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Euro zone debt crisis: Scenario analysis and implications for developing Asia-Pacific*

by Sudip Ranjan Basu, Clovis Freire, Pisit Puapan,
Vatcharin Sirimaneetham, and Yusuke Tateno¹

July 2012

Abstract

The views expressed in this Working Paper are those of the author(s) and should not necessarily be considered as reflecting the views or carrying the endorsement of the United Nations. Working Papers describe research in progress by the author(s) and are published to elicit comments and to further debate. This publication has been issued without formal editing.

The ongoing euro zone debt crisis creates an undesirable scenario for the global economy as well as for the Asia-Pacific region given that the region has close economic linkages. The paper aims to provide quantitative estimates of the potential impact of the euro zone debt crisis on merchandise exports as well as on economic growth and poverty reduction efforts in the region. The results indicate that a one-percentage-point fall of output growth of the euro zone would result in a total export loss of \$166 billion. In addition, the protectionist threats could further increase the loss in exports by \$27 billion. On social development, the disorderly euro zone debt crisis scenario would prevent 8.19 million people to get out of poverty and another 1.15 million would be pushed back into poverty as per the \$1.25-a-day poverty line. The paper illustrates that macroeconomic policy space appears adequate in most economies that tend to be more heavily affected by the euro zone debt crisis. But strong inflationary pressures and less favourable public debt conditions could prevent some economies from implementing swift and forceful macroeconomic policy responses.

JEL Classification Numbers: N14, H63, O47, E31, F14, I32, Q18.

Keywords: Euro zone, Debt crisis, Growth, Inflation, Exports, Protectionism, Poverty reduction, Policy space.

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Euro zone debt crisis: Scenario analysis and implications for developing Asia-Pacific

**Sudip Ranjan Basu, Clovis Freire, Pisit Puapan,
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I. INTRODUCTION

The economies of the Asia-Pacific region are still struggling to keep their dynamism in the aftermath of the global economic and financial crisis of 2008-2009, and now they face the downside risk of a disorderly sovereign debt default in Europe, or which would be even worse, the breakup of the euro common currency area.² Thirteen years after its launch, the euro zone is now facing lack of credibility and new waves of fiscal austerity plans to control rising and potentially unsustainable public debts. The new economic environment has also raised concerns of more structural problems given the significant disparity in competitiveness and productivity responses among the euro zone economies.

In the coming years, fiscal austerity measures and substantial sovereign debt restructuring may be inevitable for the heavily-indebted countries - the so-called “PIIGS” economies.³ There are increasing concerns on the political commitment of the euro zone economies to resolve the crisis on the potential contagion effects of worsening economic and financial environment. Without appropriate crisis resolution measures and effective management of the fiscal austerity plans, market confidence might weaken further. Credit rating agencies have downgraded euro zone sovereign credit rating in recent months, and there is now a looming banking sector crisis in several economies. This would create greater difficulty for euro zone governments in their collective efforts to utilize the European Financial Stability Facility (EFSF) as financial facility for debt restructuring.⁴

Economic risks arising from disorderly resolution of euro zone sovereign debts and a potential break-up of the monetary union would have significant ramifications for the world financial markets and the global economy in years to come, especially for the Asia-Pacific region given its close economic and, for some countries, financial linkages to euro zone economies.⁵ Although the region’s dependency on advanced economies appears to have reduced over time owing to expanding regional demand and proliferation of South-South trade and investment linkages, the region’s economies are still reliant on consumption demand from advanced economies. In particular, they are inter-linked through international production networks,⁶ suggesting that economic growth for the region remains highly sensitive to swings in external demand originating from the developed economies.⁷ In addition, if advanced economies

² For further details, see ESCAP (2012a).

³ These economies include Portugal, Italy, Ireland, Greece and Spain.

⁴ The EFSF was created to safeguard financial stability in Europe by providing financial assistance to euro area Member States. Currently, EFSF is backed by guarantee commitments from the euro area Member States for a total of €780 billion and has a lending capacity of €440 billion. See more details at <http://www.efsf.europa.eu/about/index.htm>

⁵ For further discussion, see UNDESA (2012).

⁶ See further details, ESCAP (2011a).

⁷ Recent studies show that, if the euro zone experiences a sharp recession, the region would experience its growth rate falling sharply through the contagion channels which would be felt mainly through trade. IMF

are to implement trade restrictive measures to protect their domestic industries, the region's export sectors would be further negatively affected.⁸ Moreover, these contagion effects could pose serious challenges to social development achievements in the Asia-Pacific as adverse economic shocks typically have disproportionately large impacts on the poor and vulnerable sections of the populations.

The salient feature of this paper is to assess how sensitive the Asia-Pacific region is to economic growth performance of the euro zone economies and other advanced economies in the world. In particular, it presents the results of impact assessment of several economies in the region in the event of a disorderly euro zone debt scenario. The Global Economic Model developed by the Oxford Economics is used to simulate the "crisis scenario" that cuts the euro zone output growth by one percentage point in 2012 relative to the baseline under the assumptions of (1) deteriorated credit condition in the euro zone economies, United States, United Kingdom and Japan; (2) 15% lower stock market indices for all major and emerging market economies; and (3) 150-300 basis points higher borrowing costs in the euro zone economies.

The paper focuses on three major areas in which policymakers in the region are particularly concerned: exports, growth prospects and poverty reduction. Therefore, the key policy issues to be addressed in light of euro zone crisis here are as follows: i) impact on region's exports dependence in advanced economies and on increasing protectionist trade measures; ii) impact on region's growth and inflation prospects; iii) impact on poverty reduction efforts. And finally, the paper addresses the region's macroeconomic policy space to mitigate the adverse impacts of external shocks such as the euro zone crisis in the short-term to medium-term.

The remainder of the paper is structured as follows. Section II provides estimates of the potential loss to exports from the exposure of the region to the advanced economies as well as the increasing threat from the protectionist measures. In Section III, the paper assesses the impacts on growth, inflation and poverty reduction in the Asia-Pacific region. Section IV explores the macroeconomic policy space of selected economies in the region, and Section V concludes the paper.

II. TRADE IMPACT ON ASIA-PACIFIC

As enumerated above, given the close economic and, for some economies, financial links of the region with the euro zone economies and the other advanced countries, the Asia-Pacific region could experience significantly large adverse impact through trade channels. Therefore, this section assesses the potential impact of a disorderly sovereign euro zone debt default on exports from the economies of the Asia-Pacific region. Furthermore, it examines emerging threats from the protectionist trade measures which are being imposed by the advanced economies on the exports from the region.

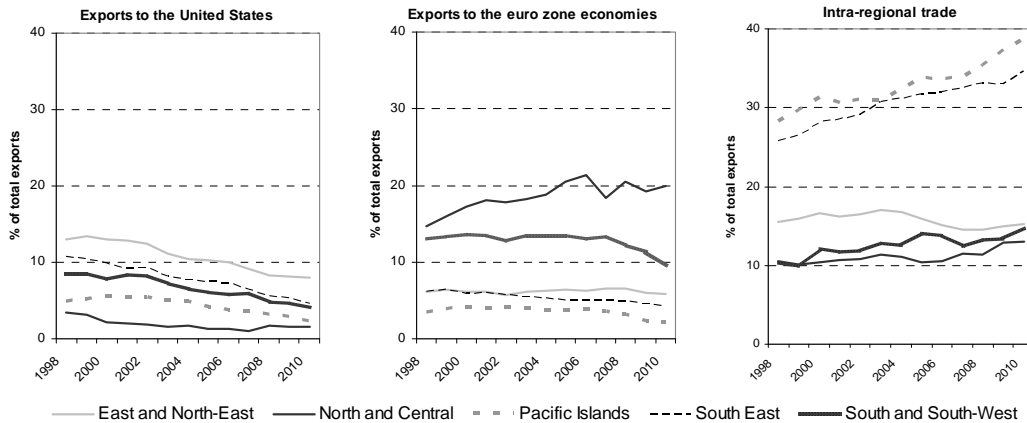
(2012) predicts a fall of four percentage points in the growth rate of China in the downside scenario when the euro zone activity declines by about four percentage points to the previous forecasts. Similarly, using a Bayesian vector autoregressive model, Erten (2012) finds that a one-percentage-point reduction in the euro zone growth would lead to 0.75 percentage point reduction in emerging Asian growth rate.

⁸ World Trade Organization (WTO) director-general Pascal Lamy noted that protectionism was increasing through the "accumulation of small measures that do not disappear", and warned that Asia's open, trade-dependent economies were particularly exposed to this trend. See <http://www.bangkokpost.com/breakingnews/295930/wto-protectionism-is-growing-risk>

The production networks channel

In recent years, the economies of the Asia-Pacific region have diversified their export destinations from advanced country markets towards neighbouring developing economies. The region's exports to the euro zone and the United States markets as a share of its total exports have been declining over time both at the regional and subregional levels (figure 1).⁹

Figure 1: Exports to the United States, the euro zone, and intra-regional trade



Source: Authors' calculations based on data from United Nations Statistics Division, Commodity Trade Statistics database (COMTRADE).

However, declining shares of exports to the advanced world do not necessarily mean lower dependence on those markets. In fact, a good portion of the region's exports remains tied to final demand in advanced economies through intermediate goods trade. The development of international production networks in recent years, becoming increasingly centred on China, boosted the region's intermediate goods exports from \$0.7 trillion, or 52% of the region's total exports in 1998 to \$2.9 trillion, or 58% of the total exports in 2010 (figure 2). In 2008-2010, the growth of intermediate goods exports accounted for 67% of the region's export growth and remained the category that contributed the most for merchandise exports growth (figure 3).

⁹ The shares of exports to the United States in total exports have declined over the past ten years for all five subregions in Asia-Pacific, while those to the euro zone economies have reduced in all subregions except for North and Central Asia where the share increased from 15% in 1998 to over 20% in 2010.

Figure 2: Composition of exports in Asia-Pacific (constant 2005 prices)

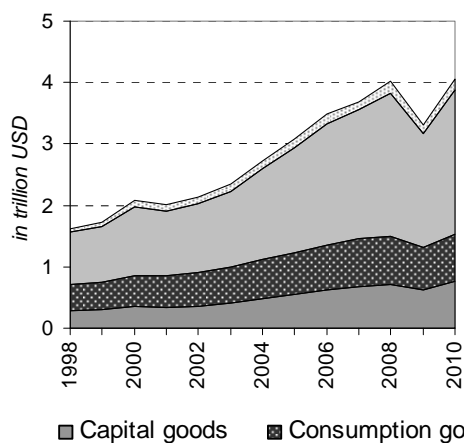
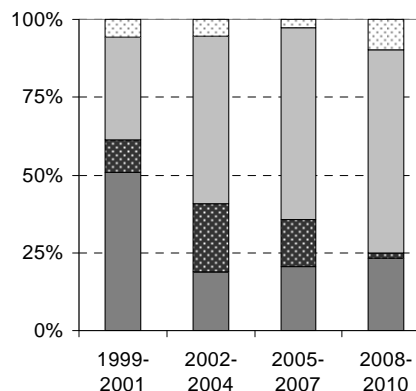


Figure 3: Contribution to export growth in Asia-Pacific



Source: Authors' calculations based on data from United Nations Statistics Division, Commodity Trade Statistics database (COMTRADE).

Now that the region is facing the challenge of maintaining its growth momentum under the deteriorating global economic climate, it is crucial and highly relevant to consider these indirect channels in order to assess potential impacts of external shocks. It is certain that impacts would affect the region not only through direct trade linkages but also through well-established and complex production networks within and across regions.

Against this background, this paper assesses the sensitivity of Asia-Pacific exports to economic growth performance of the euro zone economies by estimating the degrees of direct and indirect export dependency on these economies both at the regional and national levels. Degrees of interdependence between two or more economies are typically examined by the Input-Output analysis. The Asian International Input-Output Table (the AIO Table) published by Japan External Trade Organization (JETRO) provides systematic descriptions of the international input-output structures of intermediate and final goods trade flows in a table that can be used for quantitative analyses on the interdependence of Asia-Pacific economies.¹⁰ However, the use of the AIO Table has some shortcomings. First, it covers only nine economies of the region, namely, China, Japan, the NIEs-3 (i.e. the Republic of Korea, Singapore and Taiwan Province of China) and the ASEAN-4 (i.e. Indonesia, Malaysia, Thailand, and the Philippines). Since one of our focuses is on the region's linkages to advanced economies through international production networks, the analysis should include other economies in Asia-Pacific as well as advanced economies outside the region where the large final demand exists. Second, the AIO Table is available for a limited number of years with the latest version of 2000. Since the production networks in the region have evolved, especially in recent years, it is essential to benefit from the most up-to-date trade figures.

For the reasons listed above, this paper suggests an alternative approach to measure export dependency using the industry-level bilateral trade data from 2010, compiled from the United Nations Commodity Trade Statistics database.¹¹ These estimates are based on simple

¹⁰ For the use of the AIO Table, see, for instance, Mori and Sasaki (2007), Pula and Peltonen (2009), and IMF (2011).

¹¹ He et al. (2007) provides the direct and indirect trade exposure to the United States for major Asian economies based on the country-level bilateral trade statistics from the IMF's Direction of Trade Statistics.

calculations of the direct and indirect trade dependency of 43 economies of the Asia-Pacific region and easily modifiable, reproducible and extendable in both time-series and cross-sectional dimensions.

The direct dependence measure of country i on the euro zone economies is calculated by the share of merchandise exports to the euro zone economies in country i 's total exports. Equivalently, for all country j in the euro zone,

$$DirectDependency_i^{eurozone} = \sum_j \frac{x_i^j}{X_i} \times 100$$

where x_i^j represents exports from the source country i to the destination country j , and X_i represents country i 's total exports.

To measure indirect dependency, intermediate goods are defined based on the Broad Economic Categories (BEC), following Pula and Peltonen (2009). Intermediate goods consist of food and beverages, primary, mainly for industry (111), food and beverages, processed, mainly for industry (121), industrial supplies not elsewhere specified, primary (21), industrial supplies not elsewhere specified, processed (22), fuels and lubricants, primary (31), fuels and lubricants, processed (32), parts and accessories of capital goods (42), and parts and accessories of transport equipment (53). Similarly, final goods are defined to include capital goods, consumption goods, and other goods. Capital goods are capital goods (41) and transport equipment, industrial (521). Consumption goods include food and beverages, primary, mainly for household consumption (112), food and beverages, processed, mainly for household consumption (122), passenger motor car (51), transport equipment, non-industrial (522), and consumer goods not elsewhere specified (6). Other goods are goods not elsewhere specified (7).

Since the data on the use of imported intermediate goods are not available, it is assumed that imported intermediate goods are used for production of both intermediate and final goods and re-exported in full as part of both intermediate and final goods without consumed domestically. Although this assumption would overestimate the actual indirect dependency, domestic consumption of imported intermediate goods in the region is found to be fairly small as compared to the volume of its intra-regional trade. For example, a study by the Asian Development Bank (2007) estimated that only 6.4% of Asia's exports served final demand from China, the largest market in the region. Similarly, Pula and Peltonen (2009) reported, based on the Input-Output analysis, that final demand in China only accounted for 7.2% of the value added in the region.

The indirect dependence measure of country i on the euro zone is the sum, for all of i 's trading partners k , of the shares of intermediate goods exports from i to k multiplied by the direct dependence of k on the euro zone economies. That is, for all of country i 's trading partners k ,

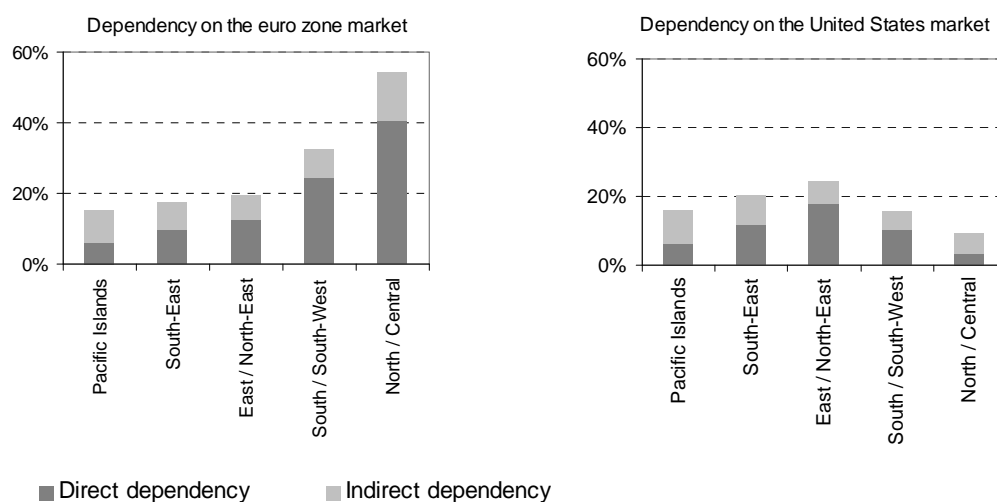
$$IndirectDependency_i^{eurozone} = \sum_k \left(\frac{IX_i^k}{X_i} \times DirectDependency_k^{eurozone} \right)$$

where IX_i^k represents intermediate goods export from the source country i to the destination country k . The direct and indirect dependency on the United States market as well as the rest of developed economies is also calculated in the same way.

The results show that, even though intra-regional trade in the Asia-Pacific region is higher than other developing economies, the degree of export dependence on advanced economies is still significant (figure 4). On average, the degree of indirect dependence is about

one half of direct dependency. Therefore, 40% of the region's exports are connected to the demand in the euro zone and the United States either through direct or indirect linkages.

Figure 4: Direct and indirect dependency on the euro zone and United States markets in 2010



Source: Authors' calculations based on data from United Nations Statistics Division, Commodity Trade Statistics database (COMTRADE).

Note: The subregional aggregates are averages of the country-level dependency measures weighted by the values of total exports. "Advanced" countries (i.e. Australia, Japan, and New Zealand) are excluded from these figures.

Export dependency on the euro zone markets is highest in North and Central Asia¹² with 40% direct and 12% indirect channels, followed by South and South-West Asia¹³ with 22% direct and 7% indirect. These findings are along the line with the standard gravity model in which the value of bilateral trade increases with the economic size of the trading partners, measured by their GDP, and decreases with their distance apart.¹⁴

Indirect dependency on the euro zone markets relative to direct dependency is highest in the Pacific Islands¹⁵ because most of their exports go to neighbouring economies in the region before re-exported to Europe. Relative indirect dependency is also high in South-East Asia¹⁶ and East and North-East Asia¹⁷ where the international production networks are well-developed.

¹² North and Central Asia refers collectively to Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan and Turkmenistan. Uzbekistan is excluded due to lack of data.

¹³ South and South-West Asia comprises Afghanistan, Bangladesh, Bhutan, India, Islamic Republic of Iran, Maldives, Nepal, Pakistan, Sri Lanka and Turkey.

¹⁴ See ESCAP (2011c) for details.

¹⁵ Pacific Islands include Cook Islands, Fiji, Kiribati, Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu. "Advanced" countries such as Australia and New Zealand are not included in these aggregated totals. The following countries and territories/areas are excluded due to lack of data: American Samoa, French Polynesia, Guam, Marshall Islands, Micronesia (Federated States of), Nauru, New Caledonia, Niue, Northern Mariana Islands, Palau and Tuvalu.

¹⁶ South-East Asia refers collectively to Brunei Darussalam, Cambodia, Indonesia, Malaysia, Philippines, Singapore, Thailand, Timor-Leste and Viet Nam. Lao People's Democratic Republic and Myanmar are excluded due to lack of data.

¹⁷ East and North-East Asia comprises China, Hong Kong, China, Macao, China, Mongolia and Republic of Korea. "Advanced" countries (i.e. Japan) are not included in these aggregated totals. Democratic People's Republic of Korea is excluded due to lack of data.

Similarly, South-East Asia and East and North-East Asia have high indirect dependence on the United States economy, about one quarter of which is associated with intermediate goods exports to China.

China plays an important role as a conduit of intermediate goods trade since the region's intermediate goods exports to China accounts for 22% and 30% of indirect dependence on the euro zone and the United States markets, respectively (table 1). High indirect dependency suggests that bilateral trade data do not fully describe the relationship or linkages between two economies. For example, the United States-China trade imbalances could be overstated as a large portion of China's exports to the United States are indeed the trade between other economies with the United States through China, rather than the simple bilateral relationships.

Table 1: Direct and indirect export dependency on the euro zone, United States, and the rest of developed economies

(% total merchandise exports; 2010 unless otherwise noted)

	Dependence on the eurozone						Dependence on the US						Dependence on the rest of developed economies	
	Direct	Total	Indirect				Direct	Total	Indirect				Direct	Indirect
			intra-reg. trade	subregional trade	via China	via Japan			intra-reg. trade	subregional trade	via China	via Japan		
North and Central Asia	40.4	12.2	3.8	0.9	0.9	0.2	3.3	6.2	2.3	0.1	1.1	0.5	13.6	10.3
Armenia	34.5	13.3	2.9	2.0	0.5	0.0	8.4	6.4	1.2	0.5	0.6	0.0	5.4	11.1
Azerbaijan	47.4	9.7	2.8	1.0	0.3	0.0	8.2	9.0	1.9	0.3	0.3	0.0	10.1	14.0
Georgia	9.6	14.9	8.7	4.5	0.2	0.0	11.5	6.6	1.6	0.8	0.2	0.1	7.9	8.3
Kazakhstan	46.7	13.0	6.3	2.4	2.8	0.1	1.6	11.4	4.0	0.3	3.4	0.2	13.4	12.7
Kyrgyzstan	4.1	19.8	5.5	4.8	0.2	0.0	6.2	3.8	0.6	0.3	0.3	0.0	28.7	4.1
Russian Federation	39.5	12.1	3.4	0.6	0.7	0.3	3.2	5.3	2.1	0.1	0.9	0.5	13.9	9.7
Tajikistan (2000)	37.4	20.8	12.7	12.7	0.0	0.0	0.1	5.2	1.6	0.0	0.0	0.0	13.2	14.2
Turkmenistan (2000)	19.0	27.8	23.9	16.9	0.0	0.0	0.6	5.7	2.9	0.0	0.1	0.0	3.9	18.9
South and South-West Asia	21.5	7.3	3.1	0.8	1.2	0.1	9.5	5.3	2.7	0.4	1.4	0.2	10.7	7.0
Afghanistan	4.1	2.7	2.2	2.2	0.0	0.0	0.9	1.4	1.3	0.0	0.0	0.0	1.8	1.4
Bangladesh (2007)	39.4	2.3	1.6	1.0	0.2	0.1	26.2	1.9	1.5	0.7	0.3	0.1	18.1	2.0
Bhutan	0.1	13.1	13.1	12.1	0.9	0.1	0.0	10.2	10.2	8.9	1.2	0.1	0.7	8.6
India	15.5	7.4	3.4	0.8	1.5	0.2	11.3	6.7	3.5	0.4	1.9	0.3	9.3	8.9
Iran	7.4	7.5	6.5	2.4	2.7	0.2	0.4	6.2	5.6	1.2	3.3	0.3	3.1	7.1
Maldives	25.5	0.8	0.8	0.8	0.0	0.0	0.7	0.7	0.7	0.7	0.0	0.0	13.0	0.6
Nepal	8.5	8.5	8.1	7.9	0.1	0.0	6.4	6.3	6.0	5.7	0.2	0.1	6.0	5.5
Pakistan	18.0	4.6	3.0	1.5	1.1	0.0	17.7	3.4	2.3	0.4	1.4	0.1	9.3	4.3
Sri Lanka	21.7	3.4	1.6	0.9	0.2	0.1	22.0	2.5	1.4	0.6	0.2	0.1	20.3	4.0
Turkey	35.0	8.4	2.0	0.2	0.3	0.0	3.5	3.2	0.7	0.1	0.3	0.0	13.8	4.9
Pacific	4.6	9.2	7.1	0.2	3.4	1.2	4.9	9.9	8.8	0.2	4.2	2.2	30.2	7.6
Australia	4.2	10.0	7.8	0.1	3.8	1.3	4.2	10.8	9.7	0.1	4.6	2.4	28.8	8.1
Cook Islands (2008)	1.4	3.1	3.1	0.4	0.5	2.0	2.0	4.7	4.7	0.5	0.6	3.4	65.0	1.2
Fiji (2009)	1.5	10.9	1.9	0.3	0.0	0.1	12.7	5.2	2.3	0.8	0.0	0.2	48.9	5.7
Kiribati (2005)			3.8	3.8	1.8	0.0	0.0	0.1	6.0	6.0	4.4	0.0	43.2	9.4
New Zealand	6.9	3.9	2.7	0.5	1.0	0.4	9.1	4.2	3.3	0.6	1.2	0.7	38.4	4.2
Papua New Guinea (2004)	19.9	10.1	5.8	1.2	1.4	1.0	6.3	10.6	8.4	1.5	2.2	1.8	40.5	11.3
Samoa	0.2	3.8	3.7	3.5	0.0	0.0	3.3	3.8	3.8	3.6	0.0	0.0	93.6	0.4
Solomon Islands (2007)	9.6	13.3	10.9	0.3	7.9	0.6	0.1	14.6	13.8	0.3	9.9	1.0	13.3	12.3
Tonga	0.0	1.2	0.7	0.7	0.0	0.0	16.6	1.0	1.0	1.0	0.0	0.0	31.7	4.9
Vanuatu (2007)	23.0	10.3	4.7	0.5	0.1	0.0	1.4	8.8	6.9	2.0	0.2	0.1	16.5	18.5
South-East Asia	9.1	7.5	5.5	1.7	1.9	0.7	10.2	7.9	6.6	1.9	2.4	1.3	18.6	9.0
Brunei Darussalam (2006)	0.1	11.1	10.3	2.4	0.3	3.7	6.7	15.1	15.0	2.8	0.5	7.6	46.0	11.8
Cambodia	12.0	2.8	2.7	0.6	2.1	0.0	34.2	3.5	3.4	0.6	2.9	0.0	12.1	3.9
Indonesia	9.5	8.4	6.7	1.4	1.6	1.4	9.4	9.2	8.0	1.5	2.0	2.6	22.2	8.8
Malaysia	9.2	7.7	5.8	1.6	2.0	0.8	10.0	8.1	6.7	1.6	2.5	1.4	17.7	9.3
Philippines	13.4	5.9	4.4	1.6	1.5	0.9	15.3	6.8	5.6	1.5	1.9	1.7	18.8	8.6
Singapore	7.9	7.8	5.9	2.2	2.3	0.3	7.0	8.2	7.0	2.5	2.9	0.6	12.5	10.7
Thailand	7.9	6.9	4.1	1.2	1.6	0.5	11.0	6.2	5.0	1.3	2.0	1.0	23.0	6.5
Timor-Leste (2005)	7.5	7.6	3.5	0.2	0.0	0.0	24.0	4.4	3.5	0.3	0.0	0.1	54.9	12.4
Viet Nam (2009)	13.1	5.2	3.4	1.0	1.1	0.6	20.9	5.1	4.5	1.4	1.4	1.1	25.3	5.1
East and North-East Asia	12.0	6.3	3.9	2.7	1.9	0.2	16.3	6.1	4.4	3.5	2.3	0.4	12.8	7.2
China	15.4	4.8	2.3	1.1		0.3	18.7	4.2	2.3	1.6		0.5	15.8	5.4
Hong Kong, China	7.9	9.1	7.6	6.9	6.6	0.2	11.0	9.9	9.1	8.5	8.1	0.3	10.9	9.2
Japan	9.1	6.8	4.3	3.0	2.4		17.0	6.9	5.0	3.8	3.0		7.8	9.3
Korea, Rep. of	8.8	8.0	5.4	3.8	3.4	0.4	11.6	8.1	6.1	5.0	4.2	0.8	11.9	8.5
Macau, China	6.7	1.0	1.0	1.0	1.0	0.0	16.2	1.3	1.3	1.3	1.3	0.0	5.0	1.1
Mongolia (2007)	4.6	14.4	13.0	11.9	11.5	0.1	3.4	23.0	15.1	15.0	14.6	0.2	11.3	15.1
Asia and the Pacific	14.5	7.3	4.3	2.1	1.8	0.3	12.9	6.6	4.7	2.5	2.3	0.7	14.6	7.8

Source: Authors' calculations based on data from United Nations Statistics Division, Commodity Trade Statistics database (COMTRADE).

Note: The subregional aggregates are averages of the country-level dependence measures weighted by the values of total exports. The rest of developed economies comprises Australia, Canada, Denmark, Israel, Japan, New Zealand, Norway, Sweden, Switzerland, and United Kingdom.

High indirect dependency suggests that bilateral trade data do not fully describe the relationship or linkages between two economies. For example, the United States-China trade imbalances could be overstated as a large portion of China's exports to the United States are indeed the trade between other economies with the United States through China, rather than the simple bilateral relationships.

These measures of export dependence are used to estimate the sensitivity of the region's exports to economic performance of the euro zone economies. The export sensitivity is measured in terms of percentage point changes in total goods exports with respect to a one-percentage-point change in output growth of the euro zone economies. For country i , it is defined as:

$$ExportSensitivity_i = \frac{1}{100} \sum_k [\% \Delta M_k \times (DirectDependency_i^k + IndirectDependency_i^k)]$$

for all country k in the euro zone and the United States, where $\% \Delta M_k$ is a percentage point change in total goods imports of country k with respect to a one-percentage-point decrease in output growth rates. It is estimated by the Oxford Global Economic Model that a one-percentage-point fall in the euro zone output growth in 2012, which arises from a financial turmoil,¹⁸ would reduce the euro zone demand for imports from other countries by 2.7 and 7.3 percentage points in 2012 and 2013, respectively. These impacts are assumed to lead to a proportionate decline in its trading partners' exports.

This sensitivity measure can be interpreted as an estimated effect of economic performance of the euro zone on country i 's total merchandise exports. The analysis presented in table 2 considers the developing economies in the Asia-Pacific region and estimates the impact of a one-percentage-point reduction in output growth of the euro zone in 2012. The overall impact would be substantial for a number of export-dependent countries and most worryingly, for the most vulnerable countries. It is estimated that merchandise export growth of the developing Asia-Pacific economies would be reduced by one percentage point in 2012 and three percentage points in 2013, which is equivalent to a total export loss of \$166 billion.

Given the different levels of dependency on the euro zone, these estimates vary across the region, with the most sensitive subregion being North and Central Asia, followed by South and South-West Asia. The countries with special needs such as the least developed countries (LDCs) would suffer more than other developing economies in the region, and landlocked developing countries (LLDCs) would be the most sensitive to economic performance of the euro zone economies due to their high export dependence with estimated sensitivity of 1.8 percentage points in 2012 and 5.1 percentage points in 2013. Furthermore, owing to the LLDCs' large share of international trade in their GDP, the adverse impact of the slowdown would be significantly greater. Their GDP growth would fall by around 0.6 percentage points in 2012 and 1.5 percentage points in 2013 as compared to the baseline scenario.

¹⁸ A financial turmoil in this paper is defined as a combination of deteriorated credit condition, lowered stock market indices and high borrowing costs.

Table 2: Estimated export sensitivity with respect to output growth of the euro zone economies

Region and subregions	Sensitivity measure		% of GDP		Export loss (in billion US\$)
	2012	2013	2012	2013	
Developing Asia-Pacific	1.0	3.0	0.3	0.9	166
North and Central Asia	1.6	4.5	0.4	1.2	29
South and South-West Asia	1.1	3.1	0.1	0.4	16
Pacific Islands	0.9	2.6	0.1	0.4	0.07
South-East Asia	0.8	2.4	0.4	1.3	31
East and North-East Asia	1.0	2.9	0.3	0.9	90
LDCs	1.4	4.3	0.2	0.6	1.17
LLDCs	1.8	5.1	0.6	1.5	5.88
SIDS	1.0	2.8	0.1	0.3	0.08

Source: Authors' calculations based on the Oxford Global Economic Model and data from United Nations Statistics Division, Commodity Trade Statistics database (COMTRADE).

Notes: Developing Asia-Pacific excludes the "advanced" countries (i.e. Australia, Japan, and New Zealand). The list of *LDCs* in this estimation is the following: Afghanistan, Bangladesh, Bhutan, Cambodia, Kiribati, Nepal, Samoa, Solomon Islands, Timor-Leste and Vanuatu, while *LLDCs* comprises Afghanistan, Armenia, Azerbaijan, Bhutan, Kazakhstan, Kyrgyzstan, Mongolia, Nepal, Tajikistan, and Turkmenistan. *SIDS* includes Cook Islands, Fiji, Kiribati, Papua New Guinea, Samoa, Solomon Islands, Maldives, Timor-Leste, Tonga, and Vanuatu.

Although the direct trade dependency on advanced economies have reduced over time, the region's merchandise exports are still linked to consumption in such economies through international production networks, suggesting that external demand remains an important source of economic growth for the region. It can be concluded based on these findings that economic performance of advanced economies still has a considerably large influence on the developing Asia-Pacific economies via merchandise trade, especially the countries with special needs such as LDCs and LLDCs, owing to their high dependence on the advanced world.

Trade protectionism measures

Another common concern of policymakers in the region is the imposition of various types of trade restrictive measures by developed countries in an effort to protect their economies in a climate of slow growth. Since the onset of the current global economic and financial crisis in 2008, the world has witnessed such trade-protective measures, which would potentially have adverse impacts on the export-led economies in the region. Several countries in the region, especially LDCs, LLDCs, and small island developing states (SIDS) are most vulnerable to the looming threat of protectionism which could reduce their export capacity and generate prolonged uncertainties in employment opportunities. ESCAP (2012a) noted that these types of trade-restrictive measures could escalate into a trade war as the Asia-Pacific economies might take retaliatory measures that would make the recovery of the world economy even more difficult.

According to the World Trade Organization (WTO) agreements, countries are allowed to erect trade defence or "contingency protection" measures which are rule-based and in defined situations, to "safeguard" interests of national industries. These rules are designed to provide relief for specific sectors in the event of economic distress. Over the past years, policymakers have resorted to measures such as safeguards, anti-dumping and countervailing, which are often considered to be complex and discriminatory in nature. Being the most important hub of global trade-led growth, the region was affected significantly by the number of foreign discriminatory

trade policy measures and their exports were constantly the target of murky forms of protectionism.¹⁹ During the peak of ongoing economic and financial crisis, the governments could not pursue protectionist policies unabatedly due to the existence of the WTO trade rules governing international multilateral trading system.²⁰

However, since early 2009, it became indispensable for international organisations to monitor protectionist trends as well as to advocate the role of trade in economic recovery from the crisis. The members of the WTO have been promoting a rule-based system which ensures the stability, transparency and predictability of international trading environment. Despite the existence of a robust multilateral trading system, the world economy had witnessed imposition of plethora of barriers on free flows of goods and services which were often inconsistent measures with regard to the international trade rules, and the region has been affected by such trade policy instruments (ESCAP, 2010).

Following the requests of the G-20 Heads of States and Governments, the latest WTO-OECD-UNCTAD joint report showed that new import restrictive measures taken during mid-October 2011 to May 2012, affected around 1.1% of total G-20 merchandise imports, or 0.9% of world imports, which was higher than the period of October 2008-October 2009 in which these trade restricting measures peaked and covered 1% total G-20 imports.²¹

Given the renewed uncertainties around the world due to the euro zone debt crisis and fears of another round of depressed growth prospects in many developed economies in the near term, policymakers in the region are increasingly sensitive to the danger of excessive and/or abusive use of protectionist measures by their main trading partners. At the Third High - Level Consultation on the G - 20 Mexico Summit Perspectives from Asia - Pacific, it was noted that “the Asia-Pacific region must urge G20 leaders to resist succumbing to protect their domestic markets from problems that are essentially unrelated to trade”.²²

In order to assess the impact of continued threat of protectionism for 2012 and beyond for the exports of the Asia-Pacific region, ESCAP provides estimates at the regional and national level. These estimates are carried out by using the national and regional exports data in 2010 (current US\$), and their exports share in total imports of euro zone economies and other developed economies. Even though intra-regional trade in the Asia-Pacific is higher as compared to other regions, the dependence on euro zone economies and other advanced countries are still significant as described previously. Therefore, these estimates are presented here for the Asia-Pacific region in order to understand, “what if”, the global trade environment deteriorates further in 2012-2013 under the assumption of another round global economic recession and in the scenario of delayed growth recovery process. The scenario assumes that import restrictive measures introduced by euro zone economies would reduce their import growth by one percentage point from the baseline.

¹⁹ See Baldwin and Evenett (2009).

²⁰ The current multilateral trade negotiations, Doha Development Agenda (or the Doha Round), under the World Trade Organization was launched in November 2001.

²¹ WTO-OECD-UNCTAD reports on G-20 Trade and Investment Measures illustrated the share of trade covered by G-20 trade restrictive measures of their total imports for the following periods: i) 1% in October 2008 to October 2009, ii) 0.5% in November 2009 to May 2010, iii) 0.3% in May 2010 to mid-October 2010, iv) 0.6% in mid-October 2010 to April 2011, and v) 0.6% in May to mid-October 2011.

²² See ESCAP (2012b).

Overall, it was found that the export value of the developing Asia-Pacific economies in the pessimistic case would be 1% lower than the baseline case in 2012. It would also imply that at the baseline, the developing Asia-Pacific region could experience a decline in export value of over \$10 billion in 2012-2013. As shown above, the estimated impact varies across subregions and levels of development, depending on the degrees of export dependence on euro zone economies. For example, the estimated impact could be highest in the North and Central Asia given their close trade ties with the euro zone economies. However, LDCs and LLDCs are the most sensitive to these protectionist measures, as the estimates indicate that overall exports from these vulnerable economies to euro zone would be 0.9% lower than the baseline scenario in 2012-2013 (table 3).

Table 3: Estimated impact of the trade restrictive measures imposed by the euro zone economies

Region and subregions	in billion US\$	% of exports	% of GDP
Developing Asia-Pacific	10	0.23	0.07
North and Central Asia	2	0.53	0.14
South and South-West Asia	1	0.29	0.04
Pacific Islands	0.005	0.24	0.03
South-East Asia	2	0.16	0.09
East and North-East Asia	4	0.19	0.06
LDCs	0.06	0.32	0.04
LLDCs	0.48	0.56	0.17
SIDS	0.005	0.23	0.03

Source: Authors' calculations based on the Oxford Global Economic Model and data from United Nations Statistics Division, Commodity Trade Statistics database (COMTRADE).

Notes: See notes in table 2 for grouping of economies. Impact is the sum of direct and indirect impact of trade restrictive measures of euro zone countries.

Similarly, it was estimated that, if the trade restrictive measures were implemented in all advanced economies, the developing economies in Asia-Pacific could experience an export loss of over \$27 billion. In this case, LDCs, LLDCs and SIDS could face a significant contraction in their exports to the advanced economies as compared to the baseline scenario (table 4).

Table 4: Estimated impact of the trade restrictive measures, imposed by the developed economies

Region and subregions	in billion US\$	% of exports	% of GDP
Developing Asia-Pacific	27	0.64	0.19
North and Central Asia	4	0.86	0.23
South and South-West Asia	2	0.61	0.07
Pacific Islands	0.02	0.92	0.12
South-East Asia	6	0.61	0.33
East and North-East Asia	14	0.62	0.20
LDCs	0.16	0.79	0.11
LLDCs	0.82	0.95	0.29
SIDS	0.02	0.90	0.10

Source: Authors' calculations based on the Oxford Global Economic Model and data from United Nations Statistics Division, Commodity Trade Statistics database (COMTRADE).

Notes: Developed economies include the following: euro zone economies, Australia, Canada, Denmark, Israel, Japan, New Zealand, Norway, Sweden, Switzerland, United Kingdom and United States.. See notes in table 2 for other grouping of economies Impact is the sum of direct and indirect impact of trade restrictive measures of euro zone countries.

Clearly, the euro zone crisis would have large negative impacts on the developing Asia-Pacific economies via the trade channel, especially for the countries in special needs and other vulnerable economies. In addition, if protectionist measures continue to increase, the export prospects of the region would be deteriorated even further.

Moreover, there are a number of trade policy measures, apart from traditional tariff and duties, which act as barriers to trade. Trade costs of many economies of the region have decreased, largely due to tariff cuts, but much remains to be done to address non-tariff barriers (NTBs) and behind-the-border barriers. In particular, these barriers to trade arise from time-consuming customs procedures, conformity assessments, non-transparency, arbitrariness, poor facilitation of trade at the borders, poor physical connectivity and freight and associated costs, among others.²³ Moreover, tariff trade costs in Asia and the Pacific generally account for around 10% of bilateral comprehensive trade costs, while other policy-related trade costs, such those of a non-tariff nature, account for 60-90% (ESCAP, 2012c). In this context, trade facilitation measures to simplify procedures and formalities are of utmost importance to the countries in the region. The recent ASEAN Single Window initiative aims at developing a regional Single Window system for its member countries by 2012.

As for the global trade rules and negotiations, small and vulnerable countries in the region would need to pursue a stronger set of enforceable trade rules to shield against any threat of protectionism from their trading partners outside and within the region. A meaningful development content of the Doha Development Agenda is the key to maximizing trade-related contribution to the growth recovery in 2012 and beyond. Importantly, a successful Doha round would also send a positive signal of the confidence building process, and thereby encourage freer flows of trade.

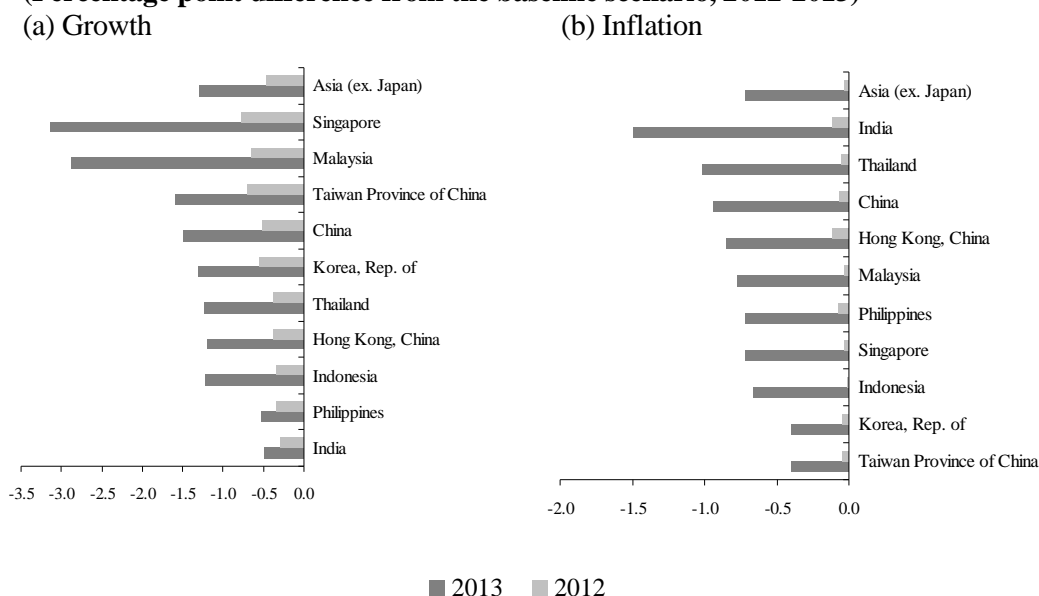
²³ See ESCAP (2011b) and also Basu et al.(2011).

III. IMPACT ON POVERTY REDUCTION

This section assesses the potential impact on poverty reduction in the economies of the Asia-Pacific region based on the estimated growth slowdown caused by a financial and economic crisis originated from a disorderly euro zone debt scenario. Such estimates for the larger economies of the region were obtained through ESCAP simulations using the Oxford Global Economic Model.

Overall, the results suggest a significant growth impact on developing Asia-Pacific (figure 5). Economic simulations show that a one-percentage-point slowdown in output growth of the euro zone, which stems from a simulated financial turmoil, would lower output growth for developing Asia-Pacific by 0.5 and 1.3 percentage points from the baseline in 2012 and 2013, respectively. Inflation in the region would be lower particularly for 2013 by 0.9 percentage points from the baseline due mainly to slacking demand domestically and externally.

Figure 5: Impact on growth and inflation
(Percentage point difference from the baseline scenario, 2012-2013)



Source: Authors' calculations based on the Oxford Global Economic Model.

At the national level, the analysis indicates that growth in China, Malaysia, Singapore and Taiwan Province of China could decline by more than 1.5 percentage points from the baseline in 2013, while India and the Philippines could observe over 0.5 percentage point decline (panel a). Inflation in the Asia-Pacific economies would be lower particularly for 2013 due mainly to a more subdued demand (panel b).

These estimates were extended to 17 other countries of the region by modeling the potential impact on their GDP growth given their degree of integration into the global economy through trade in merchandise goods and commodities, cross-border banking loans and other international financial flows, by using switching regression, an iterative multivariable regression technique.

Estimates of country specific elasticity of GDP growth on the growth of mean household consumption were used to calculate the changes in poverty rate under the assumption of unchanged inequality, using the following regression model:

$$\ln(y_{it}) = \beta_0 + \beta_1 \ln(GDPpc_{it}) + \sum_j \beta_{2j} D_j + \sum_j \beta_{3j} \ln(GDPpc_{jt}) D_j + \beta_4 R_{it} + \beta_5 G_{it} + \varepsilon_{it}$$

where y_{it} is the mean household consumption per capita of country i in year t , $GDPpc_{it}$ is the GDP per capita of country i in year t , D_j is a dummy variable for country j defined as $D_j = 1$ if $i = j$, $D_j = 0$ otherwise, and R_{it} is remittance as percentage of GDP received by country i in year t , and G_{it} is the Gini coefficient country i in year t . In this paper, we assume that inequality has not changed and it is the same as the latest available data.

The parameter of interest is $\beta_1 + \beta_{3i}$, which represents the ratio of the rate of growth of average household consumption per capita to the rate of growth of GDP per capital in country i :

$$\frac{\Delta y_i}{y_i} \bigg/ \left(\frac{\Delta GDPpc_i}{GDPpc_i} \right)$$

We use this ratio and the estimates of GDP per capita under the baseline and scenario assumptions to estimate the average household consumption per capita under each assumption.

Given these estimates of average household consumption per capita \bar{y}_t and the latest Gini coefficient, we estimate the poverty headcount for each country in 2012 and 2013 under both baseline and euro zone debt scenarios, on the basis of the empirically plausible assumption proposed by Bourguignon (2003) that incomes are lognormally distributed, by the following formula:

$$H_t = \Phi \left(\frac{\log(z/\bar{y}_t)}{\sigma} + \frac{1}{2} \sigma \right),$$

where Φ is the cumulative distribution function of the standard normal, z is international poverty line (i.e. \$1.25-a-day – PPP 2005), and σ is the standard deviation of the lognormal distribution. The latter can be calculated from the Gini coefficient G by the following equation:

$$\sigma = \sqrt{2 \left[\Phi^{-1} \left(\frac{G+1}{2} \right) \right]^2}$$

Based on the estimates, additional 9.35 million people in the Asia-Pacific region could be trapped below the poverty line of \$1.25-a-day by 2013, and 14.35 million based on the \$2-a-day poverty line, in the case of global economic crisis triggered by a disorderly euro zone debt.

Given the economic dynamism of the region, the actual number of people living with less than \$1.25-a-day is still expected to be reduced by 46.2 million people by 2013, but under the baseline scenario the number of poor would have decreased by 55.6 million people. Thus the main effect of a disorderly euro zone debt scenario would be a significant slowdown in the pace of poverty reduction in Asia and the Pacific. Of those additional people trapped below the \$1.25-a-day poverty line in 2013, 8.19 million would be prevented to get out of poverty, while another 1.15 million would be pushed back into poverty (table 5).

Table 5: Impact on poverty: number of additional people living below \$1.25-a-day, selected Asia-Pacific countries (Millions of people)

	Additional poor (cumulative)		Prevented to get out of poverty (cumulative)		Pushed into poverty (cumulative)		Poverty headcount (percentage points, cumulative)	
	2012	2013	2012	2013	2012	2013	2012	2013
North and Central Asia								
Armenia	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.09
Azerbaijan	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03
Georgia	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04
Kazakhstan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kyrgyzstan	0.00	0.01	0.00	0.01	0.00	0.00	0.04	0.15
Russian Federation	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.01
Tajikistan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Turkmenistan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uzbekistan	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.04
South and South-West Asia								
Bangladesh	0.21	0.88	0.21	0.88	0.00	0.00	0.12	0.51
Bhutan	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04
India	0.62	1.68	0.62	1.68	0.00	0.00	0.05	0.14
Iran, Islamic Rep.	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.01
Maldives	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Nepal	0.01	0.02	0.00	0.00	0.01	0.02	0.02	0.07
Pakistan	0.69	2.25	0.69	1.22	0.00	1.03	0.38	1.23
Sri Lanka	0.00	0.03	0.00	0.03	0.00	0.00	0.02	0.15
Turkey	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.01
Pacific								
Micronesia, Fed. Sts.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Papua New Guinea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
South-East Asia								
Cambodia	0.01	0.05	0.01	0.05	0.00	0.00	0.08	0.36
Indonesia	0.25	1.07	0.25	1.07	0.00	0.00	0.10	0.43
Lao PDR	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.13
Malaysia	0.00	0.01	0.00	0.01	0.00	0.01	0.01	0.05
Philippines	0.11	0.28	0.11	0.28	0.00	0.00	0.11	0.28
Thailand	0.02	0.06	0.02	0.06	0.00	0.00	0.02	0.09
Timor-Leste	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Viet Nam	0.07	0.33	0.07	0.33	0.00	0.00	0.08	0.36
East and North-East Asia								
China	0.58	2.11	0.58	2.11	0.00	0.00	0.04	0.16
Mongolia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub Total	2.59	8.84	2.58	7.75	0.01	1.09		
Total for the developing Asia-Pacific	2.73	9.35	2.72	8.19	0.01	1.15		

Source: Authors' calculations based on the Oxford Global Economic Model, World Bank's PovCalnet website, World Development Indicators Database, and IMF World Economic Outlook Database, April 2012.

The country with the higher number of people who would be pushed back into poverty is Pakistan (1.03 million), while the countries where most people would be prevented from stepping out of poverty would be China (2.11 million), India (1.68 million), Pakistan (1.22 million) and Indonesia (1.07 million). Based on the \$2-a-day poverty line, 11.97 million would be prevented to get out of poverty, while another 2.39 million would be pushed back into poverty, and the country with the largest number of people affected would be China (4.39 million) (table 6).

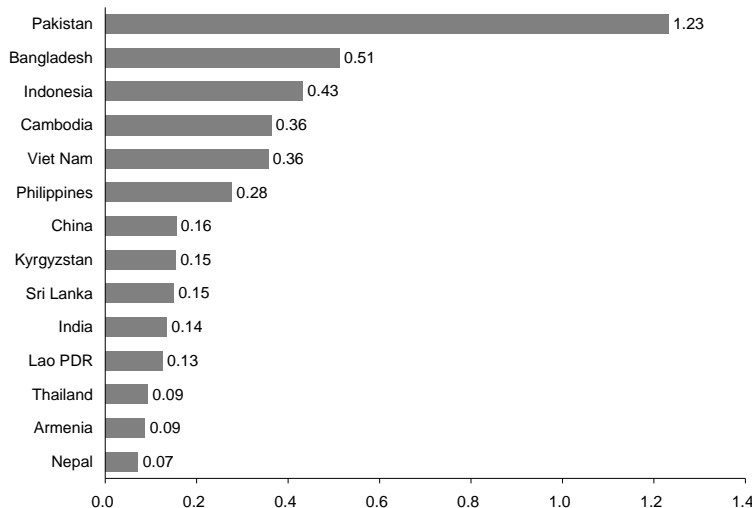
Table 6: Impact on poverty: number of additional people living below \$2-a-day, selected Asia-Pacific countries (Millions of people)

Country Name	Additional poor (cumulative)		Prevented to get out of poverty (cumulative)		Pushed into poverty (cumulative)		Percentage points (cumulative)	
	2012	2013	2012	2013	2012	2013	2012	2013
North and Central Asia								
Armenia	0.00	0.01	0.00	0.01	0.00	0.00	0.09	0.28
Azerbaijan	0.00	0.01	0.00	0.00	0.00	0.01	0.02	0.11
Georgia	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.06
Kazakhstan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Kyrgyzstan	0.01	0.03	0.01	0.03	0.00	0.00	0.11	0.44
Russian Federation	0.02	0.10	0.02	0.10	0.00	0.00	0.02	0.07
Tajikistan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Turkmenistan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uzbekistan	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.04
South and South-West Asia								
Bangladesh	0.21	0.92	0.21	0.92	0.00	0.00	0.13	0.54
Bhutan	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05
India	0.66	1.82	0.66	1.82	0.00	0.00	0.05	0.15
Iran, Islamic Rep.	0.01	0.02	0.00	0.00	0.01	0.02	0.01	0.03
Maldives	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04
Nepal	0.01	0.02	0.00	0.00	0.01	0.02	0.02	0.06
Pakistan	0.90	3.01	0.52	0.86	0.38	2.15	0.51	1.65
Sri Lanka	0.01	0.06	0.01	0.06	0.00	0.00	0.04	0.30
Turkey	0.00	0.02	0.00	0.00	0.00	0.02	0.01	0.03
Pacific								
Micronesia, Fed. Sts.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Papua New Guinea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
South-East Asia								
Cambodia	0.01	0.07	0.01	0.07	0.00	0.00	0.10	0.45
Indonesia	0.40	1.80	0.40	1.80	0.00	0.00	0.16	0.73
Lao People's Democratic Republic	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.15
Malaysia	0.01	0.04	0.01	0.02	0.00	0.02	0.03	0.14
Philippines	0.16	0.41	0.16	0.41	0.00	0.00	0.17	0.41
Thailand	0.04	0.15	0.04	0.15	0.00	0.00	0.06	0.24
Timor-Leste	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Viet Nam	0.14	0.67	0.14	0.67	0.00	0.00	0.16	0.73
East and North-East Asia								
China	1.17	4.39	1.17	4.39	0.00	0.00	0.09	0.32
Mongolia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub Total	3.77	13.58	3.37	11.32	0.40	2.26		
Total for the developing Asia-Pacific	3.99	14.35	3.57	11.97	0.42	2.39		

Source: Authors' calculations based on the Oxford Global Economic Model, data from World Bank's PovCalnet website and World Development Indicators Database, and IMF World Economic Outlook Database, April 2012.

In countries in which the impact would consist only of people prevented to step out of poverty, the effect of a disorderly euro zone debt scenario would be to slowdown the pace of poverty reduction. Such effect would be higher in Armenia, Bangladesh, Cambodia and the Philippines, where the number of people affected would represent over 25% of the number of people who is expected to step out of poverty under the baseline scenario. In contrast, such effect would be smaller for Kazakhstan (5.2%) and Georgia (7.3%).

Figure 6: Additional people living below \$1.25-a-day in 2013, selected Asia-Pacific countries (Percentage of population)



Source: Author's calculations based on the Oxford Global Model, data from World Bank's PovCalnet website and World Development Indicators Database, and IMF World Economic Outlook Database, April 2012.

The share of the burden would vary across the region. In Pakistan, the worst affected country in relative terms, the disorderly euro zone debt scenario would push up the poverty rate in 2013 by 1.2 percentage points from the baseline. Other countries with higher share of the population affected would be Bangladesh, Cambodia, Indonesia and Viet Nam, with additional 0.3% to 0.5% of the population living in poverty (figure 6).

The slowdown in poverty reduction caused by a disorderly euro zone debt scenario may result in a one-year delay in the achievement of the Millennium Development Goal on eradicating extreme poverty and hunger for many countries in the region, including Bhutan, India, Nepal and Uzbekistan.

IV. DOES ASIA EXHIBIT MACROECONOMIC POLICY SPACE?

The analysis in the previous sections highlighted that some Asian economies tend to be more adversely affected by the euro zone turmoil than others due to their high export dependency. Thirteen economies are the following: Azerbaijan, Bangladesh, Cambodia, Hong Kong (China), Indonesia, Kazakhstan, Republic of Korea, Malaysia, Pakistan, the Philippines, Singapore, Taiwan Province of China and Viet Nam. In these economies, the euro zone crisis would markedly cut economic growth, reduce merchandise exports and/or increase the number of the poor.²⁴ The channel of the impact varies across economies. For instance, Cambodia and Viet Nam would experience both much lower output growth and slower pace of poverty reduction. In Bangladesh, Indonesia, Pakistan and the Philippines, the poverty impact is sizeable although the growth impact could be more modest.

²⁴ The selected 13 economies met at least one of the following criteria: (i) estimated GDP growth over 2012-2013 under the crisis scenario is lower than 80% of that under the baseline scenario (see figure 1), (ii) export sensitivity measure amounts to at least 0.5% of GDP (see table 2), and (iii) the number of additional poor over 2012-2013 is at least 0.25% of population (see figure 6).

The baseline growth projections in most of these economies are subpar relative to their historical paces. According to IMF (2012), only Bangladesh, Indonesia and Taiwan Province of China may experience swifter output growth over 2013-2015 relative to their trend growth over 2000-2007 (figure 7). But if the baseline projections are downgraded by merely 15% due to a global slowdown, then only Indonesia would enjoy growth acceleration. To maintain macroeconomic stability and avoid subsequent social impacts, it is vital that economies can timely and forcefully respond to adverse external demand shocks.

Figure 7. Historical and projected output growth (%)

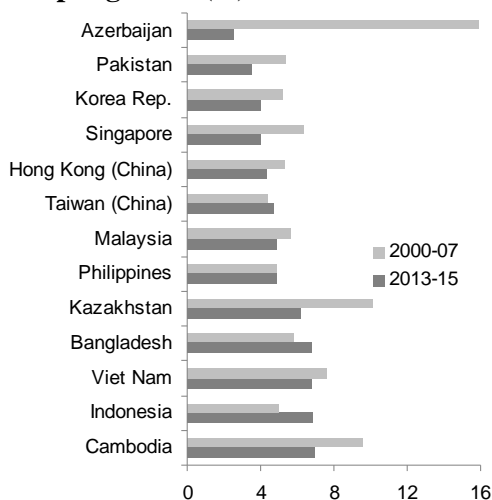
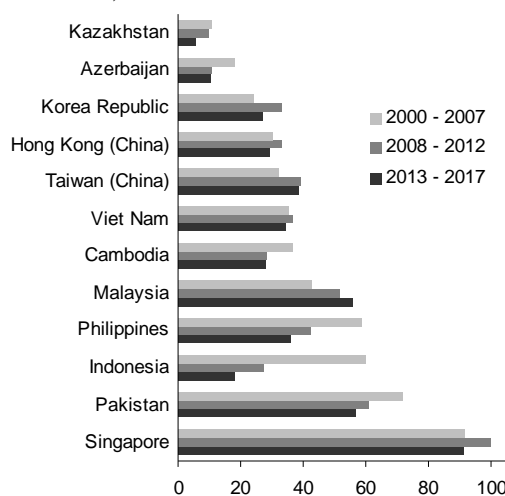


Figure 8. General government debt (% of GDP)



Source: Asian Development Bank (2007).

This section examines macroeconomic policy space, defined as room for domestic fiscal and monetary policies in response to sluggish global demand, focusing on the 13 economies above. It argues that reasonable policy space exists in these economies. But monetary policy space in some economies is restricted by strong inflationary pressures, while fiscal policy space can be constrained by relatively high and potentially rising public debt and/or debt projections that are sensitive to economic growth and other standardized shocks.

Fiscal policy space

Public debt appears manageable in most Asian economies closely linked with the euro zone. The 2008-2009 global financial meltdown has weakened fiscal positions in several economies as a result of fiscal stimulus packages and/or output decline in nominal terms (figure 8). But the current levels of general government debt as a share of GDP are still not considered excessively high. Public indebtedness is also set to improve in several economies over 2013-2015. Economies such as the Republic of Korea and Singapore, which are anticipated to run small fiscal deficits and surpluses respectively, should gradually resume their pre-crisis debt levels. The notable exception is Malaysia where public debt has been rising since the global economic crisis began and is expected to increase further in the near term.

Generally favourable public debt conditions are however sensitive to various factors, many of which may arise if the euro zone disorder materializes. The debt sustainability analysis carried out by the International Monetary Fund and the World Bank indicates that the risk of

debt distress is typically low among the economies considered here.²⁵ But in many instances, the baseline estimates assume a continuation or implementation of announced fiscal consolidation; hence, continued effort to maintain fiscal discipline is essential. Moreover, the debt paths are shown to notably deteriorate under several standardized shocks. For example, debt projections in Azerbaijan, Bangladesh, Cambodia, Kazakhstan, Malaysia and Pakistan appear sensitive to slower-than-expected economic growth, which is highly likely in an event of the euro zone crisis.²⁶ Meanwhile, under a historical scenario where key fiscal and other macroeconomic variables are assumed to continue at the historical pace, public debt would rise in Bangladesh and Viet Nam. In this aspect, fiscal reforms to expand revenue base and rationalize subsidies as well as prudent debt management are desirable. Other standardized shocks include realization of contingent liabilities, interest rate rise and domestic currency depreciation. Debt paths in Bangladesh, Cambodia, Malaysia, Pakistan, the Philippines and Viet Nam are exposed to some of these shocks.

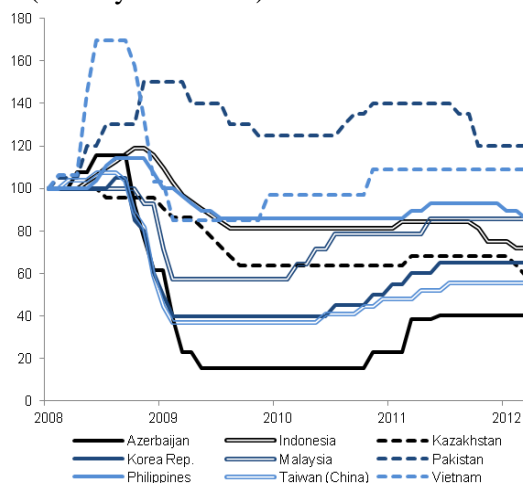
Monetary policy space

Monetary policy remains generally accommodative. Indonesia, Kazakhstan and the Philippines resumed their policy rate cuts in late 2011/early 2012 mainly in response to heightened uncertainty in the global economy (figure 9). Monetary policy stance in these three economies eased notably. The Philippines' policy rate is now back to its trough observed during the peak of the global financial crisis, while the rates in Indonesia and Kazakhstan indeed dipped below their previous troughs. For economies that have not yet adjusted their policy rates in recent months such as the Republic of Korea, Malaysia and Taiwan Province of China, the current levels are still below the pre-crisis rates so monetary policy remains conducive to growth. Whether and to what extent economies can afford loose monetary policy depends primarily on the near-term price pressures.

²⁵ See www.imf.org/external/pubs/ft/dsa/index.htm for the methodology and country studies. There is no debt sustainability analysis conducted for Taiwan Province of China.

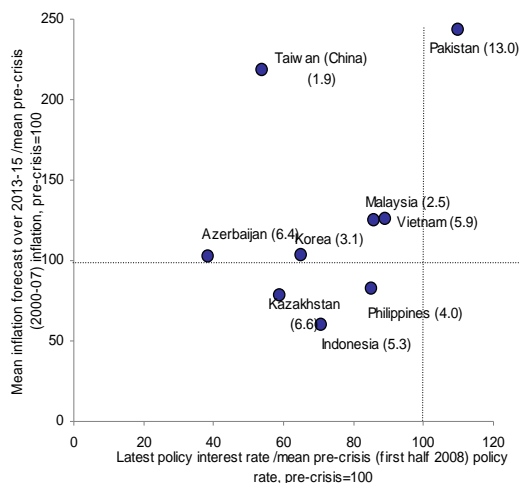
²⁶ The magnitude of the growth impact on debt profile can be significant. In the case of Malaysia, the public debt level could reach 70% of GDP by 2016 relative to the baseline of around 60% of GDP if output growth is 1.5 percentage points slower than the baseline.

Figure 9. Policy interest rate levels
(January 2008=100)



Source: Authors' calculations based on data from CEIC Data Company Limited.

Figure 10. Policy interest rates against inflation outlook



Note: The numbers in the parentheses show expected consumer inflation over 2013-2015. *Sources:* Authors' calculations based on data from IMF World Economic Outlook Database, April 2012 and CEIC Data Company Limited.

The inflation outlook is favourable, thus allowing some monetary policy space. In Malaysia, the Philippines and the Republic of Korea, the inflation outlooks over 2013-2015 are comparable to their historical trends during 2000-2007 and remain modest at 2.5-4% (figure 10). In Taiwan Province of China, although the consumer price pressures could accelerate, expected consumer inflation is still low at around 2%. If needed, policy rate cuts are possible in these four economies, especially among those that pursued more active policy rate normalization in the past quarters. Although not shown in figure 10 due to a more limited role of policy interest rate in monetary policy management,²⁷ monetary policy space also seems available in Cambodia and Singapore given their manageable near-term inflation rates. In contrast, the expected inflation rates in Azerbaijan, Kazakhstan, Pakistan and Viet Nam are considered rather high at around 5.9-13%. Lowering the policy rates in these cases might push up general price pressures further. Adopting micro-level, targeted schemes such as reducing taxes and tariffs, relaxing import restrictions, and using commodity buffer stocks to cope with inflation might be preferred.

Macroeconomic policy effectiveness

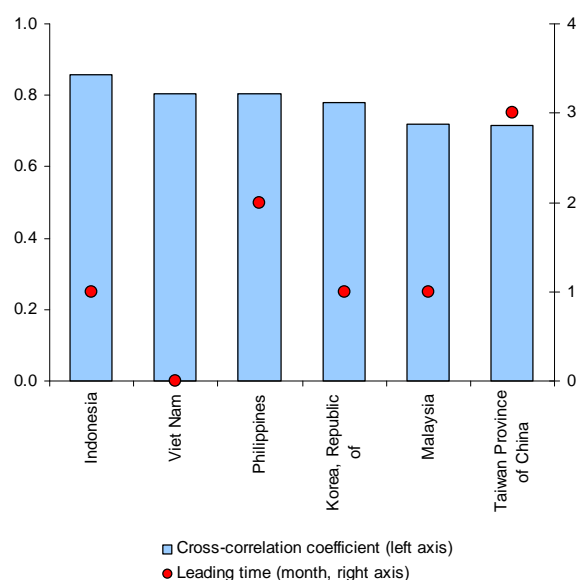
In addition to the policy space, policy design and an enabling environment for effective macroeconomic policies also matter. This section has so far focused on assessing fiscal and monetary policy space in the 13 economies which tend to be heavily affected by the euro zone crisis and represent all the sub-regions. But countries with larger policy space may not necessarily weather the downturn more resiliently. One factor at play is policy design and choices. For example, a fiscal stimulus package that emphasizes cash transfers to sustain consumer spending tends to have a different growth effect (in terms of magnitude, timing, etc.) from the package that concentrates on improving public infrastructure.

²⁷ This is mainly due to a high degree of dollarization in Cambodia, and the use of an exchange rate as a main monetary policy tool in Singapore.

Another important factor is the effectiveness of macroeconomic policy transmission. On fiscal policy, this relates to economic structure that helps to boost fiscal multipliers. Fiscal injections generally contribute more to economic growth when the national saving rate is higher, imports-to-GDP ratio is lower, public debt conditions are healthy, and the financial sector is more developed. Under this environment, the marginal propensity to consume and invest would be higher because incentives to save are limited, leakages to import bills are small, expectations on debt distress and future tax increases are weak, and financing channels to smoothen consumption and investment needs are effective.²⁸

On monetary policy, monetary transmission can be considered effective when changes in the policy rates are promptly and sizably translated into market interest rates, and where the adjusted interest rates meaningfully influence consumption and investment decisions. This first link between the policy and market interest rates typically occurs when excess banking system reserves are limited and commercial bank competition is reasonably strong. The second link between market interest rates and lending/borrowing activities is possible through a relatively developed financial market, and when spare production capacity is low and central bank independence observed. Central bank autonomy and transparency help to strengthen public expectations on monetary policy commitments.²⁹

Figure 11. The cross-correlation between policy interest rates and market lending rates



Source: Authors' calculations based on data from IMF International Financial Statistics and CEIC Data Company Limited.

Note: The data period is available data during January 2000 and April 2012.

²⁸ See Ducanes et al. (2009), Tang et al. (2010) and Yadav et al. (2011) for the analysis of fiscal multipliers in selected Asian economies. The results indicate that fiscal multipliers in larger economies like China and India are typically greater than one, and generally below one for smaller, open economies like Malaysia, Thailand, and the Republic of Korea. More broadly, Ilzetzi et al. (2009), Spilimbergo et al. (2009) and Corsetti et al. (2012) suggest some ranges of fiscal multiplier values under different conditions regarding exchange rate regime, degree of trade openness, national income level, and economy size.

²⁹ See Mishra and Montiel (2012) for a recent review of monetary transmission in developing economies. The literature also suggests that monetary transmission is stronger under the flexible exchange rate regime. But at the same time, fiscal multipliers are typically higher in economies with the fixed exchange rate regime. The net impact of exchange rate system on macroeconomic policy transmission remains unclear.

Interest rate pass-through seems effective in most economies considered here. A simple cross-correlation analysis suggests that the transmission from changes in the policy rates to bank lending has been responsive over the past years in Indonesia, Malaysia, the Philippines, the Republic of Korea, Taiwan Province of China and Viet Nam. The correlation coefficients are high at between 0.71-0.86, with the leading time of 0-3 months (figure 11). The pass-through is however much weaker in Azerbaijan (with coefficient around 0.27). This coincides with less strong banking sector competition there relative to other economies, as proxied by the interest rate spread.³⁰ Azerbaijan's domestic debt market is also less developed, which complicates monetary policy conduct (EIU, 2012).

V. CONCLUSION

The results clearly illustrate the growing concern of policymakers in the Asia-Pacific from the ongoing euro zone debt crisis as the region continues to face serious downside risks to trade, economic growth and poverty. With tight macroeconomic policies and prolonged lackluster growth in developed economies, there is a risk that restrictive trade measures would further deteriorate the growth and poverty reduction efforts in the region.

Despite the growing importance of intra-regional trade, a good portion of this trade remains tied to final demand in the developed countries through intermediate goods. The paper shows that up to 40% of total exports from the region eventually end up in the euro zone and the United States. One-third of these exports are initially shipped as intermediate goods to other countries for re-export to these developed economies. The potential trade impacts of any economic crisis emanating from the euro zone would be substantial for a number of the most export-dependent countries and most worryingly, for a number of the most vulnerable countries. The estimates indicate that on average, a one-percentage-point slowdown of the euro zone output growth from the baseline would reduce the pace of merchandise export growth of the region by about one percentage point. More importantly, least developed countries and other vulnerable economies would face additional burden due to their high dependence on markets in developed economies.

Finally, with robust domestic demand in several Asia-Pacific economies, the region is becoming increasingly important for other developing regions. The analysis indicates that there is a sizable scope to support growth through active government policy interventions. With relatively sound macroeconomic fundamentals and low public debt-to-GDP ratios, Asia-Pacific developing economies have reasonable policy space to mount fiscal stimulus programmes and relax monetary policy to support inclusive growth and sustainable development.

³⁰ Over 2000-2011, Azerbaijan's mean interest rate spread (the base lending rate minus the deposit rate) stood at close to 8 %, compared to 1.7-5.4 % in the six economies depicted in figure 11.

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