Trade-led Growth:
A sound strategy for ASIA

Edited by Simon Evenett, Mia Mikic, and Ravi Ratnayake

UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

RTNeT

UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

Trade-led growth: A sound strategy for Asia

Edited by Simon Evenett, Mia Mikic and Ravi Ratnayake

Papers presented at the 5th Anniversary Conference of ARTNeT "Trade-led Growth in Times of Crisis", 2 - 3 November 2009

United Nations publication

ISBN : 978-92-1-120621-0
ST/ESCAP/2618

Contents

Preface and acknowledgments

This volume is a collection of papers presented at the conference which celebrated 5th anniversary of the establishment of Asia-Pacific Research and Training Network on Trade (ARTNeT). The conference took place in November 2009 as the global economy and the Asian region in particular were already starting to benefit from a nascent recovery in both trade flows and GDP growth. At that time it was too early to declare crisis over, and from today's perspective this was a right call.

While trade flows, at least for most of the Asian economies as well as of commodity producers around the world, returned to their pre-crisis monthly levels by mid-2010, escalating financial problems in Euro zone economies and no return to fast growth in the United States, coupled with economic disasters in Japan and some other countries, slowed trade growth towards the end of 2011. While it is too early to comment on the duration and characteristics of this latest slow-down (could it be a second recession bottom - tracing the famous W shape of the crisis?), the fact that it has direct implications for the trade-dependent economies of the region highlights the continuing relevance of the ARTNeT network's earlier deliberations. For sure, the subject matter "trade-led growth in times of crisis" will not disappear from the agendas of researchers, analysts, practitioners and development strategists as it seems that "crisis"--understood as a short-fall in a global demand--will remain a characteristic of over the medium term for developing countries in the Asia and the Pacific region.

The 150 trade researchers from the Asia-Pacific region and beyond who participated in the Conference discussed the origins of the global economic and crisis and its implications for the region's trade-led growth model. A summary of the discussions prepared by the ARTNeT secretariat is added in Part six of the book, together with the text from the Conference rapporteur, Simon Evenett. From both of these reports it is obvious that, based on the collective knowledge and wisdom at the Conference, the region is prepared to discuss the premise and components of its development strategy but is not willing to refrain from utilizing trade as a major foundation to development. The chapters in this volume explore further how trade could remain the major engine of growth.

The authors of the chapters are well-known experts and thinkers in their respective fields and we are most grateful for their contributions. The chapters were peer reviewed and thus the versions appearing in this book differ from the papers presented at the conference in 2009. While editors tried to group the papers according to some common themes or messages, inevitably there is still some overlap across sections. As is usual, the views expressed in the following chapters are to be attributed strictly to their respective authors, and not the editors of the volume.

There are many other people that we need to thank, without implicating them in the views expressed in this volume, for assisting with the process of getting the book ready for publication. Mr

Martin Wermelinger, Research Assistant with ARTNeT secretariat and doctorate candidate at University of St Gallen, worked with authors on the revision of chapters. Mr Robert Oliver, external copy and style editor of ARTNeT, undertook the demanding task of harmonizing style and presentation of the material throughout the book. As this book was conceived as one of the objectives of the Conference, we need to thank many people who assisted in organization of this event. Trade and Investment Division staff, in particular Ms Melanie Ramjoue, Ms Panjai Limchupong and Ms Pradtana Limkrailassiri are thanked for the logistic support supplied the Conference organizers. We would like to express appreciation to Dr Noeleen Hayzer, the Undersecretary General of the United Nations and the Executive Secretary of the ESCAP, for inaugurating and attending the conference.

Last, but not the least, we wish to thank IDRC, the core partner of ARTNeT, in providing sponsorship for the conference and to Dr Evan Due from the IDRC for his substantive contributions during the Conference and also during the operation of the network. This network saw ARTNeT member institutions, partners, and associate partners take an active interest in the Conference.

Simon J. Evenett
Mia Mikic
Ravi Ratnayake

List of contributers

Kym Anderson, Professor, University of Adelaide, Australia, E-mail: kym.anderson@adelaide.edu.au

Ann Capling, Professor, School of Social and Political Sciences, Faculty of Arts, The University of Melbourne, Australia, E-mail: annc@unimelb.edu.au

Mitzie Irene P. Conchada, De La Salle University, Manila, the Philippines, E-mail: mitzie.conchada@dlsu.edu.ph

Prabir De, Fellow, Research and Information System for Developing Countries, New Delhi, India. E-mail: prabirde@hotmail.com

Alan V. Deardorff, Professor of Economics, University of Michigan, United States. E-mail: alandear@umich.edu

Deborah Elms, Assistant professor and Head, Temasek Foundation for Trade & Negotiations Nanyang Technological University, Singapore, E-mail: ISDElms@ntu.edu.sg

Simon J. Evenett, Professor of International Trade and Economic Development, University of St. Gallen, Switzerland. E-mail: simon.evenett@unisg.ch

Henry Gao, Associate Professor of Law, Singapore Management University.
E-mail: gaohenry@gmail.com

John Gilbert, Professor, Department of Economics and Finance, Utah State University, United States. E-mail: jgilbert@econ.usu.edu

Phouphet Kyophilavong, Associate Professor, Faculty of Economics and Business Management, National University of Laos. E-mail: Phouphet20007@hotmail.com

Patrick A. Messerlin, Professor of Economics, Institut d'Etudes Politiques de Paris, Paris, France. E-mail: patrick.messerlin@free.fr

Mia Mikic, Economic Affairs Officer, Trade and Investment Division, United Nations Economic and Social Commission for Asia and Pacific, E-mail:mikic@un.org

Ayako Obashi, Associate Professor, Faculty of Economics, Keio University. E-mail: aobashi@gs.econ.keio.ac.jp

Pahan Prasada, Department of Agricultural Economics and Business Management
Faculty of Agriculture. University of Peradeniya, Sri Lanka, E-mail : pahan1@gmail.com, pahan2@gmail.com

Ravi Ratnayake, Director, Trade and Investment Division, ESCAP, E-mail: ratnayaker@un.org

John Ravenhill, Professor, Department of Internmational Relations, Australia National University, E-mail: john.ravenhill@anu.edu.au

John Paolo R. Rivera, De La Salle University, Manila, the Philippines, E-mail: john.paolo.rivera@dlsu.edu.ph

Anna Strutt, Senior Lecturer, Department of Economics, University of Waikato, New Zealand. E-mail: astrutt@waikato.ac.nz

Tereso S. Tullao, De La Salle University, Manila, the Philippines,
E-mail: tullaot@dlsu.edu.ph

Terrie Walmsley, Assistant Professor and Director of the Centre for Global Trade Analysis, Purdue University and Principal Fellow, University of Melbourne, Australia, E-mail: twalmsle@purdue.edu

Abbreviations and acronyms

AANZFTA	ASEAN-Australia-New Zealand Free Trade Agreement
ACP	African, Caribbean and Pacific Group of States
ADB	Asian Development Bank
AEC	ASEAN Economic Community
AFTA	ASEAN Free Trade Area
AGOA	African Growth and Opportunity Act
AHTN	ASEAN Harmonized Tariff Nomenclature
AIC	Akaike Information Criterion
ANZSCEP	Agreement between New Zealand and Singapore on a Closer Economic Partnership
APC	Australian Productivity Commission
APEC	Asia-Pacific Economic Cooperation
APTIAD	Asia-Pacific Trade and Investment Agreement Database
ARTNeT	Asia-Pacific Research and Training Network on Trade
ASEAN	Association of Southeast Asian Nations
ASEAN5	Brunei Darussalam, Indonesia, Malaysia, Singapore and Thailand
ASEAN6	ASEAN5 plus the Philippines
ASEC	ASEAN Secretariat
ASW	ASEAN Single Window
ATIGA	ASEAN Trade in Goods Agreement
BoP	balance of payments
CAFTA	Central American Free Trade Agreement
CAFTA-DR	Dominican Republic-Central America-United States Free Trade Agreement
CAN	Andean Community
CAREC	Central Asia Regional Economic Cooperation
CARICOM	Caribbean Community
CCCA	Coordinating Committee on the Implementation of CEPT for AFTA
CCFTA	Central European Free Trade Agreement
CEPR	Centre of Economic Policy Research
CGE	computable general equilibrium
CLMV	Cambodia, Lao People's Democratic Republic, Myanmar and Viet Nam
COMTRADE	United Nations Commodity Trade Statistics Database
CTC	change in tariff classification
CTH	change in tariff heading
CTSH	change in tariff subheading
DDA	Doha Development Agenda
DFAT	Australian Department of Foreign Affairs and Trade
EAFTA	East Asia Free Trade Agreement
EC	European Communities
ECMS	EC Member States
EFTA	European Free Trade Association
ERIA	Economic Research Institute for ASEAN and East Asia

ESCAP	Economic and Social Commission for Asia and the Pacific
FDI	foreign direct investment
FoB	free on board
FTA	Free Trade Agreement
FTAA	Free Trade Area of the Americas
FTAAP	Free Trade Area of the Asia-Pacific
G20	Group of Twenty (major economies)
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
GDyn	GTAP framework incorporating dynamic behaviour
GE	government effectiveness
GFC	global financial crisis
GMS	Greater Mekong Subregion
GPN	global production network
GSP	Generalized System of Preferences
GTAP	Global Trade Analysis Project
HQC	Hannan-Quinn criterion
HS	Harmonized System
ICT	information and communications technology
IDRC	International Development Research Centre
IMF	International Monetrary Fund
IPR	intellectual property rights
KIEP	Korean Institute for International Economic Policy
LAIA	Latin American Integration Agreement
LDC	least developed country
MDS	multidimensional scaling
MERCOSUR	Southern Common Market
MFN	most-favoured nation
MNC	multinational corporation
NAFTA	North American Free Trade Agreement
NT2	Nam Theun 2
NTB	non-tariff barrier
NTM	non-tariff measure
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
OLS	ordinary least squares
OPEC	Organization of the Petroleum Exporting Countries
ORRC	other restrictive regulations of commerce
P4	Trans-Pacific Strategic Economic Partnership, a free trade agreement between Brunei Darussalam, Chile, New Zealand and Singapore
PECS	Pan-European Cumulation System
PTA	preferential trade agreement

RIS	Research and Information System for Developing Countries
RL	rule of law
ROO	rules of origin
RQ	regulatory quality
RTA	regional trade agreement
RVC	regional value content
SAARC	South Asian Association for Regional Cooperation
SCM	Subsidy and Countervailing Measures
SIC	Schwarz Information Criterion
SPS	sanitary and phytosanitary standards
TBT	technical barrier to trade
TECH	technical requirement
TNC	transnational corporation
TPA	Trade Promotion Authority
TPP	Trans-Pacific Partnership
TPSET	Trans-Pacific Strategic Economic Partnership Agreement
TPS	transitional product-specific safeguard
TRAINS	Trade Analysis and Information System
TS	Tariff Schedule of the United States
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
USTR	United States Trade Representative
VAC	value added criterion
VAR	vector autoregression
VC	value content
WITS	World Integrated Trade Solution
WTO	World Trade Organization

Part one

Trade in times of global imbalances and crises

I. A trade theory explanation of global imbalances[1]

By Alan V. Deardorf

There has been concern for many years over the large and growing trade imbalances of various countries in the world economy. This has led to calls for "global rebalancing" in which countries with persistent trade deficits, such as the United States of America, would reduce net imports while countries with persistent trade surpluses, such as China, would reduce net exports. This issue has become associated with concerns about the managed exchange rates of China and other economies as well as budget imbalances of the United States and other economies. The purpose of this chapter is to look at global imbalances from the perspective that a trade theorist would take to global trade. The issue is whether trade imbalances are necessarily harmful to global welfare and, therefore, a sign that policies are needed to correct them.

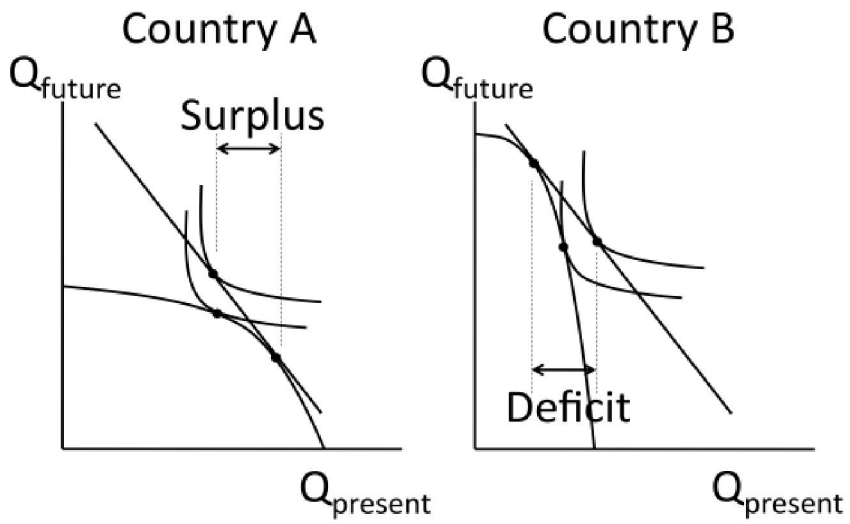
From a trade perspective, trade imbalances need not be a sign of disequilibrium. Rather, they could be a simple indication that there is trade across time as well as across space. This is illustrated simply by figure 1, which shows the familiar trade theorists' illustration of differing production possibilities in two countries, A and B, together with indifference curves showing the welfare that they can achieve both in autarky and with free trade. However, instead of the axes showing quantities of two different goods at the same point in time, they show what could be the same good but at different times. That is, country A is relatively better at, and therefore has a comparative advantage in, producing the good in the present, while the production possibilities of country B are similarly skewed towards production in the future. In autarky, these differences are reflected in a relative price that is lower at pesent in country A than in country B compared with future consumption; this corresponds to a lower real interest rate in A than in B. With free trade (shown by price lines with the same slope and thus the same interest rate in both countries), country A expands production in the present, exporting its excess to country B, while B does the reverse. In the present, it follows that country A is producing more than it is consuming, and thus is running a trade surplus, while country B is running a deficit.

Are there gains from this trade? Certainly, as each country is exploiting its own inter-temporal comparative advantage, and both are accordingly able to reach higher indifference curves, representing higher welfare. If this were the situation in the world economy of today, it would not be a cause for concern.

[1] The author acknowledges having benefited from comments by participants at the Asia-Pacific Trade Economists' Conference in Bangkok in November 2009 and at the UNCTAD-India conference on "Global Economic Crisis: Challenges and Opportunities" in Delhi in December 2009.

However, what differentiates the two countries in figure 1 is that country A has a comparative advantage in present production while country B has a comparative advantage in future production. This difference in the two production possibility curves means that the ratio of real output in the future, compared with the present, is larger in country B than in country A; in other words, real output is growing faster in country B. That is why it makes sense for consumers in country B to run a trade deficit, in effect smoothing their consumption over time.

Figure 1. Free inter-temporal trade with identical preferences

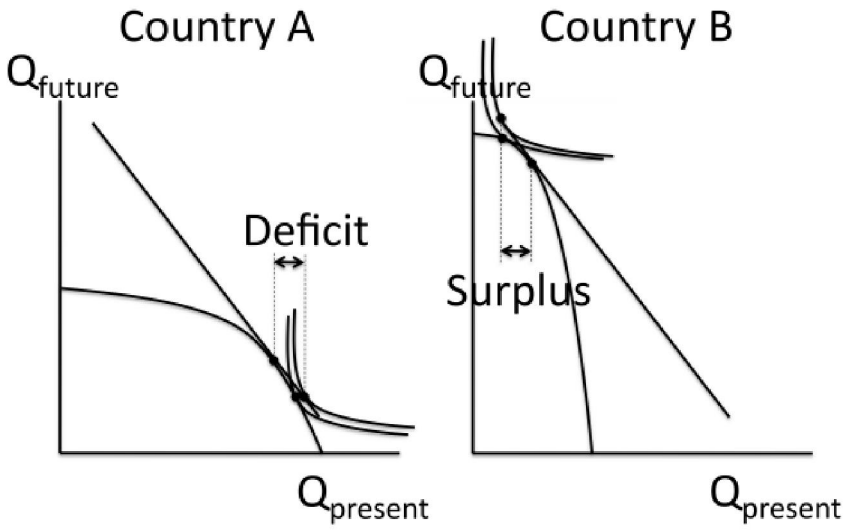


However, trying to match this scenario to the current situation in the world economy creates a problem. The country that is running the largest chronic trade surplus is rapidly-growing China, not the slow-growing United States. Thus, in the figure, the United States would be country A and China would be country B. The theory would indicate that the United States should be running a surplus and China should be running a deficit.

How is it possible, in the context of this model, to account for the fact that the two countries are doing just the opposite? One possibility would be to let them have different preferences. Suppose that country A has an even greater preference for present consumption than its ability to produce in the present, while country B has a similarly extreme preference for consuming in the future. Figure 2 shows such a free trade equilibrium. It has the two countries gaining from this inter-temporal trade, which is now motivated more by their difference in preferences than by their difference in their ability to produce.

Is figure 2 a plausible explanation of the situation in the world today? Perhaps. It is certainly true that many in the United States, the author included, act as though present consumption is preferred over future consumption to an extreme degree, while the savings rates of China and other developing countries suggest the opposite preference. However, if that were the whole story, then a higher real interest rate could be expected in the United States than in China, except to the extent that trade and/or capital flows have equalized interest rates internationally. That does not seem plausible. In any case, the author hesitates to rely on an explanation of behaviour that rests too much on differences in preferences, which this one certainly does. An alternative would be to ask whether policies might exist that interfere with the free inter-temporal trade of figure 1 and which could alter its outcome. In trade theory, we are most accustomed to considering barriers to trade such as tariffs, but these would not help in this case. They would only drive the trade imbalances to zero, not reverse them.

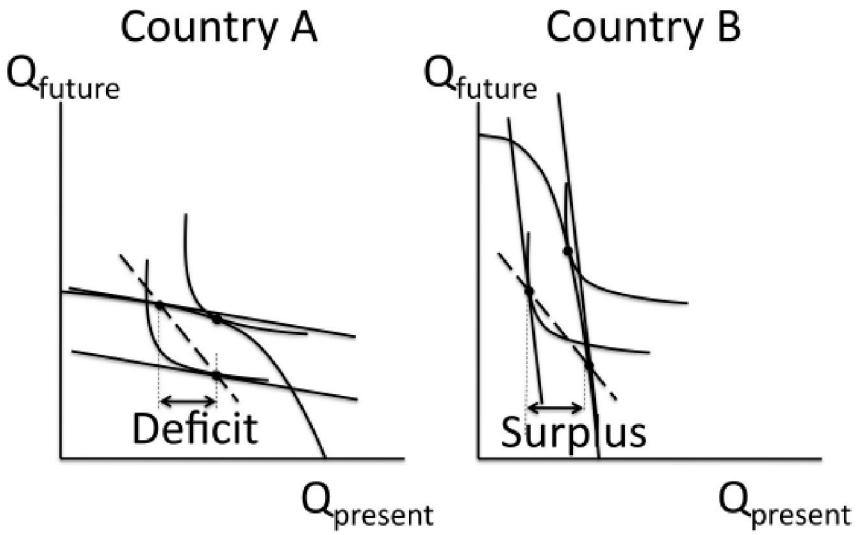
Figure 2. Free inter-temporal trade with non-identical preferences: Country A consumers favouring Qpresent and country B consumers favouring Qfuture.



Instead, policies are needed that artificially stimulate trade that is counter to comparative advantage. Most simply, suppose that countries use policies to subsidize or otherwise encourage exports of the good in which they have comparative disadvantage. Specifically, suppose that country A subsidizes exports of the future good, while country B subsidizes exports of the present good. The outcome of this pair of policies is shown in figure 3. Trade takes place along a common (broken) price line. Because of the subsidy to export the future good in country A, its relative price is higher within the domestic market, both for producers and for consumers, than on the world market. The opposite is true in country B. Also, in both countries, the budgets of consumers at domestic prices are reduced below the value of production at those prices by the need to levy lump-sum taxes to finance the

subsidies. Although this may all look somewhat unfamiliar, it is just the export-subsidy analogue of the usual two-country analysis of an import tariff.

Figure 3. Policy-distorted inter-temporal trade: Country A subsidizes exports of Qfuture and country B subsidizes exports of Qpresent.



The result shown in figure 3 has welfare of both countries reduced well below the autarky level. However, this is not necessarily the case, since it would be possible for one country to gain if its own subsidy were sufficiently small compared with the other. But a net loss for the world as a whole, compared to autarky, is necessary, since by trading contrary to comparative advantage, the world is promoting inefficiency.

Figure 3 tells a dramatic story of how pernicious a global imbalance can be if it is caused by policies that promote inter-temporal trade that is contrary to comparative advantage. The fact that certain fast-growing economies, such as China, are running trade surpluses while slow-growing economies, such as the United States, are running deficits is suggestive that something similar to this might be going on. However, this raises the question as to what types of policies might be in place that would play the role of the export subsidies shown in figure 3.

In the case of China, the answer is relatively straightforward. For many years, the Govrnment of China has accumulated foreign assets as a by-product of its exchange market intervention. It is, in effect, lending massively each year to the rest of the world. That policy comes about as close as can be imagined to subsidizing exports of present goods.

In the United States, it is harder to see a policy that can be interpreted as subsidizing future exports or present imports. However, the stance of both monetary and fiscal policies during recent years appears to have promoted present consumption over future consumption, and thus low saving. That does not fit quite as neatly into this theoretical framework, but it seems likely to have similar effects. Therefore, this interpretation of global imbalance, from the perspective of trade theory, suggests that it is likely to be undermining world welfare. In addition, to the extent that it is caused by policies of both the surplus and the deficit countries, it is likely to be making them all worse off.

II. World trade regime, World Trade Organization and large-scale crises[2]

By Patrick A. Messerlin

Introduction

One year after the collapse of Lehman Brothers and three years after the start of the food and commodities crisis, the time seems ripe to make a provisional assessment of the resilience of the open trade policies to this severe downturn, and to draw the main lessons.

In attempting to answer this question, it is necessary to make a distinction between the "world trade regime" and the World Trade Organization (WTO). The former consists of all the multilateral, plurilateral and unilateral trade policies. Sometimes such policies amplify WTO weaknesses. However,, sometimes they amplify WTO disciplines, as during the past year (see section A). WTO, with its key disciplines and its dispute settlement mechanism, is the undisputed legal skeleton of the world trade architecture. However, it is in great need of adjustiment to a faster-moving, often chaotic, world trade regime.

The distinction between WTO and the world trade regime is even more crucial, since the designation of the G20 as the "premier forum" for international economic cooperation between the largest world economies (Pittsburgh Summit communiqué). The Republic of Korea, which holds the G20 Chair for 2010 (and Canada, as the host of the G20 in spring 2010) will have the major task of developing this new architecture – weaving together the G20, WTO and the other trade-related international institutions.

Section A of this chapter argues that, during the past year, the world trade regime has shown an unexpected resilience to an economic downturn of a magnitude unknown before. Section B explains why such a positive conclusion is not shared by all observers. Section C suggests four concrete proposals that would improve the resilience of open trade policies, particularly during the perilous exit period of the current crisis. Section D stresses the fact that any progress in the world trade architecture faces a political constraint that is likely to stay with us for a long time – the "iron law of thin majorities" (the vast majority of the governments of the largest economies depend on very thin

[2] Paper presented at the ARTNeT Conference on "Trade-led growth in times of crisis" (2-3 November 2009). The author is grateful to Mia Mikic, Jean-Jacques Hallaert and the participants of the ARTNeT Conference and the seminars hosted by the Korean Institute for International Economic Policy (KIEP), the Graduate School of International Studies (Seoul National University) and the Hong Kong Forum for their very useful comments. The paper was written prior to the G-20 meetings in 2010. Any errors are those of the author.

majorities). Section E examines the balance to be struck between designing stricter international disciplines and building robust institutions when improving the long-term resilience of the world trade regime to large-scale crises. Section F draws some conclusions for the Doha Round and the post-Doha Agenda, emphasizing the key role of the Republic of Korea and Canada in the G20 context, and the assets of those two countries when playing such a role.

A. The good news: The (unexpected) resilience of the world open trade regime

This section argues that the world trade system has shown an unexpected resilience to the tidal waves of the past three years (Messerlin 2009; World Trade Organization, 2010). Eighteen months ago, most observers were expecting a massive surge of tariff increases from the approximately 20 largest developed, emerging and developing economies that are applying tariffs at a (much) lower level than their levels bound at the 1995 Uruguay Round (table 1). This surge did not happen, except in a very few countries (most notably, Argentina and Indonesia, but these countries had adopted harmful trade policies long before the crisis).

Meanwhile, substantial liberalization has been implemented. Many barriers to exports have been reduced or eliminated (economic analysis shows that barriers to exports are barriers to imports).[3] Despite a severe downturn a key emerging economy, Mexico, has launched a swiping unilateral liberalization, thus completing the preferential trade agreements that it has already with the United States and the European Communities (EC).

Therefore, it is too early to "cry wolf" – such resilience of the open trade regime is good news. However, it is also much too early to declare victory for several reasons.

First, this unexpected resilience comes from the world trade regime (the practice), not from legal commitments at WTO. Countries with "tariff water" (bound tariffs higher than applied tariffs) did not align their bound tariffs to their applied tariffs at WTO; this remains a key issue of the Doha negotiations (see section F). However, the fact that the trade policies of the largest economies are, de facto, enforcing the key WTO notion of "value of binding" (no gap between applied and bound tariffs) is a promising sign in the long term. In addition, it may significantly change the dynamics of the Doha negotiations in the short term (see section F).

Second, key emerging and developing economies have faced a much less dramatic domestic downturn than the downturn faced by the developed economies, or they appear to have rebounded

[3] It should be noted that many of these barriers to exports were explicitly temporary and had explicit end dates, hence mostly raising the risk of being extended. This feature is also observed for barriers on imports currently imposed by non-WTO members, particularly the Russian Federation.

more rapidly (table 1). In other words, their virtue has not been tested as harshly as the virtue of the industrial countries. For example, China and India are exhibiting growth rates of 7.9 per cent and 6.1 per cent, respectively (second quarter of 2009, percentage change on a year ago) (*The Economist*, 25 September 2009]. These growth rates are considerably higher than those enjoyed by the United States during the "golden" 1990s and 2000s, and three to four times more than the EC growth rates of those same decades.

Third, developed countries continue to show negative or very low growth rates, while they may have exhausted the leverage of macroeconomic policies (Eichengreen and Irwin, 2009). In such a context, recent trade barriers such as the United States' 35 per cent import duties on tyres from China, adopted under the transitional product-specific safeguard (TPS) included in China's WTO protocol accession, are worrisome for two reasons:

(a) They may open the door to new cases (such as shoes, example) in the United States, since it is much easier to impose measures under TPS than under other WTO safeguards.[4] The TPS provision is scheduled to be eliminated in 2014, hence will be enforceable for the whole duration of the crisis in the United States (see section D),

(b) The "trade-diversion" TPS provision means that, as soon as one WTO member takes a TPS measure, other members could enforce similar measures at almost no cost in terms of investigation, prior notification, input from Chinese parties etc. As a result, it may be ultimately much more difficult than expected for Chinese firms to shift exports to non-United States markets – thereby fuelling frustrations at future G20 Summits.

[4] This is illustrated by the fact that the petition was tabled on 20 April 2009, and President Obama announced his decision on 11 September 2009 – a record time for such procedures. China was particularly frustrated by not even getting a few days of discussions with the United States in September.

Table 1. Tariff water and the six first months of the crisis

WTO members	Industrial tariffs Simple average		Average tariff water [a]	GDP growth rate [b]	GDP growth rate [c]
	Bound tariff (%)	Applied tariff (%)			
Section A. Eight largest WTO members without "tariff water" [a]					
European Union 27[d]	3.9	3.8	0.1	-4.7	-0.5
United States	3.3	3.2	0.1	-3.9	-0.7
Japan	2.4	2.6	-0.2	-6.4	3.7
China	9.1	9.1	0.0	7.9	--
Canada	5.3	3.7	1.6	-3.2	-3.4
Taiwan Province of China	4.8	4.6	0.2	-7.5	--
Hong Kong, China	0.0	0.0	0.0	-3.8	13.9
Macao, China	0.0	0.0	0.0	--	--
All Section A	4.1	3.9	0.3		
Section B. Next 26 largest WTO members with "tariff water" [a]					
Brazil	30.8	12.5	18.3	-1.2	7.8
India	36.2	11.5	24.7	6.1	--
Republic of Korea	10.2	6.6	3.6	-2.5	11.0
Mexico	34.9	11.2	23.7	-10.3	-4.4
Australia	11.0	3.8	7.2	0.6	2.5
Turkey	16.9	4.8	12.1	-7.0	--
Indonesia	35.6	6.7	28.9	4.0	--
Norway	3.1	0.6	2.5	-4.8	-5.0
Saudi Arabia	10.5	4.7	5.8	4.5	--
South Africa	15.7	7.6	8.1	0.3	-3.0
Argentina	31.8	12.3	19.5	-0.8	1.1
Thailand	25.5	8.2	17.3	-4.9	9.6
Venezuela	33.6	12.7	20.9	-2.4	--
Malaysia	14.9	7.9	7.0	-3.9	--
Chile	25.0	6.0	19.0	-4.5	-1.4
Colombia	35.4	11.8	23.6	-0.6	2.7
Singapore	6.3	0.0	6.3	-3,5	20.7
Pakistan	54.6	13.8	40.8	2.0	--
Israel	11.5	5.0	6.5	0.1	1.0
Philippines	23.4	5.8	17.6	--	--
Nigeria	48.5	11.4	37.1	--	--
Egypt	27.7	9.2	18.5	4.2	--
New Zealand	10.6	3.2	7.4	--	--
Peru	30.0	9.7	20.3	--	--
Kuwait	100.0	4.7	95.3	--	--
Bangladesh	34.4	14.2	20.2	--	--
All Section B	27.6	7.9	19.7		

Sources: World Trade Organization Trade Profiles (April 2008) and *The Economist*, 26 September 2009.

Note: -- Information unavailable.

[a] Difference between the average bound tariff and the average applied tariff (average "tariff water").

[b] Percentage change on a year ago, second quarter 2009, except if specified.

[c] Percentage change on previous quarter, annual rate. [d] For growth rate figures, eurozone.

Last, the food and commodities crisis preceded the downturn crisis. Protectionist measures adopted during the former crisis (export restrictions) have been eliminated during the latter. In other words, the liberalization undertaken during the downturn has notably consisted of correcting the protectionist drift introduced only 18 months earlier. Such a swift shift offers the best-ever illustration of the intertemporal inefficiency costs generated by the volatility of protectionist measures. However, the ongoing crisis seems unlikely to end within the next two years, meaning that we will not benefit from such a happy turn of events soon.

B. The missing debate

The positive view on the past year described above does not reflect a consensus. For some observers, the slippage in protection is big enough to raise serious concerns (Evenett, 2009a) while other observers have significantly reduced their initial concerns from a "significant slippage" (WTO, 2009) to "sand in the gears" (WTO-OECD-UNCTAD, 2009 and 2010).

Why such a wide range of opinions? It flows from the many intrinsic difficulties of an accurate monitoring of the ongoing changes. Such difficulties begin with collecting the protectionist measures. For example, it is much harder to get the full range measures aiming at reducing domestic distortions (e.g., between large and small firms) than to collect tariff changes. There are also methodological difficulties. For example, it would be necessary to pay much more attention to the procedure consisting of systematically adding the count of measures at one point in time. Such an addition ignores the fact that barriers are often substitutable, hence one barrier works at one stage of the crisis while another one works at a later stage. In such a case, counting two measures overstates the surge in protection – the proper count should be one measure at each stage (but the measure is different).

That said, there is a more substantial reason for such a wide range of opinions, i.e., there has been no serious debate on the benchmark to be used for qualifying a possible "slippage" to protection.

A first possible benchmark would be the complete absence of new protectionist measures. Supporters of such a choice invoke the Washington and London G20 communiqués which say: "We [...] reaffirm our commitment to fight *all forms* (author's emphasis) of protectionism, and to reach an ambitious and balanced conclusion to the Doha Development Round" (London Summit communiqué).

Such a benchmark is clearly too stringent. It is doubtful that it reflects the true state of the G20 leaders' minds who, as shrewd politicians, are well aware that they should put some "oil in the gears" if they want to avoid serious political clashes at home.

Such a benchmark is not even consistent with the traditional GATT-WTO approach, which has recognized political constraints since the naissance of GATT, as best illustrated by Article XIX on safeguards or Article XVIIIB on balance of payments in the GATT text. Finally, such a benchmark makes it difficult to take fully into account liberalization measures, hence it is at odds with the economic analysis that gives relative prices (prices of exports and imports) the key role.

Another (etter to the author's view) benchmark would be an indicator of the changes in trade barriers "routinely" implemented every year in the recent past, and to assess the extent to which changes in trade barriers occurring in the ongoing crisis have deviated from this "routine" indicator.

An obvious first component of such a "routine" indicator is the sheer number of tariff increases and decreases. A first attempt to provide such an estimate suggests a routine of 4 per cent of tariff line changes every year (Bouet and Laborde, 2009). This figure covers tariffs only and it is based on data at the HS 6-digit level. As a result, comparing this figure with the HS 4-digit data of the Global Trade Alert database (Evenett, 2009 and 2010) is not adequate. The estimates that are the most comparable with the Bouet-Laborde indicator suggest that the import restrictions introduced since October 2008 cover 1 per cent of world trade merchandise and 1.7 per cent of EC exports (Cernat and Sousa, 2010).[5] In sum what has happened during the past 18 months remains within the routine limits.

Of course, similar routine indicators would be needed for the other key barriers to trade. If it is relatively easy to gather such indicators for key barriers on imports, such as antidumping or safeguard measures (Bown, 2009; van Grasstek, 2009), it is more difficult to collect complete information on export restricting measures; such information is largely missing for "behind-the-border" barriers, such as subsidies or public procurement, to take two types of the measures often used during the past year.

C. Proposals for improving resilience of open trade policies in the short term

Crises are very sensitive to panic, and panic thrives on imperfect information. The above discussion on benchmarks should thus not be seen as a discussion among trade specialists, but as a serious matter of public policy aimed at limiting the risks of panic and uncontrollable situations. In this perspective, the above discussion sheds some light on what should be done as soon as possible to maintain and improve the resilience observed during the past year. The following two proposals appear to be natural candidates:

(a) Proposal 1. There should be a major effort to calculate the routine number of tariff changes during a representative sample of years (those under shiny growth and those under crises

[5] These figures include quotas, import licences, reference prices and import bans.

of various nature, magnitude and geographical scope) as well as changes in other import barriers, such as antidumping, anti-subsidy, safeguards etc.;

(b) Proposal 2. Similar information should be made available, to the best possible extent, on changes in export barriers (export quotas, duties and credit regimes) as well as in key trade-distorting, behind-the-border policies (public procurement, domestic production subsidies, technical barriers etc.).

Such indicators should be provided, both on a country and a sector basis, in a form easily usable by the ordinary citizens of a country. Providing "user-friendly" indicators is essential for disciplining countries. The international option of "shaming" countries that adopt poorly conceived policies is often evoked. However, the international trading community (starting with WTO) would clearly hesitate to implement it on time for good or bad reasons. By contrast, citizens of such countries may be eager to use such information as rapidly as possible, in order to stimulate a better informed public debate on the policy of their own country.

Proposals based on counting measures are clearly insufficient (they could even be misguiding in some cases, as argued below in the case of antidumping). It is thus indispensable to get a "quick" economic assessment of the trade barriers introduced. At first glance, such a task appears vast and thus out of reach. However, the situation is not so bad for two reasons:

(a) There is no reason to undertake such a task for the whole universe of trade barriers. Only a few key barriers need to be monitored with special care because they are likely to be the first and/or most used components of a protectionist wave. The best illustrations are antidumping, safeguards or (direct and indirect) production subsidies;

(b) Some crude criteria could be developed for a rapid assessment of the harmfulness of those instruments put under "special" scrutiny. For example, antidumping cases aim at fragmenting world markets and at establishing collusive markets that would normally be competitive. Some new antidumping cases in products close to cases lodged during the past 20 or 30 years may mostly be aimed at ensuring that the downturn will not induce firms to breach the existing collusive agreements – in short, that the cartel-like disciplines generated by the previous antidumping measures will not collapse. They simply reveal the true practices that were going on, quietly and behind the scenes, before the crisis. The extent to which such "new" antidumping cases cause notable deterioration of the situation existing in such markets is thus questionable – this is a case where a mere counting could create devastating panic under the form of a race in antidumping actions. The truly worrisome sign of increased protection would be a spreading of antidumping cases to goods never involved in past antidumping complaints. Only such cases would deserve "special" scrutiny.

The above discussion therefore suggests two more proposals:

(a) Proposal 3. Establish a list of crucial trade barriers – those which have the highest likelihood of generating wide (e.g., recent safeguard measures tend to have a large product coverage) and/or long-term (e.g., antidumping measures, once adopted, tend to last long) distortions for the ongoing crisis;

(b) Proposal 4. Develop crude but fast techniques aimed at splitting the trade barriers being monitored into those expanding protection and collusive behaviour into new products and those "merely" re-enforcing existing protection and collusion.

The list of trade barriers to be put under special scrutiny cannot be decided once and for all because trade barriers are substitutable with each other to some extent. Hence, such a list may evolve over time, even during the same crisis. For example, at the beginning of the current crisis, many observers believed that tariff increases were the indicator to scrutinize carefully. However, subsidies and public procurement have played a much bigger role in spreading the impression of a surge in protection. Such a role may vanish in the coming years – subsidies may be much less fashionable when the Treasuries face increasing budgetary constraints.

The tasks required by the four proposals above require skills and means that are not available in one international institution. For tariffs and import quotas, WTO clearly has the expertise as well as access to the required information. It may also be the case for export quotas and duties, if the practice and/or legal language of WTO concerning these instruments are strengthened. However, WTO has no expertise in export restrictions and credit regimes, export or production subsidies, or public procurement, unlike the World Bank, the International Monetary Fund, the Organisation for Economic Co-operation and Development (OECD), the Bern Union of Export-Import agencies (and perhaps the Bank of International Settlements in the case of the financial sector), for example.

This is where efficient post-Pittsburgh G20 Summits could change the situation dramatically. Previously, no international institution was capable of deciding to undertake such tasks in an efficient way. As a result, no initiative was taken, or the most affordable initiatives were taken by several institutions generating useless duplications. Since Pittsburgh, it has become possible for the G20 (or an ad hoc G20 subcommittee) to make such decisions, and to assign the tasks among the various available international institutions based on their skills, capacities and access to information (while ensuring that the institutions properly carry out their tasks).

D. Facing the "iron law of thin majorities"

Exit is often the most dangerous phase of a crisis because it is the time when the pains and gains accumulated during the recession are netted out, making fully visible the stark contrast between

net losers and winners, hence generating long-term bitterness. Such a phase may be difficult even in countries where growth has been severely cut for only a few months. The long-term impact of brutal short-term decelerations is difficult to assess. It could be substantial in economic terms. One key lesson from the Japanese "Lost Decade" (Kaji, 2009) is that a great crisis generates relatively rapidly a severe attrition of competition in certain markets for goods and services, as may already be the case in financial services. The long-term impact of brutal short-term decelerations could also be substantial in political terms. Bitter memories of what happened may fuel a loss of confidence in market efficiency, generating a political establishment more wary of open trade and, more generally, markets.

As of today, macroeconomic analysts expect that the the United States – the largest badly-hit economy – will be back on its "potential GDP" growth path in a few years from now, probably around 2014 (Pisani, 2009). If correct, this simulation implies that all the next key elections in the largest industrial democracies (French and United States Presidents, and German, Japanese and United States Parliaments) will occur before the end of the recovery – hence possibly while they are still under serious political stress. The exact intensity of such stress will depend of the path of the recovery; will it be V-, U- or W-shaped? The most frequent scenario appears to be a W-shaped curve (a recovery followed by a smaller downturn, before the final recovery), which could be very stressful from a political point of view because such a double-dip could again damage the return to confidence.

This scenario deserves an important remark Concerning the fact that the pre-crisis situation is taken as the benchmark. Strictly speaking, this is incorrect because the potential gross domestic product (GDP) path before the crisis was "doped" by the financial excesses of the late 1990s and 2000s, compared to what would have occurred in a "normal" world. However, calculating a "financial excesses-adjusted" potential GDP path is far beyond our capacity, meaning that we have to live with this error as an unavoidable additional cost of the excesses of the past decade or so.

The same observation should be made from a trade policy perspective. The financial excesses of the 1990s have generated huge distortions in markets, inflating some sectors at the expense of the others. During those years, few observers paid attention to such distortions and their discriminatory impact on trade flows. For example, exports of sports utility vehicles expanded to the detriment of exports of smaller cars, making some countries more successful (and others less successful) than they would have been with prices and incomes less "doped" by financial excesses.

Unfortunately, as in macroeconomic matters, it seems impossible to create the "counterfactual" of financial excesses-free economies. However, trade analysts should at least be very careful when evoking trade-related discrimination based on the situation prevailing a_year ago. For example, the strong decline in the demand for large cars since late 2008 is not entirely discriminatory – it simply reflects a move towards a healthier situation, which should have prevailed years ago. This point is important to keep in mind if only because the manufacturers of large cars will certainly argue

that the recent evolution is entirely discriminatory, and thus possibly ask for countervailing protectionist measures.

That said, waiting until 2014 for the return to normality makes the "iron law of thin majorities" a tough constraint. This law reflects the observed fact that, since the late 1980s, all the industrial democracies happen to have shared the same political trend – increasingly thin majorities support the elected governments, independently from the political colour (Messerlin, 2007). Whatever the reasons are for such a similar evolution, the final result is that narrowly elected governments are very likely to be weaker due to resisting lobbies than they were before the 1990s.

The "iron law" has two dimensions. First, increasingly tiny lobbies may succeed where they would have failed 20 years ago, a possible explanation of the difficulties to achieve success in the Doha Round in July 2008. Second, the time during which governments could successfully resist pressure groups may be shorter – a dimension highly relevant to the topic of this chapter since it endangers the long-term resilience of trade policies to large-scale crises.

That said, two lessons could be drawn from the "iron law". First, waiting for "better" times (stronger majorities) may be illusory. For example, the current United States Congress may be hostile to, or uninterested in, trade issues. Yet, if the "iron law" continues to be verified, any hope that the 2012 United States election could change the situation is illusory because it will deliver another tiny majority only slightly less hostile to, or uninterested in, trade matters. In short, procrastination is not an option – a key point to keep in mind when looking at the G20 role.

The second lesson to be drawn from the "iron law of thin majorities" is that one should be very careful when designing medium- or long-term initiatives. There is a need to choose initiatives that require the lowest amount of political capital, since such capital is limited. Of course, such a conclusion applies to initiatives to be tabled at the G20 Summit, as well as to those initiatives to be tabled in WTO or other trade-related international forums. In short, agility and flexibility should be the driving force of the initiatives to be taken..

E. Stricter international disciplines and robust domestic institutions: A key balance

This section examines the initiatives that would have the best chance of enhancing the long-term resilience of the world trade regime to large-scale economic crises. It starts from the observation that there is currently a tendency to overinvest in stricter international disciplines and to underinvest in robust domestic institutions that appear critical to effective enforcement of strict international disciplines. Indeed, the current crisis provides some evidence that (a) large-scale economic crises can easily circumvent or wipe out international disciplines conceived during a quieter period (often many

years before the crisis erupts), and (b) international institutions are robust only as long as they can rely on the support of robust domestic institutions.

This section assumes that large-scale economic crises are infrequent (e.g., occurring once every two to three decades). This assumption is important because it gives a timespan that is long enough to find the best balance between designing stricter disciplines (enough time to agree on disciplines more substantive than those existing today) and building robust domestic institutions (enough time to design them and for them to establish their reputation).

1. Designing stricter disciplines

The current crisis has witnessed the proposal of many stricter disciplines to be implemented in case of large-scale economic crises. For example, Dhar and others (2009) tabled a protocol organized into five sections (general principles, non-discrimination, standstill, subsidies and technical barriers to trade) and laid out 28 specific commitments. These commitments would be signed only by the G20 members (although non-G20 members could join them), and they would be "exceptional" to the extent that they would lapse after a predetermined number of years (e.g., two years).

Subsidies offer a good example for discussing such proposals. Since mid-2008, industrial countries and the richest emerging economies have granted huge subsidies to the banking and car manufacturing sectors. The recent evolution of these subsidies is unclear. While some banks are speeding up reimbursement of the subsidies they received, a notable share of subsidies (public guarantees to banks and production subsidies to carmakers) is currently being extended to next year, despite increasingly distressed public budgets. As all the subsidizing countries are signatories of the subsidy and Countervailing Measures (SCM) Agreement of the Uruguay Round, does that mean that a stricter SCM WTO Agreement should be negotiated?

The current situation in the EC offers a compelling illustration of the fact that a stricter SCM Agreement is not sufficient. The EC has a system of notifications, transparency and standstill disciplines for subsidies that is so precise and binding, and so strongly linked to the core competition provisions of the Treaty establishing the EC, that it is hard to believe that a similar agreement could ever be achieved at the world level during the next 30 years. Despite such a legal arsenal, EC anti-subsidy disciplines have been extremely disappointing during the past year. Subsidies to carmakers and banks were routinely notified by the EC Member States (ECMS). However, there is no clear indication that, during the examination of the notified subsidies by the Commission, significant changes have been requested by the Commission and introduced in the initial packages tabled by ECMS. In addition, the whole mechanism ended up with a blanket acceptance by the European Commission of almost all the notified subsidies. It is only very recently that the then-Competition

Commissioner began to show some willingness to block mergers and to require rescued banks to restructure (*International Herald Tribune*, 17 October 2009).

How can we explain that the already well-oiled, relatively successful EC anti-subsidy mechanism did not "bite" after the few first months of the on-going crisis (i.e., after allowing some time for assessing the extent of the damage)? A first possible explanation is that these subsidies are ultimately not so discriminatory, thus inducing the Commission to estimate that the political costs of fighting subsidies would exceed the economic benefits of eliminating them. There may be some truth in this argument. For example, in late 2008, all those ECMS producing cars granted subsidies for scrapping old cars ("cash for clunkers"). If such subsidies were officially granted for greening the stock of cars in ECMS, they were above all adopted for boosting the sales of new cars.[6] Available evidence on recent car registrations does not suggest strong distortionary effects within the car sector in the short term. Table 2 suggests that the shares of domestically-made and foreign-made cars sold in the French market during the first eight months of 2008 and the first eight months of 2009 were relatively similar for similar brands. For example, the European brands of non-luxury cars closest to Renault and Peugot products exhibited similar performances. The deepest changes during that period involved carmakers that were unfashionable before the crisis, and attractive subsequently – such as Dacia in the low-end range, or the Republic of Korea's brands in the middle-high range. Carmakers (from Japan and Germany) producing sophisticated cars that fitted in well with the pre-crisis conditions suffered the most – an evolution that is evident for all industrial products (Freire and Mikic, 2009).

[6] In fact, many old and delapitated vehicles are still being run, including in their countries of origin, because the subsidy schemes have often been badly designed, as best illustrated by Germany.

Table 2. Registrations in the French car markets, 2008 and 2009

Brands	Country/Region	Registrations[a]			Market Shares	
		August 2008	August 2009	2008/2009 (%)	August 2008	August 2009
Citroen	FRA	197 126	220 978	12.1	13.93	15.45
Peugeot	FRA	239 414	238 217	-0.5	16.92	16.65
Renault	FRA	309 461	306 985	-0.8	21.87	21.46
Dacia	FRA/ROU	28 136	34 579	22.9	1.99	2.42
Nissan	FRA/JAP	26 939	26 373	-2.1	1.90	1.84
Ferrari	EUR	159	237	49.1	0.01	0.02
Alfa Romeo	EUR	6 533	7 814	19.6	0.46	0.55
Porsche	EUR	1 245	1 459	17.2	0.09	0.10
Ford[c]	U.S./EUR	78 184	82 953	6.1	5.53	5.80
Seat[c]	EUR	24 332	25 768	5.9	1.72	1.80
Lancia	EUR	3 224	3 363	4.3	0.23	0.24
Fiat[c]	EUR	51 386	53 339	3.8	3.63	3.73
Audi	EUR	32 185	33 311	3.5	2.27	2.33
Volkswagen[c]	EUR	94 277	96 822	2.7	6.66	6.77
Maserati	EUR	176	178	1.1	0.01	0.01
Skoda[c]	EUR	12 316	11 910	-3.3	0.87	0.83
Mercedes	EUR	35 638	33 785	-5.2	2.52	2.36
Valvo	EUR	8 180	7 591	-7.2	0.58	0.53
Opel[c]	U.S./EUR	65 051	57 115	-12.2	4.60	3.99
Smart[c]	EUR	6 045	5 211	-13.8	0.43	0.36
Mini[c]	EUR	13 496	11 229	-16.8	0.95	0.79
BMW	EUR	34 669	28 359	-18.2	2.45	1.98
Saab	EUR	2 228	1 152	-48.3	0.16	0.08
Subaru	JAP	733	973	32.7	0.05	0.07
Honda	JAP	8 608	9 805	13.9	0.61	0.69
Suzuki	JAP	17 298	18 370	6.2	1.22	1.28
Baihatsu	JAP	1 180	1 239	5.0	0.08	0.09
Toyota	JAP	62 763	54 227	-13.6	4.44	3.79
Mazda	JAP	9 372	8 060	-14.0	0.66	0.56
Lexus	JAP	1 607	1 154	-28.2	0.11	0.08
Mitsubishi	JAP	1 930	1 347	-30.2	0.14	0.09
Kia	KOR	11 367	13 777	21.2	0.80	0.96
Hyundai	KOR	13 557	14 886	9.8	0.96	1.04
Chevrolet	U.S.	5 912	11 748	98.7	0.42	0.82
Jaguar	IND	1 207	812	-32.7	0.09	0.06
Land Rover	IND	2 308	1 334	-42.2	0.16	0.09
Dodge	U.S.	1 808	1 038	-42.6	0.13	0.07
Jeep	U.S.	1 792	835	-53.4	0.13	0.06
Chrysler	U.S.	2 008	801	-60.1	0.14	0.06
Lada	RUS/FRA	124	28	-77.4	0.01	0.00
Cadillac	U.S.	66	10	-84.8	0.00	0.00
French brands[b]		746 001	766 180	2.7	52.73	53.56
Non-lux. EUR brands[c]		345 088	344 347	-0.2	24.39	24.07
Japanese brands		103 491	95 175	-8.0	7.31	6.65
Korean brands		24 925	28 663	15.0	1.76	2.00
Total		1 414 828	1 430 391	1.1	100.00	100.00

Source: Comité des constructeurs français d'automobiles.

[a] First eight months of 2008 and 2009 .

[b] Citroen , Peugeot and Renault.

[c] Non-luxury European brands.

However, the "non-discriminatory" impact of subsidies is likely to be limited to two key aspects. First, even if subsidies for greener cars do not introduce a massive discrimination in car

markets, they definitively distort the demand for cars relative to the demand for other goods and services – the global demand for cars has been achieved to the detriment of current or future demand for other goods and services. Second, it is doubtful that long-lasting subsidies would have no discriminatory impact in the long-term.

For these reasons, one would have expected the Commission to at least have paved the way for a progressive removal of the subsidies to such key sectors. For example, it could have tabled guidelines – following a tradition dating back to the 1970s and 1980s, which were marked by the huge excess capacities in steel production or shipbuilding. The very long silence of the Commission raises serious questions about the robustness of international institutions that would be in charge of implementing stricter disciplines at the global level.

2. Building robust national institutions

How then to ensure effective enforcement of stricter international disciplines during large-scale economic crises? The European subsidies case is interesting because it shows that international institutions – even with executive power and a long record, such as that of the European Commission – are not sufficient.

Two reasons may explain the Commission's inertia. First is the Commission's desire to behave as a government. This is an unfortunate deviation from the Commission's core mandate, which is to "ensure that the provisions of this Treaty and the measures taken by the institutions pursuant thereto are applied, and formulate recommendations or deliver opinions on matters dealt with in this Treaty, if it expressly so provides or if the Commission considers it necessary" (Article 211 of the Treaty of Nice).[7] Second, and more importantly, the Commission has no strong institutional support in ECMS. Such an absence of domestic support at the ECMS level makes it politically almost impossible to launch of economically sound debates on ECMS subsidies concerned during difficult periods – preventing any action by the Commission.

This discussion leaves two options. First is giving up about any willingness to design stricter international disciplines and to rely, as is currently the case, on "light" disciplines with international institutions by being merely the host of negotiations on cooperative solutions to reduce and eliminate discriminatory measures. This "light" option requires a decision to launch negotiations and an assignment procedure (concerning which institution will be asked to host the negotiations). After the

[7] The Lisbon Treaty makes no mention of delivering opinions. Article 9D1 simply states that "the Commission shall promote the general interest of the Union and take appropriate initiatives to that end" before listing its coordinating, executive and management functions.

Pittsburgh Summit, the G20 is clearly the forum in which to take the decision to launch negotiations. Then the G20 could either directly assign an institution to undertake the task, or it could charge WTO to act as its "dispatching" (assigning) arm to the extent that the issues at stake are trade-related. For example, in the case of subsidies in the car manufacturing sector, a candidate institution to host negotiations first on netting out subsidies, then on progressive cuts of the remaining subsidies, would be the OECD Secretariat, which was the forum for a similar exercise on subsidies in steel and shipbuilding during the 1970s and 1980s. An alternative would be an ad hoc subcommittee set up by the G20.

The second option would be to design stricter disciplines and to ensure that international institutions would be robust enough. The European case suggests that this second condition requires the existence of robust domestic institutions that would buttress the international institutions in the front line.

Is there a blueprint for such domestic institutions? The Australian Productivity Commission (APC) appears to be an attractive model. Its mandate is to be an "independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians" (APC website). This mandate looks promising for the same two reasons that make the European Commission a disappointing institution. First, independence is ensured at no cost in terms of executive power (APC is an advisory body). In other words, APC is not preoccupied with attending to the most urgent things first (behaving as a government). However, this independence is not without a price – the influence of an APC-type institution is not instantaneous. Rather, it flows from its capacity, year after year, to deal with difficult issues by collecting the appropriate information, providing a sound economic analysis, and disseminating both via numerous hearings involving all parties – in short, from its capacity to build, over the years, a strong reputation to offer good solutions. All these features make APC-type institutions quite different from competition authorities. Indeed, it is remarkable that no ECMS competition authority has raised a strong voice in favour of disciplining the subsidies granted since mid-2008, and that Australia has a very active competition authority apart from APC.

The second key – and by far the most important – feature of the APC mandate is that the APC goal is the "welfare of Australians", which includes not only producers but also consumers and tax-payers, thus allowing APC to take the widest possible economic perspectives. Such a feature gives APC-type domestic institutions two key additional virtues. First, it makes them are very sensitive to the risk of attrition from competition in the markets of many goods and services often generated by deep crises (as amply shown by the Japanese "Lost Decade"). Second, it may allow reliance on such institutions in taking some risks in the world trade regime and in WTO – for example, when opening or reopening the difficult negotiations on rules on contingent protection (particularly safeguards).

Therefore, adopting stricter international disciplines with some chance of enforcing them during harsh times requires building robust domestic institutions such as APC. It is conceivable that each WTO member could create its own APC. However, that is not necessary. What counts for the resilience of the world trade regime is that the G20 members be equipped with such institutions (of course, this should not prevent smaller countries from also creating such an institution).

F. Conclusion – Doha Round, post-Doha agenda and G20

The G20 Pittsburgh Summit sticks to the official line of "we will fight protectionism [and] we are committed to bringing the Doha Round to a successful conclusion in 2010." However, the tone is definitively softer – there is no emphatic reference to fight "all forms" of protectionism. Such language is unlikely to boost the already low moral of the trade negotiators in Geneva.

Paradoxically, the current crisis may have made the Doha Round easier. During the past year, the largest emerging economies have revealed their willingness and capacity not to increase their applied tariffs in difficult times – that is, not to use their WTO rights to increase applied tariffs up to their much higher bound tariffs.

Such a revealed preference may dramatically change the background environment of the Doha negotiations. It should induce the emerging economies to abandon their claim that they make huge concessions when cutting their bound tariffs (they are currently showing that they do that for their own good) and instead accept a limit on their requests for exceptions to such cuts. Symmetrically, it should induce the developed countries to abandon their claim for "effective market access" (meaning cuts in the tariffs applied by the emerging economies) if they do not want a definitive collapse of the Doha Round – facing for ever the risk of high bound tariffs in the emerging economies and losing the huge opportunities in services liberalization. In other words, both camps have to accept their responsibilities.

In any event, concluding the Doha Round in 2010 or 2011 remains a serious challenge. The Republic of Korea – the G20 Chair in 2010 thus have the critical role toof generating momentum. Such a goal would require the G20 to move on three fronts.

1. Mobilize trade negotiators

First, it would be important to mobilize trade negotiators' energy on the proposals suggested in section C – getting a better sense of the trade-related measures routinely taken during "normal" years as well as the potential impact of the most dangerous forms of protection. The exit phase of a large-scale crisis is perilous, and it has the capacity to cause severe damage to the resilience of trade policies.

Avoiding confusion – hence fear, the greatest cause of all panic – in the coming months requires a better assessment of the level of resilience achieved in the coming months and years.

As of today, such benchmarks do not exist. However, WTO only has the capacity to generate these benchmarks for import barriers. The G20 should thus designate the international institutions capable of providing the benchmarks for barriers on exports as well as for key "behind-the-borders" barriers, such as public procurement, subsidies etc. Rather than directly designating the other institutions, the G20 could ask WTO to "dispatch" the task of providing the benchmarks to other appropriate institutions (OECD, UNCTAD, World Bank, export-import agencies etc.).

3. Mobilize the business community

Second, it is important to mobilize the energy of the business community in supporting open markets. In this regard, goods do not offer very attractive opportunities to the business community in the long term for several reasons. Applied industrial tariffs in the 25 or so largest economies are already low or moderate. Binding them and cutting the remaining tariff peaks will be the important goal to achieve through the Doha Round. However, that also means the gains from negotiations in manufacturing after a successful Doha Round will be largely limited to the small developing economies – crucial result for those countries, but only of marginal importance to the largest economies. Tariffs in farm and food products will remain substantial in most countries after a successful Doha Round. However, huge pressure to further liberalize agricultural trade will come from climate change, water scarcity and energy substitution giving a new raison d'être for tariff cuts in agriculture as a key tool for fighting climate-driven hunger and avoiding water-driven conflicts.

Services can attract the support of the business community much more than any other conceivable trade-related issues such as intellectual property rights, norms, non-tariff barriers, public procurement, rules etc. They are the largest source of opportunities for firms for three reasons: their sheer size (50 to 75 per cent of countries' GDP), their ubiquitous presence (even the manufacturing or agrobusiness firms have a significant share – often about 50 per cent – of their turnover in services) and their high level of protection, as services enjoy, on average, twice as much protection than that given to goods (Shepherd and Miroudot, 2009). Services liberalization will translate these opportunities into vast gains for consumers all over the world.

As this stage, the Doha negotiators can do very little in services for two reasons. They have imposed on themselves a sequencing of negotiations – getting results in agriculture and NAMA before starting to look at services – thereby shuting themselves out. More permanently, the huge and heterogeneous WTO membership is not well suited to negotiations in services that deal with regulations, and thus are much more complex than negotiations on tariffs.

As a result, there would be no harm in starting exploratory talks on services outside WTO, then continuing them in WTO if they are promising (Messerlin and van der Marel, 2009). Such talks should be limited to the largest economies (aprroximately 10, including the EC) – a group small enough to keep negotiations manageable and large enough to cover more than 80 per cent of world production in services. One initial possibility would be for the two largest world economies, the United States and the EC, to explore the option of bilateral talks on services in order to gain a better idea of the expected gains for consumers and opportunities for services providers. Such talks have interesting "dynamics"; it would be relatively cost-free and highly beneficial to extend them to eight countries in order to cover more than 80 per cent of world production in services. Furthermore, extending transatlantic talks to those eight countries would greatly reduce the risk of trade distortions.

The transatlantic option is not the only one available. Alternatives could be a transpacific (APEC) or a Eurasian dialogue. All these options are open, because once one of these dialogues is launched the above-mentioned dynamic forces will induce the non-participating largest economies to join the talks – the EC, the United States and the group of the eight other countries have more or less the same share in most services, and no interest in being excluded from the exploratory talks.

Since these ten economies are all G20 members, the G20 is the natural forum in which to facilitate such talks. The G20 could even set up an informal committee to start such talks immediately at the G20 level. If promising, the results of the talks could (and, ideally, should) then be included in the Doha negotiations and constitute the embryo of a Doha agreement in services. That would give the Doha Round the critical boost that was missing in July 2008.

3. Mobilize robust domestic institutions

The "iron law of thin majorities" is a permanent threat to the open world trade regime and WTO. Such a challenge can be dealt with in two different but complementary ways.

First, WTO should be "flex-plined", that is, made as flexible as possible while keeping its full role as a rule-maker (non-discrimination) and rule-guardian (dispute settlement) (Messerlin 2007). There are many possible sources of flexibility in WTO. The most important is undoubtedly a re-interpretation of the "Single Undertaking" notion ("every WTO member shall sign all the agreements negotiated during a round"). Ten years later, such a strict interpretation is backfiring. It has fuelled a process of de facto systemic evasion of the WTO negotiations, with groups of WTO members getting exemptions from various obligations ("negative coalitions") under various pretexts such as they are small or vulnerable, net food importers, recent WTO members etc. The alternative interpretation would be to make the "Single Undertaking" enforceable at future times, not at every Round. Within a period

with no "Single Undertaking", the negotiation process would allow members to "discriminate positively", that is, to open their markets further by participating in plurilateral agreements without waiting for an agreement among all members.

Indeed, the crisis and a successful Doha outcome exert convergent pressures for "flex-plining" WTO. The current business of WTO as the key negotiating forum on tariff cuts in goods will be much smaller – it is "death by success". WTO is unlikely to be such a forum for services because of the complexity of services negotiations. However, it will remain the ultimate world forum for binding market access in goods and services if it is made more flexible (see above). In contrast, WTO may increase its role as "rule-maker/guardian" by improving its dispute settlement mechanism, and by becoming an effective monitor of the world trade regime, a "dispatcher" on behalf of the G20 of tasks to be undertaken in trade matters by other international institutions as well as a repository of stricter international disciplines.

The second way to deal with the "iron law of thin majorities" would consist of a serious effort to strengthen the national foundations of the world trade regime and WTO. GATT was a "light" body in terms of commitments and disciplines. WTO is more demanding to the point that many obligations are routinely ignored or bungled by its members, as illustrated by its many monitoring obligations rarely fulfilled on time or even fulfilled at all.

As a result, seeking stricter disciplines for facing future large-scale economic crises could be a dangerous illusion. It runs the high risk that the disciplines will not be enforced precisely when it becomes time to use them. What is needed are domestic institutions that are robust enough to invest their reputation in their own country by supporting the stricter disciplines desirable at the world level. An illustration of such an institution is APC, with its two main features – independence (requiring the absence of executive power and the focus on analyses, debates and persuasion) and a mandate focusing on the "welfare of all the people living in the country". Such institutions are also well-equipped to make adequate impact assessments of future national laws and regulations – a feature that is crucial when topics tabled at negotiations include services or norms.

4. Final remarks

The crisis has put the G20 at the heart of the world trade regime, but the page is still blank. Much will depend on the initiatives to be taken by the Republic of Korea (as the G20 Chair in 2010, the co-host of the G20 Summit in June 2010 and the host of the G20 Summit in November 2010).

The Republic of Korea and Canada are well suited to the huge task awaiting them. They are enjoying a rapid recovery, are strong supporters of the world trade regime and WTO, and have the best records in terms of the resilience of their trade policies among the G20 members.

Last but not least, both countries share a very valuable advantage. They are among the 10 largest economies (including the EC as one) but not among the "big elephants". This feature allows the Republic of Korea and Canada to table bold proposals without attracting the suspicion that the same proposals would attract if tabled by one of the "big elephants". The long history of the international trade negotiations shows how decisive bold initiatives can be when taken by such countries.

References

Bown, C. (2009). "The pattern of antidumping and other types of contingent protection", World Bank PREM Notes No. 144, 21 October 2009,. Washingtobn, D.C.

Bouet A. and D. Laborde (2009). "The potential cost of a failed Doha Round", Discussion Paper No. 00886, International Food Policy Research Institute, Washington, D.C.

Cernat, L. and N. Sousa (2010). "The impact of crisis-driven protectionism on EU exports: The 'Russian doll' effect", VoxEU.org. Accessed at www.voxeu.org/index.php?q=node/4464.

Dhar, B., S. Evenett, G. Long, A-M. Nassar, S. Tangermann and A. Trejos (2009). "Disavowing protectionism: A strengthened G20 standstill and surveillance" (mimeograph). The Graduate Institute, Geneva.

Eichengreen, B. and D. Irwin (2009). "The slide to protectionism in the Great Depression: Who succumbed and why?" National Bureau of Economic Research Working Paper No. 15142. Massachussetts.

Evenett, S. (2010). "The prospects for the world trading system in 2010", paper presented at the Jeddah Economic Forum.

——— (2009). "What can be learned from crisis-era protectionism? An initial assessment", *Business and Politics*. October 2009.

Freire, C. and M. Mikic (2009). "Export performance in the aftermath of global economic crisis", paper presented at the ARTNeT Conference on "Trade-led growth in times of crisis", 2-3 November 2009 (mimeograph). ESCAP, Bangkok.

Kaji, S. (2009). "Déjà vu? Japan's financial crisis revisited". Groupe d'Economie Mondiale at Sciences Po (GEM), Paris. Accessed at http://gem.sciences-po.fr.

Messerlin, P. (2009). "A significant slippage in protectionism? Not yet", in S. Evenett, B. Hoekman and O. Cattaneo (eds.), *Effective Crisis Response and Openness: Implications for the Trading System*. Centre for Economic Policy Research, London, and World Bank, Washington, D.C.

——— (2007). "Reviving the Doha Round: The agenda for the developed countries", in B. Blonigen (ed.), "*Monitoring Trade Policy: A New Agenda for Reviving the Doha Round*". Centre for Economic Policy Research, London, and Kiel Institute for the World Economy, Kiel, Germany.

Messerlin, P. and E. van der Marel (2009). "Leading with services: The dynamics of transatlantic negotiations in services", Working Paper, Groupe d'Economie Mondiale at Sciences Po (GEM), Paris. Accessed at http://gem.sciences-po.fr.

Pisani, F. (2009). "L'économie américaine après le choc". CEPII, Paris.

Shepherd, B. and S. Miroudot (2009). "Leveraging in services to consolidate the global economic recovery: An agenda for the G20". Groupe d'Economie Mondiale at Sciences Po (GEM), Paris. Accessed at http://gem.sciences-po.fr.

van Grasstek, C. (2009). "The short- and long-run declines in the supply and demand for U.S. trade policy", Powerpoint presentation. University of Toronto.

World Trade Organization (2009). *Report to the TPRB from the Director-General on the financial and economic crisis and trade-related developments*. Washington, D.C.

WTO-OECD-UNCTAD (2010). *Report on G20 trade and investment measures*, 8 March 2010. Geneva.

——— (2009). *Report on G20 trade and investment measures*, 14 September 2009. Geneva.

Part two

Trade-led recovery and production networks

III. Resiliency of production networks in Asia: Evidence from the Asian crisis*

By Ayako Obashi

Introduction

Despite the financial origins of the recent economic downturn in the United States and Europe, the impact on Asian countries has been felt primarily through trade channels. The export-oriented manufacturing industries and countries dependent on them have been hit the hardest in Asia (Asian Development Bank, 2009a and 2009b). Due to a drastic drop in external final demand for manufactured goods produced in Asian countries, concern is greatest regarding the adverse effects of the global financial crisis and economic downturn on the real economies of the region. According to the latest Asian Development Bank (2009b) data in the second quarter of 2009 industrial production and exports in newly-industrialized economies (i.e., the Republic of Korea, Singapore, Taiwan Province of China and Hong Kong, China) were already showing the beginning of what might be a V-shaped recovery Nevertheless, there is concern about the overdependence on external final demand and that, through international production networks stretched across the region, Asian countries will continue to suffer from the deteriorating economic conditions outside the region that are centred on the United States.

The more interdependent countries are, the more quickly an economic shock originating in one country is transmitted to another. Once final demand decreases, mutual ties built through supply chains will bring a synchronized contraction of trade flows across countries taking part in the production networks; however, trade relationships within the networks appear to be rather stable and resistant to the shocks due to the relation-specific nature of the transactions. Given the need for coordination between upstream and downstream production processes as well as the presence of sunk costs of investing in newly fragmented production blocks, the network-forming firms would put

* The author is grateful for the invaluable observations provided by Professor Fukunari Kimura and Professor Yoshimasa Shirai as well as the helpful comments made by the participants in: the Economic Research Institute for ASEAN and East Asia (ERIA),seminar, held on 3 September 2009 at the Economic Research Institute for ASEAN and East Asia (ERIA) in Jakarta; the Asia-Pacific Trade Economists' Conference on "Trade-Led Growth in Times of Crisis" held on the fifth anniversary of ARTNeT on 2 and 3 November 2009 in Bangkok; and the second GEP Conference in China on "The Global Financial Crisis", held on 10 and 11 November 2009 at the University of Nottingham, Ningbo, China.

priority not only on lowering production costs but also on the stability of trade relationships.[1] In this sense, transactions of intermediate goods within production networks are necessarily based on special relationships, unlike in the case of finished products made from start to finish in one country as well as goods sold on the open market. This chapter examines the stability of intermediate goods transactions within production networks in the Asian region as wella s their resilience in the face of the Asian financial and currency crisis back in 1997-1998.

East Asian countries have expanded and deepened intraregional trade relationships since the beginning of the 1990s. Regional diversity in income levels and development stages promotes opportunities for multinational enterprises to locate fragmented production blocks in different locations with different location advantages throughout the region.[2] In particular, the machinery industry extends the most sophisticated networks (see Fukao, Ishido and Ito, 2003; Athukorala and Yamashita, 2006; and Kimura, 2006), and the increasing importance of machinery exports and imports is evident for each East Asian country. In the light of the unprecedented development of production networks in East Asia, together with active back-and-forth transactions of machinery parts and components, this chapter examines intra-East Asian trade relationships of machinery parts and components compared to those of finished products, in order to look into the unexplored nature of production networks.

The objective of this chapter is to verify the stability of international production networks in East Asia and to shed light on their resilience during the Asian crisis. To this end, a survival analysis was conducted, using highly disaggregated trade data at the country-product level, which made it possible to reveal (a) the probability of continuance once a trade relationship has been established and (b) the probability of recovery after the transaction has been broken off. A series of survival analyses provided evidence to support the stability of the transactions of intermediate goods within production networks and their resilience to a temporary disruption due to economic shocks.

First, machinery parts and components are more likely to be traded through long-lived relationships compared to finished products. The higher probability of continuance for parts and components is robust even after considering the possible effects of the Asian crisis on the probability of continuance/discontinuance. Second, despite the higher probability of continuance at normal times, trade relationships of machinery parts and components are no exception in that a non-negligible portion was actually broken off amid the Asian crisis. Nevertheless, even when broken off due to

[1] As a source of hysteresis in exports at the company level, the role of sunk costs to enter the export market has been examined theoretically (Baldwin, 1988; Baldwin and Krugman, 1989; and Dixit, 1989a and 1989b) and empirically (Roberts and Tybout, 1997; and Bernard and Jensen, 2004).

[2] For the fragmentation theory, see Jones and Kierzkowski, 1990, Arndt and Kierkowski, 2001, and Deardorff 2001. In terms of international production networks in East Asia, Kimura and Ando (2005) claimed the two-dimensional concept of fragmentation.

such shocks, many of the trade relationships of parts and components were restored shortly afterwards compared to finished products as well as the case of transactions that were discontinued at times other than the Asian crisis.

This chapter revisits the findings of Obashi (2009), who presented the stability of international production networks in comparison to other transactions in East Asia, by expanding the coverage of countries and years in the sample and by considering the possible effects of the Asian crisis. This chapter offers further evidence that transactions of intermediate goods within production networks in East Asia are not only highly stable but also resilient during temporary disruption resulting from the Asian crisis. Both of the papers contribute to a pioneering work on the duration of trade by Besedeš and Prusa (2006a and 2006b), from the perspective of international fragmentation of production. Besedeš and Prusa (2006a), who first investigated the duration of United States imports, found the observed trade relationships at the country-product level to be surprisingly volatile; during 1972-1988 only 67 per cent of trade relationships survived one year, while 49 per cent survived four years at the 7-digit level of Tariff Schedule of the United States (TS).[3]

In their companion paper, Besedeš and Prusa (2006b) highlighted the fact that differentiated products had a longer duration and a higher probability of continuance than other goods, based on a search cost model of international trade. Sixty-nine per cent of the trade relationships of differentiated products survived one year while only 53 per cent and 59 per cent of the trade relationships of homogeneous goods and reference priced products, respectively, survived. In the fourth year, these rates declined to 52 per cent for differentiated products and 33 per cent to 38 per cent for other goods. Besedeš (2008) provided additional facts on the duration of United States imports from the search cost perspective. A considerable amount of short-lived trade relationships were also observed by Blyde (2008) for exports by Latin American countries, by Nitsch (2009) for German imports, and by Obashi (2009) for intra-East Asian trade in machinery.

This chapter is closely related to recent evidence showing the existence of zero values in the bilateral trade matrix, which has been highlighted in the context of the adequacy of standard specifications of the gravity equation. Haveman and Hummels (2004) found that nearly one-third of bilateral trade flows were, in fact, zero at the 4-digit level of Standard International Trade Classification (SITC). Helpman, Melitz and Rubinstein (2008) found that about half of the country pairs in their sample covering 158 countries did not trade with each other. Given that zero trade flows are surprisingly common, there are five possible patterns of bilateral trade relationships through time: (a) countries have continued to trade with each other throughout the period of interest; (b) countries have never traded with each other; (c) countries started trading with each other at some

[3] As for observed short-lived trade relationships, Besedeš and Prusa (2006a) discussed potential explanations including the Ricardian comparative advantage model, the product cycle model, and the model of trade and search costs.

point during the period of interest; (d) countries initially traded with each other, but ceased to trade at some point; and (e) countries stopped trading with each other at some point, but then restarted trading at a later time. This chapter focuses on type (e) of trade relationships, and highlights the fact that, despite the commonness of short-lived trade relationships, breaks and restorations of trade relationships occur with significant frequency. Exporting is not a once-and-forever phenomenon, either at the company level or even the country-product level.[4]

Section A of this chapter examines the probability of the continuance of trade relationships, employing the Kaplan-Meier method and the Cox proportional hazard model, as well as outlining the duration of trade for intra-East Asian trade. In considering the possible effects of the Asian crisis, section B confirms the fact that machinery parts and components have a higher probability of continuance than finished products, and it examines the probability of the recovery of trade relationships discontinued at the time of the Asian crisis. The interpretation of the empirical findings and their implications for the impact of the recent global recession are discussed in section C. The conclusion is provided in section D.

A. Survival of trade relationships in intra-East Asian trade

To examine trade relationships in intra-East Asian trade, this paper uses bilateral trade data at the 6-digit level of the Harmonized System (HS) 1992, from 1993 to 2007, obtained from the United Nations Commodity Trade Statistics Database (United Nations Comtrade).[5] The HS 6-digit level is the most detailed disaggregated level of internationally comparable trade data that are publically available. At the 6-digit level of HS 1992, 4,013 and 1,124 product lines exist for all manufacturing industries (HS28-92) and for the machinery industry (HS84-92), respectively, with the latter grouped into 436 parts and components and 688 finished products, following Ando and Kimura (2005). East Asia here includes 13 countries and one territory, namely, ASEAN (Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Viet Nam), China, Japan and the Republic of Korea as well as Hong Kong, China. Eight have reported trade statistics according to the HS classification throughout the period. The dataset is created by using import as well as export statistics reported by those eight countries, and consists of 152 ([14 East Asian countries * 13] – [6 non-reporting countries * 5]) exporter-importer pairs.

1. Duration of trade

For each exporter-importer product pair, whether a trade relationship is active in a given year and how long a trade relationship is continued without interruption can be identified. Table 1

[4] At the company level, Bernard and Jensen (2004) found that former exporters have higher probabilities of exporting after having exited the export market, using a balanced panel of the US manufacturing plants.

[5] See annex 1 for the details of trade data used throughout this paper.

gives the basic statistics for the number of years in which a trade relationship was active during 1993-2007 for intra-East Asian trade. The figures for machinery parts and components (P&C) are compared to those for finished products (FP) and other manufactured goods. Trade relationships for parts and components are more active than those for finished goods as well as other manufactured goods. For the observed exporter-importer product pairs, excluding those inactive throughout the period under review, the mean number of active years is 9.2 for parts and components, which is 1.5-1.7 points higher than for finished products and other manufactured goods.

Table 1. Exporter-importer product pairs – number of years active, 1993-2007

	Mean	Median	Cumulative percentages (%)			Obs.	Share (%) in the max. possible No.	No. of product lines
			1	7	14			
Machinery	8.3	8	14.3	47.3	76.3	103 454	60.6	1 124
P&C	9.2	10	11.4	39.8	69.6	42 893	64.7	436
FP	7.7	7	16.3	52.6	81.0	60 561	57.9	688
Other manufacturers	7.5	7	16.3	53.8	81.7	231 927	52.8	2 889

Note: The number of exporter-importer pairs in the sample of East Asian countries is 152. Inactive trade relationships throughout 1993-2007 are not included in the above basic statistics.

The above result can be interpreted as a reflection of the difference in the duration of trade relationships. In this connection, interest now turns towards the length of time a certain product is continuously traded between an exporter-importer pair. For example, if country i started to export product h to country j in 1994 and ceased to export the product in 1998, the trade relationship is regarded as having a spell length of four years. As some trade relationships were broken off and restored after a certain period (at least one year) – referred to as multiple spells – the number of spells by exporter-importer product pair as well as the length of each spell should be examined.

Tables 2 and 3 report the basic statistics for the number of spells and their lengths, respectively.[6] Even with aggregated trade data at the country level rather than data on company-level export activities, the break and restoration of trade relationships occur with significant frequency. In particular, for machinery finished products, 54 per cent of exporter-importer product pairs experience multiple spells, more than half of which experience more than two spells. In addition, short-lived trade relationships are more common than expected, particularly for finished products. The mean length of spells is 3.9 years for finished products, which is 1.2 years shorter than for parts and components.

[6] As multiple spells are treated as independent, the number of observations in table 3 is larger than in table 2.

Table 2. Number of spells for exporter-importer product pairs

	Mean	Median	Cumulative percentages (%) by number of spells				Obs.
			1	2	3	4	
Machinery	1.91	2	48.8	73.2	89.8	97.6	103 454
P&C	1.81	1	53.4	76.6	91.5	98.1	42 893
FP	1.98	2	45.6	70.8	88.6	97.2	60 561
Other manufacturers	1.88	2	48.2	74.6	91.2	98.2	231 927

Note: Exporter-importer product pairs of active trade relationships only.

Table 3. Length of spells for bilateral trade relationships at the product- line level

	Mean	Median	Cumulative percentages (%) by length of spells					Obs.
			1	2	4	7	**10**	
Machinery	4.4	2	44.3	59.0	71.0	79.9	83.7	197 561
P&C	5.1	2	39.4	53.1	65.0	74.2	78.4	77 514
FP	3.9	2	47.5	62.8	74.9	83.6	87.1	120 047
Other manufacturers	4.0	2	45.4	60.9	73.7	82.4	86.5	436 263

Note: Active trade relationships only.

2. Kaplan-Meier estimation

Stimulated by the fact that machinery parts and components are likely to be traded through more stable relationships without interruption for a longer period of time compared with finished products as well as other manufactured goods, this and the following subsection provide a survival analysis. As the first step, this subsection highlights the difference in the probability of the survival of trade relationships, i.e., continuance of trading, between machinery parts and components and finished products, employing the Kaplan-Meier method. As the second step, the following subsection confirms the difference in the probability of survival, employing the Cox proportional hazard model.

Estimated Kaplan-Meier survival rates for bilateral trade relationships at the product-line level in intra-East Asian trade in machinery are reported in table 4, and the corresponding survival

functions and hazard functions are shown in figure 1.[7] The estimates for parts and components are compared with those for finished products.[8]

Table 4. Estimated Kaplan-Meier survival rates for intra-East Asian trade in machinery

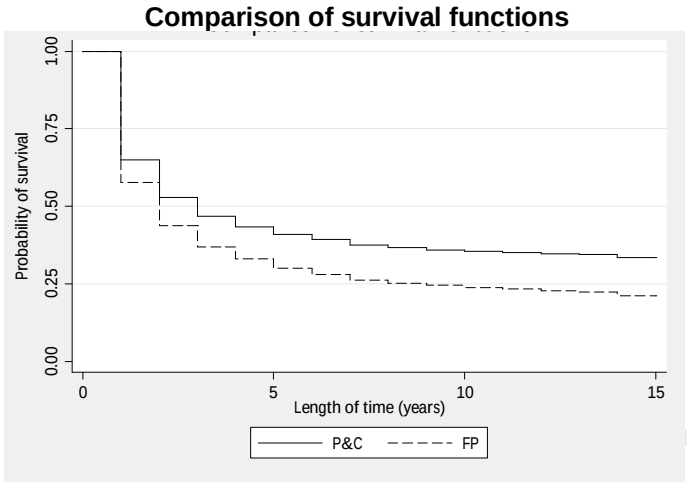
	Estimated K-M survival rate					Obs.
	1st year	2nd year	4th year	7th year	10th year	
P&C	0.65	0.53	0.43	0.38	0.36	77 514
FP	0.58	0.44	0.33	0.26	0.24	120 047

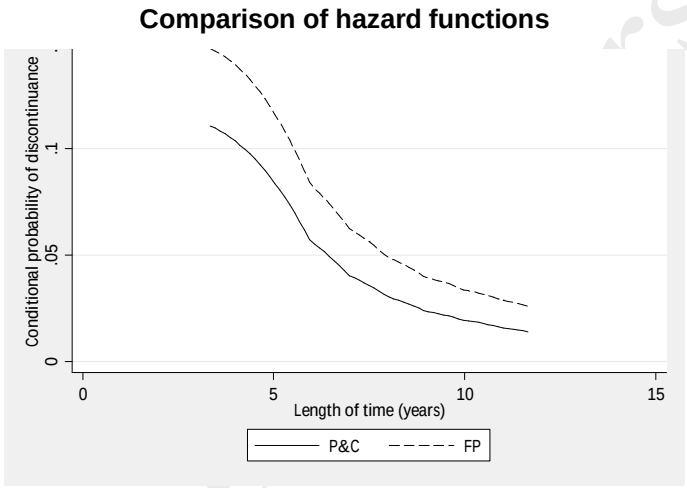
Note: The difference of survival function between parts and components, and finished products is significant at the 1 per cent level using the log-rank test.

[7] The survival function is estimated non-parametrically using the Kaplan-Meier product limit estimator, along the lines of Besedeš and Prusa (2006a) and other previous studies. The hazard function is estimated using the usual smoothing Kernel (epanechnikov) technique with a limited graphing range. The survival function of T, the time to failure event, is given by $S(t)=\Pr(T>t)$. $S(t)$ equals one at $t=0$ and decreases towards zero as t increases. The hazard function is given by $h(t)=\Pr(T=t|T\geq t)$. The survival and hazard functions are just alternative ways of expressing the same underlying failure process.

[8] As a reference, the Kaplan-Meier estimates for machinery, including parts and components, and finished products, in comparison with those for other manufactured goods, are reported in table 1 and figure 1 of annex 2.

Figure 1. Kaplan-Meier estimates of survival functions and hazard functions for intra-East Asian trade in machinery





The shape of the estimated survival functions for parts and components, and finished products look similar. Both curves are downward sloping with a decreasing slope. A substantial portion of trade relationships fail within the first four years, especially in the first year when the survival rates – i.e., the probability of survival – are 65 per cent and 58 per cent for parts and components, and finished products, respectively. For the later years, on the other hand, the survival rates slowly decline by only 5 per cent to 7 per cent between the fourth and seventh years, and remain nearly constant afterwards.[9] As evidenced by the shape of the estimated hazard functions, a type of threshold effect is observed. The hazard rate, i.e., the conditional probability of discontinuance, is maintained at a high level in the earlier years, but then sharply decreases once a trade relationship lasts for a certain period. To be more precise, the hazard rate here is the probability that a particular product will not be traded between an exporter-importer pair in the t-th year given that it has been traded until the previous year.

[9] Spells ended in 2007, the end year of the sample, are classified as right-censored (i.e., continued) rather than failures (i.e., discontinued). It is appropriate to interpret the length of the right-censored spells as a minimum.

The survival curves are similar in shape, but the survival rates are higher for parts and components than for finished products at any point of time. Such a difference is reflected in the result that the hazard rates are lower for parts and components than for finished products. In addition, the distance between the survival curves widens in the earlier years. Meanwhile, the higher hazard rate for finished products is particularly significant in the early stage of trade relationships, although the hazard curves tend to converge as the transactions last longer.

These features are robust, although estimated survival rates vary among different samples (see table 1 and figure 1 in annex 2). First, to address the left-censoring issue, survival functions are re-estimated for the sample without spells that began in 1993. Second, survival functions are estimated using a modified sample, in which the length and number of spells are adjusted by assuming that a one-year gap between spells that last at least two years is a result of a recording error, as pointed out by Besedeš and Prusa (2006a and 2006b).[10] For a reference, survival functions are also estimated only for the first spells of respective exporter-importer product pairs and for single spells, in which the aforementioned features still hold. Furthermore, these features are not limited to intra-East Asian trade (see table 2 and figure 2 in annex 2).

3. Cox proportional hazards estimation

In order to confirm the difference in the probability of survival between machinery parts and components, and finished products, the Cox proportional hazards model is estimated, considering country-specific and pair-specific characteristics that may influence the duration of trade. The semi-parametric Cox proportional hazards model asserts that the hazard rate for the m-th subject in the sample is:

$$h(t|\boldsymbol{x}_m) = h_0(t)\exp(\boldsymbol{x}_m\boldsymbol{\beta})$$

where xm denotes a vector of m-th subject's covariates and coefficients β are to be estimated.[11] The Cox model is by far the most popular choice in the analysis of survival data. A particular advantage of the model is that the baseline hazard function, h0(t), is left unspecified and not estimated. What is assumed is that the covariates multiplicatively shift the baseline hazard, which is common to all the subjects.12 The hazard rate for individual subject is equal to the baseline hazard when the value of all covariates is set to zero. Exponentiated respective coefficients are then interpreted as the ratio of

[10] A one-year gap may be partly due to the discrete nature of trade data, which is compiled on an annual basis.

[11] The Cox model is a continuous model, while the survival data used in this paper is on an annual basis, in which some failures occur at the same survival time (year). Therefore, the Breslow (1974) approximation is assumed in order to treat tied failures.

[12] In this regard, however, the estimation is stratified by the machinery subsector, i.e., general machinery (HS84), electric machinery (HS85), transport equipment (HS86-89) and precision machinery (HS90-92), allowing the baseline hazard to vary among strata.

the hazard rates, which is referred to as hazard ratio, for a one-unit change in the corresponding covariate. The hazard ratio is greater than one if the corresponding covariate negatively affects the duration of trade, and vice versa. A ratio equal to one implies no impact on the duration of trade.

To estimate the Cox model using time-dependent covariates, the survival data are split at every observed failure time, i.e., at every year, for respective spells. As for country/year-specific characteristics, exporter country GDP and importer country GDP are included as standard gravity variables of economic size.[13,14] Supplier firms located in larger economies might be able to maintain a longer trade relationship due to larger production capacities. Meanwhile, a larger pool of potential buyers might ease accommodating demand fluctuation through switching buyers within a country, leading to a longer trade relationship at the country level.

As for pair/year-specific characteristics, the absolute value of the difference in per capita GDP between exporter and importer countries is included as a proxy for wage differential, which may reflect different factor intensity, or production technology, and factor endowment. These differences in production conditions are presumed to encourage cross-border production sharing, leading to a longer-lasting trade relationship. To capture supplier firm's competitiveness in terms of relative trading cost, the year-on-year percentage change in real exchange rate (RER) for exporter country's currency to importer country's currency is included. An increase in RER reflects the fact that an exporter country's currency has weakened relative to an importer country's currency with consideration given to inflation in the respective economies. If an exporter country's currency depreciates, its supplier firms will become more competitive relative to those located in the export counterpart, and the suppliers might be less likely to exit from the market.

To control for the initial size of transaction, the logarithm of trade value in the first year is included. A trade relationship started with a smaller trade value at the country level, which is probably economically less important for either or both exporter and importer countries in the beginning, may face a greater risk of discontinuance. Regarding the prevalence of multiple spells, a dummy variable for subsequent spells is included, following Besedeš and Prusa (2006b). Although multiple spells are treated as independent because separated spells are highly likely to involve different firms of exporter and importer countries, the probability of survival will depend on the experience of discontinuance. A trade relationship restarted after a certain period of no trade may avoid failure again, owing to accumulated information about the trade counterpart at the country level. In addition to these two control variables, country, country-pair and year fixed effects are

[13] See annex 2 for the data sources of covariates.

[14] The author would prefer the value-added of the machinery industry on its own (ideally, disaggregated by product type) to GDP as a variable, to indicate the size of economic activities of the machinery industry. However, due to the lack of publicly available data, GDP had to be used.

included to control for unobserved characteristics. Standard errors are clustered at the HS 6-digit product level, allowing for possible correlation within products.

Table 5 provides the Cox proportional hazards estimates for intra-East Asian trade in machinery. The interest here are the estimated coefficients for a dummy variable, which takes a value of one if a trade relationship is parts and components. The sample of interest is listed at the top of each column, and the covariates and control variables are in the left-hand column of the table. Units in which respective variables are measured are in parentheses.[15] Estimated coefficients are expressed in terms of hazard ratios.

Table 5. Cox proportional hazards estimates for intra-East Asian trade in machinery

	All spells	Without 1993-origin spells	1-year-gap-adjusted	The first spells only	Single spells only	Excl. Japan
P&C dummy	0.725**	0.790**	0.734**	0.702**	0.623**	0.734**
	(0.014)	(0.012)	(0.014)	(0.016)	(0.026)	(0.015)
Exporter's GDP (US$ 100 billion)	0.952**	0.919**	0.956**	0.968**	1.042**	0.944**
	(0.002)	(0.002)	(0.002)	(0.003)	(0.007)	(0.002)
Importer's GDP (US$ 100 billion)	0.989**	0.953**	0.993**	0.988**	1.025**	0.989**
	(0.002)	(0.002)	(0.002)	(0.004)	(0.005)	(0.002)
Abs. diff. in PCGDP (US$ 1 000)	0.961**	0.935**	0.964**	0.982**	0.984**	0.974**
	(0.002)	(0.002)	(0.002)	(0.003)	(0.004)	(0.002)
Change in RER (10%)	0.985**	0.978**	0.999	0.984**	1.025**	0.983**
	(0.002)	(0.003)	(0.002)	(0.003)	(0.007)	(0.003)
Log of initial trade value (US$)	0.854**	0.917**	0.866**	0.830**	0.867**	0.868**
	(0.003)	(0.002)	(0.003)	(0.003)	(0.006)	(0.003)
Subsequent spells dummy	0.720**	0.793**	0.820**			0.707**
	(0.005)	(0.005)	(0.005)			(0.005)
Obs.	822 746	373 260	837 904	580 046	454 917	613 416
No. of spells	184 576	139 024	169 418	96 982	47 634	150 630
No. of failures	123 159	101 681	108 001	65 590	16 242	103 216
Log likelihood	-1 267 300	-1 024 505	-1 108 194	-628 905	-139 453	-1 043 918

Notes: The sample of interest is listed at the top of each column and the covariates are in the left-hand column. Coefficients are expressed as hazard ratios. Robust standard errors clustered by product are in parentheses. ** and * indicate significance (difference from one) at the 1 per cent and 5 per cent level. All regressions include country, country-pair and year fixed effects, but those coefficient estimates are not reported for brevity. The estimates are stratified by machinery subsectors. Multiple spells of respective exporter-importer product pairs are treated as independent. Trade data and GDP data are in constant year 2000 US dollars.

The result for all the observed spells during 1993-2007 reported in the second column confirms the difference in the probability of survival by product type. With allowing trade relationships of finished products to be the benchmark, those of parts and components have a 27 per cent lower hazard rate. In other words, for parts and components, once a trade relationship is

[15] The unit in which a variable is measured makes no substantive difference.

developed, it is 27 per cent less likely to be broken off.[16] As for the effects of other covariates on the hazard rate, all of them are estimated as expected.

As with the previous subsection, the same Cox model is re-estimated using two different samples as a robustness check. One is the sample without 1993-origin spells, and the other is the modified sample with the one-year gap adjustment. The estimates are qualitatively similar to the result for all the observed spells. For further reference, the estimates for the first spells sample, the single spells sample and the sample excluding Japan are reported in the right-hand side of the table. The patterns of estimated coefficients remain unchanged, except for the result for the single spells sample, and trade relationships of parts and components are less likely to be discontinued in each sample. By focusing on only single spells, the coefficients for both exporter and importer GDP become more than one, which appears to be due, in part, to multi-colinearity issue.

B. Effects of the Asian crisis

For intra-East Asian trade in machinery, it was found that parts and components were more likely to be traded through long-lived relationships compared with finished products. In this section, the higher probability of survival for parts and components is to be verified, even after considering possible effects of the Asian currency and financial crisis in 1997-1998, in order to derive implications for the impact of the recent global economic downturn.

1. Impact on the survival of trade relationships

Among all the observed trade relationships, the proportion of the trade relationships that had been active until 1997, but which were discontinued in 1998 following the outbreak of the Asian crisis, is notably higher than average. The proportion of the trade relationships that are observed in 1997 and continued or discontinued in 1998 is reported in table 6, compared with the corresponding average figure for the remainder of sample period. The proportions of the discontinued trade relationships have hovered around 13 per cent and 20 per cent for machinery parts and components, and finished products, respectively; however, the figures for 1997 are exceptionally high, at 16 per cent and 24 per cent, respectively. Although the discontinuance share is lower for parts and components than for finished products even in 1997, the discontinuance share is markedly increased not only for finished products but also parts and components. This fact appears to be due mostly to

[16] In contrast, Besedeš (2008) found that for United Stataes imports from developing countries, trade relationships of intermediate goods faced about 10 per cent higher probability of discontinuance than did final goods. However, he examined all the merchandise trade, including not just manufactured goods but also agricultural goods and mineral fuels. It is left for future research to check whether the higher probability of survival for machinery parts and components is limited to intra-East Asian trade after considering factors behind the duration of trade.

the Asian crisis and suggests the need for controlling effects of the crisis to bear out the stability of international production networks in the Asian region."

Table 6. Number of trade relationships continued/discontinued in the next year

	P&C				FP			
	Continued in the next year		Discontinued (no trade) in the next year		Continued in the next year		Discontinued (no trade) in the next year	
	No.	Share (%)	No.	Share (%)	No.	Share (%)	No.	Share (%)
Trade relationships active in 1997								
	21 766	84.0	4 133	16.0	23 347	75.8	7 462	24.2
Average value in the rest of sample period								
	23 373	87.1	3 351	12.9	25 337	80.3	6 027	19.7

In the light of possible effects of the Asian crisis on the probability of the survival of trade, Table 7 reviews the Cox proportional hazard estimates presented in Table5. The same Cox model is re-estimated using the sample excluding the trade relationships that had been active until 1997 but were discontinued in 1998 as well as a limited sample including only trade relationships that were started in and after 1998. All the estimated coefficients are qualitatively unchanged from the result for all the observed spells, except that the coefficient for the year-on-year percentage changes in RER becomes more than one in the result for the latter limited sample. Still, even after considering the impact of the Asian crisis, trade relationships of parts and components face a 21-28 per cent lower hazard rate with respect to those of finished products in intra-East Asian trade in machinery.

Table 7. Robustness check for the Cox proportional hazards estimates: Effects of the Asian crisis

	Excl. trade relationships ceased in 1998	Trade relationships started in and after 1998 only
P&C dummy	0.722**	0.794**
	(0.015)	(0.013)
Exporter's GDP	0.948**	0.895**
	(0.002)	(0.003)
Importer's GDP	0.988**	0.927**
	(0.002)	(0.003)
Abs. diff. in PCGDP	0.958**	0.902**
	(0.002)	(0.002)
Change in RER (%)	0.994**	1.013**
	(0.002)	(0.004)
Log of initial trade value	0.853**	0.920**
	(0.003)	(0.002)
Subsequent spells dummy	0.745**	0.777**
	(0.005)	(0.006)
Obs.	799 676	235 278
No. of spells	173 772	98 402
No. of failures	112 355	66 027
Log likelihood	-1 145 622	-644 320

Note:
See *Notes* in table 5.

2. Revival of trade relationships amid the Asian crisis

Now another question arises. When looking into the trade relationships that were discontinued, does the probability of revival, i.e., recovering from a disruption, also differ by product type? Estimated Kaplan-Meier failure rates are reported in table 8 and the corresponding failure functions and hazard functions are shown in figure 2.[17] The estimates for the trade relationships discontinued in 1998 are compared with those for the trade relationships discontinued in the remainder of the sample period (1994-2006), in addition to the comparison between parts and components, and finished products.

[17] Failure function, $F(t)$, equals 1-$S(t)$, where $S(t)$ is survival function.

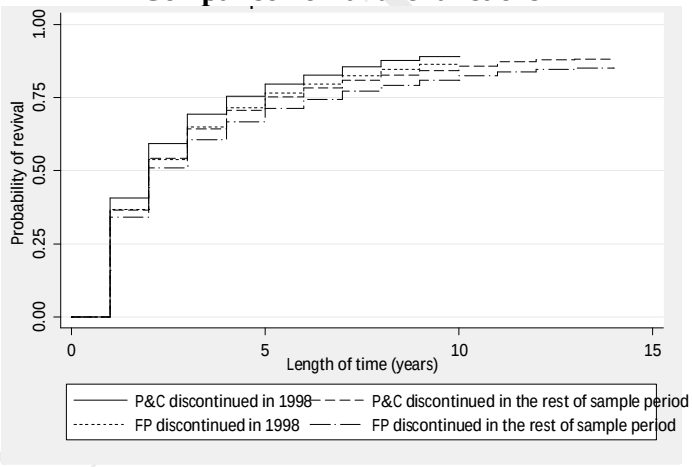
Table 8. Estimated Kaplan-Meier failure rates for intra-East Asian trade in machinery

	Estimated K-M failure rate				Obs.
	1st year	2nd year	4th year	7th year	
Trade relationships discontinued in 1998					
P&C	0.41	0.59	0.75	0.85	4 133
FP	0.37	0.54	0.72	0.82	7 462
Trade relationships discontinued in the rest of sample period					
P&C	0.37	0.54	0.71	0.81	43 570
FP	0.34	0.51	0.67	0.77	78 356

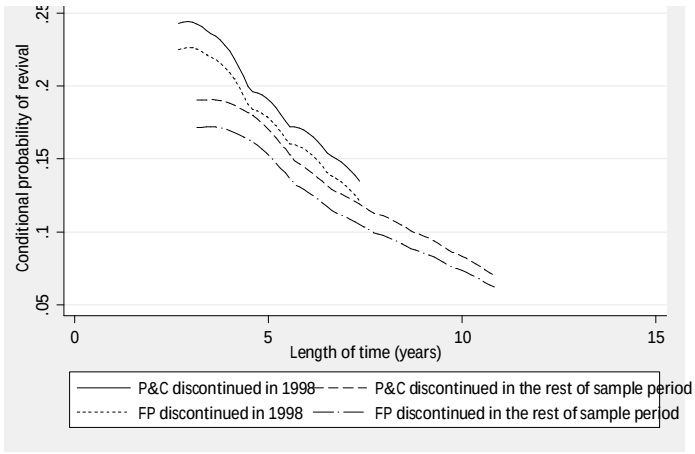
Note: The difference in failure function between parts and components, and finished products, and that between trade relationships discontinued in 1998 and those discontinued in the rest of sample period, are significant at the 1 per cent level using the log-rank test.

Figure 2. Kaplan-Meier estimates of failure functions and hazard functions for intra-East Asian trade in machinery

Comparison of failure functions



Comparison of hazard functions



Irrespective of when trade relationships are broken off, the estimated failure curves are upward sloping with a steeper slope in the earlier years for parts and components, and finished products. In general, the shorter the time after trade relationships are broken off, the more easily they are restored. Among trade relationships discontinued in the same year, the probability of revival is clearly higher for parts and components than finished products at any point. Meanwhile, trade relationships discontinued in 1998 face a higher probability of revival compared to those discontinued in the rest of sample period. Particularly in the case of the trade relationships of parts and components that were discontinued in 1998, 59 per cent of them were restored within the first two years, two-thirds of which were restored in just over one year. In addition, 75 per cent of the trade relationships were restored in 2002, at most after a four-year break.

The hazard rate here is the conditional probability of the revival of trade relationships, given that they had been inactive until the previous year. By the product type, reflecting the difference in the failure rates, the hazard rates are also higher for parts and components than for finished products at any point, particularly in the earlier years. The estimated hazard rate is notably high for the trade relationships of parts and components that were discontinued in 1998, standing at around 25 per cent in the third year and nearly 15 per cent even in the seventh year, thus decreasing over time. More noteworthy is that the slope of the hazard curve is steeper for the trade relationships discontinued in 1998 than for those discontinued in the remainder of the sample period. From another perspective, the distance between the hazard curves is especially large in the earlier years, indicating that the trade relationships discontinued in 1998 are more likely to have been restored shortly afterward.

These results indicate that the discontinued trade relationships of parts and components face a higher probability of recovery than finished products, not only at normal times but in face of the Asian crisis. In addition, compared to disruptions in normal times, discontinued trade relationships are more likely to be restored faster when broken off at the time of the crisis. Trade relationships restored after a certain period may include different companies, so it would be better to treat trade relationships before and after the break as unrelated. Nevertheless, it is striking that although a substantial proportion of trade relationships were broken off during the Asian crisis, many of them were restored within just a few years, particularly in the case of parts and components.

C. Implications for the impact of the recent global recession

Trade relationships in parts and components are more likely to be lasting compared to those of finished products in intra-East Asian trade in machinery, even after considering the impact of the Asian currency and financial crisis. In addition, although a non-negligible portion of the transactions were actually broken off during the Asian crisis, trade relationships in parts and components were more likely to be restored shortly compared to those of finished products as well as transactions that were discontinued in the remainder of sample period. A higher probability of survival and revival for parts and components can be interpreted as indicating the stability and resiliency of the transactions of intermediate goods within international production networks in East Asia.

Within the networks created, coordinated and managed by multinational enterprises across borders, each of the fragmented production blocks is often unable to function effectively without coordination between production processes. In other words, the lack of even a single part or component hinders the entire production of the relevant finished product. The transaction of intermediate goods within the networks cannot be realized without coordination with upstream suppliers and/or downstream buyers, irrespective of whether an intermediate good is traded through an intra-firm or arm's length relationship.[18] Moreover, to connect remotely-located production blocks, service link costs, including transport, telecommunications and coordination costs, are required. A service link typically has strong economies of scale in both the static and dynamic sense. From the dynamic standpoint, a service link plays a critical role in a firm's decision on whether or not to set up the network with sunk costs to invest in a newly fragmented production block.

Given these features, unlike in the case of finished products made entirely in one country or goods sold on the open market, firms would put priority not only on lowering production costs but on the stability of relationships for transactions of intermediate goods within international production networks. Due to such a relation-specific nature of the transaction, once a trade relationship is established, it would appear that the transaction of intermediate goods within production networks is more lasting and resilient to a short-term shock compared to the other transactions.

The Asian crisis of a decade ago originated in Asian countries themselves, although the recent global financial crisis originating in the United States has been transmitted to Asian countries primarily through trade channels. Some may suspect that transactions within international production networks in East Asia were barely affected by the Asian crisis, probably because those transactions depend largely on ultimate demand from outside the region, centring on the United States. If the United States is such an important source of final demand underneath the surface of the development of production networks stretched across East Asia, transactions within the networks may be more vulnerable to decline in United States demand than to internal economic shock in the region. However, it should be noted that East Asia's reliance on the United States market even as an export destination of machinery finished products has been diminishing.

Table 9 shows the intraregional and interregional shares of total exports by East Asian countries, the latter of which includes East Asian exports to the United States, European Union as well as other regions. The proportion of intra-East Asian exports of machinery parts and components increased from 45 per cent in 1993 to 57 per cent in 2007, whereas the proportion of interregional

[18] Some may wonder if longer-lived trade relationships of parts and components reflect the fact that trade of intermediate goods is more driven by intra-firm transactions compared to trade in finished products. Unfortunately, however, detailed trade data classified by type of transaction, i.e., intra-firm or arm's length relationship as well as by product type, could not be obtained.

exports declined due to a drastic drop in the United States' share from 29 per cent to 14 per cent. More interestingly, similar to machinery finished products, the intra-East Asian share slightly declined from 28 per cent to 25 per cent during the same period, but the United States' share also dropped from 35 per cent in 2000 to 26 per cent in 2007.

Table 9. Composition of East Asian exports by destination

Destination		Share (%)		
		1993	2000	2007
Machineries				
P&C	Intra-East Asia	44.6	49.1	57.1
	United States	29.2	24.9	13.5
	European Union	15.8	15.9	13.7
	Other regions	10.4	10.1	15.8
FP	Intra-East Asia	27.9	26.7	24.7
	United States	31.4	35.3	25.9
	European Union	19.8	21.0	20.6
	Other regions	20.8	17.0	28.7
Other manufacturers				
	Intra-East Asia	49.1	48.6	42.3
	United States	20.3	21.6	17.9
	European Union	15.6	15.3	18.2
	Other regions	15.0	14.6	21.7

The growing share of intra-East Asian exports of machinery parts and components cannot be regarded as evidence for independence from external demand as a great proportion is eventually shipped out of the region, particularly to the United States, in the form of finished products. In this regard, however, the destination of the East Asian exports of machinery finished products has been diversified by a lessening of the dependence on the United States market.

Furthermore, although international trade data do not include machinery finished products manufactured and sold domestically, the importance of East Asia's own markets is increasing steadily in parallel with the continued strong growth of East Asian countries and the consequent emergence of the middle class with growing purchasing power. When taking into account all the products manufactured within the region, the proportion of machinery finished products ultimately consumed in the United States appears to be much smaller.

East Asian countries have built mutually complementary economic ties together with the development of international production networks by taking advantage of regional diversity in income levels and development stages. Certainly, the deepening of interdependence via supply chains across borders makes it inevitable that an economic shock originating in one country will be quickly transmitted to the other countries. Nevertheless, the diversified destinations for the East

Asian exports of machinery finished products suggest that a country has only to switch to the markets of other countries if its export counterpart's demand for certain finished products has deteriorated.

As long as East Asia's export destinations (other than countries mired in a slump, including East Asian countries themselves) sustain growth, a country can switch between potential markets for certain finished products. If so, the transactions of the relevant intermediate goods that are traded within production networks for assembly and manufacturing do not appear to be severely affected by the decreased final demand, even in a major export counterpart such as the United States, for example. Moreover, as presented in the previous section, even if trade relationships are broken off, the ties built on production networks will still be resilient to a temporary disruption.

Indeed, according to the latest survey on the effects of the current global financial crisis on the overseas business operations of Japanese firms at the end of 2008 (Japan External Trade Organization, 2009), there is no evidence that can be interpreted as suggesting any catastrophic damage on international production networks in the Asian region.[19] As for the way to cope with the global economic downturn, about half of the Japanese firms with any global bases indicated that they would enhance their overseas operations, either by expanding existing operations (23 per cent) or by starting new ones (23 per cent), rather than downsizing existing operations (9 per cent) or halting new projects (15 per cent). Such a forward-looking and vigorous stance of Japanese firms is particularly noticeable in the electric machinery sector that extends the most sophisticated networks across East Asia.

D. Conclusion

The objective of this chapter is to shed light on the resilience of international production networks during the Asian financial and currency crisis as well as to verify their stability after considering the possible effects of the crisis. A series of survival analyses provide evidence supporting the view that transactions of intermediate goods within production networks are more likely to be stable and resilient to a temporary disruption compared to other transactions. Contrary to the public perception of globalizing business activities as foot-loose investments, trade relationships built through supply chains are highly stable and resilient to shocks due to the relation-specific nature of the transactions.

[19] In the case of Japanese multinational enterprises, who are among the most important players in Asian production networks, 70 per cent of the firms with affiliates in Central and Eastern Europe have expressed strong concern about the worsening business conditions due to the crisis, whereas those with affiliates in China, Hong Kong, China and Viet Nam appear to be less concerned about the adverse effects on their operations. In particular, for China and Viet Nam, nearly 15 per cent of the Japanese firms operating there reported no impact. However, 38 per cent-46 per cent of them reported severe adverse effects.

Even during the recent global turmoil, the shrinkage of the United States and European markets is not likely to become a profound threat to the stability of international production networks stretched across the Asian region. Production networks will be resilient to the downturn in the United States and European demand, backed by the sustained strong growth of Asia's own markets, although less economically important trade relationships might be broken off in the process of restructuring the networks to become more efficient or sophisticated.

Annex 1. Trade data

Bilateral import data have been used in this chapter, whenever available, from the standpoint of reliability because country of origin is more closely verified due to tariff regulations, even though final destinations may not be known at the time of export. Where import statistics were unavailable for an exporter-importer pair, the corresponding export statistics have been used instead, following Feenstra and others (2005). In addition, the sample was restricted to 19,661 country pairs including 152 intra-East Asian country pairs, either or both of which reported trade statistics throughout the sample period.

Trade data for all the years in the sample were originally reported according to, or modified to fit, the 6-digit level of HS 1992 classification. By using this dataset, even though the birth of newly-developed products within a product-line category of the HS 1992 classification could be observed, the probability of discontinuing trade relationships are underestimated, but never overestimated. More importantly, it was not necessary to be concerned with the censoring issue emerging from the complicated mergers and branching of codes due to the update of classification.

Since the annual data at the HS 6-digit level below (current) US$ 500 were not reported before 2000, trade flows below US$ 500 have been treated as if there was no trade at all for the years in the sample.

Annex 2. Data sources for other variables

Variable	Source
GDP (constant 2000 United States dollars) Per capita GDP (constant 2000 United States dollars)	World Bank, World Development Indicators Online
The annual average of nominal exchange rate, which is deflated by WPI or CPI (2000=100) for each country	IMF International Financial Statistics
Initial trade value (United States dollars), which is deflated by the United States WPI (2000=100)	United Nations Comtrade; IMF International Financial Statistics

Figure 1. Kaplan-Meier estimates of survival functions for intra-East Asian trade by different samples

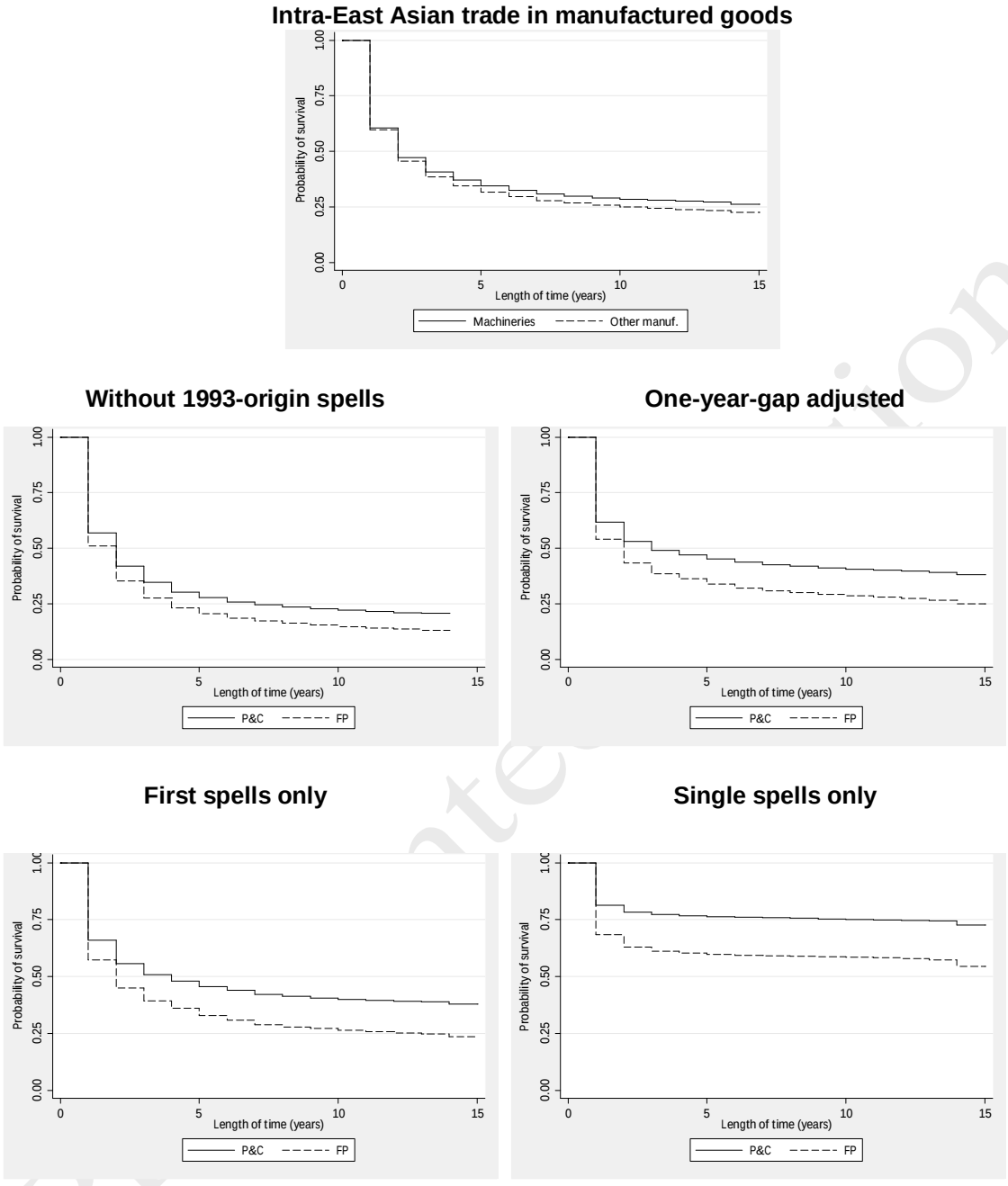
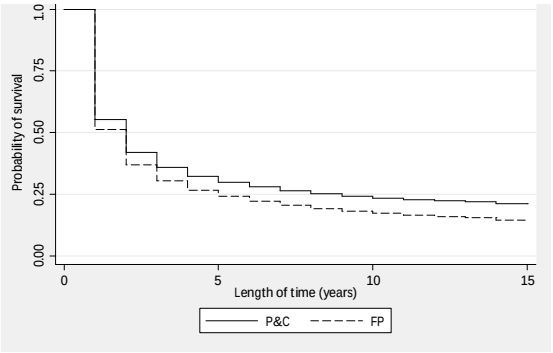
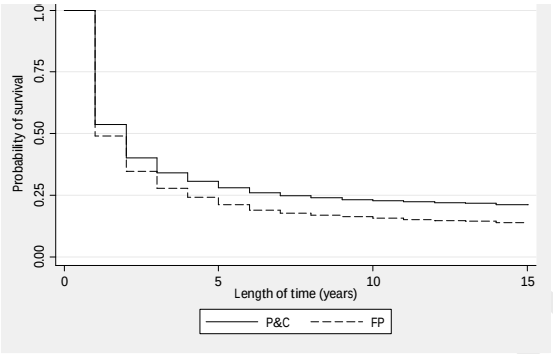


Figure 2. Kaplan-Meier estimates of survival functions for trade in machinery by different samples

East Asian exports to other regions



East Asian imports from other regions



Outside East Asia trade

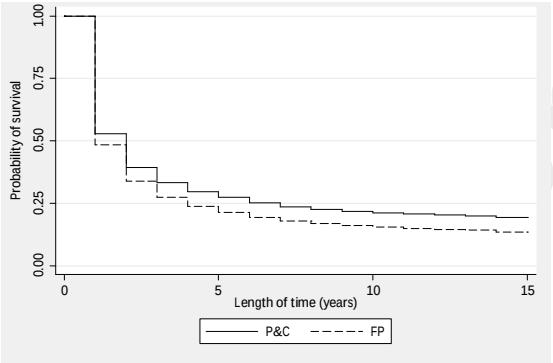


Table 1. Estimated Kaplan-Meier survival rates for intra-East Asian trade by different samples

Sample		Estimated K-M survival rate					Obs.
		1st year	2nd year	4th year	7th year	10th year	
All manufactured goods							
All spells	Machinery	0.61	0.47	0.37	0.31	0.29	197 561
	Other Manufacturers	0.60	0.46	0.35	0.28	0.25	436 263
Machinery only							
Without 1993-origin spells	P&C	0.57	0.42	0.30	0.25	0.22	56 236
	FP	0.51	0.35	0.23	0.17	0.15	93 992
One-year-gap-adjusted	P&C	0.62	0.53	0.47	0.43	0.41	71 112
	FP	0.54	0.43	0.36	0.31	0.29	110 329
The first spells only	P&C	0.66	0.56	0.48	0.42	0.40	42 893
	FP	0.57	0.45	0.36	0.29	0.26	60 561
Single spells only	P&C	0.81	0.78	0.77	0.76	0.75	22 909
	FP	0.68	0.63	0.60	0.59	0.59	27 588

Note: The difference in survival function between machinery and other manufactured goods, and between parts and components and finished products for each sample are significant at the 1 per cent level using the log-rank test.

Table 2. Estimated Kaplan-Meier survival rates for trade in machinery by different samples

Sample		Estimated K-M survival rate					Obs.
		1st year	2nd year	4th year	7th year	10th year	
East Asian exports to other regions	P&C	0.55	0.42	0.32	0.26	0.23	475 088
	FP	0.51	0.37	0.27	0.21	0.17	633 238
East Asian imports from other regions	P&C	0.54	0.40	0.31	0.25	0.23	229 944
	FP	0.49	0.35	0.24	0.18	0.16	265 062
Trade outside East Asia	P&C	0.53	0.39	0.30	0.24	0.21	1 894 462
	FP	0.48	0.34	0.24	0.18	0.15	2 407 660

Note: The difference insurvival function between parts and components, and finished products for each sample is significant at the 1 per cent level using the log-rank test.

References

Asian Development Bank (2009a). *Asian Development Outlook, 2009: Rebalancing Asia's Growth*. Manila.

——— (2009b). *Asian Development Outlook, 2009 Update: Broadening Openness for a Resilient Asia*. Manila.

Ando, M. and F. Kimura (2005). "The formation of international production and distribution networks in East Asia", in T. Ito, and A. K. Rose (eds.), *International Trade in East Asia,* pp. 177-213. University of Chicago Press, Chicago.

Arndt, S.W. and H. Kierzkowski (2001). *Fragmentation: New Production Patterns in the World Economy*. Oxford University Press.

Athukorala, P-C. and N. Yamashita (2006). "Production fragmentation and trade integration: East Asia in a global context", *North American Journal of Economics and Finance,* vol. 17; pp. 233-256.

Baldwin, R. (1988). "Hysteresis in import prices: The beachhead effect", *American Economic Review,* vol. 78; pp. 773-785.

Baldwin, R. and P. Krugman (1989). "Persistent trade effects of large exchange rate changes", *Quarterly Journal of Economics,* vol. 104; pp. 821-854.

Bernard, A. B. and B. Jensen (2004). "Why some firms export", *Review of Economics and Statistics,* vol. 86; pp. 561-569.

Besedeš, T. (2008). "A search cost perspective on formation and duration of trade", *Review of International Economics,* vol. 16; pp. 835-849.

Besedeš, T. and T. J. Prusa (2006a). "Ins, outs, and the duration of trade", *Canadian Journal of Economics,* vol. 39; pp. 266-295.

——— 2006b. "Product differentiation and duration of US import trade", *Journal of International Economics,* vol. 70; pp. 339-358.

Blyde, J. (2008). "What drives export survival? An analysis on export duration in Latin America". (Mimeograph).

Breslow, N. (1974). "Covariance analysis of censored survival data", *Biometrics,* vol. 30; pp. 89-99.

Deardorff, A. V. (2001). "Fragmentation in simple trade models", *North American Journal of Economics and Finance,* vol. 12; pp.121-137.

Dixit, A. (1989a). "Entry and exit decisions under uncertainty", *Journal of Political Economy,* vol. 97; pp. 620-638.

——— 1989b. "Hysteresis, import penetration, and exchange rate passthrough", *Quarterly Journal of Economics,* vol. 104; pp. 205-228.

Feenstra, R. C., R. E. Lipsey, H. Deng, A. C. Ma and H. Mo (2005). "World trade flows: 1962-2000", National Bureau of Economic Research Working Paper No. 11040. Massachussetts.

Fukao, K., H. Ishido and K. Ito (2003). "Vertical intra-industry trade and foreign direct investment in East Asia", *Journal of the Japanese and International Economies,* vol. 17; pp. 468-506.

Haveman, J. and D. Hummels (2004). "Alternative hypotheses and the volume of trade: The gravity equation and the extent of specialization", *Canadian Journal of Economics,* vol. 37; pp. 199-218.

Helpman, E., M. Melitz and Y. Rubinstein (2008). "Estimating trade flows: Trading partners and trading volumes", *Quarterly Journal of Economics*, vol. 123; pp. 441-487.

Japan External Trade Organization (2009). "Survey on international operations of Japanese firms (FY2008)". Available at: www.jetro.go.jp/en/reports/survey/pdf/2009_02_biz.pdf.

Jones, R. W. and H. Kierzkowski, (1990). "The role of services in production and international trade: A theoretical framework", in R. W. Jones and A. O, Krueger (eds.) *The Political Economy of International Trade: Essays in Honor of Robert E. Baldwin*. Basil Blackwell, Oxford, United Kingdom.

Kimura, F. (2006). "International production and distribution networks in East Asia: Eighteen facts, mechanics, and policy implications", *Asian Economic Policy Review*, vol. 1; pp. 326-344.

Kimura, F. and M. Ando (2005). "Two-dimensional fragmentation in East Asia: Conceptual framework and empirics", *International Review of Economics and Finance*, vol. 14; pp. 317-348.

Nitsch, V. (2009). "Die another day: Duration in German import trade", *Review of World Economics*, pp. 133-154.

Obashi, A. (2009). "Stability of production networks in East Asia: Duration and survival of trade" forthcoming in *Japan and the World Economy*.

Roberts, M. and J. Tybout (1997). "The decision to export in Colombia: An empirical model of entry with sunk costs", *American Economic Review*, vol. 87; pp. 545-564.

IV. Role of global production networks in understanding the impacts of the macroeconomic stimulus

By Tereso S. Tullao, Mitzie Irene P. Conchada and John Paolo R. Rivera

Introduction

The economic performance of the Association of Southeast Asian Nations (ASEAN) region has been registering fast economic growth attributable to increases in exports. The increases can be traced from the utilization of global production networks (GPNs), facilitated by forces of liberalization, deregulation, and the impact of information and communication technology (ICT). GPNs are a nexus of interconnected functions and operations in which goods and services are produced, distributed and consumed, and can therefore provide perspectives on patterns of trade and investments (Tullao, Conchada and Aguinaldo, 2005).

The global crisis has resulted in declining exports and tight liquidity due to foreign capital outflow, and ASEAN has not yet decoupled itself from the downturns in the economy of the United States. According to Crispin (2008), as global trade collapses ASEAN will be hit harder, especially the region's most open economies of Singapore and Malaysia, where merchandise exports represent around 200 per cent and 100 per cent of gross domestic product (GDP), respectively. Likewise, Thailand, Indonesia and the Philippines, whose exports represent a substantial percentage of GDP, could also experience declining growth.

China, with which ASEAN has a trade surplus due to exports of raw materials as well as electronics components and computer parts for re-export to third world nations, might sustain the region's economies but the situation has faltered with the recent softening in their export figures. Meanwhile, economists say that the stimulus package coming from China has been customized to cushion the domestic economy but that there have been no indications of the region's sinking economies being lifted (Crispin, 2008).

Credit Suisse's research has revealed that recent growth of ASEAN exports to China largely comprised intermediate goods intended for final to the United States, Europe and Japan. Credit Suisse investigated how much ASEAN has really decoupled from United States demand, noting that 70 per cent of intra-Asian trade was in intermediate goods and that more than half of China's total imports were destined for re-export to mainly Western markets. As such, slackening commodity demand, including that in China, will have an adverse impact on several ASEAN economies.

Therefore, it is interesting to study the extent to which the trade-geared economies of ASEAN members will fall into line with the global economy, specifically with the extensive utilization of GPNs by the United States and China. Moreover, is the drop in the United States' GDP adversely affecting China's exports to the United States, and imports from ASEAN? Given such key questions, and using GPNs as the focus, the objectives of this chapter are to determine whether the ASEAN manufacturing sector's exports to China are sensitive to China's exports as well as the United States' and European Union's GDPs, while being less sensitive to China's GDP. The results will have implications for the stimulation of large economies. For example, stimulating China's economy may or may not be as effective, relative to stimulating the United States economy, in mitigating the impact of an economic crisis in ASEAN.

A. Economic stimulus from developed economies

1. Current account imbalances

Rapid economic growth as well as liberalization measures in trade and investment policies have enabled ASEAN economies to experience expansion in merchandise trade during the past three decades. Consequently, the phenomenal growth of trade in ASEAN has built up trade surpluses with the leading economic blocs of the world. In 1991, East Asia posted a trade surplus with the United States amounting to some US$ 75 billion (table 1). The region's trade surplus with the United States was primarily derived from China, Japan, the Republic of Korea and Singapore, with Japan and China accounting for US$ 47.67 billion and US$ 14.01 billion, respectively, of the region's trade surplus with the United States.

Trade expansion in East Asia has continued in recent years and the trade surplus with the Uited States has grown even further. However, in recent years, in East Asia, China has emerged as the leading trade partner of the United States, accounting in 2006 for 48.5 per cent of total United States imports from the region and 24.8 per cent of United States exports to the region (table 2). Consequently, China has replaced Japan as the East Asian economy with the largest trade surplus (US$ 249.18 billion) with the United States. Japan's trade surplus with the United States in 2006 was US$ 92.26 billion.

The region's trade also expanded in the European markets. In 2000, East Asian registered a trade surplus US$ 120 billion with the European Union (table 3). Although Japan had a greater share than China of the European trade in 2000, its trade surplus of US$ 42.96 billion with the European Union was smaller compared with China's US$ 44.95 billion trade surplus. The Republic of Korea and Singapore also recorded trade surpluses with the European Union.

Table 4 shows that in 2006 China overtook Japan as the leading East Asian trade partner of the European Union. China registered a US$ 164.41 billion trade surplus with the European Union in that year, representing almost 65 per cent of the total trade surplus of East Asia with the European Union. Japan and the Republic of Korea, on the other hand, registered trade surpluses of US$ 40.61 billion and US$ 22.59 billion, respectively in trade surpluses with the European Union. The trade of Singapore with the European Unon was almost balanced.

Table 1. Share of East Asian exports/imports to/from the United States

Selected countries for 1991				
	Exports		**Imports**	
Country	**Per cent of exports**	**Amount of exports (US$ billion)**	**Per cent of imports**	**Amount of imports (U$ billion)**
Japan	55.1	95.76	48.7	48.12
Republic of Korea	10.2	17.73	15.7	15.51
China	11.7	20.33	6.4	6.32
Singapore	5.9	10.25	8.9	8.79
Total East Asian exports	US$ 173.8 billion		US$ 98.8 billion	

Source: United Nations Comtrade Database.

Table 2. Share of East Asian exports/imports to/from the United States

Selected countries for 2006	Exports		Imports	
Country	**Per cent of exports**	**Amount of exports (US$ billion)**	**Per cent of imports**	**Amount of imports (US$ billion)**
Japan	24.2	151.86	26.8	59.60
Republic of Korea	7.6	47.69	14.6	32.47
China	48.5	304.34	24.8	55.16
Singapore	2.9	18.20	11.1	24.69
Total East Asian exports	US$ 627.5 billion		US$ 222.4 billion	

Source: United Nations Comtrade Database.

Table 3. Share of East Asian exports/imports to/from the European Union

Selected countries for 2000	Exports		Imports	
Country	**Per cent of exports**	**Amount of exports (US$ billion)**	**Per cent of imports**	**Amount of imports (US$ billion)**
Japan	32.8	84.82	30.2	41.86
Republic of Korea	9.6	24.83	11.1	15.38
China	26.6	68.79	17.2	23.84
Singapore	6.2	16.03	10.5	14.55
Total East Asian exports	US$ 258.6 billion		US$ 138.6 billion	

Source: United Nations Comtrade Database.

Table 4. Share of East Asian exports/imports to/from the European Union

Selected countries for 2006	Exports		Imports	
Country	**Per cent of exports**	**Amount of imports (US$ billion)**	**Per cent of imports**	**Amount of imports (US$ billion)**
Japan	19.1	96.89	22.2	56.28
Reppublic of Korea	10.1	51.24	11.3	28.65
China	48.2	244.52	31.6	80.11
Singapore	4.8	24.35	9.6	24.34
Total East Asian exports	US$ 507.3 billion		US$ 253.5 billion	

Source: United Nations Comtrade Database.

These statistics show that East Asia has generated a trade surplus of an increasing and significant magnitude, mainly by China, over time and across the two major trading blocs in the world. Aside from the change, it is apparent from the data that these countries have recorded huge trade surpluses that have persisted during several years. Consequently, several economies in the East Asian region have balance of payments (BoP) surpluses (table 5).

Table 5. Balance of payments (US$ million)

COUNTRY	2003	2004	2005	2006	2007
United States	-1 529.00	-2 804.00	-14 100.00	-2 392.00	125.00
European Union	-32 802.00	-15 560.00	-22 912.00	2 562.00	5 956.00
China	116 586.00	206 153.00	207 342.00	246 855.00	461 691.00
Japan	187 150.00	160 850.00	22 330.00	31 980.00	36 520.00
Sngapore	6 703.28	12 193.00	12 314.70	17 007.50	19 640.10
Republic of Korea	25 791.100	38 675.000	19 864.000	22 090.10	15 109.10
Malaysia	10 180.600	22 050.000	3 619.610	6 863.78	13 143.70

Source: International Financial Statistics.

The trend shown in table 5 is consistent with the temporal and geographical variations in the trade balance of the region. Although Japan registered a higher BoP surplus of US$ 187 billion in 2003, in 2007 its trade surplus of US$ 36 billion was overtaken by China in 2007 with a surplus of US$ 461 billion. During recent years, the United States and the European Union have experienced BoP deficits, although the European Union registered BoP surpluses in 2006 and 2007. The United States also recorded a BoP surplus in 2007. However, compared with the surpluses generated by Malaysia and Singapore, the United States and European Union BoP surpluses were relatively small.

2. Adjustments in current account imbalances

(a) Accommodating transactions in the current account

A deficit or net outflow of monetary assets in the current account must be offset by a surplus or a net inflow of monetary and financial assets to achieve balanced national accounts. Similarly, a surplus or net inflow of monetary assets in the current account must be offset by a deficit or net outflow in the BoP. If the current account deficit is not financed wholly by a surplus in the capital account, there will be changes in official transactions.

A country can decrease its international reserves, sell gold or use its special drawing rights allocation at the International Monetary Fund (IMF) in order to lessen the imbalance in its BoP. On the other hand, if the current account surplus is not fully covered by a deficit in the capital account, the country will accumulate more international reserves and gold, or increase its allocation of special drawing rights.

On the other hand, if a country chooses to lessen its reserves, it becomes more vulnerable to contagion effects and attacks on its currency, as was seen in Asian countries during the 1997 Asian financial crisis. China was able to insulate itself from the currency devaluing effects of that crisis largely due to its reserves. During the current global financial crisis, it is more likely hold on to its reserves in case a contagion effect on Asian investments reoccurs.

(b) Changes in the exchange rate

A current account deficit may also be addressed by devaluing the domestic currency. An increase in the domestic currency value of foreign goods will discourage imports and encourage exports, since this action makes the foreign currency price of exports relatively cheaper. Similarly, a current account surplus can be addressed by an appreciation of the domestic currency.

The view that China's currency is undervalued has led to debates on whether or not it should appreciate its currency with regard to the United States dollar. Rogoff (2007) as well as Kim and Yang (2008) postulated that greater exchange rate flexibility in Asia could help to reduce the imbalances in the BoP accounts of the United States and China. Cooper (2006) cited two arguments for adjusting China's undervalued currency. First, it will help reduce global imbalances. Second, it

will help to avoid overheating of China's rapidly growing economy. Moreover, greater monetary flexibility in the face of economic shocks can be obtained from a more flexible exchange rate regime (Kim and Yang, 2008).

However, a real appreciation in China's domestic currency can lead to inflation, since that will trigger economic activity (Kim and Yang, 2008). Apart from this, Kim and Yang (2008) warned that huge adjustments and regulatory mechanisms needed to be put in place if a change from a managed to a more flexible exchange rate regime was to be made, or else the country might experience a crisis due to an unorderly shift in exchange rate policy.

On the other hand, Rogoff (2007) also warned that the effects of autonomous exchange rate adjustments must not to be counted on as the main drivers for bringing balance to BoP accounts, but that adjustments in savings and investment imbalances should also be considered. Devereux and Genberg (2007) stated that an appreciation in China's currency would even improve the current account balance at low trade elasticity, and lower the current account balance by only 1.5 per cent of GDP, assuming a high level of trade elasticity.

(c) Changes in domestic expenditure

A current account deficit implies excessive domestic demand that cannot be met by domestic production. Thus, there is a need to curb domestic demand including consumption through higher taxes, investments through higher interest rates, and government expenditure through reduced fiscal deficit and a budget surplus. On the other hand, a current account surplus implies that domestic demand is deficient in meeting domestic production. As such, there is a need to expand domestic consumption through lower taxes, investments through lower interest rates, and government expenditure through deficit spending.

A contractionary fiscal policy is an option to cool down overheating economies, since it also has the effects of contractionary monetary policy without the additional inflow of capital as well as increased exchange rates (Kim and Yang, 2008). Salvatore (2007) suggested that the United States deficit might be lessened through a contractionary fiscal policy, and that the surplus of emerging economies such as China be reduced by fiscal expansion. Together with a contemporaneous restructuring of other economies, such as Japan and Europe, that should be able to bring balance to the current accounts of those economies. Devereux and Genberg (2007) agreed that fiscal policy was an effective measure in bringing balance to the BoP and, compared to a nominal adjustment in the exchange rate, it is not so much affected by elasticities in trade between two countries. However, Salvatore (2007) warned that fiscal policy must be used with caution because rapid shocks in one country's expenditure could make other countries slow to adapt, thus putting them at a disadvantage by reducing their economic growth and making them less likely to trade with other nations.

With regard to the relationship between the BoPs of the United States and China, Eichengreen and Park (2006) suggested a contemporaneous adjustment in fiscal policy between the two countries such that the United States must decrease its spending, in order to lessen demand, and reduce imports as well as adapt to the slowing down of demand. On the other hand, China should increase domestic spending in order to create a buffer that would absorb the lost demand for its products.

3. Decoupling theory

According to Park (2009), Asia cannot decouple itself and cannot experience higher economic growth compared to the economic slowdown in the global market. Also, studies by ADB have revealed that the Asian economies still relies heavily on external demand and global economic conditions. Moreover, Asian economies are highly dependent on exports, and those involved in regional integration have further strengthened regional ties. Stronger regional trade and regional investment flows may shield countries from changes in the external environment (Park, 2009).

Furthermore, Park (2009) believed that as long as the situation of China was remained good, Asia would be able to cope with any economic challenge. Asian exports are still very sensitive to changes in United States demand, proof of which can be seen in the existing relationship between the growth rate of Asia's exports and United States imports (However, this does not include oil imports from the United States.). Park (2009) claimed that in the 1980s, 1990s and 2000s the correlation between the growth rate of United States non-oil imports and emerging Asian exports had improved, especially after the Asian financial crisis when they increased substantially. In the 2000s, the correlation was 82 per cent, implying that when United States imports were lower, Asian exports suffered.

In line with intraregional trade, Park (2009) said that Asia's exports to other countries in Asia might not be related to United States imports. However, statistics show that Philippine exports to Malaysia and Indonesian exports to China revealed that they are highly related to the changes and fluctuations in United States imports. Such is the case because regional production networks must serve external demands within the region. Park (2009) noted that the Unitedc States has subsidiaries in Japan and Europe. Some 90 per cent of the goods produced by the subsidiaries in Japan are sold to Japanese consumers while about 60 per cent of the European subsidiaries output is sold to European consumers. In contrast, United States subsidiaries in East Asia (excluding Japan) sell less than 40 per cent of their goods to the region's consumers; the remainder is exported. Similarly, the Japanese subsidiaries located in different parts of Europe sell 60 per cent of their products to European consumers. In the United States, 90 per cent of Japanese subsidiaries' products are sold to United States consumers. On the other hand, Japanese subsidiaries in Asia export more than half of their production.

Park (2009) further noted that China was indeed the hope for intraregional trade that is destined for external markets other than those in Asia. China's exports to the United States, Japan and Europe are highly correlated with China's imports from Asia. China imports and ships to bigger countries outside Asia. Thus, more than 60 per cent of Asian exports eventually cater to the demands of the United States, Japan and Europe. Park (2009) concluded that as long as this cycle remained unbroken, Asia would be tied to the economic fortunes of the economies of the United States, Japan and Europe.

B. Global Production Networks

1. Concept of global production networks

The pattern of trade and investments in the international market is partly characterized by GPNs. Tullao, Conchada and Aguinaldo (2005) noted that GPNs are one of the trends in today's competitive world. Multinational corporations (MNCs) create production networks in various countries comprising factories and research centres, and other aspects of a business. GPNs have replaced transnational corporations (TNCs) as the most effective form of industrial organization. This change has emerged in response to three constituent processes of globalization: (a) the ascendancy of liberalization policies; (b) the rapid uptake of ICT; and (c) the onset of global competition. Moreover, the networks combine concentrated dispersion of the value chain across firms and national boundaries with a parallel process of integration of hierarchical layers of network participants (Tullao, Conchada, and Aguinaldo, 2005).

2. Drivers of global production networks

There are three major driving forces that moved industrial organization from TNCs towards global network flagships – liberalization, ICT and competition. These forces led to the emergence of global flagships, and the integration of their dispersed supply, knowledge and customer bases into GPNs (Ernst and Kim, 2002).

First, liberalization or institutional changes, consist of four elements, i.e., trade liberalization, liberalization of capital flows, liberalization of foreign direct investment (FDI) policies, and privatization. These institutional changes have permitted the integration of the domestic markets with the global markets for goods, services and capital through changes in domestic regulations and policies. The impact of liberalization has resulted in a decrease in costs and risks in international transactions by providing a level playing field, the minimization of uncertainties and various choices for market access. Liberalization has made it easier for TNCs to identify locational specialization among competing countries (Tullao, Conchada, and Aguinaldo, 2005)

Second, globalization of production has likewise been promoted significantly by the demand and supply impacts of ICT. International production rather than exports is perceived as a primary source of competitive advantage as it enables better linkages in international markets. In effect, ICT reinforces globalization by increasing the demand for it, and by creating new opportunities. Although segments of production are dispersed across countries, ICT provides a network infrastructure that allows for greater coordination among all players in GPNs (Tullao, Conchada, and Aguinaldo, 2005)

Last, with liberalization and rapid developments in ICT, competition in the global arena has become complex, fierce and dynamic. Because competition cuts across national boundaries, firms are forced to have some presence in all major markets and must be able to integrate activities across countries to reap the benefits of coordination. Since competition also cuts across sectors and market segments, it has become more difficult to develop as well as nurture niches for a long period. This complexity forces firms to be on guard and always on the lookout for advantages that they can exploit, using liberalization and ICT as the main conduits (Tullao, Conchada, and Aguinaldo, 2005)

3. Global production networks and their roles in ASEAN

The ASEAN region has benefited from GPNs. MNCs such as the Ford Motor Corporation perceived the region as a successful GPN. Using the provisions for trade in ASEAN, Ford was able to build complementary products at their facilities in Thailand and the Philippines. They specialize in producing cars in the Philippines and trucks in Thailand. Likewise, Malaysia is harnessing its competitive advantage to make it more attractive for FDI in terms of minimal costs, good infrastructure, a highly-skilled workforce, a stable socio-political environment and attractive tax incentives. Their industrial zones have attracted numerous firms in electronics, computer peripherals and semiconductors such as Acer, Alcatel, Canon, Fujikura, Hewlett Packard, Intel, Motorola, Sony, among many others (Tullao, Conchada, and Aguinaldo, 2005).

In the Philippines, the rapid growth of the telecommunications industry is attributed, to a certain extent, to the domination of call centres. These are networks of national and international connections dealing with customer consultations and logistical support. They usually comprise technical or product support services, customer care or service, bill collection, reservation services, fund raising, surveys, direct mail follow-ups, product testing, customer acquisition and customer activation. Language proficiency, inexpensive labour, cultural characteristics, a mature telecommunication infrastructure and the strong Western orientation of the Filipinos have made the Philippines one of the most popular destinations for call centres in the world (Tullao, Conchada, and Aguinaldo, 2005).

It should not be overlooked that GPNs have served as a channel through which knowledge and technology are transferred from the home country to the ASEAN region. This is manifested through a more educated labour force, in terms of acquired skills and work habits, and an enhanced infrastructure in the areas of telecommunications and transportation.

C. Vulnerability to stimulus packages from the United States, European Union and China

1. Vector autoregression

In examining the sensitivity of the ASEAN trade sector to external factors such as the economic performance of the United States, the European Union and China, together with the existence of GPNs, a Vector Autoregressive (VAR) model was employed. The model utilizes a dynamic multivariate time series, which is widely used in analysing the dynamic behaviour of time series variables for forecasting, structural inference and policy analysis (Enders, 2004). VAR resembles a simultaneous or structural equation except that several endogenous variables are considered together. Each endogenous variable is explained by its lagged values of all other endogenous variables in the model (Gujarati, 2003). Thus, the VAR methodology is a-theoretic, in which the data generation of the process determines the model.

2. Data requirements

The data requirements for this study are time series data for the GDP of the United States (*USGDP*), the European Union (*EUGDP*), China (*PRCGDP*), Japan (*JAPGDP*) and ASEAN (*ASEANGDP*). The time series data for China's imports from ASEAN (*PRCM*) or ASEAN exports to China (*ASEANX*) are also required. Likewise, the imports of the United States (*USM*), the European Union (*EUM*) and Japan (*JAPM*) are needed. Last, other necessary variables such as inflation (*ASEANINF*) and nominal exchange rate (*ASEANNEER*) for ASEAN are included. Such datasets are sourced from the International Financial Statistics and the ASEAN Secretariat database.

3. Preliminary tests

(a) Phillips-Perron Stationary Test

Before implementing a time series analysis such as VAR, the data must be subjected to unit root testing to verify stationarity. According to Gujarati (2003), stationarity is necessary in order to guard against spurious regressions wherein there would exist a nonsensical relationship when one non-stationary time series endogenous variable is regressed against one or more exogenous non-stationary time series variables.

To determine the unit root of the variables in the system, which is the number of times a non-stationary time series, Y_t, has to be differenced to make it stationary (Gujarati, 2003). A test, the Phillips-Perron (PP) Unit Root Test, can be implemented to determine stationarity.

According to Gujarati (2003), in an *m*-variable VAR model, all the *m* variables must be jointly stationary. If the *m* variables are non-stationary, there is a need to transform the time series data appropriately through differentiation, depending on the order of integration. The results derived from the transformed data might be unsatisfactory (Gujarati, 2003); therefore, the usual approach by VAR adherents is to work in level values even if the series is non-stationary. The regression could be estimated in first-differences, but then any long-term information carried by the levels of the variables is lost (Mulligan, 2003). Thus, this study generates VAR results using level values of the time series

(b) Johansen Cointegration Test

Co-integration is an econometric property of time series variables wherein if two or more series are non-stationary, but a linear combination of them is stationary, then the series are said to be cointegrated. Co-integration can be determined using the Johansen Cointegration Test (see annex 2). This test is used to establish how many cointegrating vectors the system has, and it includes the "λ-max" test for hypotheses on individual eigenvalues, and the "trace" test for joint hypotheses. Supposing that the eigenvalues λ_i are sorted from largest to smallest, the null hypothesis for the "λ-max" test on the i^{th} eigenvalue is that $\lambda_i = 0$. The corresponding trace test, instead, considers the

hypothesis $\lambda_j = 0$ for all $j \geq i$. Such a test was implemented to determine whether there is long-term co-movement among all the variables of interest in the VAR (p) model.

If both trace and λ-max tests rejected the null hypothesis that the smallest eigenvalue is 0, it can be concluded that the series is, in fact, stationary (Enders, 2004). The rejection of the hypothesis denotes the number of cointegrating equations. If there is cointegration, OLS estimates of the structural relationships have the property of consistency (Mulligan, 2003).

(c) Model specification

The VAR (p) model to be estimated will determine the susceptibility of ASEAN to shocks from its major trading partners such as the United States, the Eurropean Union, Japan and China. The specific VAR (p) models of interest are shown by equations 1 to 3. Note that the optimal lag structure p of the VAR model is determined by the lowest Akaike Information Criterion (AIC) and Schwarz Information Criterion (SIC) (Gujarati, 2003).

$$PRCX_T = F(USGDP_T, EUGDP_T, PRCGDP_T, JAPGDP_T, ASEANGDP_T, USM_T, EUM_T, JAPM_T, ASEANX_T, ASEANINF_T, ASEANNEER_T) \quad (1)$$

$$ASEANX_T = F(USGDP_T, EUGDP_T, PRCGDP_T, JAPGDP_T, ASEANGDP_T, PRCX_T, ASEANINF_T, ASEANNEER_T) \quad (2)$$

$$ASEANGDP_T = F(USGDP_T, EUGDP_T, PRCGDP_T, JAPGDP_T, ASEANX_T, ASEANINF_T, ASEANNEER_T) \quad (3)$$

Based on equations above, the variance decompositions and impulse response functions can be generated, which will serve as bases for inferences. Variance decompositions partition the variations in a variable of interest to shocks in other variables in the system including its own innovations (Gujarati, 2003). It provides measures of relative importance of various shocks in explaining the concerned variable. Meanwhile, impulse-response functions trace the response of variables in the system to shocks in other variables and capture the direction, magnitude and persistence of this response (Enders, 2004).

In line with existing studies, a Reduced Form VAR was implemented to examine the extent to which the trade-geared economies of ASEAN members will fall into line with the global economy and specifically with the extensive utilization of GPNs by the United States and China. VAR expresses the current value of each m series as a weighted average of the past of all series plus a disturbance term, ε_t, that represents all factors that affect the series but is not taken account explicitly. To begin, a VAR model is specified by equation 4:

$$Y_t = A_0 + \sum_{k=1}^{p} A_k Y_{t-k} + \varepsilon_t \quad (4)$$

where Y_t is a vector of n variables specified earlier, A_0 is an $n \times 1$ vector of constant terms, A_k is an n x n matrix of coefficients, ε_t is an $n \times 1$ vector of stochastic error terms[27] and p is the order of autoregression. However, there is uncertainty about ε_t because the past observations of Y_t are unknown and it will have to be estimated from the available data. Such uncertainty is lessened by assuming that ε_t is a random vector having a zero mean, the error covariance matrix S is positive definite and ε_t is uncorrelated with past observations of Y_t . Thus, the lag order of the VAR (p) is set such that the error terms are serially uncorrelated.

[27] In VAR, the vector of stochastic error terms is also called impulses, innovations or shocks (Gujarati, 2003).

The interpretation of the VAR (*p*) shown by equation 4 is normally based on its moving average representation. By successive substitution, equation 4 has a moving average representation shown by equation 5:

$$Y_t = B_0 + \sum_{k=1}^{q} B_k \varepsilon_{t-k} + \varepsilon_t \quad (5)$$

where Y_t is a vector of n variables to be specified later, B_0 is an $n \times 1$ vector of constant terms, B_k is an $n \times n$ matrix of coefficients, ε_t is an $n \times 1$ vector of error terms and q is the moving average order. The lag order of the VAR (q) is set such that the stochastic disturbance terms are non-autocorrelated.

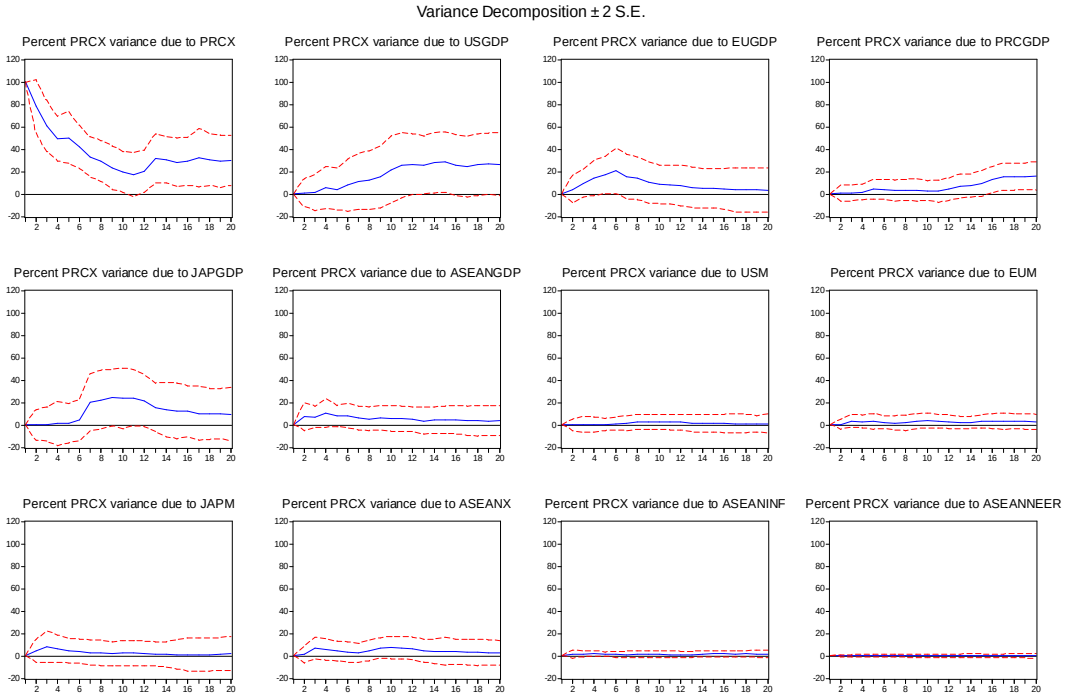
(d) Variance decomposition and impulse response analysis

Given the above-mentioned backdrop on VAR, Y_t is expressed as a linear combination of contemporaneous and previous innovations. Based on equation 5, the variance decompositions and impulse response functions can be generated that will serve as bases for statistical inferences. Variance decompositions partition the variation in a variable of interest to shocks in other variables in the system including its own innovations (Gujarati, 2003). Thus, they provide natural measures of relative importance of various shocks in explaining the concerned variable (Enders, 2004). Meanwhile, the impulse-response functions trace the responses of the variables in the system to one standard deviation shocks in other variables (Gujarati, 2003). They capture the directions, magnitudes and persistence of a variable's responses to impulses in the system (Enders, 2004).

One important aspect that needs to be pointed out, which pertains to the generation of variance decompositions and impulse-response functions, is that innovations in equation 5 may be contemporaneously correlated. This means that a shock in one variable may work through the contemporaneous correlation with innovations in other variables. Since isolated shocks to individual variables cannot be identified due to contemporaneous correlation, the responses of a variable to innovations in another variable of interest cannot be adequately represented (Enders, 2004). To solve this identification problem, an empirical strategy that orthogonalizes the innovations using the Cholesky factorization can be used (Enders, 2004).

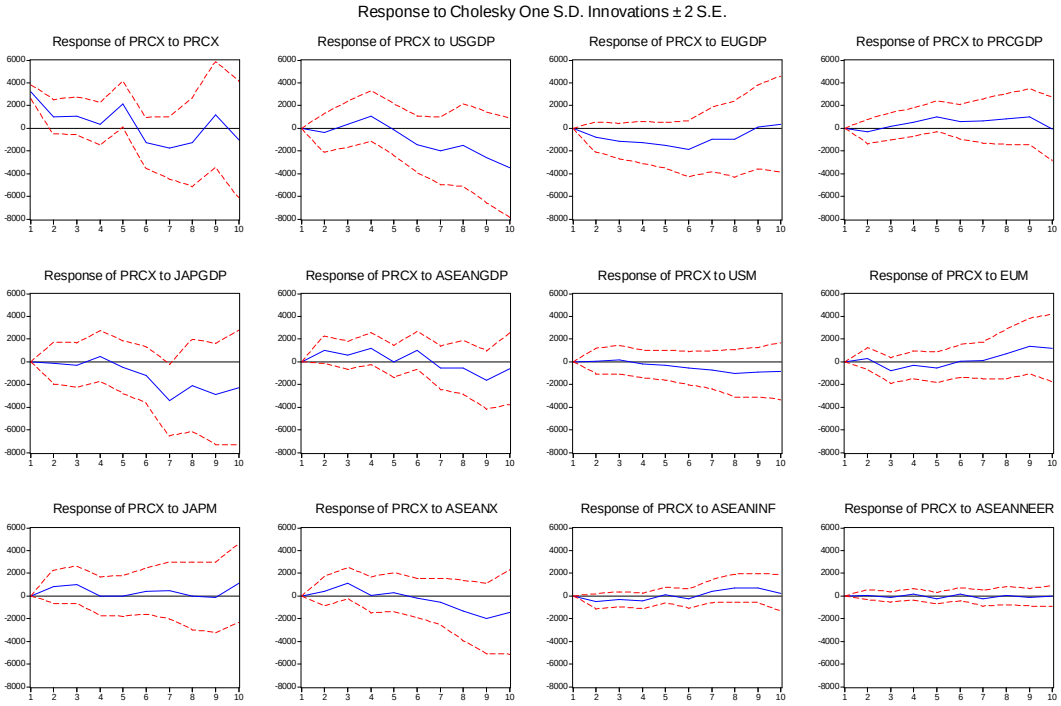
The results of the variance decomposition in equation 1 are shown in figure 1. It plots the variations, shown in figure 1 of annex 1. in *PRCX* accounted by innovations coming from the other variables of interest. The variations are plotted together with two standard deviation bands. Generally stated, if the bands do not encompass zero, then the variations are significantly different from zero. Notice that *PRCX*, *PRCGDP*, and *USGDP* cause significant variations in *PRCX* reaching up to approximately 30 per cent. Comparatively, the disturbances coming from *JAPGDP*, *ASEANGDP*, *USM*, *EUM*, *JAPM*, and *ASEANX* are relatively the same. Domestic variations coming from *ASEANINF* and *ASEANNEER* have a relatively small impact on *PRCX*, explaining only approximately 1 per cent of the variation. Note that the influences of the economic performance of China's major trading partner, the United States, bring about variations in China's exports during the period studied. Indeed, it shows that China's trade performance is not decoupled from the United States. Such a finding is consistent with the findings of Park (2009).

Figure 1. Variance decomposition for equation 1



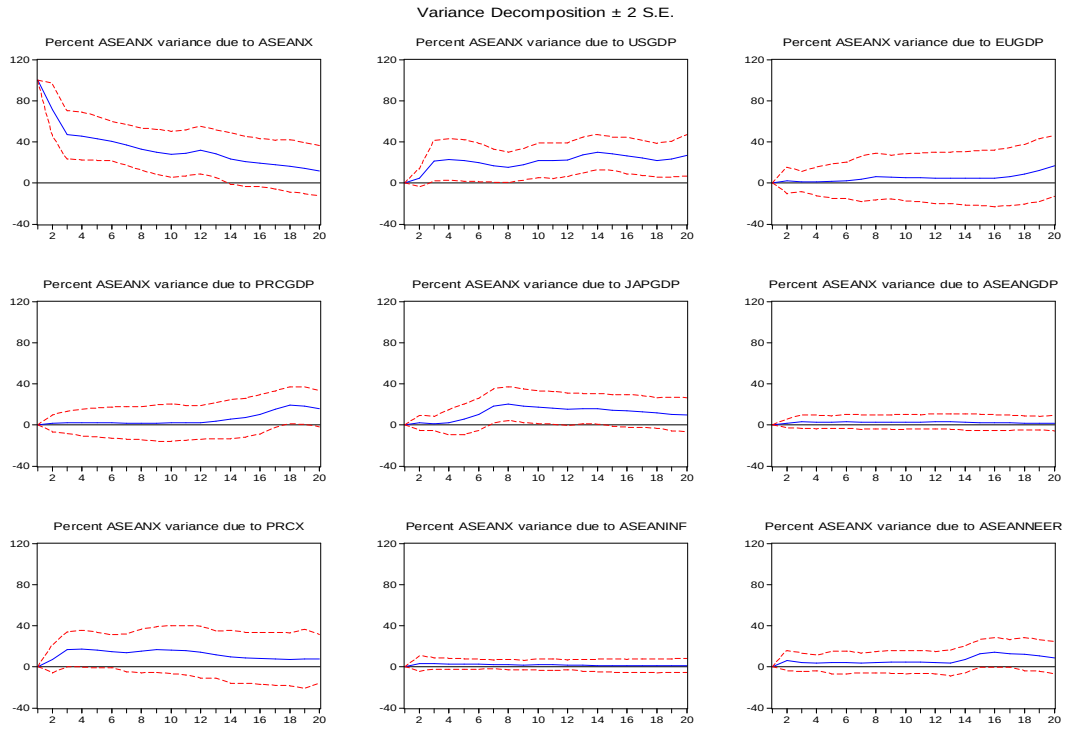
The results of the impulse-response function (figure 2) show that the shocks in *PRCX* are mainly generated by *PRCX* itself and the GDPs of the United States, the European Union, Japan and ASEAN but during initial periods only. This supports the initial results that the economic performances of China's major trading partners appear to be the major source of their export fluctuations. Note that the response of *PRCX* to one standard deviation shock in domestic variables such as *ASEANINF* and *ASEANNEER* are insignificant. Therefore, given the variance decomposition results, the effect of *USGDP, EUGDP, JAPGDP* and *ASEANGDP* are relatively more important. Such results imply that the economies are highly coupled. Likewise, this reinforces the findings of Park (2009).

Figure 2. Impulse response for equation 1



The results of the variance decomposition in equation 2 are shown in figure 3. Note that *ASEANX* and *USGDP also* cause significant variations in *ASEANX* up to 30 per cent. Likewise, the disturbances from *PRCGDP*, *JAPGDP*, *ASEANGDP*, *USM*, *EUM*, *JAPM*, and *PRCX* are similar. Domestic innovations from *ASEANNEER* and *ASEANINF* have a minimal contribution to variations in *ASEANX*. Indeed, the demand for ASEAN's products by China and then by the United States is significant. The United States stimulates China's demand for ASEAN's raw materials due to the former country's increased demand for finished goods. Thus, the economies of ASEAN, China and the United States are highly coupled. Again, it reinforces the initial results presented here as well as the findings of Park (2009).

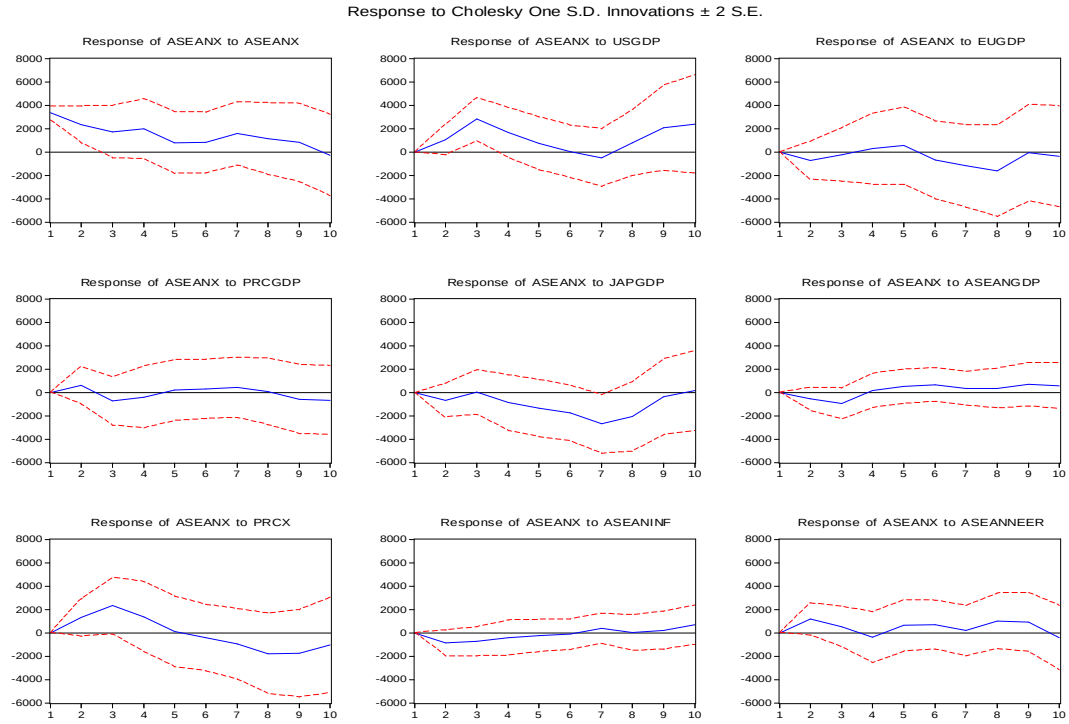
Figure 3. Variance decomposition for equation 2



The results of the impulse response function (figure 4) show that the shocks in *PRCX* are mainly generated by *PRCX* itself and the GDPs of the United States, the European Union, Japan and ASEAN but during initial periods only, confirming that the economic performance of China's major trading partners is the major source of their export fluctuations. Note that the response of *PRCX* to shocks in domestic variables such as *ASEANINF* and *ASEANNEER* are insignificant. Thus, the effect of *USGDP*, *EUGDP*, *JAPGDP* and *ASEANGDP* are relatively more important.

The results of the variance decomposition in equation 3 are shown in figure 5. Note that *ASEANGDP*, *PRCGDP* and *JAPGDP* cause significant variations in *ASEANGDP* up to 50 per cent. The disturbances from the other variables are similar. Domestic innovations in *ASEANNEER* and *ASEANINF* make a minimal contribution to variations in *ASEANX*. Indeed, the demand for ASEAN's products by China and Japan is significant in stimulating the ASEAN economy. Likewise, the economies of ASEAN, China and Japan are highly coupled.

Figure 4. Impulse response for equation 2



The results of the impulse response function (figure 6) show that the shocks in *ASEANGDP* are mainly generated by *ASEANGDP*, *PRCGDP* and *JAPGDP*. Note that the response of *PRCX* to shocks in domestic variables such as *ASEANINF* and *ASEANNEER* are insignificant. Thus, the effect of *USGDP*, *EUGDP*, *JAPGDP* and *ASEANGDP* are relatively more important.

Therefore, across all equations estimated together with accompanying variance decomposition and impulse-response functions, it can be seen that the economic performance of the United States affects economic growth in the ASEAN region as well as China's trading activities. Likewise, China's performance, when it comes to international trade with its major trading partners, affects the economy of ASEAN. Such results are consistent with the findings of Park (2009), wherein China has a vital role in intraregional trade that is destined for external markets other than those of Asia. Indeed, China's exports to US, Japan, and Europe are indeed correlated with China's imports from ASEAN. Most importantly, the results demonstrated that the ASEAN region is indeed tied to the economic performance of developed countries, especially the United States.

Figure 5. Variance decomposition for equation 3

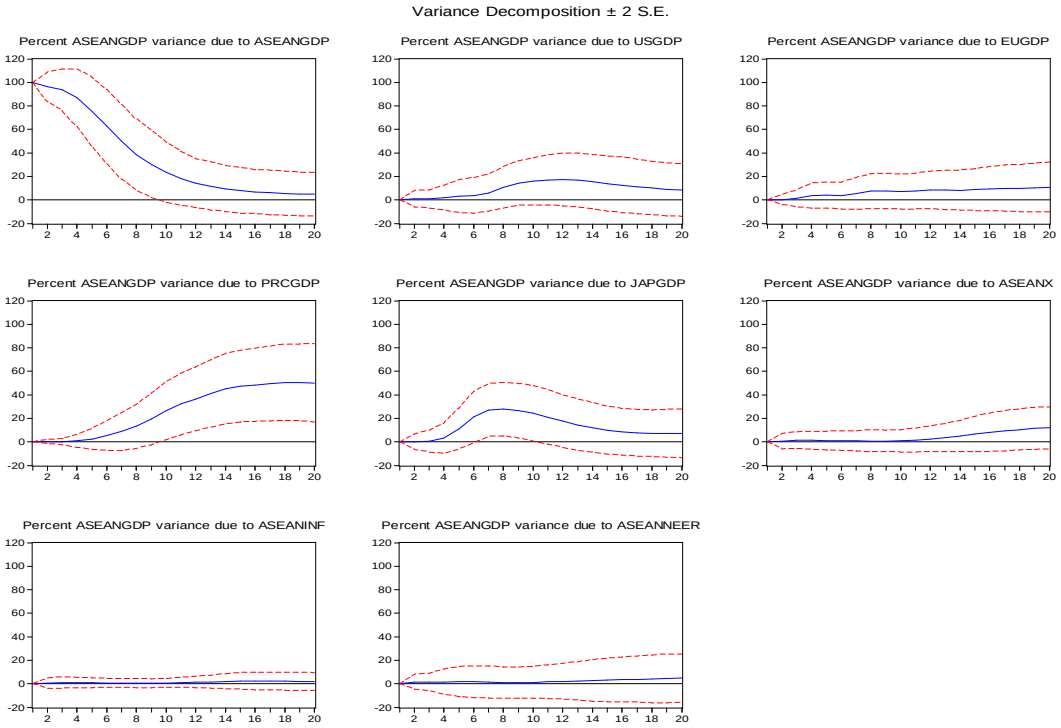
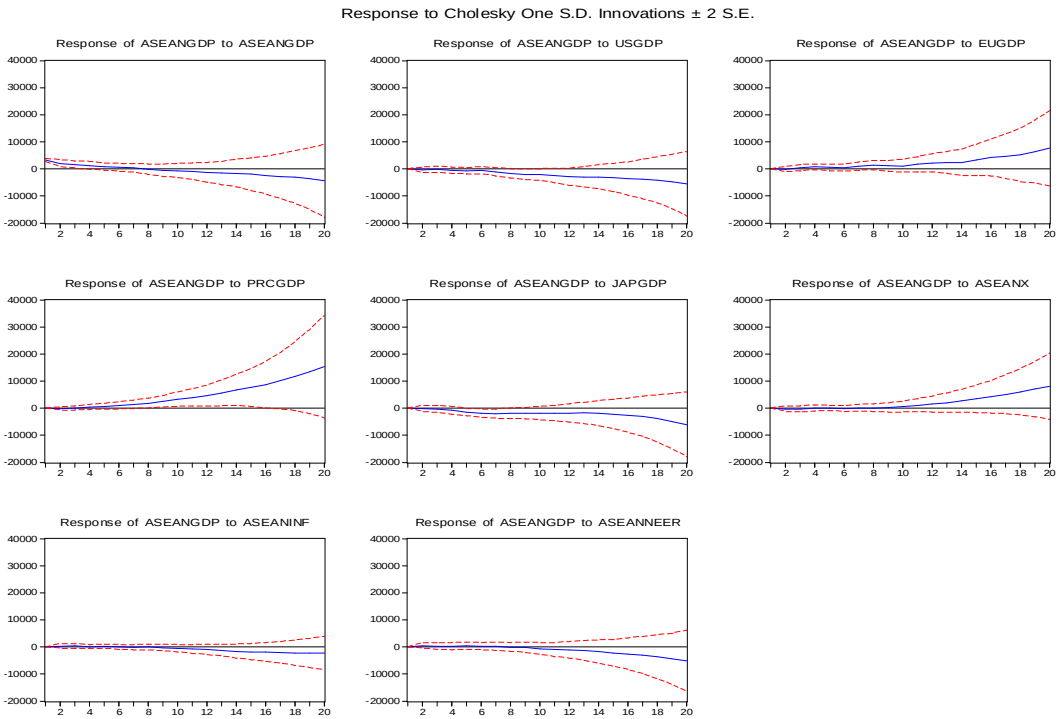


Figure 6. Impulse response for equation 3



D. Conclusion and policy implications

ASEAN plays a vital role in global trade, particularly manufactured goods such as electronics, due to its increasing trade volume in and out of the region,. This has resulted in the utilization of GPN wherein raw materials and work-in-progress goods are sourced from ASEAN's developing economies. In turn, those countries export the semi-finished goods to China for production of final goods both for domestic consumption and for export to the rest of the world. Thus, it is the huge world demand, especially the developed countries, that fuels trade between China, ASEAN and the rest of the world. This suggests that countries are interdependent and that no single economy can decouple from the rest of the world in terms of economic performance. For example, a drop in China's exports to the rest of the world will have negative consequences for the ASEAN economies that supply the necessary raw materials required by China to produce for exports to the rest of the world.

Using VAR to investigate the impacts of trade between China and ASEAN reveals that the economies of China and ASEAN are interdependent in trade. Results show that the economic growth experienced by ASEAN has brought about positive effects for China's export sector, since ASEAN is the major supplier of raw materials and a major destination for China's exports. Moreover, the shocks from China to ASEAN come through ASEAN exports, which will eventually affect ASEAN's GDP. Also, the impact of China's GDP on ASEAN exports has occurred with several lags, implying that the shocks have delayed effects distributed across time.

Also, variations in ASEAN's exports and GDP in one period are dominated by variations of ASEAN's exports and GDP in previous periods. Internal variation exists because ASEAN is a large economy. Likewise, disturbances from China that have had an impact on ASEAN exports will continue in the more recent variations in ASEAN exports. Also, despite the linkages of ASEAN with China, the United States and the rest of the world, ASEAN is susceptible to internal disturbances.

Furthermore, innovations coming from China's GDP significantly affect ASEAN's GDP. Therefore, China's economic growth affects ASEAN exports, which, in turn, affects ASEAN's economic growth, indicating that China's economic growth has a direct effect on ASEAN's export growth. Eventually, China's economic growth will bring about economic growth in ASEAN. Similarly, this reflects that fact that the share of China's international trade in GDP is much higher than other large economies in the world, indicative of the remarkable role that international trade has played in China's growth process. Consequently, ASEAN needs to make intensive efforts to maintain economic stability.

Given these results, ASEAN needs to promote trade. As the results suggest, the economic conditions of China and ASEAN are correlated. Therefore, it is important that the strong economic linkages within the region are not weakened by tariff increases or non-tariff barriers in individual countries as a means of protecting domestic producers.

Finally, there is a need to strengthen regional cooperation efforts to promote macroeconomic coordination and cooperation initiatives in capacity-building, human resource development, research and development, trade facilitation and investment generation.

Annexes

Annex 1. Optimal VAR lag selection

A. For equation 1

```
VAR system, maximum lag order 4

The asterisks indicate the best (that is, minimized) values of the respective
information criteria, AIC = Akaike criterion, BIC = Schwartz Bayesian criterion and
HQC = Hannan-Quinn criterion.

lags    loglik  p(LR)    AIC     BIC     HQC

  1  -5031.59813      167.341875  172.694020  169.443262
  2  -4784.42117 0.00000 164.013586  174.306172  168.054715
  3  -4512.20681 0.00000 159.877639  175.110666  165.858510
  4  -3973.94154 0.00000 147.159405* 167.332873* 155.080017*
```

The optimal lag structure is 4, based on the lowest AIC, BIC and HQC (Gujarati, 2003). Thus, we have a VAR (4) model. Testing for higher order lag structure is not feasible due to lack of observations.

B. For equation 2

```
VAR system, maximum lag order 5

The asterisks indicate the best (that is, minimized) values of the respective
information criteria, AIC = Akaike criterion, BIC = Schwartz Bayesian criterion and
HQC = Hannan-Quinn criterion.

lags    loglik  p(LR)    AIC     BIC     HQC

  1  -3239.25221      109.155810  112.270214  110.376374
  2  -3119.16220 0.00000 107.874171  113.791538  110.193242
  3  -2961.96565 0.00000 105.375923  114.096254  108.793503
  4  -2754.03630 0.00000 101.214305  112.737600  105.730392
  5  -2554.76549 0.00000  97.336574* 111.662832* 102.951169*
```

The optimal lag structure is 5, based on the lowest AIC, BIC, and HQC (Gujarati, 2003). Hence, we have a VAR (5) model. Testing for higher order lag structure is infeasible due to lack of observations.

C. For equation 3

```
VAR system, maximum lag order 4

The asterisks indicate the best (that is, minimized) values of the respective
information criteria, AIC = Akaike criterion, BIC = Schwartz Bayesian criterion and
HQC = Hannan-Quinn criterion.

lags    loglik  p(LR)    AIC     BIC     HQC

  1  -2708.57681      89.696026  92.166247*  90.665897
  2  -2617.80982 0.00000  88.832575  93.498547  90.664553
  3  -2520.50643 0.00000  87.758272  94.619996  90.452358
  4  -2317.43199 0.00000  83.272000*  92.329475  86.828193*
```

The optimal lag structure is 4, based on the lowest AIC, BIC, and HQC (Gujarati, 2003). Hence, we have a VAR (4) model. Testing for higher order lag structure is infeasible due to lack of observations.

Annex 2. Johansen Cointegration Test

A. For equation 1

```
Johansen test:
Number of equations = 12
Lag order = 4
Estimation period: 1992:4 - 2008:1 (T = 62)

Case 3: Unrestricted constant
Rank Eigenvalue Trace test p-value  Lmax test p-value
  0  0.99042   1329.5 [0.0000]   288.18 [0.0000]
  1  0.98398   1041.4 [0.0000]   256.30 [0.0000]
  2  0.97455   785.05 [0.0000]   227.60 [0.0000]
  3  0.87596   557.45 [0.0000]   129.41 [0.0000]
  4  0.84624   428.04 [0.0000]   116.09 [0.0000]
  5  0.78441   311.96 [0.0000]   95.131 [0.0000]
  6  0.64050   216.82 [0.0000]   63.429 [0.0000]
  7  0.58392   153.40 [0.0000]   54.367 [0.0000]
  8  0.50342   99.029 [0.0000]   43.401 [0.0001]
  9  0.42274   55.629 [0.0000]   34.067 [0.0002]
 10  0.24357   21.562 [0.0045]   17.307 [0.0142]
 11  0.066324   4.2548 [0.0391]   4.2548 [0.0391]
```

Both the trace and λ-max test reject the null hypothesis that the smallest eigenvalue is 0, so it may be concluded that the series is in fact stationary (Enders, 2003). The rejection of the hypothesis denotes that the number of cointegrating equations, in this case, is at most 10. Since there is cointegration, OLS estimates of the structural relationships have the property of consistency (Mulligan, 2003).

B. For equation 2

```
Johansen test:
Number of equations = 9
Lag order = 5
Estimation period: 1993:1 - 2008:1 (T = 61)

Case 3: Unrestricted constant
Rank Eigenvalue Trace test p-value  Lmax test p-value
  0  0.88300   533.26 [0.0000]   130.88 [0.0000]
  1  0.86020   402.38 [0.0000]   120.02 [0.0000]
  2  0.75182   282.36 [0.0000]   85.010 [0.0000]
  3  0.69176   197.35 [0.0000]   71.789 [0.0000]
  4  0.52580   125.56 [0.0000]   45.514 [0.0006]
  5  0.46525   80.045 [0.0000]   38.184 [0.0008]
  6  0.36283   41.862 [0.0010]   27.494 [0.0042]
  7  0.19631   14.367 [0.0723]   13.331 [0.0684]
  8  0.016850   1.0366 [0.3086]   1.0366 [0.3086]
```

Both the trace and λ-max test reject the null hypothesis that the smallest eigenvalue is 0, so it may be concluded that the series is in fact stationary (Enders, 2003). The rejection of the hypothesis denotes that the number of cointegrating equations, in this case, is at most 7. Since there is cointegration, OLS estimates of the structural relationships have the property of consistency (Mulligan, 2003).

C. For equation 3

```
Johansen test:
Number of equations = 8
Lag order = 4
Estimation period: 1992:4 - 2008:1 (T = 62)

Case 3: Unrestricted constant
Rank Eigenvalue Trace test p-value  Lmax test p-value
  0  0.90048   362.14 [0.0000]   143.06 [0.0000]
  1  0.71384   219.08 [0.0000]   77.576 [0.0000]
  2  0.53856   141.51 [0.0000]   47.951 [0.0033]
  3  0.39005   93.555 [0.0001]   30.652 [0.1156]
  4  0.34240   62.903 [0.0008]   25.988 [0.0772]
  5  0.27563   36.915 [0.0057]   19.992 [0.0712]
  6  0.20281   16.923 [0.0286]   14.053 [0.0521]
  7  0.045247   2.8707 [0.0902]   2.8707 [0.0902]
```

Both the trace and λ-max test reject the null hypothesis that the smallest eigenvalue is 0, so it may be concluded that the series is in fact stationary (Enders, 2003). The rejection of the hypothesis denotes that the number of cointegrating equations, in this case, is at most 7. Since there is cointegration, OLS estimates of the structural relationships have the property of consistency (Mulligan, 2003).

References

Cooper, R. (2006). "Living with global imbalances: A contrarian view", *Journal of Policy Modeling,* vol. 28; pp. 615-627.

Crispin, S. W. (2008). "Down and still coupled", *Asia Times Online.* Accessed at www.atimes.com/atimes/Southeast_Asia/JL25Ae01.html.

Devereux, M. B. and H. Genberg (2007). "Currency appreciation and current account adjustment", *Journal of International Money and Finance,* vol. 26; pp. 570-586.

Eichengreen, B. and Y. C. Park (2006). *Global Imbalances: Implications for Emerging Asia and Latin America*. University of California, Berkeley and Seoul National University.

Enders, W. (2004). *Applied Econometric Time Series (Second Edition*). John Wiley and Sons, Inc., United States.

Ernst, D. and L. Kim (2002). "Global production networks, knowledge diffusion, and local capability formation", *Elsevier*. Accessed at www.eastwestcenter.org/stored/misc/Global_production.pdf

Gujarati, D. N. (2003). *Basic Econometrics* (Fourth Edition). McGraw-Hill Companies, Inc., Singapore.

Kim, S. and D. Y. Yang (2008). "The impact of capital inflows on emerging East Asian economies: Is too much money chasing too little good?" ADB Working Paper Series on Regional Economic Integration, No. 15. Manila.

Mulligan, R. F. (2003). *The Austrian Business Cycle: A Vector Error-Correction Model with Commercial and Industrial Loans.* Western Carolina University.

Park, C. Y. (2009). "Global economic crisis: Impacts and policy options", *Asia-Pacific Social Science Review,* vol. 9, No. 1; pp. 51-74.

Rogoff, K. (2007). "Global imbalances and exchange rate adjustment", *Journal of Policy Modeling,* vol. 29; pp. 705-709.

Salvatore, D. (2007). "US trade deficits, structural imbalances, and global monetary stability", *Journal of Policy Modeling,* vol. 29; pp. 697-704.

Tullao, T.S., M. I. P. Conchada and J. P. Aguinaldo (2005). *An Analysis of Trade Policy Environment and Global Production Networks: Implications on Regional Agreements.* De La Salle University, Angelo King Institute, Manila.

Part III. Multilateralizing regionalism in the Asia-Pacific region: Strengths, weaknesses and the political economy

V. Trans-Pacific strategic economic partnership agreement: High standard or missed opportunity?

By Henry Gao

Introduction

Since its inception in 2005, the Trans-Pacific Strategic Economic Partnership Agreement (P4 Agreement) has enjoyed great attention and has been referred to by many commentators as a "high-standard" free trade agreement (FTA).[28] There is, in fact, no official definition of what constitutes a "high standard" FTA; however, since the central purpose of FTAs is to reduce trade barriers and promote trade liberalization, the degree of trade liberalization should be used as the basis for judging whether the "standard" of an FTA is "high" or not. To be more specific, in line with the requirements under General Agreement on Tariffs and Trade (GATT) Article XXIV and General Agreement on Trade in Services (GATS) Article V, a "high standard" FTA should satisfy the following requirements:

(a) With regard to trade in goods, coverage of substantially all the trade between the parties, and elimination of duties and other restrictive regulations of commerce on such trade;

(b) With regard to trade in services, a substantial sectoral coverage, and an absence or the elimination of substantially all discrimination in national treatment in the sectors covered.

In addition, since a claim for "high standard" obviously involves some element of comparison, the P4 Agreement should also provide for trade liberalization opportunities and rules restricting trade protection better than:

(a) Those provided for under the WTO Agreements;

(b) Those provided for under other agreements concluded between other WTO members who are not parties to the P4 Agreement;

(c) Those provided for under the other agreements concluded between the parties to the P4 Agreement and non-members to the P4 Agreement;

(d) Those provided for under the pre-existing agreements concluded between the members of the P4 Agreement themselves before the P4 Agreement was concluded.

The following sections review the main components of the P4 Agreement and compare them with those of other agreements in order to assess whether the former actually lives up to its reputation of being a "high standard" FTA.

[28] See, for example: Ministry of Trade and Industry of Singapore Media Info-note on the P4 Agreement, 18 July 2005; and the Statement of United States Trade Representative Susan Schwab on the launch of the United States negotiations to join the Trans-Pacific Strategic Economic Partnership Agreement, 22 September 2008, available online at www.ustr.gov/schwab-statement-launch-us-negotiations-join-trans-pacific-strategic-economic-partnership-agreement.

A. Market access for goods

As FTAs have traditionally been viewed as a tool for dismantling tariff barriers, the reduction and elimination of tariffs on goods have been regarded as a key benchmark for measuring trade liberalization under an FTA. The emphasis on tariff reduction is reflected in GATT Article XXIV, which notes that an FTA will "eliminate tariffs" on "substantially all the trade" between the constituent members of an FTA. There are two components to this requirement.

The first component is a high coverage of the goods traded. There has been much debate on the exact meaning of "substantially all the trade", for example, whether:

(a) It demands a qualitative approach (no exclusion of major sectors) or a quantitative approach (a minimum numerical benchmark for the trade volume covered);
(b) The percentage is measures by tariff lines or the actual trade volume;
(c) The trade includes actual trade only or potential trade as well;
(d) The percentage will be measured in terms of the total trade of all the members combined or merely the separate exports and imports of each member on an individual basis or both. So far, the only body that can give an official interpretation of the term; WTO has not been able to articulate clear guidelines, largely due to the difficulties created by the consensus-based, decision-making rule. In practice, most FTAs around the world have chosen to adopt a quantitative approach, which is usually set at no less than 90 per cent of the actual trade between the members.

Second, the duties will be "eliminated" on the trade covered. The choice of the word "eliminate" rather than "reduce" means that what is required is zero tariffs, rather than low tariffs. Thus, legally speaking, even an FTA that reduces all tariffs from 100 per cent to 0.01 per cent ad valorem across the board would not satisfy the requirement here as the tariffs will have not been "eliminated".

In the case of the P4 Agreement, the tariff reductions in the following countries are:

(a) Singapore – almost all imports already enjoy duty-free treatment. The only exceptions are alcoholic drinks such as stout, porter, beer and ale, which are subject to a duty of S$ 16 per litre, and samsu (rice-wine), which is subject to a duty of S$ 8 per litre.[29] Upon the conclusion of the P4 Agreement, Singapore agreed to eliminate these duties with immediate effect, bringing tariffs on all imports to zero;

(b) Brunei Darussalam – imports from Singapore already enjoy the preferences under the ASEAN Free Trade Area (AFTA), which provided for the reduction of 99 per cent of the tariffs to 0-5 per cent by 2002[30] and the total elimination of all tariffs by 2010.[31] At the same time, Brunei Darussalam applied zero tariffs on 92 per cent of the imports from New Zealand prior to the conclusion of the P4 Agreement. Brunei Darussalam agreed to bind the tariffs for these products at zero upon the entry into force of the P4 Agreement. The remaining tariffs would be eliminated according to the following schedule: (i) duties on forestry products, which account for 1.79 per cent of the imports from New Zealand, were to be eliminated by 1 January 2010; (ii) duties on certain machinery products, which

[29] List of Dutiable Goods, available at www.customs.gov.sg/leftNav/trad/List+of+Dutiable+Goods.htm.
[30] See ASEAN Free Trade Area: An Update at www.aseansec.org/7665.htm.
[31] Protocol to Amend the Agreement on the Common Effective Preferential Tariff (CEPT) Scheme for the ASEAN Free Trade Area for the Elimination of Import Duties, 31 January 2003. Available at www.aseansec.org/14183.htm.

account for 1.19 per cent of the imports from New Zealand, will be eliminated by 1 January 2012; and (iii) duties on vehicle and vehicle parts, rubber articles as well as the other machinery products, which account for 5.29 per cent of the imports from Chile, will be eliminated by 1 January 2015. Brunei Darussalam excludes products such as alcohol, tobacco and firearms from its tariff elimination schedule for moral, human health and security reasons;

(c) New Zealand – imports from Singapore already enter the country duty-free as the result of the New Zealand-Singapore Closer Economic Partnership. Similarly, 99 per cent of the imports from Brunei Darussalam (mostly oil) and 67 per cent of the imports from Chile also enjoyed zero tariffs even before the conclusion of the P4 Agreement. On 1 May 2006, New Zealand had to remove tariffs on another 29 per cent of the imports from Chile. The remaining tariffs would be eliminated according to the following schedule: (i) duties on jewellery, ceramics and skincare products, which account for 0.03 per cent of the imports from Chile, were to be eliminated by 1 January 2008; (ii) duties on whiteware and aluminium products, which account for 1.54 per cent of the imports from Chile, were to be eliminated by 1 January 2010; (iii) duties on textiles, apparel, footwear and carpet products, which account for 1.92 per cent of the imports from Chile, will be eliminated by 1 January 2015;

(d) Chile – 89.3 per cent of the imports from New Zealand and Singapore were to receive duty-free treatment when the Agreement came into force on 8 November 2006. The remaining tariffs would be eliminated as follows: (i) for Singapore, duties on 9.57 per cent of the imports within the following three years, and the remaining imports within the following six years;[32] (ii) for New Zealand, most of the tariffs will be eliminated by 1 January 2015, with tariffs on Chile's most sensitive dairy products – butter, milk powder and whey – which account for 9.26 per cent of the imports from New Zealand to be eliminated on 1 January 2017.

Now compare the above tariff reduction schedules provided for under the P4 Agreement, with those under the other agreements. Of the four countries, Singapore has long maintained a zero-tariff policy on all imports except alcoholic beverages and tobacco products. As the result, 99 per cent of all imports enter Singapore duty-free. Thus, even though Singapore has concluded FTAs with countries in many parts of the world, it does not make much sense to compare Singapore's tariffs under the P4 Agreement with those under other agreements. On the other hand, Brunei Darussalam has only a very small trade volume and most of its trade is with Singapore. Moreover, other than the P4 Agreement, Brunei Darussalam only has one FTA – the EPA with Japan – that was not concluded as part of the collective FTA initiative by ASEAN. Thus, comparing the P4 Agreement with Brunei Darussalam's other FTAs is also unlikely to yield meaningful results. Therefore, the focus is on New Zealand and Chile (more so on Chile as the trade regime of New Zealand is in general already very liberal), which have similar trade volumes and trade-to-GDP ratios, a more diversified trade pattern and are parties to a wider range of FTAs in addition to the P4 Agreement.

First, consider the coverage of tariff lines and actual trade. Generally, the broader the coverage, the more liberal is the agreement. The P4 Agreement covers 100 per cent of the imports of Chile and New Zealand. While this compares favourably against the FTAs that Chile signed pre-P4, such as the Canada-Chile Free Trade Agreement (CCFTA), which excludes dairy products, it is the same as the post-P4 FTAs, such as the one with Australia.

The next factor is the depth of initial tariff reduction. The more liberal FTAs would usually include a higher percentage of duty-free products when such agreements enter into force. Under P4, only 89.3 per cent of the imports from New Zealand and Singapore enjoyed zero tariffs when the

[32] See www.fta.gov.sg/fta_tpfta.asp?hl=12.

Agreement entered into force. While this is higher than under CCFTA, which liberalized only 75 per cent of the trade upon initial implementation,[33] it is lower than the one provided for under the FTA with Australia, which was 96.9 per cent of the trade from Australia upon entry into force.[34]

The third factor is the length of the phase-in period for the remaining tariff eliminations. The shorter the time frame, the more liberal the agreement. The P4 Agreement allows Chile 10 years to implement the duty-free obligations on dairy products from New Zealand. Again this is shorter than CCFTA (15+ years for milling wheat, sugar and beef) but longer than the FTA with Australia (six years).

The last factor is the real economic impact of the Agreement. The higher the real economic impact, the more liberal is the agreement. While it is always difficult to measure the economic impact of an FTA accurately, a proximate substitute would be the amount of tariffs saved, which can be estimated by multiplying the amount of trade covered with the difference between the MFN tariff rate and FTA tariff rate. The MFN tariff rates of the four countries are all quite low; calculated on a trade-weighted average basis, the rates in 2006 were 5.1 per cent for Brunei Darussalam, 6 per cent for Chile, 3.5 per cent for New Zealand, and zero per cent for Singapore.[35] Combined with the low trade volume of all countries (except Singapore, which already enjoys duty-free treatment on most of its exports to the other three countries), the tariff savings are insignificant. For example, based on the 2004 trade figures, New Zealand estimated that the P4 Agreement would only result in savings of $NZ 2.2 million on its exports to Chile[36] and $NZ 52,000 on its exports to Brunei Darussalam,[37] while New Zealand will end up with duties foregone of $NZ 300,000 from Chile[38] and $NZ 1,800 from Brunei Darussalam.[39] Even if it is assumed that the conclusion of the Agreement will generate 100 per cent more trade between the parties, the economic impacts seem to be insignificant. Indeed, exports from New Zealand to Chile only increased from $NZ 36.6 million in 2004[40] to $NZ 44.9 million in 2008[41] while the imports contracted from $NZ 26.1 million in 2004[42] to $NZ 21.6 million in 2008,[43] and any future economic impact of the agreement would probably also be negligible.

B. Rules of origin

The classic justification for Rules of Origin (ROO) is to prevent free-riders, i.e., those non-members of an FTA that evade tariffs by trans-shipping their products from a low MFN-tariff FTA member to a member with higher MFN tariffs. Overly-restrictive ROO, however, can constitute undue barriers to trade between FTA members and non-members, reducing the potential for trade between the two. As one of the original intentions of the P4 Agreement was to entice other countries to join, it adopted a more liberal ROO regime.

In general, ROO regimes include two dimensions: (a) sectoral, product-specific ROOs; and (b) general, regime-wide ROOs. In terms of product-specific ROOs, there are two basic criteria to determine origin: (a) wholly obtained or produced; and (b) substantial transformation. Substantial

[33] See www.agr.gc.ca/itpd-dpci/ag-ac/4957-eng.htm.
[34] Australia-Chile Free Trade Agreement, Summary of Key Obligations, Available at www.dfat.gov.au/GEO/chile/fta/FTA_key_obligations.html.
[35] WTO Tariff Profiles. Available at http://stat.wto.org/TariffProfile/WSDBTariffPFView.aspx?Language=E&Country=BN,CL,NZ,SG.
[36] New Zealand Ministry of Foreign Affairs and Trade, Trans-Pacific Strategic Economic Partnership Agreement National Interest Analysis, July 2005; p. 15.
[37] Ibid., p. 16.
[38] Ibid., p. 47.
[39] Ibid., p. 48.
[40] lbid., p. 15.
[41] See www.mfat.govt.nz/Countries/Latin-America/Chile.php.
[42] WTO Secretariat report on the P4 Agreement.
[43] See www.mfat.govt.nz/Countries/Latin-America/Chile.php.

transformation, in turn, includes three main components that can be used either alone or together: (a) change in tariff classification (CTC); (b) value content (VC); or (c) technical requirement.

According to Article 4.2 of the P4 Agreement, a good is considered as originating from the members if one of the following conditions is fulfilled:

(a) The good is wholly obtained or produced entirely in the territory of one party, pursuant to the definition in Article 4.1;

(b) The good is produced entirely in the territory of one or more parties, exclusively from materials whose origin conforms to the provisions of this Chapter; or

(c) The good is produced in the territory of one or more parties, using non-originating materials that conform to a change in tariff classification, a regional value content, or other requirements specified in Annex II, and the good meets the other applicable provisions of this Chapter."

Of these three criteria, the first two are quite straightforward as they involve only parties to the Agreement. The last requirement, however, is much more complicated. The main text of the Agreement does not provide for a single set of rules. Instead, Annex II of the Agreement lists the detailed rules that each product has to meet to be considered as a good originating from the members. These include all three components of the substantial transformation test: For most goods, CTC applies and may require a change of either HS chapter (CC), HS heading (CTH) or HS subheading (CTSH). The corresponding rules are listed either at the HS heading (4-digit) or HS subheadings (6-digit) levels.

Many products also include a regional value content (RVC) test as an alternative rule to the CTC criterion. Under this test, the relevant CTC rules will not apply if the RVC of a product or the originating materials constitute a minimum percentage in the overall FOB value of the product. The default RVC is 45 per cent, except for textiles, clothing and footwear products for which it has been raised to 50 per cent. Finally, goods falling under Chapters 15 (animal or vegetable fats and oils products) and 27 to 40 (mineral, chemical and plastic products) are subject to technical requirement rules.

While a high RVC requirement can guarantee that only goods genuinely originating from members are eligible for RTA tariff savings, it also impedes trade flow from non-members and can sometimes even deny the benefits for products that would have been treated as originating goods under a regime with lower RVC requirements. Thus, the higher an RVC requirement, the more restrictive the Agreement. As noted by Estevadeordal, Harris and Suominen (2009), the 45 per cent to 50 per cent RVC under the P4 Agreement is higher (more restrictive) than two-thirds of all the 70+ agreements examined.

Another indicator of the restrictiveness of a ROO regime is cumulation (or accumulation) rules, which allow an RTA member to use materials from another country without losing the preferential status of the final product. The more restrictive ROOs tend to include only the possibility for bilateral cumulation, i.e., only goods or materials originating in an RTA member may be considered in determining the origin of the final product. The more liberal ROOs, on the other hand, also include extended cumulation, where the inputs from non-members may also count in the origin determination of the final product.

The P4 Agreement provides for bilateral cumulation under Article 4.5, but extended cumulation is not allowed. To a certain extent, this rather harsh rule is softened slightly by the exception in Article 4.12 allowing outward processing, whereby products undergoing processing in a non-party prior to final manufacture in a party will be considered as originating, provided that the

total value of non-originating materials does not exceed 55 per cent of the customs value of the final good. However, this exception has only a minor impact as it applies to just a small set of products, listed in Annex 4.B of the P4 Agreement, that includes mostly machinery and appliance products.

The third indicator is the de minimus rule, which allows goods that do not conform to the CTC rules to be treated as originating if the value of non-originating materials does not exceed a maximum percentage of the value of the final product. Article 4.6 of the P4 Agreement provides for a 10 per cent *de minimus* rule. This is higher than the rules under most other FTAs and is quite liberal.

The last factor to be considered is the complexity of the ROO regime, also referred to as sectoral selectivity in ROOs, which measures the number and types of ROOs in FTAs.

Those with a larger number and type of ROO are more complex than those with a smaller number or even one type of ROO. While complexity does not necessarily translate into restrictiveness, more complex regimes typically would raise the cost of compliance, and inhibit rather than encourage trade flows. According to Estevadeordal, Harris and Suominen (2009), the P4 Agreement is among the most complex FTAs, and is more complex than more than two-third, of the FTAs studied.

C. Non-tariff barriers

In addition to the elimination of duties, Article XXIV.8(b) also requires FTAs to eliminate "other restrictive regulations of commerce" (ORRC). The exact scope of this term, like the vaguely-worded "substantially all trade", also remains largely an unsolved mystery. Granted, the term tells us two things. First, ORRC does not include tariffs, which obviously would be covered by the word "duties" in the same sentence. Second, what matters most is not the form of the regulation, but its effect on commerce. As long as a regulation has a "restrictive" effect on trade, it could be potentially covered by ORRC. Beyond this, however, we enter uncharted waters. To start with, all regulations, be it border measures or those regulating the domestic market, invariably affect trade to a certain extent and can be deemed as "restricting" commerce. Does this mean that they are all ORRC? It would be ridiculous to think that Article XXIV.8(b) would cast such a wide net. Of all the non-tariff measures that are covered by WTO (such as TBT measures, SPS measures and trade remedy measures), which ones are covered and which ones are not? Of these, the most difficult question arises from the inclusion of trade remedy measures, i.e., antidumping, subsidy-countervailing and safeguard measures. This raises the following issues.

First, are they "regulations of commerce"? The answer seems obvious as the initiation and conduct of various trade remedy investigations are usually governed by regulations. However, because the final measures usually take the form of additional duties imposed on imports and such duties are of the same form as the normal customs duties, it could be argued that they fall under "duties" rather than ORRC.

Second, even if for the sake of argument we assume that they are "regulations of commerce", are they of a "restrictive" nature? Again this question appears to be easily answered – don't all trade remedy measures restrict trade by imposing additional burdens on imports? Further reflection reveals, however, that this question is not as simple as it first appears. To the extent that antidumping and subsidy-countervailing measures are supposed to address "unfair trade", they do not restrict but instead facilitate "proper trade" by supposedly removing the distortions created by such unfair trade practices. In addition, even safeguard measures serve a useful purpose by providing a safety valve to deal with the temporary difficulties created by a sudden rise of imports; without such an escape clause, the entire free trade agreement might never be approved by the legislature and no additional

trade could be generated. In other words, while trade remedy measures might appear to restrict trade, their ultimate purpose is to facilitate trade, and thus should not be condemned.

Third, even assuming that the trade remedy measures are "restrictive regulations of commerce", does the requirement of elimination of ORRC mean that trade remedy measures must be banned in FTAs? Consider the following two scenarios: one is an FTA that bans the application of trade remedy measures between members, but allows the application towards non-FTA members; the other scenario is an FTA that allows the application of trade remedy measures to both members and non-members. Which scenario is in line with the requirement to "eliminate" ORRC? To answer this question, we first have to deal with another question, i.e., to the extent that the meaning of ORRC embodies the consideration of the trade-restrictive effect of a measure, should we consider the effect of the measure on trade among members only, or on trade between members and non-members as well? In the author's view – to the extent that in the same paragraph ORRC precedes the clause "on substantially all the trade between the constituent territories in products originating in such territories" – it means that only the effect on intra-FTA trade will be considered. Thus, because trade remedy measures – if allowed between members – would create trade-restrictive effect on members, they should be eliminated accordingly.

In reality, however, many FTAs, including the P4 Agreement, do allow the application of trade remedy measures among members. Do they all violate the requirement of the elimination of ORRC? No, not as such. The above analysis is incomplete as it ignores the exception contained in parentheses in the same sentence that allows the continued application of ORRCs "permitted under Articles XI, XII, XIII, XIV, XV and XX" even after the formation of an FTA. Again, however, the list of exceptions has been subject to contradicting interpretations. One view is that the list is exhaustive, i.e., only those Articles that are listed might be cited as a way to avoid the general obligation to eliminate ORRCs. Because the provisions authorizing the trade remedy measures – Articles VI and XIX – are not in the list, they will not be included in the exceptions, which means that they must be eliminated in an FTA. The other approach, however, treats the list as illustrative, i.e., it also includes implicitly similar provisions that are not explicitly mentioned. For example, the security exceptions clause under Article XXI is not listed here. However, because its twin clause under Article XX is included, surely Article XXI should also be included. It would be absurd if countries are allowed to impose trade restrictions upon the breakout of a serious pandemic but not a major war – national security considerations are definitely more important than public health concerns.

To summarize the above discussion, it is unclear whether trade remedy measures among members are eliminated upon the formation of an FTA. However, one fact is clear: these measures, if allowed among members, have a restrictive effect on intra-FTA trade. Thus, a "high-standard" FTA that aims to facilitate greater trade liberalization among members will eliminate, or at least restrict, the use of trade remedy measures.

Unfortunately, in this regard, the P4 Agreement again fails to live up to its reputation. First, as a general matter, the Agreement allows a member to adopt non-tariff measures either "in accordance with its rights and obligations under the WTO Agreement" or "in accordance with other provisions of this Agreement."[44] This could be interpreted to mean that even measures that are inconsistent with WTO rules could be maintained as long as that is allowed by the Agreement. 32. In particular, the Agreement allows Chile to maintain the following measures: (a), a price band system for various edible vegetable oils, sugar, wheat and wheat flour;[45] (b), a quantity-based safeguard for certain dairy

[44] Article 3.8.

[45] Article 3.12. In October 2000, Argentina challenged Chile's price band system in WTO. The Appellate Body ruled in its report of September 2002 that the price band system was inconsistent with Article 4.2 of the Agreement on Agriculture. In November 2001, Chile amended Article 12 of Law No. 18.525 so that maximum applied rates resulting from the application of the price band system were no more than its bound rates in WTO. However, this means that the rates may still be higher than the zero tariffs provided for under the P4 Agreement.

products during the phase-in period for the tariff liberalization on these products;[46] and (c) measures related to imports of used vehicles.[47]

Second, in terms of the generic trade remedy measures, the P4 Agreement provides that the members retain their "the rights and obligations" under the WTO Agreements on Safeguards, Antidumping, and Subsidy and Countervailing Measures, as well as GATT Articles XIX and VI. Moreover, the Agreement explicitly provides that the members get no "additional rights or obligations" with regard to trade remedy measures taken pursuant to these WTO Agreements. This means that members may simply apply safeguard measures as was done before the conclusion of the FTA. The investigating member faces no more restrictions than the ones provided for under the WTO Agreements, while the member under investigation cannot claim better treatment than that accorded to non-members.

This is a rather disappointing outcome and compares unfavourably with other FTAs. As noted by Teh, Prusa and Budetta (2007), a large number of FTAs have adopted RTA-specific rules that tighten discipline on the application of trade remedies on RTA members, with some even abolishing certain trade remedy measures. These include some of the FTAs signed by the members of the P4 Agreement. For example, Singapore and New Zealand agreed in ANZSCEP to tighten the thresholds for the commencement and application of antidumping investigations by raising the *de minimis* dumping margin from 2 per cent to 5 per cent, and the margin of negligible imports from 3 per cent to 5 per cent.[48]

The Canada-Chile FTA, EFTA-Chile FTA and EFTA-Singapore FTA banned antidumping measures, while Singapore agreed to prohibit safeguard measures in its FTAs with Australia and New Zealand. As many of these more liberal FTAs were concluded before the P4 Agreement, the question is why the members have not chosen to consolidate the more liberal approach that they have agreed to in the other FTAs into the P4 Agreement, and to make it a trade-remedy-free agreement. Indeed, even though such a move might be considered a bold one, it could be argued that the negotiation for the P4 Agreement provided the most opportune occasion for such action. On the one hand, of the four parties, Singapore, Brunei Darussalam and New Zealand rarely apply any trade remedy measures against any country; Chile has made use of these measures against other countries, yet it has rarely used them against Singapore, Brunei Darussalam and New Zealand.[49] On the other hand, given the small trade volume between the parties, it is much less costly for the members to abolish trade remedy, a move to which there should be little resistance. Unfortunately, the P4 Agreement failed to seize the opportunity.

D. Opening up the services market

According to GATS Article V, an Economic Integration Agreement for services will satisfy the following conditions:

(a) Substantial sectoral coverage, and

(b) Provision for the absence or elimination of substantially all discrimination, in the sense of Article XVII, between or among the parties, in the sectors covered under subparagraph (a), through the (i) elimination of existing discriminatory measures, and/or (ii) prohibition of new or more discriminatory measures.

[46] Article 3.13.
[47] Annex 3.A.
[48] Article 9. This has been inherited by the P4 Agreement, but only applies to bilateral trade between New Zealand and Singapore.
[49] For an overview of Chile's antidumping and safeguard measures from 1981 to 2002, see Sáez, 2005.

Article V requirements are similar to the requirements under Article XXIV to "eliminate duties and other restrictive regulations of commerce on substantially all the trade". The similarity in the wording, however, also means that the Article V requirements suffer from the same interpretative problems. First, "substantial sectoral coverage" is rather vague. While a footnote to the Article provides some clarification by stating that the factors to be considered in evaluating the coverage of an Economic Integration Agreement include "number of sectors, volume of trade affected and modes of supply", it still does not provide a clear numerical benchmark and leaves many important questions unanswered:

(a) What is the exact meaning of the word "substantial"? Is it close to "substantially all", meaning close to 100 per cent, or does it refer to somewhat significant, meaning that more than 50 per cent would suffice? Or could it even include less than 50 per cent?
(b) For the number of sectors, should only the 12 broad sectors be considered, or should the more than 160 sectors listed in the Services Sectoral Classification List also be considered?[50]
(c) Does the "volume of trade" refer to the value of the trade, or the number of services transactions, or number of services suppliers or customers?
(d) In terms of modes of supply, the same footnote states that an agreement "shall not provide for the a priori exclusion of any mode of supply". Does that mean all four modes must be listed in every sector or subsector that is included in the schedule? Even if all four modes are included, can a party inscribe "unbound" in any mode? Is it acceptable if a schedule only includes horizontal commitments on a mode while offering no sector-specific commitments on the mode?

The same interpretive difficulties also arise from the requirement for "elimination of substantially all discrimination". While the text of the Article states that the discriminations will be those regulated by Article XVII, i.e., only national treatment discriminations, and not market access or MFN discriminations, it still leaves many gaps wide open:

(a) Does this requirement apply to all the sectors covered in the schedule?
(b) Does it apply to all four modes?
(c) Should the word "substantially all" be understood in terms of the number of discriminatory measures or should the volume or value of trade affected by individual measures also be taken into account?
(d) When considering the effect on trade should such consideration only cover existing trade, or should any potential trade that could arise from the elimination of certain measures also be considered?

While these questions are very important, it is obviously beyond the scope of this chapter to provide the answers. Instead, as stated above, the purpose of the study described here was to evaluate the claim that the P4 Agreement was a "high standard" free trade agreement. For that purpose, it was only necessary to compare the P4 Agreement to other FTAs and Economic Integration Agreements in terms of whether it was a better or worse deal. In other words, there was no need to find out exactly how much the P4 Agreement was worth. While referring to hard trade figures (as in the trade in goods section above) provides the most reliable way of comparison, that was not possible in the current study as services trade flows are notoriously difficult to capture and all the data available so far are at best "guestimates". Fortunately, however, comparing trade numbers is not the only approach available. So long as the same methodology is used to evaluate the degree of trade liberalization of different agreements, it is possible to gain reasonable idea of the extent of openness in different agreements. The study detailed in this chapter adopted the methodology used by Fink and Molinuevo (2008) for quantifying services commitments. That methodology identifies the "value added" of FTAs

[50] MTN.GNS/W/120, 10 July 1991.

for each of the 154 subsectors and four modes of supply by classifying the resulting 616 entries per FTA schedule into the following four categories:

(a) Subsectors and modes for which only a GATS commitment exists or an FTA does not offer any improvement (GATS only);

(b) Sub-sectors and modes for which a partial GATS commitment exists and an FTA eliminates one or more remaining trade-restrictive measures (FTA improvements);

(c) Subsectors and modes for which no GATS commitment is available, but an FTA commitment is made (FTA new sectors);

(d) Sub-sectors and modes for which neither a GATS nor an FTA commitment exists (Unbound).

Categories (a), (b), and (c) are further divided into partial and full commitments, with the latter defined as not listing any remaining trade-restrictive measures.

When the P4 Agreement was initially signed by the four members, only Singapore, Chile and New Zealand made commitments on services. According to Article 20.5 of the Agreement, Brunei Darussalam was to submit its services schedule for acceptance by the other parties within two years upon the Agreement's entry into force. Prior to that, Brunei Darussalam could not benefit from the services commitments offered by the other three members. As the Agreement entered into force for Brunei Darussalam on 12 July 2006, the decision was supposed to be made by 12 July 2008. However, nothing has happened so far. This means that Brunei Darussalam's services trade with the other three parties is still wholly excluded from the Agreement. Because of the low level of Brunei Darussalam's services trade,[51] trade in the sector between Brunei Darussalam and the other three members is probably very small; however, the fact that the services sector of one member has been excluded still casts some doubt on whether the "substantial sectoral coverage" requirement has been fulfilled.

Outwardly, the services commitments made by the three remaining countries appear to be quite liberal as the Agreement adopts a "negative list" approach in scheduling the commitments, meaning that obligations on national treatment, MFN and market access apply to all covered sectors in all four modes unless otherwise noted.[52] However, closer observation reveals that the commitments are not as broad and deep as might be first thought.

First, several sectors were excluded from the whole Agreement. Following the example of GATS, air transport services and services supplied in the exercising of governmental authority have both been excluded. Moreover, the Agreement also removed the entire financial services sector from its coverage. Given the importance of that sector, both on its own and as an infrastructural sector, the exclusion again raises questions regarding the fulfillment of the "substantial sectoral coverage" requirement.

Second, the obligations only apply to the extent that there are no reservations listed in Annex III and IV. Annex III lists the existing non-conforming measures. To some extent the potential damaging effect of Annex III has been softened slightly by the "ratchet" clause in Article 12.8:1(c), which provides that a party may only amend an existing non-conforming measure to make it more liberal, but not more restrictive.

[51] In 2005, Brunei Darussalam's services trade in the world rankings was 100. This was dwarfed by the rankings of Chile, New Zealand and Singapore.
[52] Article 12.8.

However, the "ratchet" clause could potentially be defeated by Annex IV reservations, which allows the parties to adopt or maintain new measures that do not conform to the basic obligations. As all three members made many reservations under both Annexes, it seems that the "elimination of substantially all discrimination" is also being evaded.

These worries are confirmed by Fink and Molinuevo (2008), which compares the levels of liberalization among Singapore's FTAs. In terms of the width of coverage and depth of commitments, even though Singapore's commitments in the P4 Agreement are better than many of the other FTAs it has signed, there are still some FTAs with higher levels of liberalization than the P4 Agreement. One notable example is the FTA with the United States, in which Singapore agreed to higher commitments in the financial services, recreational, cultural and sporting services, and transport services sectors. Even the FTA with Jordan features better commitment in the construction and related engineering services sector, while the commitments in the distribution services and environmental services sectors are better in the FTA with the Republic of Korea. In terms of the modes of supply, the FTA with Australia has better commitments in every mode except mode 4, while the FTAs with the Republic of Korea, the United States and Panama include higher commitments in all modes.

E. Conclusion: High standard or missed opportunity?

As the above discussion shows, the trade liberalization provided for under the P4 Agreement is rather modest, sometimes even lower than the commitments made by the parties themselves in other agreements. On top of this, the existing trade regimes of the members were already very liberal before the conclusion of the P4 Agreement, and the trade volume of each member (except Singapore) as well as that between members is rather small. Thus, it is unlikely that the Agreement will bring significant economic benefits. Why, then, did the parties negotiate the Agreement in the first place?

In a special lecture delivered at the Victoria University of Wellington in 2005, Chilean Ambassador to New Zealand Juan Salazar explored the reasons. While Salazar's talk focused on the rationale for the Closer Economic Relations Agreement between Chile and New Zealand, it was applicable largely to the larger P4 Agreement as well as the other parties share similar circumstances as the two. According to Salazar, "the Chile-New Zealand initiative was, from the very beginning, not supposed to be a typical Free Trade Agreement" that aimed at "increasing bilateral flows of merchandise". Instead, the parties really wanted to use the Agreement to build "a larger scheme for a Closer Economic Partnership" with the following goals:

(a) To act as a benchmark for trade liberalization among APEC economies and create a demonstration effect for the WTO;

(b) To promote political cooperation between the two countries as they share similar political philosophies;

(c) To forge potential strategic alliance on a wide array of areas ranging from agricultural, education to technology.

Of the three objectives, the first is most relevant from the perspective of trade policy and worth further discussion. According to Salazar, as Chile, New Zealand and Singapore are all small, open and export-oriented economies, they have to push harder for world trade liberalization than their larger and less export-dependent countries. When multilateral negotiations do not move forward, they have to resort to bilateral or regional initiatives to create more market access opportunities for their exports and, eventually, increase the momentum for trade liberalization on a wider platform. While the Chile-New Zealand-Singapore partnership might not have sufficient political clout to have a big impact on the progress of negotiations at WTO, the P4 Agreement could serve as a stepping-stone for an expanded "P+" agreement within APEC.

While this analysis appears to be plausible on paper, it is doubtful that the P4 Agreement can really achieve this purpose. In the author's view, before the P4 Agreement can become the nucleus of a wider economic integration process, it needs to satisfy three requirements.

First, at the economic level, the Agreement itself must offer a high level of trade liberalization. While the existing members of the Agreement might not have put economic benefits at the top of their list when they entered into the Agreement, other potential members will not find it worthwhile to join unless they can enjoy substantial economic gains. However, as indicated above, while the market access opportunities provided for under the Agreement are quite substantial, they do not always compare favourably against those under other agreements. Moreover, not only must the existing members conform to such a "high standard", they must also be able to hold the new members against the same standard. As even the existing members – most are considered to be among the most open economies – did not feel comfortable with offering many real concessions, it is highly unlikely that new members will be able to follow suit. This raises another question: in the future expansion of the Agreement, will the priority be placed on getting the largest number of countries with a lower level of trade liberalization and smaller set of issues covered, or on achieving the widest coverage of issues and highest level of liberalization with a smaller group of countries? In the author's view, since the P4 Agreement strives to build up a "high standard" agreement for others to follow, the latter approach should be adopted and quality should not be sacrificed for the sake of quantity. Otherwise, the Agreement will lose its credibility and languish into another agreement that is indistinguishable from most of the preferential trade agreements. Unfortunately, this is probably easier said than done, especially when considering the eagerness of the current members of the P4 Agreement to invite other countries to join the pact. However, the members will have to accept this trade-off if they really want to create something special.

Second, at the political level, the members to the Agreement must find a way to deal with the pressures from political and economic powers that wish to accede to the Agreement. As Baldwin, Evenett and Low (2009) observed, "[t]he world of trade negotiations is governed by something of the law of the jungle, where nations with big markets have more leverage than those with small markets…. The jungle law is much more in evidence when large countries sit down with small ones [in a regional or bilateral negotiation] than it is in a WTO context". Of the four existing members of the Agreement, Chile is the largest in terms of land area and population. Have the other three members managed to escape the law of the jungle? Not really. If the commitments made by the four members are compared, the ones by Chile are generally lower than those of the other members. Also, as discussed above, there are many exceptions tailor-made just for Chile. It might be argued that the special treatment for Chile is justified as it is a developing country and has the lowest per capita GDP among the four countries. However, if the P4 Agreement really wants to set the "Golden Standard" for FTAs, it will have to hold every country, be it rich or poor, large or small, to the same standard. If a country is not ready, the members will just have to pass it over and keep the high standard, rather than letting that country in and diluting the degree of trade liberalization.

It might also be argued that since Brunei Darussalam, the smallest and weakest member among the parties, also got away with lower concessions, the fact that Chile's concessions are lower than the others does not necessarily mean that Chile has abused its negotiating power. However, the author would again disagree. Brunei Darussalam is an entirely different story to that of Chile, as the former country's market is too small and insignificant for the other parties. Looking at the negotiating history of the P4 Agreement, it can see that the talks stopped several times due to the reluctance of Chile. While there might have been real political difficulties at home, such reluctance on the side of Chile, coupled with the eagerness on the side of New Zealand, gave Chile more bargaining power in the process. That is why Chile, from a mercantilist point of view, gained much more than the other parties in the final Agreement. This sets a rather bad example for the other potential members – if the P4 Agreement cannot even handle the pressure from a country that is, at best, a regional power, how can it deal with the pressure from global powers such as the United States and China? Until the parties to the Agreement can find a way to handle the pressure from more powerful countries, it is better to

keep the membership among smaller open economies. Otherwise, the plague of protectionism will creep in and the P4 Agreement will degenerate into another ordinary spoke of a hub country.

Third, at the technical level, the Agreement provides the necessary elements and mechanisms for making the regional preferences multilateral. One of the stated objectives of the Agreement is to serve as a model FTA within the Asia-Pacific region and gradually expand to other countries in the region.[53] In a way, this is similar to the concept of "multilateralizing regionalism" as argued a seminal article by Baldwin (2006). In that article as well as in a sequel by Baldwin, Evenett and Low (2009), the necessary elements and mechanisms for multilateralizing both tariff and non-tariff commitments were discussed. Unfortunately, few of these elements and mechanisms are featured in the P4 Agreement. For example, the multilateralization of tariff preferences needs liberal ROOs and extended cumulation rules. As discussed above, however, the ROO in the P4 Agreement is rather restrictive and complicated, and only bilateral cumulation is allowed. Baldwin also noted that the experiences of the Information Technology Agreement and Pan-European Cumulation System have shown that the unbundling or fragmentation of offshoring to "spoke" economies would create enough political economy forces to resolve the spaghetti bowl problem.

In the case of the P4 Agreement, however, its members do not have a great deal of intra-industry trade and it is unlikely that the same political economic forces will be found forming within the four parties. While Chile and New Zealand share many similarities in the agricultural sector, this will not lead to the same unbundling process as that seen in the Pan-European Cumulation System; This is because agricultural products, unlike industrial products, are generally not sent back and forth between different countries for processing before the final product is produced. While the prospect for more intra-industry trade might become more promising when more countries in East and South-East Asia join the P4 Agreement, it remains to be seen whether other countries in the region are actually interested in joining. In the case of trade remedies, Baldwin (2006) called for (a) the elimination of trade remedy measures or at least limited recourse to trade remedies through mechanisms such as notification and consultation procedures, or (b) higher thresholds for the initiation, investigation and application of these measures. Again, however, the P4 Agreement provides nothing useful in that area, as it merely affirms the rights and obligations of the parties under the respective WTO Agreements.[54]

Compared to these areas, the trade in services chapter appears to be more encouraging, as it offers both mechanisms suggested by Baldwin (2006), i.e., the "third party" MFN clause and the "leaky" or liberal ROO. However, the potential effects of these two provisions might be more limited than originally thought. First, as mentioned above, both the MFN and Market Access clauses in the services chapter can be limited by the reservations parties have scheduled in Annexes III and IV. This explains why many concessions given by some of the parties to other countries (such as the United States) cannot be found in the P4 Agreement. Second, the liberal ROO is also subject to the limitations that the parties might impose on a service supplier pursuant to Article 12.12, which authorizes denial of benefits to service suppliers under certain circumstances. Overall, the P4 Agreement needs to be substantially revamped to make it friendlier to multilateralization.

In conclusion, contrary to the frequently-repeated rhetoric that the P4 Agreement is a high-standard FTA, the author argues that it is not unusual. To achieve its stated goal of becoming a stepping stone for wider trade liberalization efforts in the Asia-Pacific region, it will need to revamp substantially both the market access and rules component of the package to make it more attractive. Otherwise, the P4 Agreement might go down in trade liberalization history as the "P-fail Agreement".

[53] See the last sentence of the preamble to the P4 Agreement. See also the Overview on the P4 Agreement by New Zealand's Ministry of Foreign Affairs and Trade, available at www.mfat.govt.nz/Trade-and-Economic-Relations/Trade-Agreements/Trans-Pacific/index.php.
[54] Chapter Six in the P4 Agreement.

References

Baldwin, R. E. (2006) "Multilateralizing regionalism: Spaghetti bowls as building blocs on the path to global free trade", *World Economy*, vol. 29, No. 11; pp. 1451-1518.

Baldwin, R. E., S. Evenett and P. Low (2009). "Beyond tariffs: Multilateralizing non-tariff RTA commitments", in R. E. Baldwin and P. Low (eds.), *Multilateralizing Regionalism: Challenges for the Global Trading System*; pp. 79-141. Cambridge University Press, Cambridge, United Kingdom.

Estevadeordal, A., J. Harris and K. Suominen (2009). "Harmonizing preferential rules of origin regimes around the world", in R. E. Baldwin and P. Low (eds.), *Multilateralizing Regionalism: Challenges for the Global Trading System.* Cambridge University Press, Cambridge, United Kingdom.

Fink, C. and Molinuevo, M. (2008) "East Asian Free Trade Agreements in Services: Key Architectural Elements", *Journal of International Economic Law*, vol. 11, No. 2; pp. 263-311.

Sáez, S. (2005). "Keeping animal spirits asleep: The case of Chile 109", in M. J. Finger and J. J. Nogues (eds.), *Safeguards and Antidumping in Latin American Trade Liberalization: Fighting Fire with Fire*; pp. 109-136. World Bank, Washington, D.C.

Teh, R., T. J. Prusa and M. Budetta (2007). "Trade Remedy Provisions in Regional Trade Agreements." Working Paper ERSD-2007-03. Geneva: World Trade Organization.

VI. A comparison of the ASEAN-Australia-New Zealand Free Trade Agreement and P4 Agreement

By Ann Capling

Introduction

The Asia-Pacific region is home to a large and rapidly growing number of preferential trade agreements (PTAs).[55] It is particularly notable that in the East Asia/Oceania region – a relative latecomer to the PTA competition due to its traditional preference for multilateralism through the framework of the World Trade Organization (WTO) and open regionalism through the Asia-Pacific Economic Cooperation (APEC) forum – all of the major economies are negotiating and concluding PTAs at an accelerating rate. In 2000, there were only three PTAs involving countries in the East Asian region; as of January 2008, that number had risen to 38, with another 68 under negotiation or consideration (Kawai and Wignaraja, 2009).

The majority of these agreements have been bilateral PTAs, which has given rise to concerns about the so-called Asian "noodle bowl" problem of overlapping agreements with conflicting provisions that could potentially create complex patterns of discrimination and exclusion across the Asia-Pacific region. Indeed, there is a great deal of diversity among these PTAs in terms of their design, scope and underlying objectives. Nonetheless, it is possible to identify some broadly contesting PTA "models" in the region (Dent, 2006; Ravenhill, 2008). PTAs involving the United States are by far the most comprehensive in terms of their coverage of trade in goods and services as well as their inclusion of WTO-plus provisions in areas such as intellectual property, labour and environmental standards.

As a subset of the United States model, the Australia and New Zealand PTAs are comprehensive in their product coverage but have fewer WTO-plus provisions than the United States agreements. Those of Japan (and the Republic of Korea) are similar to those of the United States in their interest in tackling a broad range of "behind the border" issues, but are distinctive in their inclusion of technical assistance for capacity-building with developing countries. The agreements of China and ASEAN are typically far less ambitious, narrower in their coverage of trade in goods and services and, with few exceptions, having no WTO-plus provisions. This diversity in scope and design can be attributed to differences in levels of, and approaches to, economic development as well as the underlying motivations that drive PTAs. Importantly, most of the bilateral PTAs involving at least one partner in the East Asia/Oceania region have been driven by political, diplomatic, geo-political and/or strategic considerations rather than commercial ones (Dent, 2006; Ravenhill, 2008 and 2009; Capling, 2005 and 2008).

The rapid proliferation of PTAs in the Asia-Pacific region has been accompanied by ongoing efforts to promote the development of broader economic architecture in the region. In East Asia, a number of proposals have been made for the establishment of larger plurilateral trade agreements including several that build on the Association of Southeast Asian Nations (ASEAN).[56] These include proposals for ASEAN+3 (ASEAN, China, Japan and the Republic of Korea) and ASEAN+6 (ASEAN+3 and Australia, New Zealand and India). Neither of these proposals has moved beyond the discussion stage, in part because of intense inter-State rivalries between Japan and China. In the

[55] The official WTO terminology for bilateral and plurilateral trade agreements negotiated outside of WTO is "regional trade agreements". However, this leads to conceptual ambiguity as many of these so-called regional agreements are between non-contiguous trade partners. For the purposes of this chapter, the term "preferential trade agreements" is used, which draws attention to the discrimination that is inherent in some of their rules.

[56] The 10 ASEAN members are Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Viet Nam.

meantime, ASEAN has negotiated a range of ASEAN+1 agreements with its most important trade partners in the region, i.e., Australia, China, India, Japan, the Republic of Korea, and New Zealand. The most recent – and the most comprehensive – of these is the ASEAN-Australia-New Zealand Free Trade Agreement (AANZFTA).

These proposals have given rise to concerns about a "split down the middle" of the Asia-Pacific region, with fears about the emergence of separate trading blocs in East Asia/Oceania and the Americas that have the potential to fragment important trade and investment relationships. Thus, within APEC there is also interest in plurilateral trade agreements that would include economies from both sides of the Pacific Ocean. One proposal that has been mooted by APEC's business advisory council is for the establishment of a Free Trade Area of the Asia-Pacific (FTAAP). However, there are many political obstacles to such an agreement, not least of which is the strong anti-China sentiment in United States domestic politics, which make the FTAAP proposal a long-term prospect at best. More promising, perhaps, is the recent interest in the negotiation of a Trans-Pacific Partnership (TPP), which would build on the existing Trans-Pacific Strategic Economic Partnership (TPSEP or P4 Agreement) between Brunei Darussalam, Chile, New Zealand and Singapore.

To be sure, there is an obvious inconsistency here – while APEC leaders remain committed to full and non-discriminatory free trade and investment in the region by 2020 (the "Bogor Goals" of 1994), their governments continue to proliferate PTAs. Nonetheless, for a range of reasons, PTAs continue to be attractive to governments and it is evident that they are here to stay. At the same time, there is a genuine interest among many APEC members in the development of larger regional or cross-regional arrangements, through the addition of new members in existing agreements, the merging or docking of existing PTAs, or the establishment of new and larger groupings.

This chapter has the very modest objective of drawing on recent literature on how PTAs might serve as building blocks to broader non-discriminatory liberalization in order to provide a preliminary assessment of the AANZFTA and P4 Agreements. These two agreements have been chosen for comparison and analysis because:

(a) Neither agreement involves a hegemonic power that is capable of imposing its preferences on the other members of the agreement;
(b) Both agreements involve a range of developed and developing countries in the Asia-Pacific region; and
(c) Both agreements have been touted by their champions as being high-quality, WTO-Plus agreements that could serve as building blocks for greater regional economic integration.

Admittedly, this constitutes a partial and limited exercise. First, the focus is only on the design, scope and structure of key elements of the agreements, with a view to looking at the extent to which they are broadly friendly to further "multilateralisation". Second, it does not preclude the possibility that there may be other agreements in the Asia-Pacific region that are potentially better vehicles for regionalizing multilateralism, either for economic or political reasons. That being said, as argued above the choice of agreements is not entirely arbitrary either.

Section A of this chapter briefly outlines some of the recent thinking about how the architecture and design features of PTAs can advance or inhibit the multilateralisation of regionalism**.** Section B provides a background on the two agreements selected for analysis. Section C draws on existing surveys as well as the legal texts of both agreements, in order to outline the key features of AANZFTA and the P4 Agreement. The conclusion is given in section D.

A. Multilateralising regionalism

To date, the debate about PTAs has tended to focus on whether they are "building blocks" that promote trade and investment liberalization, enhance welfare and buttress the multilateral trade system, or "stumbling blocks" that distort and divert trade and investment, thus undermining

multilateralism and a global approach to trade governance. While this debate is bound to continue, there is also new thinking among scholars and policymakers about how the tangle of PTAs might be tamed. Much of this work has focused on market access provisions for trade in goods and the related issues of tariff preferences, rules of origin and rules of cumulation. However, recent studies (e.g., Baldwin and Low, 2009; Estevadeordal, Suominen and Teh 2009) also consider the way in which the treatment of non-tariff barriers (NTBs) in PTAs may actually help to promote non-discriminatory trade cooperation. For example, Baldwin, Evenett and Low (2009), in their analysis of six NTBs in PTAs – trade in services, government procurement, competition policy, investment performance measures, technical barriers to trade, and trade remedies – showed how PTAs might promote multilateralisation. This may occur as a result of: (a) the inclusion of MFN provisions for particular rules or policies, either by design or because it is not feasible to apply them on a discriminatory basis; (b) the inclusion of third-party MFN clauses that prevent PTA partners from extending more favourable treatment to others in subsequent PTAs; and/or (c) the inclusion of provisions in PTAs that prevent actions allowable under WTO rules from being applied in a discriminatory manner.

Efforts by governments to tackle the problems associated with PTAs are occurring at the international, regional and national levels. Although WTO has rules that govern the formation of PTAs,[57] these rules are vague and incomplete, and they have never been enforced. As part of the Doha Round agenda, efforts are being made within WTO to clarify and strengthen the procedures and rules that apply to PTAs; the most notable development to date in this regard has been the establishment of a new Transparency Mechanism, adopted by the WTO General Council in December 2006.[58] The hope is that subjecting PTAs to increased scrutiny will help to alert and educate members about the positive and negative elements of specific agreements, and encourage governments to negotiate agreements that are complementary rather than hostile to the rules and norms of WTO.

In the Asia-Pacific region, APEC members have also been grappling with the challenges posed by the rapid proliferation of PTAs. While many governments in the region see PTAs as a "second best" option to multilateral trade liberalization, it is widely understood that PTAs are here to stay. Nonetheless, business communities within APEC have registered their concerns about the adverse implications of the growing number of PTAs in the region, prompting governments to promote the agenda to "multilateralise regionalism" in several different ways. Collectively, APEC members have backed a variety of initiatives that are aimed at harmonizing PTAs at a high standard, consistent with APEC's commitment to "open regionalism" and with WTO rules. These initiatives include the development of non-binding "model measures" for PTAs (APEC, 2004) as well as the promotion of analytical work that explores how existing PTAs might be merged or "docked" with a view to enlarging existing agreements (APEC, 2008a). Individual APEC members have also negotiated plurilateral PTAs that are supportive of the multilateralisation of regionalism. It is this development that considered in this chapter.

B. Background of the P4 Agreement and AANZFTA

1. Trans-Pacific Strategic Economic Partnership (P4 Agreement)

The origins of the P4 Agreement can be traced to a United States proposal in 1998 for the negotiation of a PTA between Australia, Chile, New Zealand, Singapore and the United States, with the intention of spurring Asian members of APEC into action on trade liberalization.[59] For different reasons, Australia, Chile and the United States did not proceed, leaving New Zealand and Singapore

[57] Article XXIV of the General Agreement on Tariffs and Trade, Article V of the General Agreement on Trade in Services and the 1979 Enabling Clause that has provisions for PTAs between developing countries.

[58] The Transparency Mechanism requires WTO members to notify WTO and provide information on any new PTAs that they enter into. The WTO Secretariat provides a factual presentation on PTAs for consideration by the members. The Transparency Mechanism is being applied on a provisional basis, pending the conclusion of the Doha Round.

[59] This section draws heavily on Dent, 2006, (especially pp. 193-197). See also chapter IX of this publication.

to negotiate a bilateral PTA, the Agreement on a New Zealand-Singapore Closer Economic Partnership (ANZSCEP). Chile's subsequent interest in negotiating bilateral PTAs with New Zealand and Singapore led the three governments to propose a trilateral PTA. The proposal was launched at the 2002 APEC Leaders Summit; negotiations commenced in 2003 and, prior to the final round of negotiations in 2005, Brunei Darussalam asked to participate. The final agreement – the Trans-Pacific Strategic Economic Partnership (P4 Agreement) – was initialled at the 2005 APEC Trade Ministers Meeting and it entered into force in 2006. During the early stages of negotiations, there was agreement among the parties that they should aim to develop a high-quality, ambitious model agreement that was open to other nations in the future. To that end, the P4 Agreement includes an accession clause that allows other parties to join in the future.

The P4 Agreement is the first multi-party trade agreement to link three different continents, i.e., Asia, Australia and South America. The trade liberalization gains were minor as the economies of the signatories were already very open and the trade flows between them were small.[60] The P4 Agreement is comprehensive in that it includes: provisions on market access for trade in goods and related rules (e.g., customs procedures, rules of origin, sanitary and phytosanitary measures, technical barriers to trade, and trade remedies); trade in services; intellectual property; government procurement; competition policy; and dispute settlement. It goes further than the ANZSCEP as it includes agreements on cooperation in matters relating to labour and the environment, and the use of a negative rather than positive list approach in the scheduling of services sector commitments. It does not include a separate chapter on investment, and negotiations on investment and financial services were scheduled to commence two years after it came into effect.

At one level, the P4 Agreement is not of great significance due to the limited economic weight of the parties (see chapter VI for an elaboration). Rather, the principal importance of the P4 Agreement lies in its potential as a building block in efforts towards greater regional integration in the Asia-Pacific region in a way that is more incremental and, therefore, likely to be more politically feasible than the divisive FTAAP proposal. In that sense, it is proving attractive. In early 2008, the United States joined the P4 negotiations on investment and financial services as an observer and, in September of that year, Susan Schwab, then-United States Trade Representative, announced the former Bush Administration's intention to join an expanded Trans-Pacific Partnership (TPP) agreement. Australia, Peru and Viet Nam quickly followed suit, signalling their interest in joining TPP. In announcing Australia's decision, Trade Minister Simon Crean drew attention to the importance of "knitting together bilateral trading arrangements" and "harmonizing the rules in these various FTAs" in order to make them consistent with the multilateral trade system (Crean, 2008). However, with the arrival of the Obama Administration, the United States' PTA negotiations were put on hold pending a review of United States trade policy.

2. ASEAN-Australia-New Zealand Free Trade Agreement

Since 1992, when ASEAN members agreed to work towards the creation of the ASEAN Free Trade Area (AFTA), Australia and New Zealand have been keen to negotiate a link between AFTA and the Australia-New Zealand Closer Economic Relations agreement (CER). Apart from the economic benefits, the Government of Australia saw that such a linkage would enable it to influence AFTA's approach to free trade, by encouraging it to adopt an open and non-discriminatory approach rather than a closed preferential bloc. More recently, negotiating a PTA with ASEAN has been a strategic priority for Australia, due in part to ASEAN's importance as a trade partner, but also because of fears that Australia could be excluded from emerging regional economic architecture. Efforts to launch negotiations in 1999 were stymied by Malaysia's opposition, prompting Australia and New Zealand to negotiate bilateral PTAs with Thailand and Singapore.

A change of government in Malaysia created a renewed opportunity for Australia and New Zealand to seek a PTA with ASEAN. It was a difficult negotiation, involving Australia, New Zealand

[60] For a relevant statistical analysis, see World Trade Organization, 2008.

and the 10 ASEAN member countries, which are highly diverse in terms of their stage of development, openness and domestic sensitivities; their market access commitments reflect those differences. Negotiations were conducted between Australia, New Zealand and ASEAN as an entity but there are separate market access commitments for all 12 parties to the agreement. AANZFTA was signed on 27 February 2009.

The agreement between ASEAN and Australia marks the completion of the "ASEAN Plus One" process whereby ASEAN has sought PTAs with all of its major trade partners in the region (i.e., Australia, China, India, the Republic of Korea, Japan and New Zealand). AANZFTA is of considerable economic significance, encompassing 600 million people with an overall annual GDP of US$ 1.9 trillion. It is the most comprehensive PTA negotiated by ASEAN, covering trade in goods, services, intellectual property, competition policy and investment. The chapters on services and intellectual property are WTO-plus, which is notable for a PTA involving ASEAN. However, there are no provisions on government procurement, the competition policy chapter has few specific provisions and the market access commitments in the investment chapter have yet to be scheduled.

As with the P4 Agreement, the architects of AANZFTA expressed the hope that the agreement would promote greater regional integration. The preamble of the AANZFTA treaty expresses the expectation that the agreement "will serve as an important building block towards regional economic integration". In addition, in announcing AANZFTA, Australia's then-Trade Minister Simon Crean (2009) declared that the AANZFTA partners expected the agreement to "serve as a catalyst for enhanced and accelerated regional integration throughout the Asia-Pacific region".

C. Comparison of the P4 and AANZFTA Agreements

This section compares key elements of the AANZFTA and P4 agreements in relation to five key areas that have been identified as being important for advancing the multilateralisation of regionalism: (a) rules of origin and cumulation for trade in goods, and four areas of NTBs: (b) trade in services; (c) competition policy; (d) trade remedies; and (e) technical barriers to trade (TBTs). Two other NTBs identified by Baldwin, Evenett and Low (2009) as being areas that could yield an "MFN dividend" – investment performance measures and government procurement – have not been included in this discussion due to the exclusion of an investment chapter from the P4 Agreement and the exclusion of government procurement from AANZFTA.

It should be noted that in most areas, the actual legal text in the two agreements is similar. There are some areas where the P4 Agreement goes further, most notably in trade in services and through the inclusion of a chapter on government procurement. However, in some areas, AANZFTA has stronger legal text, in part because the negotiators used the P4 Agreement as a reference point to push for a better outcome.

1. Rules of Origin

To date, the debate about how the tangle of PTAs might be tamed has focused largely on the issue of tariff preferences and their associated Rules of Origin (ROO), which determine what goods are eligible for preferential treatment under the terms of the PTA. The debate about the discriminatory impacts of ROO and how they might be made friendlier to multilateralism is a complicated one, in part because there is some disagreement about what would constitute a friendly ROO.[61] Moreover, an

[61] As pointed out to the author by Milton Churche, despite the fact that many economists argue for highly liberal ROO as a way of mitigating trade diversion produced by tariff preferences, this viewpoint overlooks the way in which ROO might help to encourage greater efficiencies in production processes and production chains. Even if tariff preferences on a final product lead to some trade diversion in that particular product (i.e., more of that final product is sourced within the PTA region), consideration of the raw materials, parts and components used to produce that good might also reveal trade creation. These second- or third-round effects could be especially important for developing countries, in helping them to move up the value chain. In this way, a good PTA could be supportive of development in a way that multilateral trade liberalization might not be.

assessment of the impact of ROOs cannot be made separately from an evaluation of the tariff outcomes that take into account, among other things:

(a) The gap between MFN and preferential tariff rates in specific industry sectors;
(b) Tariff levels between non-cumulating countries;
(c) The cost of production differences between cumulating and non-cumulating countries;
(d) The size and nature of different economies within a cumulation zone;
(e) The administrative costs associated with proving origin; and
(f) The presence of non-tariff barriers that might effectively negate preferential access (Gasiorek, Augier and Lai-Tong, 2009).

This chapter cannot do justice to the burgeoning literature concerned with the impact of ROO on trade and investment flows, and on how their consequences – trade diversion and increased costs to businesses and governments – can be minimized. Thus, the following discussion is necessarily brief, and is aimed at illuminating the key elements of the ROO in the AANZFTA and the P4 agreement.

Estevadeordal, Harris and Suominen (2009) identified the two main problems with ROO as restrictiveness (the extent to which they introduce barriers to trade between PTA members and non-members) and divergence. Restrictiveness relates to (a) the criteria used to determine what proportion of non-originating inputs is allowed in a good in order for it to qualify for preferential access under the agreement (transformation criteria), and (b) the list of countries whose products can be considered as having originating status for the purpose of the agreement (the ”cumulation” zone). In relation to the first point, the two main approaches to ROO in the Asia-Pacific region are value content (VC) and change in tariff classification (CTC). The VC approach sets a minimum level of value-added to be acquired by the product in the exporting country or region in order to qualify for preferential access. The advantages of this approach are that VC thresholds are negotiable and liberalization can be achieved by lowering the minimum content thresholds. However, the impact of exchange rate and resource cost fluctuations can make it unpredictable, and it can be expensive for business to prove origin. In addition, when a single threshold is chosen for all goods, VC can be a blunt instrument that may not reasonably measure whether substantial transformation on non-originating materials has taken place.

The CTC approach requires that the input for a specific final product has a different tariff classification than the final product itself. This approach is seen as transparent, predictable and having low administration costs. However, tariff classifications were not designed to accommodate these practices and the transformation of a product does not always change its classification. Further, the creation of a CTC schedule involves complex debate on what constitutes the “substantial transformation” of non-originating inputs, and it can be subject to attempts to manage the outcomes to protect domestic industry interests (e.g., the ”yarn forward” rule used by the United States in its PTAs).

The problem of restrictiveness is a mixed story in the Asia-Pacific region. On the one hand, with two notable exceptions,[62] agreements in the East Asia region have not been as restrictive as those in North America and Europe (Estevadeordal, Harris and Suominen 2009). Moreover, there is not much evidence that the “noodle bowl” of PTAs in the East Asia region has led to any significant trade discrimination. The bilateral FTAs negotiated to date in East Asia have not cut tariffs in any serious way (Baldwin, 2007). In addition, there is considerable evidence that business take-up rate of preferences has been relatively low (Ravenhill, 2009). However, less is known about the impact of ROO on trans-Pacific PTAs as less research has been done on this aspect.

The problem of divergence relates to the existence of different types of ROO regimes and the transaction costs to traders, investors and governments when having to deal with a number of PTAs with differing regimes**.** A recent APEC study identified the divergence of approaches to ROO as

[62] The Japan-Singapore FTA and the Australian-Thailand FTA.

being a potential obstacle to convergence in the Asia-Pacific region (APEC, 2008b). The prevailing practice in East Asia has been the application of a fixed general rule to most products.[63] Agreements that use a general rule have tended use VC as the main method for determining origin, with thresholds ranging for 40 per cent to 50 per cent minimum value. This is different from the so-called "NAFTA model", where FTAs are characterized by product-specific rules; this means that there is much more variability, and in some cases several criteria, including CTC and VC, may be used to determine origin (Estevadeordal, Harris and Suominen, 2009; APEC, 2008b). This NAFTA model is being introduced into the region via bilateral agreements that link countries in the Americas with countries in East Asia and Oceania. This raises concerns about the compatibility between ROO across different PTAs, and their potential to complicate the organisation and production of supply chains.

In relation to the question of restrictiveness, arguably AANZFTA has the less restrictive approach to determining the criteria for transformation. AANZFTA provides for two different approaches to ROO: the VC approach (with a 40 per cent threshold), which is preferred by ASEAN, and the CTC approach, which is preferred by Australia and New Zealand. Importantly, the VC and CTC approaches are co-equal, which allows businesses to choose which one provides them with the best access. The use of the co-equal approach is fairly new[64] and it is considered to be liberalizing in that "these flexibilities recognize the increasing trends to global production chains in the region and open the door to goods with substantial non-regional content" (Stoler, 2009). Moreover, the availability of the CTC approach could be beneficial to some of the developing country members of the agreement that may struggle to meet even a relatively low VC threshold (e.g., 40 per cent) due to low labour costs and low value processing. There is less flexibility in the P4 Agreement; CTC is the main approach to determining origin, although for some sensitive products (e.g., textiles, clothing and footwear) there are additional regional value content requirements (45 per cent to 50 per cent threshold in most cases) and, in some situations, either VC or CTC approaches, or defined manufacturing processes, can be used. There is additional flexibility for trade between New Zealand and Singapore, as exporters will be able to use the ROO under either the P4 Agreement or NZSCEP, but this flexibility does not extend to the other parties.

In relation to the question of cumulation, the P4 Agreement and AANZFTA have relatively permissive rules of cumulation. Both agreements allow "regional cumulation"[65] whereby the originating materials from one party to the PTA that are used in the manufacture of goods in another party of the PTA can be treated as materials from the second country in determining the origin of the final product. During the AANZFTA negotiations, Australia pushed unsuccessfully for full cumulation, although there was genuine interest among the ASEAN countries in this possibility. This is reflected in the final agreement that provides for the Committee on ROO to look at moving to full cumulation as part of a work programme.[66] This is potentially an interesting development in the Asia-Pacific region.

As noted above, to the extent that competition between the "East Asian" and "North American" approach to ROO is likely to pose obstacles to efforts to converge PTAs in the Asia-Pacific region, PTAs that seek to address these diverging approaches to ROO could be considered as friendly to multilateralism (Scollay and Trewin, 2006). AANZFTA is an exemplar in this regard in its use of the co-equal approach.

[63] For example, AFTA, ASEAN's agreements with China and the Republic of Korea, and the Singapore-Australia FTA use this approach.
[64] It was used in the Japan-Malaysia FTA.
[65] In the scholarly literature on ROO, there is apparently no term for describing plurilateralised bilateral cumulation; hence the use of the term "regional cumulation" in this discussion as diagonal cumulation does not appear to apply in either the P4 Agreement or AANZFTA.
[66] AANZFTA Chapter 3, Article 18.3.

2. Trade in services

It is beyond the scope of this chapter to quantify the extent of new liberalization in the services commitments are in the P4 and AANZFTA agreements. Rather, the focus of this discussion is on the extent to which the provisions on trade in services in these agreements may help to promote liberalization and non-discrimination, i.e., the extent to which they are friendly to multilateralisation.

Fink and Jansen (2009) argued that PTAs that include trade in services had not created the same sort of webs of discrimination that were a feature of PTAs for trade in goods, because the nature of services regulation made it difficult to liberalize services on a discriminatory basis.[67] In addition, many PTAs contain provisions for third-party MFNs, such that parties to a PTA can receive the benefits of any additional services liberalization that any party commits to in future PTAs with other countries. For these reasons, PTAs that include trade in services have the potential to be "building blocks" rather than "stumbling blocks" to non-discriminatory liberalization.

In assessing the Services provisions of the P4 Agreement and AANZFTA, it is worth noting that both agreements include provisions for liberalization that goes beyond their existing WTO commitments. This is consistent with the trend among WTO members to demonstrate more willingness to liberalize services through PTAs, especially in relation to "commercial presence" (GATS mode 3), and even, to some extent, in relation to the "movement of natural persons" (GATS mode 4) (Fink and Jansen, 2009). In relation to the substantive level of commitment in both agreements, it is probably fair to say that they are only modestly GATS-plus.

In relation to their friendliness to multilateralisation, the P4 Agreement is better on several counts. First, it adopts a "negative list" approach to listing commitments in relation to market access and national treatment. As Article 12.6 on market access applies to "service suppliers" without this being limited to "of a Party", this suggests that market access commitments are on an MFN basis. Second, it includes an upward ratcheting of policy bindings that helps to lock in future liberalization (Fink and Molineuvo, 2008). Third, it provides for third-party MFN such that each party receives as a right the benefits of any additional services liberalization that any party commits to in future PTAs with other countries (Article 12.5). Fourth, it has a strong "necessity test" that has GATS-style language requiring the P4 parties to ensure their domestic regulatory regimes are designed for legitimate regulatory purposes (to ensure the quality or safety of a service) and not for protective purposes. This is notable because the necessity test in GATS and in many East Asian PTAs is weak, whereas the necessity test in the P4 Agreement applies to all sectors, all modes of supply and all measures, including those that are subject to reservations.

The services chapter (Chapter 8) of AANZFTA is a more mixed story. AANZFTA uses a "positive list" approach to scheduling market access commitments; this is widely seen as a less progressive approach and it is inconsistent with the trend towards the use of a negative list approach in the Asia-Pacific region (APEC, 2008b). While most of the new services commitments in AANZFTA are "standstill" rather than "roll-back" this is nonetheless significant in that it is more than the ASEAN countries have been willing to offer in the Doha Round negotiations. Moreover, much of this binding is on a non-discriminatory basis and it is therefore an important multilateralising measure. However, AANZFTA has no provision for the ratcheting up of policy bindings. While there are provisions for third-party MFNs, these are not a right; there is only the right to request consultations (Article 7.1).[68] Finally, there are no provisions in relation to a necessity test.

[67] Note, however, that Adlung and Morrison (2010) drew attention to GATS-minus provisions in some PTAs.
[68] The right to consultations does not exist in relation to future bilateral or plurilateral agreements involving Australia or New Zealand and one or more ASEAN member states.

3. Competition policy[69]

Competition policy provisions are often included in PTAs for ensuring that anti-competitive practices do not undermine the liberalization of trade and investment that is achieved through a trade agreement. A recent Organisation for Economic Co-operation and Development study of the competition policy provisions in 86 PTAs (Solano and Sennekamp, 2006) identifies two broad approaches to competition policy provisions: European Communities-style agreements that include specific measures to address anti-competition conduct and North American-style agreements that primarily focus on provisions for cooperation between competition authorities. No such "model" has emerged in the Asia-Pacific region. In fact, a recent APEC study revealed a high level of divergence in the treatment of competition policy in PTAs in the region, which can be attributed in part to the weakness of competition policy regimes in many countries in the East Asian region. Indeed, of 30 PTAs covered by the study, eight did not include any competition policy provisions.[70]

A PTA that was friendly towards multilateralism would have competition policy provisions that insisted on the core principles of non-discrimination, transparency and due process (Baldwin, Evenett and Low 2009).

Consistent with many agreements in the Asia-Pacific region, the P4 Agreement contains requirements for the maintenance or adoption of measures to counter anti-competitive activities. However, it goes further than many agreements by defining measures as laws and regulations, and it requires the maintenance or establishment of a competition policy enforcement authority. The P4 Agreement provides a list comprising anti-competitive agreements, concerted practices and abusive behaviour that can result from monopolistic and duopolistic positions. The P4 Agreement also imposes a number of important obligations to adhere to core principles in the conduct policy including: (a) a requirement for transparency in competition policy development; (b) procedural fairness; (c) a requirement that enforcement of competition policy should not discriminate on the basis of nationality; and (d) provisions requiring the equal application of competition policy to all businesses, public or private, with provisions allowing for exemptions.

AANZFTA's competition policy chapter establishes a framework for cooperation in the promotion of competition, economic efficiency, consumer welfare and the curtailment of anti-competitive practices. In effect, these provisions establish very little beyond an agreement for governments to cooperate through the exchange of information and officials. The weakness of the AANZFTA competition policy chapter is reflective of the reality that most ASEAN members have weak competition policy regimes (and the fact that Australia and New Zealand lack the clout to secure significant changes in the domestic competition policy regimes of their trade partners in the same way that the United States and the European Union have sought to do in many of their PTAs).

While AANZFTA is clearly inferior to the P4 Agreement in terms of its friendliness to multilateralism, it is important to note that competition policy is excluded from dispute settlement in both agreements. However, this exclusion is not uncommon in PTAs, and it may reflect the fact that competition policy commitments in PTAs "are primarily aspirational, novel or untested in international trade law" (Baller and Sergi, 2008).

4. Technical barriers to trade

Trade agreements include provisions on Technical Barriers to Trade (TBT) to ensure that product regulation is applied in a non-discriminatory way and is consistent with the underlying public

[69] This section is limited to an examination of Competition Policy chapters, and not to competition principles that may exist in other parts of the agreements.

[70] These include: the ASEAN FTA; ASEAN's PTAs with China and the Republic of Korea; China's PTAs with Hong Kong, China and Chile; Peru's PTAs with Thailand and Mexico; and the Australia-Papua New Guinea PTA.

policy objectives, rather than being protectionist in its intent. A recent OECD report (Lesser, 2007) argued that TBT provisions in the majority of RTAs were converging towards and strengthening the multilateral trade system, in that most of the provisions reaffirmed the WTO TBT Agreement, encouraged or required harmonization towards international standards and encouraged WTO-style transparency commitments. The study argued that "RTAs could further strengthen multilateralism by: (a) promoting transparency; (b) providing "effective" assistance to help low income countries in building their capacity in TBT matters; and (c) the adoption of model provisions. On the latter point, the study singled out the APEC "model provisions" as an example because, among other things, they promote the alignment of standards on the basis of international, not regional, standards (Lesser, 2007).

The TBT chapters in both the P4 Agreement (Chapter 8) and AANZFTA (Chapter 6) are consistent with the trend for PTAs to reinforce WTO rules. Both are based on the WTO TBT Agreement and other associated rules. In both agreements, the TBT chapter encourages the use of international standards, mutual recognition of each other's technical regulations and conformity assessment procedures. The P4 Agreement establishes a Committee to manage advanced cooperation in the area of harmonization, equivalence and accreditation while AANZFTA has similar provisions.

5. Trade remedies

A PTA that was multilateral-friendly would have provisions that prevent "actions allowed under WTO agreements from being taken in a manner that results in discriminatory treatment", for example, where a safeguard action taken by an FTA partner is applied to FTA partners and non-partners alike (Baldwin, Evenett and Low, 2009).

The P4 Agreement and AANZFTA are both good in this regard. In the P4 Agreement, the safeguards provisions (Chapter 6) do not grant any additional rights or obligations to the P4 parties in regard to global safeguard actions taken under Article XIX of GATT 1994 or the Safeguards Agreement (Articles 6.1 and 6.2). Similarly, in AANZFTA (Chapter 7), "each Party retains its rights and obligations under Article XIX of GATT 1994, the Safeguards Agreement and Article 5 of the Agreement on Agriculture. This Agreement does not confer any additional rights or obligations on the Parties with regard to global safeguard measures" (Article 9.1).

6. Other provisions

AANZFTA includes provisions for economic cooperation (Chapter 12), which are aimed at building confidence in ASEAN countries in their ability to engage effectively under the agreement, with the work programme being funded largely by Australia and New Zealand. To the extent that this assistance is aimed at helping ASEAN governments to identify policies that are appropriate to their circumstances, while also being supportive of the goals of transparency and non-discrimination, this could be seen as a welcome development.

7. Summary

Considering the provisions of each agreement in isolation of broader political economy and strategic issues, and giving equal weighting to each of the provisions discussed above, the P4 Agreement is friendlier to multilateralism. With respect to ROO, arguably AANZFTA, with its co-equal approach, is less restrictive than the P4 Agreement; however, the P4 Agreement is better in terms of its treatment of Services and Competition Policy.

D. Conclusion

While the P4 Agreement has the edge over AANZFTA, it does not automatically follow that the former is the better building block for multilateralising regionalism in Asia and the Pacific; this is where other political economy considerations need to be taken into account.

AANZFTA is clearly of greater economic and political significance that the P4 Agreement, and in that sense it is by definition a more important building block for regional economic integration. However, it is unlikely that AANZFTA has enough in it to interest other countries in the region that are looking for high-quality PTAs. Without a chapter on government procurement, provisions for investment market access, labour and the environment, and a strong chapter on competition policy, AANZFTA is lacking many of the key elements of a WTO-plus PTA. Nor is it clear in political terms that it would be easy to build on AANZFTA, either within the East Asia region or across the Pacific. What it does have to offer is an important design feature in its flexible approach to ROO, and there is potential for future PTAs in the Asia-Pacific region to adopt this dual approach.

A TPP with an expanded membership that includes countries from East Asia, Oceania, Latin America and the United States could well prove to be an attractive vehicle for multilateralising regionalism in the Asia-Pacific region, and could serve as a catalyst for broader developments. However, it cannot be assumed that the current structure and design of the P4 Agreement will be the same for a new, larger membership TTP. In particular, it is not clear that the TPP would be a genuine regional PTA – that is, an agreement with a single tariff schedule for each country, with tariff commitments that apply equally to all other parties and with eligibility for these commitments determined by regional ROO. Moreover, as Elms (in one of the chapters of this volume) and Ravenhill (2009) noted, significant political economy factors exist that are likely to militate against an expansion of the P4 Agreement in the near future. Much of the trade between the proposed TPP partners is already covered by existing bilateral PTAs, and the potential gain to the United States of securing deals with Brunei Darussalam, New Zealand and Viet Nam through the TPP is likely to be very small. In that sense, the TPP is unlikely to attract the type of business support in the United States that would be necessary to counter protectionist forces that currently hold sway in the Congress.

In summary, neither the P4 Agreement nor AANZFTA is likely to become the basis for a broader cross-regional agreement in the near future. On the other hand, neither agreement is terribly harmful to multilateralism. To some extent, both reinforce and, in some cases, advance non-discriminatory liberalization as well as WTO rules and norms. In addition, the approach to ROO in AANZFTA is a creative one that could be used more widely across the region to help tame the tangle of PTAs.

References

Adlung, R. and P. Morrison (2010). "Less than the GATS: Negative preferences in regional services agreements", *Journal of International Economic Law* (forthcoming issue). Abstract available online since 7 September 2010 at http://jiel.oxfordjournals.org/content/early/2010/09/07/jiel.jgq021.abstract.

APEC (2008a). "2008 Progress Report on the APEC Regional Economic Integration Agenda", 2008/AMM/015, presented at twentieth APEC Ministerial Meeting, 19-20 November, Lima.

——— (2008b). "Identifying convergences and divergences in APEC RTAs/FTAs", Forum document No. 2008/CSOM/016rev1. Singapore.

——— (2004). "Best practice guidelines for RTAs/FTAs in APEC", document No. 2004/CSOM/028rev1, presented at sixteenth APEC Ministerial Meeting, 17-18 November Santiago.

Baldwin, R. (2007). "Managing the noodle bowl: The fragility of East Asian regionalism", Asia Development Bank Working Paper Series on Regional Integration No. 7. Manila.

Baldwin, R., S. Evenett and P. Low (2009). "Beyond tariffs: Multilateralizing non-tariff RTA commitments", in R. Baldwin and P. Low (eds.), *Multilateralizing Regionalism: Challenges for the Global Trade System*, Cambridge University Press, Cambridge, United Kingdom.

Baldwin, R. and P. Low (2009). "Introduction", in R. Baldwin and P Low (eds.) *Multilateralizing Regionalism: Challenges for the Global Trade System*. Cambridge University Press, Cambridge, United Kingdom.

Baller, S. and S. Sergi (2008). "A negotiator's guide to regional trade agreements: Considerations from an East Asian perspective', Policy Research Report, World Bank, Washington, D.C.

Capling, A. (2008). "Preferential trade agreements as instruments of foreign policy: An Australia-Japan free trade agreement and its implications for the Asia-Pacific region", *The Pacific Review*, vol. 21, No. 1; pp. 27-43.

——— (2005) *All the Way with the USA: Australia, the US and Free Trade*. University of New South Wales Press, Sydney.

Crean, S. (2009). Presentation on the tabling of the ASEAN-Australia-New Zealand Free Trade Agreement', 17 March 2009. Available from: http://www.trademinister.gov.au/speches/2009/090317_aanzfta.html

——— (2008). "Australia to join efforts to promote free trade in Asia-Pacific", Ministerial statement to the Australian House of Representatives, Canberra, 26 November 2008.

Dent, C. (2006). *New Free Trade Agreements in the Asia Pacific*. Palgrave Macmillan, United Kingdom.

Estevadeordal, A., J. Harris and K. Suominen (2009). "Harmonizing preferential rules of origin regimes around the world", in R. Baldwin and P. Low (eds.), *Multilateralizing Regionalism: Challenges for the Global Trade System*. Cambridge University Press, Cambridge, United Kingdom.

Estevadeordal, A., J. Harris and R. The (2009). *Regional Rules in the Global Trading System*. Cambridge University Press, Cambridge, United Kingdom.

Fink, C. and M. Jansen (2009). "Services provisions in regional trade agreements: Stumbling blocks or building blocks for multilateral liberalization", in R. Baldwin and P. Low (eds.), *Multilateralizing Regionalism: Challenges for the Global Trade System*. Cambridge University Press, Cambridge, United Kingdom.

Fink, C. and M. Molinuevo (2008). "East Asian free trade agreements in services: Key architectural elements", *Journal of International Economic Law*, vol. 11, No. 2; pp. 263-311.

Gasiorek, M., P. Augier and C. Lai-Tong (2009). "Multilateralizing regionalism: lessons from the EU experience in relaxing rules of origin", in R. Baldwin and P. Low (eds.), *Multilateralizing Regionalism: Challenges for the Global Trade System*. Cambridge University Press, Cambridge, United Kingdom.

Kawai, J. and G. Wignaraja (2009). "Multilateralizing regional trade arrangements in Asia", in R. Baldwin and P. Low (eds.), *Multilateralizing Regionalism: Challenges for the Global Trade System*. Cambridge University Press, Cambridge, United Kingdom.

Lesser, C. (2007). "Do bilateral and regional approaches for reducing technical barriers to trade converge towards the multilateral trading system? Organisation for Economic Co-operation and Development Trade Policy Working Paper No. 58. Paris.

Ravenhill, J. (2009). "Extending the TPP: The political economy of multilateralization in Asia", paper presented at the Asia Pacific Trade Economists' Conference, ARTNeT, 2-3 November 2009, ESCAP, Bangkok.

——— (2008), "The move to preferential trade on the western Pacific rim", *Australian Journal of International Affairs*, vol. 62, No. 2; pp. 129-150.

Scollay, R. and R. Trewin (2006). "Australia and New Zealand bilateral CEPS/FTAs with the ASEAN countries and their implication on the AANZFTA", Executive Summary of Final Report, Regional Economic Policy Support Facility Project No. 05/003. ASEAN-Australia Development Cooperation Programme, ASEAN Secretariat, Jakarta.

Solano, O. and A. Sennekamp (2006). "Competition provisions in regional trade agreements", Organisation for Economic Co-operation and Development Trade Policy Working Paper No. 31. Paris.

Stoler, A. L. (2009). "Open regionalism in East Asia", presentation at a seminar on "Multilateralising Regionalism", 24 March 2009, Australian National University and the University of Melbourne, Canberra.

World Trade Organization (2008), "Factual presentation: Trans-Pacific Strategic Economic Partnership Agreement between Brunei Darussalam, Chile, New Zealand and Singapore (goods and services)", WT/REG229/1, 9 May 2008. Geneva.

VII. Political economy of multilateralisation in Asia

By John Ravenhill

> "We are in favour of high-quality and comprehensive FTAs … We are in favour of initiatives that ensure bilateral and regional trade arrangements are more consistent with the multilateral trading system. Our announcement to join negotiations on the Trans Pacific Partnership is perhaps the most important initiative the Rudd Government has taken to fulfil that aim (Australian Minister for Trade, Simon Crean).[71]

> I am certainly not saying that regionalism is all bad. On the contrary, I believe many regional initiatives have made important contributions to economic welfare and doubtless to political stability as well...The question, then, is what forces and interests might push trade relations in a multilateralising direction. And what forces and interests might push in the contrary direction — where the discrimination inherent in regional arrangements is viewed favourably by interest groups that benefit from it?" (World Trade Organization Director-General Pascal Lamy).[72]

Introduction

The proliferation of preferential trade agreements (PTAs) in the Asia-Pacific region in the years since the Asian financial crises of 1997-1998 has generated a growing concern that what Baldwin (2007) termed the "noodle bowl" of criss-crossing arrangements, each with its unique Rules of Origin (ROO), will have a negative effect on cross-border business activities. The potential trade diversion that is caused by discriminatory trade agreements can, in the worst case scenario, generate greater inferior welfare outcomes for participants than if no agreement existed. In response to these problems, governments have increasingly sought means through which existing regional arrangements might be "multilateralised", that is, extended to current non-members on a non-discriminatory basis, or to the creation of a new "region-wide" free trade agreement (seen most recently in the commitment by the ASEAN Plus Three Economic Ministers to realize an East Asia Free Trade Agreement [EAFTA] within 15 years).[73]

The Trans-Pacific Strategic Economic Partnership Agreement (TPP) is one of the rare PTAs in which membership has already been extended beyond that of its three founders – Chile, New Zealand and Singapore – with the addition of Brunei Darussalam. (The ASEAN Free Trade Agreement is another example, with the accession of Cambodia, the Lao People's Democratic Republic and Myanmar to ASEAN membership).[74] The decision by the former Bush Administration in September

[71] Ministerial Statement: The Trans Pacific Partnership, 26 November 2008 Department of Foreign Affairs and Trade. Accessed 19 August 2009 at www.trademinister.gov.au/speeches/2008/081126_tpp.html.

[72] An address on "Proliferation of regional trade agreements 'breeding concern'." (10 September 2007) Accessed 21 August 2009 at www.wto.org/english/news_e/sppl_e/sppl67_e.htm.

[73] The Economic Ministers agreed to refer the proposal to the ASEAN Plus Three summit in October 2009. The Chairman's statement from the Summit "noted" the report and commented that the "EAFTA and Comprehensive Economic Partnership in East Asia (CEPEA) could be examined and considered in parallel". The Ministry of Foreign Affairs, Government of Japan. 2010. Chairman's Statement of the 12th ASEAN Plus Three Summit *(*24 October 2009). Ministry of Foreign Affairs of Japan 2009 [cited 10 April 2010]. Available at www.mofa.go.jp/region/asia-paci/asean/conference/asean3/state0910-1.pdf. ASEAN Secretariat (2009) "The Twelfth AEM Plus Three Consultation, 15 August 2009, Bangkok, Thailand, Joint Media Statement". Jakarta: ASEAN Secretariat, 15 August 2009, www.asean.org/JMS-12th-AEM-Plus-Three.pdf.

[74] Negotiations for the TPP were launched by the Governments of Chile, New Zealand and Singapore at the APEC leaders' meeting in 2002. Brunei Darussalam attended several of the negotiating rounds as an observer and joined the TPP as a "founding member", even though the agreement was initially applied by Brunei Darussalam a provisional basis. Brunei Darussalam did not negotiate its services and government procurement schedules until 2008, and did not complete its ratification of the agreement until July 2009.

2008 to join the TPP, followed by the announcements from Australia, Peru and Viet Nam that they also intended to participate, provides a good context for examining the key political economy questions on the multilateralisation of PTAs identified by Pascal Lamy in the quote at the beginning of this chapter: what are the forces that may promote or inhibit multilateralisation? The focus of this chapter, therefore, is less on the TPP itself, its strengths and weaknesses being comprehensively explored in chapters VI and V by Ann Capling and Henry Gao in this publication, than on the political economy of multilateralisation in the Asia-Pacific region.

Baldwin (2006) provided the most theoretically sophisticated argument for why multilateralisation might arise "naturally" from the present proliferation of PTAs – or, in his terminology, why it may become politically optimal for governments to remove trade barriers that they had previously found politically optimal to impose (or retain). The essence of the argument is that once significant PTAs are established, they impose costs on business in non-participating states and, indeed, on business in participating States, which causes them to lobby governments to take action to remove those costs.

The first of these effects, the "domino" effect in Baldwin's (1995) terminology, is generated once exporting interests that are disadvantaged by an agreement – signed by the government of the country in which their principal competitors are located – demand that their own government level the playing field by negotiating an equivalent agreement. A proliferation of agreements will then follow.

The second effect reflects a world of "fragmented" production in which transnational companies seek to locate particular stages in the value chain in the most cost-effective location. For such firms, the proliferation of PTAs, and the presence within them of restrictive ROO, prevents companies from optimizing their value chains. The problems generated by the PTA will push firms to pressure governments to remove discriminatory provisions in their trade agreements (for example, by permitting "diagonal" accumulation for value-added purposes in PTAs).

Underlying these developments is a powerful political economy development, which Baldwin (2006) referred to as a "juggernaut" effect. This effect sees export-oriented interests that are strengthened by trade liberalization becoming empowered and mobilized to argue for additional trade liberalization against protectionist interests that have been progressively weakened as trade is liberalized.

A straightforward explanation for the proliferation of trade agreements involving Asian governments follows from Baldwin's arguments; it simply reflects a rational response on the part of business groups to their being disadvantaged by preferential arrangements afforded their competitors. However, is this an accurate presentation of what has driven PTAs in Asia? To what extent do the pro-multilateralisation effects that Baldwin identified apply in the Asia-Pacific region?

A. What has driven Asia's preferential trade agreements?[75]

The "domino effect" rests on several implicit assumptions regarding the advantages created by PTAs, the responses of businesses to them and, in turn, the responsiveness of governments to business lobbying. To argue persuasively that the "domino effect" has played a significant role in the proliferation of PTAs in Asia would necessitate demonstrating that:

(a) PTAs have created significant advantages/disadvantages for businesses, for which the appeal of PTAs is two-fold. They can provide a "positional good" if they afford an advantage that is not available to competitors. Second, PTAs may be regarded as essential for removing disadvantages generated by PTAs that are enjoyed by competitors. In the first instance, business lobbying to preserve any advantage that PTAs have created would be expected. In the second instance, lobbying would be prompted by a desire to level the

[75] This issue is explored in more detail in Ravenhill, 2010.

playing field.

(b) Businesses, accordingly, have been motivated to lobby for changes in policies of governments on PTAs;

(c) Effective transmission belts exist through which business demands are transformed into government policy.

However, considerable doubt exists on all counts.

1. Limited advantages/disadvantages generated by Asian preferential trade agreements

2.

For governments, the great attraction of PTAs is that they enable "liberalization without political pain" (Ravenhill, 2003), i.e., they afford governments the opportunity to exclude sensitive sectors from liberalization by exploiting the lack of specificity of WTO rules on PTAs. Regional trade arrangements were legitimized first under Article XXIV of the original GATT Treaty and subsequently (for arrangements solely involving less developed economies) under the 1979 Enabling Clause, and for services under Article V of GATS. WTO members have failed to agree on implementing the requirements of Article XXIV that PTAs should cover "substantially all trade" among their signatories – with the consequence that PTAs have largely escaped effective scrutiny by the international community. The Enabling Clause, meanwhile, does not require even the loose disciplines of Article XXIV, providing only (in its third paragraph) that preferential arrangements involving less developed economies should not "raise barriers to or create undue difficulties for the trade of any other contracting parties" and must not constitute an impediment to the reduction or elimination of tariffs and other barriers on a most-favoured nation (MFN) basis.

Taking advantage of the lack of specificity of the Enabling Clause requirements, the agreements entered into by ASEAN, China and India are vague in their provisions, frequently failing to specify clearly the products that will be included and the specific tariff rates that will apply. (ASEAN's definition of "free" trade is tariffs that fall in the range from zero to 5 per cent). Moreover, agreements involving these countries typically have lengthy timetables for implementation. India is particularly notorious for seeking to carve out substantial sectors of its economy from its PTAs. In its agreement with Singapore, for example, only 4.3 per cent of products were granted duty-free access when the agreement was initially implemented while 56 per cent of the total was completely excluded from the agreement (Institute of South Asian Studies, 2006).

Few of the agreements involving the region's less developed economies are "WTO Plus" in scope. They fail to address issues of "deeper integration" such as intellectual property rights, investment and competition policies, government procurement, the environment and labour standards. On services, the region's developing economies have seldom gone beyond a restatement of their existing commitments under GATS. However, in their lack of ambition they are not unique. Although the agreements involving industrialized economies (Australia, Japan, New Zealand and the United States) do attempt to extend coverage of trade in services, and include provisions on government procurement, competition policy and environment, unlike NAFTA they do not include provisions related to the environment and labour standards. In addition, their references to intellectual property rights are typically no more than re-statements of the governments' commitments under existing international agreements. Even on services, industrialized countries have failed to extract substantial concessions from the region's developing economies (Ravenhill, 2008). Some of the region's more advanced economies have also taken advantage of the lax disciplines of WTO to carve out sensitive sectors – most notably agriculture, but also key service industries – from their liberalization schedules.

The potential lack of impact generated by the shallowness of many of the region's PTAs is compounded by several other factors:

- Overall tariff levels in the region are low, even for many less-developed economies, so that a PTA may provide a partner with limited preferential advantages. Moreover, given the extended period afforded to countries for phasing in reduced tariffs under PTAs, situations may arise where the preferential tariff is actually higher than the MFN tariff. In

his study of Japan's PTA with Mexico, Ando (2007) found that in January 2007 about one half (close to 10,000) of Mexico's MFN tariff lines on manufacturing and mining commodities were lower than those that Japanese exporters enjoyed through the provisions of the PTA;

- Various mechanisms (duty-drawback arrangements, export-free zones and sectoral trade arrangements – especially the Information Technology Agreement) already provide duty-free access for components to many economies in the region;
- In a world of floating exchange rates, any advantage provided by a PTA may be more than offset by currency realignments;
- Restrictive ROO together with other limitations on liberalization, such as tariff rate quotas and seasonal limitations, may constitute significant non-tariff barriers that limit the benefits from an agreement.

2. Estimates of the effects of PTAs

The proliferation of PTAs within the region has created regular work for economic modellers. Most of the negotiations for PTAs have been preceded by the creation of "study groups that, in turn, have commissioned (either from private consultancies, think tanks or academic economists) economic modelling exercises to gauge the potential welfare gains from the proposed agreements. These exercises, because they involve ex ante estimation of the impact of PTAs, typically apply a computable general equilibrium (CGE) model. Although a core component of the contemporary economist's toolkit, CGE models have a number of significant limitations, especially when applied in the context of PTAs.

The results generated by CGE models are dictated by the parameters chosen, which inevitably rest on a number of simplifying assumptions on how economies work and on how they will be affected by a PTA. As noted by the lead economists of a major World Bank project on regional trade arrangements, in CGE modelling "critical relationships are often specified with no empirical justification; many crucial variables cannot be measured satisfactorily; the level of sectoral detail is often rather low…and the specification of the behavioural relationships is usually very simple" (Schiff and Winters, 2003). Even economists sympathetic to CGE modelling acknowledge that the record of assumptions regarding the substitution elasticities governing trade flows, critical to the modelling of trade agreements, is "chequered at best" (Hertel and others, 2004).

The most important assumption that CGE models make regarding PTAs is that they will be "clean", i.e.,, they will involve a complete removal of tariff barriers, and that potentially restrictive non-tariff barriers such as the ROO that are an inevitable component of free trade agreements will generate no significant distortions. As already noted, however, the lax disciplines imposed by WTO on PTAs has meant that such assumptions are not reflected in the agreements negotiated by Asian governments. Other problematic common assumptions found in CGE models, and utilized in the most comprehensive modelling of Asian PTAs published to date (Scollay and Gilbert, 2001), are that:

(a) Industrial sectors are under perfect competition (no returns to scale etc.);
(b) National and foreign goods are imperfect substitutes for one another (the "Armington assumption", which discounts the possibility, for example, that a Honda produced in Thailand will be identical to the same model manufactured in Japan);
(c) No factor mobility occurs across national borders. Further unrealistic assumptions are introduced in the various "closure rules" that the models use, e.g., employment is constant and the wage endogenous. (For further discussion see Kimura, 2006 and Taylor and Amim, 2007.)

Even with the assumption of a comprehensive liberalization of trade between parties, CGE models predict very low aggregate welfare gains from PTAs – typically less than 0.1 per cent of GDP for an industrialized economy with low tariffs (Kimura, 2006). Although the assumption of clean

implementation of PTAs may lead CGE modellers to overestimate their benefits, many economists believe that the static nature of the models fails to capture some of the potentially important effects of PTAs, e.g., stimulation of foreign investment. Consequently, Kimura (2006) noted, "researchers face strong temptations to enlarge the estimated effects by introducing model settings that include accumulation, technological progress and FDI". He warned that such extensions were entirely "ad hoc". The outcome can be a modelling process based on assumptions divorced from reality.

An egregious example occurred in the context of the negotiation of a PTA between Australia and the United States. A consulting firm's original modelling of the agreement assumed a clean implementation of a comprehensive agreement. The anticipated welfare gains to Australia were driven primarily by increased exports of sugar and dairy products, which were estimated to contribute 60 per cent of the total increase in Australian exports projected for the PTA (Centre for International Economics, 2001). When an agreement was reached that excluded sugar and severely limited the potential for expansion of Australian exports of dairy products, the Government of Australia commissioned a second report from the same consulting firm. The second study attempted to measure the potential dynamic effects of the agreement, suggesting that investment liberalization and "dynamic productivity improvement" resulting from the agreement would contribute a welfare gain four times the magnitude of that derived from trade liberalization, and that the total welfare gain would be more than double that estimated in the original study (Centre for International Economics, 2004). One of Australia's leading economists, Garnaut (2004) suggested that the assumptions would not survive a "laugh test" – "can someone who knows the real world, that's meant to be described by the modelling exercise, look at the results and not laugh" (for a discussion of the flaws in the Australia-United States agreement see Capling, 2005).

Economic modelling of PTAs, then, gives little confidence that these arrangements will result in any substantial aggregate welfare gains for participating States; it follows that for firms in the aggregate, these agreements will not create any substantial advantages/disadvantages. This is not to assert that individual firms will not be advantaged/disadvantaged by the proliferation of PTAs. However, the fundamental political economy logic that is likely to limit the effects of the agreements is that governments maintain high levels of tariffs for political reasons and are no more willing to expose protected sectors to international competition through PTAs than through global agreements.

Detailed studies of trade in products, where agreements have created preferences, will be required before definitive judgments are reached on the impact of PTAs on welfare. However, preliminary indications support intuitive a priori reasoning about their limited potential. Consider, for example, the much-vaunted "Early Harvest" provisions of the China-ASEAN Free Trade Agreement, which covered trade of a total value of less than US$ 1 million (Munakata, 2006b). PTAs with Singapore, given its zero tariffs on all except a handful of merchandise products, will only generate benefits of any significance in services trade – and while these may be of import to individual financial services firms or law firms, they will not have a noticeable impact on aggregate bilateral trade. Similarly, agreements on merchandise trade with Japan, given its low levels of tariffs on manufactures as well as Tokyo's unwillingness to impose any significant concessions on the heavily protected agricultural sector, are unlikely to generate major welfare gains. Following the implementation of its Uruguay Round commitments, more than half of Japan's tariff lines were bound at zero; in fact, Japan's average tariff on manufactures was 3.5 per cent.

Ex post evaluations of the impact of PTAs in East Asia are likely to be particularly prone to error, given the relatively brief period that many of the agreements have been in force, the extended timetables for their complete implementation and the intervention of other variables. The most important of the latter will often be changes in exchange rates – but other unanticipated developments may have significant consequences on bilateral trade for reasons that have little or nothing to do with a preferential trade agreement. For example, there was a substantial increase in Mexican exports of beef to Japan after the implementation of the Japan-Mexico agreement (the largest post-PTA increase for any commodity exported by Mexico). This was caused not by the preferences created by the agreement (which allowed for a duty-free quota of only 10 metric tons for the first two years) but by

the BSE outbreak in the United States, which led to Japan banning imports from this source (Ando, 2007). Moreover, examinations of aggregate trade data can be misleading because changes in bilateral trade may be driven by products where the MFN tariff was zero or where, for other reasons such as previous duty drawback arrangements, the PTA did not create any preferential advantage.

3. Insignificant partners

Beyond the shallow provisions of existing arrangements, another important consideration comes into play in estimating the extent to which they will advantage/disadvantage business, i.e., the question of whether agreements are negotiated with significant trading partners. On this issue, the Asian record is divided, with substantial differences existing between the smaller and larger economies. For the largest economies – China, India, Japan, the Republic of Korea and Taiwan Province of China – the share of overall exports covered by PTAs negotiated to date is very small (even if the dubious assumption is made that agreements cover 100 per cent of current trade). Japan has negotiated PTAs only with ASEAN collectively, the larger ASEAN economies individually and with Mexico – countries that collectively account for only 14 per cent of Japan's exports (table 1). China has a larger number of PTAs; however, excluding that with Hong Kong, China (a treaty that China regards as a "domestic" economic agreement), its PTA partners account for less than 9 per cent of its total exports (Ravenhill and Jiang, 2009). For the Republic of Korea, the share of total exports covered by PTAs is 13 per cent (this figure doubles if the agreement with the United States, not ratified by either party at the time of writing, is included). The extreme case is Taiwan Province of China, whose participation in PTAs has been limited by Beijing's frequently expressed hostility to countries entering agreements with Taiwan Province of China (despite the fact that Taiwan Province of China is a member of WTO). Taiwan Province of China's four PTAs collectively cover less than one quarter of 1 per cent of its total exports.[76]

It is not surprising, therefore, that there are numerous reports of businesses in the larger East Asian economies either not being aware of, or being indifferent to, many of the PTAs that their governments have signed. For example, the Government of Japanese is reported to have had difficulty in generating enthusiasm in the business community for its PTAs with South-East Asian economies. Similarly, studies of China's agreements report that (with the exception of agreements with resource-rich partners where state-owned companies are keen to increase their activities) the country's businesses have displayed little interest in its PTAs.

Table 1. Bilateral/minilateral PTAs involving Asian countries

Country	Share of total exports covered by PTAs[a]	PTA partners (figures in parenthesis are partners' shares in total exports)
ASEAN	53.5	AFTA (25.2), Australia-New Zealand (2.9), China (8.7), India (2.5), Japan (10.8) and the Republic of Korea (3.4)
Brunei Darussalam	62.8	AFTA (24.8), Chile (0)-New Zealand (1.2)-Singapore (2.4),[b] and Japan (36.8)
Cambodia	6.7	AFTA (6.7)
China	25.3	ASEAN (7.3), Chile (0.3), Hong Kong, China (16.3), Macau, China (0.2), New Zealand (0.2), Pakistan (0.5), SACU (0.5), Singapore (2.2) and Thailand (1.0)
Hong Kong, China	45	China (45.0)
India	13.1	Afghanistan (0.15), Bhutan (0.10), Chile (0.14), MERCOSUR (1.24), Singapore (5.29), Sri Lanka (1.90), Thailand (1.04), Nepal (0.84) and South Asia FTA [Bhutan, Maldives (0.06), Nepal, Pakistan (0.65), Sri Lanka, Bangladesh (1.67), Afghanistan].
Indonesia	39.4	AFTA (18.3), Japan (21.1)

[76] Author's calculations, based on the International Monetary Fund's data and, in the case of Taiwan Province of China, Bureau of Foreign Trade data available at http://cus93.trade.gov.tw/bftweb/english/FSCE/FSC0011E.ASP.

Country	Share of total exports covered by PTAs[a]	PTA partners (figures in parenthesis are partners' shares in total exports)
Japan	14.0	ASEAN (12.8), Indonesia (1.6), Malaysia (2.1), Mexico (1.2), Philippines (1.5), Singapore (3.1), Thailand (3.8) and Viet Nam (0.6)
Republic of Korea	13.0[c]	ASEAN (9.6), Chile (0.4), EFTA (0.4), Singapore (2.6) and the United States (14.6)
Lao People's Democratic Republic	72	AFTA (72.0), Thailand (29.4)
Malaysia	36.0	AFTA (26.1), Japan (9.4), Pakistan (0.5)
Myanmar	61.2	AFTA (61.2)
Philippines	34.8	AFTA (17.3), Japan (17.5)
Singapore	70.6	AFTA (30.9), Australia (4.0), China (9.5), EFTA (0.4), India (2.8), Japan (6.0), Jordan (0.02), Republic of Korea (3.9), New Zealand (0.6), Panama (0.9), Peru (0.01), US (11.5) and Brunei Darussalam-Chile (0.02)-New Zealand[b]
Taiwan Province of China	0.1	El Salvador-Honduras (0.03), Guatemala (0.03), Nicaragua (0.01) and Panama (0.07)
Thailand	35.3	AFTA (22.2), Australia (2.9), China (8.3), India (1.4), Lao People's Democratic Republic (0.7) and New Zealand (0.5)
Viet Nam	30.4	AFTA (16.8), Japan (13.6)

Source: Data are for 2005, calculated from the International Monetary Fund Direction of Trade database. For ASEAN collectively, data are from the ASEAN Secretariat website at www.aseansec.org. For Taiwan Province of China, data are from the Bureau of Foreign Trade website at http://cus93.trade.gov.tw/bftweb/english/FSCE/FSC0011E.ASP).

[a] Assumes that agreements cover 100 per cent of exports to FTA partners; figure is cumulative, i.e., no double counting where countries are joined by more than one FTA.

[b] Trans-Pacific Strategic Economic Partnership.

[c] The figure rises to 27.6 per cent if the agreement with the United States (signed but not ratified by either party) is included.

4. Does business take advantage of current PTAs?

CGE modelling of the welfare effects of PTAs assumes not only that the agreements will have comprehensive coverage and be cleanly implemented, but also that traders will take advantage of their provisions – which, in reality, is another problematic assumption. The incomplete coverage of trade afforded by PTAs creates uncertainty for business. ROO generate costs that firms must incur if they are to gain access to the preferential tariffs. The cost of complying with ROO is estimated to vary from 4 per cent to 8 per cent of the overall cost of a consignment (Estevadeordal Harris and Suominen, 2007), which may not be substantially less than the advantage afforded by a preferential tariff given the relatively low levels of MFN tariffs. Consequently, the share of total trade that takes advantage of preferential tariffs created by PTAs may be relatively small.

Estimating the extent to which traders take advantage of PTAs is complicated by the failure of most Asian customs offices to collect specific information on the value of trade that takes advantage of preferential tariffs. Only Malaysia and Thailand regularly publish this information. Other studies have examined customs documentation. The results are summarized in table 2.

Table 2. Share of ASEAN country exports to other ASEAN

economies making use of AFT

(Unit: Per cent)

Indonesia	< 4.0
Lao People's Democratic Republic	< 0.1
Malaysia	19.1
Philippines	14.0
Thailand	30.9
Viet Nam	< 8.0

Source: Data reported in Hiratsuka and others, 2008, citing an unreferenced JETRO study; Avila and Manzano, 2007; Anas, 2007; Phetmany and Rio, 2007; and Van, 2007).

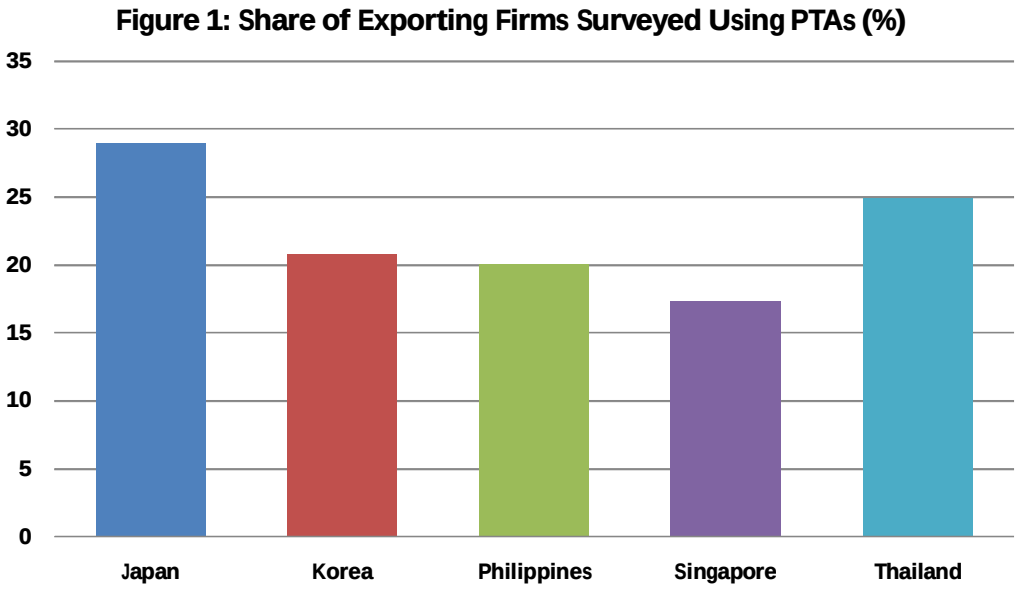
These figures are higher than the notorious estimate that less than 5 per cent of intra-ASEAN trade was conducted under the preferential rules established by the ASEAN Free Trade Area (McKinsey and Company, 2003); the overall ASEAN usage of preferences is dragged down, however, by the lower income economies. Cambodia issued only 23 certificates of origin for AFTA in 2005, for trade with a total value of under US$ 500,000 (Kakada and Hach, 2007).

Nonetheless, preliminary evidence suggests that these AFTA utilization rates may be higher than for other ASEAN countries, and for many of the other agreements involving Asian countries. Thai customs data indicate that only 11 per cent of Thai exports took advantage of the ASEAN-China FTA in 2007 (Hiratsuka and others, 2008). Case studies based on the issue of the appropriate ROO documentation suggest even lower rates of utilization in other countries. Anas (2007) estimated that only 2 per cent of Indonesian exports were using the preferential provisions of this agreement. For Cambodia, only six certificates of origin were issued in 2005 for exports to China, for a total value of less than US$ 100,000 (Kakada and Hach, 2007). Chinese exporters similarly failed to make use of the agreement: in 2005; the value of trade covered by Form E, required for certification of ROO compliance under CAFTA, amounted to less than one-third of 1 per cent of China's exports to ASEAN (Zeui, 2007).

The relatively recent (and phased implementation) of CAFTA may have contributed to the low utilization of its preferential arrangements. However, the continuing small take-up of AFTA preferences suggests that there are broader factors at work in the Asian region. Even if a more relevant but more complex calculation were to be attempted – the percentage of trade in products with non-zero MFN tariffs that takes advantage of the preferential arrangements – it is clear that the figure would still be very small. The utilization of AFTA preferences is exceptionally low by international standards (and contrasts with, for example, the more than 60 per cent of the total value of Mexican and Chilean exports to the United States that takes advantage of preferential arrangements, and similar figures being reported for many European agreements).

In the absence of customs data for most of the countries in the region, estimates of the utilization of PTAs have depended on surveys of firms. Such studies have numerous problems, not least issues related to the representativeness of the sample of firms that take the trouble to respond to the surveys. In addition, no inferences can be drawn from the percentage of firms that report that they utilize PTAs to the actual percentage of trade that takes advantage of these agreements. The percentage of firms that report that they have used PTAs has increased over the years but nonetheless remains relatively low (figure 1).

Figure 1. Percentage share of surveyed exporting firms utilizing PTAs



Source: Data given in Kawaii and Wignaraja, 2009.

Similarly, 23 per cent of firms taking advantage of PTA provisions were reported for 607 Japanese affiliates in ASEAN, India and Oceania by Hiratsuka and others (2008). Takahashi and Urata (2009) reported that, from a survey of 1,688 Japanese companies, utilization rates of Japan's FTAs ranged from 12.2 per cent for the Malaysian agreement to 23.7 for the Chile agreement and 32.9 per cent for that with Mexico.

Of particular interest in the survey reports are the reasons companies gave for not taking advantage of PTAs, as they provide strong support for the a priori reasoning above about the likely effects of the agreements. Reasons commonly cited included negligible preferential margins (with specific reference sometimes given to concessions enjoyed through the Information Technology Agreement, export-processing zones and/or the removal of tariffs by investment incentives), and the costs (and delays) incurred by firms when attempting to obtain relevant documentation required by the agreements.

Hiratsuka and others (2008) calculated that the average tariff value at which Japanese firms would make use of PTAs was 5.3 per cent, a figure consistent with calculations of the cost of compliance with ROO cited above. For the China-ASEAN FTA, Prasert (2007) reported that the average preferential margin for Thai exports was only 1.03 per cent, a strong factor in the very low usage of the scheme. Well under 10 per cent of the Japanese firms surveyed by Takahashi and Urata (2009) said that the FTAs had led to an increase in exports.

5. Business and political action

The limited effects of existing PTAs, coupled with business indifference to them, have significant implications for their likely impact on the domestic political economy equation. Contrary to assumptions in Baldwin's model, it is unlikely that PTAs will significantly strengthen exporting interests. With little overall impact on trade, PTAs are unlikely to bestow any substantial economic gain on exporting interests. Moreover, the success of protectionist interests in maintaining the exclusion of their sectors from trade liberalization arguably will strengthen them – both economically and politically.

Such doubts are reinforced by another problematic assumption underlying the applicability of the multilateralisation model to Asia, i.e., that business has been a significant force in driving PTAs in the region.

In recent years, many international political economy theorists have borrowed heavily from economics in their efforts to explain the growth of regionalism. The starting assumption in the literature on the political economy of trade policy is that governments are rational actors whose primary concern is to maximize their utility, which in this instance means re-election to office. Exporting interests will lobby their government for improved access to foreign markets. Yet, why would governments that respond to their pressures, and exporters themselves, choose a regional (preferential) approach to trade liberalization rather than a non-discriminatory global agreement, which all economic modelling suggests would bring larger aggregate economic gains?

The literature predicts that exporting interests are more likely to lobby for regional rather than global liberalization when they are competitive within the proposed regional market but not at the global level. A variant of this argument suggests that a regional trade agreement will be particularly attractive to companies that either depend or could depend on a regional market to realize economies of scale (Milner, 1997; Chase, 2005). Although attractive as a theoretical proposition, little empirical support has been offered for arguments based on scale economies. In many industrial sectors, the introduction of numerically-controlled machine tools has facilitated more flexible manufacturing, making shorter production runs more viable. Similarly, economies of scope have substituted for economies of scale. The relatively small additional markets provided by the current PTAs involving Asian economies render such arguments implausible as an explanation for the new Asian regionalism. An intuitively more persuasive explanation views the support exporting interests give to PTAs as being driven primarily by defensive concerns, captured by Baldwin's "domino effect".

Regionalism is indeed the product of purposive action by state elites. However, where does the initiative for trade policy originate? Most of the writing on the political economy of trade policy has been developed in the context of the United States political system where the legislature, especially in a context of weak party discipline, enjoys a more central role in trade policymaking than its counterparts in other industrialized economies. Also, the central assumption of arguably the most influential political economy model of regional trade agreements (Grossman and Helpman, 1995) is that trade policy is driven by governments' calculations of the likely impact on campaign contributions. Despite the United States-centric character of the premises, the expectation is that the propositions are of universal applicability; economic and political rationality knows no geographical bounds.

Yet, institutional configurations matter. The extensive literature on Asian political economy suggests that the logic of political action may be different in that part of the world. In particular, researchers have asserted that the State has been both a relatively autonomous actor and the lead player in formulating economic policies – whether of a "developmental" type as in North-East Asia (Johnson, 1982; Deyo, 1987; Amsden, 1989; Wade, 1990; Woo-Cumings, 1999) or those facilitating patrimonial rent-seeking as in many South-East Asian countries (Mackie, 1988; MacIntyre, 1991). This literature not only proposes that the State enjoys substantial autonomy from domestic interests in formulating foreign economic policies, but also that models of economic policymaking that depend on predictions of the behaviour of the median voter are unlikely to have much purchase in East Asia's authoritarian and quasi-democratic polities.

In Singapore, government-linked corporations dominate the local economy, providing an opportunity (Lee, 2006) for the State to impose its trade policy priorities with little domestic resistance. In Taiwan Province of China, Hseuh (2006) asserted that a different logic of state action applied because of the relative political weakness of sectoral interests and the Government's pre-occupation with the cross-straits relationship. Hseuh noted that "the Taiwanese Government's trade policy is often made in response not to domestic economic interests, but rather to the international political economic environment of threat under which Taiwan is forced to operate" (see also Dent, 2005). In Thailand, where the administration of fugitive former Prime Minister Thaksin Shinawatra

embarked on an active policy of simultaneously negotiating multiple PTAs with partners as diverse as Croatia and Peru, Nagai (2003) stated bluntly that "the private sector does not play an important role in forming FTA policy". Similarly, Chirathivat and Mallikamas (2004) noted that under Thaksin, "academia, policymakers and even the business sector have difficulties monitoring the longer-term development and progress of this FTA strategy". Hoadley (2008) contended that some of Thailand's PTAs "seemed impulsive, the result of tourism by Thai leaders, for which the preparatory staff work had not been done".

In South-East Asia in particular, the configuration of economic actors may be very different from that in Western industrialized economies, with consequences for both policy preferences and the policymaking process itself. In Malaysia and in Singapore, for example subsidiaries of multinational corporations are responsible for more than 80 per cent of the value of domestic exports. The regional production networks they operate often import components from a number of countries for local assembly, for ultimate export to markets outside East Asia. Their interests in trade agreements within the region, therefore, may lie less in securing tariff reductions in other countries' markets than in ensuring low domestic barriers to the components they wish to import.

The one example that is often cited in the literature in support of arguments that domestic business interests were the primary driving force in the new regionalism is the PTA between Japan and Mexico. In the negotiation of a PTA with Mexico, a domino effect is said to have occurred with Japanese business interests, led by *Keidanren*, the peak organization of large Japanese business firms, scrambling to level a playing field that had been tilted against them by: (a) the implementation of NAFTA (particularly by the changes it required in Mexico's treatment of maquiladora industries); and (b) the negotiation of a PTA between Mexico and the European Union (Solis, 2003). Manger (2005) uses the Mexican case to argue that lobbying by firms was "crucial in motivating Japanese policymakers to pursue FTA".

The evidence is more equivocal than acknowledged by such arguments, however. *Keidanren* did publish strong statements in support of the Government's concluding a PTA with Mexico after negotiations were under way. However, several dimensions of the case are inconvenient for those who see the negotiations for a PTA as being driven primarily by Japanese business interests that were responding to their disadvantaged position in an important export market. First, the initiative for the PTA came not from Japan but from Mexico. Second, the initial response of the Government of Japanese was not to pursue a PTA but to offer the counter-proposal of a bilateral investment treaty. Third, a Japan External Trade Organization (JETRO) survey conducted among Japanese subsidiaries in Mexico in the second half of 1999, after the initiative had been launched, found no company stating that it required a PTA to sustain its Mexican operations (Ogita, 2003). Fourth, even though the public position adopted by *Keidanren* favoured a PTA, the business sector in Japan was by no means unified on the issue.

Japan's Ministry of Economy and Industry had been reconsidering its approach to trade policy even before the invitation from the Government of Mexico to negotiate a PTA. Elements within the ministry had been disappointed at the Government's failure to back the proposal from Malaysia's Prime Minister Mahathir Mohamed for an East Asian Economic Group; the financial crisis and subsequent unhelpful response from Western governments and existing regional institutions alike reinforced the case for strengthening regional cooperation and opened a window for policy change (Munakata, 2006b, provides the most detailed discussion on this issue. See also Krauss, 2003 and Ogita, 2003). The policy appeared to be driven more by geo-political concerns and a desire to enhance the effectiveness of Japan's economic diplomacy both within East Asia and globally, rather than by efforts to level the playing field for Japanese businesses, which did not face significant economic competition in South-East Asia in particular (where there were no PTAs that benefited competitors, and where they were able to take advantage of various duty draw-back arrangements to import components duty-free for products destined for export to third country markets). Hence, the first PTA that Japan negotiated was with Singapore, essentially a free port, where Japanese exporters faced tariffs on only four product lines. The Government of Japan reportedly sought support from the

business community for the agreement but failed to gain an enthusiastic response (Ogita, 2003).

A subsequent decision to negotiate with ASEAN as a whole was prompted by China's proposal of a PTA to ASEAN (which itself was a response to Singapore's undertaking negotiations for PTAs with the United States and Australia). Again, this was primarily a reflection of defensive diplomatic-strategic concerns rather than economic issues or lobbying by the business community (Munakata, 2006b).

No commentator would be so naïve as to suggest that governments in their foreign economic policymaking do not give consideration to the interests of domestic firms. Yet, little evidence can be drawn from the Mexican negotiations to support the argument that lobbying by business interests was "critical" for the switch in Japan's policy away from multilateralism towards the negotiation of PTAs. Rather, the change in policy was largely government-driven, in an attempt to stimulate East Asian cooperation in the wake of the financial crisis and to ensure Japan's centrality within the emerging regional architecture. Even if it is conceded that business lobbies had a role in driving the PTAs, this evidently was offset to a considerable extent by the concern of the Government of Japan for other domestic economic interests that opposed the domestic liberalization they feared would accompany PTAs.

A similar government-led process is evident across the region. Interviews conducted by the author in the Republic of Korea, for example, indicated that the Government determined the choice of partners with which to negotiate FTAs. Government officials reported that many businesses were either ill-informed about, and/or indifferent to, the Government's strategy.

The Asian experience does provide strong support for one political economy argument, i.e., in negotiating PTAs, governments have been preoccupied with balancing, on the one hand, the potential economic gains from liberalization (and possible increased political support from exporting interests) with, on the other, the potential loss of support from domestic interests hurt by liberalization. Given the autonomy from societal interests, as discussed above, that many Asian States are said to enjoy, it might be anticipated that governments would be able to resist domestic pressures in their design of PTAs. However, protectionist interests have frequently triumphed. They have often been aided by electoral systems that over-represent the countryside. In its choice of partners for PTAs, the Government of Japan has appeared to be motivated as much by a concern to minimize domestic economic adjustment as to maximize gains in foreign markets (hence the choice of relatively minor economic partners and the exclusion of most agricultural products that competed with domestic production. See, for example, Mulgan, 2008 and Solis, 2003).

The opportunity that PTAs afford to pursue trade policies that maximize domestic political advantage (or minimize domestic political costs) is one source of their attractiveness to Asian governments. However, much of the explanation for the new enthusiasm for PTAs lies not in economics but in governments' political-strategic considerations. The explosion of PTAs in the region has been driven by a "political domino effect", with governments' primary concern being their potential exclusion from a new dimension of regional economic diplomacy. Choi and Lee (2005) noted, for example, that the Government of the Republic of Korea expressed increasing concern in the early years of the new millennium at being isolated as the only WTO member besides Mongolia that had not entered into a PTA. With the economy in disarray in the immediate post-financial crisis period, the Republlic of Korea had experienced difficulties in finding potential partners willing to negotiate with it (Park and Koo, 2007).

Once the PTA bandwagon started rolling, competitive regionalism became the name of the game. As Munakata (2006a) noted, competing conceptions of the region rather than a desire to reduce transaction costs have been the principal driving force. Of particular significance in this regard has been the rivalry between China and Japan for leadership in East Asia. China's offer of a PTA to ASEAN was a diplomatic masterstroke. It was designed to assuage ASEAN fears (reinforced by contemporaneous econometric studies) that low-income South-East Asian economies would be the

principal losers from China's accession to WTO (Ravenhill, 2007). Yet, it also served to place Japan on the defensive because of the domestic problems that country faced in negotiating comprehensive agreements with ASEAN economies that were significant exporters of agricultural products. Moreover, its status as a "framework" agreement not only was in keeping with ASEAN's own poorly-specified approach to trade liberalization, but also was likely to impose few domestic costs on the Chinese economy.

With governments unhappy at the prospect of missing out on new diplomatic opportunities, they clamoured to enter agreements. Recipients of requests for negotiations faced a dilemma as a negative response would have been regarded as undiplomatic in a region where "face" is of great importance. Governments frequently found themselves under pressure to sign on to negotiations with relatively minor partners (or with partners in whose capacity or commitment to implement effective arrangements they had little confidence). The proliferation of PTAs has been driven more by a political domino than an economic domino effect. A survey of elite opinion in eight Asia-Pacific States (Dent, 2006) provides support for this conclusion; Dent found that "strengthening diplomatic relations with key trade partners" was the reason most frequently cited for the negotiation of PTAs.

In sum, the primacy of the political over the economic in Asia's new regionalism is reflected in the characteristics of current PTAs that are shallow in their content and typically link countries with relatively unimportant trading partners.

B. Implications for multilateralisation of TPP

The characteristics of current PTAs in Asia noted above suggest that they will not generate momentum towards multilateralisation along the lines predicted by Baldwin's "domino" and "juggernaut" effects. The agreements have been pursued by governments primarily for political rather than economic reasons. Their shallowness, coupled with the existing lack of impediments to the operation of supply chains in the region, ensure that they create few advantages for firms in partner countries (and concomitantly, few disadvantages for companies in countries not party to agreements). Consequently, there is little evidence of business having lobbied governments to preserve the advantages that the agreements have created, and surprisingly few instances of businesses having lobbied governments to create equal opportunities when they are disadvantaged.

The failure of businesses to make significant use of most of the agreements (there are a few exceptions such as the Thai auto industry's utilization of the country's PTA with Australia) suggests substantial indifference on the part of the business community to this new dimension of commercial diplomacy. The notable exception to private sector indifference is the strong lobbying by protectionist interests to preserve sectoral carve-outs.

To what extent does the TPP correspond to these stylized facts about regional PTAs? As the chapters in this publication by Capling and Gao demonstrate, the current TPP is not atypical. First, it is an agreement among small countries that are relatively insignificant trading partners of one another. Second, the agreement provides remarkably little additional liberalization compared to the status quo. This is particularly the case for tariff barriers, which were already low (zero for almost all of Singapore's imports) and/or covered by existing bilateral or minilateral PTAs (AFTA, New Zealand-Singapore) (see the discussion in the chapter by Gao). Turning the calculations of the Government of New Zealand on the effects of the agreement (as cited by Gao) into tabular form (table 3) produces a striking portrayal of the trivial effects of the tariff reductions produced by the current TPP. Moreover, tariff cuts will be phased in over a lengthy period.

Table 3. Gains from abolition of tariffs under TPP (New Zealand dollars)

	Brunei Darussalam	Chile	Singapore
Customs duties saved	52 000	2 200 000	0
Tariff revenue foregone	1 800	300 000	0

Third, the agreement is shallow in its other provisions on services, dispute resolution etc. Fourth, the partner governments have permitted protectionist interests, particularly in Chile, to carve out sensitive sectors from the agreement.

Therefore, TPP in its current form provides little for the business community to become excited about. Such an argument might be something of a two-edged sword. On one hand, the lack of tangible benefits from the existing agreement may produce an indifference on the part of the business community to any effort to extend it. On the other hand, disappointment with the current agreement may cause business to push not just for widening (in the sense of geographical scope) but also deepening the agreement. Given the disappointment that business groups in many countries have expressed over the results of PTAs,[77] generating enthusiasm for a new agreement may be very much a case of anticipating the triumph of hope over experience.

A broader question arises in this context – does it matter whether the initiative for PTAs comes from business or from governments as long as an agreement is eventually delivered? In the author's view, the answer is "yes", because in negotiations that are primarily politically motivated governments will place emphasis on reaching an agreement even if this objective is achieved at the expense of quality (seen, for example, in the Australia-United States PTA). Moreover, if political motivations are in the ascendancy, the political economy equation is likely to be tilted in favour of domestic protectionist interests.

The interest of the proposed parties to an expanded TPP in reaching an agreement will vary significantly. An enlarged TPP would duplicate a number of existing PTAs – most notably in the Australia-United States, Chile-United States and Singapore-United States agreements. Singapore's relations with Australia and New Zealand are already covered by two other agreements – bilateral treaties and the ANZCERTA-ASEAN Agreement. Australia and New Zealand have their own bilateral agreement. Brunei Darussalam's relations with Singapore and Viet Nam are subject to AFTA, and those with Australia are covered by the ANZCERTA-ASEAN Agreement. The same agreement also covers relations between Viet Nam and Australia/New Zealand. Australia and Chile have a bilateral PTA. Chile and Peru signed a bilateral PTA in August 2006. Peru negotiated a bilateral agreement with Singapore in July 2009. The United States-Peru Trade Promotion Agreement was signed into law by President Bush in December 2007, making permanent the concessions the United States had granted under the Andean Trade Preference Act in 1991. Therefore, of the total of 28 bilateral preferential arrangements (8x7/2) that an expanded TPP would create, only the eight listed below are not already covered by existing preferential trade agreements (including the current TPP): Australia-Peru; Brunei Darussalam-United States; Brunei Darussalam-Peru; Chile-Viet Nam; New Zealand-Peru; New Zealand-United States; Peru-Viet Nam and Viet Nam-United States.

It is difficult to see business interests being excited by or significant welfare gains being generated by most of these potential new trade partnerships. For instance, in the most recent year (2007-8) for which data are available, New Zealand's annual exports to Peru totalled only $NZ 54.6 million, while imports from Peru in the same period amounted to only slightly over $NZ 20 million.[78] Bilateral trade between Viet Nam and Peru was of the same magnitude, amounting to US$ 51 millions

[77] See, for example, "Business seeks better returns from Free Trade Agreements". *Australian Industry Group*. Corporation. Retrieved 6 February 6, 2010, from www.aigroup.com.

[78] New Zealand Embassy, Santiago, "New Zealand Relations with Chile, Peru and Colombia", www.nzembassy.com/info.cfm?CFID=864&CFTOKEN=72629816&l=100&p=60916&s=bu&c=16, Accessed on 24 August 2009].

in 2006.[79] Viet Nam's exports to Chile amounted to US$ 55 million in 2007-2008 while imports from Chile reached US$ 107 million.[80]

The big prize in an expanded TPP would be preferential access to the United States market for those countries that have not already signed a PTA with the United States. But the potential impact will vary significantly between countries, depending on the composition of their exports, and whether or not these products already enter the United States market duty-free and/or are likely to be included within a revamped TPP.

The United States and Brunei Darussalam signed a TIFA in December 2002. United States bilateral trade with Brunei Darussalam amounted to only US$ 225 million in 2008, very evenly balanced between imports and exports.[81] Most of Brunei Darussalam's exports to the United States historically have been dominated by oil (except for 2008 when these exports fell by 90 per cent). The other major export (worth US$ 70 million in 2008) has been cotton apparel. Neither is likely to be affected by an expanded TPP.

Viet Nam would be likely to gain far more from the TPP. United States-Viet Nam trade relations expanded rapidly after the United States lifted its trade and investment embargo against Viet Nam in 1994. The two countries signed a trade and investment facilitation agreement in June 2007, which built on a bilateral trade agreement ratified in December 2001. In 2008, Viet Nam's exports to the United States amounted to more than US$ 12 billion, of which roughly one half consisted of apparel and footwear (including sporting footwear).[82]

The website of the New Zealand Ministry of Foreign Affairs and Trade notes that "securing a free trade agreement negotiation with the United States has been a key New Zealand trade objective for more than a decade".[83] New Zealand's efforts to sign a PTA with the United States have been repeatedly rebuffed, primarily for foreign policy reasons (New Zealand's ban on harbour visits by nuclear-powered and armed warships, and more recently its criticism of United States policies in Iraq). The composition of New Zealand exports to the United States has also been a barrier to negotiating an agreement. Roughly one half of the US$ 3.5 billion in exports comprises agricultural products – primarily beef, lamb and dairy products – which are particularly sensitive items in the United States market, as Australia found to its cost in the negotiations on its PTA with the United States. In March 2010, 30 United States Senators signed a letter sent to the United States Trade Representative, Ron Kirk, warning of the potentially harmful effects of a TPP on the United States dairy industry.[84]

The actual benefits that the TPP will generate will depend largely on the willingness of the United States to open its market further to imports from countries with which it does not currently have a trade agreement. There is also the possibility that TPP negotiations will offer an opportunity to revisit existing PTAs and expand their coverage. However, such an outcome seems highly unlikely; faith in its eventuating rests on a very naive reading of the political economy of United States trade policy.

All the potential members of the TPP are relatively minor trading partners of the United States.

[79] Bo Ngoai Giao Viet Nam, Ministry of Foreign Affairs, "Vietnam-Peru Relations", www.mofa.gov.vn/en/cn_vakv/america/nr040820155812/ns071219141635. Accessed on 24 August 2009].
[80] Bo Ngoai Giao Viet Nam, Ministry of Foreign Affairs, "Vietnam Increases Exports to Chile", www.mofa.gov.vn/en/nr040807104143/nr040807105039/ns080910162808. Accessed on 24 August 2009].
[81] United States Census Bureau, "FTD—Statistics—Country Data—US Trade Balance with Brunei", www.census.gov/foreign-trade/balance/c5610.html#questions. Accessed on 24 August 2009.
[82] All United States trade data from the United States Census Bureau at www.census.gov/foreign-trade/statistics/product/enduse/imports.
[83] New Zealand Ministry of Foreign Affairs and Trade, "United States of America: Country Information Paper", www.mfat.govt.nz/Countries/North-America/United-States.php. Accessed on 24 August 2009.
[84] "Thirty US Senators warn US Trade Representative Ron Kirk about dairy provisions in TPP", www.citizenstrade.org/pdf/20100311_senatorsletterkirk.pdf.

Although these are atypical bilateral trade relations for the United States, in that it runs trade surpluses with all of the TPP partners except for New Zealand and Viet Nam, nonetheless all potential TPP partners combined currently provide a market for only 5 per cent of total United States exports. Also, in the context of the preoccupation of the United States Congress with bilateral trade imbalances, it is notable that the only two potential TPP partners with which the United States currently runs trade deficits are the two countries that are most likely to benefit from improved access under the TPP to the United States market – New Zealand and Viet Nam.

The relevant question here is what potential gains the United States may expect to make that would offset such "concessions". Even though the TPP is being hailed by the Obama Administration as a symbol of the "return" of the United States to Asia, to expect the United States Congress to sign off on a comprehensive TPP for reasons of being a good international citizen, or as a means of improving relations with these relatively insignificant partners, would again seem to be naive in the context for trade policy in Washington. A substantial number of Congressional representatives are calling for a revamp of United States trade policy; 106 members of Congress have signed the Trade, Reform, Accountability, Development and Empowerment Act introduced on 24 June 2009 by Sen. Sherrod Brown (D-OH) and Rep. Mike Michaud (D-ME). In a letter to the President, organized by Rep. Michaud, 54 members of Congress called for a reform of trade policy "to remedy the negative consequences on the American economy, environment, and public health and safety that have resulted from aspects of the current trade and globalization model".[85] Civil society groups have already urged that the TPP, seen as a legacy of the Bush administration's approach to trade, be abandoned; failing this, the agreement must be of a "platinum" standard incorporating comprehensive provisions on labour standards and the environment.[86]

Does the TPP have the potential to generate gains for United States businesses that will lead them to invest the resources to lobby to counteract that from civil society and protectionist interests? The potential gains from trade agreements with Viet Nam and New Zealand appear slim. With the partial exception of Viet Nam, to whose market Japanese and Chinese exporters have preferential access by virtue of the China-ASEAN and Japan-ASEAN partnership agreements, United States exporters do not face any substantial discrimination. To take advantage of Viet Nam's accession to WTO, the United States granted permanent normal trade relations status to Viet Nam in December 2006. At the time, the Congressional Budget Office estimated that PNTR would increase United States revenues by less than US$ 20 million per year. Ninety-four per cent of United States exports of manufactured goods face duties of less than 15 per cent. Industrial tariffs on United States priority products including construction equipment, pharmaceuticals, aircraft parts, chemicals and IT products for the most part are subject to low duties in the zero to 5 per cent range. Despite these very modest figures, Viet Nam is a larger market than New Zealand where total United States exports in 2008 amounted to only US$ 2.5 billion, the largest single category of which was aircraft parts – again a product unlikely to benefit substantially from the provisions of a PTA.

A key question for multilateralisation of the TPP is on what terms it will proceed? The United States template for FTAs is generally regarded as high quality, having more WTO Plus provisions than those of other countries/economic groupings (although not liberal in its provisions on ROO, selective in its coverage of agricultural products, and including provisions on TRIPs that many economists feel provide excessive protection to owners of intellectual property) (Ravenhill, 2008). The United States typically adopts a "one size fits all" approach to FTAs; unless its current trade policy review forces a change in approach, the United States can be expected to push for the use of its existing template for

[85] The Online Office of Congressman Mike Michaud, "54 members send letter to President Obama", www.michaud.house.gov, 26 February 2009 (accessed on 20 August 2009).

[86] Public Citizen, "Testimony regarding the proposed United States-Trans-Pacific Partnership Free Trade Agreement", Docket Number USTR-2009-0002, 4 March 2009, www.citizen.org/documents/TPPFTACommentsFinal.pdf; and Citizens Trade Campaign, "CTC letter to President Obama", www.citizenstrade.org/pdf/TPP_CTC_President.pdf, 25 January 2010 (accesed on 10 April 2010).

an expanded TPP. This would force liberalization on some of its partners and would result in a higher-quality TPP than the present agreement. However, the United States has been guilty of double standards in its FTAs, not demanding the same "concessions" of itself as it has of its partners – particularly in the case of sensitive agricultural products. Consequently, New Zealand is like to see only limited liberalization of market access for many of its most important agricultural exports.

C. Conclusion

The proliferation of PTAs in Asia in the past decade has been driven primarily by governments who have seized on these agreements as another instrument for pursuing foreign policy objectives. Private sector involvement in trade policymaking in most countries has been minimal. The consequence has been agreements that are shallow in their coverage and which seldom create any significant advantage for participants, and, concomitantly, any significant disadvantage from those who do not have access to them. Private sector actors have shown little interest in many of the agreements. Factors that might sustain a positive momentum towards multilateralisation of the current "noodle bowl" effect consequently have been significantly constrained in Asia.

The TPP is no exception to this generalization. Although it is not as poor an agreement in terms of quality as many of those that ASEAN, China and India have entered into, it falls far short of a model of international best practice. It joins small players who are not significant trading partners. Although the current ineffectiveness of the TPP might be expected to generate a demand for the negotiation of a more comprehensive agreement, several political economy factors weigh against any optimism regarding the likely outcome of efforts to extend it to the proposed eight-country grouping.

An extended TPP would create new preferences in only eight bilateral relations, the majority of which are between parties that are very minor trading partners with one another. The key addition to the TPP would be the United States. However, little enthusiasm can be expected from exporting interests in the United States for the agreement, making it unlikely that the domestic political economy balance will be swung away from the protectionist forces that will block any substantial concessions on "sensitive products", unless some larger Asian economies opt to join the proposed partners.

References

Amsden, A. H. (1989). *Asia's Next Giant: South Korea and Late Industrialization.* Oxford University Press, New York.

Anas, T. (2007). "Indonesia" in *Preferential Rules of Origin,* World Bank Policy research Report. Washington, D.C.

Ando, M. (2007). "Impacts of Japanese FTAs/EPAs: Post-evaluation from the initial data", in *Assessing Quality and Impacts of Major Free Trade Agreements.* Research Institute of Economy, Trade and Industry, Tokyo

Avila, J. L. and G. Manzano (2007). "The Philippines", in *Preferential Rules of Origin,* World Bank Policy Research Report. Washington, D.C.

Baldwin, R. E. (2007). "Managing the noodle bowl: The fragility of East Asian regionalism". Asian Development Bank, Manila.

——— (2006) "Multilateralising regionalism: Spaghetti bowls as building blocs on the path to global free trade, *World Economy,* vol. 29; pp. 1451-1518.

——— (1995). "A domino theory of regionalism", in R. E. Baldwin, P. Haaparanta and J. Kiander (eds.), *Expanding membership of the European Union.* Cambridge University Press, Cambridge, United Kingdom.

Capling, A. (2005). *All the way with the USA: Australia, the US and free trade.* UNSW Press, Sydney, Australia.

Centre for International Economics (2004). "Economic analysis of AUSFTA: Impact of the bilateral free trade agreement with the United States". Canberra.

——— (2001). "Economic impacts of an Australia-United States free trade area. Canberra.

Chase, K. A. (2005). *Trading blocs: States, firms, and regions in the world economy* University of Michigan Press, Ann Arbor, United States.
Chirathivat, S. and S. Mallikamas (2004). "Thailand's FTA strategy: Current development and future challenges. *ASEAN Economic Bulletin,* vol. 21; pp. 37-53.
Choi, B-i. and K-J. Lee (2005). "A Long and winding road: Ratification of Korea's first FTA", in B-i Choi (ed.) *Korea and International Conflicts: Case Studies – vol. 1.* Institute for International Trade and Cooperation, Ewha Woman's University, Seoul.
Dent, C. M. (2006). *New Free Trade Agreements in the Asia-Pacific.* Palgrave Macmillan, Basingstoke, United Kingdom.
——— (2005). "Taiwan and the new regional political economy of East Asia, "*The China Quarterly*, vol.182; pp. 385-406.
Deyo, F. C. (ed.) (1987). *The Political Economy of the New Asian Industrialism.* Cornell University Press, Ithaca, New York.
Estevadeordal, A., J. Harris and K. Suominen (2007). "Multilateralising preferential rules of origin around the world. *Multilateralizing Regionalism.* WTO/HEI/NCCR, Geneva.
Garnaut, R. (2004). "AM - Ross Garnaut says Government's FTA report laughable", *ABC Online,* 4 May 2004. www.abc.net.au/rural/news/stories/s1100968.htm
Grossman, G. M. and E. Helpman (1995). "The politics of free trade agreements", *American Economic Review,* vol. 85; pp. 667-690.
Hertel, T., D. Hummels, M. Ivanic and R. Keeny (2004). "How confident can we be in CGE-based assessments of free trade agreements?" National Bureau of Economic Research, Cambridge, Ma., United States.
Hiratsuka, D., K. Hayakawa, K. Shiino and S. Sukegawa (2008). "Maximizing benefits from FTAs in ASEAN", in J. Corbett and S. Umezaki (eds.), *Deepening East Asian Economic Integration.* Economic Research Institute for ASEAN and East Asia, Jakarta.
Hoadley, S. (2008). "Thailand's and Malaysia's cross-regional FTA initiatives", in S. N. Katada and M. Solis (eds.), *Cross Regional Trade Agreements: Understanding Permeated Regionalism in East Asia.* Springer-Verlag, Berlin.
Hsueh, R. Y. (2006). "Who rules the international economy? Taiwan's daunting attempts at bilateralism", in V. K. Aggarwal and S. Urata (eds.), *Bilateral Trade Agreements in the Asia-Pacific: Origins, Evolution, and Implications.* Routledge, London.
Institute of South Asian Studies, (2006). *Guide to the Singapore-India Comprehensive Economic Cooperation Agreement.* Rajah and Tann, National University of Singapore, Singapore.
Johnson, C. (1982). *MITI and the Japanese Miracle.* Stanford University Press, Stanford, Ca., United States.
Kakada, D. and S. Hach (2007). "Cambodia", in *Preferential Rules of Origin,* World Bank Policy Research Report. Washington, D.C.
Kawai, M. and G. Wignaraja (2009). *The Asian 'Noodle Bowl': Is it Serious for Business?* Asian Development Bank Institute, Tokyo.
Kimura, F. (2006). "Bilateralism in the Asia-Pacific: An economic overview", in V. K. Aggarwal and S. Urata (eds.) *Bilateral Trade Agreements in the Asia-Pacific: Origins, Evolution, and Implications.* Routledge, London.
Krauss, E. S. (2003). The US, Japan and trade liberalization: From bilateralism to regional multilateralism to regionalism, *The Pacific Review,* vol. 16; pp. 307-329.
Lee, S. (2006). "Singapore trade bilateralism: A two-track strategy", in Aggarwal, V. K. and Urata, S. (Eds.) *Bilateral trade agreements in the Asia-Pacific: Origins, evolution, and implications.* London, Routledge.
MacIntyre, A. (1991). *Business and Politics in Indonesia.* Allen and Unwin, Sydney, Australia.
Mackie, J. A. C. (1988). "Economic growth in the ASEAN region: The political underpinnings", in H. Hughes (ed.), *Achieving Industrialization in East Asia.* Cambridge University Press, Cambridge, United Kingdom.
Manger, M. (2005). "Competition and bilateralism in trade policy: The case of Japan's free trade agreements", *Review of International Political Economy,* vol. 12; pp. 804-828.
McKinsey and Company (2003). "ASEAN Competitiveness Study". Jakarta, ASEAN Secretariat, Jakarta.

Milner, H. V. (1997). "Industries, governments and the creation of regional trading blocs", in E. D. Mansfield and H. V. Milner (eds.), *The Political Economy of Regionalism.* Columbia University Press, New York.

Mulgan, A. G. (2008). "Japan's FTA politics and the problem of agricultural trade liberalization", *Australian Journal of International Affairs,* vol. 62; pp. 164-178.

Munakata, N. (2006a). "Has politics caught up with markets? In search of East Asian economic regionalism", in P. J. Katzenstein and Shiraishi, T. (eds.), *Beyond Japan: The Dynamics of East Asian regionalism.* Cornell University Press, Ithaca, New York.

——— (2006b). *Transforming East Asia: The Evolution of Regional Economic Integration.* Brookings Institution Press Washington, D.C.

Nagai, F. (2003). "Thailand's FTA policy: Continuity and change between the Chuan and Thaksin governments", in J. Okamoto (ed.), *Whither Free Trade Agreements? Proliferation, Evaluation and Multilateralization.* Institute of Developing Economies, Japan External Trade Organization, Chiba, Japan.

Ogita, T. (2003). "Japan as a late-coming FTA holder: Trade policy change for Asian orientation?" in J. Okamoto (ed.), *Whither Free Trade Agreements? Proliferation, Evaluation and Multilateralization.* Institute of Developing Economies, Japan External Trade Organization, Chiba, Japan.

Park, S-H. and M. G. Koo (2007). "Forming a cross-regional partnership: The South Korea-Chile FTA and its implications", *Pacific Affairs,* vol. 80; pp. 259-278.

Phetmany, T. and J. Rio (2007). "Lao PDR", in *Preferential Rules of Origin,* World Bank Policy Research Report. Washington, D.C.

Prasert, A. (2007). "Thailand", in *Preferential Rules of Origin,* World Bank Policy Research Report. Washington, D.C.

Ravenhill, J. (2010). "The 'new East Asian regionalism': A political domino effect", *Review of International Political Economy,* vol. 17, No. 2.

——— (2008). "The move to preferential trade on the Western Pacific rim: Some initial conclusions", *Australian Journal of International Affairs,* vol. 62; pp. 129-150.

——— (2007). "China's 'peaceful development' and Southeast Asia: A positive sum game?" in W. W. Keller and T. G. Rawski (eds.), *China's Rise and the Balance of Influence in Asia.* University of Pittsburgh Press, Pittsburgh, United States.

——— (2003). "The new bilateralism in Asia-Pacific", *Third World Quarterly,* vol. 24; pp. 299-317.

Ravenhill, J. and Y. Jiang (2009). "China's move to preferential trading: A new direction in China's diplomacy", *Journal of Contemporary China,* vol. 18; pp. 27-46.

Schiff, M. W. and L. A. Winters (2003). *Regional Integration and Development.* Oxford University Press for the World Bank, New York.

Scollay, R. and J. Gilbert (2001). *New Regional Trading Arrangements in the Asia-Pacific?* Institute for International Economics, Washington, D.C.

Solis, M. (2003). "Japan's new regionalism: The politics of free trade talks with Mexico", *Journal of East Asian Studies,* vol. 3; pp. 377-404.

Takahashi, K. and S. Urata (2009). "On the use of FTAs by Japanese firms: Further evidence". Research Institute of Economy Trade and Industry, Tokyo.

Taylor, L. and R. V. Amim (2007). *Modelling the Impact of Trade Liberalisation: A Critique of Computable General Equilibrium Models.* Oxfam Publishing, Oxford, United Kingdom.

Van, D. N. (2007). "Viet Nam", in *Preferential Rules of Origin,* World Bank Policy Research Report. Washington, D.C.

Wade, R. (1990). *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization.* Princeton University Press, New Jersey, United States.

Woo-Cumings, M. (ed.) (1999). *The Developmental State.* Cornell University Press, Ithaca, New York.

Zeui, Y. (2007). "China", in *Preferential Rules of Origin: Policy Research Report.* World Bank, Washington, D.C.

VIII. From the P4 Agreement to the Trans-Pacific Partnership: Explaining expansion interests in the Asia-Pacific region

By Deborah Elms[*]

Introduction

This chapter investigates two puzzling issues in the possible evolution of the P4 Free Trade Agreement (FTA) with Singapore, New Zealand, Chile and Brunei Darussalam into a Trans-Pacific Partnership (TPP) trade agreement with the possible addition of the United States, Australia, Peru and Viet Nam (at least as an observer). First, what prompted a set of small, largely open economies that have very little trade with one another to launch free trade negotiations in the first place? Trade negotiations consume scarce resources, particularly in small countries with limited bureaucratic staff resources. The Trans-Pacific Strategic Economic Partnership Agreement (TPSEP, more commonly known as the P4 Agreement) talks ran to more than five rounds (with additional negotiations on financial services and investment scheduled for completion after the original agreement had been finished)..Ultimately, as outlined briefly in this chapter, the economic gains from greater liberalization in the P4 Agreement have been minimal and are likely to remain small.

Second, given the minimal gains accruing to the original P4 member States, what has prompted other countries such as Australia and the United States to express an interest in joining this agreement? If the P4 Agreement were a "high-quality" preferential trade agreement, joining might make sense. However, as Gao and Capling argue in their respective chapters in this publication, the case for including the P4 in the list of agreements of a higher standard is, at best, rather weak. There are theoretical reasons for thinking that States are pushed into enlarging FTAs to avoid potential trade diversion caused by overlapping and inconsistent bilateral agreements; however, as persuasively demonstrated in the chapter by Ravenhill,, this logic does not appear to hold in this case.

Instead, the answer might come from economic incentives. Although the potential gains from trade in these cases are modest, perhaps business groups have been actively pushing for expansion. After all, an FTA is about liberalizing trade leading to greater economic gains. As this chapter shows, the business case for expansion has been quite muted. Most of the preferred deals have already been reached through a dense web of overlapping bilateral agreements between most of the potential member States.

So what accounts for the flurry of interest in the P4 Agreement and TPP talks? It is argued in this chapter that there are two key factors: (a) the political importance of an agreement that ties States together across the Asia-Pacific region (keeping most of the potential participants firmly linked into Asia); and (b) the possibility for economic gains at some point in the future if the TPP gains momentum and expands further.

Officials can certainly approve trade agreements for political reasons, but it is important to recall that the agreements have economic consequences. Some of the potentially contentious areas in any negotiations are highlighted in this chapter. If the TPP were only being considered with regard to the seven or eight States currently involved, most of the economic fights would likely be modest. However, this agreement is intended to be a model for the future. It will need to both accommodate and entice participation by other States. This will certainly complicate TPP negotiations.

[*] This chapter is based on a paper written by the author in November 2009.

A. P4 Agreement background

Negotiations were launched at the Asia-Pacific Economic Cooperation (APEC) Leaders Summit in 2002 when the leaders of Singapore, New Zealand and Chile announced their intentions to create a preferential trade arrangement.[87] Officials held four rounds of negotiations on the Pacific Three Closer Economic Partnership between 2003 and 2005. At the fifth meeting of the interested parties in April 2005, Brunei Darussalam joined negotiations with the intention of becoming a founding member State of the agreement.[88] The successful conclusion of the P4 Agreement talks was announced at the APEC Trade Ministers meeting in June 2005. The 20 chapters in the Agreement were accompanied by two Memoranda of Understanding (MOUs) on environmental and labour cooperation.[89] The Agreement came into force in 2006.

At the outset of negotiations, officials at the Ministry of Foreign Affairs and Trade in New Zealand announced three primary objectives for the talks:

(a) "Concluding a high-quality, comprehensive agreement that will contribute to liberalization and cooperation within the Asia-Pacific region and support trade liberalization through WTO;
(b) Making Pacific Three (P3) a business-friendly agreement that provides an enabling framework for development of commercial and broader linkages; and
(c) Ensuring that P3 reflects New Zealand's overall public policy and social objectives."[90]

These objectives were nearly identical to the objectives expressed in Singapore and Chile on the launch of the talks. Singapore had been interested for some time in establishing a true free trade area in Asia as either part of the 10-member Association of Southeast Asian Nations (ASEAN) process or through the 21 members of APEC. The P4 Agreement was explicitly negotiated from the beginning with an eye to having an accession clause included to provide other States with the opportunity to join in the future. This was viewed, in part, as a "back door means" of getting to a larger trade agreement with the willing members of a larger coalition of States. The bargaining over a Free Trade Area of the Asia-Pacific (FTAAP) in APEC was stalled.

Negotiating with an enthusiastic group of economies on further liberalization was viewed as a much more viable strategy towards a broader trade area than engaging in endless – and likely fruitless – negotiations with some APEC member economies who were proving unwilling to open any further in a meaningful way. It also provided another avenue for trade liberalization, given the difficulties of concluding the Doha round negotiations in WTO.[91]

[87] The idea of such a trade arrangement, however, dates back even earlier, to the mid-1990s. At several APEC meetings in the 1990s, Australia, Chile, New Zealand, Singapore, and the United States held informal "P5" discussions. The United States and Australia did not share the same level of enthusiasm for launching official talks at the time, so the other three members moved ahead on their own in 2002. Interview with New Zealand officials, Wellington, October 2009.

[88] Brunei Darussalam became a member on 12 July 2006, when the agreement came into force, although the late entry into negotiations meant that country was not subject to all the original deadlines imposed on the other three member States in the agreement. Instead, it was granted longer implementation periods. The market in Brunei Darussalam was also considerably less open than the markets of the other three States. Brunei Darussalam also had additional negotiations on government procurement and trade in services, as neither of these commitments had been concluded at the time the P4 Agreement was completed.

[89] Although the environmental and labour agreements were announced as separate documents, any State wishing to exit any one of the three agreements automatically results in the exit of the other two.

[90] "New Zealand's Objectives for the Pacific Closer Economic Partnership, 2002." Not mentioned at the outset was the Government's objective of building up credibility as an FTA partner for future agreements. See "Trans-Pacific Strategic Economic Partnership Agreement: National Interest Analysis," New Zealand Ministry of Foreign Affairs and Trade, 14 July 2005.

[91] This is not to say, however, that any of the States involved in the P4 Agreement or the TPP have abandoned the multilateral approach to trade liberalization. Governments in all States have made strong efforts to confirm

Focusing on these broader objectives meant that Singapore and New Zealand in particular could overlook the extremely modest economic outcomes of the original P4 deal. The agreement is broadly comprehensive and viewed as "high quality."[92] It includes liberalization of all tariff lines for Chile, New Zealand and Singapore, and 99 per cent for Brunei Darussalam (phased in over time).[93] The services chapter contains a negative list – broadly viewed as more trade liberalizing than the alternative formulations in other FTAs. Additional chapters include sanitary and phytosanitary standards (SPS), technical barriers to trade, competition policy, intellectual property rights, government procurement and dispute settlement. It contains some labour and environmental provisions in a separate MOU. Two chapters on financial services and investment were to be completed within two years of the agreement. Critically, and unusually, the document also included an accession clause to allow other economies to join the agreement in the future.[94]

The anticipated gains from trade as a result of the P4 Agreement were expected to be modest.[95] When the agreement came into force in 2006, Brunei Darussalam's total imports and exports of merchandise trade in goods to other P4 partners amounted to US$ 299 million and US$ 417 million, representing 17.9 per cent of total imports and 5.5 per cent of total exports.[96] Chile's imports from, and exports to, P4 partners were worth US$ 71 million and US$ 77 million, respectively, representing 0.2 per cent of total imports and 0.1 per cent of all exports.[97] New Zealand imported US$ 1.5 billion and exported US$ 452 million to P4 members, which represented a 5.7 per cent share of total imports and a 2 per cent share of total exports.[98] Singapore's imports from, and exports to, P4 partners amounted to US$ 731 million and US$ 2 billion, respectively, representing a 0.3 per cent share of total imports and a 0.7 per cent share of total exports.[99]

By the time the scheduled elimination of tariffs comes into force, however, there may still be some gains from trade, as each member will receive a margin of preference off MFN rates that could be quite substantial.[100] Importantly, many of these gains will come in the categories of the top 25

---

that the conclusion of the Doha round remains their chief priority. It is also clear that many view the P4 Agreement (and TPP) as a fall-back option, should the multilateral trading system continue to struggle in the future to produce new gains from trade.

[92] The extent to which this is really true is debatable as the chapters by Gao and Capling in this publication make clear. Nonetheless, this is the rhetoric most frequently employed to describe this FTA agreement.

[93] The exceptions for Brunei Darussalam include alcohol and tobacco products, which are excluded on health and religious grounds.

[94] The Agreement is open to any APEC economy or any other State (Article 20.6), subject to terms to be agreed among the Parties.

[95] In fact, one Member of Parliament in New Zealand, John Hayes, said "it will make not the slightest bit of difference to anybody – and it will make no practical difference to the people in my electorate. But it is a good idea." See the Debates in Parliament, "Free-trade Agreement – New Zealand-United States," 23 September 2008.

[96] "Factual presentation, Trans-Pacific Strategic Economic Partnership Agreement between Brunei Darussalam, Chile, New Zealand and Singapore (Goods and Services)", WTO Secretariat, 9 May 2008, WT/REG229/1 (hereafter, "WTO Factual Presentation"). All figures are in United States dollars. Brunei Darussalam has limited services trade with its P4 partners, but was granted two additional years to complete its services schedule after the agreement came into force (because of that country's late entry into negotiations).

[97] WTO Factual Presentation.

[98] Ibid.

[99] Ibid. Singapore's services trade with its partners averaged US$ 136.5 million in imports and US$ 435.5 million in exports.

[100] See Annex 1, WTO Factual Presentation, pp. 61-68. The amount is still small. New Zealand, for example, already had duty-free access to Singapore prior to signing the P4 Agreement. In 2004, New Zealand paid a total of $NZ 2.2 million in duty to Chile (mostly on coal exports) and $NZ 50,000 in duty to Brunei Darussalam. The Government of New Zealand estimated it would lose $NZ 320,000 a year in tariff revenue from Chile and $NZ 1,800 a year on imports from Brunei Darussalam. See "Trans-Pacific Strategic Economic Partnership Agreement: National Interest Analysis," New Zealand Ministry of Foreign Affairs and Trade, 6 and 10 July 2005.

exports for each country. For example, Brunei Darussalam currently faces duty on 59 tariff lines from Chile across its top 25 export categories. By 2015, all 59 tariff lines will be duty-free.

Even off a very modest base, the potential is there for economic gains from trade among the members, especially for certain firms and sectors. New Zealand noted that while dairy exports to Chile were generally subjected to a low, six 6 per cent tariff prior to the P4 Agreement, this still placed their exporters at a disadvantage relative to exporters from the United States, European Union and Mercosur. The others were all covered under different FTAs with Chile, with tariffs closer to (or at) zero. The reduction in tariffs could help small and medium-sized exporters find a market in Chile.[101]

Officials in Brunei Darussalam used the P4 Agreement, in part, to catalyse changes in the domestic economy. For example, developing and enforcing comprehensive changes in domestic legislation for intellectual property rights had not been viewed as a priority before Brunei Darussalam signed on for the P4 talks.[102]

The P4 Agreement came into force with very little fanfare. The two States with the most trade between them – New Zealand and Singapore – already had an FTA pact (NZSCEP) in place. Part of the P4 talks included the understanding that businesses in these two States could opt to use either the P4 terms of reference in seeking market access or the FTA deal, as outlined in a side letter with the P4 Agreement. Firms could opt for whichever arrangement provides them with the most benefits.[103] This included the ability to use the positive list for services (NZSCEP) or the negative list (P4) as well as differing rules of origin calculations in each agreement. Using both agreements instead of allowing one to supersede the other, argued New Zealand, would give greater flexibility to traders.[104]

This clause undermined the argument that the P4 Agreement provided a means for "untangling the spaghetti bowl" of overlapping FTA deals. It does not rationalize the existing agreements or streamline the rules into one comprehensive package spread across more partners. Instead, it adds another layer of "pasta".

B. American announcement

In September 2008, the Office of the United States Trade Representative (USTR) of the outgoing George W. Bush Administration announced that the United States would seek participation in the P4 Agreement. USTR Susan Schwab said: "This high-standard regional agreement will enhance the competitiveness of the countries that are part of it and help [to] promote and facilitate trade and investment among them, increasing their economic growth and development."[105]

ew Zealand's Trade Minister Phil Goff greeted the statement warmly, saying that: "Securing an FTA negotiation with the United States, the world's largest economy, has been a key trade objective for more than decade."[106] However, his enthusiasm was not equally shared. One Chilean

[101] "Trans-Pacific Strategic Economic Partnership Agreement: National Interest Analysis," New Zealand Ministry of Foreign Affairs and Trade, 13 July 2005.
[102] Interview with officials, Geneva, 1 October 2009.
[103] However, some trade remedy provisions in the New Zealand-Singapore Closer Economic Partnership prevail over the P4 Agreement (paragraphs 63 and 66). Since neither New Zealand nor Singapore tracks which agreement importers are using when claiming tariff preferences, it is not possible to say which agreement provides greater benefits for business.
[104] See the report to WTO members on the P4 Agreement, "Consideration of the Trans-Pacific Strategic Economic Partnership Agreement between Brunei Darussalam, Chile, New Zealand and Singapore, Goods and Services, WTO, 18-19 September 2008, WT/REG229/M/1/Rev.1, p. 3.
[105] United States Trade Representative Statement, Press Release, September 2008.
[106] Remarks at the P4 Trade Minister's Meeting in New York, Nevil Gibson, "Goff Welcomes US FTA Negotiations," *National Business Review – New Zealand*, 23 September 2008. However, not everyone was so

trade official complained that, with an FTA already in place with the United States, he could only expect greater, politically and perhaps economically difficult, demands from the Americans in a TPP.[107] Brunei Darussalam expressed similar concerns about upcoming demands, particularly in areas such as labour or the environment where their trade officials have had limited experience in negotiations.[108]

The official press release for the American statement of participation noted that "ultimately, the objective is to expand the membership of the Agreement to other nations that share our vision of free and fair trade."[109] This had the effect that officials were hoping for, as Australia and Peru quickly announced their interest in joining the talks. Viet Nam asked for observer status. Other States, including Japan, also suggested a willingness to consider joining the talks in the future.

The P4 Agreement had become the P7 or the Trans-Pacific Partnership (TPP) talks. The United States immediately joined in the negotiations on the two missing chapters on financial services and investment.[110] Initial talks with potential TPP member States were scheduled for March 2009. However, the talks were postponed, pending a broader trade policy review within the United States under the new Obama Administration. New USTR Ron Kirk announced that the United States would "pick up" the TPP talks at a minimum in May 2009.[111]

The initial TPP talks have not been rescheduled during the remainder of 2009. The United States trade policy review has also not been publically released at the time of writing this chapter. The White House has suggested that a major presidential speech on trade is forthcoming, which will address the topics covered in the review.[112] Of greatest interest is some clearer understanding of what needs to happen in the Doha negotiations in Geneva at the WTO for the United States to close the deal;[113] resolution of the pending FTA agreements waiting for submission to Congress for ratification (Panama, Columbia and the Republic of Korea), and some indication of future directions on trade pacts such as the TPP.

One critical reason for the United States to support the TPP can be found in USTR documents such as the President's 2008 Annual Report on the Trade Agreements Programme. It says, in part, that "United States' participation in the TPP could position United States businesses better to compete in the Asia-Pacific region, which is seeing the proliferation of preferential trade agreements among United States competitors and the development of several competing regional economic integration initiatives that exclude the United States."[114]

---

enthusiastic. The New Zealand "Not for Sale" Campaign urged members to post letters to their MP in opposition.

[107] Interview with officials, Geneva, 1 October 2009. Sensitive issues will likely include intellectual property, financial services and investment. Financial services negotiations were already difficult in the United States-Chile FTA talks, and more recent United States FTA agreements have had even greater market access provisions included. Given that Chile views its financial services commitments as important regulatory instruments, it is unenthusiastic about greater market opening that would dilute its ability to regulate the industry properly.

[108] Interview with officials, Geneva, 2 October 2009. The same officials noted the struggles within Brunei Darussalam to fully implement existing agreements, given the capacity problems in the trade ministry and elsewhere.

[109] "United States to Negotiate Participation in Trans-Pacific Strategic Economic Partnership," USTR, September 2008.

[110] Three rounds of negotiations were held in 2008 without being completed.

[111] See *Inside U.S. Trade*, 20 May 2009.

[112] The latest information is that the review has been postponed until the health-care debate in the United States is resolved. The speech may be scheduled in October. See *Inside U.S. Trade*, 4 September 2009.

[113] One senior United States trade official in Geneva argued that sufficient information had already been conveyed to negotiators about the necessary parameters of a Doha Round deal. Interviews in Geneva, 2 October 2009.

[114] Bilateral and Regional Negotiations and Agreements, USTR, *President's 2008 Annual Report on the Trade Agreements Program*, p. 127.

If Asian economies are going to create some sort of free trade area, the Americans would rather be in than out. As Senator Charles Grassley said: "If we want to have any influence over that process, we need to get involved. We can't advance our economic interests if we're not at the table."[115] The United States has viewed trade talks with various Asian-only partners with a wary eye. This includes the various permutations of ASEAN+ agreements (either +3 or +6).[116] Instead, the United States has traditionally pushed for trade liberalization in this region through the APEC process.

Getting into the TPP early makes sense. Although the P4 Agreement was designed to allow other States to join the agreement, the entire agreement cannot be renegotiated for each new member State. At a certain point, the agreement will have to be closed for new membership, after which economies could still elect to accede, but they would have to accept the deal on the table as given (subject, presumably, to minor modifications and certain conditions for entry).[117]

Because the United States already had bilateral FTAs with Singapore and Chile that entered into force on 1 January 2004, (and because the P4 Agreement was based, in part, on the template provided by those deals), it is assumed that negotiations on a wider expansion of the agreement should be easier for the United States. After all, the template of the P4 Agreement already included most of the specific items of interest to the United States, including services, investment, intellectual property, labour and the environment. These same chapters are included in the bilateral s between the United States and Australia, and the United States and Peru, which came into force on 1 January 2005 and 1 February 2009, respectively.

Many of the provisions in the existing FTAs were carefully crafted compromises, offering a balance of benefits, opportunities and pain to the economic interests in each member State. Under an expanded TPP, even if the original FTA arrangements remain in place, some of these previous agreements will be altered or even undermined. The same favourable deal struck with one State in an FTA may not be extendable to the larger membership. This could unravel the partnerships in place in some States from previous deals (and, instead, setting up new potential coalitions).

C. Existing FTA arrangements

The markets for most of the provisional TPP States were not large, from the perspective of the United States. Nonetheless, bilateral trade did increase in the wake of the various FTA agreements. For example, American-Australian trade expanded after the signing of the FTA in 2005. Trade in goods in 2008 was US$ 33.9 billion, up 56 per cent from 2004.[118] Trade in services was US$ 16.3 billion in 2007, after an increase of nearly 50 per cent from 2004. By 2008, Australia was the fourteenth largest export market for United States goods.

In 2008, two-way trade between the United States and Chile equalled US$ 20.3 billion with United States exports to Chile slightly more than imports.[119] By 2008, Singapore had became the sixteenth largest trading partner for the United States, with two-way trade of US$ 44.7 billion and

[115] "Trans-Pacific Economic Partnership, Pending Trade Agreements," *Congressional Documents and Publications*, 22 September 2008.

[116] ASEAN includes Brunei Daruassalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Viet Nam. The ASEAN+3 grouping comprises the 10 ASEAN members plus China, Japan and the Republic of Korea. The ASEAN+6 is all of the above plus India, Australia and New Zealand. Notably, from the American position, none of these arrangements includes the United States.

[117] In this regard, it would not be unlike new members joining WTO. Each time a new State joins WTO, it does not renegotiate all the previously existing commitments, but instead negotiates the specific terms of admission for itself.

[118] Bilateral and Regional Negotiations and Agreements, USTR, 2009 Report, p. 111.

[119] Ibid., p. 112.

US$ 11.1 billion, respectively, in services.[120] Two-way trade with Peru amounted to US$12.5 billion in 2008.[121] This figure was expected to rise in the wake of the United States-Peru Trade Promotion Agreement (PTPA) that entered into force on 1 February 2009. The PTPA agreement immediately eliminated tariffs on 80 per cent of United States exports, with the remaining tariffs to be phased out gradually

There is currently no FTA in place between the United States and New Zealand. Trade between the two States is limited, with total trade in goods standing at US$ 5.7 billion in 2008 and services at US$ 3.2 billion in 2007.[122] Brunei Darussalam is a tiny market for the United States, ranked at 139 in goods trade worth US$ 226 million in two-way trade in 2008.[123] The National Association of Manufacturers noted that the United States exported US$ 108 million in manufactured goods in 2008.[124]

D. American business interests in the TPP

If the United States already had bilateral trade agreements with most of the States in the emerging TPP agreement, why expend additional resources in negotiating a larger deal? The bulk of American trade with presumptive partners was already covered under the existing arrangements.[125] While it is possible that a TPP arrangement might be expanded at some point into a larger FTAAP among the 21 member economies of APEC (which would certainly have real economic benefits for the United States),[126] it is equally plausible that it will not. The TPP might become one more trade deal with seven members in an increasingly complex set of overlapping rules governing American trade with its partners.

In addition, trade deals do have "real world" economic consequences. While it might be tempting for trade officials to talk of broader strategic objectives and interests, many of the rules hammered out over an international negotiating table will affect business decisions at home and abroad. If the TPP never turns into an FTAAP in the future, what are the likely economic incentives for American firms to support or oppose the initiative?

It should be noted at the outset that American business has not been out in front of government on this issue. Business lobby groups do not appear to have agitated for participation in the TPP process prior to the announcement of United States participation by the Government. Nor, as indicated below, has business interest in joining the TPP talks been particularly strong. This evidence casts doubt on Richard Baldwin's arguments about the forces that propel a multilateralisation of existing FTAs, just as suggested in Ravenhill's chapter of this publication.[127]

[120] Ibid., p. 113. Services figures are for 2007.
[121] Bilateral and Regional Negotiations and Agreements, USTR, 2009 Report, p. 120.
[122] Ibid., p. 147.
[123] USTR, 27 July 2009
[124] Testimony of Franklin Vargo, National Association of Manufacturers, 4 March 2009.
[125] In manufactured goods, for example, 96 per cent of United States exports were already covered by existing agreements with Australia, Chile, Peru and Singapore. Trade with Brunei Darussalam and New Zealand accounted for US$ 108 million and US$ 2.3 billion, respectively. See Testimony of Franklin Vargo, National Association of Manufacturers, 4 March 2009.
[126] In 2008, United States goods trade with APEC economies totalled US$ 2.1 trillion, with an additional US$ 287 billion in services. Bilateral and Regional Negotiations and Agreements, USTR, 2009 Report, p. 124.
[127] Baldwin, in brief, argued that as businesses found themselves disadvantaged by the growing number of bilateral FTAs, they would begin to agitate for more FTAs and, particularly, for expanding the membership in FTAs. See Baldwin, 2006, "Multilateralising regionalism: Spaghetti bowls as building blocs on the path to global free trade," *World Economy*, vol. 29; pp. 1451-1518. For an emphatic response, see Ravenhill, "Extending the TPP: The political economy of multilateralization in Asia," ARTNeT conference, Bangkok, 2 November 2009.

The Trade Policy Staff Committee in the United States Congress held the first public hearings on the proposed TPP talks on 4 March 2009. This was the first opportunity for industry groups to weigh in on the planned talks.[128] The public statements were important, as they revealed the presumptive lines of arguments that would be used once the official talks get underway. They also highlighted the sources of disagreement.

The United States Chamber of Commerce argued that, while the new export opportunities in the seven partners of the TPP were relatively modest, the combined trading bloc made an important "geostrategic group." In addition, any effort to expand to additional partners in the future could reach into economically significant markets that were previously closed through bilateral negotiations.[129] Several commentators spoke of a loss of United States market share to competitors due to overlapping preferential trade deals that excluded the United States.[130] This trade diversion problem seems more hypothetical than real, but the sentiment remains strong.

The AFL-CIO asked the USTR to provide more economic reasons for engaging in TPP negotiations, noting that most of the explanations provided for American involvement in the deal were rooted in political considerations.[131] It also asked for a greater explanation of the possible benefits to be obtained from the three partners without a current FTA in place to govern trade. New Zealand, it noted, was already substantially open for trade, while Brunei Darussalam represented almost no market of any kind (beyond limited trade in oil and oil-related equipment), and most of what the United States wanted from Viet Nam was incorporated into the latter country's recent WTO accession package.. Others, including officials at USDA and the American Farm Bureau Federation, questioned the economic value of a TPP for agriculture.[132]

---

[128] Groups testifying or supplying messages of support included: the United States Chamber of Commerce; National Foreign Trade Council; National Council of Textile Organizations (if Viet Nam is removed from TPP list); Pharmaceutical Research and Manufacturers of America; International Intellectual Property Alliance; Coalition of Service Industries; National Association of Manufacturers; the United States-New Zealand Council; Emergency Committee for American Trade; New Zealand-United States Council; Biotechnology Industry Association; Grocery Manufacturers Association; National Pork Producers; Land O'Lakes Farmers Coop; Motion Picture Association of America; Croplife America; Northwest Horticulture Council; TechAmerica; National Retail Federation; Boeing; Novartis Corporation; Wal-Mart; Distilled Spirits Council of the United States; California Table Grape Commission; Advanced Medical Technology Association; National Electrical Manufacturers Association; National Confectioners Association; United States Association of Importers of Textiles and Apparel; and the American Chamber of Commerce in Japan. Several commodity groups and agribusiness organizations, including the National Association of Wheat Growers, the National Association of Barley Growers and the American Soybean Association, sent a letter of support to President Obama in March 2009. See *Inside U.S. Trade*, 10 April 2009. Opposing testimony or letters included: the American Manufacturing Trade Action Coalition; National Milk Producers Federation; Rubber and Plastic Footwear Manufacturers Association; Public Citizen; American Sugar Alliance; and United States Dairy Export Council.

[129] Testimony of Myron Brilliant, "Oral testimony on the proposed Trans-Pacific Partnership Agreement," 4 March 2008.

[130] See, for example, the testimony by Chuck Dittrich, National Foreign Trade Council, 4 March 2008, or the submission by the National Pork Producers highlighting the tariff disadvantage faced by United States pork exporters relative to competitors in markets such as New Zealand, where imports from Canada, Australia and China had duty-free access, while the United States was subject to a 5 per cent MFN tariff. See letter of support to USTR from National Pork Producers, March 2009.

[131] Testimony filed by the American Federation of Labour and the Congress of Industrial Organizations, 25 February 2009.

[132] *Inside U.S. Trade*, 20 March 2008 and 26 September 2008. The American Farm Bureau argued that it could support the TPP only if it: (a) included all areas, eliminated non-tariff barriers; (b) did not have an impact on previously existing FTAs; and (c) included States with significantly larger markets. See the Bureau's submission to USTR, 11 March 2009. The Wine Institute, the California Association of Wine Grape Growers (CAWG) and Wine America argued they could only support the TPP if the USTR could guarantee that: (a) existing FTAs' provisions for wine and grape juice concentrate would not be changed; (b) the phase-out schedule for United States imports of New Zealand wine and grape juice concentrate should be the longest possible; and (c) the tariff elimination should be immediate for wine and grape juice concentrate to Brunei Darussalam and Viet Nam. See the submission by JBClawson International on their behalf, 10 March 2009.

E. American industry: Points of concern

Various industry and lobby groups made specific recommendations for tariff reductions with each of the potential partners in the TPP. Many of them discussed problems with customs clearance for goods in particular cases. In addition to tariff and customs issues, industry argued that policymakers should ensure the following seven areas were included in any final agreement.

1. Services[133]

The Coalition of Service Industries noted that service imports by TPP member countries amounted to US$ 134 billion in 2007 and almost the same amount in service exports. American exports of services to TPP countries in 2007 totalled US$ 20.7 billion, which exceeded those to China.[134] Various industry groups mentioned barriers to trade in services and expressed strong support for trade liberalization across substantially all service sectors. Several urged the United States to use a negative list approach to negotiations.[135] Industries singled out for particular attention included: financial services,[136] telecommunications, audio/visual services, the media, electronic payment systems, e-commerce, energy services and express delivery services.

2. Intellectual property rights and enforcement[137]

The primary concerns are enforcement of intellectual property rights (IPR) as well as lax legal protections. Brunei Darussalam, Chile, Peru and Viet Nam have been on the United States' Special 301 watch list for problems with IPR protections in the past. Several industry officials urged the USTR to ensure that the TPP conform to the latest United States FTA chapters, as these could serve as a better template than earlier models. This was especially important for those member countries without a bilateral FTA in place.[138] The Grocery Manufacturers Association urged that attention be given to trademark protection for branded food products.[139] The International Intellectual Property Alliance argued that IPR protections and enforcement mechanisms with Viet Nam alone might make the entire agreement worthwhile for United States industry.[140]

3. Standards and other technical barriers to trade[141]

[133] Services were specifically mentioned by the United States Chamber of Commerce, National Foreign Trade Council, National Electrical Manufacturers Association and Coalition of Service Industries.
[134] Testimony by John Goyer, Coalition of Service Industries, 4 March 2009.
[135] These include the United States Chamber of Commerce, and the Coalition of Service Industries.
[136] Public Citizen noted the potential problems of negotiations on greater liberalization in financial services in the wake of the greatest financial crisis since the 1930s. See Testimony filed by Public Citizen, 4 March 2009.
[137] Intellectual property rights were specifically mentioned by the Motion Picture Association of America, United States Chamber of Commerce, National Foreign Trade Council, Pharmaceutical Research and Manufacturers of America, International Intellectual Property Alliance, Coalition of Service Industries, National Association of Manufacturers, Consumer Electronics Industry, Grocery Manufacturers Association, Croplife America, TechAmerica, Advanced Medical Technology Association, Novartis Corporation and the Biotechnology Industry Association.
[138] New Zealand is currently not a member of the World Intellectual Property Organization's Performances and Phonograms Treaty. The country was also cited in the *2008 U.S. Foreign Trade Barriers Report* for problems in its Copyrights Amendments Bill.
[139] Grocery Manufacturers Association submission, 11 March 2009.
[140] Testimony by Eric Smith, International Intellectual Property Alliance, 4 March 2009.
[141] Standards were specifically mentioned by: the United States Chamber of Commerce, National Association of Manufacturers, National Milk Producers Federation, United States Dairy Export Council, Grocery Manufacturers Association, National Pork Producers, Northwest Horticulture Council, TechAmerica, Advanced Medical Technology Association, Telecommunications Industry Association, National Electrical Manufacturers Association and the Biotechnology Industry Association.

The main complaint under this category has been a lack of transparency regarding standards and other processes. Two potential models mentioned as templates are the Dominican Republic-Central America-United States Free Trade Agreement (CAFTA-DR) with five Central American countries (Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua) or the United States-Peru FTA. Both of these agreements contained robust chapters on intellectual property.

The United States Dairy Export Council noted that many of the discussions on non-tariff barriers (NTBs) and SPS barriers to trade were insufficiently resolved during the negotiations over previous FTAs.[142] This has meant additional complications at the implementation phase of the agreements. In any complex TPP talks, particularly in drafting a model text to be used for future entrants, many of these issues must be fully addressed in the negotiations before signing the agreement and not simply left to be resolved after the fact.

The Grocery Manufacturers Association highlighted the importance of negotiations with Viet Nam over standards, in particular, and welcomed the possibility of a more science-based approach to SPS.[143]

4. Investment and investor protection[144]

Various groups specifically mentioned the need for strong investor protection, transparent mechanisms for resolving investor-State disputes and adequate enforcement provisions.

5. Government procurement[145]

New Zealand and Brunei Darussalam are not members of the plurilateral WTO Government Procurement Agreement (Chile is an observer). This, argued several industry officials, meant it was particularly important to include strong government procurement provisions in the TPP negotiations. New Zealand also has some specific provisions in procurement for native peoples that could cause difficulties in bargaining.[146] One specific area of concern might be New Zealand's national formulary for medicines used in the Government's national health services.[147]

6. Rules of origin[148]

The National Council of Textile Organizations noted that rules of origin (ROO) for yarn varied across different FTAs.[149] This is likely to be a similar problem for a host of products. It is not yet clear whether the TPP will supersede and replace existing agreements or exist alongside various bilateral agreements, allowing industry to pick and choose ROO criteria. If the experience of

[142] Testimony provided by United States Dairy Export Council, 10 March 2009.
[143] Submission by Grocery Manufacturers Association, 11 March 2009.
[144] Investment issues were covered extensively by the Coalition of Service Industries as well as by National Association of Manufacturers, Advanced Medical Technology Association and the Motion Picture Association of America.
[145] Transparency in government procurement was specifically mentioned by the National Foreign Trade Council, TechAmerica, Telecommunications Industry Association, National Electrical Manufacturers Association and the AFL-CIO.
[146] However, the United States managed to negotiate with Malaysia and South Africa on FTA agreements, despite special procurement provisions aimed at ethnic Malays or black South Africans.
[147] A similar system caused problems in the United States-Australian FTA negotiations. The submission by the Advanced Medical Technology Association specifically mentioned this problem. See testimony of 11 March 2009. See also the submission by Novartis Corporation on 3 March 2009.
[148] Rules of Origin problems were specifically mentioned by the National Council of Textile Organizations, Croplife America, National Pork Producers, Grocery Manufacturers Association, TechAmerica, National Retail Federation, Wal-Mart, American Sugar Alliance, National Confectioners Association, United States Association of Importers of Textiles and Apparel, and the United States Dairy Export Council.
[149] These differing rules for yarn were creating headaches for the National Retail Federation, which urged the USTR to think carefully about which ROO ought to apply to the TPP. See submission, 11 March 2009.

Singapore and New Zealand is any guide, there will ultimately be overlapping agreements. Businesses in both member countries of a bilateral FTA can opt for ROO contained in either the P4 Agreement or the FTA.

The National Association of Manufacturers explicitly offered its support on the condition that existing FTA agreements would be allowed to remain in force as, it argued, its supporters should not be worse off as a result of the TPP negotiations.[150] The American Sugar Industry insisted that all previous concessions remain intact, without being subject to any further modifications.[151]

The United States Dairy Export Council said it would push hard to ensure that ROO for dairy products would be country-specific, in order to prevent such products from being trans-shipped through various TPP member States to the United States as the ultimate destination.

7. Labour and the environment[152]

Labour and environmental issues are quite an interesting area. It is widely held that the United States Congress (particularly when controlled by the Democrats) will not accept agreements without robust labour and environmental protection built in. Concern over these two issues, however, has barely been mentioned in the industry statements on the TPP to date. One notable exception has been Oceana, which has highlighted a host of concerns to be addressed in the TPP.[153] The AFL-CIO prepared a separate paper for the USTR, covering the labour law issues of concern with each of the potential TPP member States. The AFL-CIO also urged that the separate agreement on labour included as part of the P4 Agreement not become the model for the TPP, as the obligations in the MOU were quite weak with no built-in enforcement mechanisms.

F. Other issues for the United States

In addition to the general concerns of industry noted above, three additional issues will have to be considered by American trade officials. Two concern the countries without an FTA with the United States, and include some specific problems with New Zealand agriculture (dairy and beef, in particular), and the possible inclusion of Viet Nam as a member. A third point of concern for the USTR will be the lack of trade promotion authority from the United States Congress. Each of these points is considered below.

1. New Zealand agriculture

United States-New Zealand trade has not been covered under a separate FTA.[154] Historically, the obstacles to a closer economic partnership were political, including New Zealand's refusal to allow American warships with nuclear capabilities to dock or refuel, and, later, a disagreement about support for the Iraq war.

By late 2008, however, these concerns appeared to have receded into the background. This does not mean that a TPP agreement that includes New Zealand will be smooth sailing. The AFL-CIO

[150] Testimony by Franklin Vargo, National Association of Manufacturers, 4 March 2009.
[151] See submission of 11 March 2009. This stance was opposed by the National Confectioners Association in its submission on 10 March 2009.
[152] Labour and the environment were specifically mentioned by the National Foreign Trade Council, Oceana and Public Citizen.
[153] Oceana is not opposed to the TPP negotiations. It noted that all of the States involved have strong marine interests and called on officials to negotiate a new standard for protection of the environment, specifically by promoting trade in sustainable marine products. See testimony by Michael Hirshfield, Oceana, 4 March 2009.
[154] There is a Trade and Investment Framework Agreement (TIFA) in place with regular meetings to discuss trade concerns, but this is not at the level of a regular FTA agreement.

noted the relatively open trade position of New Zealand, vis-à-vis American exports, in nearly all sectors and asked about additional benefits that might accrue from a TPP FTA.[155]

The National Milk Producers Federation has expressed deep concerns about the dairy industry in New Zealand.[156] The primary problem for American milk producers is that New Zealand's dairy industry is viewed as a monopoly, with one firm (Fonterra) in control of 90 per cent of the market, and substantial barriers to entry into the market.[157] If the American market is opened to competition through an FTA such as the TPP, the Federation has said that New Zealand dairy products will gain unfair competitive advantages.[158]

These concerns were echoed by the United States Dairy Export Council.[159] The Council noted its support for nearly all other FTAs, stemming from the experience with NAFTA where Mexico has become the single largest destination for United States dairy exports. The American export market was previously driven primarily by the sale of United States government stockpiles and subsidized products, but exports have become an important marketplace for domestic producers.

The Council highlighted deep reservations about the problems of competition in the monopolistic New Zealand dairy industry, which also controlled nearly one-third of all global dairy trade. In addition to rising problems of direct competition,[160] a TPP agreement that included dairy products would undermine some important gains from trade as, for example, New Zealand and Australia would become more competitive in the Peruvian market (where neither State currently has an FTA in place). Given the export-oriented structure of the dairy industry in New Zealand and the size of the American market, the group argued that it was likely that much of the production would be directed at the United States.

The United States Congress has picked up this concern.[161] Representative John McHugh wrote to the USTR that "the New Zealand dairy industry has the ability to flood our market with new imports, including such dairy products as cheese, milk proteins, butter fat and dairy food preparations.

[155] Testimony filed by the American Federation of Labour and Congress of Industrial Organizations, 25 February 2009.

[156] The American dairy industry was also concerned about the inclusion of dairy products into the United States.-Australian FTA. In the end, dairy was included, but was subject to a lengthy, 18-year, phase-out period. The New Zealand dairy industry was also a problem in the P4 negotiations, with Chile only willing to cut tariffs to zero on implementation for 55 per cent of New Zealand's dairy exports, with the remaining tariffs to be cut over a 12-year period with the possibility of safeguard mechanisms. See "P4 Economic Partnership Agreement-Key Outcomes," New Zealand press release, 3 June 2005.

[157] The WTO review of New Zealand (2003) found that the dairy industry was no longer a monopoly, but one company had exclusive licences to export to some markets from 2010 onwards. Fonterra (USA), Inc. submitted a letter to USTR during the open comment period (through the legal firm of Blank, Rowe, LLP, on 11 March 2009). It argued that the market in New Zealand was open for competition, with no government subsidies, import tariffs or quota restrictions. It also argued that the entire New Zealand dairy industry was smaller than that of California and that it was no more globally competitive than American dairy products in various export markets.

[158] Jaime Castaneda estimates that United States dairy producers would lose gross revenues of US$ 20 billion over the first 10 years of an FTA. See testimony by the National Milk Producers Federation, 4 March 2009. Land O'Lakes was more careful, but urged the USTR to look carefully at New Zealand's dairy industry for anti-competitive outcomes. See submission to the USTR, 9 March 2009. The National Confectioners Association asked for immediate liberalization of dairy products from New Zealand, as it would bring about substantial benefits for their producers, who were forced to manufacture sweets with the highest-priced sugar and dairy content in the world. See submission to the USTR, 10 March 2009.

[159] Testimony submitted by Thomas Suber, United States Dairy Export Council, 10 March 2009.

[160] This is happening in any case, as New Zealand dairy exports increased from US$ 454 million in 2004 to US$ 704 million in 2008. See testimony filed by the United States Dairy Export Council, 10 March 2009.

[161] Forty-five members of the Friends of New Zealand Congressional Caucus sent a letter to President Obama in support of the TPP negotiations. "New Zealand-US Council Welcomes Further Steps Towards Resumption of Trans Pacific Negotiations," media release, New Zealand-United States Council, 13 March 2009.

These actions would likely result in the closure of thousands of small and medium-sized American dairy farmers, and negatively [have an] impact [on] rural manufacturers."[162]

Another specific area of concern with New Zealand is the beef market. New Zealand is currently subject to tariff rate quotas on beef. If these were removed in the TPP negotiations, the United States Cattleman's Association has suggested using a quantity-based safeguard during a phase-out period and the potential for a tariff snapback if imports surge.[163] The United States is the largest market for New Zealand beef exports, worth US$ 785 million in 2008.[164]

2. Viet Nam

Many of the comments from industry highlighted the importance of Viet Nam as a member in the TPP, and not simply as an observer. Many industry associations believed that the largest source of economic gains from a TPP could come from further liberalization and market access in Viet Nam.

In part, the pressures of further liberalization have kept Viet Nam from joining the TPP talks from the outset as a full participant. The country chose to join initially as an observer, until it could determine how much additional economic openness would be required from members.[165] Viet Nam's 2007 accession to WTO resulted in some wrenching changes at the domestic level to meet the stringent requirements of the accession provisions. These changes, officials have argued, will take time to absorb without agreeing to additional liberalization in other agreements in the near term.

Not everyone in the United States is enthusiastic about Viet Nam's possible inclusion in the TPP talks.[166] In particular, the American garment and textile industries have expressed strong reservations about an FTA with a non-market economy. The National Council of Textile Organizations noted that after the removal of quotas from Viet Nam in 2007, textile and apparel imports increased by US$ 2 billion – 60 per cent – in two years.[167]

The American Manufacturing Trade Action Coalition came strongly against any FTA agreement with Viet Nam, noting that Viet Nam does not purchase finished goods from the United States, nor does it use substantial amounts of American-made products in its supply chains.[168] The Coalition recommended excluding textiles, apparel and other sensitive products from any agreement with Viet Nam. The Rubber and Plastic Footwear Manufacturers Association urged officials to

[162] Press release, "McHugh to Administration: Dairy Must be Protected During FTA Negotiations," 25 September 2008.
[163] "USTR Announced New Zealand FTA Gets Cool Agriculture Reaction," *Inside U.S. Trade*, 26 September 2008.
[164] The United States imported 174,000 tons of beef in 2008 under New Zealand's CSTQ, with an in-quota tariff of US cents 4.4/kg. This produced NZ$ 12.8 million in tariffs. The out-of-quota tariff was 26.4 per cent. The United States is also the second largest importer of New Zealand lamb, at 24,000 tons worth US$ 218 million annually. See "New Zealand Welcomes Positive Signals on TPP Talks," The Beef Site, 19 May 2009.
[165] Interview with officials, Geneva, 1 October 2009.
[166] See, for example, the testimony by Cass Johnson, National Council of Textile Organizations, 24 February 2009.
[167] The National Council of Textile Organizations argued that it was not fair competition, as the Government of Viet Nam had "poured billions of dollars of government support into the sector over the last 10 years." Testimony by Cass Johnson, National Council of Textile Organizations, 24 February 2009. In addition, this surge in imports did not merely harm domestic American producers, but also competitors in trade preference areas such as Africa, Central America and Mexico. The National Association of Manufacturers urged officials to take careful note of the apparel sector concerns if Viet Nam moved from being an observer to a full participant. Testimony by Franklin Vargo, National Association of Manufacturers, 4 March 2009.
[168] In the testimony by Sara Ormand, American Manufacturing Trade Action Coalition, 4 March 2009, she said: "A potential free trade agreement with Viet Nam would be a disaster and would represent the worst aspects of the failed 'one-way' trade policy of the Bush Administration.".

exclude core products of the domestic rubber footwear industry from any agreement with Viet Nam.[169]

The National Association of Manufacturers noted that the United States ran a large and growing manufactured goods trade deficit of US$ 8.6 billion with Viet Nam in 2008. It highlighted high Vietnamese tariffs (which will be lowered under Viet Nam's WTO accession terms, although not to zero) and the potential benefits that could arise from Vietnamese participation in the TPP.[170] The National Confectioners Association made a similar point. Vietnamese tariffs on chewing gum and sugar confectionary products can be as high as 35 per cent. Reduction of these tariffs to an MFN rate of 5 per cent could generate US$ 2 million in export sales in the first year.[171]

The National Association of Retailers highlighted the importance of Viet Nam to the supply chains of many American firms as well as growing opportunities for retail investment.[172] It argued strongly that liberalizing trade in textiles and clothing would benefit American consumers. Other benefits could accrue to the United States dairy industry as a result of further market opening in Viet Nam.[173]

3. Trade Promotion Authority.

One additional complication for future TPP talks is peculiar to the United States' political system. At present, the President of the United States does not have Trade Promotion Authority (TPA) from Congress. TPA authorizes the Executive Branch to begin trade negotiations and promises that the United States Congress will vote on the agreement as it stands at the conclusion of talks. Congress can only vote the agreement up or down, but cannot suggest changes to the negotiated text. Without having TPA in place, negotiating partners cannot be certain that any hard-fought bargains will remain after Congress goes through the text, line-by-line. At this point, it is unclear whether the Obama Administration will be granted TPA from Congress to open negotiations on the TPP, although 45 members did sign an open letter to President Obama on 10 March 2009, urging him to begin the first round of comprehensive talks.

It is possible to start talks in the absence of such authority, but it is a risky strategy.[174] It means that the USTR must be particularly careful to consult regularly with Congress and industry as negotiations unfold in order to avoid any unpleasant surprises and rejections of the final deal.

4. Australia

In an expansion of the TPP beyond the original founding members, perhaps the second most important State to consider is Australia. Like the United States, the Government of Australia will face conflicting pressures from industry groups. Understanding these interests is important, as they are likely to shape the direction of any future deals.

---

[169] The industry did not take a position on trade talks with any of the other States in the TPP talks. Rubber footwear has some of the highest tariffs in the United States and has maintained these tariff levels through successive rounds of negotiations in the WTO and elsewhere. The high tariffs stem in part from a concern over defence needs. See testimony by Mitchell Cooper, Rubber and Plastic Footwear Manufacturers Association, 4 March 2009.

[170] Testimony by Franklin Vargo, National Association of Manufacturers, 4 March 2009.

[171] See the submission by the National Confectioners Association, 10 March 2009.

[172] See submission by the National Association of Retailers, 11 March 2009.

[173] Viet Nam's tariff levels are generally low, and largely falling in areas of significant export promise as a result of WTO accession commitments. See submission by United States Dairy Export Council, 10 March 2009. Land O'Lakes Farmers Coop was specifically enthusiastic about the potential for market expansion in Viet Nam. See submission, 9 March 2009.

[174] The absence of TPA is likely to prove a problem should the Doha round of the WTO talks be concluded. If it looks like a deal is imminent, the Administration will likely push forward TPA legislation for Congress. Given the politics of trade in the United States at this time, however, renewal of TPA might be granted only for the Doha deal.

Australia's [then] Trade Minister, Simon Crean, announced Australia's planned participation in TPP talks on the margins of the APEC ministerial meeting in Lima on 20 November 2008. This announcement followed nearly two months of intensive discussions within the Government and industry over the priorities and objectives for the negotiations.

Australia has bilateral FTAs with New Zealand (1983), Singapore and the United States (2003). It concluded an FTA with Chile (2009). Brunei Darussalam was included in the ASEAN/Australia/New Zealand agreement. Given this network of FTAs (and similar overall templates to the United States FTA agreements), negotiating in the TPP should be relatively straightforward.

Australia has strong trade ties with most of the TPP member States. The United States was Australia's third-largest trading partner in 2008, with a two-way goods trade of A$ 38.8 billion and services trade of $A 15.9 billion. Singapore was the fourth largest partner with goods of $A 22.3 billion and services of $A 8.7 billion.[175] Peru and Chile are members of the Cairns group of agricultural exporting countries with a long history of working together in multilateral trade negotiations.

Like the United States, Australia views the TPP as a building block for further regional integration. With this perspective, policymakers would prefer to be in "on the ground floor" to shape the overall direction of the agreement. United States participation will be critical in keeping up the momentum for greater liberalization and further engagement with the Asia-Pacific region.

The Government of Australia issued a report in 2008[176] that reviewed export policies and programmes. The report warned of the potential for Australia to be caught out by the proliferation of trade deals in the region. As a hedge against this possibility, the report recommended developing multiple "clusters" of FTA deals that could ultimately be knitted together into something like FTAAP. The TPP negotiations fit within this cluster approach to trade. The report noted that among States with recently negotiated FTAs, there had not "yet been a strong export response, but the full benefits of the agreements are expected to emerge over time.[177]

In announcing Australia's intention to pursue membership, [then] Trade Minister Crean outlined the following priorities:

(a) Promotion of trade and investment flows with the partners of the Trans-Pacific Partnership negotiations;
(b) Ensuring that the Trans-Pacific Partnership provides a platform for comprehensive liberalization across goods, services and investment;
(c) Substantial improvement of trade and economic integration with Peru, with which Australia does not currently have a free-trade agreement, given the growing commercial interests of Australia, particularly in services and commodities trade;
(d) Pursuit of commercial interests more broadly in the Asia-Pacific region as other countries start to take a closer interest in the Trans-Pacific Partnership process;
(e) Building on WTO rules covering goods, services and investment; and
(f) The provision of a model arrangement that might stimulate other initiatives to multilateralise bilateral FTAs.[178]

Australian industry approaches to the TPP negotiations

[175] *Trade at a Glance, 2009*, Australian Department of Foreign Affairs and Trade. Overall trade with APEC members accounts for $A 560.8 billion in total two-way trade and a 68 per cent share of Australian trade.
[176] David Mortimer, *Winning in World Markets: Review of Export Policies and Programs*, 1 September 2008.
[177] Mortimer, 2008.
[178] Ministerial Statement, [then] Trade Minister Simon Crean, 26 November 2008.

Again, like the United States, the Australian Department of Foreign Affairs and Trade solicited public comment on the TPP negotiations on 3 October 2008.[179] The responses in many ways mirrored the reactions from the United States' industry groups.

One striking difference between the two States, however, was the importance that Australian firms placed on widening the TPP process to include other States. Industry after industry recommended bringing China, Japan and the Republic of Korea into the negotiations.[180] Given the trade liberalization already flowing from Australia's bilateral FTAs with most of the presumptive TPP partners, the economic gains from negotiations could be best captured with the inclusion of some of the bigger North-East Asian markets. Several industry officials questioned whether the seven markets in the TPP negotiations (plus Viet Nam as an observer) would be sufficient to attract the interest of those economies in joining. If not, perhaps Australia's Department of Foreign Affairs and Trade's focus should be on negotiating bilateral or regional agreements with the key markets of China, Japan or the Republic of Korea.

Specific points of concern raised by industry for the negotiations included:

(a) Agriculture.[181] The Australian dairy industry asked for a high degree of trade liberalization in agriculture (and specifically dairy products) to include both tariff and non-tariff barriers to trade.[182] The Australian sugar industry noted that the TPP might be a mechanism for bringing liberalization into the American sugar market that was not possible in the United States-Australian FTA.[183] Sugar products were substantially liberalized under the P4 Agreement, so it may be difficult to exclude sugar from the TPP;[184]
(b) Financial services and investment.[185] IFSA encouraged the Government to consider restrictions and regulations on capital and investment flows, discriminatory tax settings and non-recognition of regulatory regimes;
(c) Intellectual property rights.[186] ARIA and MIPI asked the Government to ensure that the TPP include IP protection and strengthen the existing chapter in the P4 Agreement with a view to harmonizing Australian FTA rules and building a broader FTAAP;
(d) Labour and the environment.[187] CFMEU and AFTINET both asked for labour standards in the TPP, while expressing concerns about the movement of persons and rights of

[179] Weighing in to support the negotiations were: ABB Grain Ltd.; American Chamber of Commerce in Australia; Australian Diary Industry Council Inc.; Australian Industry Group; Australian Recording Industry Association; Australian Sugar Industry Alliance Ltd; Australian Tourism Export Council; Investment & Financial Services Association Ltd.; Minerals Council of Australia; Music Industry Piracy Investigations Pty Ltd; and the Screen Producers Association of Australia. Opposing negotiations were Australian Fair Trade and Investment Network (AFTINET) and Australian Pork Ltd.

[180] For example, see the submissions by the Australian Industry Group or Australian Pork Ltd.

[181] Agriculture was specifically mentioned by ABB Grain Ltd. and the Australian Sugar Industry Ltd.

[182] Allan Burgess, Australian Dairy Industry Council Inc., submission on 6 November 2008.

[183] The United States-Australian FTA, the industry noted, was the only one that either country had concluded that completely excluded sugar. See Ian McMaster, Australian Sugar Industry Alliance Limited, submission on 31 October 2008. The United States National Confectioners Association specifically asked the USTR to review the exclusion of Australian sugar in the TPP negotiations. See submission to the USTR, 10 March 2009. In the P4 Agreement, Chile was granted a special agricultural safeguard mechanism, the "sugar treatment," based on a trade surplus mechanism. This was the only sector-specific provision in the P4 goods agreement. (See WTO Factual Presentation, p. 38.) Wal-Mart asked the USTR to avoid such sector-specific exclusions in the TPP. See submission by Wal-Mart, 11 March 2009. This was opposed by the American Sugar Alliance, as noted in their submission of 11 March 2009.

[184] New Zealand noted that it only agreed to liberalization of sugar products (in solid form, HS 1701) because it did not export such products to Chile. See "Trans-Pacific Strategic Economic Partnership Agreement: National interest analysis," New Zealand Ministry of Foreign Affairs and Trade, 8 July 2005.

[185] Financial services and investment were mentioned by the Investment & Financial Services Association Ltd. (IFSA) and Wal-Mart.

[186] IPR was mentioned in detail by Australian Recording Industry Association, Music Industry Piracy Investigations and the Screen Producers Association of Australia.

indigenous peoples. AFTINET asked for strengthening multilateral environmental agreements. The National Centre for Marine Conservation and Resource Sustainability highlighted problems of marine management;

(e) Rules of Origin.[188] Ann Capling strongly urged the Government to adopt a common set of rules of origin in the TPP negotiations, as part of a wider objective to address the discriminatory problems of FTAs.

Industry officials also expressed a set of concerns at the domestic level. They called on the Department of Foreign Affairs and Trade to continue to negotiate in the context of an open and transparent process with sufficient access for public consultations.

G. Conclusion

At this early stage, any assessment of the prospects for the Trans-Pacific Partnership talks is difficult. Nevertheless, a few things seem clear. First, this is an agreement that is not primarily driven by economic considerations. Instead, it is a political statement about binding together different regions of the world. Member countries want to use TPP participation as a means of cementing their relationship with Asia.

Second, the TPP Agreement is one step in a larger quest for greater trade liberalization. It could either incorporate more partners (with particular emphasis on the economies of North-East Asia) or even the entire APEC membership. In fact, without the incentive of other potential accessions, the motivations for discussion dim considerably.

Third, if the TPP does not expand, it will do little to achieve further liberalization or to catalyse trade in the Asia-Pacific region. The participating member States are already relatively open to trade and are already well-connected through bilateral FTA webs to one another. The amount of trade conducted among the seven States is limited and does not have the potential for significant expansion in the near term.

Fourth, the TPP will not serve the goal of rationalizing the overlapping problems of multiple free trade arrangements in the region. By allowing States to continue to use the provisions of existing bilateral agreements – alongside the TPP rules – the agreement merely adds another layer of "pasta" to the "spaghetti bowl".

Finally, although talks on expanding the P4 Agreement into the TPP will go relatively smoothly, given the existence of overlapping FTA deals, the negotiations still contain a few sticking points. It took five rounds of bargaining for the original four States to reach agreement (and then only by putting aside the two most contentious chapters for further consideration), even through they had almost no trade between four very small and open economies. Negotiations on expanding from four to seven (or eight) States will take longer and be much more complex. In particular, the existing template of the P4 Agreement will not be adequate to get the United States on board. This chapter has highlighted some of the probable areas of intense discussions for two incoming States.

[187] Labour and the environment were covered in detail by the Construction Forestry Mining and Energy Union (CFMEU), Australian Fair Trade and Investment Network (AFTINET), and the National Centre for Marine Conservation and Resource Sustainability.

[188] Submission by A. Capling, 30 October 2008.

The problem of reaching a satisfactory deal is compounded by the desire of the member States to create a final agreement open to additional accession by other States. This means that deals struck in the TPP must be suitable for a wide range of potential partners in the future. It must also not be so limited or limiting that these potential partners choose not to participate. This will make future negotiations especially complex. The potential stakes are high if the TPP is, indeed, to form the path to a free trade agreement in the Asia-Pacific region.

Part four

Institutions and trade enhancement

IX. Do institutions matter for trade in Asian countries?[189]

By Prabir De

Introduction

The rise of Asia as a major economic power and global growth centre is an unprecedented development in the contemporary world. By any standard, Asia's economic performance has greatly improved; per capita incomes have risen much more rapidly in the past few decades as the population growth rate has fallen while the rate of increase in output has risen. The absolute number of people living in poverty, while still large, has decreased dramatically. Asia's participation in the international economy has increased, with greatly reduced barriers to international transactions.[190] Trade and economic integration within the region and with the rest of the world has played an important role in Asia's economic success. However, the current financial crisis has severely affected global trade, including exports from the Asia-Pacific region. As a result, economic integration has become a major challenge for the entire region. Quite naturally, the ongoing financial and economic crisis reinforces the need for economic integration.

Economic integration is successful where the "prosper-thy-neighborhood" sentiment becomes stronger (Lindberg and Stuart, 1971; and Lombaerde and Langenhove, 2007). Its pace escalates when well-planned polices, institutions and governance enforce regional projects – physical or otherwise – towards building a regional harmony and unity. Regional economic integration becomes successful when higher trade and investment coupled with good governance supports the region's growth and prosperity. The ongoing financial and economic crisis has refocused attention on the governance aspects of economies, yet economists are still not giving that enough consideration.

Institutions such as property rights, the judicial system and rule of law, and contract enforcement play an important role in the process of economic growth. It is argued that a favourable institutional environment reduces transaction costs, encourages skill formation and innovation, supports capital formation and capital mobility, and allows risks to be priced and shared, all of which positively influence economic growth. Similarly, good economic governance fosters productivity and growth by ensuring a consistent policy environment. Most of the Asian economies generally rank low in terms of the various indicators of institutions and governance quality (De, 2010); however, interaction between institutions and organizations is what shapes the institutional evolution of an economy (or a region). Both interaction and governance enhance integration, economic growth and infrastructure – regional or otherwise. Thus, an appropriate institutional and policy framework is needed for a governance framework to be able to function effectively (World Bank Institute, 2008; ESCAP, 2009; and Asian Development Bank, undated).

The primary objective of this chapter is to find out whether or not governance matters for enhancing Asia's trade. An attempt is made to answer two important policy issues: (a) the ways and means through which the countries in Asia can make a positive contribution to governance, which then enhances trade in the region; and (b) the role that regional cooperation can play in strengthening governance in Asia. Section A presents a literature review on the role of institutions and governance in growth and development. Section B presents the performance of countries in governance in Asia. Section C attempts to measure the empirical relationship between trade and governance in Asia. Section D presents the conclusion and policy implications.

[189] An earlier version of this chapter was presented in a paper at the Asia-Pacific Trade Economists' Conference "Trade-led growth in times of crisis", organized by ESCAP from 2 to 3 November 2009 in Bangkok..

[190] The decline in transportation costs during the past few decades has been supporting globalization and regional integration in different parts of the world.

A. Institutions and governance for development: Literature review

Institutions form the incentive structure of a society, and consequently the political and economic institutions are the underlying determinant of economic performance. According to North (1990):

> "Institutions are the humanly-devised constraints that structure human interaction. They are made up of formal constraints (rules, laws and constitutions), informal constraints (norms of behaviour, conventions and self-imposed codes of conduct), and their enforcement characteristics. Together, they define the incentive structure of societies and specifically economies. Institutions and the technology employed determine the transaction and transformation costs that add up to the costs of production."

Dixit (2009) noted that good economic governance was needed to fulfill three essential prerequisites: (a) collective action; (b) enforcement of contracts; and (c) security of property rights. This ensures that corruption is minimized, the views of minorities are taken into account and the voices of the most vulnerable in society are heard in decision-making. It is also responsive to the present and future needs of society.

Various studies have demonstrated that institutional quality is crucial to economic and social development.[191] For example, Smith (1776) noted that private contracting (institutional quality) was an important prerequisite for the mutually beneficial exchanges that promoted specialization, innovation and growth, which are again the main factors for gains from trade. Empirical studies have revealed that institutional quality is associated with (a) higher economic growth and income levels (Campos and Nugent, 1998; Barro, 1999; Acemoglu, Johnson and Robinson, 2002; and Lee and Kim, 2009);[192] (b) an increase in investment (public and private) (Knack and Keefer, 1995 and Alfaro, Kalemli-Ozcan and Volosovych, 2005); (c) an improved stock of human capital (Arimah, 2004); (d) better management of (ethnic) conflicts (Easterly, 2001); (e) less income inequality (Chong and Gradstein, 2004), better financial development (Beck and others; 2001); (f) efficient allocation of aid (Epstein and Gang, 2009); and (g) sustaining "common resource pools" through human cooperation (Ostrom, 2005).

The quality of institutions and governance is an important determinant of economic growth and income levels, since it affects, for example, the costs of transactions (Aron, 2000; and Rodrik, Subramanian and Trebbi, 2002). Transaction costs are far higher if economic actors and agents cannot fully trust property rights or the rule of law. Consequently, they typically operate on a smaller scale, use inexpensive but less efficient technologies, and are thus less competitive. They may even retreat to the black market economy and rely on bribery and corruption to facilitate their operations (Busse and others, 2007). Ultimately, this leads to the rise of a rent-seeking informal economy. Overall, as indicated in Rodrik, Subramanian and Trebbi (2002), the impact of institutional quality on income levels can be explained through three different channels: (a) information asymmetries, as institutions channel information about market conditions, goods and participants; (b) the reduced risk, as institutions define and enforce property rights; and (c) the restrictions on the actions of politicians and interest groups, as institutions make them (more) accountable to citizens (World Trade Organization,, 2004). Yet there might also be a reverse influence from income levels to institutions and governance, since citizens from richer countries are likely to have stronger preferences and choices (as well as the knowledge and the resources) for high-quality institutions and good governance.

By exploring comparative advantages in particular goods, either using economies of scale in production or taking advantage of technology spillovers and knowledge information, institutions and governance are likely to boost economic growth rates and, thus, income levels. Institutions might also

[191] See, for example, Ostrom, 2005.

[192] In particular, the quality of institutions and correct policies matter in long-term economic growth (Rodrik, 2003; Knack and Keefer, 1995; and Lee and Kim, 2009).

have an indirect impact on income levels through trade, as high-quality institutions reduce the risk premium required for (international) trade. Conversely, trade might also influence the quality of institutions and the governance therein. From a theoretical perspective, there are two main channels for a positive linkage (Busse and others, 2007). First, economic agents in open economies may learn from experience in their trading partner's countries by adapting (or imitating) successful institutions and regulations. Second, international competition may force countries to improve their institutional and regulatory setting, as domestic producers would go out of business without reforms.

Better regional institutions improve the regional investment climate and increase foreign direct investment (FDI) inflow into each country of the region (Busse and others, 2007). Rent seeking and corruption might be more difficult in more open economies, as foreign firms increase the number of economic agents involved (Rajan and Zingales, 2003). Anderson and Marcouiller (2002) argued that weak institutions acted as significant barriers to trade. Increasing the transparency of the trading environment through greater predictability and simplification can be an important way of reducing trade costs (Helble Shepherd, and Wilson, 2009) while de Groot and others (2004) found that both institutional quality and existence of similar institutions in trading partners were positively associated with bilateral trade.

Strong institutional coordination coupled with improved infrastructure helps minimize international trade costs (Francois and Manchin, 2007). Institutional quality can be proxied by good governance in a country (Busse and others, 2007). Bolaky and Freund (2004) demonstrated that regulatory quality influenced the interaction between trade and economic growth and that countries with excessive regulations did not benefit from trade. Excessive regulations may encourage a country to produce goods in which that country has no comparative advantage and/or the terms of trade have been unfavourable over recent decades (Rodrik Subramanian and Trebbi, 2002).[193]

Based on economic theory, beneficial effects could be expected from lowering trade barriers for Asian countries, as nations may benefit from the well-known gains from exchange and specialization through trade. However, trade benefits would be suboptimal or unattainable if not supported by adequate infrastructure and proper institutions that practice good governance in Asia and the Pacific (Kohsaka, 2007). Smaller economies in Asia are less likely to achieve welfare gains from trade liberalization in the presence of perennial economic asymmetry, where increased market access to smaller economies may not produce a good result in the short to medium term. Among the various reasons for the disappointing export performance and, in general, economic development of smaller and vulnerable economies and other developing countries, the quality of institutions has been identified as a major impediment. Therefore, many free trade agreements (FTAs) intend to go beyond the standard FTA features by enhancing the political dimension, explicitly addressing corruption, promoting participatory approaches and refocusing development policies on poverty reduction.[194]

What follows is that improved institutions and good governance are positively associated with growth and development, and countries need to improve them for the long-term growth prospects of an economy or a region.

B. Measuring governance in Asia and the Pacific

Good governance is one of the key pillars of United Nations poverty reduction strategy. Assisting developing countries to improve governance is a strategic priority of the United Nations

[193] Trade is only beneficial if the involved adjustment costs are relatively low; that is, if the reallocation of labour and capital from the import-competing sector to the export sector can be achieved at minimal costs. However, if the structure of the economy is relatively rigid, production factors cannot move to the sectors where large welfare gains can be achieved. The economy may end up in a situation where trade does not have a beneficial impact on the allocation of resources within and between sectors.

[194] Refer, for example, to the Cotonou Agreement between African, Caribbean and Pacific Group of States and the European Union.

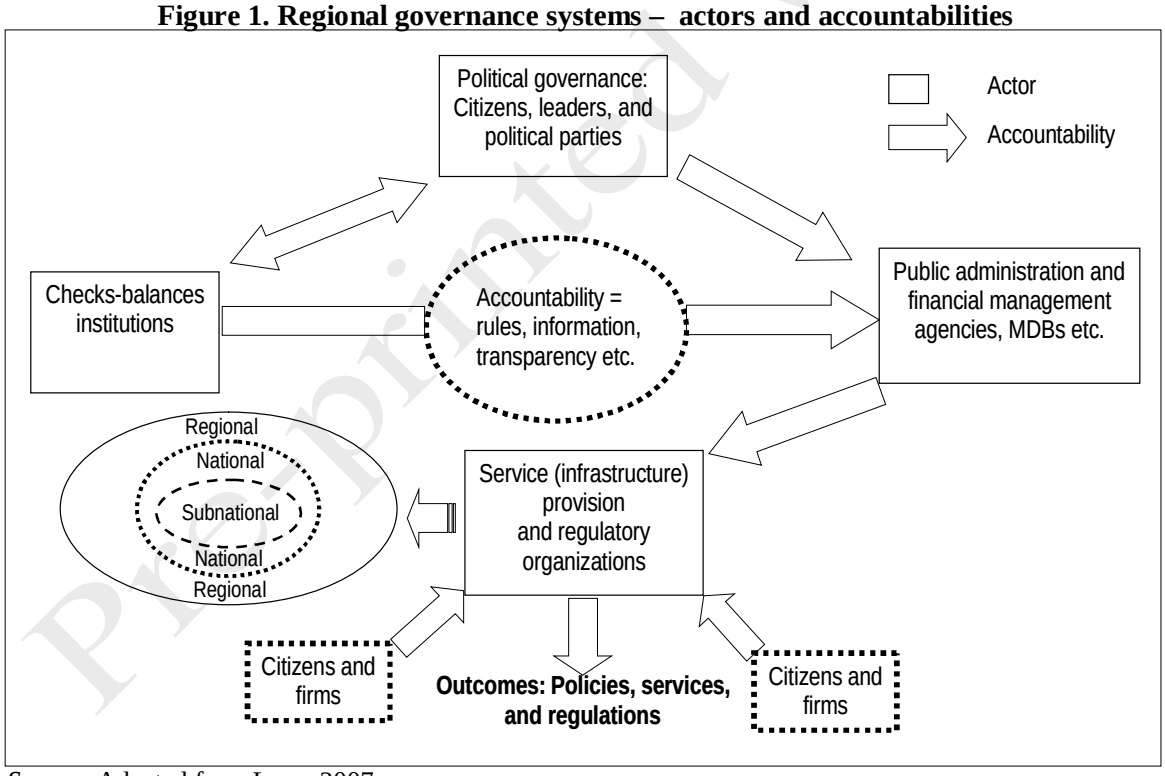
(2009) in its work to eliminate poverty in Asia and the Pacific. The United Nations (2009) argued that the attainment of good governance required a sound infrastructure to support effective implementation.

Good governance has eight major characteristics, i.e., participatory, consensus-oriented, accountable, transparency, responsive, effective and efficient, equitable and inclusive, and following the rule of law. This infrastructure can be broadly defined as requiring sound financial and legal systems, the systemic protection of rights, and support by strong regulatory bodies to provide oversight as well as monitor and enforce these rules.

To monitor governance, Levy (2007) discussed the role of actors and their accountabilities (figure 1). A regional governance system includes many institutions and actors, including politicians, policymakers, citizens and other stakeholders. The governance can be monitored provided:

(a) Citizens and firms can use measures of governance to hold governments accountable for their actions on regional infrastructure;
(b) Governments in member countries (and regional organizations, development partners etc. that seek to provide technical support) can use governance measures to improve the design of regional policy, for example, by providing "actionable" guideposts for operational efforts to improve regional governance;
(c) Regional organizations, donors and development partners seek assurance that the resources they provide for regional infrastructure are being used well, and not misappropriated.

Figure 1. Regional governance systems – actors and accountabilities



Source: Adapted from Levy, 2007.

As figure 1 shows, transparency, effectiveness of government, rule of law, control of corruption, voice and accountability, political stability and regulatory quality are essential elements of any governance system, contributing to the efficacy both of actors and of accountability relationships in terms of:

(a) Accountability. Officials are answerable to the entity from which they derive their authority that work has been conducted according to agreed rules and standards, and reported fairly and accurately.

(b) Participation. Allowing public employees to have a role in decision-making and empowering citizens – especially the poor – by promoting their rights to access and secure control over basic entitlements that allow them to earn a living.

(c) Predictability. Fair and consistent application of laws, regulations and policies.

(d) Transparency. Low cost, understandable and relevant information made available to citizens to promote effective accountability as well as clarity about laws, regulations and policies.

Within Asia, there is already strong appreciation of the role of governance as the vehicle for enhancing productivity by increasing capital allocation that should accrue to the rightful stakeholders and, therefore, enhance long-term economic growth prospects (Singh and others, 2005; and Kohsaka, 2007). Autonomy, transparency, accountability, decision-making tools are important in regulating regional infrastructure and governance (Asian Development Bank, undated and 2008). Being central in development, monitoring governance would help achieve regional development goals.

Since governance is a multidimensional phenomenon, analysis of governance includes more disaggregated dimensions (Kaufmann, Kraay and Mastruzzi, 2008). Given the large scale of heterogeneity, improving governance is one of the primary aims of economic and social policies in many Asian countries. The World Bank Institute provides the following set of indicators that can represent governance structure of a country:[195]

(a) Voice and accountability (VA) – measuring perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association and a free media;

(b) Political stability and absence of violence (PS) – measuring perceptions of the likelihood that a government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism;

(c) Government effectiveness (GE) – measuring perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of a government's commitment to such policies;

(d) Regulatory quality (RQ) – measuring perceptions of the ability of a government to formulate and implement sound policies and regulations that permit and promote private sector development;

(e) Rule of law (RL) – measuring perceptions of the extent to which agents have confidence in, and abide by, the rules of society, particularly the quality of contract enforcement, property rights, the police, the courts as well as the likelihood of crime and violence;

(f) Control of corruption (CC) – measuring perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, and "capture" of the State by the elite and private interests.

[195] However, there are many varieties of governance indicators such as those compiled by the United Nations Development Programme (2004) and the World Bank's Country Policy and Institutional Assessment. For the methodology of these indicators, see Kaufmann, Kraay and Mastruzzi, 2008.

Table 1. Global rankings of Asian countries in governance indicators

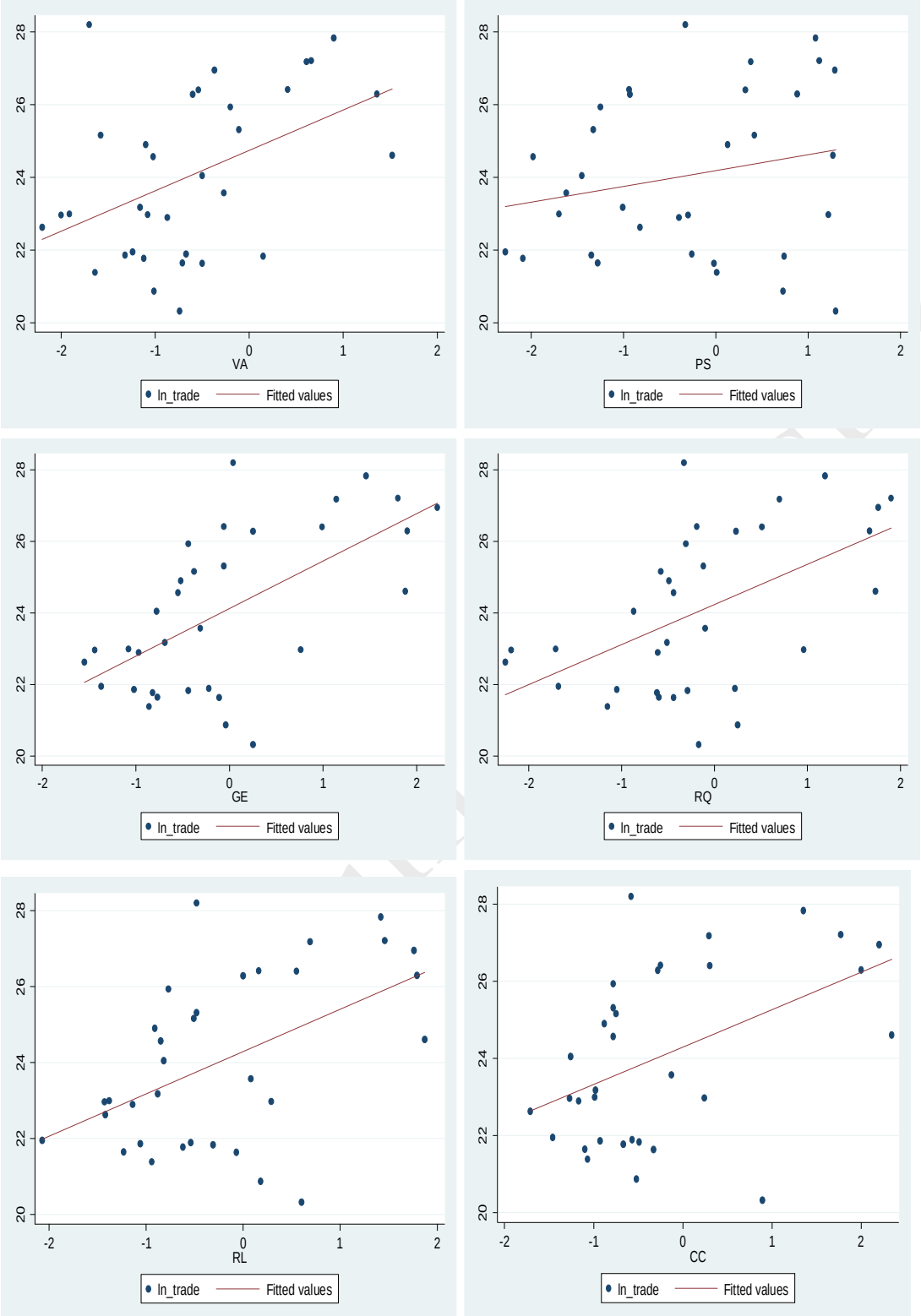
Subregion	Country/area	VA		PS		GE		RQ		RL		CC	
		2007	1996	2007	1996	2007	1996	2007	1996	2007	1996	2007	1996
Central Asia	Afghanistan	148	167	171	158	159		169		173	148	172	
	Armenia	117	119	96	68	92	118	67	150	99	98	119	107
	Azerbaijan	146	141	128	118	125	139	121	143	132	132	154	127
	Kazakhstan	140	127	66	103	115	148	115	123	131	122	143	118
	Kyrgyzstan	121	118	144	50	132	109	109	126	158	112	161	115
	Tajikistan	155	162	138	165	149	165	148	164	156	157	137	148
	Turkmenistan	172	164	101	73	162	164	170	166	161	144	164	144
	Uzbekistan	169	154	155	93	131	147	164	157	151	137	147	130
South Asia	Bangladesh	120	92	157	132	135	120	140	110	130	121	157	96
	Bhutan	128	152	48	36	74	56	133	72	57	148	36	
	India	65	72	141	137	73	81	94	100	70	57	91	88
	Maldives	131	140	85	70	85	74	81	72	73		130	
	Nepal	130	83	168	114	136	86	130	132	117	75	118	80
	Pakistan	138	120	172	149	124	110	126	121	138	108	135	128
	Sri Lanka	107	94	163	159	90	105	84	60	71	74	72	77
South-East Asia	Brunei Darussalam	142	142	14	9	40	27	36	1	64	45	59	46
	Cambodia	127	131	118	146	138	153	122	92	150	140	160	134
	Indonesia	92	143	145	124	100	57	98	66	125	93	125	103
	Lao People's Dem. Rep.	163	138	95	16	137	69	149	155	143	160	150	123
	Malaysia	115	99	76	45	33	32	56	42	54	41	62	37
	Myanmar	173	172	150	141	169	157	171	145	164	147	171	140
	Philippines	91	70	154	108	75	65	86	54	112	69	133	78
	Singapore	108	91	16	13	1	2	4	2	11	14	9	6
	Thailand	118	61	142	81	66	44	75	63	76	46	97	82
	Viet Nam	162	153	69	66	101	83	112	115	103	114	123	102
North-East Asia	China	164	161	113	100	67	59	95	83	95	85	117	67
	Hong Kong, China	55	65	19	85	13	26	3	4	20	24	17	20
	Japan	39	39	21	34	23	23	32	59	21	19	29	26
	Republic of Korea	51	54	60	76	26	31	42	61	38	42	51	53
	Mongolia	74	56	49	48	127	111	103	133	92	67	113	46
	Taiwan Province of China	48	53	58	26	34	21	40	31	46	31	48	32
Pacific	Australia	16	12	30	10	7	22	9	20	12	10	12	
	Fiji	113	95	88	37	110	69	116	119	88	60	100	
	New Zealand	7	1	11	11	10	5	8	3	5	3	5	4
	Rank correlation	0.91*		0.80*		0.90*		0.87*		0.89*		0.93*	

Source: Calculated based on World Governance Indicators, World Bank Institute, Washington, D.C.
*Significant at the 1 per cent level.

Governance is a dynamic phenomenon and it therefore requires a systematic analysis to capture countries' achievement over time. Table 1 presents the global ranking of selected Asian countries in the above six governance indicators for 2007 and 1996. Also, the following observations are worth noting.

First, although the global ranking of New Zealand dropped from 1996 to 2007 in all indicators, it was the only country in the Pacific subregion of Asia to enter the top-10 league in all indicators except PS, in which it slipped to eleventh position globally without any change in rank during those years. Australia and Hong Kong, China also entered the top-10 league in the RQ category, as did Singapore in the GE, RQ and CC categories.

Figure 2. Scatter of trade and governance indicators in Asia, 2007



Second, the bottom positions were also occupied by Asian countries. For example, the performance by Central Asian countries in all six indicator categories was unusually poor. None from Central Asia made even a median achievement except for Kazakhstan in the PS category and Armenia in the RQ category in 2007. South Asian countries were also below the mean level, with Bangladesh, Nepal and Pakistan performing poorly. Although countries in North-East Asia dominated the governance ranks in Asia, their performances varied between top and middle level. Except for the Pacific, the remaining subregions of Asia show mixed results in governance. High and significant rank correlations suggest there has not been much change in Asian countries' global ranks in governance. Improvement in performance is visible most in the case of smaller countries such as New Zealand and Singapore. While New Zealand's performance was consistent across the indicators, there was wide variation in the case of other smaller countries such as Singapore. In the GE category, Singapore was the top-ranked country globally, whereas it was ranked 108 (out of 176 countries) in the VA category. Overall, consistency is important for infusing improved governance environment in a country and for regional infrastructure.

Third, given that governance indicators are perception-based, it is not surprising that all six indicators are closely associated with (the log) of trade (figure 2).[196] Figure 2 indicates a positive association between governance and trade. Therefore, countries with higher governance show a positive association with trade. [197]

Do countries with higher income and infrastructure stock, and improved governance also witness higher trade? To test this hypothesis, the relationship between trade and governance with the same set of countries is considered below.

C. Impact of governance on trade in Asia

In a region such as Asia, which is vast and heterogeneous, the impact of governance on trade might vary across subregions. In order to find the empirical association between governance and trade across Asian subregions, the following equation is used:

$$Trade_{it} = \alpha_0 + \beta_1 Gov_{it} + \beta_2 TI_{it} + \beta_3 X'_{it} + \beta_4 Subregion_{jt} + \varepsilon_i \quad (1)$$

where *i* represents a country, *j* = subregion, *t* = time and ε_i is the error term. The dependent variable is *Trade*, whereas independent variables are *TI* (trade infrastructure). *Gov* presents governance indicators of country *i* for year *t*, *X* is a vector of additional regressors, *Subregion* is a dummy variable, representing four subregions of Asia (following the specification of table 1). Additional regressors (*X*) include some control variables to represent internal and external demand for infrastructure such as per capita income, population and FDI, among others.

TI is trade infrastructure index, constituted over national and regional infrastructure indicators, which represents a country's trade infrastructure stock in a particular year. A part of the national infrastructure also constitutes regional infrastructure. Ultimately, these indicators individually and/or jointly represent a region's physical infrastructure. It can be assumed that a higher national infrastructure implies a higher regional infrastructure. Specifically, *TI* is an index over six key physical infrastructure indicators for 1996 and 2006:[198] (a) roads; (b) railways; (c) airports; (d) seaports; (e) telecommunications; and (f) electricity. With the help of the principal component

[196] Trade is defined as exports and imports of merchandise. The correlations are in the range of 0.22 to 0.61, indicating a close linkage with trade (see annex).

[197] The usual caveat is that this association does not talk about the direction of causality between trade and governance.

[198] This index has been taken from De, 2009, which can be referred to for further details.

analysis (PCA), *TI* has been constructed, which is a linear combination of the unit free/scale free values of the individual facilities.[199]

An interactive term is introduced between *Gov* and *Subregion* in order to understand the variability of subregional governance and its impact on trade in particular. Equation (1) is then written as:

$$Trade_{it} = \alpha_0 + \beta_1 Gov_{it} + \beta_2 TI_{it} + \beta_3 X'_{it} + \beta_4 Subregion_{jt} + \beta_5 (Gov_{it} * Subregion_{jt}) + \varepsilon_i \quad (2)$$

A sample of 30 Asian countries is included for which data are available for the dependent and independent variables. The baseline results are presented in table 2. The usual caveat is that there is no accepted definition of subregional or regional governance, which is a very difficult concept to measure. It can be measured partially by the effectiveness of subregional institutions, such as SAARC, GMS, ASEAN and CAREC, that are implementing subregional programmes. However, the governance of individual members of such programmes affects overall subregional governance. The following observations are worth noting.

First, the coefficients of national governance of all six indicators have positive signs but their significance level varies. For example, estimated coefficients of national RQ are not significant (thereby meaning no association with trade in Asia), whereas the others are significant at the 5 per cent to 10 per cent level.

Second, the size of significant national governance impact on trade is highest in the case of GE (2.129) and lowest in the case of VA (1.001), thus meaning that a 1-point improvement in government effectiveness would lead to about a 2-point rise in trade in Asia, other things being equal.

[199] Specifically, $TI_{ij} = \sum W_{kj} X_{kij}$, where TI_{ij} is trade infrastructure index of the i-th country in j-th time, W_{kj} is weight of the k-th facility in j-th time, and X_{kij} is the unit free and scale free value of the k-th facility for the i-th country in j-th time point. It helps in deriving the index (score) after adding the multiplied values corresponding to each category. As discussed above, the weights (W_{kj}) in this equation have been derived from the PCA. See De, 2009 for PCA weights and data sources.

Table 2. OLS (cross-section pooled) regression results

2(a). Voice and accountability

	National	Regional
TI	0.0116[b]	0.0117***
	(2.626)	(3.640)
LnPCI	2.604[a]	2.882 [a]
	(6.512)	(8.113)
LnPop	0.537 [a]	0.776 [a]
	(3.544)	(3.771)
FDI	0.0212	0.1101 [c]
	(0.684)	(1.257)
VA (National)	1.001 [b]	
	(2.079)	
VA (Regional), of which		
Central Asia		-0.0446
		(-0.0621)
South Asia		-0.5517
		(-0.548)
South-East Asia		1.372 [c]
		(1.678)
North-East Asia		1.856 [c]
		(2.006)
Mean VIF[$]	1.54	1.61
	18.74	30.00
IM-test ch^2 (p-value)#	(0.539)	(0.414)
Adjusted R^2	0.837	0.801
Observations	60	60

2(b). Political stability (PS)

	National	Regional
	0.009 [c]	0.0113 [b]
TI	(1.968)	(2.606)
	3.010[a]	3.008 [a]
LnPCI	(9.037)	(8.433)
	0.615 [a]	0.605 [a]
LnPop	(3.128)	(4.267)
	0.0149	0.039
FDI	(0.427)	(0.678)
PS (National)	0.0181[b]	
	(2.038)	
PS (Regional), of which		
		-0.989 [c]
Central Asia		(-1.528)
		-0.558 [c]
South Asia		(-1.253)
		0.599
South-East Asia		(0.805)
		3.344 [b]
North-East Asia		(2.327)
Mean VIF[$]	1.80	1.56
	18.05	30.00
IM-test, ch^2 (p-value)#	(0.584)	(0.414)
Adjusted R^2	0.854	0.869
Observations	60	60

2(c). Government effectiveness

	National	Regional
TI	0.034 (1.477)	0.025 [c] (2.298)
LnPCI	1.829 [b] (2.356)	2.802 [b] (4.421)
LnPop	0.454 [b] (2.523)	0.467 [a] (3.023)
FDI	0.0070 (0.18)	0.284 (0.73)
GE (National)	2.129 [b] (2.565)	
GE (Regional), of which		
Central Asia		-0.675 (-0.77)
South Asia		-2.159 [c] (-1.69)
South-East Asia		0.319 (0.279)
North-East Asia		3.185 [b] (2.16)
Mean VIF[$]	3.72	2.43
IM-test, ch^2(p-value)#	22.51 (0.314)	30.00 (0.414)
Adjusted R^2	0.854	0.867
Observations	60	60

2(d). Regulatory quality

	National	Regional
TI	0.007 [c] (2.029)	0.016 [a] (2.911)
LnPCI	2.672 [a] (4.636)	2.699 [a] (4.891)
LnPop	0.615 [a] (3.324)	0.516 [a] (3.729)
FDI	0.0027 (0.6081)	0.0082 (0.1501)
RQ (National)	0.521 (0.609)	
RQ (Regional), of which		
Central Asia		-0.819 (-1.407)
South Asia		-3.108 [c] (-1.543)
South-East Asia		-0.836 (-0.491)
North-East Asia		3.673 [c] (2.315)
Mean VIF[$]	2.44	2.50
IM-test, ch^2(p-value)#	19.36 (0.499)	30.00 (0.414)
Adjusted R^2	0.810	0.819
Observations	60	60

2(e). Rule of law

	National	Regional
TI	0.014 [b]	0.027 [c]
	(2.091)	(1.925)
LnPCI	2.204 [a]	2.416 [a]
	(4.43)	(4.966)
LnPop	0.573 [a]	0.547 [a]
	(3.376)	(3.489)
FDI	0.0202	0.0491 [c]
	(0.540)	(1.418)
RL (National)	1.127 [b]	
	(2.354)	
RL (Regional), of which		
Central Asia		0.256
		(0.471)
South Asia		-0.119
		(-0.140)
South-East Asia		1.782 [b]
		(2.805)
North-East Asia		3.771 [a]
		(3.205)
Mean VIF[$]	2.15	1.83
IM-test, ch^2(p-value)#	21.43	30.00
	(0.372)	(0.414)
Adjusted R^2	0.856	0.867
Observations	60	60

2(f). Control of corruption

	National	Regional
TI	0.0082 [b]	0.0056 [c]
	(2.632)	(1.489)
LnPCI	2.037 [a]	2.410 [a]
	(3.869)	(5.531)
LnPop	0.625 [a]	0.569 [a]
	(3.731)	(3.499)
PPI	0.019	0.0479
	(0.549)	(1.311)
CC (National)	1.872 [b]	
	(2.876)	
CC (Regional), of which		
Central Asia		0.683
		(0.805)
South Asia		0.208
		(0.287)
South-East Asia		1.954 [a]
		(3.36)
North-East Asia		3.343 [a]
		(3.634)
Mean VIF[$]	2.08	1.77
IM-test, ch^2(p-value)#	24.27	30.00
	(0.201)	(0.414)
Adjusted R^2	0.876	0.886
Observations	60	60

2(g). Composite governance

		National	Regional
TI		0.016 [b]	0.019 [c]
		(2.132)	(2.431)
LnPCI		2.223 [a]	2.618 [a]
		(3.855)	(4.714)
LnPop		0.611 [b]	0.642 [b]
		(3.637)	(4.134)
FDI		0.014	0.067
		(0.312)	(1.610)
Governance (National)	0.256 [c]		
	(1.923)		
Governance (Regional), of which			
Central Asia			-0.047
			(-0.381)
South Asia			-0.110
			(-0.501)
South-East Asia			0.330 [c]
			(1.414)
North-East Asia			0.745 [b]
			(2.784)
Mean VIF		2.67	2.29
IM-test, ch^2(p-value)#		21.24 (0.383)	30.00 (0.414)
Adjusted R^2		0.865	0.889
Observations		60	60

Cameron and Trivedi's decomposition of IM-test (checking homoscedasticity).
$ VIF (variance inflation factors) to check multi-collinearity.
[a], [b] and [c] = significant at the 1 per cent, 5 per cent, and 10 per cent levels, respectively.
t-values are in parenthesis.

Third, when considering subregional governance, North-East Asia comes out with significant and robust coefficients in all six indicators. South-East Asia also follows the same direction except in the case of government effectiveness (correct sign but statistically insignificant) and regulatory quality (negative sign but statistically insignificant). Estimated coefficients suggest that trade at the subregional level has also benefited from the improvement in subregional governance in North-East Asia. On the other hand, South-East Asia's trade has benefited from most indicators of the quality of governance with the exception of regulatory quality and government effectiveness, which may require enhancement.

Fourth, estimated coefficients of regional governance for Central Asia and South Asia corroborate why they have yet to witness higher regional trade, compared with other subregions in Asia. Most of the estimated coefficients of regional governance indicators show the wrong negative sign (except control of corruption), thus suggesting these two subregions did not witness any positive impact from their quality of governance. This may suggest that these subregions did not witness adequate improvement in national as well as subregional governance in order to enhance trade. Indirectly, this may suggest that there is scope for improvement in governance in Central and South Asian countries.

Fifth, trade infrastructure (TI) has come out as significant and positive (except national GE) thereby showing infrastructure has a positive association with trade, and that improvement of trade infrastructure would lead to an increase trade in Asia, other things being equal.

Sixth, the estimated models explain 80 per cent to 89 per cent of the variations in observation. The robust estimation is also supported by Cameron and Trivedi's decomposition of IM-test in all the cases, which suggests no presence of heteroscedasticity in residuals (always reject null hypothesis). Next, low VIF (variance inflation factors) scores suggest the models do not suffer from multi-collinearity (mean VIF always less than 10). Linearity of model, normality of residuals and model specification (not reported here due to space limitation) suggest that the baseline OLS models sufficiently explain the impact of national and regional level governance on trade in Asia. More importantly, the coefficient of the regional governance for North-East Asia is found to be positive and significant.

Seventh, the estimated coefficients of control variables such as per capita income, TI, population and FDI show mixed results. Per capita income, population and TI are significant and positively associated with trade. Those countries with higher income and population, improved infrastructure, and which are practicing good governance, will help facilitate trade – national or otherwise.

Thus it is concluded that trade in Asia is very much contingent upon governance and institutional quality. Apart from regulatory quality, the remaining governance indicators strongly influence the trade in Asia. At the same time, the impact of the quality of governance on trade varies over subregions. The author's estimation indicates those countries that have successfully improved governance and institutions over time have witnessed higher trade, ceteris paribus. North-East Asia is a case in point.

D. Conclusion, policy implications and limitations of the study

In this chapter, an empirical analysis is made of the linkages between governance and trade. The results indicate that governance is crucial for trade. All Asian countries are able to benefit from improved governance and institutions. All individual governance indicators except for regulatory quality have a significant impact on trade in Asia, of which government effectiveness is the most important factor for enhancing such trade. In other words, good governance and institutions help unlock trade potential of a region (or a nation). Therefore, more effective policy approaches toward improved governance are needed to complement the regional trade policy in Asia as well as in the rest of the world.

As shown in this chapter, the level of governance varies widely among countries and the impact of regional governance varies over major subregions of Asia. South-East Asia and North-East Asia are two subregions where trade has been influenced by improved governance and infrastructure. With regard to subregional governance, North-East Asia shows strong relationship with all six indicators while South-East Asia has a similar relationship except for government effectiveness and regulatory quality. This also indicates that subregional trade has benefited from subregional governance in North-East Asia, whereas South-East Asia needs to improve regulatory quality and government effectiveness to have any positive impact on trade. In the case of Central Asia and South Asia, regional governance does not show a significant relationship with trade with the expected positive sign. This may indicate that improvement in institutional governance is not significant enough over time to have an impact on subregional trade. Therefore, it can be concluded that the soft infrastructure, such as the institutions and governance, are crucial to enhancing trade in Asia.

The results also show that improved national governance is crucial to enhancing regional governance for trade promotion. The quality of governance includes: (a) regulatory and procedural effectiveness; (b) technical standards; and (c) appropriate policy and measures to address environmental and other socio-economic issues. Improved capacity of national and regional institutions will help to reduce risks and trade costs. Improved national and regional governance is also crucial to attracting FDI.

Regional organizations, donors and development partners can use governance measures for cross-country comparisons and for monitoring the trends across countries. However, regional governance cannot be monitored without greater involvement of member countries and their populations. The most challenging task, therefore, is to make countries aware of the benefits of improved governance. This is where the scope of regional cooperation and appropriate capacity-building comes in, as they can make countries adaptable to change in governance for regional trade and infrastructure.

Poor governance leaves countries isolated from best practice global markets. Countries face significant constraints in improving governance; at the same time, improvement of governance requires lead time and structural adjustments. Regional cooperation has an important catalytic role to play in improving national governance. By sharing each other's experiences, regional cooperation can make countries efficient in integrating themselves into regional and international governance.

Finally, improved governance, particularly at the sectoral level, can provide huge payoffs in Asia at a time when the region is planning to pursue free trade throughout the entire region. Ignoring "governance weaknesses" can stultify economic returns to FTA. Therefore, complementary policy initiatives are needed by countries, regional organisations and multilateral development organisations in order to strengthen governance in Asia and beyond.

The analysis detailed in this chapter is not beyond limitations. In that regard, the following suggestions should be considered:

(a) Statutory robustness checks are required for the baseline equations.

(b) Further studies should be undertaken in order to understand the relationship between governance indicators and trade at a much disaggregated level.

(c) It is also worth attempting an analysis on causality between governance and trade.

(d) The analysis may be verified with new governance indicators from alternate sources. Efforts should also be made to collect representative governance indicators, which contain better information.

(e) It would be useful to undertake new studies that can give policy directions on the ways and means through which the countries in Asia can make a positive contribution to improving governance that aid in building regional trade;

(f) A more sophisticated dynamic analysis could be attempted in order to verify the findings given in this chapter.

(g) A capacity-building and training tool on the impact of regional governance on trade for easy understanding by policymakers may worth considering.

(h) Since there may be a lag between governance and trade, future studies could consider lagged values of independent variables or using autoregressive distributed lags (ARDL) model in a panel data to show more clearly the direction of association. Sector-specific analysis, particularly for important export goods, would be useful in order to derive better policy formulation.

(i) The relationship between governance and trade cannot be interpreted as causal or accurate as the possibility of endogeneity in the baseline equations shown in this chapter cannot be ruled out. Therefore, the endogeneity problem has to be addressed in any future study.

Annex

Correlation matrix, 2007

	Trade*	VA	PS	GE	RQ	RL	CC
Trade*	1						
VA	0.4594	1					
PS	0.2154	0.4136	1				
GE	0.6083	0.7573	0.7174	1			
RQ	0.5302	0.7911	0.658	0.9561	1		
RL	0.5074	0.7787	0.7392	0.9646	0.9252	1	
CC	0.4689	0.7491	0.7109	0.9527	0.8986	0.9633	1

*Taken in log scale.

References

Acemoglu, D., S. Johnson and J. A. Robinson (2002). "Reversal of fortune: Geography and institutions in the making of the modern world income distribution", *Quarterly Journal of Economics*, vol. 117; pp. 1231-1294.

Asian Development Bank (undated). "Elements of governance: Understanding the conditions necessary for good governance". Manila. Available at www.adb.org/Governance/elements.asp.

——— (2008), "Good governance and anticorruption", Policy Brief. Manila.

Alfaro, L., S. Kalemli-Ozcan and V. Volosovych (2005). "Why does capital not flow from rich to poor countries? An empirical Investigation", Working Paper No. 11901, National Bureau of Economic Research, Cambridge, Mass., United States.

Anderson, J. E. and D. Marcouiller (2002). "Insecurity and the pattern of trade: An empirical investigation", *Review of Economics and Statistics*, vol. 84, No. 2; pp. 342-352.

Arimah, B. (2004). "Poverty reduction and human development in Africa", *Journal of Human Development*, vol. 5, No. 3; pp. 399-415.

Aron, J. (2000). "Growth and institutions: A review of the evidence", *World Bank Research Observer*, vol. 15, No. 1; pp. 99-135.

Barro, R. J. (1999), *Determinants of Economic Growth: A Cross-country Empirical Study*, (second edition). MIT Press, Cambridge, Mass., United States.

Beck, T., G. Clarke, A. Groff, P. Keefer and P. Walsh (2001). "New tools in comparative political economy: The database of political institutions", *World Bank Economic Review*, vol. 15, No. 1, pp. 165-176.

Bolaky, B. and C. Freund (2004). "Trade, regulations, and growth", Policy Research Paper No. 3255, World Bank, Washington, D.C.

Busse, M., A. Borrmann, S. Fischer and S. Gröning (2007). *Institutions, Governance and Trade: An Empirical Investigation of the Linkages in View of the Proposed ACP/EU Economic Partnership Agreements*, Hamburg Institute of International Economics, Hamburg.

Campos, N. and J. Nugent (1998). "Institutions and growth: Can human capital be a link?" *CEPAL Review*, No. 64; pp. 7-27.

Chong, A. and M. Gradstein (2004). "Inequality and institutions", Working Paper No. 4739, Centre for Economic Policy Research, London.

de Groot, H. L. F., G. J. Linders, P. Rietveld and U. Subramanian (2004). "The institutional determinants of bilateral trade flows", *Kyklos*, vol. 57, No. 1; pp. 103-123.

De, P. (2010). "Governance, institutions and regional infrastructure in Asia", Working Paper No. 183, Asian Development Bank Institute, Tokyo.

Dixit, A. (2009). "Governance institutions and economic activity", *American Economic Review*, vol. 99, No. 1; pp. 5-24.

Easterly, W. (2001). "Can institutions resolve ethnic conflict?" *Economic Development and Cultural Change*, vol. 49, No. 4; pp. 687-706.

Epstein, G. S. and I. N. Gang (2009). "Good governance and good aid allocation", *Journal of Development Economics*, vol. 89, No. 1; pp. 12-18.

ESCAP (2009). *Navigating Out of the Crisis: A Trade-led Recover*, ESCAP, Bangkok.

Francois, J. and M. Manchin (2007). "Institutions, infrastructure and trade", World Bank Policy Research Working Paper No. 4152. World Bank, Washington, D.C.

Helble, M., B. Shepherd and J. S. Wilson (2009). "Transparency and regional integration in the Asia-Pacific", *World Economy*, vol. 32, No. 3, pp. 479-508.

Kaufmann, D., A. Kraay and M. Mastruzzi (2008). "Governance matters VII: Governance indicators for 1996-2007", World Bank Policy Research Paper, June 2008, World Bank Institute, Washington, D.C.

Knack, S. and P. Keefer (1995). "Institutions and economic performance: Cross country test using alternative institutional measures", *Economics and Politics*, vol. 7, No. 3; pp. 207-227.

Kohsaka, A. (ed.) (2007). *Infrastructure Development in the Pacific Region*, Routledge, London and New York.

Lee, K., and B-Y. Kim (2009). "Both institutions and policies matter but differently for different income groups of countries: Determinants of long-run economic growth revisited", *World Development*, vol. 37, No. 3; pp. 533-549.

Levy, B. (2007). *Governance Reform: Bridging Monitoring and Action.* World Bank, Washington, D. C.

Lindberg, L. N. and S. A. Scheingold (eds.) (1971). *Regional Integration: Theory and Research*, Harvard University Press, Cambridge, Mass., United States.

Lombaerde, P. and Van Langenhove, L. (2007). "Regional integration, poverty and social policy", *Global Social Policy*, vol. 7, No. 3; pp. 377-383.

North, D. C. (1990). *Institutions, Institutional Change and Economic Performance*, Cambridge University Press, Cambridge, Mass., United States.

Ostrom, E. (2005). *Understanding Institutional Diversity*, Princeton University Press, Princeton, United States.

Rajan, R. and L. Zingales (2003). "The great reversal: The politics of financial development in the twentieth century", *Journal of Financial Economics*, vol. 69, No. 1; pp. 5-50.

Rodrik, D., A. Subramanian and F. Trebbi (2002). "Institutions rule: The primacy of institutions over geography and integration in economic development", Working Paper No. 9305, National Bureau of Economic Research, Cambridge, Mass., United States.

Smith, A. (1776). *The Wealth of Nations* (reprint 2000). Random House, New York.

United Nations (2009). *Governance and Institution-Building*. New York. Available at www.un.org/en/development/progareas/governance.shtml.

World Bank Institute (2008). *Worldwide Governance Indicators 1996-2008.* Washington, D.C. Available at http://info.worldbank.org/governance/wgi/index.asp.

World Trade Organization (2004). World Trade Report 2004: Exploring the Linkage between the Domestic Policy Environment and International Trade. Geneva.

X. National and supranational institutions and trade

By Pahan Prasada

Introduction

Enduring puzzle of the distance effect in international trade

There should be very few people, if any, in this day and age who doubt that there have been major gains from trade. Since the 1960s, the world has seen momentous progress in trade volumes, consistently outpacing worldwide growth in gross domestic product (GDP). Such advances have been explained repeatedly in the international trade literature both theoretically and empirically (e.g.: Helpman and Krugman, 1985; Feenstra, 2004; and Lejour and Nahuis, 2005). Efficiency gains from trade to its participants have been quantified for numerous countries. Hufbauer and Grieco (2005) stated that an average American household enjoys annual benefits worth about US$ 10,000 from 'shrinking distances' and increasingly relaxed policy barriers to trade and investment in recent decades. Badinger (2005) estimated that the European Union countries would have had 20 per cent lower income per capita, on average, in the absence of international economic integration.

The sources of these rapid expansions of growth have also been documented. Baier and Bergstrand (2001) showed that the growth in GDP, the reduction of tariffs (due to multilateral agreements such as the General Agreement on Tariffs and Trade (GATT) and its successor, the World Trade Organization (WTO) as well as declines in transportation costs were the main sources of trade growth. Further, increased outsourcing of production processes across borders is linked to reductions in costs and tariffs for transportation and communication, thus enabling trade to happen (Yi, 2003).

Yet, looking at the global picture, the persistent lack of trade between otherwise potential trading partners has continued to baffle many a researcher. Comparing theoretical expectations with actually observed trade patterns, it is clear that countries trade far less than would be expected, taking into consideration only the potential motivation to exploit scale effects caused by differences in resource endowments, technology and variety of goods produced among countries (Loungani, Mody and Razin, 2002). In an empirical analysis of trade patterns, Eaton and Kortum (2002) argued that if trade were frictionless, trade volume would be five times as great as currently observed.

Such deficits have drawn many explanations over the years. Trefler (1995) argued that home bias in consumer preferences – also highlighted by Obstfeld and Rogoff (2000) –may be an important factor in explaining the large deviations in actual trade patterns from those predicted by trade theory. Barriers to trade that are intangible may provide an explanation for home bias, consistent with widely documented evidence, starting with Bröcker (1984) and McCallum (1995) who asserted that trade falls sharply when crossing international borders. According to the data available for any recent year, many country pairs have a low volume of trade, and even more country pairs have no trade at all. Although there are obvious differences in economic strength and size between countries, economic and demographic differences alone would not justify such disproportionality (Linders, Burger and Van Oort, 2008). It is from this discrepancy that this chapter draws its motivation to attempt further articulation of the "distance puzzle" in terms of institutions. Its aims are to extend the conceptualization of distance to incorporate the heterogeneity of institutional environment (often called institutional distance) and to measure the impact of several institution-related elements at both the national and the supranational level. A potential comparison is attempted between the relative importance of national and supranational institutions, harkening at the continuing debate on the potential importance of better and stronger supranational and multilateral institutional arrangements to foster trade. The strategy adopted is to estimate a series of specifications of the famous gravity model

of trade, controlling for multiple indicators of institutional quality at both the national and the supranational level.

The chapter is organized as follows. Section A provides an introduction to the related gravity literature and then discusses in detail the indicators of institutional environment considered in this chapter. Section B details the data and the explanatory variables considered for the estimations. Section C lists the series of models estimated with the results. The empirical analysis is conducted in two stages. First, various alternative econometric estimations suggested in the previous literature are experimented with in investigating the presence or the absence of potential consensus in the estimates of conventional gravity effects. Second, the analysis is extended to incorporate the traditional North-South divide in trade literature to test if all-country estimates still hold for the North-South sub-samples. Section D provides the conclusion.

A. Apparently universal "force of gravity" in international trade

Analogous to the famous gravity equation in physics, the gravity model considers trade between a pair of countries as an increasing function of their national incomes and a decreasing function of their geographical distance. Since its introduction (according to many authors) by Tinbergen (1962), the model has enjoyed significant backing and following both in both the theoretical and empirical circles. Among others, studies by Helpman and Krugman (1985) and Deardorff (1998) showed that both new trade theories of product differentiation as well as the classical Heckscher-Ohlin theory of comparative advantage could provide a theoretical rationale for the gravity model of bilateral trade.

The empirical success of the gravity trade model is unprecedented and has led to numerous extensions by way of introducing new variables that relate to both countries, or either of the two countries separately in addition to the basic three variables of importer GDP, exporter GDP and geographical distance. These extensions are often called "augmented" forms of the model. The logic behind the augmentation comes mainly from the properties of the three main variables, two of which (the economic masses of the two countries) enter the equation to represent unilateral properties while the third (the geographical distance) enters as a bilateral argument of the function. So, whenever the new variables are introduced, they enter either as representative of one partner (often having a complementary representation for the other partner) or as a variable representing some property that is unique to the bilateral relationship. The often-used variables such as language, common colonial background, common religion and contiguity are examples of the latter. A third possibility to introduce new variables is to combine two complementary unilateral properties of the two partners by way of an index and include them as a bilateral variable.

The theoretical basis for the selection of independent variables to be included also follows the same logic behind the basic gravity relationship, i.e., variables representing economic mass and the variables representing the distance between the two partners. The dependent variable of the gravity equation is often the bilateral flow (as either imports or exports) and could appear as total flow or any part of it, reflective of a product or a product group according to the researcher's choice. Looking at the literature of the past few decades, especially during the past 20 years, one finds the estimates and the model fit have been robust to varying choices of explanatory variables.

Another property of the gravity equation, which is as impressive as its empirical success in incorporating different variables, is its robustness to choice of functional form. While the linear relationship between the dependent variable and the independent variables, often specified in log-linear form, is certainly the most frequently applied, various authors have resorted to multiplicative specifications and other variants of the linear form over the years. The claim for a superiority of any functional form is still being deliberated and this issue is addressed in some detail in section C. However, among (gravity) trade researcher it is common knowledge that almost all different

functional forms report positive impacts of the variables importer and exporter GDP while the distance effect is negative.

The gravity equation has been proven to hold, almost equally, with the use of both cross section and panel data, albeit with certain differences of size and significant across various studies (Disdier and Head, 2008). While the panel specifications undoubted facilitate drawing of additional information (time invariant country-pair based effects and time effects), the estimate values of the key gravity variables have displayed comparable performances under both circumstances.

1. Measurement of national and supranational structures

(a) Articulating bilateral distance in the form of institutional heterogeneity

The inverse relationship between geographic distances and bilateral trade volumes is considered as one of the most robust empirical findings in economics (Leamer and Levinsohn, 1995). The primary candidate reason behind the distance effect is "transportation costs", the logic being that the farther one partner is from the other, the more costly it is for the goods to travel between the two countries (Obstfeld and Rogoff, 2000, among many others, asserted that transportation costs caused the distance effects.). There is, however, no consensus on what geographic distances are proxying for. Grossman (1996), Hummels (2001) and others argued that transport costs were too low to explain the magnitude of the distance effects, particularly after taking into account the fact that gravity models could also explain the flow of literally weightless goods such as capital (Portes and Rey, 2005).

What are the other candidates for distancing of two countries? Tariffs and non-tariff policy measures undoubtedly top the list. However, there are many less obvious causes of distance. Rauch (2001) focused on the importance of information costs related to physical (and cultural) distances. Deardorff (2001) argued that international trade patterns, to a great extent, depended on largely unobservable trading costs instead of factor endowments and technology. The informal trade barrier appears to be very large, even between similar countries such as the United States and Canada. Thus, informal trade barriers may help to explain the home bias or border effect in trade (McCallum, 1995).

Articulating the "distance" effect of bilateral trade is undoubtedly a challenge that any single research contribution will never completely meet, since any instance of dissimilarity (or even similarity in certain characteristics) between two countries can logically be hypothesized to cause a negative effect on bilateral flow of goods. The main contenders to the list will be culture, language, political association, use of a common currency etc. Yet, it can be inferred that the unobserved barriers to trade are often related to incomplete or asymmetric information and uncertainty in exchange. This is where the institutional environment in any given country matters. According to North (1990), one of the authoritative intellectuals on the role of institutions in economics, institutions can be defined as "humanly devised constraints that shape human interaction". The impact of institutions on transaction costs has received extensive attention in the literature on economic growth and development (Knack and Keefer, 1995), the notion being that poor governance entails negative externalities for private transactions being the leading premise. Consequent rises in transaction costs bear negatively on growth and development, an argument that can also be extended easily to international trade (Wei, 2000).

Since international exchange transactions involve a number of checks and balances, the effectiveness of domestic institutions in securing and enforcing property rights in economic exchange is an important determinant of trade costs. In other words, the regulatory environment that is present domestically (together with the perceived image of it by foreigners) shapes the norms and conventions of doing business. These, in turn, may also have an impact on risk perceptions and preferences in international transactions. Thus, the hypothesis that institutions matter for international trade appear quite logical.

Among the recent contributions towards testing this hypothesis, the work by Anderson and Marcouiller (2002) is noteworthy. They used a gravity model to investigate the hypothesis that corruption and imperfect contract enforcement dramatically reduce international trade. Inadequate institutions are seen as a hidden tax on trade constraining trade as much as tariffs. They made a compelling case for the potential biases that might result in the gravity estimates by the omission if variables representing institutional quality.

Other recent work highlighting the important role of institutions include Ranjan and Lee (2007), who looked at contract enforcement and its effect on trade; de Groot and others (2004) measured the impacts of institutional homogeneity on bilateral trade; Meon and Khalid (2008) investigated the relationship of disaggregated trade to world governance indicators. Meon and Khalid brought out the interesting result that not all categories of trade have positive correlation with institutional quality. They estimated an inverse relationship between non-manufactured good exports and institutional quality.

(b) Conceptualizing country-specific institutional and governance environments

This chapter conceptualizes country-specific (national) institutional and governance environments in a four-fold manner and uses a proxy for the nature of supranational institutional environment, the institutional quality of which is harder to measure.

First to be considered, under national institutions, is quality of the domestic infrastructure and related regulation, with special emphasis on business creation and enterprise development matters. This aspect of the domestic economy would equally matter to the promotion of both exports and imports. Most exporting firms depend largely on the domestic institutional quality since many institutional variables such as labour regulation, property rights enforcement and business taxation bear directly on their regular operations. For importers engaged in domestic value addition and re-exporting, the effect is the same as above. Since most imports are directed to domestic sales, the business start-up environment is equally important for thriving importing and distribution network. The author believes the "Doing business" data cover a majority of these aspects.

Second is the quality of the border institutions. For exporters, this means better market access abroad, better logistics and convenient border crossing enforcements. For importers, it includes shorter custom delays, less paperwork and less bribing, among other benefits. This aspect is well covered by the enabling trade data

Third is the quality of the domestic trade-related policies, which could include many intangible barriers to trade. These could even include explicitly domestically-oriented policies, such domestic industry protection and support. The trade policy environment effect calculated by Hiscox and Kastner (2004) is used for generating a variable to represent this third aspect of domestic institutions.

Fourth is the general governance environment, which will mainly determine a country's image as a trade-friendly location. This would necessarily include the rule of law, political stability and level of corruption, among others. World Governance Indicators data, which provide excellent coverage of these issues, are used here as indicative of the fourth aspect of domestic institutional environment. Gauging the quality of supranational institutions is less straightforward and a selected set of political and trading agreements are used here to proxy for this heterogeneity of international institutional climate.

Subsection 2 describes the data sources of the indicator framework and discusses developing summary instruments for each category of country-specific institutional context. It also describes the political and trading agreement used to proxy for supranational institutional heterogeneity.

2. Measuring national institutional quality

(a) Quality of business institutional environment: "Doing business" data

In order to measure the quality of business environment, the World Bank "Doing Business" data are used. These indicators are frequently utilized by various researchers in studying the domestic business environment. The sub-indices and the method of measurement adopted for "doing business" indicators can be summarized as follows. The four main business environment categories evaluated include (a) starting a business, (b) registering property, (c) getting credit and (d) contract enforcement.

Under category (a), the emphasis is placed on the number of steps entrepreneurs can expect to go through to launch a business, the time it takes on average, and the cost and minimum capital required as a percentage of gross national income (GNI) per capita.

Under category (b), the ease with which businesses can secure rights to property is measured using the number of steps, time, and cost involved in registering property.

Under category (c), measures on credit information sharing, and the legal rights of borrowers and lenders are included. The Legal Rights Index ranges from 0 to 10, with higher scores indicating that those laws are better designed to expand access to credit. The Credit Information Index measures the scope, access and quality of credit information available through public registries or private bureaus. It ranges from 0 to 6, with higher values indicating that more credit information is available from a public registry or private bureau.

Finally, under category (d), the ease or difficulty of enforcing commercial contracts is measured by following the evolution of a payment dispute and tracking the time, cost, and number of procedures involved from the moment a plaintiff files a lawsuit until actual payment.

(b) Institutional bottlenecks at trading interfaces: Enabling trade data

In analysing the performance of institutions at the borders, the enabling trade data compiled by the World Economic Forum are used. The sub-categories under which these data are listed include (a) market access, (b) border administration, (c) transport and communications infrastructure and (d) business environment. The first sub-index measures the extent to which the policy and cultural framework of a country welcomes foreign goods into that country. Once goods have been allowed in to the country, the second sub-index assesses the extent to which the administration at the border facilitates their entry. Once goods have crossed the border, the third sub-index takes into account whether the country has the transport and communications infrastructure necessary to facilitate the movement of the goods from the border to their destination. Finally, the fourth sub-index looks at the regulatory and security environment that have an impact on the transportation business in the country. Each of these four sub-indexes, in turn, comprises the following pillars for enabling trade:

(a) Tariffs and non-tariff barriers;

(b) Proclivity to trade;

(c) Efficiency of customs administration;

(d) Efficiency of import-export procedures;

(e) Transparency of border administration;

(f) Availability and quality of transport infrastructure;

(g) Availability and quality of transport services;

(h) Availability and use of ICTs;

(i) Regulatory environment;

(j) Physical security.

(c) Domestic trade policy effect

The ICY index of trade restrictiveness by Hiscox and Kastner (2002) is used here as a measure of the level of policy restrictiveness to trade by a country. The index, developed via a gravity estimation, reports values for 76 countries. According to Hiscox and Kastner, ICY correlates positively with revenues from import duties as a percentage of imports. The ICY index is negatively correlated with trade as a percentage of GDP. Furthermore, the index is much more closely correlated with both duties and trade openness than are duties and trade with each other. The index is positively related to Dollar's (1992) index of price distortions, although only weakly; the Dollar index is itself positively correlated with import duties. Finally, the ICY index is correlated in a strong positive fashion with the calculations by Lee (1993 of own-import weighted averages of duties on intermediate inputs and capital goods. The ICY Index scores fit with the traditional contrasts drawn between "closed" and "open" economies.

The trade policy effect index values for the remaining countries are predicted in the data set, making use of the fact that an extremely high (0.87) correlation exists between this index and the GDP per capita (purchasing power parity) values for 2005. Since the GDP per capita values are not included here in the gravity estimation, the above imputation of values does not produce any statistical anomaly to the gravity regressions.

B. Governance variables: World Governance Indicators

The best compiled indicators available for cross-country measurement of governance is the set due to Kaufmann, Kraay and Mastruzzi (2006). The indicators measure six dimensions of governance: (a) voice and accountability; (b) political stability and absence of violence; (c) government effectiveness; (d) regulatory quality; (e) rule of law; and (f) control of corruption. The indicators, which cover 212 countries, are based on several hundred individual variables measuring perceptions of governance, drawn from 33 separate data sources constructed by 30 different organizations. The detail and the method adopted result in the indicators capturing cross-country differences of governance levels in a statistically significant manner.

They provided the following elaboration of the scope of the six categories of governance:

(a) Voice and accountability (VA) – measuring the extent to which a country's citizens are able to participate in selecting their government as well as freedom of expression, freedom of association and a free media;

(b) Political stability and absence of violence (PV) – measuring perceptions of the likelihood that a government will be destabilized or overthrown by unconstitutional or violent means, including domestic violence and terrorism;

(c) Government effectiveness (GE) – measuring the quality of (i) public services, (ii) the civil service and the degree of its independence from political pressures, and (iii) policy formulation and implementation as well as the credibility of government commitment to such policies;

(d) Regulatory quality (RQ) – measuring the ability of a government to formulate and implement sound policies and regulations that permit and promote private sector development;

(e) Rule of law (RL) – measuring the extent to which agents have confidence in, and abide by, the rules of society – particularly the quality of contract enforcement, the police and the courts – as well as the likelihood of crime and violence;

(f) Control of corruption (CC) – measuring the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the State by the elite and private interests.

1. Use of multidimensional scaling: Addressing the problem of handling multiple indicators

In the following paragraphs, (classical) multidimensional scaling (MDS) is performed on data from the doing business dataset, enabling trade dataset and world governance indicators dataset, in order to reduce the dimensionality of data while preserving the variability. This also helps to avoid issues of collinearity between sub-indices within each dataset of institutional variables. The motivation primarily comes from the need to create a single variable to represent each of the four institutional dimensions selected for inclusion in the study. It is a method similar to factor analysis; however, multidimensional scaling methods do not start with a matrix of correlation coefficients, as is common for factor analysis, but with a matrix of dissimilarities. Because many (dis)similarity coefficients have been developed, this gives these methods greater flexibility. Moreover, less strict assumptions are made than for factor analysis.

The conceptual basis for the techniques is rather straightforward. It is assumed that for every two objects *i* and *j* of a collection of size *n*, a (dis)similarity coefficient can be defined. This coefficient indicates the (in) equality, association, interaction etc. and, in general, the proximity or distance between the objects (Shepard, 1972). Subsequently, a search is made for a configuration of *n* points in (Euclidian) space with as few dimensions as possible, so that it meets to the greatest extent the requirement that the distance between points, D*ij*, be monotonically related to the (dis)similarities (Kruskal, 1964). The coordinates of the points in geometric space are the scale values.

With the exception of the trade restrictiveness indicator, the data from the other three aspects are reduced to three score variables, i.e., doing business score, enabling trade score and the governance score. In order to help an intuitive understanding of the nature of the scores, table 1 presents their (statistically significant) pair wise correlation with per capita GDP (purchasing power parity) while the descriptive statistics of the institutional variables (the three scores and the trade restrictive index) are given in table 2. The scores obtained from MDS display good representative properties. For example, see table 3 where all six sub-indices are pair wise correlated with final the governance score. All the six indices show a high correlation with the final score. Similar high correlation between the final MDS score and the constituent sub-indices is observed for enabling trade data as well.

The correlation of institutional quality scores with GDP per capita (ppp) also enables understanding of how to judge the desirability of the effects of institutional scores at the regression. In other words, given the very high negative correlation of enabling trade score, the governance score and policy effect score indicate that a potential negative relationship between any of these and the bilateral imports, in fact, shows a positive relationship between better institutions and higher trade. The doing business score, however, does not share this property with the other three institutional quality variables.

Table 1. Correlation between per capita GDP and domestic institutional quality variables

	GDP per capita	Doing business	Enabling trade	Governance
GDP per capita	1			
Doing business	0.2411	1		
Enabling trade	-0.9159	-0.2037	1	
Governance	-0.8996	-0.2015	0.9369	1

Table 2. Summary statistics: domestic institutional quality variables

Variable	No. of obs.	Mean	Std. dev.	Min	Max
Doing business score	123	4.35E-06	536.9709	-4871.04	225.123
Enabling trade score	119	-0.02361	1.74892	-3.8095	3.0961
Policy effect score	226	37.24304	8.041299	3.096	44.349
Governance score	204	-0.02118	2.319235	-4.7983	5.2238

Table 3. Correlation between scaled governance score and its sub-indices

	Governance score	Voice and accountability	Political stability and absence of violence	Government effectiveness	Regulatory quality	Rule of law	Control of corruption
Governance score	1						
VA	-0.9019	1					
PV	-0.8391	0.7063	1				
GE	-0.9762	0.8469	0.7511	1			
RQ	-0.953	0.8581	0.7055	0.9577	1		
RL	-0.9753	0.8357	0.8234	0.9505	0.9077	1	
CC	-0.9616	0.8186	0.7573	0.954	0.9022	0.9481	1

In order to display further the meaningfulness of the developed scales/scores, they have been disaggregated, based on the national developmental status, and the descriptive statistics investigated. To Proxy for the development status I consider the membership of OECD. Table 4 summarizes this information.

Table 4. Description of national institutional quality scores by OECD membership

	Doing business score		Enabling trade score		Domestic policy effect score		Governance score	
	OECD	Non-OECD	OECD	Non-OECD	OECD	Non-OECD	OECD	Non-OECD
Mean	152.75	-42.29	-2.11	0.62	25.81	39.37	-3.08	0.63
Standard deviation	62.55	600.79	0.99	1.39	7.31	6.21	1.35	1.97
Minimum	-79.85	-4871.04	-3.25	-3.81	3.10	3.10	-4.80	-4.32
Maximum	217.81	225.12	0.58	3.10	39.54	44.35	0.23	5.22
Twenty-fifth percentile	134.75	-38.02	-2.93	-0.15	22.48	37.91	-4.19	-0.93
Fiftieth percentile/median	172.36	154.72	-2.41	0.87	24.36	41.59	-3.46	0.93
Seventy-fifth percentile	186.67	189.62	-1.21	1.62	31.19	43.50	-2.02	2.15
N	25	96	28	91	30	181	30	164

2. Supranational institutional environment

Trade and political associations as a supranational form of institutions contribute to the bilateral distances. An attempt is made to capture the potential impact of these institutions using the data about the membership of several leading political and trading blocs. Dummy variables are used with 1 for membership and 0 otherwise. Table 5 lists the membership of the various associations considered in the present analysis.

Table 5. Political and trading association membership

Political or trading bloc	Number of members considered for analysis
Association of Southeast Asian Nations (ASEAN)	10
African, Caribbean and Pacific Group of States (ACP)	79
South Asian Association for Regional Cooperation (SAARC)	7
Asia-Pacific Economic Cooperation (APEC)	22
European Union	25
Southern Common Market (MERCOSUR)	5
North American Free Trade Agreement (NAFTA)	3
Organisation for Economic Co-operation and Development (OECD)	31
Organization of the Petroleum Exporting Countries (OPEC)	11

3. Data

Data from 229 countries for 2005 are used in this study. The United Nations trade databases, World Development Indicators database and CEPII database of gravity variables are primarily used. The information about economic and political association membership was obtained from various sources of public information and the Central Intelligence Agency World Factbook. Data on Business environment is obtained from doing business reports. Data on institutional quality at the border is obtained from the enabling trade reports. The governance variables are obtained from the World Bank's Worldwide Governance Indicators data set. The trade policy restrictive index was obtained from Hiscox and Kastner (2004) and used for imputation of covert domestic policy effect on trade for all the countries in the data set. The dependent variables used in the estimations are bilateral imports values and the log of imports values. Table 6 describes the variability of the two variables by OECD membership.

Table 6. Description of the dependent variables

	l_imp		Imports	
	OECD	Non-OECD	OECD	Non-OECD
Mean	6.62	2.62	959978.10	83906.36
Standard deviation	5.67	4.05	6867490.00	1784430.00
Minimum	0.00	0.00	0.00	0.00
Maximum	19.49	19.38	290000000.00	260000000.00
Percentile 25	0.00	0.00	0.00	0.00
Percentile 50	7.73	0.00	2265.50	0.00
Percentile 75	11.56	5.02	104400.00	151.00

C. Methods and models

1. Alternative functional forms

One distinct feature of gravity literature is the recurring comparison alternative specifications and the concerns about the lapses in any given modelling technique that are frequent. The apparent ubiquity of the log-normal model has been long challenged, earlier in regional science literature (Flowerdrew and Aitkin, 1982) and later by econometricians (Egger, 2000), with an often-quoted example being Silva and Tenreyro (2006). The main charge against the use of the log-normal model has been the fact that a log linear model cannot be expected to provide unbiased estimates of mean effects when the errors are heteroscedastic. Silva and Tenreyro (2006) provided empirical evidence suggesting that the resulting biases were likely to be large. In addition to this critique, they suggested the use of the Poisson estimator, also suggested by Egger (2000) and Matyas (1998), as an alternative approach to estimation. Other complaints have referred to the omission of zero bilateral flows and

overstatement of coefficient values in the log-normal model compared to alternative specifications. Tobin (1958) identified the problem of the impact of a considerable number of zero bilateral trade flows in the dependent variable, with most authors citing this proportion to be more than 50 per cent of the total observations (which is also the case for 2005 data covering 229 countries used here).

The presence of zero values of the dependent variable in a sample has potentially very important implications for the parameter values estimated using these data. Heckman (1979) generalized the approach to estimation in the presence of zeros, as a problem of estimation in samples potentially involving selection bias.

Alternative estimation techniques in the literature include mainly count data estimators, selection models of the Heckman type and non-linear least squares. The numerous empirical contributions to international trade using the gravity framework employ different techniques based mainly on the discretion of each author. The statistical significance of the estimates and the considerable size of the estimates frequently overshadow the often arbitrary choice of estimators.

A comparative analysis of the competing estimation techniques has been adopted here in order to bring some consensus to the resulting coefficient estimates, both in terms of significance and in size. The choice of several functional forms in this chapter is mainly motivated by the findings and concerns of previous work. The log-normal form, which enjoys the status of the standard method, was used first**.** Liu (2007) believed the case of more than 50 per cent of the observations reporting zero trade flows to be a standard corner solution problem, and suggested that the Tobit model was a more appropriate method.[200] However, even the Tobit model suffers from the inability to handle residuals that are not normal and homoscedastic.

Given the presence of the large number of zero flows, the log-normal with Tobit estimation was followed in the present analysis. Based on the recommendations of many authors, including Silva and Tenreyro (2006), the gravity model using the Poisson maximum likelihood method is estimated next. Following Linders, Burger and Van Oort (2008), the hurdle Poisson-logit max. likelihood model is also tried. This model has the particular advantage of fitting data in two stages, the first stage as logit estimation (logically similar to a selection model) and then the Poisson model in the second stage for the non-zero values of the dependent variable. In addition, the negative binomial model and the zero-inflated forms of both the Poisson and the negative binomial model are implemented.

Table 7 summarizes the various models and specifications implemented. In applying different specifications, the various institutional variables are introduced separately together with the key gravity variables. This is done with the intention of identifying the unique effect of each variable in every functional form; in addition, it performs the partial role of robustness check.

[200] The Tobit model explains mathematically why the zero trade flows matter:
$T^* = X\beta + u, \quad u|X \sim Normal(0, \sigma^2)$ where T^* is the latent bilateral trade and X is a vector of covariates. Since both $E(T|X)$ and $E(T|X, T > 0)$ are of importance, the following relationship is obtained by the law of iterated expectations: $E(T|X) = P(T > 0|X) * E(T|X, T > 0)$ where $P(T > 0|X)$ is the conditional probability of positive trade.

Table 7. Different functional forms and their specifications implemented

Model	Version	Dependant variable	Explanatory variables
Log-normal	1	Log imports	Basic variables
	2	Log imports	Basic + doing business variables
	3	Log imports	Basic + enabling trade variables
	4	Log imports	Basic + trade restrictiveness variables
	5	Log imports	Basic + governance variables
	6	Log imports	Basic + trade and political association membership dummies
Tobit	1	Log imports	Basic variables
	2	Log imports	Basic + doing business variables
	3	Log imports	Basic + enabling trade variables
	4	Log imports	Basic + trade restrictiveness variables
	5	Log imports	Basic + governance variables
	6	Log imports	Basic + trade and political association membership dummies
Poisson maximum likelihood	1	Imports	Basic variables
	2	Imports	Basic + doing business variables
	3	Imports	Basic + enabling trade variables
	4	Imports	Basic + trade restrictiveness variables
	5	Imports	Basic + governance variables
	6	Imports	Basic + trade and political association membership dummies
Hurdle Poisson-logit maximum likelihood (first stage-logit and second stage-Poisson)	1	Imports	Basic variables
	2	Imports	Basic + doing business variables
	3	Imports	Basic + enabling trade variables
	4	Imports	Basic + trade restrictiveness variables
	5	Imports	Basic + governance variables
	6	Imports	Basic + trade and political association membership dummies
Negative binomial maximum likelihood	1	Imports	Basic variables
	2	Imports	Basic + doing business variables
	3	Imports	Basic + enabling trade variables
	4	Imports	Basic + trade restrictiveness variables
	5	Imports	Basic + governance variables
	6	Imports	Basic + trade and political association membership dummies

2. Incorporation of country-specific fixed effects

In a separate set of estimations, alternative models are implemented to include country dummies for exporters and importers, respectively, to take out the effects of origin-specific or destination-specific unobservable market attributes or multilateral frictions from both the exporter and importer sides. Recent literature on gravity models (Matyas, 1998; Egger, 2000; Anderson and van Wincoop, 2003) increasingly recommend that this practice, grounded in trade theory, takes better care of the "omitted variable" problems and yields more moderate and reasonable estimates. The use of country-specific dummies is considered robust to alternative theories, whether based on consumer differentiation among goods on the demand side (Anderson and vanWincoop, 2003) or on differences in technology on the supply side (Eaton and Kortum, 2002). Table 8 summarizes the fixed effect specifications implemented.

Table 8. Implementation of fixed effect model

Model	Version	Dependant variable	Explanatory variables
Log normal	Basic	Log imports	Basic variables + all fixed effects
	Augmented	Log imports	Basic + doing business variables + enabling trade variables + trade restrictiveness variables + governance variables + all fixed effects
Poisson maximum likelihood~importer FE	Basic	Imports	Basic variables + importer fixed effects only
	Augmented	Imports	Basic + doing business variables + enabling trade variables + trade restrictiveness variables + governance variables + importer fixed effects only
Poisson maximum likelihood~exporter FE	Basic	Imports	Basic variables + exporter fixed effects only
	Augmented	Imports	Basic + doing business variables + enabling trade variables + trade restrictiveness variables + governance variables + exporter fixed effects only
Hurdle Poisson-logit maximum likelihood (first stage-logit and second stage-Poisson)	Basic	Imports	Basic variables + all fixed effects
	Augmented	Imports	Basic + doing business variables+ enabling trade variables + trade restrictiveness variables + governance variables + all fixed effects

3. Results

(a) Basic gravity impacts

In all the specifications under each functional form, and in all the fixed-effect specifications, the three basic gravity variables of importer GDP, exporter GDP and the geographical distance are included in the log form. The estimates for these variables are significant at the 1 per cent level for all the specifications under each functional form. For each functional form, the range of variation of the estimates is reported in the final column of table 9. The estimates display expected signs at all instances and comprehensively reinforce the main impacts of the gravity model. In each case in this and the following subsections, only the significance level of the parameters is reported; standard errors or the test statistics of the models and estimates are not included in the interest of saving space and ensuring visual clarity of the multiple-column tables. Notably, count data models produce much more conservative estimates of the main gravity effects compared with linearly estimated log-normal and Tobit models.

The conventional dummy variables such as contiguity, common language and common colony were included in all the specifications and the significant trade enhancing impacts were obtained. Given this uniformity of the outcome of the three dummy variables and its similarity to the results reported in many analyses, they have not been included in the results tables.

Table 9. Estimates for key gravity variables in alternative specifications

	Basic variables	Basic + doing business variables	Basic + enabling trade variables	Basic + trade policy index variables	Basic + governance variables	Basic + trade and political association membership dummies	Range
Log-normal specification							
ln GDP exporter	1.229[a]	1.303[a]	1.281[a]	1.151[a]	1.132[a]	1.072[a]	1.072[a] - 1.303[a]
ln GDP importer	0.999[a]	1.071[a]	1.11[a]	0.957[a]	0.956	0.905[a]	0.905[a] - 1.11[a]
ln weighted distance	-0.894[a]	-0.981[a]	-0.866[a]	-1.038[a]	-1.093[a]	-1.224[a]	(-1.224[a]) - (-0.866[a])
Tobit specification							
ln GDP exporter	1.607[a]	1.553[a]	1.391[a]	1.551[a]	1.477[a]	1.503[a]	1.391[a] - 1.607[a]
ln GDP importer	1.342[a]	1.294[a]	1.21[a]	1.312[a]	1.28[a]	1.288[a]	1.210[a] - 1.342[a]
ln weighted distance	-1.268[a]	-1.216[a]	-0.917[a]	-1.43[a]	-1.449[a]	-1.622[a]	(-1.622 [a]) - (-0.917 [a])
Poisson maximum likelihood specification							
ln GDP exporter	0.741[a]	0.764[a]	0.753[a]	0.832[a]	0.783[a]	0.78[a]	0.741[a] - 0.832[a]
ln GDP importer	0.781[a]	0.777[a]	0.725[a]	0.753[a]	0.77[a]	0.717[a]	0.717[a] - 0.781[a]
ln weighted distance	-0.367[a]	-0.546[a]	-0.501[a]	-0.548[a]	-0.542[a]	-0.59[a]	(-0.59[a]) - (-0.367[a])
Hurdle Poisson-logit maximum likelihood specification							
First stage (logit)							
ln GDP exporter	0.679[a]	0.734[a]	0.652[a]	0.634[a]	0.612[a]	0.633[a]	0.612[a] - 0.734[a]
ln GDP importer	0.584[a]	0.632[a]	0.563[a]	0.534[a]	0.544[a]	0.562[a]	0.534[a] - 0.632[a]
ln weighted distance	-0.473[a]	-0.457[a]	-0.109[a]	-0.553[a]	-0.635[a]	-0.617[a]	(-0.635[a]) - 0.109[a]
Second stage (Poisson)							
ln GDP exporter	0.798[a]	0.87[a]	0.858[a]	0.91[a]	0.876[a]	0.863[a]	0.798[a] - 0.91[a]
ln GDP importer	0.844[a]	0.889[a]	0.833[a]	0.844[a]	0.869[a]	0.81[a]	0.81[a] - 0.889[a]
ln weighted distance	-0.589[a]	-0.814[a]	-0.745[a]	-0.776[a]	-0.801[a]	-1.044[a]	(-1.044[a]) - (-0.589[a])
Negative binomial maximum likelihood specification							
ln GDP exporter	0.851[a]	0.949[a]	0.925[a]	0.811[a]	0.812[a]	0.848[a]	0.811[a] - 0.949[a]
ln GDP importer	0.932[a]	0.912[a]	0.855[a]	0.904[a]	0.892[a]	0.912[a]	0.855[a] - 0.932[a]
ln weighted distance	-1.188[a]	-1.424[a]	-1.219[a]	-1.366[a]	-1.383[a]	-1.532[a]	(-1.532[a]) - (-1.188[a]

(Dep var – bilateral imports is logged in log-normal and Tobit.)
[a]Significant at the 1 per cent level; [b]significant at the 5 per cent level; [c]significant at the 10 per cent level.

(b) Domestic institutional quality

This subsection reports the estimates of the effects of national institutional quality scores/variables on bilateral imports. The results from the five functional forms (log-normal, Tobit, Poisson, hurdle Poisson-logit and negative binomial) are presented first in table 10. The effects appear in their final elasticity form after exponentiating the regression coefficients multiplied by the standard deviation of the variables (Linders, Burger and Van Oort, 2008). In table 11, the corresponding estimates from the fixed effect regressions appear, also in the final elasticity form. While the results from both log-normal and Tobit have been included for the sake of completeness, the author considers the estimates from the Poisson and the hurdle Poisson to be more reliable given the methodological concerns discussed above.

In looking at the results, the overstating nature of the log-normal and Tobit estimates compared to count data models can be observed here too. In discussing the ranges, the author has ignored the first stage of the hurdle regression (the selection process) and depends on the estimates at the second stage (Poisson).

Table 10. Elasticities of domestic institutional variables for alternative functional forms

	Log-normal	Tobit	Poisson maximum likelihood	Hurdle Poisson-logit maximum likelihood		Negative binomial maximum likelihood
				Logit	Poisson	
Doing business score~exporter	0.140[a]	0.095[a]	-0.226[a]	-0.048	-0.261[a]	0.129[a]
Doing business score~importer	0.035	0.031	0.045[a]	0.099[a]	-0.002[a]	0.055[c]
Enabling trade score~exporter	-0.573[a]	-0.650[a]	0.064[a]	-0.3[a]	0.159[a]	-0.165[a]
Enabling trade score~importer	-0.183[a]	-0.217[a]	-0.210[a]	-0.157[a]	-0.153[a]	-0.119[b a]
Trade restrictiveness score_exporter	-0.328[a]	-0.158[a]	0.263[a]	-0.019[c]	0.079[a]	-0.048[a]
Trade restrictiveness score_importer	-0.123[a]	-0.0234[a]	-0.106[a]	-0.027[a]	-0.015[a]	0.005
Governance~exporter	-0.689[a]	-0.654[a]	0.176[a]	-0.361[a]	0.294[a]	-0.235[a]
Governance~importer	-0.318[a]	-0.291[a]	-0.104[a]	-0.276[a]	0.006[a]	-0.138[c]

(Dep var – bilateral imports is logged in log-normal and Tobit.)
[a]Significant at the 1 per cent level; [b]significant at the 5 per cent level; [c]significant at the 10 per cent level.

In interpreting the estimates for scaled scores, it should be noted that this is done with regard to an increase of the score by one standard deviation. The doing business score effect on the exporter side varies from -26 per cent to +4 per cent. The effect of the doing business score on the importer side varies in the positive range (ignoring the trivial negative elasticity of hurdle second stage) from +3 per cent to +9 per cent. The effect of the enabling trade score on the exporter side varies from -65 per cent to +15 per cent. The corresponding effects on the importer side vary only in the negative range from -15 per cent to -21 per cent. One needs to mindful of the fact that this is a desirable outcome, given that enabling trade score records better institutional quality (see the clarification on the behaviour of enabling trade score, domestic policy environment score and governance score in section A). In other words, the fewer the institutional bottlenecks at the border, the higher the bilateral imports will be. The domestic policy effect on trade on the exporter side varies from -32 per cent to +26 per cent. Here also a higher negative value indicates a desirable effect (i.e., positive correlation between less restrictive domestic policy environment and bilateral trade) The corresponding effect on the importer side varies from -1 per cent to -12 per cent, again indicating desirable impacts of lesser trade restrictiveness. The effect of the governance score shows mixed results on the exporter side. However, on the importer side, governance elasticities stay negative indicating desirable impacts of

good governance, especially if a country is an importer. Almost all the estimates for the above variables are significant at the 1 per cent level.

Table 11. Elasticities of domestic institutional variables from fixed effect models

Explanatory variables	Log-normal specification	Poisson maximum likelihood specification ~importer	Poisson maximum likelihood specification ~exporter	Hurdle Poisson-logit maximum likelihood specification	
				Logit	Poisson
Doing business score~importer	0.003	0.028[a]	0.100[a]	0.076	0.033[a]
Doing business score~exporter	0.119[a]	-0.157[a]	0.076[a]	-0.133	0.113[a]
Enabling trade score~importer	-0.667[c]	-1.848[a]	-0.958[a]	-0.8	-2.428[a]
Enabling trade score~exporter	-4.765[a]	-0.670[a]	-0.247[a]	-2.130[c]	-0.232[a]
Governance~importer	0.165	0.729[a]	0.590[a]	0.815	1.420[a]
Governance~exporter	9.783[a]	0.721[a]	0.371[a]	3.799[a]	0.384[a]

(Dep var – bilateral imports is logged in log-normal and Tobit.)
[a]Significant at the 1 per cent level; [b]significant at the 5 per cent level; [c]significant at the 10 per cent level.

The fixed effect model was implemented in log-normal, Poisson and hurdle Poisson-logit specifications and the results for national institutional quality variables are reported in table 11. After controlling for all country-specific characteristics, the estimates deviate from the more moderate elasticities reported above with some very large effects. However, it is only in the case of institutional quality at the border that the beneficial impacts of good institutional can be observed clearly (the large negative elasticities).

(c) Supranational institutional effects

The elasticity estimates of political and trade association membership (which acts as a proxy for supranational institutional differences) are reported in table 12. Since these variables are employed via dummies with one for institutional membership, the elasticities can be interpreted directly (i.e., a large positive elasticity indicate trade-enhancing impacts). Compared to the mixed effects (i.e., positive in some and negative in others) observed with domestic institutional quality effects on trade, the majority of the supranational institutional effects indicate trade-enhancing effects of supranational institutional membership that are substantial in value on both the exporter and the importer side. Several important observations emerge. In general, membership of SAARC, MERCOSUR and NAFTA does not appear very helpful in the improvement of bilateral trade. In a certain sense, this is to be expected, given the small membership and relative high involvement within the member's own bloc that is common to all the three blocs. Further, all functional forms show that if a country is importing, it is not very helpful to be a member of OPEC.

Table 12. Elasticities of supra -national institutional membership effects

	Log normal specification	Tobit specification	Poisson maximum likelihood specification	Hurdle Poisson-logit maximum likelihood specification		Negative binomial maximum likelihood specification
				Logit	Poisson	
ASEAN exporter	1.117[a]	2.056[a]	0.301[a]	0.788[a]	0.477[a]	0.270[c]
ASEAN importer	0.793[a]	1.430[a]	0.605[a]	0.376[c]	0.684[a]	1.342[a]
ACP exporter	0.221[a]	0.210[b]	-0.108[a]	0.276[a]	0.338[a]	0.840[a]
ACP importer	0.608[a]	0.799[a]	-0.183[a]	0.495[a]	0.327[a]	0.448[c]
SAARC exporter	0.974[a]	0.944[a]	-0.534[a]	0.672[a]	-0.385[a]	-0.07
SAARC importer	1.435[a]	1.430[a]	-0.332[a]	0.477[a]	-0.294[a]	1.992[b]
APEC exporter	3.683[a]	3.084[a]	0.950[a]	0.614[a]	1.067[a]	2.561[a]
APEC importer	0.933[a]	0.696[a]	0.548[a]	0.126	0.640[a]	0.813[b]
European Union25 exporter	0.662[a]	0.616[a]	0.499[a]	0.369[a]	0.143[a]	-0.064
European Union25 importer	0.390[a]	0.344[a]	0.603[a]	0.279[b]	0.313[a]	-0.088
MERCOSUR exporter	3.632[a]	4.254[a]	0.032[a]	0.844[a]	0.204[a]	1.472[a]
MERCOSUR importer	-0.470[a]	-0.889[a]	-0.296[a]	-0.432[a]	-0.026***	-0.177
NAFTA exporter	-3.341[a]	-5.746[a]	-0.470[a]	-1.875[a]	-0.219[a]	-2.706[a]
NAFTA importer	0.297	0.047	0.659[a]	0.982[c]	0.923[a]	-0.713[a]
OECD exporter	1.117[a]	0.249[c]	-0.639[a]	0.954[a]	-0.77[a]	0.181
OECD importer	1.063[a]	0.589[a]	-0.320[a]	1.052[a]	-0.498[a]	0.278
OPEC exporter	-1.117[a]	-2.367[a]	0.309[a]	-0.799[a]	0.326[a]	0.105
OPEC importer	-0.306[b]	-0.779[a]	-0.430[a]	-0.675[a]	-0.361[a]	-0.784[a]

(Dep var – bilateral imports is logged in log-normal and Tobit.)
[a]Significant at the 1 per cent level; [b]significant at the 5 per cent level; [c]significant at the 10 per cent level.

(d) Robustness of results to development status of trading partners

The structural differences between the highly-developed countries and the developing countries with regard to economic environment and institutional environment motivate decomposition of the analysis based on the development status of the trading partners. The conventional terminology of North and South divide is used here. As a proxy for development status, membership of OECD is used. The total sample is sub-divided into four categories based on the four possible directions of trade: North-North; North-South; South-North; and South-South. The origin of the bilateral flow is always indicated first (i.e., North-South would mean a flow between an OECD exporter and a non-OECD importer) in the category nomenclature. Table 13 shows the estimates in their final elasticity form (not the regression coefficients or semi-elasticities) for the key gravity variables and the national institutional quality variables.

The sub-divided flows indicate significant differences between them. First, looking at the basic gravity variables, in a trade flow between a northern country and southern country, regardless of the direction of the flow, the northern country GDP has a higher trade enhancing effect. Another remarkable point is the very high role played by the distance in the case of South-South flows compared with its lesser role in North-North flows. When National Institutional Quality scores are considered, better domestic business institutional quality (measured by the doing business score) has a very high trade enhancing effect on the North-North flows, whereas it does not appear to matter at all in the case of South-South flows. The elasticities of the other three institutional variables, however, are less informative. In general, it can be seen that the size of the institutional quality impact is significantly higher when trade occurs between northern countries, as is evident from the higher absolute values of elasticities for North-North trade.

Table 13. Elasticities of the Poisson estimates of gravity model by development status

Explanatory variable	North-North	North-South	South-North	South-South
Imports				
Log of GDP exporter	1.680[a]	1.787[a]	1.542[b]	1.716[a]
Log of GDP importer	1.776[a]	1.396[a]	1.838[a]	1.173[a]
Log of weighted distance	-1.10[a]	-1.519[a]	-0.763[a]	-2.532[a]
Doing business score~exporter	0.957[a]	-0.665[a]	-0.174[a]	-0.081[a]
Doing business score~importer	2.687[a]	0.030[a]	0.711[a]	-0.002[a]
Enabling trade score~exporter	0.249[a]	-0.120[a]	-0.598[a]	-0.084[a]
Enabling trade score~importer	1.093[a]	-1.010[a]	0.962[a]	-0.757[a]
Governance~exporter	-0.504[a]	-0.819[a]	0.697[a]	-0.177[a]
Governance~importer	-0.609[a]	0.030[a]	-0.884[a]	0.184[a]
Trade restrictiveness score_exporter	0.301[a]	0.359[a]	-0.174[a]	-0.105[a]
Trade restrictiveness score_importer	-0.0279[a]	0.051[a]	0.012[a]	-0.163[a]

(Dep var - bilateral imports)
[a]Significant at the 1 per cent level; [b]significant at the 5 per cent level; [c]significant at the 10 per cent level.

D. Conclusion

This chapter attempts to evaluate the relative impacts of national institutional and supranational institutional environment on bilateral trade via a series of gravity equations estimated both in linear and non-linear forms. In particular, the large size of the dataset (covering 229 countries) from 2005 adds to the generalization of the outcomes. All functional forms and specifications reported high model fit and explanatory power. However, the three key variables of exporter GDP, importer GDP and distance explained more than 65 per cent of the variation in the dependent variable, an outcome very similar in size to most previous work with gravity models. In general, the count data models that estimate the gravity equation multiplicatively displayed higher model fit and explanatory power compared with linear estimations of the log-normal and Tobit models.

The log-normal specification adopted here deviates from the standard implementation in that zeros have been used to replace the many instances where the problem of obtaining the log zero-valued imports arises. In this sense, the dependent variable used in the log-normal specification cannot be strictly considered as a true log of imports. While acknowledging this modification of the dependent variable to be rather unconventional, the author believes that the Tobit specification with zeros censored provide a partial justification for the experimentation with the log-normal model. Tobit results clearly show the inflationary effect of the elimination of zeros on the estimates of the key gravity variables (log of importer GDP, log of exporter GDP and the geographical distance).

One remarkable outcome emerging from the comparison of the alternative functional forms is the fact that linear estimations (log-normal and Tobit) routinely produce higher estimates compared with all the count data models that take a non-linear (multiplicative) form. Given the often-heard complaint that log-normal estimates are rather too high to have an intuitive appeal, the count data estimations consistently provide conservative estimates for the key variables. A general rule for identifying this conservativeness is values of elasticity estimates being lower than 1 for the three key gravity variables.

The use of multidirectional scaling to reduce the dimensionality of many domestic institutional variables proved to be a useful undertaking, given the high correlation of scaled scores and constituent sub-indices in the case of governance data and enabling trade. This reduction of dimensionality helped in capturing four different categories of domestic institutional quality without having to drop variables owing to collinearity issue.

Another partially method-related contribution made here (even though it is by no means original) is the side-by-side comparison of the alternative functional forms. This provides a clear picture of the different estimating properties of these different functional forms with regard to the gravity variables.

With regard to the main objective of this chapter to capture institutional quality effects, a general conclusion can be drawn to the effect that the supranational institutional membership had a significantly large trade-enhancing impact overshadowing the more moderate trade-related impacts of domestic institutional quality. This outcome, in fact, augurs well for the present dialogue on the potential usefulness of supranational institutional arrangements as facilitators of international trade.

References

Anderson, J. E. and D. Marcouiller (2002). "Insecurity and the pattern of trade: An empirical investigation", *Review of Economics and Statistics*, vol. 84, No. 2; pp. 342-352.

Anderson, J.E. and E. VanWincoop (2003). "Gravity with gravitas: A solution to the border puzzle", *American Economic Review*, vol. 93; pp. 170-192.

Badinger, H. (2005). "Growth effects of economic integration: Evidence from the EU member states", *Review of World Economics*, vol. 141; pp. 50-78.

Baier, S. and J.H. Bergstrand (2001). "The growth of world trade: tariffs, transport costs and income similarity", *Journal of International Economics,* vol. 53; pp. 1-27.

Bröcker, J. (1984). "How do international trade barriers affect interregional trade?" In A. E. Anderson, W. Isard, T. Puu (eds.), *Regional and Industrial Development Theories, Models and Empirical Evidence,* pp. 219-239. Elsevier Science B.V., Amsterdam.

Burger, M. J., G. J.M. Linders and F. G. Van Oort (2008). "On the specification of the gravity model of trade: Zeros, excess zeros and quasi-Poisson estimation", Working Paper, Erasmus University, Rotterdam.

de Groot, H. L. F., G. J.M. Linders, P. Rietveld and U. Subramanian (2004). "The institutional determinants of bilateral trade patterns", *Kyklos,* vol. 57; pp. 103-123.

Deardorff, A. V. (2001). "Developing country growth and developed country response", *Journal of International Trade and Economic Development*, vol. 10, No. 4; pp. 373-392.

——— (1998). "Determinants of bilateral trade: Does gravity work in a neoclassical world?" In J. Frankel (ed.), *The Regionalization of the World Economy*. University of Chicago Press, Chicago, United States.

Disdier, A. C. and K. Head (2008). "The puzzling persistence of the distance effect on bilateral trade", *Review of Economics and Statistics,* vol. 90; pp. 37-41.

Dollar, D. (1992). "Outward-oriented developing countries really do grow more rapidly: Evidence from 95 LDCs, 1976-85", *Economic Development and Cultural Change*, April; pp. 523-544.

Eaton, J. and S. Kortum (2002). "Technology, geography and trade", *Econometrica*, vol. 70; pp. 1741-1779.

Egger, P. (2005). "Alternative techniques for the estimation of cross-section gravity models", *Review of International Economics,* vol. 13; pp. 881-891.

——— (2000). "A note on the proper econometric specification of the gravity equation", *Economic Letters*, vol. 66, No. 1; pp. 25-31.

Feenstra, R. C. (2004). *Advanced International Trade: Theory and Evidence*. Princeton University Press, Princeton, NJ, United States.

Flowerdew, R. and M. Aitkin (1982). "A method of fitting the gravity model based on the Poisson distribution", *Journal of Regional Science,* vol. 22; pp. 191-202.

Grossman, G. (1996). "Comments on Alan V. Deardorff – Determinants of bilateral trade: Does gravity work in a Neoclassical world", in J. A. Frankel (ed.), *The Regionalization of the World Economy*. University of Chicago for National Bureau of Economic Research, Chicago.

Heckman, J. (1979). "Sample selection bias as a specification error", *Econometrica*, vol. 47, No. 1; pp. pp. 153-161.

Helpman, E. and P. Krugman (1985). *Market structure and Foreign Trade*. MIT Press, Cambridge, MA, United States.

Hiscox, M. J. and S. Kastner (2004). "A general measure of trade policy orientations: Gravity model-based estimates for 82 nations, 1960 to 2000". Draft available at www.people.fas.harvard.edu.

Hufbauer, G. C. and P. L. E. Grieco (2005). *The Payoff from Globalization*, Institute for International Economics, Washington, D.C.

Hummels, D. (2001). "Towards a geography of trade costs", Working Paper, Krannert School of Management, West Lafayette, IN., United States.

Kaufmann, D., A. Kraay and M. Mastruzzi (2006). "Governance Matters V", *World Bank Economic Review*, vol. 18; pp. 253-287.

Knack, S. and P. Keefer (1995). "Institutions and economic performance: Cross-country tests using alternative institutional measures", *Economics and Politics,* vol. 7, No. 3; pp. 207-227.

Kruskal J., B. (1964). "Multidimensional scaling by optimizing goodness of fit to a nonmetric hypothesis", *Psychometrika,* vol. 29; pp. 1-27.

Leamer, E. and J. Levinsohn (1995). "International trade theory: The evidence", in G. Grossman and K. Rogoff (eds.), *Handbook of International Economics,* vol. III. Elsevier Science B.V., Amsterdam, pp. 1339-1394.

Lee, J.W. (1993). "International trade, distortions and long-run economic growth". IMF Staff Papers, vol. 40, No. 2; pp. 299-328.

Lejour, A.M. and R. Nahuis (2005). "R&D spillovers and growth: Specialisation matters", *Review of International Economics,* vol. 13; pp. 927-944.

Linders, G.J.M., M. J. Burger and F. G. Van Oort (2008). "A rather empty world: The many faces of distance and the persistent resistance to international trade", *Cambridge Journal of Regions, Economy and Society,* vol. 1, No. 3; pp. 439-458.

Liu, X. (2007). "GATT/WTO promotes trade strongly: Sample selection and model specification". (Unpublished).

Loungani, P., A. Mody and A. Razin (2002). "The global disconnect: The role of transactional distance and scale economies in gravity equations", *Scottish Journal of Political Economy,* vol. 49; pp. 526-543.

McCallum, J. (1995). "National borders matter: Canada-U.S. regional trade patterns", *American Economic Review,* vol. 85; pp. 615-623.

Matyas, L. (1998). "The gravity model: some econometric considerations", *The World Economy,* vol. 21; pp. 397-401.

Meon, P.-G. and S. Khalid (2008), "Institutional Quality And Trade: Which Institutions? Which Trade?," *Economic Inquiry,* Western Economic Association International, vol. 46, No. 2, pp. 227-240, 04.

North, D. (1990). *Institutions, Institutional Change and Economic Performance*. Cambridge University Press, Cambridge, United Kingdom.

Obstfeld, M. and K. Rogoff (2000). "The six major puzzles in international macroeconomics: Is there a common cause?" *NBER Macroeconomics Annual,* vol. 15; pp. 339-390. National Bureau of Economic Research, Chicago.

Parsley, D. C. and S. J. Wei (2001). "Explaining the border effect: the role of exchange rate variability, shipping costs and geography", *Journal of International Economics,* vol. 55, No. 1; pp. 87-105.

Portes, R. and H. Rey (2005). "The determinants of cross border equity flows", *Journal of International Economics,* vol. 65, No. 2; pp. 269-296.

Ranjan P. and J. Y. Lee (2007), "Contract Enforcement And International Trade," Economics and Politics, *Blackwell Publishing*, vol. 19, No. 2, pp. 191-218.

Rauch, J. E. (2001). "Business and social networks in international trade", *Journal of Economic Literature,* vol. 39, No. 4; pp. 1177-1203.

Silva, J. C. M. and S. Tenreyro (2006). "The log of gravity", *Review of Economics and Statistics,* vol. 88; pp. 641-658.

Shepard R. N. (1972), "Introduction to volume I", in R. N. Shepard, A. K. Romney and S. B. Nerlove (eds.), *Multidimensional Scaling*. vol. 1; pp. 1-20. Seminar Press, New York and London.

Tinbergen, J. (1962) *Shaping the World Economy*. The Twentieth Century Fund, New York.

Tobin, J. (1958). "Estimation of relationships for limited dependent variables", *Econometrica,* vol. 26; pp. 24-36.

Trefler, D. (1995). "The case of missing trade and other mysteries", *American Economic Review,* vol. 85; pp. 1029-1046.

Wei, Shang-Jin (2000). "How taxing is corruption on international investors?" *Review of Economics and Statistics,* vol. 82, No. 1; pp. 1-11.

Yi, K. M. (2003). Can vertical specialization explain the growth of world trade?" *Journal of Political Economy,* vol. 111; pp. 52-102.

Part V. Use of Computable General Equilibrium analysis for trade policymaking

XI. Scope for world trade reform to ease Asian poverty and inequality

By Kym Anderson[*]

Introduction

For decades, earnings from farming in many Asian and other developing countries have been depressed by a pro-urban, anti-agricultural bias in own-country sectoral and trade policies as well as by governments of richer countries favouring their farmers with import barriers and subsidies. Both sets of policies reduced national and global economic welfare, inhibited economic growth, and added to inequality and poverty because no fewer than three-quarters of the world's billion poorest people still depend directly or indirectly on farming for their livelihood (World Bank, 2007).

During the past two to three decades, numerous developing country governments have reduced their sectoral, trade and exchange rate policy distortions, while some high-income countries also have begun reforming their protectionist farm policies. Yet myriad policy measures continue to distort world food markets in many and complex ways (Anderson, 2009). In some developing country settings they raise food prices for consumers and the earnings of farm households, while in other settings they lower them; however, in most situations there is a mixture of winners and losers, both in rural and in urban areas, not least because many farm households receive some of their income from non-farm sources. The only feasible option for discerning the net impacts of price-distorting policies on poverty and inequality is to undertake quantitative analysis using economy-wide models with up-to-date price distortion data as well as detailed household information on the earning and spending profiles of different groups of people, both rural and urban.

The need for undertaking poverty and inequality analysis remains strong, notwithstanding the contributions of trade-related policy reforms over the past quarter-century. Partly as a result of those policy reforms and the consequent growth of incomes in many developing countries, the number of people living on less than US$ 1 per day nearly halved during 1981-2005, and their share of the global population fell from 42 per cent to 16 per cent (annex table 1). Yet that number of extremely poor people was still almost 900 million in 2005, and it may have risen above that following the eruption of the global financial crisis that began in 2008. Moreover, most of the improvement has been in Asia (especially China), while in sub-Saharan Africa the incidence of poverty was little lower in 2005 than in 1981, at around 40 per cent (amounting to 300 million people in 2005). Despite the success of China, it still had more than 100 million people living on less than US$ 1 per day in 2005, 90 per cent of whom were rural. In India, the number of extreme poor remains stubbornly close to 300 million, with 74 per cent of that number rural inhabitants, even with large subsidies to their farmers.

Less pressing than extreme poverty, but nonetheless still important to the welfare of individuals, is the extent of income inequality. In the past it was just inequality at the local level that affected individuals' utility, but the information and communications technology revolution has increased awareness of income differences not only within local regions but also nationally and internationally. At the national level, there are concerns about rural-urban inequality as well as inequality within each of those broad geographic zones. Within rural areas, for example, differences in incomes can be vast between landless unskilled farm workers, subsistence farmers, the larger commercial farmers and non-farm workers in rural towns.

[*] Revision of a paper presented at the Asia-Pacific Trade Economists' Conference, ESCAP, Bangkok, 2-3 November 2009. That paper was a product of a World Bank research project on "Distortions to Agricultural Incentives". The author is grateful for collaboration by John Cockburn and Will Martin, and for funding from the World Bank Trust Funds provided by the Governments of the Netherlands, the United Kingdom and the Australian Research Council. The views expressed are those of the author and not necessarily those of the World Bank and its Executive Directors, nor the countries they represent, nor of the institutions providing funds for this research project

In the light of the evidence currently available, the question this chapter focuses on is: How much scope is there to further reduce poverty and inequality in Asia and elsewhere by getting rid of remaining distortions to incentives facing producers and consumers of tradable goods, unilaterally or globally?

Empirical studies undertaken as background for the World Trade Organization's (WTO) on-going Doha round of multilateral trade negotiations suggested that in 2001, when that round was launched, policy-driven distortions to agricultural incentives contributed around two-thirds of the global welfare cost of merchandise trade barriers and subsidies (see, for example, Anderson and Martin, 2005). While such empirical studies did not have access to comprehensive estimates of distortions to farmer and food consumer incentives in developing countries, other than applied tariffs on imports, a more recent study (Valenzuela, van der Mensbrugghe and Anderson, 2009) that drew on a new database of distortions to agricultural incentives confirmed that earlier result. The authors suggested that agricultural price and trade policies as of 2004 accounted for 70 per cent of the global welfare cost of those and other merchandise trade policies. This is a striking result, given that the shares of agriculture and food in global GDP and trade are only 3 and 6 per cent, respectively. The contribution of farm and food policies to the welfare cost of global trade-distorting policies for just developing countries is estimated by those authors to be even greater, at 72 per cent – of which more than half is due to policies of developing countries themselves. Even so, the estimates of price distortions that went into that modelling study showed that many developing countries were protecting their less-competitive farmers from import competition, so some of that subset of farmers might be hurt if all markets were opened (Anderson, 2009).

Annex table 2 summarizes the changing extent of price distortions in developing and high-income countries. It shows that the rate of assistance to farmers relative to producers of non-farm tradables has fallen by one-third for high-income countries since the latter part of the 1980s (from 51 to 32 per cent) while in developing countries it has all but disappeared (rising from -41 per cent in the early 1980s to +1 per cent during 2000-2004). The latter trend for developing countries is mainly because of the phasing out of agricultural export taxes, since assistance via import restrictions has risen over the period shown. Thus, in high-income and developing countries there is now a large gap between their nominal rates of assistance for import-competing and export agriculture as well as a continuing large gap (albeit smaller than in the 1980s) between the relative rates of assistance in the two groups of countries. In the light of that evidence, the above question addressed here can be expressed more specifically, for any developing country of interest, as: How important are its own policies compared with those of the rest of the world in affecting the welfare of the poor in that country, and what do agricultural policies in particular contribute to those outcomes? Clear answers to this question are crucial to guiding countries in their national policymaking, and as they negotiate bilateral and multilateral trade agreements.

Now is an appropriate time to address this multi-faceted question for at least two policy reasons. One is that WTO is struggling to conclude the Doha round of multilateral trade negotiations, and agricultural policy reform is once again one of the most contentious issues in those talks. The other is that poorer countries are striving to achieve their United Nations-encouraged Millennium Development Goals by 2015, the prime ones being the alleviation of hunger and poverty. A further reason to focus on this question is that the World Bank recently compiled a very comprehensive new global database that updates and expands substantially our understanding of the distortions to agricultural incentives in developing countries.[201] Those estimates have since been expressed in order to make them usable in national and global economy-wide models (Valenzuela and Anderson, 2008). They differ from the usual ones employed by trade modellers of developing country policies in that they are based on direct domestic-to-border price comparisons rather than (as with the GTAP dataset) on applied rates of import tariffs and other key border measures. A first attempt to exploit that new database was recently undertaken to assess the relative impacts on national, regional and global poverty as well as inequality of agricultural and non-agricultural trade policies at home and abroad.

[201] The distortions database is documented fully in Anderson and Valenzuela, 2008, and is based on the methodology summarized in Anderson and others, 2008.

This chapter summarizes some of the working papers that have emerged from that research project (see www.worldbank.org/agdistortions).

At the outset, it should be made clear that agricultural and trade policies are far from the first-best policy instruments for achieving national poverty or income distribution objectives; that is the prerogative of domestic social welfare and income tax policy measures. However, if empirical studies reveal that national trade-related policies are worsening poverty or inequality in specific countries, they provide yet another reason – on top of the usual national gains-from-trade reason – for those countries to reform their policies unilaterally. Should the inequality and poverty-alleviation effects of national trade-related policy reforms in specific countries be contingent on reforming by the rest of the world, this will provide a further reason for such countries to participate actively in promoting multilateral trade negotiations under WTO. In addition, if global modelling studies reveal that multilateral trade reform would alleviate global inequality and poverty, it will underline the importance of bringing the WTO Doha Development Agenda (DDA) expeditiously to a successful conclusion with ambitious agricultural reform commitments.

A negative finding (e.g., that trade liberalization or farm subsidy cuts would increase poverty in a specific country) need not be a reason to shun welfare-enhancing reform; rather, it should be to use the results to provide guidance as to where tax or social programmes need to be better targeted so that all groups in society share in the economic benefits from such reform (Ravallion, 2008). Global reform results also provide bargaining power to developing countries seeking aid-for-trade side payments to alleviate any increase in poverty projected to result from multilaterally-agreed trade reform.

Section A of this chapter provides an outline of the analytical framework as well as the common empirical methodology adopted by the global and national case studies being summarized. Sections B compares modelling results from both the global and the national models, while section C concludes by mentioning some caveats and drawing out policy implications. The findings are based on two studies that each uses a global model to examine the effects of farm and non-farm price and trade policies on global poverty and its distribution within and across many identified countries, plus a series of individual developing country studies of which five are Asian.

A. Analytical framework

In order to adequately capture the poverty and inequality effects of price-distorting policies, careful consideration must be given to the impacts on household income and expenditure. Many farm households in developing countries rely on their farm enterprise for virtually all of their income, and in the world's poorest countries the share of national poverty concentrated in such households is large. The fact that the poorest households in the poorest countries are concentrated in agriculture means those households are likely to benefit from farm producer price increases engendered by trade policy reform, other things being equal. However, the outcome is not certain because poor households also spend the majority of their income on staple foods; thus, if food prices rise as a consequence of reform, then this adverse effect on household expenditure may more than offset the beneficial effect of higher earnings. The urban poor also would be adversely affected by a rise in consumer prices of staple food. However, it is possible that a trade reform that induced a rise in food prices may also raise the demand for unskilled labour (according to the relative factor intensities of production in an economy's expanding sectors). Depending on how mobile labour is, intersectorally, such reform could raise the income of poor households more than it raises the price of their consumption bundle.

The approach adopted by Anderson, Cockburn and Martin (2010) in utilizing the above theory is a variant of the path-breaking approach pioneered by Hertel and Winters (2005 and 2006) in their study of the poverty consequences of a prospective Doha round agreement under WTO. The present study reported in this chapter contrasts with that earlier study in three ways. First, the focus here is on the impacts of agricultural domestic and trade policies, distinguishing them from the impacts of other merchandise trade policies. A second distinction is that inequality as well as poverty is examined. Third, the effects of current policies are considered, i.e., full (not partial) global

liberalization, whereas Hertel and Winters focused mainly on the multilateral partial reform proposals that were on the table as of 2005. The country case studies examine unilateral reforms that individual developing countries might implement, not just multilateral trade reform. The effects of unilateral actions are compared with what full liberalization abroad would generate, to enable an assessment of the relative importance domestically for each nation of own-country policies as distinct from those of other countries (over which the country has influence only indirectly via trade negotiations).

The national computable general equilibrium (CGE) models are able to estimate the effects of unilateral reform of agricultural or all merchandise trade-distorting policies. For the national modeller to estimate the effects of other countries' policies, however, input is required from a global model. The World Bank's Linkage model is used here for that purpose. It, too, is calibrated to 2004, based on Version 7 of the GTAP global protection database (Narayanan and Walmsley, 2008), apart from the replacing of its applied agricultural tariffs for developing countries with the more comprehensive set of distortion estimates from Valenzuela and Anderson (2008).[202]

All the CGE models referred to below are comparative static, and they assume constant returns to scale, and perfectly competitive homogeneous firms and product markets. Unemployment is assumed to be unaffected by the trade policy regime. These assumptions are imposed simply because of insufficient data and empirical evidence to impose alternative ones across all the countries being modelled. This use of a standard set of assumptions reduces the risk that differences across countries in results are driven by different assumptions about investment behaviour, or the degrees of monopolistic competition, firm heterogeneity and economies of scale or aggregate employment response to trade policy changes (see Helpman, Itskhoki and Redding, 2009). Such specifications almost certainly lead to underestimation of the welfare gains that would accrue from trade reform though. In particular, without dynamics the models will not generate a growth dividend from freeing up markets or from eventual productivity/efficiency gains from trade. That dividend could be very substantial (Winters, 2007). Moreover, since economic growth is the predominant way in which poverty is reduced in developing countries (see the literature review in Ravallion, 2006), the absence of dynamics implies that the results from this study will grossly underestimate the potential poverty-alleviating consequences of liberalization – and might in some situations indicate poverty increases when, in fact, they would be decreases once the growth consequences are incorporated.

All the country case studies surveyed below make use of household survey data in addition to a social accounting matrix, which forms the basis for the data in the CGE model, while the household survey data are used in micro-simulation modelling.

Typically, the experiments are performed in two stages. The first stage involves the imposition on the national CGE model of the policy shock (either unilateral liberalization or an exogenous shock to border prices and export demand provided by the Linkage model). This generates changes in domestic product and factor markets. The consequent changes in consumer and factor prices are then transmitted to the micro-simulation model to see how they alter the earnings of various household types (according to the shares of their income from the various factors) and their cost of living (according to the shares of their expenditure on the various consumer products). That, in turn, provides information on changes in the distribution of real household incomes and hence in inequality, and in the number of people below any chosen poverty line such as US$1 per day.

All country case studies ran a common set of simulations in order to make it possible to compare the inequality and poverty effects in each country of own-country versus rest-of-world

[202] There are various ways of transmitting the results derived from a global CGE model, such as Linkage, to a single-country CGE model. Like Hertel and Winters (2006), the present study used the approach developed by Horridge and Zhai (2006). For imports, Horridge and Zhai proposed the use of border price changes from the global model's simulation of rest-of-world liberalization (that is, without the focus developing country). For the focus developing country's exports, the shift in its export demand curve, following liberalization in the rest of the world, is given in percentage changes by $x=(1/\sigma)q$ where x is the percentage vertical shift in the export demand curve, σ is the elasticity of substitution between the exports of country i and those from other countries, and q is the percentage change in the quantity of exports under the scenario with liberalization in the rest of the world, excluding the focus country.

policies affecting markets for agricultural (including lightly processed food) goods versus other merchandise. The global studies referred to in the next section use the same 2004 global protection dataset but implement global reform shocks, each using a different global model. In most cases, additional simulations were also run, often to illustrate the sensitivity of the results to key assumptions pertinent to that particular case study.

Even though the models surveyed here are all standard perfectly competitive, constant-returns-to-scale, comparative static, economy-wide CGE models, they nonetheless differ somewhat in order to capture important realities (such as labour market characteristics or data limitations) in their particular setting. However, to ensure their comparability, they all aimed to conform to a common set of factor market assumptions and closure rules in addition to using 2004 as their base, and to undertake a common set of simulations using the same global distortions dataset. Specifically, all modellers assumed: (a) a fixed aggregate stock of factors (including no international mobility); (b) possibly some sector-specific capital and labour, but most capital and labour types are assumed to be intersectorally mobile with a common flexible rate of return or wage; and (c) land to be specific to the agricultural sector but mobile across the different crop and livestock activities within that sector. The key agreed macroeconomic closure rules that each case study aimed to adopt were (a) a fixed current account in foreign currency, to avoid foreign debt considerations, and (b) fixed real government spending and fiscal balance, so as to not affect household utility other than through traceable changes in factor and product prices and taxes. Fiscal balance is achieved by using a uniform (generally direct income) tax to replace net losses in revenue from abolishing sectoral trade taxes and subsidies.

B. Synopsis of empirical findings

1. Global model results

This section summarizes the results from two global models (denoted Linkage and GTAP). Section C then brings together the results from national case studies that are more detailed before the lessons learnt from both sets of analyses are drawn together.

(a) Linkage Model results

Anderson, Valenzuela and van der Mensbrugghe (2010) used the World Bank's global Linkage model (van der Mensbrugghe, 2005) to assess the market effects of the world's agricultural and trade policies, as of 2004, on individual countries and country groups, in order to be able to say something about poverty (using a simple elasticities approach) and international inequality. This model also provides the basis for estimating the effects of rest-of-world policies on the import and export prices, and demand for the various exports of any one developing country, for use by each of the country case studies discussed in the next section.

The Linkage model results suggest that developing countries would gain nearly twice as much as high-income countries in welfare terms if 2004 agricultural and trade policies were removed globally (an average welfare increase of 0.9 per cent, compared with 0.5 per cent for high-income countries (annex table 3). Thus, in this broad sense of a world of just two large country groups, completing the global reform process would reduce international inequality. The results vary widely across developing countries, however, and include slight losses in the case of India as well as some sub-Saharan African countries that would suffer exceptionally large adverse terms of trade changes.

Three-quarters of the world's poorest people depend directly or indirectly on agriculture for their main income, and farm sizes are far larger in high-income countries than in developing countries. Therefore, the Linkage study also looked at the extent to which agricultural and trade policies in place, as of 2004, have reduced rewards from farming in developing countries and thereby added to international inequality in farm incomes. It found that net farm incomes in developing countries would rise by 5.6 per cent, compared with 1.9 per cent for non-agricultural value-added, if those policies were eliminated (annex table 3). This suggests that inequality between farm and non-farm

households in developing countries would fall. In contrast, in high-income countries net farm incomes would fall by 15 per cent on average, compared with a slight rise for real non-farm value added. That is, inequality between farm households in developing and those in high-income countries would decrease substantially. These inequality results would not be very different if only agricultural policies were to be removed (annex table 3), underscoring the large magnitude of the distortions from agricultural, compared with non-agricultural, trade-related policies.

The study reported here shows that unskilled workers in developing countries – the majority of whom work on farms – would benefit most from reform (followed by skilled workers and then capital owners), with the average change in the real unskilled wage over all developing countries rising 3.5 per cent. However, the most relevant consumer prices for the poor, including the many poor farm and other rural households who earn most of their income from their labour and are net buyers of food, relate just to food and clothing. Hence, deflating by a food and clothing price index rather than the aggregate CPI provides a better indication of the welfare change for those workers. As shown in annex table 4, for all developing countries the real unskilled wage over all developing countries would rise by 5.9 per cent with that deflator. That is, inequality between unskilled wage-earners and the much wealthier owners of capital (human or physical) within developing countries would decrease with full trade reform.

The above results for real factor rewards and net farm income suggest that poverty as well as international and intra-developing country inequality could be alleviated globally by agricultural and trade policy liberalization. Anderson, Valenzuela and van der Mensbrugghe (2010) go a step further by explicitly assessing reform impacts on poverty even though the Linkage model has only one single representative household per country. They do so using the elasticities approach, which involves taking the estimated impact on real household income and applying an estimated income to poverty elasticity to estimate the impacts on the poverty headcount index for each country. They focus on the change in the average wage of unskilled workers deflated by the food and clothing CPI, and assume those workers are exempt from the direct income tax imposed to replace the lost customs revenue following trade reform (a realistic assumption for many developing countries).

Under the full merchandise trade reform scenario, annex table 5 shows that extreme poverty (the number of people surviving on less than US$ 1 per day) in developing countries would drop by 26 million, relative to the baseline level of just under 1 billion, a reduction of 2.7 per cent. The proportional reduction is much higher for China and sub-Saharan Africa, each falling by around 4 per cent. It is even higher for Latin America (7 per cent) and South Asia other than India (10 per cent). In contrast, the number of extreme poor in India (although not in the rest of South Asia) is estimated to rise by 4 per cent.[203] Under the more moderate definition of poverty – those living on no more than US$ 2 per day – the number of poor in developing countries would fall by nearly 90 million compared with an aggregate baseline level of just under 2.5 billion in 2004, or by 3.4 per cent (notwithstanding the number in India below US$ 2 per day still increasing, but by just 1.7 per cent).

(b) GTAP Model results

Hertel and Keeney (2010) drew on the widely-used global economy-wide model of the Global Trade Analysis Project (GTAP). Their study adopted the same price distortions as the other studies surveyed here, and ran the same scenarios, but generated its own world price changes from the GTAP model for the multilateral trade reform scenarios. Those price changes alter border prices for the various countries in the GTAP model, a subset of which have attached to them detailed household survey data. This permits the authors to say something about poverty impacts across a range of diverse economies.

The Hertel and Keeney multi-country study focused on 15 developing countries – five Asian (Bangladesh, Indonesia, Philippines, Thailand and Viet Nam), four African (Malawi, Mozambique, Uganda and Zambia), and six Latin American countries (Brazil, Chile, Colombia, Mexico, Peru and

[203] The rise in India is partly because of the removal of the large subsidies and import tariffs that assisted Indian farmers, and partly due to the greater imports of farm products raising the border price of those imports.

Venezuela). (Due to space limitation, only a simple average of the results for each of the non-Asia regions is provided in the tables below). Overall, the study concluded that removing current farm and trade policies globally would tend to reduce poverty, and primarily via agricultural reforms. The unweighted average for all 15 developing countries is a headcount decline in extreme poverty (<US$1 per day) of 1.7 per cent. The average fall for the Asian sub-sample is twice that, however – and it is in Asia where nearly two-thirds of the world's extremely poor people live (although the Hertel and Keeney sample did not include China and India). These GTAP model results are close to the Linkage model results in the first part of this section.

Annex table 6 shows the percentage change in the national poverty headcount when the poor are not subject to the income tax rise required to replace trade tax revenue following trade reform. This assumption represents a significant implicit income transfer from non-poor to poor households, and thus generates a marked difference in the predicted poverty alleviation. Trade reforms go from being marginally poverty-reducing in most of the 15 cases to being poverty-reducing in all cases and by a considerable magnitude. It reduces the poverty rate by approximately one-quarter in Thailand and Viet Nam, for example.

Overall, the regional and total average extent of poverty alleviation is around four times larger in this scenario than when the poor are also assumed to be levied with income taxes to replace lost trade tax revenue. The unweighted average poverty headcount reduction for the three regions shown in annex table 6 are remarkably similar to the population-weighted averages from the Linkage model reported in annex table 5 with a similar tax-replacement assumption: the latter's 17 per cent for Asia excluding China and India and 6.4 per cent for Latin America are just slightly above the GTAP model's 14 per cent and 5.7 per cent, respectively.

2. National model results

This subsection looks at how the results from the detailed individual country case studies compare with the above results from the global models. Like the global models, the case studies focused on price-distorting policies as of 2004, even though the database for their CGE models and their household survey data typically date back a little earlier in the decade. They all include more sectoral and product disaggregation than the global models, and cover multiple types of households and types of labour. All of the national studies include micro-simulations drawing on the model results.

The national results for real GDP and household consumption suggest that GDP would increase from full global trade reform, although only by 1 or 2 per cent, in all 10 countries studied. Given falling consumer prices, real household consumption would increase by considerably more in most cases. In general, these numbers are a little larger than those generated by the global Linkage model, but they are still generally much lower than would be the case had dynamic models been used. They therefore share the feature of the global models of underestimating the poverty-alleviating benefits of trade reform, given the broad consensus in the literature that trade liberalization increases growth, which, in turn, is a major contributor to poverty alleviation.

The comparative tables 7 and 8 summarize the national results for the incidence of extreme poverty and income inequality, respectively, resulting from own-country, rest-of-world or global full liberalization of agricultural or all goods trade. One should not necessarily expect the unweighted averages of the poverty results for each region to be similar to those generated by Hertel and Keeney (2010), but for comparative purposes the latter's unweighted averages of national poverty effects for each of the key developing country regions are reported in parentheses in the last four rows of annex table 7(c), in order to make it easy to compare with the unweighted regional averages for the national case studies.

As indicated in annex table 7(c), poverty is reduced in all the studied countries by both global agricultural and (with the exception of the Philippines) non-agricultural liberalization. When all merchandise trade is liberalized, the extent of reduction ranges from close to zero to about 3.5 percentage points, except for Pakistan where it is more than 6 percentage points. On average, nearly

two-thirds of the alleviation is due to non-farm trade reform. The contribution of own-country reforms to the fall in poverty appears to be equally as important as rest-of-world reform on average, although there is considerable cross-country divergence in the extent of this for both farm and non-farm reform.

The poverty alleviation is subdivided in parts (a) and (b) of annex table 7 into rural and urban sources. Rural poverty is cut much more than urban poverty in every case. That is true for both farm and non-farm trade reform, and for own-country as well as rest-of-world reform. Since the rural poor are much poorer on average than the urban poor, this would lead to the expectation that trade reform will also reduce inequality.

Indeed, the results at the bottom of annex table 8(c) for this sample of countries show that inequality would decline in all three developing country regions following full trade liberalization of all goods, or just agricultural products, and both for own-country and rest-of-world reform. The effect of non-farm trade reform on its own is more mixed, providing another reason to urge trade negotiators not to neglect agricultural reform in trade negotiations. Rest-of-world and global agricultural reform both lead to a reduction in inequality in every country in the sample, except Thailand (and slightly in the Philippines for global reform). Non-farm global reform increases inequality slightly in three countries. In the case of Indonesia, the inequality-increasing impact of non-farm reform more than offsets the egalitarian effect of farm trade reform, whereas both types of reform increase inequality in the case of the Philippines and Thailand.

Inequality within the rural or urban household grouping is not altered very much by trade reform as compared with overall national inequality (compare parts (a) and (b) with part (c) of annex table 8). This underlines the point that trade reform would tend to reduce urban-rural inequality predominantly rather than inequality within either region.

Several of the national studies investigate impacts of reforms that could complement trade reforms, most notably different approaches to deal with the elimination of trade tax revenues. If these revenues can be recouped through taxes that do not bear adversely on the poor, then the impacts of reform for poverty reduction are more favourable. The China study focuses on the vitally important issue of reducing the barriers to migration out of agriculture, by improving the operation of land markets and reducing the barriers to mobility created by the *hukou* system. These measures, and international trade liberalization that increases China's market access, reduce poverty such that a combination of these measures would benefit all major household groups.

3. What have we learned?

As found in previous studies, whether based on ex post econometrics or ex ante economy-wide simulation (Hertel and Winters, 2006), the present study also produced mixed results that are not easy to summarize, particularly with regard to the poverty effects. There is, nonetheless, a high degree of similarity in the most important sign – the estimated national extreme poverty effect of freeing all merchandise trade globally. It happens to be the effect for which there is the most overlap between the studies summarized above. Those signs agree in most of the cases shown; apart from India, there is no case where the majority of the signs indicate reform would increase poverty.

This beneficial impact of full liberalization of global merchandise trade on the world's poor would come more from agricultural than non-agricultural reform, and within agriculture, more from the removal of substantial support provided to farmers in developed countries than from developing country policy reform. According to the economy-wide models used in the Anderson, Cockburn and Martin (2010) study, such reform would raise real earnings of unskilled workers in developing countries, most of whom work in agriculture. Their earnings would rise relative to both unskilled workers in developed countries and other income earners in developing countries. This would thus reduce inequality, both within developing countries, and between developing and developed countries, in addition to reducing poverty.

According to the Linkage model results, the number of extremely poor people in developing countries (on less than US$ 1 per day) is estimated to fall by 2.7 per cent with global opening of all goods markets, and by 4 per cent in China and sub-Saharan Africa, but to rise by 4 per cent in India

(or by 1.7 per cent if the more moderate US$ 2 per day poverty level is used). The 15-country results from the GTAP model are in line with those of the Linkage results. The 10 national case studies all found global trade liberalization to be poverty alleviating, regardless of whether the reform were to involve only agricultural goods or all goods, with the benefit coming approximately equally from reform at home and abroad. The studies also found that rural poverty would be cut much more than urban poverty in all cases, whether from reform at home or abroad, and whether or not it included non-farm goods.

Global trade liberalization would reduce international inequality as between developing and high-income countries, both in total and just for farm households, according to the Linkage model. However, it cannot be guaranteed that every developing country would be better off unless there is a strong economic growth dividend from reform (not captured in the comparative static modelling used in the present study). Full trade liberalization of all goods, or just of agricultural products, also would cause inequality to decline within each of the three developing country regions covered by the sample of countries, and both for own-country and rest-of-world reform. Inequality within the rural or the urban household grouping would not alter much following full trade reform, suggesting that the predominant impact of trade reform would be to reduce urban-rural inequality.

The mechanism through which governments adapt to the fall in tariff revenue is also shown to be crucial. If it is assumed the poor do not have to bear any of the burden of replacing trade taxes, instead of sharing it proportionately, the estimated degree of poverty alleviation is about four times greater in the 15 countries studied with the GTAP model.

The results from the global analyses all indicate that removing remaining agricultural policies would have much stronger impacts on poverty and inequality than would non-agricultural trade reforms. A weighted average across the 10 country case studies would probably come to a similar conclusion. This contrasts with reforms over the past three decades: Valenzuela, van der Mensbrugghe and Anderson (2009) estimated that global non-farm trade policy reforms between the early 1980s and 2004 boosted value added in developing country agriculture more than twice as much as global agricultural policy reforms lowered it, and so could be expected to have had a dominant impact on past alleviation of poverty and inequality.

The 10 national case studies also shine some light on the relative importance of domestic versus rest-of-world reform for those countries. The contribution of own-country reforms to the fall in poverty appears to be equally as important as rest-of-world reform on average, although there is considerable cross-country divergence in the extent of this, both for farm and non-farm reform.

C. Conclusion: Policy implications

The above empirical findings have a number of policy implications. First and foremost, the generally attractive results in terms of poverty and inequality alleviating effects from trade policy reforms, whether unilateral or multilateral, provide yet another reason as to why it is in the interests of countries to seek further liberalization of national and world markets.

Second, a recurring theme in the national case studies is that the gains in terms of poverty and inequality alleviation, in addition to the standard aggregate real income gains associated with trade liberalization, are generally much greater from global reform than from just own-country reform. According to the Indonesia study, for example, unilateral trade liberalization is expected to reduce poverty only very slightly, but liberalization by the rest of the world is expected to lower poverty very substantially. In the Philippines, domestic reform alone from current levels of protection might marginally increase poverty rates, whereas rest-of-world liberalization would almost fully offset that (and more than offset it in the case of only agricultural reform).

Third, the results of this set of studies show that the winners from trade reform would overwhelmingly be found among the poorer countries and the poorest individuals within countries. However, it is also clear that even among the extreme poor, some will lose out. Hence the merit of compensatory policies, ideally ones that focus not on private goods but rather on public goods that reduce under-investments in pro-growth factors such as rural human capital.

Fourth, the strongest benefits would come from agricultural reform, underscoring the economic and social importance of securing reforms for that sector in addition to manufacturing, notwithstanding the political sensitivities involved. There are more direct, and hence more efficient, domestic policy instruments than trade policies that could meet government poverty and hunger Millennium Development Goals, but generally they are more of a net drain on treasury finances. This is particularly so for those governments of low-income countries that still rely heavily on trade tax revenue. One solution to that dilemma is to expand aid-for-trade funding as part of official development assistance programmes.

Finally, the findings from most of the national case studies that domestic reform on its own can be a way of reducing poverty and inequality suggest that developing countries should not hold back on domestic reforms while negotiations in the World Trade Organization's Doha Round and other international accords continue. It also suggests that developing countries have little to gain, and potentially much to lose from a poverty-alleviating perspective, from negotiating exemptions or delays in national reforms in the framework of WTO multilateral agreements.

References

Anderson, K. (ed.) (2009). *Distortions to Agricultural Incentives: A Global Perspective, 1955-2007*. Palgrave Macmillan and World Bank, London and Washington, D.C.

Anderson, K., J. Cockburn and W. Martin (eds.) (2010). *Agricultural Distortions, Inequality and Poverty*, World Bank, Washington D.C. Available as a free downloadable e-book at www.worldbank.org/agdistortions.

Anderson, K., M. Kurzweil, W. Martin, D. Sandri and E. Valenzuela (2008). "Measuring distortions to agricultural incentives, revisited", *World Trade Review*, vol. 7, No. 4; pp. 1-30.

Anderson, K. and W. Martin (2005). "Agricultural trade reform and the Doha Development Agenda", *The World Economy*, vol. 28, No. 9; pp. 1301-1327.

Anderson, K. and E. Valenzuela (2008). "Global estimates of distortions to agricultural incentives, 1955 to 2007", data spreadsheets available at www.worldbank.org/agdistortions.

Anderson, K., E. Valenzuela and D. van der Mensbrugghe (2010). "Global poverty effects of agricultural and trade policies using the Linkage model", chapter 2 in K. Anderson, J. Cockburn and W. Martin (eds.) (2010).

Helpman, E., O. Itskhoki and S. J. Redding (2009). "Inequality and unemployment in a global economy", Discussion Paper No. 7375, Centre for Economic Policy Research, London.

Hertel, T. W. and R. Keeney (2010). "Inequality and poverty impacts of trade-related policies using the GTAP model", chapter 4 in K. Anderson, J. Cockburn and W. Martin (eds.) (2010).

Hertel, T. W. and L. A. Winters (eds.) (2006). *Poverty and the WTO: Impacts of the Doha Development Agenda*, Palgrave Macmillan and World Bank, London and Washington, D.C.

Hertel, T. W. and L. A. Winters (2005). "Estimating the poverty impacts of a prospective Doha Development Agenda", *The World Economy*, vol. 28, No. 8; pp. 1057-1071.

Horridge, M. and F. Zhai (2006). "Shocking a single-country CGE model with export prices and quantities from a rest of the world model", pp. 94-104 in T. W. Hertel and L. A. Winters (eds.) (2006).

Ravallion, M. (2008). "Bailing out the world's poorest", Policy Research Working Paper No. 4763, World Bank, Washington, D.C.

——— (2006). "Looking beyond averages in the trade and poverty debate", *World Development*, vol. 34, No. 8; pp. 1374-1392.

Valenzuela, E. and K. Anderson (2008). "Alternative agricultural price distortions for CGE analysis of developing countries, 2004 and 1980-84", *Research Memorandum*, No. 13, Centre for Global

Trade Analysis, Purdue University, West Lafayette IN, United States. Free download at https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=2925.

Valenzuela, E., D. van der Mensbrugghe and K. Anderson (2009). "General equilibrium effects of price distortions on global markets, farm incomes and welfare", chapter 13 in K. Anderson (ed.) (2009).

van der Mensbrugghe, D. (2005). "LINKAGE Technical Reference Document: Version 6.0" (unpublished). World Bank, Washington, D.C. Available at www.worldbank.org/prospects/linkagemodel.

Winters, L.A. (ed.) (2007). *The WTO and Poverty and Inequality*, vols. I and II. Edward Elgar, London.

World Bank (2007). *World Development Report 2008: Agriculture for Development*, Washington, D.C.

Annex

Table 1. Global poverty and inequality, by region, 1981 to 2005 (number and percentage of people on less than US$ 1/day in 2005 PPP)

	1981	1987	1993	1999	2005	*Share of poor (%) who are rural, 2002*	Index of income inequality (Gini coefficient) 2004[a]
No. of people (million):							
East Asia and Pacific	948	598	600	425	180	*85*	0.37
of which China	*730*	*412*	*444*	*302*	*106*	*90*	*0.36*
South Asia	387	384	341	359	350	*75*	0.35
of which India	*296*	*285*	*280*	*270*	*267*	*74*	*0.33*
Sub-Saharan Africa	157	202	247	299	299	*69*	n.a.
Latin America and Caribbean	27	35	34	40	28	*34*	0.52
Rest of world	9	9	15	23	22	*50*	n.a.
World	**1 528**	**1 228**	**1 237**	**1 146**	**879**	*74*	**n.a.**
East+South Asia's share of world	*87*	*80*	*76*	*68*	*60*		
Share of population (Per cent):							
East Asia and Pacific	69	39	36	24	10		
of which China	*74*	*38*	*38*	*24*	*8*		
South Asia	42	37	29	27	24		
of which India	*42*	*36*	*31*	*27*	*24*		
Sub-Saharan Africa	40	42	44	46	39		
Latin America and Caribbean	7	8	7	8	5		
World	**42**	**30**	**27**	**23**	**16**		

Source: Chen and Ravallion, 2008, except for rural share (Ravallion, Chen and Sangraula 2007) and Gini coefficient (PovcalNet, 2008).

Note: [a] Gini coefficient is the population-weighted cross-country average of national Gini coefficients in the region for the nearest available year to 2004.

Table 2. Nominal rates of assistance to tradable agricultural and non-agricultural products, and the relative rate of assistance a focus regions, 1980 to 2004 (per cent)

	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004
South Asia					
NRA agric. exportables	-28	-21	-16	-12	-6
NRA agric. imp-competing	38	63	25	15	27
NRA agric. tradables	2	47	0	-2	13
NRA non-agric. tradables	55	40	19	15	10
RRA	-33	5	-16	-15	3
China and South-East Asia					
NRA agric. exportables	-50	-41	-21	-2	0
NRA agric. imp-competing	1	15	3	13	12
NRA agric. tradables	-35	-28	-12	5	7
NRA non-agric. tradables	21	23	20	10	6
RRA	-43	-42	-26	-4	2
All developing countries					
NRA agric. exportables	-41	-36	-19	-6	-3
NRA agric. imp-competing	17	38	23	22	23
NRA agric. tradables	-21	-16	-4	4	7
NRA non-agric. tradables	35	27	17	10	6
RRA	-41	-34	-18	-5	1
High-income countries					
NRA agric. exportables	12	22	16	8	7
NRA agric. imp-competing	58	71	62	54	51
NRA agric. tradables	43	56	48	37	34
NRA non-agric. tradables	3	3	3	2	1
RRA	38	51	45	34	32

Source: Anderson and Valenzuela, 2008, based on estimates reported in the project's national country studies.

Note: [a] The relative rate of assistance (RRA) is defined as 100*[(100+NRAag^t)/(100+NRA$nonag^t$)-1], where NRAag^t and NRA$nonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively (and NRAag^t is the weighted average of the NRAs for the exporting and import-competing sub-sectors of agriculture).

Table 3. Effects of full global liberalization of agricultural and all merchandise trade on national economic welfare and real GDP, by country and region, using the Linkage model (percent change relative to benchmark data)

	All sectors' policies	*Agricultural policies*		*All sectors' policies*	
	Economic welfare(EV)	**Agric GDP**	**Non-ag GDP**	**Agric GDP**	**Non-ag GDP**
East and South Asia	0.9	-0.3	0.7	0.5	2.9
of which China	*0.2*	*2.8*	*0.2*	*5.7*	*3.0*
India	*-0.2*	*-6.1*	*1.4*	*-8.3*	*-0.3*
Africa	0.2	0.1	0.8	-0.9	0.0
Latin America	1.0	36.3	2.8	37.0	2.3
All developing countries	**0.9**	**5.4**	**1.0**	**5.6**	**1.9**
Eastern Europe and Central Asia	1.2	-4.4	0.3	-5.2	0.3
All high-income countries	0.5	-13.8	0.2	-14.7	0.1
World total	**0.6**	**-1.0**	**0.4**	**-1.2**	**0.5**

Source: LINKAGE model simulations from Anderson, Valenzuela and van der Mensbrugghe (2010).

Table 4. Effects of full global merchandise trade liberalization on real factor prices, by country and region, using the Linkage model (relative to the benchmark data, per cent)

	Nominal change deflated by aggregate CPI			Real change in unskilled wages deflated by:		
	Skilled wages	**Capital[a] user cost**	**Land[a] user cost**	**Aggregate CPI**	**Food CPI**	**Food and clothing CPI**
East and South Asia	3.4	3.0	-1.8	3.2	4.6	4.8
Africa	4.7	4.3	0.1	4.4	5.8	6.9
Latin America	1.4	1.9	21.1	4.5	2.4	4.1
All developing countries	**3.0**	**2.9**	**1.6**	**3.5**	**5.5**	**5.9**
Eastern Europe and Central Asia	3.2	2.6	-4.5	1.7	4.2	4.5
High-income countries	1.0	0.5	-17.9	0.2	3.3	3.3
World total	**1.3**	**1.2**	**-3.1**	**0.9**	**3.6**	**3.8**

Source: LINKAGE model simulations from Anderson, Valenzuela and van der Mensbrugghe, 2010.
Note: [a] The user cost of capital and land represents the subsidy inclusive rental cost.

Table 5. Effects of full global merchandise trade liberalization on the incidence of extreme poverty using the Linkage model

	Average unskilled wage change, real[a] (%)	Baseline headcount US$ 1/ day (%)	Baseline headcount US$ 2/ day (%)	New levels, US$ 1/day Head-count (%)	New levels, US$ 1/day Number of poor, million	New levels, US$ 2/day Headcount (%)	New levels, US$ 2/day Number of poor, million	Change in number of poor from baseline levels US$ 1/ day, million	Change in number of poor from baseline levels US$ 2/ day, million	Change in number of poor from baseline levels US$ 1/ day, %	Change in number of poor from baseline levels US$ 2/ day, %
East Asia	*4.4*	9	37	8	151	34	632	-17	-52	-10.3	-7.6
China	*2.1*	10	35	9	123	34	440	-5	-12	-4.0	-2.7
Other East Asia	*8.1*	9	50	6	29	42	192	-12	-40	-30.1	-17.1
South Asia	*-1.9*	31	77	32	454	78	1124	8	8	1.8	0.7
India	*-3.8*	34	80	36	386	82	883	15	15	4.2	1.7
Other South Asia	*4.0*	29	94	26	68	92	241	-8	-7	-9.9	-2.7
Sub-Saharan Africa	*5.3*	41	72	39	287	70	508	-11	-14	-3.8	-2.7
Latin America	*4.1*	9	22	8	44	21	115	-3	-6	-6.8	-4.7
Middle East and North Africa	*14.3*	1	20	1	3	13	40	-2	-19	-36.4	-32.7
Developing country total	***5.9***	**18**	**48**	**18**	**944**	**46**	**2462**	**-26**	**-87**	**-2.7**	**-3.4**
Developing excl. China	*6.5*	21	52	20	820	50	2022	-21	-74	-2.5	-4.7
East Europe and Central Asia	*4.5*	1	10	1	4	9	43	-0	-4	-6.8	-8.0

Source : LINKAGE model simulations from Anderson, Valenzuela and van der Mensbrugghe, 2010.
Note: [a] Nominal unskilled wage deflated by the food and clothing CPI.

Table 6. Effects of full global liberalization of agricultural and all merchandise trade on the incidence of extreme poverty using the GTAP model (percentage point change using US$ 1 per day poverty line)

	Default tax replacement			Alternative tax replacement (poor are exempt)
	Agricultureonly reform	Non-agriculture only reform	All merchandise reform	All merchandise reform
Bangladesh	-0.3	0.5	0.3	-5.3
Indonesia	-1.1	0.5	-0.6	-5.2
Philippines	-1.4	0.4	-1.0	-6.4
Thailand	-11.2	0.9	-10.3	-28.1
VietNam	-0.5	-5.3	-5.7	-23.6
Unweighted averages:				
Asia	-2.9	-0.6	-3.5	-13.7
Africa	-0.7	0.1	-0.7	-4.5
Latin America	-1.3	0.3	-1.0	-5.7
All 15 DCs	-1.7	-0.1	-1.7	-8.0

Source: Hertel and Keeney, 2010

Table 7. Impact of reform on the incidence of extreme poverty, selected developing countries (percentage point change using national or US$ 1 per day poverty line)

(a) Rural poverty

	Base	Agriculture only reform			Non-agriculture only reform			All merchandise reform		
	(%)	Unilateral	R of W	Global	Unilateral	R of W	Global	Unilateral	R ofW	Global
China (US$ 2/day)	58	0.3	-1.4	*-1.1*	*0.2*	*-0.5*	*-0.3*	0.5	-1.9	*-1.4*
Indonesia	29	0.1	-1.1	-1.1	*-0.2*	*-3.2*	*-3.3*	-0.1	-4.3	-4.4
Pakistan	38	-1.4	-0.1	-1.5	*-6.2*	*-1.1*	*-7.1*	-7.6	-1.2	-8.6
Philippines	49	0.0	-0.6	-0.3	*0.6*	*-0.3*	*0.2*	0.6	-0.9	-0.1
Thailand	30	0.3	-1.6	-1.3	*-3.8*	*0.7*	*-3.1*	-3.5	-0.9	-4.4

(b) Urban poverty

	Base	Agriculture only reform			Non-agriculture only reform			All merchandise reform		
	(%)	Unilateral	R of W	Global	Unilateral	R of W	Global	Unilateral	R ofW	Global
China (US$ 2/day)	3	0.0	0.0	*0.0*	*0.0*	*-0.1*	*-0.1*	0.0	-0.1	*-0.1*
Indonesia	12	-0.1	-0.3	-0.4	*-0.1*	*-1.7*	*-1.8*	-0.2	-2.0	-2.2
Pakistan	20	-2.4	-0.1	-2.7	*4.7*	*-1.4*	*3.1*	2.3	-1.5	0.4
Philippines	19	0.8	-0.9	-0.2	*1.2*	*-0.7*	*0.3*	2.0	-1.6	0.1
Thailand	6	0.0	-0.8	-0.7	*-3.3*	*0.2*	*-3.2*	-3.3	-0.6	-3.9

(c) Total poverty

	Base	Agriculture only reform			Non-agriculture only reform			All merchandise reform		
	(%)	Unilateral	R of W	Global	Unilateral	R of W	Global	Unilateral	R of W	Global
China (US$ 2/day)	36	0.2	-0.8	*-0.6*	*0.1*	*-0.4*	*-0.3*	0.3	-1.2	*-0.9*
Indonesia	23	-0.0	-0.8	-0.8	*-0.1*	*-2.7*	*-2.8*	-0.1	-3.5	-3.6
Pakistan	31	-1.6	-0.1	-1.8	*-3.6*	*-1.2*	*-4.6*	-5.2	-1.3	-6.4
Philippines	34	0.4	-0.6	-0.1	*0.7*	*-0.3*	*0.2*	1.1	-0.9	0.1
Thailand	14	0.1	-1.1	-0.8	*-3.5*	*0.4*	*-3.3*	-3.4	-0.7	-4.1
Unweighted averages:										
Asia	*28*	*-0.2*	*-0.7*	*(-2.9)-0.8*	*-1.2*	*-0.8*	*(-0.6)-2.2*	*-1.5*	*-1.6*	*(-3.5)-3.0*
Africa	*32*	*-0.8*	*-0.2*	*(-0.7)-0.9*	*-0.5*	*-0.7*	*(0.1)-1.2*	*-1.3*	*-0.9*	*(-0.7)-2.1*
Latin America	*36*	*-0.3*	*-1.3*	*(-1.3)-1.6*	*-0.7*	*0.4*	*(0.3)-0.3*	*-1.0*	*-0.9*	*(-1.0)-2.0*
All 9 DCs	*43*	*-0.4*	*-0.6*	*(-1.7)-1.0*	*-0.9*	*-0.6*	*(-0.1)-1.5*	*-1.3*	*-1.2*	*(-1.7)-2.6*

Source: Country case studies in Parts II to IV of Anderson, Cockburn and Martin (2010) plus (in the case of the unbolded numbers in brackets in the final four rows), from Hertel and Keeney (2010) as reported in the last four rows of table 6.

Notes: [a] Numbers in italics for individual countries are implied assuming linearity holds; numbers do not always add because of either rounding or interaction effects.

Table 8. Impact of reform on the incidence of income inequality (percentage point change in Gini Coefficient)

(a) Rural

	Base	Agriculture only reform			Non-agriculture only reform			All merchandise reform		
	(%)	Unilateral	R of W	Global	Unilateral	R of W	Global	Unilateral	R of W	Global
China	0.32	0.0	-0.2	*-0.2*	*0.0*	*0.0*	*0.0*	0.0	-0.2	*-0.2*
Indonesia	0.29	0.0	0.0	0.0	*0.1*	*0.0*	*0.1*	0.1	0.0	0.1
Pakistan	0.26	-0.1	-0.0	-0.1	*0.3*	*0.0*	*0.3*	0.2	-0.0	0.2
Philippines	0.43	0.2	-0.1	0.1	*0.3*	*0.0*	*0.1*	0.5	-0.1	0.2
Thailand	0.33	0.0	0.5	0.5	*0.4*	*0.0*	*0.4*	0.4	0.5	0.9

(b) Urban

	Base	Agriculture only reform			Non-agriculture only reform			All merchandise reform		
	(%)	Unilateral	R of W	Global	Unilateral	R of W	Global	Unilateral	R of W	Global
China	0.26	0.0	0.1	*0.1*	*0.0*	*-0.1*	*-0.1*	0.0	0.0	*0.0*
Indonesia	0.36	0.0	-0.1	-0.1	*0.3*	*0.3*	*0.6*	0.3	0.2	0.5
Pakistan	0.40	-0.1	-0.0	-0.1	*-1.9*	*0.0*	*-1.9*	-2.0	-0.0	-2.0
Philippines	0.48	0.3	-0.2	0.1	*0.1*	*0.0*	*0.1*	0.4	-0.2	0.2
Thailand	0.15	0.1	0.6	0.7	*0.5*	*0.0*	*0.5*	0.6	0.6	1.2

(c) Total

	Base (%)	Agriculture only reform			Non-agriculture only reform			All merchandise reform		
		Unilateral	R of W	Global	Unilateral	R of W	Global	Unilateral	R of W	Global
China	0.44	0.1	-0.4	*-0.3*	*0.0*	*-0.1*	*-0.1*	0.1	-0.5	*-0.4*
Indonesia	0.34	0.0	-0.1	-0.1	*0.2*	*0.2*	*0.4*	0.2	0.1	0.3
Pakistan	0.34	-0.1	-0.0	-0.2	*-3.2*	*-0.1*	*-3.1*	-3.3	-0.1	-3.3
Philippines	0.51	0.3	-0.2	0.1	*0.1*	*0.0*	*0.1*	0.4	-0.2	0.2
Thailand	0.34	0.1	0.7	0.8	*0.4*	*0.0*	*0.4*	0.5	0.7	1.2
Unweighted averages:										
Asia	*0.39*	*0.1*	*-0.0*	*0.1*	*-0.5*	*0.0*	*-0.5*	*-0.4*	*-0.0*	*-0.4*
Africa	*0.58*	*-0.7*	*-0.1*	*-0.8*	*-0.4*	*0.1*	*-0.3*	*-1.0*	*-0.0*	*-1.0*
Latin America	*0.56*	*-0.2*	*-0.7*	*-0.8*	*0.0*	*-0.2*	*-0.1*	*-0.2*	*-0.8*	*-1.0*
All 9 DCs	*0.59*	*-0.2*	*-0.2*	*-0.4*	*-0.3*	*-0.0*	*-0.3*	*-0.5*	*-0.2*	*-0.7*

Source: Country case studies in Parts II to IV of Anderson, Cockburn and Martin, 2010.
Notes: [a] Numbers in italics are implied assuming linearity holds; numbers do not always add because of either rounding or interaction effects.

XII. Trade reforms under Doha and income distribution in South Asia

By John Gilbert

Introduction

The issues surrounding the potential for adverse trade impacts on food security and poverty have been a major area of contention in multilateral trade negotiations under the Doha Round. Concerns over rural poverty led to demands by India and China for enhanced safeguards for developing countries in agriculture, and in July 2008 the talks collapsed, once again, as negotiators failed to reach agreement on this issue. Given recent developments in the global economy, reaching a trade agreement is viewed by many as more vital than ever. Hence, it is important: (a) to evaluate the likely costs of a failure to reach an agreement as well as the costs/benefits of potential alternatives; and (b) to assess the potential effects not only on aggregate measures such economic welfare, but also on social measures such as income distribution, especially for the developing economies. This provides policymakers with information not only on the overall costs/benefits, but also on the areas where complementary policy interventions may be required.

The linkages between trade reform and poverty, and developing ways to quantitatively assess those linkages, have been the subject of intense recent research; consequently, there has been significant recent interest in using computable general equilibrium (CGE) methods for this purpose. Hertel and Reimer (2005), and Hertel and Winters (2005) surveyed a number of recent CGE attempts to assess the poverty impact of trade liberalization, while studies applying specifically to countries in the Asia-Pacific region and in South Asia were surveyed by Gilbert (2008a) and Gilbert and Oladi (2010), respectively.

Summarizing the findings of Gilbert and Oladi (2010), there have been a number of country studies. Recent work by Pradhan and Sahoo (2006), Gilbert (2007), Panda and Ganesh-Kumar (2008), and Polaski and others (2008) considered India. Gilbert (2007) looked at the impact of the current proposed modalities for reform in agriculture under Doha at the household level, in addition to more comprehensive agricultural reform, using the GTAP model to estimate the world market effects and a single economy CGE model of India. The results indicated that income inequality had improved. Pradhan and Sahoo (2006) used a similar CGE structure in their analysis of potential trade reform scenarios for India – although without a connection to a global CGE framework – and reached similar conclusions. Panda and Ganesh-Kumar (2008) specifically considered the issue of food security with changes in trade policy. Under a Doha scenario they found that all households experienced a rise in welfare, and a decline in poverty. Polaski and others (2008) considered the impact of price changes in agricultural commodities, and found that a decrease in the price of rice could have a significant negative impact on Indian poverty levels.

Results for Bangladesh were provided by Annabi and others (2006) and Raihan (2008). Annabi and others (2006) used the GTAP model to estimate the overall effect of trade reform under the Doha proposals at the world level, and then inputted the world market effects into a single economy CGE model for Bangladesh, which was used to generate detailed results at the household level. The results indicated aggregate welfare losses for Bangladesh under the Doha scenarios, together with small increases in the headcount ratio. Raihan (2008) used a single economy model for Bangladesh, arguing, in contrast to most other studies, that the effects of unilateral reform in the aggregate were positive but small. Unfortunately, Raihan did not directly discuss poverty or income distribution impacts.

The most recent study on Sri Lanka, by Naranpanawa (2005), considered a manufactured good trade liberalization scenario, and found that the potential benefits accruing to low income rural groups were low relative to other groups in the model, a fact attributed to a reduction in transfers following falls in government revenue. Ahmed and O Donoghue (2008) used a model of Pakistan that was able to generate information on poverty, although they applied it to macroeconomic shocks rather than trade reform.

All these studies used single economy models, sometimes in combination with a global model such as GTAP or Linkage, to analyse the socio-economic impacts of policy changes on a single economy in the region. Since the Doha reforms are multilateral in nature, an approach that captures potential feedback effects across a region is preferable. This is particularly important in the case of South Asia, where economic relations with India are a dominant factor in the outcomes for other smaller economies. Hence, a model of the effects of Doha trade reforms on Sri Lanka in isolation, for example, may be seriously misleading if the indirect effects felt via Doha's impact on India are not taken into account.

Fewer studies have attempted to deal with household income distribution issues in the context of the whole region simultaneously, using a disaggregated CGE model. Khan (2008) presented very preliminary results for a prototype model for South Asia. The model is an interesting approach, incorporating several non-standard features, including technological dualism and rural-urban migration of the Harris-Todaro type. The model is calibrated to a single country (India) at present. Hence, the results are relevant to other countries in the region only by extension in the model's current form. Gilbert (2008b), and Gilbert and Oladi (2010) differed in that they attempted to deal with household income distribution issues in the context of the whole region simultaneously, using a disaggregated CGE model. Both papers examined SAFTA rather than Doha trade reforms.

The study reported in this chapter used a CGE model of South Asia to analyse the economic impact of the Doha Round trade reform proposals on the economies of South Asia. For comparison, the implications of SAFTA were considered. The model was similar in structure to that used by Gilbert (2008b). However, whereas that model used the Global Trade Analysis Project (GTAP) Version 6 database with a base year of 2001, the present study used the GTAP7 database with a base year of 2004, as in Gilbert and Oladi (2010).

Section A of this chapter shows how trade indices were used in the present study to evaluate the current trading environment in the region. Section B reviews the current Doha liberalization proposals while section C describes the structure of the model used, data sources and experimental design. Section D presents the preliminary results. The conclusion is provided in section E.

A. South Asian trade patterns

Before turning to the CGE analysis, it will be useful to review the current state of regional trade and protection in South Asia, which has been updated from that presented in Gilbert (2008b). The regional trade shares (exports plus imports) are presented in table 1.[1] The first set of numbers (South Asia as destination) show the percentage of South Asian economy exports that are directed to other economies in South Asia. The second set of numbers (South Asia as source) show the percentage of exports from South Asian economies that are directed to the individual economies of South Asia. For most economies within South Asia, the regional market is only a small proportion of their external trade, with only the smaller economies being (Sri Lanka and Bangladesh) relatively reliant on regional markets. Intraregional trade has grown in importance over the period for Bangladesh, Sri Lanka and Pakistan, but has diminished for India. Overall, the intraregional trade share for South Asia has remained constant at between 3 per cent and 4 per cent, a low level compared to other regions.

Trade shares are not normalized by country size, and so may give a misleading picture of the relative importance of international trade flows (see Mikic and Gilbert, 2009, for further discussion). The trade intensity index, defined as the ratio of the intraregional trade share to the share of the region in world trade, is able to provide an indication of the degree to which a particular trade linkage is stronger than might normally be expected, given the size of the economies in world trade. The index is presented in table 2. Values greater than unity indicate an "intense" trading relationship, while

[1] In this section all the calculations are based on COMTRADE data for 2001-2008. The calculations are based on reporter data; however, where that information is missing the relevant flows have been reconstructed using the mirror data from partners.

values of less than unity are interpreted as relatively weak. Normalized in this way, the trading relationships in the region appear somewhat stronger, reflecting geographical proximity.

It is also clear that the smaller economies in the region are heavily reliant on trade with the larger economies. It is also noted that the overall intensity of trade within South Asia has been declining, driven largely by India, which now trades with other countries in South Asia only about as much as a "typical" country in world trade.

Table 1. Intra-South Asian trade shares, 2001-2008

Region	2001	2002	2003	2004	2005	2006	2007	2008
South Asia as destination								
Bangladesh	8.9	9.7	11.3	9.4	9.7	8.3	10.5	12.4
India	2.7	2.8	3.3	2.7	2.6	2.4	2.0	1.9
Sri Lanka	7.8	10.4	12.7	14.3	15.1	17.7	19.1	16.5
Pakistan	2.8	2.8	2.6	3.3	3.5	4.3	4.3	4.5
South Asia	3.7	3.9	4.6	3.9	3.7	3.6	3.9	3.2
South Asia as source								
Bangladesh	0.9	0.9	1.2	0.9	0.6	0.5	0.6	0.7
India	1.8	2.0	2.3	1.9	1.8	1.8	1.6	1.5
Sri Lanka	0.6	0.7	0.8	0.8	0.9	0.7	1.2	0.6
Pakistan	0.3	0.3	0.3	0.4	0.4	0.6	0.5	0.5
South Asia	3.7	3.9	4.6	3.9	3.7	3.6	3.9	3.2

Source: COMTRADE.

Table 2. Intra-South Asian trade intensity, 2001-2008

Region	2001	2002	2003	2004	2005	2006	2007	2008
South Asia as destination								
Bangladesh	8.7	8.9	9.3	7.5	6.9	5.9	6.2	6.5
India	2.6	2.5	2.7	2.2	1.8	1.7	1.3	1.1
Sri Lanka	7.6	9.5	10.5	11.5	10.8	12.6	11.6	9.4
Pakistan	2.8	2.5	2.2	2.7	2.5	3.1	3.0	2.8
South Asia	4.0	3.9	4.2	3.5	2.9	2.8	2.2	1.9

Source: COMTRADE.

Next, consider the trade complementarity and export similarity profiles in tables 3, 4 and 5. Constructed in much the same way as the complementarity index, export similarity is a measure of the degree of overlap between two competing economies. An index of 100 indicates that the two groups share identical export profiles, while an index of 0 indicates that the two groups compete in entirely separate markets. The calculations compare each country with South Asia as a whole.

Table 3. Intra-South Asian trade complementarity, 2001-2008

Region	2001	2002	2003	2004	2005	2006	2007	2008
South Asia as destination								
Bangladesh	46.0	52.8	49.5	48.2	44.9	44.5	47.3	44.2
India	42.0	43.7	44.5	47.8	49.7	54.4	56.9	55.9
Sri Lanka	50.2	50.8	51.8	52.3	53.9	57.5	57.8	58.4
Pakistan	41.0	43.1	43.4	47.6	47.7	50.2	52.3	55.7
South Asia	49.9	52.1	52.7	55.0	54.3	58.9	59.8	59.9
South Asia as source								
Bangladesh	5.9	7.2	7.0	8.8	6.4	6.2	10.2	7.0
India	58.2	56.5	57.8	59.5	59.2	63.9	64.5	64.2
Sri Lanka	19.5	23.7	20.4	21.0	24.0	23.7	25.0	26.5
Pakistan	18.4	18.4	18.8	20.7	21.8	21.7	23.1	25.1
South Asia	49.9	52.1	52.7	55.0	54.3	58.9	59.8	59.9

Source: COMTRADE.

Table 4. Intra-South Asian trade complementarity matrix, 2008

Region	Bangladesh	India	Pakistan	Sri Lanka	South Asia
Bangladesh	6.7	45.3	40.8	18.9	44.2
India	6.8	62.2	21.5	25.3	55.9
Pakistan	6.9	60.2	26.7	20.7	55.7
Sri Lanka	7.7	61.3	33.4	25.5	58.4
South Asia	7.0	64.2	25.1	26.5	59.9

Source: COMTRADE.

Table 5. Intra-South Asian export similarity, 2001-2008

Region	2001	2002	2003	2004	2005	2006	2007	2008
South Asia as destination								
Bangladesh	36.8	33.9	31.6	31.6	29.2	28.4	30.3	25.0
India	82.6	85.0	84.3	84.2	85.1	85.3	87.2	87.6
Sri Lanka	51.6	49.1	44.6	42.4	43.8	44.7	42.6	42.7
Pakistan	54.0	52.2	52.4	48.7	51.5	50.4	49.0	49.3

Source: COMTRADE.

Hence, the figures for India are inflated by that country's dominant role in the group.[2] Nonetheless, for Sri Lanka and Pakistan, the similarity indices remain high. In other words, the countries of South Asia tend to have a revealed comparative advantage in similar products. The values of the index have been declining over time, however. In conjunction with the increase in complementarity, this does suggest production shifts gradually aligning in these economies. The pairwise matrix (table 6) reveals that Bangladesh and Sri Lanka have the most similar export profiles.

Finally, table 7 describes the state of protection in the region, using the bilateral applied tariff (trade weighted). Substantial progress has been made in lowering the average level of protection in

[2] A country's export similarity with itself is, by definition, 100 per cent.

the South Asian economies during the past decade, but applied tariffs remain moderately high on average, with a tendency towards high agricultural protection, especially in India. In many cases, there is also a substantial degree of binding overhang, especially in Bangladesh, but also in India and Sri Lanka. Overall, the protection levels in the South Asia suggest that there is potential for efficiency gains from trade reform in general.

Taken together, the trade flow and protection patterns suggest a region that has been gradually becoming more interdependent, but where India plays a clearly dominant role. This strongly suggests that, as alluded to in the introduction, when considering the effect of trade reform scenarios for countries within the region, it is important to take into account the other economies, and in particular the linkages to India.

Table 6. Intra-South Asian export similarity matrix, 2008

	Bangladesh	India	Pakistan	Sri Lanka
Bangladesh	-	15.3	28.9	51.6
India	15.3	-	38.1	34
Pakistan	28.9	38.1	-	33.7
Sri Lanka	51.6	34.0	33.7	-

Source: COMTRADE.

Table 7. Trade-weighted average applied tariffs, 2007

	World	Bangladesh	Sri Lanka	India	Nepal	Pakistan
Bangladesh	11.3	-	17.3	10.8	4.4	15.1
Sri Lanka	6.6	6.5	-	6.1	8.6	2.0
India	10.4	17.8	21.3	-	19.2	23.1
Pakistan	11.9	6.6	4.4	8.4	8.7	-

Source: TRAINS.

B. Proposed trade reforms under Doha

To evaluate what types of trade reforms would likely be required in the region under Doha, the modalities contained in the special session of the Committees on Agriculture and NAMA, 17 July 2007, were examined. These set out formulae for cuts in the areas of domestic support, market access (tariffs) and export competition in addition to treatments of sensitive products, safeguards and related issues.[3] While these are, of course, subject to further change, they provide a useful guideline to possible outcomes. In this section, the main features of the proposals are set out. A more detailed summary can be found in Gilbert (2008a).

Broadly, the proposals cover agricultural and non-agricultural tariffs, and domestic agricultural support. In terms of agricultural market access, the proposals require that members reduce bound duties following a tiered formula of 48 per cent-73 per cent for developed countries, depending on the initial bound levels, with commitments for developing economies – which include all of the economies of South Asia examined in the present study except Bangladesh – having slightly higher bands and lower required reductions (two-thirds of developed economy levels). There are a number of exemptions. In particular, least developed members, such as Bangladesh, and very recently acceded members are not required to undertake any reductions beyond those already committed, while "small and vulnerable" economies are entitled to moderate the required cuts by a further 10 percentage points. Moreover, developed economies may designate 4 per cent to 6 per cent of dutiable lines as sensitive, with developing economies entitled to levels of 5 per cent to 8 per cent. These require reductions at

[3] A further revision was released in July 2008. However, the amendments have focused more on technical issues, while the big picture numbers on required cuts remain largely unchanged.

two-thirds of the rate required under the tiered formula. However, under the proposal, developed country members would commit to duty and quota-free market access for all products originating in LDCs.

On the non-agricultural market access (NAMA) side, the basic proposed cut is a Swiss formula with a coefficient of 8-9 for developed economies and 19-23 for developing economies, applied to bound rates. The proposal also extends binding coverage, with unbound tariffs to be bound at 2001 MFN applied rates plus 20 per cent. Once again, there are several exemptions. Developing economies may choose not to apply the formula to up to 10 per cent of NAMA imports, provided the cuts are at least half the formula, or they may choose not to apply the formula at all to up to 5 per cent of NAMA imports. Countries with low binding coverage may choose not to make reductions, provided that they instead commit to binding 90 per cent of tariff lines at a level not exceeding 29 per cent. The LDCs are not required to make any cuts, but are expected to increase their binding commitments.

Finally, proposed agricultural domestic support reductions are in the range of 45 per cent to 70 per cent, in accordance with a tiered formula. Developed countries with a level of total AMS of at least 40 per cent of the total value of agricultural production will make a further 10 per cent reduction if their total AMS is in the second tier and 5 per cent if they are in the third tier. Once again, developing economy member reductions are two thirds of those of developed economies, while small, low-income recently acceded members are not required to undertake a reduction in total AMS. The *de minimis* levels are cut by 50 per cent from those set out under the Uruguay Round Agreement on Agriculture. For agricultural export competition, the commitment is elimination of export subsidies by 2013 for developed economies, and an as yet unspecified reduction by developing economies.

C. Methodology

In analysing the effect of these proposals on the economies of South Asia, a custom-built CGE model of the region was used, with sub-economy models for key countries, programmed using the GAMS system. This section outlines the key characteristics of the model structure and experimental design. The model covers Bangladesh, India, Pakistan and Sri Lanka as well as an aggregate "rest of South Asia" (RSA) and an incompletely modelled "rest of world" (ROW) region. The structure of the model was discussed previously in Gilbert (2008b) and Gilbert and Oladi (2010), who provided a somewhat more detailed description, and it is similar in many respects to GTAP and other global models. Hence, the description here is kept brief.

The model identifies 16 production sectors. Each produces a joint product for domestic and foreign markets. The production functions use intermediate goods in fixed proportions and all primary factors in variable proportions. Intermediate inputs are composites of imported goods and domestic production, with proportions that are variable and specified independently by industry, i.e., an Armington structure with aggregating functions varying by end-use.

Competitive conditions hold, so firms pay market prices for all inputs, and make zero economic profits. Primary endowments are fixed, and in the default closure all factors except natural resources are treated as mobile across economic activities.

Several consumption activities are identified, that is, the government, investment and multiple consumer households. The number of consumer households varies by region. Final consumption of each household is modelled using Stone-Geary utility functions, the parameters of the functions varying by household to capture differences in consumption patterns. The quantity of government consumption and investment is held constant in the default closure. All agents consume composites of imported goods and domestic production, with proportions that are variable and specified independently by agent. On the income side, factors are owned in varying proportions by the households, and fixed proportions are maintained in household savings, taxation and government transfers.

The exportable production by domestic firms is allocated over destination regions using a second level transformation function; hence, the aggregate exportable is a composite of exports to the

various regions. Similarly, on the import side, the imports of each country are a composite of regional imports (i.e., a second-level Armington function). Unlike at the first level, this function is common across all agents in the domestic economy. Demand for regional exports is derived from the Armington import structure for all regions that are explicitly modelled. For regions that are not explicitly modelled (here, the ROW region), the computational complexity of the model is reduced by implementing only a demand function. The prices of imports from the ROW region are fixed.

An international transportation sector accounts for the difference between the FOB price of exports and the CIF price of imports. Transportation margins vary by commodity along all international routes. Unlike in the GTAP model, because of the focus here on a single relatively small region, the price of international transportation services is fixed.

The price normalization and macro closure rules are similar to those used in many single country models. The current account balance is fixed and the nominal exchange rate is allowed to vary to maintain balance within each country. The numeraire in each country is the consumer price index. We must also define a numeraire region for which the nominal exchange rate is fixed, which in this model is the ROW region. The model includes a full range of distortions in the form of taxes and subsidies on economic activities at all levels to ensure that the second-best implications of the policy scenarios are adequately accounted for.

The base data on trade, production, aggregate consumption and employment is extracted from the GTAP7 database. Information on sources of household income (ownership of primary factors and transfers/taxes) and variation in consumption patterns across households have been obtained from Pradhan and Sahoo (2006) for India, Fontana and Wobst (2001) for Bangladesh, Naranpanawa (2005) for Sri Lanka, and Roland-Holst (2008) for Pakistan. The household categories used in the model are listed in table 8. The information in each study was aggregated/disaggregated and rebalanced where necessary to match the dimensions of the model and to be consistent with the aggregate GTAP7 household consumption data. The exact process is described in Gilbert and Oladi (2010).

Model elasticity parameters are obtained from the existing estimates in GTAP7. Armington elasticities have recently been estimated by Hertel and others (2007). Base substitution elasticities in production are also obtained from GTAP7.

In terms of experimental design, shocks to tariffs were chosen to mimic as closely as possible the liberalization that would occur in South Asia under the NAMA and agricultural Doha proposals. The results of the complete proposal are presented. Since this is a regional model, the simulations represent the impact of the South Asian trade reforms ceteris paribus, i.e., they do not capture the effect of liberalization in countries outside the region, which would be felt through the terms of trade. Hence, the results should not be interpreted as the full effect of Doha on these economies, but rather the implications for the region of the required tariff cuts under Doha, ceteris paribus. As a benchmark, a regional scenario representing SAFTA was also considered, involving only the removal of internal tariffs in the region.[4]

All of the simulations are run as comparative statics, so the results should be interpreted as representing how the economic system would have appeared in the base year had the proposed changes been implemented and the economic system given sufficient time to adjust to the new equilibrium. A sensitivity analysis was implemented within the simulations by using an unconditional approach adopted in Gilbert and Wahl (2003). This approach improves the policy value of the simulations by highlighting results that are unlikely to be robust, and by providing an estimate of the range of potential outcomes rather than a point estimate.

To undertake the analysis, key parameters (the trade elasticities) are treated as normally and independently distributed random variables. Each simulation is run as a Monte-Carlo experiment, with a series of pseudo-random parameter values chosen from the underlying distributions. With a large number of iterations (1,000 were used in the present study) of the simulation, the mean

[4] The results for SAFTA were presented previously in Gilbert and Oladi (2010), where they were discussed further. They are provided here for comparison purposes.

predictions of the variables of interest can be approximated, together with indicators of their susceptibility to parametric uncertainty (the standard deviations), and the accuracy of the simulation procedure (the standard errors). Again, for further details see Gilbert and Oladi (2010).

Table 8. Household categories in the model by region

Category	Pakistan	Bangladesh	India	Sri Lanka
H1	Large farm - Sindh	Agricultural landless	Rural self-employed agric.	Urban low income
H2	Large farm - Punjab	Agricult.marginal land	Rural agricultural labour	Rural low income
H3	Large farm - other	Agricultural small land	Rural non-agricultural labour	Estate low income
H4	Medium farm - Sindh	Agricultural large land	Other rural	Urban high income
H5	Medium farm - Punjab	Non-agricultural poor	Urban agricultural	Rural high income
H6	Medium farm - other	Non-agricultural rich	Urban self-employed non-agricult.	
H7	Small farm - Sindh	Urban illiterate	Urban salaried	
H8	Small farm - Punjab	Urban low educated	Urban casual labour	
H9	Small farm - other	Urban medium educated	Other urban	
H10	Landless farm - Sindh	Urban highly educated		
H11	Landless farm - Punjab			
H12	Landless farm - other			
H13	Rural landless - Sindh			
H14	Rural landless - Punjab			
H15	Rural landless - other			
H16	Rural non-poor			
H17	Rural non-farm poor			
H18	Urban non-poor			
H19	Urban poor			

Sources : Pradhan and Sahoo, 2006; Fontana and Wobst, 2001; Naranpanawa. 2005; and Roland-Holst, 2008.

D. Preliminary results

The preliminary results of the analysis are presented in table 9, which covers economic welfare effects by household and country, and table 10, which presents information on production shifts. First consider the impact of the trade reforms on overall economic welfare. The results of the simulations, using the household equivalent variation (EV) measure, are presented in the third row from the bottom of table 8, labelled "total". This type of estimate of the benefit/cost of the proposed change is sometimes called a "one off" gain/loss. However, the changes are permanent, so this can be considered (more or less) as a permanent increment to household incomes at constant prices. A true "one off" measure of the benefit/cost is the discounted permanent income stream. Clearly, this will depend heavily on the discount rate applied. If the discount rate is assumed to be a standard 2 per cent, the total estimated benefit is 50 times the annual increment (the figures in the row labelled "cumulative"). This can be considered as the total benefit of the reduction in trade barriers.[5]

[5] For a variety of reasons, this estimate is likely to be very much a lower bound, since the comparative static simulation technique used here does not capture any potential dynamic accumulation effects (i.e., some proportion of the increment to income may be invested, leading to a multiplier effect), and the competitive model used does not account for potential scale effects. See Francois and Martin, 2010, for an in-depth discussion of these issues.

However measured, in absolute terms, the biggest beneficiary under the Doha scenario among the South Asian economies is "rest of South Asia" (RSA), followed by Sri Lanka. Other economies are worse off under the scenarios, with both Bangladesh and India suffering losses of about the same magnitude (very small), and Pakistan doing slightly worse. By contrast, the projected benefits of SAFTA are larger, and positive for all economies except Bangladesh. India is the biggest winner, followed closely by RSA. These results are consistent with those in Gilbert (2008b), and all appear robust to underlying parameter uncertainty.

In terms of relative benefits, the estimated welfare impact relative to a baseline metric can be evaluated, the initial GDP. The final row of table 9 expresses the cumulative gain as a proportion of GDP. Viewed from this perspective, by far the biggest beneficiary of trade reforms under both Doha and SAFTA is RSA, by a substantial margin. RSA is followed by Sri Lanka, with the gains to India from SAFTA being quite small when expressed as a percentage of GDP. The large gains to RSA reflect significant improvements in market access to its dominant trading partner, India.

Initially, it appears that the simulation results support (at least in terms of overall efficiency) a regional trade reform process through SAFTA over a multilateral process through Doha, although as might be expected given the similarity of the export profiles (as discussed above) the gains from SAFTA are also modest. However, as noted above, a little care is needed with interpretation of the simulation results. This model is computing the effect of only the reform taking place within South Asia. With Doha, reforms would be taking place in other countries also, and the effect of these reforms should be reflected in the terms of trade. In other words, the potential market access benefits of Doha outside of South Asia are not being captured. Of course, for the most part, these terms of trade effects are exogenous, so the isolated within-South Asia effects are analytically relevant; however, it is necessary to make sure that the numbers are interpreted in context. They do not provide support for regional approaches over multilateral.

Before turning to the estimated impact on household welfare, it is useful to review the household categories in the model, as presented in table 8. As detailed in Gilbert and Oladi (2010), in the Sri Lankan data there are five household groups, broken down by location and income.

The data for India, Pakistan and Bangladesh are grouped by archetype. In India, group H2 (rural agricultural labour) is the poorest, by a substantial margin, followed by H4 (other rural) and H3 (rural non-agricultural labour). The richest groups are H6 (urban self-employed) and H7 (urban salaried). The households differ substantially in their ownership of productive factors, with the richest rural group (H1, rural self-employed) being major owners of land and capital, while the poorer households, especially H2, receive income almost exclusively from selling unskilled labour. In comparing the poorest two groups (H2 and H4) with the richest two (H6 and H7), significant differences can also be seen in spending patterns. In particular, the two poorest groups spend nearly 2.5 times more of their income on basic food items (especially processed rice) than do the two richest groups.

In Bangladesh, the poorest groups are H1 and H2, rural groups with only limited or no land holdings. They are followed by H7, H3 and, to a lesser extent, H8, the urban illiterate and poorly educated, and rural households with small land holdings. The richest groups are urban households with high or medium education (H9 and H10). The factor allocation pattern is similar to India, with the lower income groups having a much higher dependence on unskilled labour. Consumption differences are also similar, with the poorest households devoting more than double the proportion of their budget to processed rice compared with the richest households.

In the case of Pakistan, the data show a combined archetype and income level classification. The data are very detailed, with a concentration on rural households. Households are grouped into multiple farm sizes based on land holdings, and three regions, in addition to the rural rich and urban poor/rich. In total, the model tracks changes in the behaviour of 44 household groups in the region.

The decomposition of the total welfare impacts on the various household groups is given in table 9. The boxed figures are not robust to changes in the underlying parameters of the model. Other values are robust given the assumptions for the parameter distributions.

For Pakistan, in both scenarios all households except one are estimated to gain (with a couple not robust). The losing households are those of the urban rich. Although the overall impact of the Doha scenario is negative (positive for SAFTA), the policy is likely to be pro-poor. For Bangladesh, again the groups that are hurt by trade reform are the urban rich (H9 and H10). These results are interesting, given the debate about Doha, which has focused on negative impacts on the rural poor. At least for these economies, the policies do not hurt the rural poor as feared, but rather the urban rich. Of course, from a political economy perspective, this could be highly problematic.

In India also, there is a highly skewed income distribution effect, with group H1 being a serious loser from trade reform under either scenario (although the result is not robust under the SAFTA scenario). The H1 group represents rural landowners. On the whole, this group is not really poor, so the policies are again not hurting the rural poor (groups H2, H3 and H4), but rather the rural rich. Again, this might have significant political economy implications.

The only result that is consistent with the conventional wisdom is for Sri Lanka, where the model projects a reduction in household incomes only for group H2, the rural poor. All other households gain. The loss in incomes for the rural poor is most marked under the Doha scenario, and in fact is not robust in the SAFTA scenario. Nonetheless, this result gives cause for concern, as it suggests that the impact of trade reform in Sri Lanka may hit the poorest groups in society relatively hard. Since the overall gains are positive, redistribution would make it feasible to make all groups better off, in principle.

Overall then, the impacts of the changes at the household level exhibit more variation than the aggregate results. While the trade policy scenarios considered here appear to be pro-poor in an absolute sense in many cases, there is little doubt that some household groups would be hard hit by trade liberalization, especially under the Doha proposals. In most cases, it is the relatively advantaged groups that are hurt by reforms, generally not the rural poor. Although the calculations are based on assumption of invariant transfers, taxes and factor ownership, in principle these can be changed if the political will exists.

In addition to overall welfare effects and their distribution across various groups in the societies in question, CGE simulation also generates sectoral information. Of particular interest are changes in the production structure, because (a) they indicate which sectors are most likely to feel the impact of the proposed policy, and (b) they provide an indication of the potential degree of structural adjustment required. Estimates of the sectoral production changes are presented in table 10. Again, results that are not considered robust under the sensitivity analysis are highlighted with a box.

Overall, the biggest adjustments are expected in RSA, under both scenarios, with large expansions in chemicals and metal production, smaller expansions in textiles, and declines in agriculture textiles and heavy manufactures. Under the SAFTA scenario the pattern is similar in Sri Lanka, while the production shifts in India are all very small, suggesting little adjustment difficulty. Under the Doha trade reforms the adjustment required in India would be more substantial, with large increases in production of apparel and manufactures, and declines in food production.

Table 9. Household welfare impact of trade reform (US$ million, EV)

	Doha					SAFTA				
	Pakistan	Bangladesh	India	Sri Lanka	RSA	Pakistan	Bangladesh	India	Sri Lanka	RSA
H1	9.5	-0.1	-1507.5	19.5		4.6	3.5	-68.1	24.3	
H2	24.8	-1	71	-77.9		14.6	41.1	31.7	-8.3	
H3	4.9	0.6	-82.9	8.5		2.5	4.1	30.6	10.8	
H4	23.1	2.5	135.2	32.6		14.2	-50.7	45.2	71.2	
H5	69	-1.4	-4.1	29.8		40.2	26	2.6	51.5	
H6	24.1	-0.9	381.7			15	1.6	69.7		
H7	21.4	-0.6	825.9			12.3	-17.7	144.2		
H8	110.8	-0.7	70.4			52.1	8.2	15.3		
H9	29.7	-1.5	53.8			8.6	-155.1	19.1		
H10	11.8	-1.9				4.3	-138.8			
H11	13.3					5.2				
H12	4.2					1.6				
H13	5.2					0.4				
H14	16.5					0.5				
H15	1.2					0				
H16	116.3					12.5				
H17	27.7					1.9				
H18	-607.9					-46.4				
H19	48.8					4.5				
Total	-45.4	-4.9	-56.5	12.5	136.1	148.6	-277.8	290.2	149.5	205.7
Cumulative	-2267.7	-246.1	-2826.7	624.2	6802.5	7428.9	-13889.6	14508.9	7477.2	10283
Cum. as a percentage of GDP	-2.4	-0.4	-0.4	3.1	48.9	7.8	-24.8	2.3	37.2	74

Sources: Author's calculations, and Gilbert and Oladi, 2010.

Table 10. Sectoral impact of trade reform (per cent change in production)

	Doha					SAFTA				
	Pakistan	**Bangladesh**	**India**	**Sri Lanka**	**RSA**	**Pakistan**	**Bangladesh**	**India**	**Sri Lanka**	**RSA**
Food grains	-0.9	0	0	-0.5	-0.4	-0.2	0	0	-0.9	0.6
Other agriculture	0.3	0.1	-0.4	-0.1	1.1	0.3	-0.9	0	0.3	6.3
Forestry and fisheries	-0.6	0	-0.9	-0.2	1.2	-0.1	-0.6	-0.1	0.3	2.4
Coal, oil, gas	-3	0	-0.6	-0.3	-3.4	-0.8	-2.4	-0.2	11.1	-5.7
Processed rice	1	0	0	-4.8	-0.2	-1.7	0	0	0.4	-1.2
Other food	-0.6	-0.1	-3.3	-1.3	-1.3	2	-0.7	-0.8	3.9	25.6
Textiles	4.3	-0.3	1.4	-0.4	9.2	0.1	3.9	0.9	-3.5	0.8
Wearing apparel	8.1	-1.1	8.1	1.8	-4.6	-3.7	15.3	-0.1	-11	-12
Leather	0.2	5.8	5.2	2.9	-5.2	-3.8	8.3	-1	-2.5	-20.3
Wood products	-5.5	0.1	-1.1	1.4	4.2	-0.6	-1.4	0.2	7.8	-1.5
Chemicals, rubber	-2.9	1.4	0.3	0.3	21.5	-0.9	-0.4	0.4	1.1	15.6
Metals and minerals	-4	0.6	-1.9	3.6	37.5	-0.6	-3	-0.1	30.1	30.5
Metal products	-3.4	0.8	0.5	-1.9	2.1	-10.3	-5	0.3	16.1	-2.3
Heavy manufactures	-7.5	0.3	-1	4.3	-5.9	-1.3	-1.7	0.2	14.6	-15.7
Manufactures NEC	2.8	-0.1	6.2	0.7	-0.7	-2.2	-2.9	-0.5	-13.5	-3.2
Services	-0.1	0	0.1	0	-0.8	-0.1	-0.5	0	-0.6	-1.4

Sources: Author's calculations, and Gilbert and Oladi, 2010.

E. Conclusion

In this chapter, the author has used descriptive statistics and CGE methods to assess the potential impact of trade reforms required under the Doha Development Agenda on the economies of South Asia, and compared the results with a potential regional trade agreement (SAFTA). The model differs from others in the literature in that it isolates household-level impacts for a diverse range of household groups across the region. The research is part of an ongoing analysis further detailed in Gilbert (2008b), and Gilbert and Oladi (2010).

The preliminary results suggest that, in contrast to the current perception, the distributional impacts of the trade reforms required under the current Doha proposals are not likely to be biased against the rural poor in many of the economies. In contrast, in most of the economies the bias is against the urban non-poor. These simulations do not capture the effect of market access under Doha, so of course they do not reflect the full impact of a potential Doha agreement. Hence, the arguments that the Doha trade reforms would have an adverse impact on the rural poor, to the extent that they are based on market access (i.e., terms of trade) effects, are not necessarily inconsistent with these results. However, it is noted that the talks collapsed largely over the issue of safeguards, a domestic liberalization issue. Moreover, the results in this chapter reflect the component of the Doha reform agenda that is under the direct control of the economies of South Asia, and so provide some interesting insights.

Future work will concentrate on improving the shock estimates in the model and incorporating the market access effects.

References

Ahmed, V. and C. O'Donoghue (2008). "Welfare impact of external balance in Pakistan: CGE-microsimulation analysis," paper presented at the 11th Annual Conference on Global Economic Analysis, Helsinki, Finland.

Annabi, N., B. Khondker, S. Raihan, J. Cockburn and B. Decaluwe (2006). "Implications of WTO agreements and unilateral trade policy reforms for poverty in Bangladesh: Short vs. long-run impacts", in T. Hertel and L. A. Winters (eds.), *Poverty Impacts of a WTO Agreement*, World Bank, Washington D.C.

Fontana, M. and P. Wobst (2001). "A gendered 1993-94 social accounting matrix for Bangladesh", Trade and Macroeconomics Division Discussion Paper No. 24. International Food Policy Research Institute, Washington, D.C.

Francois, J. and W. Martin (2010). "Ex ante assessment of the welfare impacts of trade reforms with numerical models", in J. Gilbert (ed.), *New Developments in Computable General Equilibrium Analysis for Trade Policy* (*Frontiers in Economics and Globalization*, vol. 7). Emerald Group Publishing Ltd., Bingley, United Kingdom.

Gilbert, J. (2008a). "Agricultural trade reform and poverty in the Asia-Pacific: A survey and some new results", *Asia-Pacific Development Journal*, vol.15, No. 1; pp. 1-34.

——— (2008b). "Trade policy, poverty, and income distribution in CGE models: An application to SAFTA", in *Emerging Trade Issues for Policymakers in Developing Countries in Asia and the Pacific (Studies in Trade and Investment, No. 64)*. ESCAP, Bangkok.

——— (2007). "Agricultural trade reform under Doha and poverty in India", Working Paper, No. 08/01. Poverty and Development Division, ESCAP, Bangkok.

Gilbert, J. and R. Oladi (2010). "Regional trade reform under SAFTA and income distribution in South Asia", in J. Gilbert (ed.), *New Developments in Computable General Equilibrium Analysis for Trade Policy* (*Frontiers in Economics and Globalization*, vol. 7). Emerald Group Publishing Ltd., Bingley, United Kingdom.

Gilbert, J. and T. Wahl (2003). "Labor market distortions and China's WTO accession package: An applied general equilibrium assessment", *Journal of Comparative Economics*, vol. 31, No. 4; pp. 774-794.

Hertel, T., D. Hummels, M. Ivanic and R. Keeney (2007). "How confident can we be of CGE-based assessments of free trade agreements?" *Economic Modeling*, vol. 24, No. 4; pp. 611-635.

Hertel, T. and J. Reimer (2005). "Predicting the poverty impacts of trade reform," *Journal of International Trade and Economic Development*, vol. 14, No. 4; pp. 377-405.

Hertel, T. and L. A. Winters (2005). "Estimating the poverty impacts of a prospective Doha development agenda," *World Economy*, vol. 28, No. 8; pp. 1057-1071.

Khan, H. (2008). "Analyzing poverty impact of trade liberalization policies in CGE models: Theory and some policy experiments in agricultural and non-agricultural sectors in South Asia," MPRA Paper No. 7609, University Library of Munich, Germany.

Mikic, M. and J. Gilbert (2009). *Trade Statistics in Policymaking: A Handbook of Commonly Used Trade Indices and Indicators* (Revised Edition). ESCAP, Bangkok.

Naranpanawa, R. M. A. K. B. (2005). "Trade liberalization and poverty in a computable general equilibrium (CGE) model: The Sri Lankan case", PhD dissertation. Griffith University, Gold Coast, Queensland, Australia.

Panda, M. and A. Ganesh-Kumar (2008). "Trade liberalization, poverty and food security in India," paper presented at the eleventh Annual Conference on Global Economic Analysis, Helsinki, Finland.

Polaski, S., M. Panda, A. Ganesh-Kumar, S. McDonald and S. Robinson (2008). "Policy dilemmas in India: The impact of changes in agricultural prices on rural and urban poverty," paper presented at the eleventh Annual Conference on Global Economic Analysis, Helsinki, Finland.

Pradhan, B. K. and A. Sahoo (2006). "The impact of trade liberalization on household welfare and poverty in India," Poverty and Economic Policy Research Network-Modelling and Policy Impact Analysis (PEP-MPIA) Working Paper No. 2006-01, Cahiers de recherche MPIA series. Quebec, Canada.

Rahan, S. (2008). "Trade liberalisation, growth employment and poverty in Bangladesh", paper presented at the eleventh Annual Conference on Global Economic Analysis, Helsinki, Finland.

Roland-Holst, D. (2008). "Social Accounting Matrix for Pakistan, 2004-5". University of California – Berkeley, United States.

XIII. Will trade liberalization in least developed countries help during the crisis? Evidence from the Lao People's Democratic Republic

By Phouphet Kyophilavong [209]

Introduction

Even though the financial system of the Lao People's Democratic Republic is not directly linked to the global financial system, the global financial crisis is having a negative effect on the country's economy. According to International Monetary Fund (IMF) projections, in 2009 the world economy was expected to experience negative growth (about -2 per cent) while the growth in emerging and developing economies would decline to 2 per cent. In addition, according to the IMF forecast the economy of the Lao People's Democratic Republic was expected to grow by 4.5 per cent in 2009 and 5.50 per cent in 2010 (International Monetary Fund, 2009a).[210]

The global financial crisis is likely to affect the economy of the Lao People's Democratic Republic in a variety of ways. To begin with, a downturn in the global economy has led to declining demand for Lao exports; already, exports of mineral, garments and agriculture products have been adversely affected. Minerals account for one of highest shares of total exports, amounting to some 37.4 per cent during 2004-2006 (International Monetary Fund, 2007). However, with sharply falling mineral prices during the global financial crisis, mineral exports are expected to decline. This will have a severe impact on trade and other macroeconomic factors.

Second, declining foreign direct investment (FDI) from lower market demand and falling commodity prices is also taking its toll. Since 2003, FDI has mainly focused on the natural resources sector (mining and hydropower), accounting for about 90 per cent of all sectors (Kyophilavong, 2009). Because of sharply-falling mineral prices, FDI in mining will decline. In addition, ongoing mining and hydropower projects will be suspended and delayed.

Third, during the global economic downturn, remittances from Lao people living in developed countries and from Lao migrant labour in neighbouring countries of South-East Asia will decline. Remittances from abroad are a significant source of income and investment for families.

Fourth, the global financial crisis is affecting tourism, one of the country's most important industries. In 2008, 1.6 million tourists visited the Lao People's Democratic Republic, generating income of about US$ 233 million (Lao National Tourism Administration, 2006). Due to the ongoing global financial crisis, however, the number of tourists will decline.

Because the Lao economy is highly-dependent on the mining sector in terms of revenue, exports and employment, the decline in mining exports appear to be the most serious consequence of the global financial crisis. This will have a negative impact on government revenue (lower profit tax,

[209] The author is grateful for the support of ARTNeT secretariat and would like to acknowledge the very helpful comments and suggestions ion an earlier draft of this text received from Kym Anderson, Alan Derdorff and other participants of the ARTNeT Trade Economists' Conference on "Trade-led growth in times of crisis" held in Bangkok, 2-3 November 2009.

[210] However, the Government of the Lao People's Democratic Republic has predicted that the national economy could grow by more than 7 per cent in 2009, despite the impact of the global financial crisis (*Target Magazine*, 2009).

turnover tax and dividends); the budget deficit (including off-budget) is projected to rise to 7.8 per cent of gross domestic product (GDP) in 2008/2009, compared with 2 per cent of GDP in 2007/2008 (International Monetary Fund, 2009b).

In order to minimize the impact of the global financial crisis, the Government has implemented the following policies. As revenue is lost from the mining sector, the Government will increase loans and grants from donors[211]. Despite its budget constraints, the Government plans to stimulate the economy through increased public wage spending, expenditures for the SEA Games, and infrastructure development (World Bank, 2009). The Government is also enhancing trade liberalization through the implementation of the ASEAN Free Trade Area (AFTA) as well as by improving laws related to trade – including legislation covering standards, intellectual property, customs and enterprises – in order to join the World Trade Organization (WTO). Despite this concern, a quantitative analysis of the impact of the global financial crisis – and, specifically, of declining world demand for minerals – on the Lao economy has yet to be made.

Section A of this chapter describes the current state of the Lao economy. Section B explains the trade structure in the Lao People's Democratic Republic and the circumstances concerning the country's WTO accession. Section C describes the GTAP model and database in terms of the methodology employed for analysis reported here, and explains the simulation design. Section D presents the simulation results while section E provides the conclusion and details the related constraints.

A. Lao economy

Since introducing the New Economic Mechanism in 1986,[212] the Lao People's Democratic Republic has been in transition from a centrally-planned economy to a more market-oriented economy. As a result, except during the Asian financial crisis of 1997-1998, the Lao People's Democratic Republic has been achieving high rates of economic growth with low inflation. The average rate of economic growth was about 6.53 per cent during 2001-2006, an increase from 6.18 per cent recorded during 1996-2000.[213] The average inflation rate was maintained at one digit during 2001-2006, which was a significant decline from the average rate of 57 per cent during 1996-2000. The exchange rate was also stable during 2001-2006 (table 1). Of the nation's total GDP of US$ 4,053 million in 2007, the agricultural sector accounted for 40.3 per cent, the industry sector for 34.1 per cent and the services sector for 25.6 per cent (World Bank, 2008). However, since 2003, the industrial sector has grown by more than 10 per cent, which has caused the agricultural sector's share of GDP to decline.

Even though the Lao People's Democratic Republic has been maintaining high economic growth with low inflation and a stable exchange rate, it still has serious macroeconomic issues to overcome. First, the country is facing chronic twin deficits in both government spending and international trade. The average ratio of budget deficit to GDP was 4.4 per cent during 2001-2006. The

[211] Some quasi-fiscal operations are increasingly being financed by the Bank of the Lao People's Democratic Republic, which is increasing external vulnerability and downward pressure on international reserves (International Monetary Fund, 2009b).

[212] After establishing the Lao People's Democratic Republic in 1975, the Government adopted a planned economy, following the example of other socialist countries.

[213] The engine of growth during this period was capital inflows of FDI in the mining and hydropower sectors, and mining production and exports. For a more detailed discussion of the impact of FDI in the mining and hydropower sectors on the Lao economy see Kyophilavong and Toyoda, 2008.

average ratio of the current account balance deficit to GDP was 9.24 per cent during the same period.[214] These deficits are mainly financed by Official Development Assistance (ODA), FDI and remittances. The fiscal issue is particularly serious in the Lao People's Democratic Republic. If the budget deficit continues to expand, it could cause an accelerating inflation rate and the devaluation of the Lao kip, leading to economic instability similar to that experienced during the Asian financial crisis of 197-1998 (Okonjo-Iweala and others, 1999).

Second, there is a huge gap between savings and investment. The savings rate is low because of low average incomes – GDP per capita was about US$ 580 in 2007 (World Bank, 2008) – and because the financial sectors are underdeveloped. The banking subsector is dominated by the state commercial banks, which are unable to perform full banking functions.[215]

Third, the country is facing a high external debt burden. The external debt accumulation was more than 60 per cent of GDP in 2007. If the Lao People's Democratic Republic becomes too dependent upon foreign finance, especially with regard to meeting its debt obligations, the situation could result in a foreign debt crisis and might lead to macroeconomic instability.

Table 1. Key macroeconomic indicators

Macroeconomic Indicator	2001-2006	1996-2000	1990-1995
Population (million person)*	5.46	4.86	4.4
Population growth(%)	2.12	2.06	2.52
GDP (current US$ million)**	2416	1618	1276
GDP Growth (%)	6.53	6.18	6.46
GDP per capita (constant 2000 US$)**	379	307	248
GDP per capita growth(%)	4.04	3.68	3.8
Reserve money(M2) (US$ million)*	450981	270728	148180
Money supply (M2) (%)*	21.14	65.99	30.92
Inflation-CPI (%)	9.73	57	15.21
Trade deficit (US$ million)***	-219.91	-263.21	-174.92
Trade deficit/GDP (%)	-9.24	-16.06	-13.14
Foreign reserve (US$ million)***	220	127	48
External debt (US$ million)*	2640	2410	1965
External debt /GDP (%)	115	152	161
Budget deficit (including grants) (US$ million)	-104	-58	-100
Budget deficit/GDP (%)	-4.42	-3.6	-7.61
Budget deficit (including grants) (US$ million)	-149	-121	-145
Budget deficit/GDP (%)	-6.25	-7.58	-11.21
Exchange rate (kip/US$)***	10613	4094	727

Sources: *Asian Development Bank (ADB), Key Indicators for Asia and the Pacific 2008 www.adb.org/statistic, ** World Bank, World Development Indicators CD-ROM (2005) and *** International Monetary Fund, International Financial Statistics CD-ROM August 2008

B. Lao trade structure and WTO accession

[214] It is important to note that the trade data used for this analysis are based on data from international organizations. The Government of the Lao People's Democratic Republic has claimed that the trade deficit became a surplus in 2006.

[215] More details about financial issues as well as monetary and exchange rate policies in the Lao People's Democratic Republic are discussed in Kyophilavong, 2008.

1. Trade structure

The Lao People's Democratic Republic is facing chronic trade deficits. However, the trade deficits have been narrowing since 2003.[216] The average trade deficit-to-GDP ratio was 9.24 per cent during 2001-2006, which was a decline from 16.06 per cent during 1999-2000. The average export growth during 2001-2006 was 20.4 per cent, a major increase from 1.7 per cent during 1996-2000. On the other hand, the average growth of imports was 14.10 per cent during 2001-2006 (table 1).

Various goods are imported by the Lao People's Democratic Republic from other countries, ranging from basic consumption goods to investment goods and fuel. In 2001-2006, the top three import commodities were electrical and mechanical machine (19.08 per cent), oil and mineral products (18.63 per cent), and transportation equipment (12.38 per cent). During the same period, the country's main exports were wood (31.44 per cent), apparel (28.55 per cent) and base metals and their products (15.31 per cent); base metals and their products have increased since 2001. ASEAN members are the main trading partners of the Lao People's Democratic Republic, accounting for 56.3 per cent of Lao exports and 77.40 per cent of imports. In ASEAN, Thailand accounted for the highest share of total Lao exports and imports at 65.1 per cent and 85 per cent, respectively, during 2001-2006 (tables 2 to 5).

Table 2. Exports by region/country

	2001-2006		1996-2000		1990-1995	
	Value (US$ '000)	Share (%)	Value (US$ '000)	Share (%)	Value (US$ '000)	Share (%)
ASEAN	1731493	56.3	304358	25.6	350454	43
European Union	937474	30.5	534506	44.9	204614	25.1
Asia	301482	9.8	250224	21	205152	25.2
United States	54421	1.8	89334	7.5	45880	5.6
Oceania	27056	0.9	1441	0.1	263	0.1
Other	25687	0.8	11000	0.9	7856	1
Total world	3077613	100.1	1190863	100	814219	100
Thailand	1127454	65.1	287440	94.4	334529	95.5
Viet Nam	529853	36.6				
Singapore	3873	0.2	14551	4.8	14327	4.1
Malaysia	63022	3.6	153	0.1	1138	0.3
Cambodia	529	0	36	0		
Indonesia	6668	0.4	2160	0.7	459	0.1
Philippines	83	0	19	0		
Brunei Darussalam	10	0				
Total ASEAN	1731492	100	304359	100	350453	100

Source: Compiled from COMTRADE data in the WITS database (see www.witsworldbank.org).

[216] The increase in mining exports is primarily responsible for the narrowing trade deficit. One of the largest mining projects in Laos is the Sepon Mining Project.

Table 3. Exports by commodity

Commodity			2001-2006		1996-2000		1990-1995	
			Value (US$ '000)	Share (%)	Value (US$ '000)	Share (%)	Value (US$ '000)	Share (%)
1	1-5	Animals and animal products	24944	0.8	15782	1.3	3200	0.4
2	6-14	Vegetable products	162192	5.3	85476	7.2	40182	4.9
3	15	Animal and vegetable oils	27.00	0.0	61.00	0.0	20.00	0.0
4	16-24	Processed foods, beverages and tobacco	18883	0.6	7936	0.7	3056	0.4
5	25-27	Oil and mineral products	269742	8.8	33353	2.8	9854	1.2
6	28-38	Chemical products	10578	0.3	2139	0.2	6195	0.8
7	39-40	Plastics and rubber product	25449	0.8	3459	0.2	616	0.1
8	41-43	Skin, furs and their products	6840	0.2	7390	0.6	11147	1.4
9	44-46	Wood	966658	31.4	459470	38.6	484601	59.5
10	47-49	Wood products and paper	3537	0.1	1918	0.6	291	0.0
11	50-60	Textiles	7145	0.2	2991	0.3	829	0.1
12	61-63	Apparel	877772	28.6	493639	41.5	200420	24.6
13	64-67	Shoes, hats, umbrellas, etc	43627	1.4	35325	3.0	1165	0.1
14	68-70	Stone, ceramic and glass products	668	0.0	589	0.1	64	0.0
15	71	Jewellry and precious metal products	45903	1.5	1569	0.1	1312	0.2
16	72-83	Base metals and their products	470674	15.3	3857	0.3	40151	4.9
17	84-85	Electrical and mechanical machinery	31956	1.0	6749	0.6	3120	0.4
18	86-89	Transportation equipment	55014	1.8	2644	0.2	716	0.1
19	90-92	Photographic, precision instruments	1134	0.0	350	0.0	937	0.1
20	93	Arms and munitions	23	0.0	8	0.0	2	0.0
21	94-96	Furniture and assorted products	13207	0.4	17774	1.5	2016	0.3
22	97-98	Objects d' art	618	0.0	190	0.0	435	0.1
23	99	Other	35370	1.2	8326	0.7	3749	0.5
Total			3071962	100.0	118997	100.0	814077	100.0

Source: Compiled from COMTRADE data in the WITS database (see www.witsworldbank.org).

Table 4. Imports by region/country

	2001-2006		1996-2000		1990-1995	
	Value (US$ '000)	Share (%)	Value (US$ '000)	Share (%)	Value (US$ '000)	Share (%)
ASEAN	4281062	77.4	2087341	79.3	1173624	68.5
European Union	278011	5	191122	7.3	113934	6.6
Asia	841249	15.2	318436	12.1	336202	19.6
United States	37310	0.7	17702	0.7	15134	0.9
Oceania	79704	1.4	14412	0.5	74070	4.3
Other	12198	0.2	3265	0.1	1046	0.1
Total world	5529534	100	2632278	100	1714010	100
Thailand	3637465	85	1910061	91.5	1082996	92.4
Viet Nam	413394	9.07				
Singapore	192536	4.05	158817	7.6	82739	7
Malaysia	20956	0.5	8828	0.4	3665	0.3
Cambodia	4632	0.1	3184	0.2		
Indonesia	10289	0.2	5959	0.3	3224	0.3
Philippines	1643	0	482	0		
Brunei Darussalam	147		10	0		
Total ASEAN	4281062	100	2087341	100	1172624	100

Source: Compiled from COMTRADE data in the WITS database (see www.witsworldbank.org).

Table 5. Imports by commodity

Commodity			2001-2006		1996-2000		1990-1995	
			Value (US$ '000)	Share (%)	Value (US$ '000)	Share (%)	Value (US$ '000)	Share (%)
1	1-5	Animals and animal products	61357	1.1	25195	1.0	25980	1.5
2	6-14	Vegetable products	114419	2.1	62558	2.4	45469	2.7
3	15	Animal and vegetable oils	15503	0.3	10060	0.4	4843	0.3
4	16-24	tobacco	596643	10.8	316297	12.0	186380	10.9
5	25-27	Oil and mineral products	1030291	18.6	317093	12.0	169041	9.9
6	28-38	Chemical products	300015	5.4	122397	4.6	106326	6.2
7	39-40	Plastics and rubber product	206129	3.7	93058	3.5	68640	4.0
8	41-43	Skin, furs and their products	5692	0.1	3046	0.1	1744	0.1
9	44-46	Wood	7460	0.1	3351	0.1	1857	0.1
10	47-49	Wood products and paper	65459	1.2	31082	1.2	15449	0.9
11	50-60	Textiles	487822	8.8	198930	7.5	103809	6.1
12	61-63	Apparel	68894	1.2	23691	0.9	23748	1.4
13	64-67	Shoes, hats, umbrellas, etc	22537	0.4	10357	0.4	16941	1.0
14	68-70	Stone, ceramic and glass products	141162	2.5	86397	3.3	40498	2.4
15	71	Jewellry and precious metal products	68731	1.2	15879	0.6	67015	3.9
16	72-83	Base metals and their products	394482	7.1	165011	6.2	100379	5.9
17	84-85	Electrical and mechanical machinery	1055188	19.1	488686	18.5	294883	17.2
18	86-89	Transportation equipment	684292	12.4	572809	21.7	387199	22.6
19	90-92	Photographic, precision instruments	48838	0.9	35342	1.3	16009	0.9
20	93	Arms and munitions	1066	0.0	59	0.0	786	0.0
21	94-96	Furniture and assorted products	51043	0.9	26666	1.0	17240	1.0
22	97-98	Objects d' art	598	0.0	71	0.0	112	0.0
23	99	Other	110801	2.0	32655	1.2	21183	1.2
		Total	5538422	100.0	2640690	100.0	1715531	100.0

Source: Compiled from COMTRADE data in the WITS database (see www.witsworldbank.org)

2. WTO accession by the Lao People's Democratic Republic

Under the planned economy system, international trade was controlled by the Government. At that time, the Lao People's Democratic Republic's main trading partners were socialist countries. However, the country changed from a planned economy to a market economy in 1986 and trade liberalization has been one of the pillars of economic reforms in the Lao People's Democratic Republic (Martin, 2001). The tariff rate changes are shown in table 6. In November 2004, the Lao People's Democratic Republic was granted normal trade relations status by the United States. Moreover, the Government planned to become a member of WTO by 2010.

In 1997 the Lao People's Democratic Republic applied for WTO membership; by February 1998, official observer status had been granted and a WTO Working Party for the accession of the country had been established. A Memorandum on the Lao Foreign Trade Regime was submitted to the WTO secretariat in March 2001 and a consolidated set of 263 questions was submitted from WTO members such as Australia, the European Union and the United States in early 2002. The fourth Working Party session took place in July 2008, by which time the Lao People's Democratic Republic had made good progress towards becoming a WTO member. The Lao delegation discussed bilateral trade agreements with a number of WTO member States and was successful in reaching an agreement with the European Union on open market access for goods; the service sector in the Lao People's Democratic Republic was to be the subject of negotiations at the next Working Paper meeting.

Table 6. Tariff rate structure changes

Commodity			MFN Rate					ASEAN Rate	ASEAN FTA rate	Preferential tariff for ASEAN Countries
			2007	2006	2005	2001	2000	2004	2001	2005
1	1-5	Animals and animal products	14.3	14.3	14.3	14.7	7.2	7.2	12.0	5.1
2	6-14	Vegetable products	18.3	18.3	54.8	18.3	10.4	10.4	18.0	6.1
3	15	Animal and vegetable oils	10.4	10.4	13.1	10.3	6.6	6.6	11.0	3.9
4	16-24	Processed foods, drink and tobacco	16.6	19.1	15.6	19.5	10.6	10.6	13.0	7.8
5	25-27	Oil and mineral products	6.3	6.4	5.5	5.4	2.9	2.9	0.0	4.0
6	28-38	Chemical products	10.2	9.6	10.2	8.6	5.3	5.3	5.8	4.3
7	39-40	Plastics and rubber product	15.0	8.4	15.0	8.1	7.3	7.3	4.0	4.4
8	41-43	Skin, furs and their products	17.1	16.7	17.1	16.7	11.0	11.0	0.0	7.9
9	44-46	Wood	13.9	20.5	13.3	21.0	8.8	8.8	12.7	8.1
10	47-49	Wood products and paper	6.2	5.7	6.5	5.9	6.1	6.1	0.0	3.3
11	50-60	Textiles	9.2	8.5	8.9	8.5	5.9	5.9	9.0	3.0
12	61-63	Apparel	11.9	11.1	11.1	10.4	5.3	5.3	8.8	2.8
13	64-67	Shoes, hats, umbrellas, etc.	11.3	13.7	11.0	17.8	8.6	8.6	12.4	5.5
14	68-70	Stone, ceramic and glass products	5.1	6.1	5.1	6.3	4.7	4.7	5.9	3.3
15	71	Jewelry and precious metal products	5.2	5.0	5.2	5.0	3.7	3.7	3.6	3.0
16	72-83	Base metals and their products	8.1	7.8	8.1	7.6	5.5	5.5	5.3	4.0
17	84-85	Electrical and mechanical machinery	17.4	6.4	17.6	6.5	6.3	6.3	6.8	4.0
18	86-89	Transportation equipment	9.0	12.7	9.0	10.9	7.1	7.1	8.0	5.4
19	90-92	Photographic, precision instruments	19.8	16.7	19.8	16.7	6.5	6.5	9.0	4.5
20	93	Arms and munitions	9.1	18.2	7.1	18.7	0.0	0.0	0.0	0.0
21	94-96	Furniture and assorted products	5.0	8.5		8.3	7.7	7.7	6.1	5.7
22	97-98	Objects d' art					3.0	3.0	4.0	2.8
23	99	Other					0.0	0.0	0.0	0.0
		Average	11.39	11.6	13.41	11.52	11.94	6.1	6.75	4.29

Source: Compiled from COMTRADE data in the WITS database (see www.witsworldbank.org)

Despite the above progress, many areas still require improvement, such as the laws related to trade (including standards, intellectual property, customs and enterprises). These actions indicate that the Lao People's Democratic Republic is keen to participate more fully in the global economy in the

near future. However, challenges and opportunities remain to be dealt with in order for the Lao People's Democratic Republic to achieve WTO membership.

3. Benefits and costs of WTO accession

The Lao People's Democratic Republic will certainly gain some benefits from WTO accession. First, accession will provide opportunities to improve the country's trade and investment environment. Second, WTO members will be more secure and less discriminatory in terms of market access for Lao exports. Third, WTO accession will increase FDI in the Lao People's Democratic Republic.[217]

However, the Lao People's Democratic Republic will also experience costs. First, as a least developed country, the Lao People's Democratic Republic receives unilateral preferences from some 48 developed and developing countries. The country has also received duty-free, quota-free market access under the Everything but Arms initiative from the European Union, and under the Generalized System of Preferences from Australia, Belarus, Canada, Japan, New Zealand, Norway, Russian Federation, Switzerland and Turkey. Moreover, the Lao People's Democratic Republic has been granted unilateral preferential treatment by the original ASEAN members under the ASEAN Integrated System of Preferences and receives Special and Preferential Treatment from China and the Republic of Korea. This shows that the Lao People's Democratic Republic already has good market access opportunities; however, under the WTO Multilateral Trading System, these preferential tariffs will be eroded as, in principle, they are tariff barriers.

Second, under the Agreement on Textiles and Clothing, with its cheap labour the Lao People's Democratic Republic was able to expand garment exports to the European Union and the United States. As a member of WTO, the Lao People's Democratic Republic will have to remove textile and clothing quotas and compete with large suppliers such as China and India.

Third, as some small and medium-sized enterprises in the Lao People's Democratic Republic are not competitive, WTO accession may well have a negative impact on their development.

Fourth, WTO accession may expand current budget and trade deficits, which could lead to macroeconomic instability.

However, the Government of the Lao People's Democratic Republic believes that enhancing trade liberalization[218] through WTO accession and participating actively in AFTA might help to promote economic development and minimize the impact of global financial crises.

C. Methodology

1. GTAP model and database

The Global Trade Analysis Project (GTAP) model, a multi-region computable general equilibrium (CGE) model, is one of the most popular models for analysing the impact of trade policies. There are various advantages to the GTAP model. First, since it is a multi-regional model of world production and trade, it can take into account the overall trade implications of the Lao People's Democratic Republic's WTO accession as well as that of third-party countries. Second, it contains a

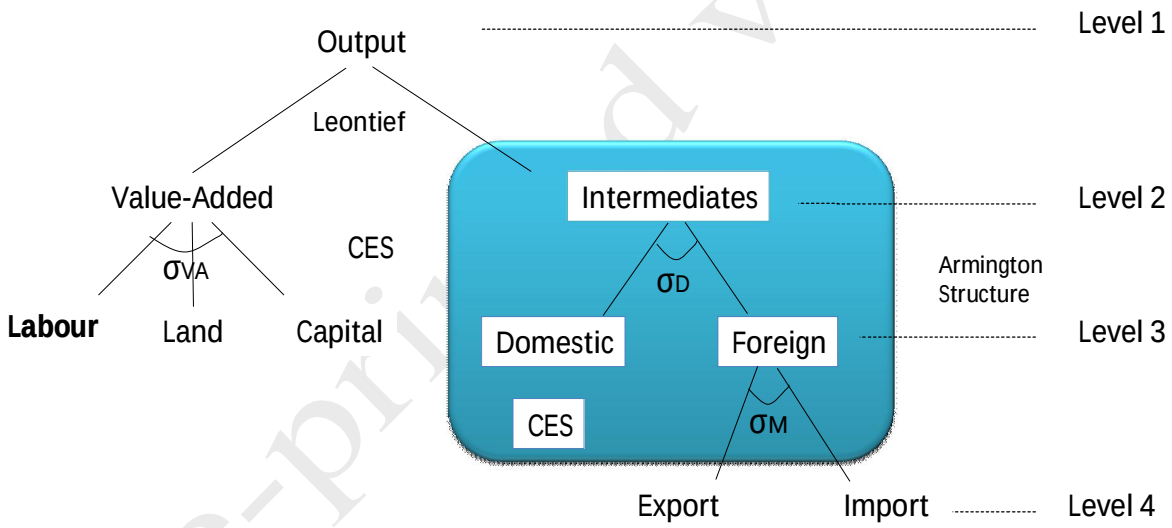
[217] For a more detailed discussion of benefits resulting from WTO accession see Anderson, 1998.

[218] Enhancing trade liberalization is a top priority for the Lao People's Democratic Republic in order to stimulate economic growth and graduate from least developed country status by 2020 (Committee of Planning and Investment, 2006 and 2004).

database for different sectors and thus can explore the trade implications for various sectors of interest.[219]

The GTAP model assumes perfectly competitive markets, where the zero profit condition holds, and that all the markets are cleared. For regional households it allocates expenditures across three categories: (a) private households; (b) government expenditures; and (c) savings. The model derives income from the "sale" of primary factors to the producers, and combines them with domestically produced and imported intermediate composites to produce final goods. These final goods are, in turn, sold domestically to private households and the Government, and exported to the rest of the world. Both the Government and private households also import final consumption goods from the rest of the world. A global bank acts as an intermediator between global savings and regional investments by assembling a portfolio of regional investment goods, and by selling shares in this portfolio to regional households in order to meet their savings demands. Finally, a global transportation sector assembles regional exports of trade, transport and insurance services and produces composite goods used to move merchandise trade among regions (Hertel and Tsigas, 1997). The production structure in the GTAP model is illustrated in the figure.

Production structure in the GTAP model



Source: Hertel (ed.), 1997.

Various studies have used the GTAP model to analyse the impact of trade policies. Tongzon (2001) used the standard GTAP model to assess the impact of China's WTO membership on the exports of East Asian developing economies. Anderson and Strutt (1999) used a GTAP model to investigate the impact of the Asian crisis and trade reforms on Indonesia. While many studies have used the CGE model for developing countries, very few studies have used CGE modelling for the Lao economy.

[219] For more details see Hertel (ed.), 1997. A graphic presentation of the GTAP model, with particular emphasis on the accounting relationships, is given in Brockmeier, 1996.

Fukase and Martin (1999) built a simple CGE model to analyse the economic effects of joining AFTA; their simulation results showed that AFTA accession would be economically beneficial. Using the CGE model, Warr and Menon (2006) studied the effect of rural road improvements on poverty incidence in Laos. Their simulation results showed that there was considerable scope for reducing poverty incidence in the Lao People's Democratic Republic by reducing rural transportation costs through the improvement of rural road quality. Warr (2006) built a two-sector, multi-household CGE model to analyse the impact of the hydropower dam, Nam Theun 2. His simulation results showed that while the project had significant effects on poverty incidence, if poor household did not share directly in the proceeds of the project, poverty incidence was likely to rise. Stone, Strutt and Hertel (2009) used a GTAP model to investigate the impact of transport infrastructure projects on socio-economic characteristics in the Greater Mekong Subregion.

There have been very few quantitative studies on the impact of the global financial crisis and trade liberalization in the Lao People's Democratic Republic. However, the newest version of the GTAP 7 database includes that country's input-output table, which might provide significant contributions to empirical studies of this issue. The latest version of the GTAP database, version 7, was used for the current study. To facilitate the analysis, products were aggregated into 10 sectors and the country subdivided into 10 regions (tables 7 and 8).

Table 7. Model sectors

No	Commodity code	Comprising	Description
1	GrainsCrops	PDR (paddy rice), WHT (wheat), GRO (cereal grains nec), V_F (vegetables, fruit and nuts), OSD (oil seeds), C_B (sugarcane, sugar beet), PFB (plant-based fibres), OCR (crops nec), PCR (processed rice)	Grains and crops
2	MeatLstk	CTL (bovine cattle, sheep and goats, horses), OAP (animal products nec), RMK (raw milk), WOL (wool, silk-worm cocoons), CMT (bovine meat products), OMT (meat products nec)	Livestock and meat products
3	Extraction	OMN (minerals nec)	Mining and extraction
4	ProcFood	VOL (vegetable oil and fats), MIL (diary products), SGR (sugar), OFB (food products nec), B_T (beverages and tobacco products)	Processed food
5	TextWapp	TEX (textiles), WAP (wearing apparel)	Textiles and clothing
6	LightMnfc	LEA (leather products), LUM (wood prouducts), PPP (paper products, publishing), FMP (metal products), MVH (motor vehicles and parts), OTN (transport equipment nec), OMF (manufactures nec), FRS (forestry), FSH (fishing)	Light manufacturing
7	HeavyMnfc	P_C (petroleum, coal products), CRP (chemical, rubber, plastic products), NMM (mineral products nec), I_S (ferrous metals), NFM (metals nec), ELE (electronic equipment), OME (machinery and equipment nec)	Heavy manufacturing
8	Util_Cons	ELY (electricity), GDT (gas manufacture, distribution), WTR (water), CNS (construction), COA (coal), OIL (oil), GAS (gas)	Utilities and construction
9	TransComm	TRD (trade), OTP (transport nec), WTP (water transport), ATP (air transport), CMN (communication), OFI (financial services nec)	Transport and communication
10	OthServices	OFI (financial services nec), ISR (insurance), OBS (business services nec), ROS (recreational and other services), OSG (public administration, defence, education, health), DWE (dwellings)	Other services

Source: Compiled by the author from the GTAP database.

Table 8. Model regions

No	Region code	Comprising	Region description
1	Oceania	AUS (Australia), NZL (New Zealand), XOC (Rest of Oceania)	Australia, New Zealand
2	EastAsia	CHN (China), HKG (Hong kong), JPN (Japan), KOR (Korea), TWN (Taiwan), XEA (Rest of EastAsia)	EastAsia
3	SEAsia	KHM (Cambodia), IDN (Indonesia), MMR (Myanmar), MYS (Malasia), PHL (Philippines), SGP (Singapore), THA (Thailand), VNM (Vietnam), XSE (Rest of SoutheastAsia)	SoutheastAsia
4	SouthAsia	BGD (Bangladesh), IND (India), PAK (Pakistan), LKA (Sri Lanka), XSA (Rest of South Asia)	South Asia
5	NAmerica	CAN (Canada), USA (United States Of America), MEX (Mexico), XNA (Rest of North America)	North America
6	LatinAmer	ARG (Argentina), BOL (Bolivia), BRA (Brazil), CHL (Chile), COL (Colombia), ECU (Ecuador), PRY (Paraguay), PER (Peru), URY (Uruguay), VEN (Venezuela), XSM (Rest of South America), CRI (Costa Rica), GTM (Guatemala), NIC (Nicaragua), PAN (Panama), XCA (Rest of Central America), XCB (Caribbean)	Latin America
7	EU_25	AUT (Austria), BEL (Belgium), CYP (Cyprus), CZE (Czech Republic), DNK (Denmark) EST (Estonia), FIN (Finland), FRA (France), DEU (Germany), GRC (Greece), HUN (Hungary), IRL (Ireland), ITA (Italy), LVA (Latvia), LTU (Lithuania), LUX (Luxembourg), MLT (Malta), NLD (Netherlands), POL (Poland), PRT (Portugal), SVK (Slovakia), SVN (Slovenia), ESP (Spain), SWE (Sweden), GBR (United Kingdom)	European Union 25
8	SSA	NGA (Nigeria) SEN (Senegal) XWF (Rest of Western Africa) XCF (Rest of Central Africa) XAC (Rest of South Central Africa) ETH (Ethiopia) MDG (Madagascar) MWI (Malawi) MUS (Mauritius) MOZ (Mozambique) TZA (Tanzania) UGA (Uganda) ZMB (Zambia) ZWE (Zimbabwe) XEC (Rest of Eastern Africa) BWA (Botswana) ZAF (South Africa) XSC (Rest of South Africa Customs Union)	Sub-Saharan Africa
9	LAOS	LAO (Lao People's Democratic Republic)	Laos
10	RestofWorld	CHE (Switzerland), NOR (Norway), XEF (Rest of EFTA), ALB (Albania), BGR (Bulgaria), BLR (Belarus), HRV (Croatia), ROU (Romania), RUS (Russian Federation), UKR (Ukraine), XEE (Rest of Eastern Europe), XER (Rest of Europe), KAZ (Kazakhstan), KGZ (Kyrgyzstan), XSU (Rest of Former Soviet Union), ARM (Arenia), AZE (Azerbaijan), GEO (Georgia), IRN (Iran, Islamic Republic of), TUR (Turkey), XWS (Rest of Western Asia), EGY (Egypt), MAR (Morocco) TUN (Tunisia), XNF (Rest of North Africa)	Rest of World

2. Simulation design

While the global financial crisis has affected the Lao economy in various ways, including reductions in FDI, remittances and tourists, the present study focused on one of the most serious consequences, i.e., the decline in mineral exports due to sharply falling mineral prices. In addition, in terms of trade liberalization, the study focused on WTO accession by the Lao People's Democratic Republic. The simulation design was divided into (a) the impact of the global financial crisis and (b) the impact of trade liberalization. A third simulation was then made of the impact of trade liberalization during the global financial crisis.[220]

(a) Simulation 1 – impact of the global financial crisis

[220] In all three simulations, which used a standard general equilibrium closure, population, numeraire, all slack variables, all technical change variables, all preferences, all policy variables and endowments were exogenous.

Various adverse effects of the global financial crisis have made themselves felt on the Lao economy such as declining demand for Lao exports, declines in FDI, remittances from Lao nationals living in developed countries and from Lao migrant labour in neighbouring countries, and a slump in tourism revenue. However, the present study only focused on the impact of the global financial crisis through declining demand for minerals. In order to capture that decline in demand for mineral commodities, the assumption was made that export taxes from 10 regions (including the Lao People's Democratic Republic) increased 80 per cent from the baseline. This simulation highlights the impact of the global financial crisis on the Lao economy.

(b) Simulation 2 – impact of trade liberalization

The Government of the Lao People's Democratic Republic is also enhancing trade liberalization though the implementation of AFTA, and will join WTO. However, in the impact of trade liberalization scenario, the focus was on WTO accession through tariff rate cuts. It was assumed that the tariff rates for seven commodities from nine regions would fall to 2.5 per cent, the same rate as that in AFTA.

(c) Simulation 3 – impact of trade liberalization during the global financial crisis

In order to analyse the impact of trade liberalization during the global financial crisis, simulation 1 and simulation 2 were combined. The result of simulation 3 refers to the impact of trade liberalization during the global financial crisis.

D. Simulation results

Changes in macroeconomic variables resulting from the simulations are shown in table 9. The global financial crisis (simulation 1) has a negative impact on equivalent variation (EV), real GDP and the terms of trade. EV declines by US$ 1.69 million, real GDP declines by 0.02 per cent and the terms of trade decline by 0.18 per cent, although the trade balance increases slightly. There are four major sources for any welfare change: (a) allocative efficiency effect; (b) endowment effect; (c) technology effect; and (d) terms of trade effect (Huff and Hertel, 2000; Hanslow, 2000; and Adams, 2005). In simulation 1, welfare loss is mainly from allocative efficiency effect. In the case of the allocative inefficiency effect, it mainly came from mining, processed food and heavy manufacturing.

On the other hand, trade liberalization (simulation 2) increases EV and real GDP, but reduces the terms of trade and the trade balance. EV increases by US$ 1.67 million and real GDP increases 0.53 per cent; the terms of trade decline 0.90 per cent and trade balance declines 43.08 per cent. Increased EV in simulation 2 comes from allocative efficiency effect, mainly from processed food, light manufacturing, and grains and crops.

The deteriorating trade balance is due to declines in processed food and heavy manufacturing. Combining simulation 1 and simulation 2 reveals the impact of trade liberalization during the global financial crisis. EV declines by US$ 20,000, real GDP increases by US$ 510,000, and the terms of trade and trade balance are adversely affected.

Table 9. Impact on macroeconomic variables

Macroeconomic variables	Simulation 1	Simulation 2	Simulation 3
EV (US$ million)	-1.69	1.67	-0.02
Real GDP (%)	-0.02	0.53	0.51
Term of trade (%)	-0.18	-0.90	-1.08
Trade balance (US$ million)	0.05	-43.08	-43.03
Import volumes (%)	-1.61	7.74	6.13
Export volumes (%)	-0.29	5.29	4.99

Source: The author's GTAP model results.

In terms of output change, in simulation 1 mining output declines by about 0.4 per cent, but all other commodity outputs increase slightly. In simulation 2, processed food and heavy manufacturing decline the most compared to other sectors, but textiles and clothing as well as utilities and construction increase. When both simulations are combined, trade liberalization during the global financial crisis has a negative impact on processed food and heavy manufacturing output, but a positive impact on textiles and clothing as well as utilities and construction output. Processed food output declines by 4.67 per cent and heavy manufacturing output falls by 3.27 per cent; textiles and clothing output increases 5.51 per cent while utilities and construction output increases 5 per cent (table 10).

Table 10. Impact on output

Sectors	Output (%)		
	Simulation 1	Simulation 2	Simulation 3
Grains and crops	0.01	-0.41	-0.40
Livestock and meat products	0.01	-0.04	-0.04
Mining and extraction	-0.40	-0.38	-0.78
Processed food	0.05	-4.73	-4.68
Textiles and clothing	0.33	5.19	5.52
Light manufacturing	1.32	-1.99	-0.67
Heavy manufacturing	0.25	-3.52	-3.28
Utilities and construction	0.06	4.95	5.01
Transport and communications	0.07	0.55	0.62
Other services	0.00	1.15	1.14

Source: The author's GTAP model results.

The impact on the trade balance is shown in table 11. In simulation 1, mining declines the most. In simulation 2, processed food, heavy manufacturing and light manufacturing decline the most. This shows that the trade balance is adversely affected in both simulations. The impact on export and import volumes is shown in tables 12 and 13. From the simulation results, it is clear that strengthening trade liberalization during the global financial crisis could help to minimize the impact on the Lao People's Democratic Republic.

Table 11. Impact on trade balance

Sectors	Trade balance (US$ million)		
	Simulation 1	Simulation 2	Simulation 3
Grains and crops	0.14	-5.33	-5.19
Livestock and meat products	0.04	-0.70	-0.66
Mining and extraction	-3.33	3.07	-0.26
Processed food	0.51	-31.18	-30.67
Textiles and clothing	0.37	5.10	5.47
Light manufacturing	1.97	-7.16	-5.19
Heavy manufacturing	-0.25	-14.71	-14.96
Utilities and construction	0.03	1.03	1.06
Transport and communications	0.22	0.61	0.83
Other services	0.36	6.19	6.55

Source: The author's GTAP model results.

Table 12. Impact on export volumes

Sectors	Export volumes (%)		
	Simulation 1	Simulation 2	Simulation 3
Grains and crops	0.40	0.02	0.42
Livestock and meat products	0.61	1.05	1.66
Mining and extraction	-7.04	1.97	-5.06
Processed food	0.80	-0.18	0.62
Textiles and clothing	0.34	8.34	8.68
Light manufacturing	1.58	8.29	9.87
Heavy manufacturing	0.39	6.23	6.62
Utilities and construction	0.44	9.30	9.74
Transport and communications	0.29	0.31	0.59
Other services	0.33	4.82	5.15

Source: The author's GTAP model results.

Table 13. Impact on import volumes

Sectors	Import volumes (%)		
	Simulation 1	Simulation 2	Simulation 3
Grains and crops	-0.17	36.45	36.28
Livestock and meat products	-0.33	33.81	33.47
Mining and extraction	-3.87	-7.45	-11.31
Processed food	-0.36	24.08	23.72
Textiles and clothing	0.10	7.64	7.74
Light manufacturing	-0.12	10.27	10.15
Heavy manufacturing	0.02	3.67	3.69
Utilities and construction	-0.07	-9.33	-9.40
Transport and communications	-0.17	-4.77	-4.94
Other services	-0.24	-6.88	-7.12

Source: The author's GTAP model results.

E. Conclusion

This chapter attempts to examine the impact of trade liberalization on the Lao economy during the global financial crisis, using a GTAP model. The global financial crisis affects the Lao economy in various ways, but the present study focused on the declining demand for Lao mineral exports. In terms of the trade liberalization scenario, the study focused on the impact of tariff cuts through WTO accession. The simulation results allow the following conclusions to be drawn. The global financial crisis has a negative impact on the Lao economy, shown by declining household welfare (EV) and real GDP. On the other hand, trade liberalization has positive impact on Lao economy, increasing household welfare and real GDP. Therefore, it can be concluded that enhancing trade liberalization during the global financial crisis could minimize the negative impact of the global financial crisis on the Lao People's Democratic Republic. It is therefore important for the Government of the Lao People's Democratic Republic to enhance trade liberalization by accelerating WTO accession and AFTA implementation.

However, the study is characterized by several weaknesses. First, it uses a static GTAP model, which does not reflect the real impact of the global financial crisis and the Lao People's Democratic Republic's WTO accession. Second, the study limits the impact of the global financial crisis to the declining world demand for minerals and does not include declining FDI, remittances, tourism and government revenue in assessing the impact of the global financial crisis. Third, various benefits from trade liberalization may be realized through joining WTO, but the simulation only focuses on tariff cuts; therefore, the impact of WTO accession might have been underestimated. Fourth, the simulation design and shock experiment might not be realistic, and could be improved with more detail.

References

Adams, P.D. (2005). "Interpretation of results from CGE models such as GTAP", *Journal of Policy Modeling*, vol. 27; pp. 941-959.

Anderson, A. (1998). *Lao PDR and WTO accession: Implications for agriculture and rural development.* School of Economics and Centre for International Economic Studies, University of Adelaide, Australia.

Anderson, K. and A. Strutt (1999). "Impact of East Asia's growth interruption and policy responses: The case of Indonesia", *Asian Economic Journal*, vol. 13, No. 2; pp. 205-218.

Brockmeier, M. (1996). "A graphical exposition of the GTAP model", GTAP Technical Paper No. 6, Centre for Global Trade Analysis, Purdue University, West Lafayette, Indiana, United States.

Committee of Planning and Investment (2006). *Sixth National Socio-Economic Development Plan (NEDP) for 2006 to 2010*. Vientiane.

——— (2004). *National Growth and Poverty Eradication Strategy (NGPES)*. Vientiane.

Fukase, E. and W. Martin (1999). "Economic effect of joining the ASEAN Free Trade Area: The case of the Lao People's Democratic Republic". World Bank, Washington, D.C.

Hanslow, K. J. (2000). "A general welfare decomposition for CGE models", GTAP Technical Paper No. 19. Centre for Global Trade Analysis, Purdue University, West Lafayette, Indiana, United States.

Hertel, T. (ed.) (1997). *Global Trade Analysis: Modeling and Application*. Cambridge University Press, New York.

Hertel, T and M. Tsigas (1997). "Structure of GTAP", in T. Hertel (ed.), *Global Trade Analysis: Modeling and Application*. Cambridge University Press, New York.

Huff, K. M. and T. Hertel, (2000). "Decomposing welfare changes in the GTAP model", GTAP Technical Paper No 5. Centre for Global Trade Analysis, Purdue University, West Lafayette, Indiana, United States.

International Monetary Fund (2009a). *Impact of the Global Financial Crisis on sub-Saharan Africa*. African Department, Washington, D.C.

——— (2009b). "The global crisis and its impact on Lao PDR". Vientiane.

——— (2007). *World Economic and Financial Survey, Regional Economic Outlook, Asia and Pacific*. Washington, D.C.

Kyophilavong, P. and T. Toyoda (2008). "Foreign capital inflows in the natural resources sectors: Impacts on the Lao economy", paper presented at "The Future of Economic Integration in Asia Conference", 20-21 November 2008, Bangkok.

Kyophilavong, P. (2009). "Mining sector in Laos", BRC Discussion Paper Series, No. 18, Bangkok Research Centre, IDE-JETRO, Bangkok.

——— (2008). "Monetary and exchange rate policies in the Lao PDR", paper presented at the Asian Development Bank "Monetary and Exchange Rate Policies in Cambodia, Lao PDR and Viet Nam: The Scope for Regional Cooperation Conference", 22 July, 2008, Bangkok.

Lao National Tourism Administration (2006). *Statistical report on tourism in Laos, 2006*. Vientiane.

Martin, W. (2001). "Trade policy reform in the East Asian transition economies", Policy Research Working Paper 2535. World Bank, Washington, D.C.

Okonjo-Iweala, N., V. Kwakwa, A. Beckwith and Z. Ahmed (1999). "Impact of Asia's financial crisis on Cambodia and the Lao PDR", *Finance & Development*, vol. 36, No. 3.

Stone, F. S., A. Strutt and T. Hertel (2009). "Assessing socio-economic impacts of transport infrastructure projects in the Greater Mekong Subregion", paper presented at the first and second Asian Development Bank Workshops on Trade and Logistics and Transnational Network. Accessed at www.gtap.agecon.purdue.edu/access_member/resources/resdisplay.asp?RecordID=3039, 12 May 2009.

Target Magazine (2009). "Lao economy, despite its weak and vulnerable foundation, growth at 7 per cent", vol. 35, June.

Tongzon, J. (2001). "China's membership in the World Trade Organization and the exports of the developing economies of East Asia: A computable general equilibrium approach," *Applied Economics*, vol. 33.

Warr P. and J. Menon (2006). "Does road improvement reduce poverty? A general equilibrium analysis for the Lao PDR", Working Paper (draft), Asian Development Bank, Manila.

Warr, P. (2006). "The Gregory Thesis visits the tropics", *Economic Record*, vol. 82, No. 257; pp. 177-194.

World Bank (2009). "Impact of the global financial crisis and recent economic developments in Lao PDR". Vientiane.

——— (2008) *Lao PDR Economic Monitor*. Vientiane.

XIV. Trade and sectoral impacts of the global financial crisis – a dynamic computable general equilibrium analysis

By Anna Strutt and Terrie Walmsley

Introduction

The current global financial crisis has resulted in a significant downturn in the global economy. Although there have recently been signs that the worst of the crisis may be over, the global economy remains fragile, with much uncertainty remaining (International Monetary Fund, 2009b; World Trade Organization, 2009a). Meanwhile, the impacts of the crisis continue to be felt throughout the world. This chapter uses a dynamic computable general equilibrium (CGE) model to explore some of the effects of two different crisis scenarios, with particular focus on trade and sectoral impacts in ESCAP member countries. The potential impacts of the recent tendency to move toward greater protection of domestic industries are also analysed.

Computable general equilibrium models have some limitations in their ability to analyse the current financial crisis; however, they have been used to generate insights into the impacts of previous economic crises (e.g., Anderson and Strutt, 1999; McKibbin and others, 2001; Siriwardana and Iddamalgoda, 2003). Some efforts to model the current crisis have also been made, including through the use of comparative static versions of the well-known Global Trade Analysis Project (GTAP) model (Jongwanich and others, 2009; Strutt, 2009). The current study uses GDyn, a dynamic global CGE model, developed by Ianchovichina and McDougall (2000), based on the GTAP model (Hertel, 1997).[221] The GDyn model incorporates most features of the GTAP model, including bilateral trade flows, a sophisticated consumer demand function and intersectoral factor mobility. In addition, GDyn tracks foreign ownership of capital and investment behaviour. This allows the inclusion of the impacts of endogenous capital accumulation and the movement of investment between countries in response to differing expected rates of return, unlike simulations using comparative static models. Use of a dynamic model also allows consecutive periods of the crisis to be modelled, together with policy responses over time and the consequent time-path of adjustment for each economy. While GDyn incorporates improved treatment of investment and captures errors in expectations, it does for example not contain debt obligations; therefore, it does not purport to explain the financial crisis. Thus, the current study has endeavoured to mimic the key macroeconomic impacts of the current financial crisis, in an effort to shed light on the impact of the crisis on production and trade.

The chapter begins with a discussion in section A of the current extent of the global financial crisis and policy responses. Section B develops a baseline scenario for GDyn, which depicts how the global economy might change over time, excluding the impact of the global financial crisis. From this baseline, three scenarios are modelled: a moderate and a more severe global financial crisis scenario, together with the possible policy response of increased protection. The results are presented for some important macroeconomic indicators, together with a discussion of the trade and sectoral impacts of each scenario. Section C provides some concluding comments, including on the limitations of the current study.

[221] See www.gtap.agecon.purdue.edu for detailed and updated information.

A. Extent of the global financial crisis

The full extent of the current global economic crisis, in terms of growth impacts and their duration, is not yet clear. The International Monetary Fund's (IMF) October 2009 projections indicated that the global economy was expected to decline by 1.1 per cent in 2009, with advanced economies being the hardest hit with an average decline in output of approximately 3.4 per cent (International Monetary Fund, 2009b). While the financial crisis began in developed countries, the subsequent collapse of aggregate demand is still working its way through the global economy. Average growth rates for developing and emerging economies were well under 2 per cent in 2009, representing a significant deviation from the previous high growth path many emerging countries were following. Recent indications suggest that the global economy may be over the worst of the crisis, with the global rebound being driven particularly by strong performance in Asian economies including China and India. However, advanced economies were projected to expand sluggishly throughout 2010, although unemployment was expected to continuing rising. In addition, risks to the outlook were expected to "remain on the downside" (International Monetary Fund, 2009b).

Table 1 presents World Bank estimates of growth rates by individual countries/regions. While forecasts differ, depending on the assumptions made and when they are updated, it is hoped that the data presented in table 1 give a reasonable indication of annual changes in GDP that take into account the impact of the crisis.[222] As previously noted, growth rates in developed countries have tended to decline the most significantly, particularly in 2009. However, growth rates in many other regions also suffer from the crisis. As indicated in Table 1, some rebound is anticipated during 2010 and 2011.

Table 1. Annual change in real GDP
(Unit: Per cent)

Region	2007	2008	2009	2010	2011
Advanced economies					
United States	2.0	1.1	-3.0	1.8	2.5
European Union*	2.7	0.6	-4.5	0.5	1.9
Japan	2.3	-0.7	-6.8	1.0	2.0
Emerging and developing economies					
Russian Federation	8.1	5.6	-7.5	2.5	3.0
China	13	9.0	6.5	7.5	8.5
India	9.0	6.1	5.1	8.0	8.5
Other regions					
East Asia and Pacific	11.4	8.0	5.0	6.6	7.8
Europe and Central Asia	6.9	4.0	-4.7	1.6	3.3
Latin America and Caribbean	5.8	4.2	-2.2	2.0	3.3
Middle East and North Africa	5.4	6.0	3.1	3.8	4.6
South Asia	8.4	6.1	4.6	7.0	7.8
Sub-Saharan Africa	6.2	4.8	1.0	3.7	5.2
World	**3.8**	**1.9**	**-2.9**	**2.0**	**3.2**

Source: World Bank, 2009b.
* Euro zone.

[222] Such estimates are, of course, continually updated as economic conditions change. For example, the most recent data available at the time of finalizing this chapter suggests that the 2009 GDP declined by 2.2 per cent globally (World Bank, 2010).

The global financial crisis has led to substantial and rapid responses, with many governments implementing stimulus packages in an effort to dampen the impact on their domestic economies (Freedman and others, 2009; Horton and Ianova, 2009; World Bank, 2009a). It is difficult to precisely quantify the fiscal stimulus packages being implemented, with the absence of a standard definition of implementation making cross-country comparisons very difficult (International Monetary Fund, 2009a).

Table 2 provides a summary of government spending growth, which includes known fiscal stimulus packages. The growth in government spending increased significantly in 2009 for some countries/regions, including the United States, the European Union and particularly Japan, with some tapering-off projected for 2010 and 2011. Current stimulus packages have focused on fiscal stimulus, in contrast to the Great Depression of the 1930s, where the case for fiscal stimulus was not well understood (Eichengreen and Irwin, 2009). The implications of this fact are important; monetary stimulus benefited the initiating countries but had a negative impact on their trading partners, while the use of different fiscal stimulus policy instruments today tends to benefit trading partners as well as the country implementing the stimulus (Eichengreen and Irwin, 2009).[223]

Table 2. Fiscal stimulus: Government consumption growth rates

(Unit: Per cent)

Country/region	2007	2008	2009	2010	2011
Australia	2.4	3.6	4.0	3.5	3.0
China	11.2	10.7	10.0	10.2	9.0
Hong Kong, China	3.0	1.7	5.0	4.0	3.0
Taiwan Province of China	0.9	1.1	12.0	8.0	7.0
Japan	1.9	0.8	6.5	4.0	4.0
Republic of Korea	5.4	4.2	6.0	5.0	4.0
India	7.0	20.3	10.0	5.0	4.0
United States	2.1	2.9	4.0	4.0	3.0
European Union*	2.2	1.6	3.7	3.1	2.3
Russian Federation	3.4	2.4	1.0	1.0	3.0

Source: World Bank, 2009b.
* Euro zone.

In addition to fiscal stimulus packages, global economic decline can also increase pressure on policymakers to assist distressed industries, including through raising barriers to trade. Indeed, the 1930s were marked by protectionist policies and the breakdown of the multilateral trading system (Eichengreen and Irwin, 2009). The current global economy may be viewed as having "firewalls" against protectionism that did not exist in the 1930s, including more institutionalized obstacles to protectionism, more policy instruments to address the economic slowdown, and a more interdependent and open world economy (Ahearn, 2009). However, despite the commitment in April 2009 by the G-20 nations not to "repeat the historic mistakes of the protectionism of previous eras", ad hoc trade policy measures have increasingly been put in place (Saez, 2009). Some governments thus appear to have reacted to the crisis by imposing new trade-restricting and distorting measures; even with signs that the worst of the crisis may be over, there appears no indication yet that governments are unwinding or removing trade restrictive measures imposed early in the crisis (World Trade Organization, 2009a and 2009b).

[223] Albeit many of the stimulus packages currently being implemented do include "buy local" clauses.

Substantial room remains for increases in trade measures and barriers that are consistent with countries' WTO obligations (Ahearn, 2009; and Bown, 2009). There is some evidence of rising WTO-legal protection (Matoo and Subramanian, 2009) with WTO noting that there had been "a marked increase in protectionist pressures globally since September 2008, driven by demands to protect domestic jobs and businesses" (World Trade Organization, 2009b). One possible WTO-compliant measure is to increase tariffs towards bound levels. In some cases these are substantially above the current applied tariffs, therefore countries may have flexibility to substantially increase their applied tariffs while still meeting their WTO obligations. These binding overhangs tend to be particularly high for developing countries, which may view trade policy as one of the few policy instruments available to help shield domestic markets and relieve some of the pain of the global crisis (Hufbauer and Stephenson, 2009). If this flexibility were fully exploited by all countries, Bouet and Laborde (2009) estimated that average levels of protection would increase by more than 90 per cent from baseline levels. They estimated the average increase in protection for high-income countries would be 48 per cent, while for middle-income countries and LDCs it would be 132 per cent and 270 per cent, respectively. Furthermore, if countries do not maintain their WTO obligations, the consequences could include major trade conflicts and damage to the world trading system (Ahearn, 2009).

B. The Model

The GDyn model used by the authors incorporates a new treatment of investment that relies on: (a) the gradual elimination of errors in expectations; (b) the gradual equalization of rates of return to investment; and (c) the gradual movement of economies towards steady state growth (Ianchovichina and McDougall, 2000).

The GDyn model was also been adapted to include endogenously determined employment of skilled and unskilled labour, together with capital. This is achieved through a complementarity (Elbehri and Pearson, 2005) which sets employment equal to the natural rate of employment, unless real wages must fall by more than a threshold rate to achieve this.[224] If real wages are required to fall by more than this, the change in real wages is fixed at this threshold rate and employment allowed to adjust endogenously. In the next period, the employment rate will attempt to move back to the natural rate again, but this will only be achieved if doing so requires less than the threshold percentage change in the real wage. If a larger decline is required, the change in the real wage will be fixed and the employment rate will again be determined endogenously. Provided the economy does not continue to be hit by negative shocks, employment is expected to move back gradually to full employment.

In combination with the GDyn model, the authors have used version 7 of the GTAP database, which has a base year of 2004 (Narayanan and Walmsley, 2008). This Data Base is augmented with supplementary data required for the GDyn model (McDougall and others, forthcoming). The 113 countries/regions and 57 sectors in the full GTAP database are aggregated into 29 regions and 27 sectors, focusing in particular on ESCAP countries. This is a quite challenging level of disaggregation to work with in this type of dynamic global study; however, it is necessary to model the regions and sectors of key interest appropriately. For clarity of exposition and to highlight key insights, the results are generally presented in a more aggregated form (see annex tables 1 and 2).

[224] The threshold rate is greater than zero because there is some evidence that real wages have declined in response to the current crisis. The threshold rate depends on the extent to which unemployment is higher than the natural rate of unemployment, where the relation is non-linear. It is assumed that as unemployment rises, the extent to which workers will accept declines in their wages increases. Note that this threshold rate can be altered, depending on the extent to which real wages are considered flexible.

1. Model baseline

Before examining the impacts of the global financial crisis, it is first necessary to develop a baseline for the model that represents how the global economy might have looked in the absence of the crisis. The development of a baseline is an important component of the experimental design when using a dynamic model, and the choice of baseline can affect the results of the scenario under consideration (Adams and Parmenter, 2000). However, building a baseline that adequately reflects expected changes in the world economy is a difficult task.

Given the difficulties in creating a baseline for the GDyn model, previous baselines have focused on obtaining projections for a few key macroeconomic variables, such as real GDP, population, and skilled and unskilled labour, together with the implementation of key policies that have already been agreed upon and are expected to affect the regions/sectors being considered (Walmsley, 2006). An alternative approach, developed by Dixon and Rimmer (2002) for single country model baselines, uses a series of simulations (historical, decomposition and forecasting) to develop a baseline scenario. The authors used a combination of these approaches, focusing on the path of the macro variables. Previous work indicated that the way errors in expectation and productivity changes are modelled tends to have significant impacts on the baseline (Walmsley and Strutt, 2009). Therefore, particular focus is placed on improving the specification of these aspects. The key aspects of the baseline are summarised below.[225]

(a) Data sources

Historical data were collected primarily from the World Development Indicators for available countries (World Bank, 2009c). Some additional data for Asian economies were also collected.[226] Historical data were generally found to be particularly good prior to 2006. If data were not available for a country, it was assumed to grow at the same rate as other regions with which it was aggregated.[227] The available historical data were used to find average annual growth rates and to construct an historical baseline. We then include The following variables were then included in the baseline – real GDP, investment, consumption, government spending, population, and skilled and unskilled labour.[228]

The assumptions made on sectoral productivity growth broadly follow the approach of Hertel and others (2006) and Golub and others (2007), which based non-agricultural productivity growth on economy-wide labour productivity growth rates, adjusted for productivity differences across sectors. In addition, the authors updated the labour productivity differentials,[229] employed greater sectoral differentiation and applied this approach to agricultural sectors.

(b) Calibration of the baseline

As outlined by Walmsley (2006), historical investment can be accommodated in one of two ways: (a) by introducing an additional risk premium to explain the difference between actual and model determined investment; or (b) by introducing errors in expectations. The two alternatives can result in considerable differences in the long-term behaviour of the model, once investment is endogenised. In the first case, any large risk premiums created as a result of tracking investment are assumed to be

[225] Further details will be available in a forthcoming paper.
[226] Assistance in collating this additional data was provided by Ginalyn Komoto and Susan Stone of the Asian Development Bank Institute.
[227] The exception to this was the Democratic People's Republic of Korea. It is assumed to have zero growth; otherwise aggregation with the high-growth economy of Macau, China (and Mongolia) resulted in unrealistic growth rates, which had significant and implausible effects on the baseline in later years.
[228] Employment of land and labour does not have a consistent trend, but averages zero over time. While foreign income payments have tended to increase over time, continuation of this trend cannot continue indefinitely.
[229] Using estimates from 1995 to 2003, contrasting with previous estimates based on 1970-1990 data.

permanent and therefore remain; hence, large changes in investment do not occur. In the second case, large differences in historical and model-determined investment can lead to large errors in expectations, which, once investment is endogenised, can lead to large changes in investment. Note that while the choice between these two alternatives outlined above can be important, in the present study there is little difference between the two methods, since the errors in expectations are never completely eliminated, and therefore could also be thought of as risk premiums.

The authors simulated a business-as-usual scenario from 2004 to 2007 to calibrate the changes in errors in expectations required to achieve actual investment over this period, and real GDP data were used to calibrate technological change in the baseline.[230] The errors in expectations were generally found to be consistent and positive over the period covered. Relatively high errors in expectations tended to be found in the developed (and some developing) economies, suggesting that investment tended to be higher than theory would predict, given the current rates of return. The resulting errors in expectation for the United States, Japan and the European Union were also consistent with the hypothesis that actual investment had been higher than current rates of return would predict, due to large errors in expectations (or low risk premiums). Those calibrated errors in expectations were included, together with some average growth rates in the 2004-2020 baseline.

2. Scenarios modelled

As discussed above, the full extent of the current global economic crisis is difficult to predict accurately. While the GDynm model improved the ability of the authors to track foreign capital flows, the model does not profess to be useful in predicting the extent of the financial crisis. Therefore, aim of the current study was to mimic the behaviour of the crisis in order to assess the likely impact on production and trade. Three scenarios were modelled to capture different assumptions on the level of severity of the global financial crisis:

(1) Moderate financial crisis – a moderate financial crisis with investment recovering to pre-crisis levels in 2012;

(2) Severe financial crisis – a more severe crisis where investment recovers gradually after 2010, returning to pre-crisis levels in 2015;

(3) Financial crisis with increased protection – a moderate financial crisis, with protection increases included in 2010.

Scenario (1) models the impact of the financial crisis through four mechanisms. First, it is argued that the financial crisis was caused by investors re-adjusting their expectations of United States and the European Union returns on investment relative to other countries, in the light of news about fundamental problems with the United States' banking system that also affected the viability of the European Union banking system. This was implemented by calibrating the changes in errors in expectations required to track changes in (projected) investment in each region between 2007 and 2011,[231] as estimated by the World Bank (2009b). It was found that expectations of rates of return were adjusted downwards across the world as investors re-evaluated their expectations about the profitability of all their investments as a result of the financial crisis. The global decline in expectations, however, hides the fact that the re-adjustment has not affected all economies equally. China, for example, moved from being in the bottom position in 2007 to the highest in 2009, in terms of expectations, while the relative positions of the United States and the European Union have moved in the opposite direction.

[230] This calibration baseline is based on, and utilizes some of findings from the work undertaken by Walmsley and Strutt (2009), using the GTAP 6 database.

[231] In previous work, errors in expectations were reduced only for the United States and the European Union, and investment was allowed to relocate to other regions (Strutt and Walmsley, 2009). The current simulation attempts to capture the actual and projected changes in investment across the world, which has a significant impact on results.

This pattern reflects the fact that investment in China has been less affected by the crisis than in the United States and European Union. In 2010 and 2011, World Bank investment forecasts imply that expectations will rise again, and the United States and European Union return to their relative pre-crisis positions with higher expectations than India and China. Therefore in this scenario, it was assumed that after 2011 the crisis would essentially be over and the relative attractiveness of investment would return to pre-crisis levels.[232]

Second, in addition to the changes in expectations about future returns to capital/investment, it is argued that the crisis caused an immediate but temporary decrease in efficiency and return to capital in all countries. Between 2007 and 2011 this decrease in efficiency was obtained through calibration; it is the decrease required for real GDP to decline by the amount forecasted by the World Bank (Table 1) in that year. With the exception of the United States, the baseline changes in technology in 2007 were similar to previous years and these, together with the changes in investment and employment, explained most of the change in real GDP in that year. Hence, no decline in capital efficiency was experienced outside of the United States in 2007. After 2007, the contagion affects of the crisis could be felt on capital efficiency across the world. After 2011, the decrease in efficiency of capital was assumed to end, returning to baseline levels by 2012.

Third, unemployment of skilled and unskilled labour, together with capital, is modelled according to the mechanisms outlined in section A.

Table 2).[233] We assume that the fiscal stimulus diverts savings from investment towards funding of fiscal deficits.[234] The fiscal stimulus and decline in savings are incorporated over the period 2007 to 2011. After 2011 no further changes are made, so that the share of government spending and savings are assumed to remain fixed.[235]

Scenario (2) models the impact of a severe financial crisis that continues to have a negative impact on the world until 2015. This scenario is similar to scenario (1), with the key difference being the assumption that the world economy takes longer to recover. As in scenario (1), changes in errors in expectations in the United States, Europe and the rest of the world were found in the calibration simulation between 2007 and 2010.[236] After 2010, errors slowly adjusted so that investment growth rates returned to baseline levels by 2015 (not 2012, as in the first scenario). Moreover, the temporary

[232] Note that while this assumption is in line with World Bank forecasts, it could also be argued that changes in relative errors in expectations may continue. That is, United States errors (and investment growth) might be permanently lower than the baseline. This reflects the fact that economists have, for some time, argued that the rate of growth of the United States' trade deficit is unsustainable and that adjustments would eventually be required to bring it back into a long-term sustainable equilibrium. Under this assumption, there is a readjustment of investment across regions and, as a result, some countries (e.g., China) experience increased investment that leads to increased capital accumulation and growth in the long term, at the expense of the United States' economy. Strutt and Wahmsley (2009) explored this possibility and future work will investigate this further.

[233] For further detailed country information on stimulus packages for WTO member countries, see WTO 2009a and 2009b.

[234] Ordinarily, the GDyn model would divert income from both savings and private consumption towards government spending. Here, the diversion is allowed to be greater on savings for two reasons: first, government must pay for these deficits through increasing debt and so reduce savings available for private investment and, second, it allows the capture of the global decline in savings available for investment.

[235] Note that the alternative assumption, that governments would be able to rein in their fiscal stimulus packages and reduce spending, is also worth exploring – although that has not been done here. It is expected that a decrease in government spending would increase savings, which would have positive effects on private investment.

[236] Note that the 2011 World Bank forecasts have not been used as these are consistent with the first scenario of complete recovery in investment by 2012.

decrease in efficiency continues to 2015, although the decline is gradually eliminated so that by 2015 the technological change will have returned to baseline levels.

Finally, scenario (3) reflects concern about the potential for increased use of protection in response to the financial crisis. This scenario follows scenario (1), with the addition of increased rates of protection as a policy response to the crisis. As discussed in section A, while it is difficult to assess the full extent, there is evidence of some increase in protection levels. While there may be significant differences by industry and region, import restrictions also tend to lead to a domino effect (Saez, 2009). Therefore, some researchers have explored the impact of increases in tariffs to their full bound rate by all countries (e.g., Bouet and Laborde, 2009; Jongwanich and others, 2009; and Willenbockel, 2009); however, the authors view this as unlikely, given the current evidence of much more moderate increases in tariffs (World Trade Organization, 2009a). Therefore, in scenario (3) a relatively simple assumption has been made that tariffs have been raised from the applied towards the bound rates by 10 per cent of the difference between the two.[237] Tariff increases were calculated at the disaggregated HS6 level, then aggregated to match the regions and commodities modelled in the current study, using the TASTE program (Horridge and Laborde, 2008).

3. Results

Results for a wide range of effects, including potential trade, investment and sectoral impacts of the global financial crisis (and potential responses) are available for all countries and regions in the aggregation. However, given the large number of sectors and regions modelled, most results are presented in summary form here. Focus is placed particularly on scenario (1), before exploring some implications of a more extended crisis or tariff increases.

(a) Moderate financial crisis

Table 3 presents the macro-economic results under scenario (1). All results shown in the table are cumulative percentage differences from the baseline in 2020.[238] Due to space constraints it is not possible to show every result over time, although there are sometimes considerable differences between the short-term (2010) and long-term (2020) results. For example, real GDP results are shown for 2010 and 2020.

[237] The results may overestimate some of the impacts since regional agreements may limit the scope for increasing tariffs in some cases.

[238] To interpret the results, take the example of Chinese real GDP of 11 per cent; this means that in 2020 China's real GDP would be 11 per cent higher than what it would have been had the crisis not occurred.

Table 3. Cumulative difference in selected macroeconomic variables due to a moderate financial crisis relative to 2020 baseline, selected countries and regions

(Unit: Per cent)

Country/region/area	Real GDP in 2010	Real GDP in 2020	Investment	Real exports	Real imports
Australia	-5.99	-2.22	-0.93	3.97	-8.56
New Zealand	-7.52	-6.48	-13.49	-7.94	-9.59
China	-8.46	-6.69	27.61	-20.14	-10.08
Hong Kong, China	-21.14	-11.28	17.61	-18.71	-5.66
Taiwan Province of China	-17.32	-14.18	-13.06	-25.80	-15.69
Japan	-10.43	-10.50	-32.48	-20.63	-13.67
Republic of Korea	-13.62	-9.69	7.09	-24.86	-10.96
Indonesia	-3.73	-4.35	-10.87	2.47	-11.27
Malaysia	-15.05	-7.97	6.27	-11.19	-8.14
Philippines	-12.33	-12.96	-13.40	-22.29	-15.15
Singapore	-20.46	-4.40	117.10	-15.23	-4.22
Thailand	-16.95	-19.70	-18.39	-25.81	-14.48
VietNam	-8.78	-3.68	13.70	1.19	-3.36
Rest of South-East Asia	-8.19	-9.75	-12.74	-9.30	-19.71
Bangladesh	-4.39	-5.07	-10.08	-13.21	-9.36
India	-9.60	-7.44	16.29	-26.34	-1.43
Pakistan	-10.03	-6.46	25.41	-17.41	-3.23
Rest South Asia	-9.65	-5.90	17.42	-18.49	-3.16
United States	-9.10	-9.95	-38.41	-8.47	-18.31
EU 27	-9.97	-12.11	-29.70	-16.21	-15.84
Russian Federation	-14.58	-7.83	46.79	-6.73	-8.79
Former Union of Soviet Socialist Republics	-16.07	-10.54	37.26	-7.75	-1.98

A key impact expected from the crisis is lower real GDP, with the most significant losses in real GDP occurring between 2007 and 2011. During this period, all economies experience a downturn relative to the baseline as capital efficiency, trade and employment fall. The subsequent rate of recovery

is related to the gains in investment, with investment moving towards those countries with the highest relative rates of return. Table 3 shows that many countries recover some of their real output losses over time; for example, China and India are able to partially recover the reductions experienced in 2010 GDP, with the cumulative impact on real GDP approximately 2 per cent less in 2020 than in 2010. However, for other countries, including the United States, Japan and particularly the EU27, the reduction in GDP due to the financial crisis is even greater in 2020 than in 2010, reflecting ongoing reallocation of investment away from those regions.

The changes in investment summarized in table 3 indicate significant differences by country, reflecting the fact that the financial crisis has resulted in a readjustment of investment globally. This relocation of investment is also reflected in the adjustments of the trade balances. For example, China experiences a 28 per cent increase in investment and a decrease in its trade surplus, relative to the 2020 baseline. This suggests that, in the longer term, the financial crisis leads to an increase in the relative attractiveness of producing investment goods in China. This, in turn, has implications for sectoral output changes in China and other countries.

In terms of production, table 4 indicates that those economies experiencing large increases (decreases) in investment also experience large increases (decreases) in construction. For example, the increase in investment in China drives a 25 per cent increase in construction relative to the 2020 baseline. On the other hand, countries such as Japan and the United States experience a reduction in investment and the construction industry consequently experiences a substantial decline in output relative to the baseline.

Given the decline in global investment due to the crisis, it is no surprise to find the world construction industry is particularly hard-hit in terms of reduced output. Relatively significant reductions in global output of manufactured products are found, particularly light industry. Delving further into the broad manufactured goods aggregates shown in table 4 shows that the motor vehicle, metal products, electronics and other machinery sectors all tend to be hardest hit, declining by 15 per cent or more relative to the 2020 baseline.

Crops (particularly rice) as well as extraction, petroleum and coal products, and health and education are the least adversely affected sectors globally. In the case of agricultural products, this is primarily because they tend not to be as capital-intensive as other sectors. Instead, the fall in incomes and demand for agricultural goods causes a decline in the return to land,[239] lowering prices and limiting the losses in global output due to the financial crisis. The story is similar for the forestry and extraction sectors, where falling returns to land and natural resources result in lower prices and increase demand. For petroleum and coal products, extraction is an important input, and with the fall in the price of extractions and natural resources, the price of petroleum products can also fall.[240] Health and education clearly benefit from the global fiscal response to the crisis.

The United States and Europe experience a considerable fall in the production of almost all goods. There is a tendency for production of light manufacturing to strengthen in relative terms over time in the United States and Europe (particularly products like textiles and apparel). Countries such as

[239] Note that land and natural resources are the only factors that are assumed to be fully employed. Hence, with reduced demand returns fall, which pushes down the prices of commodities that depend on them (agriculture, forestry and extraction). Labour and capital, however, will become unemployed if the wage and/or rental price of capital fall too far.

[240] The story is a little more complicated here since there are two sources of demand for petroleum products – private households and transportation. With a decline in global trade, global demand for transportation services to move exports from one country to another experiences a considerable decline. The price of transportation services falls further, but since demand for global transportation is a "derived" demand (i.e., it depends on demand for exports in general) it remains low. This allows private consumers to take advantage of the low prices of petroleum and their demand increases.

China, on the other hand, are increasingly pushed out of light manufacturing towards products including agriculture and food processing (where declines are relatively smaller). The reason for this general shift is that light manufacturing tend to be relatively less capital-intensive in the United States and Europe than in the rest of the world,[241] particularly Asia, while agriculture in the United States is much more capital-intensive than in many other countries.[242] Countries tend to move out of sectors that are relatively capital-intensive and towards less capital-intensive goods as a result of the crisis.

Most countries reduce exports and imports relative to the 2020 baseline; table 3 indicates the overall changes in real exports and imports by country/region. Declines in exports from the Asian region are often particularly strong; for example, more than 20 per cent declines from 2020 baseline levels are seen in countries such as China, Japan and India. Declines in imports also tend to be relatively large for many Asian countries as well as the United States and EU27. The overall impact of the crisis on exports and imports is driven by investment and the realignment of trade balances resulting from the crisis. In general, Asia experiences an increase in investment, declining trade balances and decreased exports, while the United States and Europe experience declining investment, increasing trade balances and decreased imports.

Turning to the declines in exports at a more detailed sectoral level, table 5 shows that relatively strong export declines tend to be associated with quite strong output declines (table 4), emphasizing the importance of trade to the sectoral output story. For example, world exports of crops, together with forestry and extraction, remain relatively robust with output relatively unharmed. However, strong adverse impacts on exports from sectors such as construction and manufacturing are reflected in significantly reduced global output for those sectors.

While global trade falls across all sectors, there are some cases of increased trade within this overall picture. These are primarily driven by: (a) China's increased demand for imports of other food, forestry, apparel, motor vehicles, business services, and health and education; and (b) India's demand for food, forestry, motor vehicles, machinery, electronics, metal products, other manufacturing, construction, business services, and health and education. The increases in demand for imports stem from: (a) a decline in the import price due to the general decline in prices of land and natural resources elsewhere (other food and forestry); (b) the increase in construction and assembly of investment goods (apparel,[243] electronics, motor vehicles, metal products, other manufacturing, machinery, and business services);[244] or (c) fiscal stimulus packages (health and education and business services).

Table 4. Cumulative difference in 2020 of output due to moderate financial crisis, aggregated sectors and regions

(Unit: Per cent)

	Australasia	China	Japan	High-income Asia	ASEAN	India	Rest of South Asia	United States	EU27	Russian Federation and Central Asia	Rest of world	World total
Crops	-3.7	-4.2	-6.3	-4.9	-5.9	-6.3	-4.0	-5.3	-8.5	-7.0	-6.9	**-6.8**

[241] A total of 3.6 per cent of the costs of producing wearing apparel is capital in the United States, according to the GTAP database, while in Asia the capital is anywhere between 4 per cent and 20 per cent of costs. The story is similar for textiles, leather products and electronics.

[242] According to the GTAP database, 18 per cent of the costs of producing wheat are capital costs in the United States, while in the rest of the world the capital costs range between less than 2 per cent to a maximum of 10 per cent.

[243] Increased demand for imported apparel also comes from increased private household demand in China as income in China rises.

[244] The results for India reflect the high sales of these commodities – motor vehicles, electronics, metal products, machinery and other manufacturing – to the capital goods sector, according to the underlying I-O table.

Animals	-4.4	-4.7	-14.9	-7.5	-8.3	-6.7	-2.7	-8.4	-12.4	-10.1	-8.5	**-8.9**
Food processing	-1.3	-8.1	-12.0	-7.4	-10.6	-11.6	-6.4	-9.4	-11.9	-13.5	-9.5	**-10.5**
Forestry and extraction	-4.0	-3.3	-12.2	-7.0	-8.8	-6.1	-4.6	-6.5	-7.9	-4.7	-6.6	**-6.6**
Light manufacturing	2.0	-13.6	-19.9	-23.7	-11.1	-9.1	-12.0	-15.5	-15.9	-3.8	-2.1	**-14.1**
Heavy manufacturing	6.9	-4.8	-19.8	-13.0	-10.4	-4.3	-0.2	-16.1	-17.4	4.4	-4.5	**-11.4**
Construction	-2.7	25.0	-28.9	4.0	1.7	12.8	4.0	-30.0	-26.0	20.6	-9.9	**-16.0**
Services	-3.9	-8.6	-8.0	-10.5	-9.3	-10.5	-8.2	-7.1	-9.5	-13.4	-8.6	**-8.5**

Table 5. Cumulative difference in 2020 of exports due to moderate financial crisis, aggregated sectors and regions
(Unit: Per cent)

	Australasia	China	Japan	High-income Asia	ASEAN	India	Rest of South Asia	United States	EU27	Russian Federation and Central Asia	Rest of world	World total
Crops	-7.7	-10.2	-27.2	-20.4	-5.8	-5.0	7.7	-5.2	-13.1	-8.7	-7.1	**-8.2**
Animals	-19.0	-9.3	-27.9	-24.1	-3.5	-0.8	-1.1	-13.1	-16.4	-16.4	-7.1	**-13.4**
Food processing	8.0	-21.4	-13.9	-16.5	-15.2	-50.1	-21.5	-11.0	-13.0	-20.8	0.6	**-11.9**
Forestry and extraction	-13.5	-32.6	-3.4	-28.2	-14.5	-16.5	-23.4	-2.6	-1.3	-3.8	-10.6	**-9.8**
Light manufacturing	6.7	-19.8	-20.1	-27.7	-13.3	-27.2	-16.0	-6.8	-16.3	-5.2	4.6	**-15.8**
Heavy manufacturing	15.4	-14.2	-23.0	-16.9	-15.1	-15.7	-5.7	-13.8	-18.2	8.5	-0.8	**-13.6**
Construction	-5.0	-22.1	-12.6	-22.7	-19.1	-36.7	-33.9	-5.3	-17.8	-42.4	5.5	**-16.5**
Services	2.6	-36.2	-15.1	-22.1	-15.7	-50.2	-24.8	-2.8	-14.3	-25.1	8.3	**-12.8**

(b) Severe financial crisis and moderate crisis with increased protection

In scenario (2), a more severe financial crisis was modelled with longer-lasting impacts than that of scenario (1), while in scenario (3), a moderate crisis with increased protection in 2010 was modelled. Scenarios (2) and (3) may be expected to accentuate aspects of the damage caused by the global financial crisis and it is to these scenarios that we now turn.

(i) Severe financial crisis

When comparing the results of selected indicators for the severe financial crisis with the more moderate scenario (table 6), not surprisingly the impacts are found to be more severe. While 2010 real GDP variations from the baseline will be identical to the moderate crisis scenario, by 2020 real GDP has declined further for all economies as indicated in the first column of table 6. This is primarily due to the improvement in investment being delayed, as economies return to their pre-crisis levels, which, in turn, delays capital accumulation. The further decline in global GDP and incomes also causes global

savings and investment to fall (-3.2 per cent relative to the moderate financial crisis scenario). The impact on investment differs across countries, implying that there is a further re-reallocation of investment, resulting from the more gradual adjustment in expectations.

An examination of the aggregate trade results indicates that exports across every sector decline more significantly in the severe crisis scenario, with the total world export volume declining by 3 per cent more than the moderate crisis. However, at the country level, there is substantial variation, for example, with Japanese and Russian exports rising. The differences in exports by country result from differences in relative investment flows and capital account changes that lead to real exchange rate re-adjustments.

Table 6. Cumulative difference in selected macroeconomic variable under severe financial crisis relative to moderate crisis, selected countries and regions, 2020
(Unit: Per cent deviation)

Country/region	Real GDP, 2020	Investment	Real exports	Real imports
Australia	-2.08	-0.52	-2.72	-1.38
New Zealand	-1.51	0.31	-2.12	-1.15
China	-1.58	3.88	-3.68	-1.91
Hong Kong, China	-9.29	-16.38	-8.35	-7.65
Taiwan Province of China	-2.62	-1.10	-1.33	-1.97
Japan	-1.42	-2.25	7.13	-3.86
Republic of Korea	-4.09	-5.62	-4.17	-3.77
Indonesia	-1.29	2.21	-3.15	-1.28
Malaysia	-5.11	-3.35	-5.40	-4.95
Philippines	-7.02	-9.81	-10.11	-7.44
Singapore	-7.13	-16.96	-6.16	-6.97
Thailand	-4.65	-4.30	-5.18	-3.62
Viet Nam	-3.54	-0.03	-4.19	-2.92
Rest of South-East Asia	-2.01	1.20	-1.90	-2.68
Bangladesh	-1.23	2.38	-2.93	-1.67
India	-0.79	4.26	-4.88	0.34
Pakistan	-5.40	-2.81	-7.79	-5.07
Rest of South Asia	-3.31	-0.92	-5.73	-2.94
United States	-1.76	0.00	-1.71	-1.81
EU27	-2.75	-2.47	-3.70	-2.73
Russian Federation	-1.40	5.02	2.17	-5.06
Former Union of Soviet Socialist Republics	-4.40	-1.25	-3.63	-2.89

These changes in aggregate exports are also reflected in output changes by sector and region. Table 8 indicates that while a similar relative sector pattern exists between scenarios (1) and (2), almost all sectors experience a significantly greater decline in output under the more severe crisis scenario. The

exceptions are Japan and the Russian Federation, which experience a slight increase in exports in the manufactured sectors, and China and the Russian Federation, which experience a similar increase in the construction sector. This change is in response to the relative increase in investment.

(ii) Moderate crisis with increased protection

Turning to selected macroeconomic indicators for scenario (3) (table 7), it is found that when tariffs are increased 10 per cent towards their bound levels, this tends to have a substantial and further negative impact relative to scenario (1). Almost all economies experience lower real GDP when tariffs are increased in 2010 (first column of table 7). In the longer term, however, it appears that some economies (i.e., Australia, China, Taiwan Province of China, Japan, the United States and the European Union) experience some small benefits in terms of real GDP relative to the moderate crisis. It is important to note, however, that this does not suggest that countries raise their own protection as a means of reducing the impact of the crisis. First, the gains are relatively insignificant. Second, the countries that experience minor gains are those that increased their tariffs by relatively less than the other economies, hence their gains are the result of declines in their protection relative to other countries. These gains would be even larger if these countries do not raise protection in response to increased protectionism by their trading partners. Global exports now fall by a further 1.63 per cent. Furthermore, global exports and output fall across most commodities, relative to scenario (1). Therefore increasing protection can be seen to further harm the global economy and accentuate the negative impact of the crisis.

Under scenario (3), sectoral output falls for most countries and sectors, relative to scenario (1) (table 9). The exceptions are Japan and China, where output across most sectors tends to be slightly less harmed when tariffs are increased. For Australasia, the United States and the European Union, output of manufactured goods and construction tends to decline relatively less when tariffs are increased. In all these cases, tariffs increases are relatively lower than in other countries, hence reinforcing the earlier claim that a country can limit the losses from the crisis by keeping tariffs low and not responding to the protectionist tendencies of others.

Table 7. Cumulative difference in selected macroeconomic variable under scenario (3), moderate financial crisis with increased tariffs, relative to moderate crisis, selected countries and regions, 2020

(Unit: Per cent deviation)

	Real GDP, 2010	Real GDP, 2020		Real exports	Real imports
Australia	-1.44	0.08	0.27		-0.53
New Zealand	-2.59	-0.09	-0.29	-1.06	-1.05
China	-0.01	0.19	0.62	0.11	-0.10
Hong Kong, China	-6.51	-0.81	-2.90	-2.30	-2.63
Taiwan Province of China	0.00	0.21	0.93	0.43	0.24
Japan	-3.37	0.11	0.69	0.28	-0.30
Republic of Korea	-4.34	-0.44	-1.18	-1.18	-1.39
Indonesia	-2.21	-1.12	-2.55	-5.97	-5.51
Malaysia	-4.43	-0.64	-2.35	-1.61	-2.09
Philippines	-6.44	-1.72	-4.44	-4.82	-4.13
Singapore	-6.61	-2.10	-7.76	-4.78	-4.54
Thailand	-8.02	-2.11	-4.53	-5.99	-4.49
VietNam	-2.41	-0.58	-1.41	-1.07	-1.48
Rest of South-East Asia	-1.08	-1.19	-3.04	-4.22	-4.64
Bangladesh	-2.61	-1.48	-4.97	-9.85	-11.18
India	-0.28	-0.61	-1.72	-3.28	-3.57
Pakistan	-2.44	-1.59	-4.94	-4.89	-4.92
Rest of South Asia	-4.43	-2.36	-6.47	-5.17	-5.87
United States	-0.87	0.13	0.75	-0.15	-0.30
EU27	-3.23	0.20	0.90	-0.86	-0.64
Russian Federation	-2.20	-1.14	-4.23	-3.92	-5.96
Former Union of Socialist Soviet Republics	-6.07	-2.14	-5.68	-7.90	-6.67

4 Comparison of trade results

The changes in world sectoral exports under all three scenarios are compared, relative to the 2020 baseline. Exports decline across the board in every scenario, with a longer crisis and increasing protection in scenarios (2) and (3), harming exports further. However, while in the case of the construction and services sectors, exports decline more significantly under scenario (2), this is not the case in scenario (3). This is because a longer crisis will lead to much more significant damage to these sectors, especially the construction sector where investment levels have a major impact. However, there are no increases in tariffs for these sectors when tariffs increase toward their bound levels. Therefore, the impacts on these sectors in scenario (3) are similar to the impacts in scenario (1), with only indirect impacts via tariff increases in other sectors.

However, in the case of crops and food processing, the figure shows that increasing tariffs a little towards their bound levels has an even more adverse impact on exports than does an extended crisis. These are sectors with a relatively large scope for increasing tariffs within current bindings; therefore, exploiting this fact has a particularly adverse impact on these sectors. In addition, the financial crisis will have relatively less impact on the agricultural and food sectors than on sectors such as construction and manufacturing, as discussed above.

Change in real global exports by sector, relative to 2020 baseline

(Unit: Per cent change)

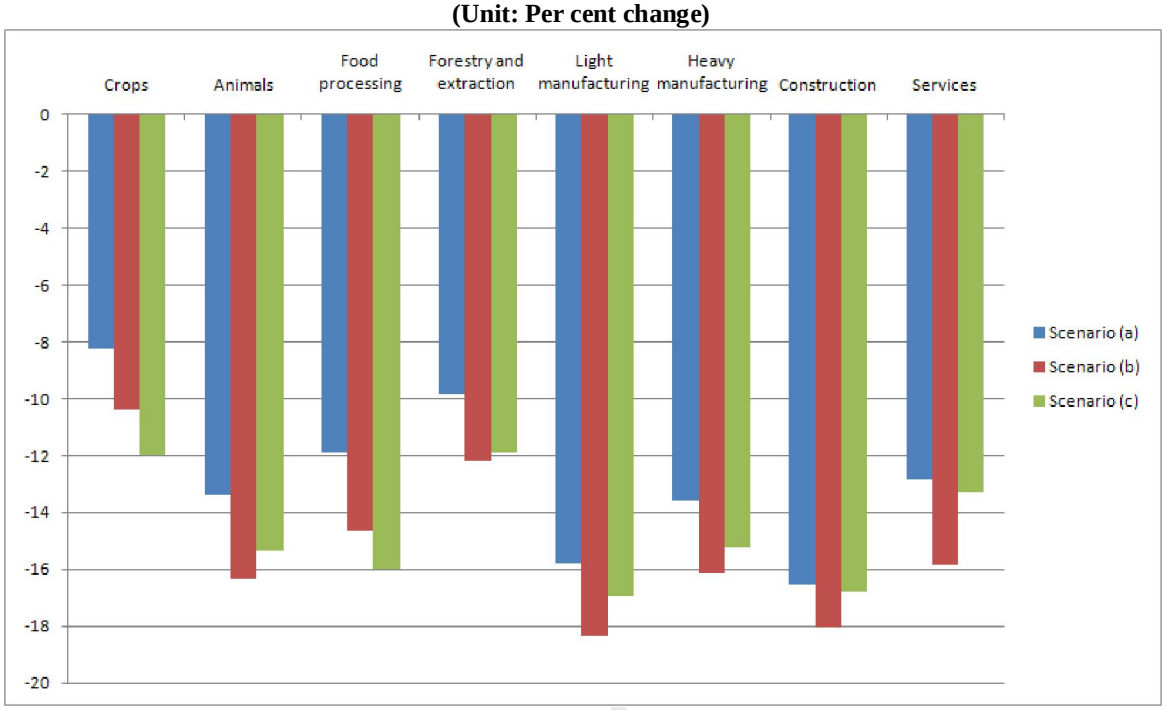


Table 8. Cumulative difference in 2020 of output due to severe financial crisis relative to moderate financial crisis, aggregated countries and regions

(Unit: Per cent)

	Australasia	China	Japan	High-income Asia	ASEAN	India	Rest of South Asia	United States	EU27	Russian Federation and Central Asia	Rest of world	World total
Crops	-1.3	-0.6	-0.4	-0.8	-1.5	-1.0	-1.4	-1.1	-1.7	-1.2	-2.7	**-1.6**
Animals	-1.4	-1.0	-1.2	-2.5	-2.4	-0.8	-2.2	-1.7	-2.6	-3.2	-3.0	**-2.2**
Food processing	-1.7	-1.6	-1.7	-3.1	-3.6	-1.3	-2.8	-1.9	-2.5	-2.9	-2.9	**-2.5**
Forestry and extraction	-1.0	-0.5	-0.8	-4.0	-3.0	-0.9	-1.0	-1.1	-1.6	-0.7	-2.6	**-2.1**
Light manufacturing	-2.2	-2.5	4.4	-3.9	-5.6	-1.0	-5.9	-0.9	-3.0	1.0	-2.8	**-2.4**
Heavy manufacturing	-2.4	-1.6	2.4	-3.5	-5.2	-0.5	-4.7	-1.5	-3.4	0.8	-3.2	**-2.3**
Construction	-0.5	3.6	-2.0	-6.1	-2.8	3.4	-0.5	-0.7	-2.6	1.7	-3.9	**-2.0**
Services	-2.2	-2.2	-1.8	-5.0	-4.3	-1.3	-4.5	-1.9	-2.9	-4.0	-3.8	**-2.8**

Table 9. Cumulative difference in 2020 of output due to moderate financial crisis with tariff increase relative to moderate financial crisis, aggregated countries and regions

(Unit: Per cent)

	Australasia	China	Japan	High-income Asia	ASEAN	India	Rest of South Asia	United States	EU27	Russian Federation and Central Asia	Rest of world	World total
Crops	-0.5	0.2	0.9	0.9	-0.6	-0.1	0.4	-0.2	0.0	-0.3	-0.2	**0.0**
Animals	-0.1	-0.1	0.1	-0.3	-0.3	0.0	-0.5	0.0	-0.4	-0.7	-0.1	**-0.2**
Food processing	-0.3	0.2	0.1	-0.4	-0.5	0.5	0.3	0.0	-0.4	-0.6	0.0	**-0.1**
Forestry and extraction	0.0	0.1	0.8	0.1	-0.2	0.1	-0.6	0.0	0.0	-0.3	-0.3	**-0.1**
Light manufacturing	0.4	0.3	0.7	0.3	-3.2	-0.9	-6.9	0.5	0.4	-0.7	-1.2	**-0.2**
Heavy manufacturing	0.3	0.5	0.4	-0.7	-2.9	-1.3	-2.7	0.4	0.3	-2.1	-1.2	**-0.2**
Construction	0.1	0.6	0.6	-1.0	-3.2	-1.5	-4.5	0.5	0.7	-3.9	-1.2	**-0.3**
Services	0.0	0.1	0.1	-0.3	-1.0	-0.4	-0.7	0.1	0.2	-1.3	-0.4	**-0.1**

C. Conclusion

The global financial crisis is having a profound impact on many economies; while encouraging signs in the global economy have recently been noted, the world economy remains fragile with much uncertainty remaining. In this chapter, historical data and forecasts have been used to help model the impacts of the crisis within a general equilibrium framework. Of course, the current study has limitations. Of particular note is that the dynamic CGE model used does not include debt or money obligations, and it therefore does not offer insights into the causes or the total macroeconomic impact of the crisis. Other sources were relied on for insights into those causes. The GDyn model used by the authors does, however, offer a way of modelling how the expected changes in real GDP and investment are likely to work their way through each economy and sector over time.

The findings suggest that the crisis is likely to have a significant effect on trade, due in part to the changes in capital flows resulting from the reallocation of savings across regions. In the short term, all countries lose as a result of the crisis. In the long term, economies such as the United States and the European Union experience a persistent decline in real GDP, while some other regions recoup some of the losses. Globally, the results suggest that trade falls by 13.7 per cent from the 2020 baseline and the composition of trade changes quite markedly as a result of the crisis, with shifts reflecting changes in demand for the manufacturing of investment goods, the increasing demands of China and India, and – at least in the short term – different capital intensities of production in different economies. A longer-lasting crisis, as modelled in scenario (2), further harms most economies. While the depth and duration of the crisis may determine which policy responses prevail, the degree to which various policy measures are adopted may, in turn, affect the extent of the economic downturn (Ahearn, 2009). Potential policy responses to the crisis may include increased protection, which are modelled in scenario (3); the results for this scenario suggest that increased protection is likely to have a significant and detrimental impact on the global recovery. Furthermore, the findings suggest that those countries refraining from raising protection so much are more likely to see the losses from the crisis reduced in the increased protection scenario.

References

Adams, P. and B. Parmenter (2000). *Economic Forecasting*. Allen and Unwin Academic, Sydney:

Ahearn, R. J. (2009). *The Global Economic Downturn and Protectionism*. Congressional Research Service, Washington, D.C.

Anderson, K. and A. Strutt (1999). "Impact of East Asia's growth interruption and policy responses: The case of Indonesia. *Asian Economic Journal,* vol. 13, No. 2; pp. 205-218.

Bouet, A. and D. Laborde (2009). "The potential cost of a failed Doha round", International Food Policy Research Institute Discussion Paper 00886. Washington, D.C.

Bown, C. P. (2009). "The global resort to antidumping, safeguards and other trade remedies amidst the economic crisis". Social Science Research Network, www.ssrn.com..

Dixon, P. and M. Rimmer (2002). "Dynamic general equilibrium modelling for forecasting and policy". Elsevier, Amsterdam. Available at www.elsevier.com

Eichengreen, B. J. and D. A. Irwin (2009). "The slide to protectionism in the great depression: Who succumbed and why?" National Bureau of Economic Research Working Paper No. w15142. Cambridge, MA 02138, United States.

Elbehri, A. and K. R. Pearson (2005). "Implementing bilateral tariff rate quotas in GTAP using GEMPACK", GTAP Tech Paper 18. Centre for Global Trade Analysis, Department of Agricultural Economics, Purdue University, West Lafayette, IN, United States.

Freedman, C., M. Kumhof, D. Laxton and J. Lee (2009). "The case for global fiscal stimulus", IMF Staff Position Note SPN/09/0. International Monetary Fund, Washington, D.C.

Golub, A., T.W. Hertel and B. Sohngen (2007). "Projecting land-use change in the dynamic GTAP framework", paper presented at the tenth Annual Conference on Global Economic Analysis, Purdue University, West Lafayette, IN, USA.

Hertel, T.W. (ed.). (1997). *Global Trade Analysis: Modeling and Applications*. Cambridge University Press, Cambridge and New York.

Hertel, T.W., C.E. Ludena and A. Golub (2006). "Economic growth, technical change and patterns of food and agricultural trade in Asia", Asian Development Bank ERD Working Paper Series No. 86. Manila.

Horridge, M. and D. Laborde (2008). "TASTE: A program to adapt detailed trade and tariff data to GTAP-related purposes", GTAP Technical Paper. Centre for Global Trade Analysis, Department of Agricultural Economics, Purdue University, West Lafayette, IN, United States.

Horton, M. and A. Ianova (2009). "The size of the fiscal expansion: An analysis for the largest countries". International Monetary Fund, Washington, D.C.

Hufbauer, G. and S. Stephenson (2009). "Trade policy in a time of crisis: Suggestions for developing countries", CEPR Policy Insight No. 33. Centre for Economic and Policy Research, Washington, D.C.

Ianchovichina, E. and R. McDougall (2000). "Theoretical structure of dynamic GTAP", GTAP Technical Paper No. 17, Centre for Global Trade Analysis, Department of Agricultural Economics, Purdue University, West Lafayette, IN, United States.

International Monetary Fund (2009a). *Global Economic Prospects and Policy Challenges*. Washington, D.C.

——— (2009b). *World Economic Outlook, October 2009: Sustaining the Recovery*. Washington, D.C.

Jongwanich, J., W. E. James, P. J. Minor and A. Greenbaum (2009). "Trade structure and the transmission of economic distress in the high-income OECD countries to developing Asia", Asian Development Bank Economics Working Paper Series No. 161. Manila.

Matoo, A. and A. Subramanian (2009). "A crisis round of trade negotiations". Accessed at www.voxeu.org.

McDougall, R., T. L. Wahmsley A. Golub, E. Ianchovichina and K. Itakura (forthcoming). "An overview of the dynamic GTAP Data Base: The data base construction and aggregation programs", in E. Ianchovichina and T. L. Wahmsley (eds.), ***Dynamic Modeling and Applications in Global Economic Analysis***. Cambridge University Press. Cambridge and New York.

McKibbin, W. J., Z. Wang and W. Coyle (2001). "The Asian financial crisis and global adjustments: Implications for US agriculture", ***The Japanese Economic Review,*** vol. 52, No. 4; pp. 471-490.

Narayanan, B. G. and T. L. Wahmsley (eds.) (2008). ***Global Trade, Assistance, and Production: The GTAP 7 Data Base***. Centre for Global Trade Analysis, Department of Agricultural Economics, Purdue University, West Lafayette, IN, United States.

Saez, S. (2009). "Managing trade policy during the economic crisis", World Bank PREM notes, July 2009, No. 140. World Bank, Washington, D.C.

Siriwardana, M. and A. Iddamalgoda (2003). "Effects of the Asian economic crisis on Singapore and its policy responses: A general equilibrium analysis", UNEAC Asia Papers, 6 2003. University of New England, Armidale, NSW 2351, Australia.

Strutt, A. (2009). "Some impacts of a global slowdown: A comparative static CGE analysis", paper prepared for the Economic and Social Commission for Asia and the Pacific. Bangkok.

Strutt, A. and T. L. Wahmsley (2009). "Trade and sectoral impacts of the financial crisis: A dynamic CGE analysis", paper presented at the ARTNeT Asia-Pacific Trade Economists' Conference on "Trade-Led Growth in Times of Crisis", 2-3 November 2006, Bangkok.

Wahmsley, T. L. (2006). "A baseline scenario for the dynamic GTAP model". Centre for Global Trade Analysis, Department of Agricultural Economics, Purdue University, West Lafayette, IN, United States.

Wahmsley, T. L. and A. Strutt (2009). "A baseline for the GDynm model", paper presented at the twelfth Annual Conference on Global Economic Analysis, 10-12 June, Santiago, Chile.

Willenbockel, D. (2009). "From overhang to hangover: Consequences of protectionist responses to the global crisis for low-income countries", MPRA Paper No. 16100. Munich University Library, University of Munich, Germany.

World Bank (2010). ***Global Economic Prospects 2010: Crisis, Finance and Growth***. Washington D.C.

——— (2009a). ***Global Development Finance: Charting a Global Recovery***. Washington D.C.: World Bank.

——— (2009b). "Global development finance: Charting a global recovery". Accessed at http://go.worldbank.org/T6U2E2CPA0, 11 November 2009.

——— (2009c). ***World Development Indicators***. Washington, D.C.

World Trade Organization (2009a). "Report to the TPRB from the Director-General on the Financial and Economic Crisis and Trade-related Developments", 15 July 2009. Geneva.

——— (2009b). "Report to the TPRB from the Director-General on the Financial and Economic Crisis and Trade-related Developments", 26 March 2009. Geneva.

Annex

Table A1. Regional aggregation

Aggregated region	Country/region modelled	Description
Australasia	Australia	Australia
	New Zealand	New Zealand
	Oceania	Rest of Oceania
China	China	China
Japan	Japan	Japan
High-income Asia	Hong Kong, China	Hong Kong, China
	Taiwan Province of China	Taiwan Province of China
	Republic of Korea	Republic of Korea
ASEAN	Indonesia	Indonesia
	Malaysia	Malaysia
	Philippines	Philippines
	Singapore	Singapore
	Thailand	Thailand
	Viet Nam	Viet Nam
	Rest of South-East Asia	Cambodia, Lao People's Democratic Republic, Myanmar, Brunei Darussalam, Timor-Leste
India	India	India
Rest of South Asia	Bangladesh	Bangladesh
	Pakistan	Pakistan
	Rest of South Asia	Sri Lanka, Afghanistan, Bhutan, Maldives, Nepal
United States	United States	United States of America
EU27	EU27	European Union 27 members
Russian Federation and former Union of Socialist Soviet Republics	Russian Federation Former USSR	Russian Federation Former Union of Socialist Soviet Republics
Rest of the world	Rest of North America	Rest of North America
	Latin America	Latin America
	Rest of Europe	Rest of Europe

Rest of East Asia	Democratic People's Republic of Korea, Mongolia and Macau, China
MENA	Middle East and North Africa
SSA	Sub-Saharan Africa

Table A2. Sectoral aggregation

Aggregated sector	Sector
Crops	Rice
	Wheat
	Grains and crops
Animals	Cattle and wool
	Other animals
Processed foods	Meat products
	Processed rice
	Other Foods
Forestry and extraction	Forestry
	Mining and extraction
Light manufacturing	Textiles
	Wearing apparel
	Leather products
	Wood and paper products
	Electronic equipment
	Other machinery
Heavy manufacturing	Petroleum, coal products
	Motor vehicles and parts
	Chemical, rubber, plastic products
	Metals
	Metal products
	Other manufacturing
Construction	Construction
Services	Utilities
	Transport and communication
	Business services
	Housing, education and health

Part Six: Conference reports

ARTNeT 5th Anniversary Conference

Trade-Led Growth in Times of Crisis

Summary of deliberations in plenary and parallel sessions

By ARTNeT secretariat

One hundred and fifty international trade researchers from the Asia-Pacific region and beyond participated in a Conference on *Trade-Led Growth in Times of Crisis* held on the occasion of the 5th Anniversary of the Asia-Pacific Research and Training Network on Trade (ARTNeT), on 2 and 3 November 2009 in Bangkok, Thailand. Conference participants discussed the origins of the global economic and crisis and its implications for the region's trade-led growth model. Key matters discussed at the Conference include:

The trade-led growth model was not fundamentally challenged

- **Trade-led growth model.** The export-led growth model that has been pursued by many countries in the Asia-Pacific region enjoyed continued support. While there were no calls for generalised disengagement from the global economy after the crisis, it was suggested that developing countries should rebalance the geographic and product structure of their trade in order to diversify their sources of growth.

- **Trade liberalization**. It was underlined that closing markets to international trade would be harmful; indeed, it was felt that further regional and global economic integration among the fast growing nations of the Asia-Pacific region would be beneficial. Participants applauded the fact that protectionism on the scale of the 1930s had largely been avoided during the recent severe economic crisis. They did, however, emphasize that the threat of more protectionist measures (especially those of the so-called non-tariff type) remains very real, unless a sustained global recovery settles in soon.

Global trade governance mechanisms need reinforcement

- **World Trade Organization (WTO)**. Participants concurred that the multilateral trading system remains of vital importance, especially considering the large number of pressing issues, including climate change and subsidization of exports/production, which can only be effectively addressed at the multilateral level. However, participants underlined that the WTO faces three enduring difficulties, all of which require greater leadership on the part of member governments: (1) the WTO is having difficulties managing diversity among its ever larger membership; (2) the WTO is struggling to manage the co-existence of regionalism (that is now entrenched) with the principles and operation of the multilateral trading system; and (3) the failure to conclude the Doha Development Agenda is a particular concern.

- **Future commitments**. The prospects of signing ambitious binding trade disciplines were considered to be bleak, due to weak or non-existent demand for trade reform in many countries and in key sectors, such as agriculture and services.

The way forward

- **Social protection.** Participants concurred that the global imbalances could in large part be explained by the high savings rates in many Asian countries, which in turn are due to insufficient social protection. It was felt that a priority for governments of the region should be to invest in social programmes and public goods which would improve standards of living as well as boost

domestic demand for consumer goods and services, thereby creating downward pressure on the surpluses.

- **Political leadership.** Political consensus must be fostered within the Asia-Pacific region so that the region can provide global leadership on trade matters. At the time of the Conference it was felt that the G20 countries, especially under the leadership of Canada and the Republic of Korea in 2010, might succeed in providing much-needed impetus to the negotiations of the Doha Development Agenda by leading the discussions in the stalled services negotiations (which are an important building block of any final accord). Alas this did not come to pass, even under the succeeding French G20 presidency in 2011.

Where possible given the nature and scope of research papers, deliberations in the parallel sessions resulted in concrete eight **policy recommendations**:

1. Rebalancing sources of growth and stimulating domestic demand to overcome the continuing crisis is recommended; however, countries with small markets and limited fiscal policy space cannot rely on this option and may require external assistance to move forward.
2. Evidence suggests that a higher than expected "sophistication degree" of the basket of exports of a country contributes to the stability and vitality of exports; on the other hand, "new" export flows contract further and faster than traditional exports with a drop in external demand.
3. Governments need to invest more in social development as the returns on these investments, even if considerable, tend not arise in the short run and thus the private sector is often reluctant to invest.
4. Governments have a key role to play in enacting sound regulatory frameworks, as well as social protection policies to minimize the impact of integration into the global economy. Overall, policy makers need to go beyond traditional trade policy to look at the extent to which governance and business institutions can affect international trade.
5. Services remain a strong source of growth for developing countries, which may explain the reluctance of some countries to enter into binding agreements at the multilateral level. However, some opening of markets in the area of services can increase the efficiency of the services sector and thus support enhanced growth.
6. The average gains from improved trade facilitation in the Asia-Pacific region far exceed those that might be achieved through the further lowering of tariffs. In some cases the hidden costs of the red tape associated with trade add as much as 15 percent of the value of goods being exported. Trade facilitation should thus be a priority for policymakers of the region.
7. Efficiency-seeking investments can be effective in stimulating intraregional trade, which is an important source of growth on the long run. Research suggests that a sound business environment and a stable political and economic environment matter more to fostering regional and global production networks than regional trade agreements.
8. Several countries in the region are already leading in the development of green technologies and energy-efficient products and production methods; where appropriate, countries should invest in these areas so that the region can emerge as a global leader of green technologies.

Trade-led growth is still a sound strategy

Report from the ARTNeT 5th Anniversary Conference

Trade-Led Growth in Times of Crisis

By Simon J. Evenett
Conference Rapporteur

Not surprisingly a diversity of views were expressed at this research conference, that took place on 2-3 November 2009 in Bangkok at the United Nations Conference Centre. The purpose of this report is to summarise a number of the leading positions advanced at this conference. Those positions addressed the implications of the global financial crisis for different aspects of trade and development thinking and policymaking.

Apart from concluding remarks, for the purpose of this report the arguments made at the conference are separated into two groups. The first set of arguments examined to what extent the crisis required a new understanding of trade flows and associated development processes, often with implications for the complementarities between trade reform and other policy initiatives. The second set of arguments explored the extent to which the crisis had altered - or revealed - the political economy of trade reform.

In addition to opening and closing sessions, the conference involved two high-level plenary sessions and several parallel sessions. As it was impossible for any one person to attend multiple parallel sessions simultaneously, this report will focus on deliberations at the two half day-long plenary sessions.

A. The crisis and our understanding of trade and development dynamics

As it happened much of the discussion in the plenary sessions on the implications of the recent global economic crisis for our understanding of the analytics of trade and development centred on three perspectives, each of which is discussed below.

One speaker noted that it was often claimed that exposure to international trade had made developing countries more vulnerable to shocks. This speaker did not deny that volatility in world markets and the like existed. Rather, it was pointed out that national economies contain sources of volatility too. On this view, openness to the world economy alters the mix of volatility faced by a country; this aspect of openness could, it was suggested, be thought of in the same way as the diversification of a financial portfolio comprising assets with different degrees of volatility. No new analytical tools were needed to develop this perspective, it was noted.

The same speaker also provided a theoretical rationalisation, using well known analytical tools, for the existence of large current account imbalances. Differences in supply side capacities combined with differences in valuation of current versus future consumption could account for such imbalances. The speaker noted, however, that current imbalances have capital flowing from poorer to richer countries, which is counter to the predictions of frameworks where the payoff to investment projects are higher in poorer countries than in richer countries. Still, it was possible to amend existing frameworks to account for "excess" saving in poorer countries that was said to be one determinant of current account imbalances. Making reference to Chinese and United States experience, the speaker argued that this perspective should lead analysts to ascertain what factors lead to the very different savings rates observed in these two countries before the crisis. On this view, trade is merely the vehicle by which

other underlying differences between economies manifest themselves. It is, therefore, those differences that should be the primary concern of policymaking; attempts to limit trade would not tackle the underlying causes of current account imbalances.

A second speaker was more critical of so-called mainstream economic models. This speaker contended that these models never allowed for the possibility of systemic failure, and therefore shed little light on the causes and ongoing dynamics of crises. Too much faith, it was said, was put in the efficiency of financial markets. Although no alternative framework was proposed or referred to by this speaker, it was asserted that more active exchange rate management was needed to limit one important source of financial instability.

Traditional supply-and-demand considerations were invoked by a third speaker to account for food and fuel bubbles that were witnessed before and during the first part of the global financial crisis. Presentation of this viewpoint prompted others to suggest that speculation had also influenced the prices of these commodities, a view that revealed that conference participants were not at one with the proposition that speculation helps stabilise markets. It was argued that export interventions (be they subsidies by industrialised countries or restrictions by many countries, both rich and poor) added to the volatility of international food prices, suggesting that the existing policy mix may well have inadvertedly contributed to outcomes that harm the poor.

Making a link between these bubbles and the important matter of food security, this speaker argued that supporting greater research and development in agriculture in developing countries was a more effective response than closing agricultural markets to international trade, including invoking export restrictions. More generally, the speaker noted that often the legitimate objectives of government in the food security and related areas could be best accomplished by measures not traditionally associated with discriminatory trade policy. For example, the development of rural safety nets would be more effective than border measures that raise the price of food for developing country consumers (that include the poor.) Steps to develop the institutions enabling water markets needed greater priority in the years to come.

Despite the diversity in subject matter and perspective, it is noteworthy that when speakers felt the crisis called for new policies those policies were not discriminatory trade policies. Moreover, in the case where new analytical perspectives was called for the assumptions attacked were not specific to the standard toolkit of international trade researchers. It would be difficult to contend, therefore, that this conference resulted in a new trade and development framework for the Asia-Pacific or even calls for the development of such a framework. Participants, it seems, were by and large satisfied with existing tools. This is not to say that participants did not recognise that the many legitimate objectives of government often require a broad-based policy response including commercial and, importantly, other complementary policies.

B. The crisis and the political economy of trade reform

Although repeated reference was made to developments at the World Trade Organization (WTO) in particular to the Doha Development Agenda (DDA), speakers and participants recognised that political economy forces and reform imperatives play out at the national, bilateral, regional, as well as multilateral levels. Three of the plenary presentations and associated discussion are particularly relevant here and this provides the subject matter for this section.

At the core of one speaker's analysis of contemporary political economy dynamics was the observation that support for trade reform in leading industrialised economies, such as the United States and the members of the European Union, was declining. The populations, and perhaps more

importantly the business communities, of these jurisdictions appear to be losing faith in open markets. The speaker suggested that has manifested itself during the DDA negotiations and the recent global economic crisis was said to have reinforced the disenchantment with trade liberalisation.

In contrast, support for further global economic integration was higher and growing among the fast growing Asia-Pacific region, the same speaker argued. Extra- and intra-regional trade was expanding too, reinforcing the link between trade and prosperity. This contrast led the speaker to contend that no one should assume that the multilateral trading system would be sustained by its traditional postwar supporters and that Asians, as the principal contemporary beneficiaries, should take a leadership role at the WTO. Specifically, this speaker recommended that three steps be taken. First, that the traditional intellectual consensus for free trade be reinforced, especially in the certain industrialised countries where it is under attack in the media. Second, that a political consensus be developed within East Asia to provide global leadership for the WTO. And, third, that networks be developed within the Asia-Pacific region to encourage more Asian voices to speak out on trade matters.

A second speaker noted that the global financial crisis had altered some fundamental factors in the world trading system while other longer-standing challenges facing the WTO remain to be addressed. While international trade flows were expected to fall by 10 percent in 2009, a substantial setback given the postwar track record, protectionism on the scale of the 1930s had been avoided. Still, the crisis would have longer term implications for international commerce not least because of the impact of falling financial wealth on consumption levels, the reorientation of some countries' aggregate demand away from export sources , disruption to supply chains and trade finance, and the potential ending of the so-called Great Moderation in macroeconomic performance. How these factors would ultimately play out was not clear at the moment, but they would surely reorder the interests in favour or against openness and the political viability of export-led growth strategies. Uncertainty, in particular as it relates to job losses, was said to lower support for globalisation too.

With respect to the WTO this speaker argued that it faced four enduring difficulties, all of which call for greater leadership on the part of member governments. It was said that the WTO was having difficulties managing diversity among its large membership; that WTO had not managed the co-existence of regionalism (that is now entrenched) with the principles and operation of the multilateral trading system; that decision-making processes could be refined; and that the failure to conclude the DDA was a particular concern. Any atrophy of the multilateral trading system would be unfortunate at a time when climate change was going to be added to the list of issues that can only be effectively dealt with at the multilateral level. Worse failure to revitalise the WTO, it was argued, might ultimately jeopardise its binding dispute settlement understanding which for many, especially those in smaller countries, is one of the jewels in the crown of the world trading system.

An alternative, perhaps less WTO-centric perspective, was taken by a third speaker. While the crisis had had awful economic consequences, it was argued that there was some good news in the 12 months after the first crisis-era G20 summit in Washington DC. With the exception of some missteps by the United States, the European Union, and China, there has not been the surge in border protection during November 2008-October 2009 that many feared would happen at the beginning of 2009. Many of the largest developing countries have not used the so-called water in their tariff schedules to raise applied tariffs up to legal maximums, although they too were to resort to much more murky protectionism in 2010 and 2010. Moreover, at the time of the Conference the view was expressed that trade matters appeared to have been well managed through the G20 process and could bring further order to the world trading system (on this point see more below.)

Having made the case that some matters went well during the past year, this speaker recognised that the prospects of signing ambitious binding trade disciplines were bleak. There was a declining

appetite for trade reform in many countries and in some sectors (such as agriculture and services) the demand for future reform was weak or non-existent in certain jurisdictions. Many governments only had the support of small majorities in legislatures and this made it easier for entrenched interests to oppose further opening of national economies.

Moreover, the emasculation of the European Union's subsidy regime during the past year surely points to the limits of signing new binding rules when there is insufficient national support for them. Indeed, this speaker argued that it was necessary to shore up support for reforms in domestic politics and not rely solely on international fixes. Australia's early experience with its Productivity Commission providing impartial evidence on different policy options was said to offer lessons for other countries.

In addition to reinforcing domestic allies of openness, the third speaker argued that there might be an opportunity in 2010 for progress on trade matters at the G20. Canada and Republic of Korea will share the leadership of the G20 during the coming year and, while both countries have widespread trading interest, proposals from either are unlikely to engender the fear that generated by others. This opportunity should be taken, it was argued, to kick-start the services negotiations of the DDA (which is an important building block of any final accord) initially through an informal G20-centred process and to create the information flow from the relevant international organisations necessary to monitor the unwinding of government intervention taken during the crisis. In this manner, so it was argued, the G20 would reinforce its position as the premier organisation of global economic governance. Alas, in the two years that followed the Conference, none of this was to come to pass.

C. Concluding remarks

While this report summarises the principal arguments advanced at ARTNeT's 5th anniversary conference, it is worth noting that certain important propositions relating to trade and development were not raised. It was telling that no speaker or participant openly questioned the export-led growth model that has been pursued by many countries in the Asia-Pacific region. Indeed, the calls from others located elsewhere for a reorientation of economic growth towards domestic sources were not discussed or evaluated. More generally, there were no calls for generalised disengagement from the global economy after the crisis. These observations may reveal something about the similarities and differences in underlying assumptions concerning trade and growth dynamics held by experts in Asia-Pacific region and elsewhere.

Earlier version of the chapters in this book were first presented at the "Trade-Led Growth in Times of Crisis" conference held to celebrate the 5th anniversary of ARTNeT. The conference was organized on 1-2 November 2009 by ARTNeT secretariat with support from its core partners ESCAP, IDRC, UNCTAD, UNDP and WTO

58800
9 789211 206210