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Its primary objective is to provide a medium for the exchange of knowledge, experience, ideas, information and data on all aspects of economic and social development in the Asia-Pacific region. The emphasis of the Journal is on the publication of empirically based, policy-oriented articles in the areas of poverty alleviation, emerging social issues and managing globalization.

The Journal welcomes original articles analysing issues and problems relevant to the region from the above perspective. The articles should have a strong emphasis on the policy implications flowing from the analysis. Analytical book reviews will also be considered for publication.

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A note from the Editor

Foreign direct investment (FDI) is one of the most important, and perhaps the most keenly sought, components of globalization. Virtually all countries in the Asian and Pacific region have adopted policy regimes to attract FDI. But, in order to maximize its long-term contribution to development, host country Governments need to go beyond offering a passive open door approach to potential investors to one that seeks simultaneously to enhance the ability of their country to attract and absorb higher value FDI. In this connection, the importance of having good physical infrastructure has been well recognized for some time, as is the need to have effective institutions for oversight and regulatory purposes if the FDI is in services such as banking and insurance. What is insufficiently recognized perhaps is the need to build up adequate human resource skills so that FDI does not remain restricted to traditional low-cost labour activities but graduates to higher skills and higher value added activities. The paper on the changing role of the public sector in FDI posits that building such skills requires strong public sector involvement. In the opening paper the author focuses on the need for an active forward-looking contribution from Governments in the region that stresses the importance of developing human resources in order to enhance the contribution of FDI to growth.

Human resource issues are also discussed in the context of greater subregional cooperation in BIMP-EAGA or the Brunei Darussalam, Indonesia, Malaysia, Philippines East ASEAN Growth Area. The author looks at the different issues involved in greater subregional collaboration in producing new and expensive skills and how best to achieve the needed “critical mass” in this area. And subregional cooperation is examined in the paper on the spillover effects of services and manufacturing in ASEAN. The paper concludes that the relationship between services and manufacturing becomes bi-directional at some point so that countries cannot choose between greater investment in manufacturing and less in services but have to develop both sectors together.

A facet of globalization is the opening up of hitherto closed domestic activities, such as agriculture, to foreign competition. In the paper on Indian agriculture since the beginning of the 1990s reforms the author discusses the impact of the reforms on productivity growth in Indian agriculture. The paper looks at the role of globalization in the process and concludes that at this relatively early stage there is little observable evidence of gains to India’s agricultural performance. Import tariffs have indeed been reduced but domestic support prices for essential foodgrains have gone up, leading to a glut in stocks. However, gains in production efficiency are proving more elusive. Much therefore still remains to be done in the practical arena of incentives between food and other crops if the contribution of globalization to greater efficiency in the critical but traditional activity of agriculture is to be enhanced in the years ahead.

Finally, the paper on the impact of foreign aid on poverty in Papua New Guinea deals with the difficult question of what impact, if any, outside assistance can have on poverty in a country like Papua New Guinea. Growth in Papua New Guinea
has not been pro-poor and has, in fact, been characterized by rising levels of inequality. In the case of Papua New Guinea the author concludes, however, that the donors, at any rate, have been following an approach that reduces poverty and improves human well-being.

Shahid Ahmed
Foreign direct investment (FDI) is one of the key drivers of globalization. Along with trade and portfolio flows such as debt and equity, all of which, together with the information, communication and technology (ICT) revolution, are major forces in increasing the process of global business activity. FDI induces trade and deepens interdependence among nations. Indeed it is difficult to find any policy regime, be it in taxation, investment protection or foreign exchange transfer in both developed and developing countries that does not have an active stance on promoting foreign direct investment. FDI involves the effective management control of a resident entity in the host country by an enterprise resident in another country, and hence has corporate governance implications.¹ It has also been viewed in some circumstances as infringing on a country’s sovereignty through foreign control over its resources, particularly where natural resources such as minerals, oil, forests and water are involved, and a threat to domestic investment promotion. Others have questioned the benefits of

¹ In the past boundaries of firms were solely determined by ownership, but now de facto they are much fuzzier as their capability to control the allocation of resources through a variety of networking arrangements which include strategic alliances and long-term contractual relations with suppliers or what sometimes is referred to as a group of related suppliers. The most obvious manifestation of this change in thinking has been the widespread deregulation and liberalization of markets, the privatization of State-owned enterprises that is open to foreign participation and deeper integration of asset markets.
FDI on national security grounds, and even on the grounds that they contribute to a weakening of domestic investment and consequently undermine the strength of national industries. Attitudes are changing, however, and FDI, with certain reservations, is being regarded as “good cholesterol” and part of the solution to promoting development.

Despite reservations concerning FDI involvement in some strategic sectors, why has FDI evolved to be the mantra for promoting economic progress by national Governments, some of which in the past viewed FDI with much suspicion? Indeed FDI flows have been cited as one of the key ingredients for the success of many East Asian economies despite the recent fall in the volume and quality of FDI in some countries. Just as country attitudes have changed in favour of market-oriented and private-led economies, a parallel shift in thinking has been evolving that recognizes that the cost of giving up all or part of domestic ownership and management control in some sectors and in some circumstances is outweighed by the benefits from FDI. Sometimes there is little choice. Most developing countries do not have the necessary level of savings and know-how to sustain economic growth. FDI after all provides a composite bundle of capital stock, technology and know-how as well as in some cases market access that can have an impact on output, trade and employment for the recipient economy. There are difficulties in pursuing old public sector-centred and nationally oriented strategies in the new technological and competitive setting.

**FDI flows and destination**

The *World Investment Report* by UNCTAD (2003) indicates that FDI grew by 29 per cent in 2000 from 1999, faster than other economic aggregates like world production, capital formation and trade, reaching a record of nearly US$ 1.4 trillion. However, in 2002 as a result of the simultaneous economic slowdown in the world’s three largest economies, the United States of America, Japan and the European Union, this rate fell sharply for the first time in a decade to less than half of this amount at US$ 651 billion, roughly reflecting 1998 levels (UNCTAD, 2003) (see table 1).

The continued sluggishness in the world economy and weak equity prices have affected FDI flows in 2002 and 2003 as well. This is compounded by a feeling of uncertainty caused by geographical tensions.

The comparison of the world maps of inward and outward FDI in 2000 and 1985 reveals that FDI reaches many more countries in a substantial manner than in the past. More than 50 countries (24 of which are developing countries) have an inward stock of more than US$ 10 billion, compared with only 17 countries in 1985 (7 of them developing countries). Despite this, FDI is unevenly distributed. The prime destination for the bulk of the FDI flows is to developed countries, with the United States being the largest recipient. Developing countries absorbed some US$ 162 billion in FDI inflows in 2002 (which is a fall of about a third from 2000),
Table 1. Total FDI inflows
(Millions of dollars)

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a Israel and Japan.

about a quarter of the world’s share, but this is a reduction from the 41 per cent share achieved in 1994 (figure 1). In absolute terms, this amount achieved in 2001 was a fall from the record of US$ 246 billion achieved in 2000. Of this, developing countries in Asia received some US$ 95 billion in 2002 (compared with US$ 142 billion in 2000, which was a record), with China taking the lion’s share of about $ 53 billion, followed by Hong Kong, China (US$ 14 billion, representing a large drop from 2002). ASEAN-10 got only 13.2 per cent of the Asian share in 2002, and this is well below the 25 to 30 per cent Asian share prevailing before the 1997 crisis. The crisis, while drastically affecting portfolio flows, did not result, except in the case of Indonesia, in outflows in FDI. From 2000 to 2002, FDI in the ASEAN-10 countries decreased by 13.4 per cent from US$ 18.6 billion to about US$ 14 billion, mainly from the traditional sources of the United States, Europe and Japan (see table 2 and figures 2 and 3). Between 1990 and 1997, East Asia attracted more than 17 per cent of the world FDI.

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2 In 2002, for China national sources indicate that FDI stood at almost $ 53 billion, its highest ever, while for Hong Kong, China, it fell to 13.7 billion.
Mergers and acquisitions (M&A) have accounted for a substantial share of FDI in recent years, although there has been a fall from record levels in 2000, mainly owing to declines in share prices and the economic downturn. The immediate benefit of cross-border M&A in East Asia following the crisis was to provide funds to help solvent firms with short-term liquidity problems to avoid bankruptcy. In some cases, the M&A was hostile in nature involving a forced sale of assets.\textsuperscript{3} There is insufficient evidence that cross-border M&A transactions have had a significant impact in restructuring the economies of the crisis countries, although they have now declined. The World Bank (2001) noted that foreign acquisitions of the M&A kind, unlike greenfield investments, do not contribute directly to added investment and thus may have lowered the impact of FDI on domestic investment. In the long run it remains to be seen whether such acquisitions could lead to new capital flows and improved access to technology and organization techniques.

Some sectors have taken a larger hit than others, in particular airline and tourism industries, and ICT (“the new economy” service sector), which were at the centre of cross-border investment in the 1990s. The ICT sector is undergoing a consolidation process as a result of the burden of sizeable debts due to unrealized investment returns. A restructuring, backed by better economic performance, can lead to an eventual upturn in investment (OECD, 2003).

\textsuperscript{3} In the five countries most affected by the Asian financial crisis, the value of cross-border M&A was higher in 1998 than in 1997, largely owing to increases in M&A activity in the Republic of Korea and Thailand. Krugman (2002), described such FDI involving the forced sale of assets as “fire-sale FDI” and poses the question whether foreign corporations are taking over domestic enterprises because they have special competence, and can therefore run them better, or simply because they have cash and the locals do not? The answer is probably some of both, and more research is required.
## Table 2. FDI inflows  
*(Millions US dollars)*

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- .. Not available
- a Estimates
Figure 2. FDI inflows to China, Hong Kong, China and Taiwan Province of China


Figure 3. FDI inflows to selected economies

Competitiveness of TNCs

What is in it for the 65,000 transnational corporations (TNCs) with about 850,000 foreign affiliates, more than half of which are in electrical and electronic equipment, motor vehicle and petroleum exploration and distribution companies? While national Governments see FDI as a way to spur national development, TNCs seek to enhance their own competitiveness in an international context, i.e., to sustain income growth in a liberalizing and globalizing world. The nature and accelerating pace of technological change are the driving forces and make it necessary to shift activities up the value chain. This is most noticeable in the merger of communication and information processing technologies. The rising complexity of information flows, the changing competitive conditions and the diversity of possible locations mean that TNCs have to organize and manage their activities differently. This requires not only changing management and technical skills but also changing relations with buyers, suppliers and competitors to manage better processes of technical change and innovations. An objective is to find the best match for their mobile assets (e.g., technology, R&D, training and strategic management) with the immobile assets of different locations within an integrated production and marketing system. The most attractive immobile assets, apart from primary resources and a large domestic market, are now world-class infrastructure, skilled and productive labour, innovative capacities and an agglomeration of efficient suppliers, competitors, support institutions and services. Within this framework of an international integrated production system involving intra-firm division of labour and value added, any part of the chain of an enterprise can be located abroad while remaining fully integrated into a corporate network. The boundaries of what is internal or external to the firm are shifting as processes and functions become divisible. A highly visible group of large TNCs continues to grow, often with turnovers larger than the national incomes of many developing countries. Consequently, competition between countries is de facto competition among individual country’s enterprise groups, for example, Boeing of the United States and Airbus of the European Union in aerospace and IBM (United States), Siemens (Germany), Nokia (Finland) and Ericsson (Sweden) in IT hardware.

The challenge for Governments is to develop an FDI strategy in this new competitive context that can benefit countries in terms of their own endowments and development objectives. There are market failures in the investment process and

---

4 Besides international enterprises in the top 100 TNCs such as the Vodafone Group, General Electric, Exxon/Mobil Corporation and Royal Dutch/Shell Group, some leading ones are in Japan such as the Toyota Motor Corporation and Mitsubishi Corporation, whose revenues exceeded $100 billion in 2001. In the same list are 5 firms headquartered in developing countries such as Petronas (Malaysia) and L.G. Electronics (Republic of Korea).

5 Market failure can occur when correct signals to economic agents are not present to make proper investment decisions and these could take the form of markets failing to exploit existing endowments fully or to develop new competitive advantages owing to a lack of information or weak markets and institutions.
divergences between TNC and national interests, and this implies a government role of intervention in the FDI process to attract or promote specific types of FDI or regulate and guide it. In this regard, several issues could be raised. First of all, what is the scope of the public sector in this process? Is it one of a passive “open door”, i.e., adopting an FDI-friendly environment, or aggressive targeting and screening of TNCs to ensure that the FDI produces value added activities including local content and technological transfer? Further, should Governments provide direct support to promote FDI or even participate as joint venture parties? How much public investment and/or subsidies should be directed to support FDI? Secondly, what is the relationship between FDI and the domestic private sector: is it complementary and reinforcing or detrimental to the growth of the domestic private sector? A large part of FDI is export-oriented and hence affected by volatility in the business cycles of the home countries and trading partners. Hence, there are arguments that pure reliance on FDI may not sustain economic development and that domestic sources of growth, particularly those from the private sector, should be nurtured. These questions are not exhaustive but only indicative of the issues that arise in the consideration of FDI and as discussed later, have been incorporated in the changing FDI strategies of the Governments in the Asia-Pacific region.

Objective

The objective of this article is to examine the changing nature of the role of the public sector in FDI and domestic private investment promotion. Section I examines briefly the experience of selected East Asian countries in FDI. Section II evaluates the relationship between FDI and the domestic private sector, and specifically evaluates evidence on whether FDI crowds in or crowds out the domestic private sector. The nature of the crowding-in and crowding-out process is considered. Section III discusses the role of the public sector in FDI and domestic private sector promotion, including some pointers for the responsibilities of the source countries and the foreign investor. Section IV provides the summary comments and conclusions.

I. ASIAN EXPERIENCES IN FDI

The Asia-Pacific region is a vast and diverse one, and hence the level and range of FDI across sectors vary in accordance with national endowments, absorptive capacity and policy stance towards FDI.

China, India and the Republic of Korea have placed more emphasis on promoting domestic investment while countries like Hong Kong, China, Singapore and Malaysia have adopted growth strategies with a heavy reliance on FDI and trade. The latter view is, however, changing with the recent slowdown in the world economy, and the growing recognition of the need to balance FDI with domestic sources of
growth. Hence, in terms of policy stance there are variations in FDI policies across countries and within a country over time.

This section focuses on East Asia, which has a strong pro-export bias in the trade regimes of the countries and which has a wide and long exposure to FDI. The key features in FDI policies can be summarized as follows:

- There has been a differentiated, strategic and evolving approach to FDI policies that covered those that protect certain sectors on “infant industry” grounds and policies that actively attract FDI to selective sectors mainly to promote exports, through a variety of investment incentives that have included free trade zone facilities, tax holidays and other fiscal incentives, and freedom to repatriate profits and capital. The balance between reliance on FDI and domestic sources of growth has varied across countries and over time.

- Over the years there has been a liberalization of foreign equity limits in some sectors, lowering or elimination of local content requirements and an expansion in the positive list of sectors/industries where FDI is permitted, including participation in privatization programmes.

- FDI-specific laws in one form or another have been enacted to spell out the main features of FDI regimes that are distinct from those applying to the domestic entity. However, in some countries, foreign investors are increasingly treated in the same manner as domestic companies with relevant provisions being incorporated in general business and commercial laws as in many developed countries.

- There have been increasing numbers of bilateral treaties for the promotion and protection of FDI as well as the avoidance of double taxation.

- In some countries there has been a growing shift to promoting FDI that embraces international production networks with a greater focus on dynamic effects of FDI – technology transfer, skills development and market access in addition to the traditional goals.

- There has been a fostering of the growth of dynamic industrial clusters that promote backward, forward and horizontal linkages marked by sustained exchanges of information, technology, skills and other assets.

- There has been a trend in some countries, particularly since 1996, towards FDI incorporating less greenfield investment and more M&A that do not involve immediate new investment in terms of creation of new assets but a change of ownership.6 This is reflected in both the manufacturing and services sector, e.g., banking.

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6 After strong growth of cross-border M&A in 1999 and 2000, the value fell by half in 2001, owing to concern over the global economy, sagging stock prices, lower corporate earnings and governance practices. This trend is likely to continue in 2002 (see UNCTAD, 2002 and Global Business Policy Council, 2002).
Reinvestment of earnings is becoming a significant source of FDI flows, particularly in the ASEAN countries, and such earnings accounted for more than 75 per cent in Malaysia and Singapore and 33 per cent in the Philippines in 2001.

The FDI regimes in East Asia have been by and large export-centred and have undergone rapid changes in the light of changing technology, economic conditions and the nature of competition. A recent survey of the executives of TNCs indicates that trade openness and growth are important for expanding FDI opportunities (Global Business Policy Council, 2002).

The key types of FDI are as follows:

1. The predominant type of FDI has been outsourcing to reduce production costs in terms of labour, infrastructure and natural resources as well as to promote exports, more traditionally in textiles and assembly/manufacture of electronic products, and more recently of cars. Production tends to be relocated in stages from more advanced to less developed countries in search of lower labour costs, i.e., the so-called flying-geese pattern of FDI. This process is a continuing one, and some examples include relocating production from home countries to China, Malaysia, the Philippines, Thailand and Indonesia. Most of the investment by Hong Kong companies in mainland China as well as Japanese, United States and European investment in Asia since the 1970s has fallen into this category. Firms in garments and footwear with leading brand names such as Reebok, Adidas, London Fog and Nike have set up buyer-driven production networks. By and large the flying-geese pattern has been most prevalent in such industries as garments and toys, where sunk costs are low.

2. An important form of FDI has been the creation of new comparative advantage by accessing information, technology and marketing channels as well as new technologies, products or services. This has been initially with conventional international production networks (IPNs), i.e., within multinational enterprises, and later to new IPNs consisting of inter- and intra-firm relationships through which TNCs organize a complete range of business activities, including R&D, product design, supply of inputs, manufacturing, distribution and support services. Examples include automobiles and ICT products. The experiences in countries in East Asia have

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7 Basically the “flying-geese” hypothesis focuses on changes in industrialization and comparative advantage. Lead country firms through FDI move production of their second-tier production to follower countries to take advantage of lower costs in order to raise the competitiveness of the products in the world market. This leads to an increase in exports of follower countries. The process over time moves production to follower countries, and as comparative advantage trends change, the location of the follower countries changes. In the description for East Asia, Japan is the lead country, followed by newly industrializing countries and areas, (Republic of Korea, Taiwan Province of China, Singapore), which are in turn followed by ASEAN-4 (Indonesia, Malaysia, Philippines, Thailand), and more recently China and Viet Nam.
a tiered development pattern reflecting a hierarchy of technological capacities, infrastructures and labour costs. For example, disk drive production has been able to obtain relatively low-cost labour (e.g., Thailand, Malaysia, China), a growing pool of technical personnel (e.g., Singapore, Malaysia), capable supplier firms (e.g., Singapore, Malaysia) and advanced infrastructure (e.g., Singapore).

Some emerging trends:

1. There has been a growing shift of FDI to China in terms of both outsourcing and IPNs in the light of low labour costs, a large domestic market as well as China’s entry into the World Trade Organization (WTO). This is putting pressure on ASEAN countries such as Malaysia and Thailand to move up the value chain of production. China is already becoming a rising competitive location for technology-intensive activities for TNCs.

2. Newer countries are joining in the flying-geese formation of FDI, e.g., Viet Nam, India and Bangladesh, although it is concentrated on lower-value products.

3. Countries like China, Malaysia and Thailand as their skill and infrastructure base improve will provide competition to older industrializing countries and areas like Singapore and Taiwan Province of China.

4. A new pattern of flows in terms of source and destination countries is emerging. TNCs from Hong Kong, China, Singapore and Taiwan Province of China have become very active in promoting FDI in North-East and South-East Asia. Outward investment from China, India, Malaysia and the Republic of Korea is gaining momentum.

5. There is expected to be continued development of subregional growth triangles despite setbacks caused by the 1997 crisis, as they involve collaboration of the three factors of land, labour and capital. Some important ones include the Greater Mekong subregion (Cambodia, Lao People’s Democratic Republic, Viet Nam, Thailand, Myanmar and China), the biggest project extended beyond the ASEAN Investment Area (AIA)\(^8\) based on an agreement signed in 1998 and the potential for broadening this Area to ASEAN+3 (ASEAN, China, Japan and the Republic of Korea), which besides becoming a huge free-trade zone could also develop into a pan-East Asian integrated production network.

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\(^8\) The main elements of AIA are: a co-ordinated ASEAN investment cooperation and promotion programme that will generate increased investment from ASEAN and non-ASEAN sources; provision of national treatment to ASEAN investors by 2010 and to all investors by 2020, subject to some exceptions; and opening all industries to ASEAN investors by 2010 and to all investors by 2020, subject to some exceptions.
II. FDI – CROWDING IN OR CROWDING OUT OF DOMESTIC INVESTMENT?

Does FDI crowd in or crowd out the domestic private sector? Does it redirect government capital expenditure to activities to promote FDI at the expense of others? Crowding out or in can take place in either product or financial markets. Crowding in means the development and upgrading of domestic firms to benefit from linkages with foreign affiliates to raise the efficiency of production and contribute to the diffusion of knowledge and skills from TNCs to the local enterprise sector, and the degree to which affiliates integrate themselves into the local learning system.9 It also includes new investment in upstream or downstream production by other foreign or domestic producers or increases in financial intermediation. Crowding in could also take the form of accelerating government investment in improving physical infrastructure and the educational system to promote FDI. By contrast, crowding out can take two forms. First, using the “infant industry” argument, FDI in the product market may abort or distort the growth of domestic capabilities in competing industries with direct exposure to foreign competition or retard the growth of the local innovative base. This can make technological upgrading and deepening dependent on decisions taken by TNCs and could in some cases hold the host economy at lower technological levels than would otherwise happen with potentially efficient domestic enterprises. The second form of crowding out is in terms of access to finance and skilled labour, resulting in an uneven playing field for domestic firms. This can raise the cost to local firms in terms of finance and skilled personnel. In some cases TNCs can create dual labour markets as well as raise the entry cost for local firms or simply deprive them of the best factor inputs.

In practice it is difficult to draw a distinction between crowding out and legitimate competition, and this is a policy challenge between regulating foreign entry and permitting competition. While the aim is to develop the domestic private sector, it should not lead to the propping up of local uneconomic firms for long periods at a heavy cost to domestic consumers and economic growth. For new industries, the test is whether these investments would have been made at all without FDI. At the same time, in some circumstances one could raise the question whether FDI is more efficient than domestic investment, particularly if its sustainability depends on the incentives provided. From the public investment point of view, there could be a diversion of public investment from domestic-oriented activities to those that serve

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9 Technology transfer can cover a range of areas such as product technology (i.e., proprietary product know-how, product design and specifications, R&D collaboration), process technology (provision of machinery and equipment, technical support on production planning, quality management) and organizational and managerial know-how (inventory management, quality assurance systems, network management, financial purchase, marketing techniques).
the foreign investor in terms of infrastructure that facilitates foreign investment projects rather than those in regions that are insulated from such investment or those that could have been given to the domestic private sector to develop new and niche areas.

Most investigations of this issue consider the matter in terms of the contribution of FDI to economic growth. Does one dollar of FDI produce more or less of this in terms of new investment? De Mello (1997) surveys the recent literature on the impact of inward FDI on growth in developing countries. He concludes that the ultimate impact of FDI on output growth in the recipient economy depends on the scope for efficiency spillovers to domestic firms, by which FDI leads to increasing returns in domestic production and increases in the value added content of FDI-related production. Also FDI is believed to be a very important source of human capital augmentation and technological change in developing economies since it promotes the use of more advanced technologies by domestic firms and provides specific productivity-increasing labour training and skill acquisition. Through a survey of the literature that employs various growth-FDI econometric models, at both the country level and the sector/industry level, De Mello makes the following conclusions from various studies that are also considered by Mody and Murshid (2002):

1. FDI is positively associated with growth, but only where human capital is sufficiently high, and higher-income countries gain more from capital flows than poor countries. Further, investment is pro-cyclical and influenced by financial market development.

2. Overall, the impact of FDI on growth depends on various types of externalities and productivity spillovers and the foreign investor’s willingness to transfer newer technologies. The absorptive capacity of the recipient country is an important element to induce the multiplier effect on growth.

3. The impact of cross-border knowledge transfer depends on the technological gap between the technology leaders and followers, and the bigger the gap, the greater the diffusion.

4. The degree of substitutability between capital stocks embodying old (domestic) and new (FDI-related) technologies seems to be higher in technologically advanced than developing recipient economies, and the evidence shows limited technological transfers incorporated in FDI.

5. The evidence highlights the importance of existing factor endowments, thereby reinforcing the hypothesis of the development threshold as a crucial determinant of FDI, and in this regard ensuring a better environment for domestic investment would undoubtedly increase a country’s ability to host foreign investment.

Borensztein, de Gregorio and Lee (1998) in their cross-section regression framework study of FDI flows to 69 countries over 20 years conclude that FDI is an important vehicle for the transfer of technology, contributing more to growth than domestic investment; however, the effect of growth is dependent on the quality of
human capital available in the host economy, and more specifically the level of educational attainment. They observed some evidence of crowding-in effects, but the results are less robust.

UNCTAD (1999) in another review of industry and country examples for crowding out and crowding in noted that the evidence may not be clear-cut and mostly neutral, i.e., one dollar of FDI leading to an increase in domestic investment by just one dollar. Caution is expressed on the results of various findings as the variables are viewed as far from perfect and there are secondary effects that are impossible to measure. In most cases, crowding out does not mean an absolute reduction in total investment, but rather that its increase is not proportionate to FDI flows. Hence, crowding out cannot be ruled out, but it does not appear to be the general case. Examples from countries in East Asia – Indonesia, Malaysia and Thailand – that have relied heavily on FDI show that it may take some time for indirect effects on domestic investment to take place, particularly those relating to the microelectronics sector. UNCTAD noted that in the absence of TNCs, it is unlikely that those investments would have been made at all. Initially, however, many of the foreign affiliates were essentially assemblers with few linkages to the rest of the economy. Over time, domestic suppliers of service and inputs have emerged. In a study of 39 countries covering a period between 1970 and 1996, it noted that out of the 12 Latin American countries included in the test, none was in the group with crowding-in effects, while neutral and crowding-in effects prevailed in 12 Asian countries. The study also showed that mining and other raw material extraction projects generated few linkages and therefore their indirect effect on domestic production was negligible.

Looking at possible crowding-out effects of public investment, those made in infrastructure, skills development and other related activities usually tend to benefit not only FDI but domestic private investment as well, and in some sense are public goods. Nevertheless, there could be investments that are solely for the support of FDI such as factory shells, free trade zones and their administration as well as subsidies that can be more costly, unless the FDI bring in benefits that give a return on the investment. Otherwise, it could represent a high opportunity cost for public investment in other areas. Available evidence in the literature is, however, scanty.

Much more research is also needed to draw firm conclusions about overall crowding-in and crowding-out effects. In new areas of investment, particularly in high technology, and in new activities beyond the current reach of domestic investors in developing countries, there are more likely to be favourable benefits to capital formation than in foreign investments in areas where domestic producers or service providers already exist. In the latter case, except in terms of competition with domestic laggards, FDI may take away investment opportunities that were open to domestic private investment prior to the foreign investments. However, the nurturing of domestic firms may be required in this regard so that they can enter the industry successfully without being swamped by FDI that may pre-empt domestic investment. Indeed, this
was the rationale for limiting FDI in certain high-technology industries in the Republic of Korea and Taiwan Province of China. In these cases, the policy makers view that domestic firms could emerge paid off. However, an example of costly intervention in favour of domestic firms in high-technology industries was the Brazilian informatics policy of the early 1980s that involved restrictions on FDI in information technology activities. For some countries the best strategy may be the Korean/Indian type, where the focus has been on building local managerial and technological capacities and using FDI in a selective and strategic manner.

III. THE ROLE OF THE PUBLIC SECTOR

The key issue about the role of the Government is not whether it should intervene but the kind of intervention, including direct participation if there is insufficient capacity in the local private sector. Some macroeconomic policies and investment-friendly policies are necessary, although not sufficient in today’s world of increasing competitiveness in attracting investment. The crucial role for the host Government is to create conditions as well as be proactive in developing these new drivers to attract international production and services in the light of the fact that contract manufacturing has grown rapidly to take advantage of differences in costs and logistics. This implies giving equal emphasis to promoting domestic private investment to benefit from the FDI. Simply opening up an economy is only the first step, and no longer enough to attract sustained flows of FDI and upgrade the quality. At the minimum, foreign investors are expecting assurances of the rule of law, a commitment to be treated no less favourably than competing domestic investors and provisions for the free transfer of capital, profits and dividends, guarantees against expropriation of their assets and binding arbitration of disputes.

The report of the panel on high-level financing for development (United Nations, 2001) to the Secretary-General advised host Governments not to exempt foreign investors from domestic laws governing corporate and individual behaviour, or to use costly and discretionary investment incentives or those that eroded labour and environmental standards in a “race to the bottom”. The report also said that developing countries needed to continue improving their attractiveness to FDI through positive actions (i.e., by improving standards of accounting and auditing, transparency, corporate governance and public administration) rather than through tax concessions, which should be regulated and discouraged.

An OECD study (Oman, 1999) indicates that incentives-based competition for FDI can be intense in selected industries (e.g., automobiles) or for particular investment projects. Most incentives-based competition is effectively intraregional,

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10 The Monterrey Consensus (2002) gives a strengthened role to the State with regard to the private sector and markets, particularly in terms of setting appropriate frameworks to regulate markets.
i.e., within a region. While data on direct financial/fiscal cost per job are not readily available, OECD estimates that in the automobile industry the cost in OECD as well as developing countries can exceed US$ 100,000 per job. Hence the distortion effects of incentives on a de facto basis work against local firms and against firms in sectors or types of activities that are not targeted. Undiscerning use of investment incentives and other discretionary policies by Governments to attract FDI can have a negative effect on FDI flows, partly because incentives could be viewed as unsustainable.

The competition for FDI raises the delicate question of how to ensure accountability of government officials, particularly those involved in the negotiation of discretionary incentive packages. A strong rules-based approach to attracting FDI, including safeguards for labour standards and the environment, can provide the policy transparency necessary to limit rent-seeking behaviour. Policies on FDI are also needed to counter two sets of market failures. The first arises from information or coordination failures in the investment process that can lead a country to attract insufficient FDI and more importantly the wrong quality of FDI. The second results when private interests of TNCs diverge from the interests of the host countries. This can lead to negative effects of FDI or a failure to harness fully the potential of the FDI.

The challenge for the Government is achieving the right balance in terms of promoting synergy between FDI and domestic private investment in terms of a win-win situation for the citizens. At the heart of these endeavours is improving the competitiveness of a country’s economy to improve its economic fundamentals and enhance living standards. As the performance of economies, industries and firms is continuously compared and benchmarked across nations, it means that individual firms and countries must also benchmark all activities against the best of competitors in a changing world economy marked by knowledge and technology-based advantages. In other words, apart from the series of measures to liberalize the economy and promote FDI that many countries are in the midst of implementing to varying degrees, there is a need for proactive policies aimed at shaping new industrial and service locations through a cooperative approach between the public and private sectors.

What determinants of competitiveness should the public sector focus on? The standard determinants of competitiveness are not only the economic, technological and measurable attributes such as strong economic fundamentals, political stability, technological effort, human resources development, physical infrastructure and financial and labour market flexibility. There are also non-economic factors, some of them controversial, such as the promotion of democratic institutions, human rights, corporate governance, anti-corruption and a host of other subjective criteria. Effective governance is therefore essential to encourage both sound FDI and domestic private investment. The role of the Government spans virtually all aspects of economic development, and here, the focus of the discussion is narrowed down – only aspects that have a direct bearing on promoting FDI and domestic private sector linkages will be considered. In
addition, specific government measures to nurture the domestic private sector in the deepening global integration of production will be discussed. This is not to downplay the other policy areas, which, depending on the stage of economic development and individual country circumstances, can give rise to different priorities.

A typical FDI-promotion model encompasses the following:

(a) Liberalization of FDI regimes by reducing barriers to entry, strengthening standards of treatment for foreign investors and improving the functioning of markets, i.e., the enabling framework, which virtually all countries are implementing in varying degrees;
(b) Governments actively attract FDI by marketing their countries usually through one-stop national investment promotion agencies;
(c) The targeting of foreign investors at the level of industries and firms in the light of the country’s developmental priorities;
(d) The need to promote sequential investment once the initial investment has been made.

It is the last two of the above elements, (c) and (d), which differentiate from the first generation of promotion as exemplified in (a) and (b). These require a special public proactive interventionist approach to nurture specific clusters that build on the country’s competitive advantages. The most important is through production linkages between foreign affiliates and domestic firms to enhance their efficiency. Investment promotion increasingly needs to improve and market particular clusters that appeal to potential investors in specific activities. The more targeted and fine-tuned the approach, i.e., matching the specific functional needs of corporate investors with specific locational products, the more costly it is. It takes time and also requires sophisticated institutional capacities. Linkages can take several forms: backward (i.e., sourcing from domestic firms), forward (i.e., foreign affiliates selling goods to domestic firms for distribution and marketing) and horizontal (i.e., cooperation in production as well as interaction with domestic firms engaged in competing activities). Linkages can also involve entities like universities, training centres, research and technology institutes, export promotion agencies and other official and private institutions. The relationship may take the form of R&D contracts with local institutions such as universities and research centres and training programmes for firms by universities and training centres (see UNCTAD, 2001c; Shen, 2002).

Governments can encourage the creation and deepening of such linkages when they are economically desirable by lowering the costs and raising the reward for linkage formation for both TNCs and local firms. The standard way has been through fiscal, financial and other incentives to forge local linkages in developing countries. Assuming an overall economic and political policy environment that is conducive to investment, the most important factor influencing linkage formation is the availability
of local suppliers with competitive costs and quality. As discussed in section III above, the technological and managerial capabilities of domestic firms also determine the ability of the host economy to absorb and benefit from the knowledge that linkages can transfer. In this regard, policy measures to strengthen the legal and institutional framework for linkage formation has become necessary. The traditional tools to promote linkages like local content requirements, restrictions on sales of goods and services in the territory where they are produced, a requirement to transfer technology and employment performance, are either no longer permissible in the context of the WTO and other agreements such as North Atlantic Free Trade Agreement (NAFTA) or are in the process of being phased out.

At the same time, policy measures need to nurture and sustain SMEs as well as to sustain institutions that provide financial, technological and training support in the process of fostering the development of viable suppliers, as well as sources of growth of the economy in their own right. Some other areas of public intervention are:

(a) Guaranteeing the accuracy of market and business information of linkage formation that could cover names and profiles of supplier information, product price information and a range of up-to-date databases depending on individual country strategies;
(b) Matchmaking, i.e., facilitating one-to-one TNC-supplier encounters and negotiations, acting as honest broker in negotiations and helping with bureaucratic processes;
(c) Facilitating technology upgrade in various ways, including technology transfers as a performance requirement, partnerships with foreign affiliates in technology upgrading programmes and strengthening inter-firm linkages in training;
(d) Promoting supplier associations for private sector training programmes and collaboration with international agencies;
(e) Legal protection against unfair contractual arrangements and other unfair business practices, including an effective competition policy;
(f) Finance – encouraging the support by foreign affiliates to domestic suppliers through fiscal incentives, co-financing or guarantees, and in some cases monetary incentives.11

The relative weight assigned to each of the elements depends on the objectives of the individual programmes. Some noteworthy examples of linkage programmes

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11 This has been mainly through performance-based and cost-sharing mechanisms. In Singapore, the programme shared salary costs of experienced engineers and managers of TNCs, who agreed to assist in supplier upgrading activities. In Taiwan Province of China the programme subsidized training and technology consultations to enhance supplier capacity. See Shen (2002).
are the National Linkage Programme of Ireland (essentially a brokerage service to promote local sourcing by foreign affiliates), the Industrial Linkages Programme of the Small and Medium Industries Corporation of Malaysia (including the Global Supplier Programme, which covers a range of areas including training, product development and testing), the Czech Republic's National Supplier Programme (a programme that includes collection and distribution of information, matchmaking and upgrading of Czech suppliers). All of these go to show how wide the range of policy measures are.

There are two other areas that require an important focus irrespective of any specific linkages that need to be forged. The first is the need to create high-level technical manpower geared closely to activities desired by the Government. Singapore, for instance, has one of the world's strongest structures for pre- and post-employment training. In the Republic of Korea, a high training levy on large firms has enabled the setting up of the Korea Advanced Institute of Science and Technology and the Korea Institute of Technology aimed at exceptionally gifted students. The second is assistance to small and medium enterprises, which Governments at all levels of development have supported through selective measures to level the playing field in relation to large firms. The basis of global competition is increasingly one of supply chains competing with one another, and hence an SME policy will also have to create effective supply chain management to improve productivity through better work processes and technology (see Asian Productivity Organization, 2002).

To maximize the benefits from FDI, a vibrant and technologically dynamic domestic enterprise sector is crucial. As profit margins are eroded on lower-end products, technological innovation is the only path to capturing markets in the higher end of the market chain and creating new ones (World Bank, 2003). In this regard, measures are required to build and strengthen technological infrastructure as well as upgrade the technological competence of firms to remain competitive. Building R&D is an important element, and this could be supported through direct funding, fiscal incentives and assistance in application of new production techniques and new products, as experience of OECD countries shows. A culture of being receptive to change is an important strategy that should permeate all levels. For countries that do not have sufficient skilled personnel it may well be advantageous to attract the “best brains” with proper incentives, as the United States and Singapore have done. A new growth driver in the “knowledge economy” is intellectual property (IP), and its management cuts across industries and involves IP creation, protection, use, valuation and technology transfer. The global agreement on IP, called TRIPs, is now part and parcel of WTO membership. While there is some controversy on patents working against the interests of developing countries, carefully worked out intellectual property protection can boost domestic innovation and improve access to new technologies. In particular, the Government could encourage local firms in IP management to develop patents and assist in the funding of costly patent applications.
Over time as domestic enterprises improve their capability, and the technological and managerial gaps between foreign and domestic firms are narrowed, government programmes could be redirected elsewhere, or reduced. Indeed, the Irish National Linkage Programme was terminated recently after 15 years of fostering domestic supplier industries and service providers that are running on their own.

Role of the foreign investor and source country Governments

There are a number of areas in which Governments could encourage support from foreign investors and source country Governments in the current climate, where the traditional role of the corporation is changing from pure profit-oriented organization to one of taking a role in other attributes of economic development. The Monterrey Consensus, adopted in March 2002, clearly recognizes that while Governments provide the framework for the operations of foreign investors, businesses, on their part, are required to engage as reliable and consistent partners in the development process. They should take into account not only the economic and financial but also the developmental, social, gender and environmental implications of their undertakings – what is commonly referred to as corporate social responsibility (CSR). TNCs and other firms should be encouraged to accept and implement the principle of good corporate citizenship and should, inter alia, subscribe to the United Nations Global Compact, an initiative encouraging the private sector to embrace, support and enact a set of core values in the areas of human rights, labour standards and environmental practices.12

Source countries too are expected to facilitate and encourage investment flows to developing countries. In this regard, they supported the Monterrey Consensus proposal to increase their support to private foreign investment in infrastructure development and other priority areas, including projects to overcome the digital divide in developing countries. This could be achieved through a range of instruments including export credits, venture capital, leveraging aid resources and risk guarantees.

Moran (1998), reviewing case studies from Latin America and East Asia, noted that the impact of foreign investment on the host economy differs systematically as a function of the relationship between the foreign affiliate and the parent company, which, in turn, depends directly upon the kind of investment regime offered by the host country. He noted that host investment rules that impose domestic-content, joint-venture and technology-sharing requirements create inefficiencies that slow growth

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12 The Global Compact network ultimately receives its most significant reinforcement at the country and community levels, where national and business leaders, in partnership with labour and civil society groups lead the movement to make the principles a practical reality through partnership processes (see Global Compact Office, 2002). Developing a CSR strategy based on integrity and sound values with a long-term approach offers both business benefits to corporations in terms of sustainable competitiveness and social benefits to civil societies as a whole.
and generate, in many cases, a negative net contribution to host economy welfare, especially if they are backed by trade protection or other kinds of market exclusivity. Moran argues that allowing foreign investors to operate with wholly owned affiliates free from such regulations can provide a far different incentive structure for upgrading technology and business practices to maintain a competitive position in international markets.

IV. SUMMARY COMMENTS AND CONCLUSIONS

The paper has shown that attracting FDI has become an important instrument of economic policy in the evolving technological and competitive setting of the world economy. FDI has been viewed as bringing not only capital but also technology and know-how as well new trade opportunities that can give a fillip to domestic investment and therefore promote overall economic growth. Studies show that the impact of FDI on economic growth is positive in the following circumstances:

- The higher the value added content of the FDI-related production, the greater the spillover effects to domestic firms, and the greater the impact.
- The impact is stronger the more technologically advanced the industry/sector hosting the foreign investment.
- The greater the absorptive capacity, particularly under conditions of political stability, good macroeconomic performance, superior human capital, good governance and high-quality infrastructure, the more sustainable is the foreign investment.
- A country with a high level of financial integration may better deploy FDI than countries where there are structural deficiencies.

If the above conditions are not sufficiently present, the impact of FDI is ambiguous, and in some cases, there may be no impact on domestic investment or even a negative impact through outflows in the form of capital and increased imports. Crowding-in or crowding-out effects of FDI are hence strongly dependent on the presence of the above-mentioned conditions. In today’s world the choice is not between FDI and domestic firms, but how to link and develop synergy between the TNCs and domestic firms.

A strong and vibrant base of domestic enterprise can develop linkages to enhance the potential source of productivity gains via spillovers to domestic firms as shown successfully in China, Taiwan Province of China, Malaysia, Singapore and Thailand. There is no strong evidence of domestic firms losing out from foreign investment unless the industry is protected or run as an “enclave” investment such as natural resource extraction with little value added. Indeed the promotion of domestic private investment goes hand in hand with FDI, as there are synergies to be gained.
Over time, domestic enterprises themselves take on the role of foreign investors as they gain financial strength and acquire and/or develop their own technology. The changing competitive conditions backed by the accelerating pace of technological change implies that both transnationals and countries need to develop partnerships to provide the optimum benefits from their assets.

Nevertheless, long-standing complaints emerging from the experience of developing countries highlight the negative side of FDI:

- A growth strategy purely reliant on FDI can introduce volatility in economic growth through business cycles of the home countries of investors and trading partners.
- The foot-loose nature of FDI in low-technology activities, where labour and costs of the business are a priority, and where sunk costs are low.
- Transfer pricing and other devices resulting in revenue erosion.
- The reluctance or lack of incentives for TNCs to transfer technology or skills in joint-venture operations.
- The pursuance of anti-competitive practices leading to an unacceptable degree of market concentration.

These and many other complaints may undermine the benefits of FDI and only go to show that Governments need to assess them more critically. This could be partly due to highly skewed agreements in favour of the investor, and partly due to weak understanding of or preparedness for the implications of the investment. This underscores the necessity for developing countries to increase their knowledge and information base focusing on a wide range of issues that will confront various entities in the economy that interface with the foreign investment activities as well as strengthen the quality of government regulations and their implementation. In the case of M&As, an important form of FDI in recent years, the firm-specific motivations underlying them need to be carefully considered, as productivity-enhancing effects cannot be taken for granted.

The challenge for developing countries in this new competitive context is to tap FDI to promote economic development in terms of their own endowments and development objectives. Comparative advantage is not a static concept but is dynamic in nature. The Government’s role in this fast-changing technological and competitive environment is not merely one of a “passive open door” but one where it is proactive in terms of forging linkages between international and domestic firms through lowering the costs and raising the reward for linkage formation for both the TNCs and the local firms. The Government’s responsibility is one of enabler and facilitator of FDI and the private enterprise system. In this regard, there is also a need to reorient educational policies to develop skills that are internationally demanded, promote high-level
technology and specialist knowledge and adopt selective measures to support domestic firms to benefit from the spillover effects from FDI. For countries that do not have a well-developed private sector, there may also be a case for the Government to take the lead, as Singapore and Malaysia have done in some sectors, be it in the form of joint-venture partners or supporting collaboration efforts by the local private businesses with foreign investors. Care, nevertheless, must be taken as experience has shown that not all measures have yielded positive results from FDI, particularly when domestically owned firms have a weak capacity to absorb or when the terms under which the FDI is undertaken do not promote much value added or transfer skills and technology in a muted form.

The active promotion of good corporate governance as part of the process to attract FDI as well as to nurture competitive domestic enterprises, covering not only the incorporated sector but also SMEs, should also be part and parcel of education and training in a technologically advanced and socially responsible market economy. A conducive economic and political environment, transparent government policies and business ethics remain paramount to sustaining investor confidence.

It also has to be recognized that promoting FDI is a costly exercise, as well as a learning experience. Indeed, the Asian crisis of 1997 and the volatile economic conditions have made countries such as Singapore, Malaysia and Thailand reassess the need to rely on FDI for growth and realize that local private sector investment should also be bolstered to create robust domestic sources of growth. The balance between the costs and benefits has to be weighed very carefully. As countries like China, Malaysia, the Republic of Korea and Singapore have shown, it is possible to transform a country’s competitiveness to create new products and services and reduce costs of others through a judicious blending of foreign capital, know-how and technology with the abilities of local people and firms to innovate. Some label this the Asian miracle, but there is an important role for well-designed country policies and programmes.
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AN EMPIRICAL INVESTIGATION OF THE SPILLOVER EFFECTS OF SERVICES AND MANUFACTURING SECTORS IN ASEAN COUNTRIES

Michael D. Clemes,* Ali Arifa and Azmat Gani**

The services sector has experienced phenomenal expansion in several regions throughout the world, particularly since the 1980s. Similarly, the manufacturing sector has also expanded, although at a slower pace than the services sector. It is quite likely that there is a two-way spillover effect as a result of the growth in these two sectors: expansion of the services sector contributes to the expansion of the manufacturing sector, and vice versa. In this paper, this likely spillover effect is examined using the experience of ASEAN economies. The empirical results confirm a strong, positive bi-directional influence of growth of services and manufacturing. It is also the case that investment in services and manufacturing is essential for the expansion of both sectors.

There has been substantial research on the global economic environment and its sectoral components, although much of it has focused on the performance of the agricultural and industrial sectors of the developing and the developed countries. The research on the services and manufacturing sectors has been somewhat limited. The recent rapid growth in these sectors has prompted a changing research focus. There is now growing interest in the services sector, a dominant contributor to gross domestic product in the developed economies such as the United States, Japan, Australia, and Singapore. The services sector is also becoming an increasingly important contributor to the gross domestic product of emerging economies such as Malaysia, Viet Nam, Thailand and Indonesia. There are several factors that have been identified as contributing to the transformation of the service economy and among the most salient are: globalization, deregulation and privatization, social changes affecting the world’s consumers, business trends including more liberal professional standards and the rapid

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advance in technology. While some of these factors originated as far back as the early 1960’s, others such as the rapid advance in technology are of more recent origin, likely to cause further rapid change in the service economy through the next decade and beyond.

Services now represent approximately 25 per cent of world trade. In the United States in 2000, and despite the negative trade balance, there was a US$ 81 billion trade surplus in services (Bach, 2001). One reason for the increasing trade in services is that economic growth in many developing nations is fostering a rising demand for consumer and business services, ranging from fast food outlets to professional consultancy. In addition, the hollowing out effect observed in the industrial economies in the 1980s and 1990s is beginning to appear in some of the ASEAN economies. However, the trend is not restricted to manufacturing, as some service organizations in higher wage countries are beginning to outsource work at an increasing scale to those countries that have highly skilled labour available at lower charge-out rates. For example, recently an Australian accounting firm has transferred some of its basic accounting tasks to Malaysia and then electronically transferred the completed data sets back to its head office.

Similarly, the manufacturing sector has also expanded in several parts of the developing as well as the developed world, albeit at a slower pace than the services sector. While this growth has been seen to benefit the services sector as an array of services are required to satisfy the demand for the knowledge and skill-intensive business sector, the benefits have not flowed one way. The increase in the growth of the services sector has also triggered a growth in demand for a variety of manufactured goods such as computers, cell phones, digital scanners and optical linkages. The close connection between the service and manufacturing sectors is likely to have spillover effects in each of these sectors; however, research into the spillover effects of services and manufacturing has been sparse. Thus, the investigation of such spillover effects is an area that warrants investigation. In order to determine whether the growth of services has a spillover effect on manufacturing growth and vice versa, we examine the ASEAN economies.

The ASEAN economies attracted considerable international attention prior to the 1997 Asian crisis, primarily as a result of their phenomenal GDP growth rates. Much of their robust growth was driven by the rapid expansion of both the services and the manufacturing sectors. In the next section, we begin by looking more closely at the global sectoral composition of GDP. This is followed by a discussion of ASEANs sectoral composition and links between services and manufacturing. We then discuss the implications of the main issues followed by the presentation of our findings and we present our conclusions in the final section.
I. GLOBAL SECTORAL COMPOSITION

The internationalization of business is one of the most notable global developments that have taken place over the past two decades. A wide variety of indirect and direct international transactions are becoming part of daily economic life for people of most nations. The increased internationalization of the world economy, combined with the relatively free flow of goods and services across several borders has also resulted in the changing production structures of several countries. Most countries are now focusing on marketing an increasing number of their goods and services outside their borders. One evidence of this change is reflected in the massive increase in the global values of exports which stood at US$ 5.5 trillion in 1999, compared to approximately US$ 2 trillion in 1985 (World Bank, 2000).

Developments in global merchandise and service exports are directly related to changes in the production structures of the individual nations of the world. Increases in global exports have been largely concentrated between two sectoral outputs: exports of manufactures and exports of services. For example, trade in manufactures accounts for over 75 per cent of international trade (World Bank, 2000). Trade in manufactures includes the following category of goods: machinery and transport equipment, with automotive products as a major sub-category. Other trade in manufactures includes chemicals, textiles and clothing.

Trade in services has also been growing rapidly leading to the expansion of the service sector in several countries around the globe. According to the World Bank (2000), trade in services is estimated to be around US$ 1.3 trillion. The services sector is also a large contributor to income and employment in several countries. According to the International Standard Classification (ISIC) system, services include wholesale and retail trade, restaurants and hotels, transport, storage, communications, financial services, insurance, real estate, business services, community services, social services and government services.

The development of the global business environment has led to changes in the domestic production structures of many nations where production activities are targeted toward goods and services that have an international demand, whether manufactures or services, and where prices are internationally competitive. Further evidence of the sectoral development in services, as well as manufactures, is revealed by data on the composition of world production. Available sectoral production data reveal interesting patterns (table 1). According to data in table 1, the trend reveals that in the last thirty years there has been a rapid expansion of the services sector globally. However, during the same period, agriculture has gradually lost its dominance as the main production sector in most parts of the world. The manufacturing sector has also expanded in several regions; however, it has been expanding at a slower pace than the services sector.
In the last decade, the share of services in gross domestic product ranged from 40.5 per cent in East Asia and the Pacific to almost 65 per cent in high-income non-OECD countries. The share of manufacturing in GDP ranged from almost 13 per cent in the Middle East and North Africa to 31 per cent in East Asia and the Pacific. The share of the agricultural sector in gross domestic product ranged from 2 per cent in high-income non-OECD countries to 29 per cent in South Asia.

Closely allied to changes in the sectoral composition of world GDP has been the rate of growth of various sectors. While several regions have had positive growth rates in both manufacturing and services (table 2), the growth rate of manufacturing and services in the last two decades in South East Asia and South Asia has outpaced all other regions around the world.

Considering the remarkable expansion and growth of the services and manufacturing sectors, particularly in East Asia and the Pacific and South Asia, we posit that in these regions the expansion of one sector also produces a spillover effect on the other. The nature of services and manufacturing activities suggest that there are close inter-linkages between these two sectors. In the next section, we discuss the possible links that may exist between services and manufacturing. We restrict our focus to a sample of countries that belong to ASEAN.

Table 1. Sectoral shares of GDP by major regions: ten-year averages (Percentage)

<table>
<thead>
<tr>
<th>Region</th>
<th>Agriculture</th>
<th>Manufacturing</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>70-79</td>
<td>80-89</td>
<td>90-99</td>
</tr>
<tr>
<td>High income countries</td>
<td>…</td>
<td>3.4</td>
<td>2.0</td>
</tr>
<tr>
<td>(non-OECD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Asia and the Pacific</td>
<td>29.4</td>
<td>22.8</td>
<td>16.2</td>
</tr>
<tr>
<td>Europe and Central Asia</td>
<td>…</td>
<td>17.3</td>
<td>12.1</td>
</tr>
<tr>
<td>Latin America and Caribbean</td>
<td>12.5</td>
<td>10.2</td>
<td>8.1</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>11.3</td>
<td>12.5</td>
<td>13.5</td>
</tr>
<tr>
<td>South Asia</td>
<td>41.0</td>
<td>33.6</td>
<td>29.0</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>20.2</td>
<td>18.6</td>
<td>17.8</td>
</tr>
</tbody>
</table>

II. AN OVERVIEW OF THE ASEAN SECTORAL COMPOSITION AND SERVICES – MANUFACTURING

ASEAN’s sectoral composition of output can be discussed with particular reference to the size of three major sectors: agriculture, manufacturing and services. In their study, Gani and Clemes (2002) identified three distinct features of ASEANs sectoral composition. First, the authors showed that the service sector was the dominant contributor to GDP in Philippines, Singapore, Thailand and Viet Nam during 1995-1999, while in Indonesia, the service sector’s contribution to GDP was slightly below that of the manufacturing sector for the same period. Second, they reveal that since 1980, the contribution of the agricultural sector to GDP has declined gradually in many ASEAN economies while the share of services to GDP has increased over time in Brunei Darussalam, Indonesia, Philippines, Thailand and Viet Nam. The share of services to GDP was highest in Singapore among all ASEAN countries. Third, the authors identified that the services sector has experienced high growth rates since 1980 onwards, with Malaysia ranked at the top of the list averaging 8.1 per cent per annum.

Table 2. Sectoral growth rate by major regions: ten year averages (Percentage)

<table>
<thead>
<tr>
<th>Region</th>
<th>Agriculture</th>
<th>Manufacturing</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>70-79</td>
<td>80-89</td>
<td>90-99</td>
</tr>
<tr>
<td>High income countries</td>
<td>...</td>
<td>4.1</td>
<td>...</td>
</tr>
<tr>
<td>(non-OECD)</td>
<td>3.4</td>
<td>...</td>
<td>3.2</td>
</tr>
<tr>
<td>East Asia and the Pacific</td>
<td>...</td>
<td>2.6</td>
<td>-2.8</td>
</tr>
<tr>
<td>Europe and Central Asia</td>
<td>3.3</td>
<td>5.1</td>
<td>2.3</td>
</tr>
<tr>
<td>Latin America and Caribbean</td>
<td>4.4</td>
<td>4.2</td>
<td>3.4</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>1.3</td>
<td>2.2</td>
<td>3.3</td>
</tr>
<tr>
<td>South Asia</td>
<td>2.2</td>
<td>...</td>
<td>2.3</td>
</tr>
</tbody>
</table>

... indicates data not available.
While the services sector has dominated in terms of its contribution to ASEAN GDP, the contribution of the manufacturing sector to GDP cannot be ignored. As a share of GDP, the manufacturing sector averaged just over 24 per cent in the last decade. In Indonesia, Malaysia and Thailand, manufacturing valued added to GDP has continuously increased over the last three decades (table 3).

Table 3. Manufacturing value added to GDP – ten year averages

(Percentage)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunei Darussalam</td>
<td>12.1</td>
<td>10.2</td>
<td>...</td>
</tr>
<tr>
<td>Indonesia</td>
<td>10.4</td>
<td>15.2</td>
<td>23.6</td>
</tr>
<tr>
<td>Malaysia</td>
<td>16.8</td>
<td>20.4</td>
<td>27.1</td>
</tr>
<tr>
<td>Philippines</td>
<td>25.7</td>
<td>25.0</td>
<td>23.3</td>
</tr>
<tr>
<td>Singapore</td>
<td>23.8</td>
<td>26.9</td>
<td>24.9</td>
</tr>
<tr>
<td>Thailand</td>
<td>19.0</td>
<td>23.3</td>
<td>28.7</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>...</td>
<td>27.3</td>
<td>19.9</td>
</tr>
</tbody>
</table>


Despite some studies focusing on the services sector in ASEAN (for example, Pang and Sundberg, 1988; Lee, 1988; Arndt, 1989; and Yeung, 1996), research into services in ASEAN has received little attention. In particular, studies examining the spillover effects of services into manufacturing and vice versa are rare. Some broad insights into the links between services and manufacturing would strengthen the empirical focus that we are currently pursuing. Unfortunately, the literature dealing specifically with ASEAN is scarce.

While the literature is scarce on the spillover effects of services on manufacturing and vice versa, the ASEAN sectoral contribution data do seem to reveal some interesting patterns. For instance, countries such as Indonesia, Malaysia, Thailand and Singapore have gone through significant structural changes in the 1980s resulting in competitiveness and growth in the international business environment. For example, several of the ASEAN countries have experienced strong export growth in the services and manufacturing sectors. Given the growth experienced in both the services and manufacturing sectors, we contend that it is highly probable that growth in the services sector will have a spillover effect on the growth of the manufacturing sector, and that the growth of the manufacturing sector is likely to have a spillover effect on the growth of the services sector. The inter-connectedness of these two sectors strongly suggests that such effects exist in the ASEAN economies as well as elsewhere.
At a basic level, the services and manufacturing spillover effects can be conceptualized through a scatter plot. The scatter plot in figure 1 includes services and manufacturing growth data averaged for five ASEAN countries (Indonesia, Malaysia, Philippines, Singapore and Thailand) for the years 1980-1999. The scatter plot reveals an interesting pattern. The scatter plot shows a strong positive relationship between growth in services and growth in manufacturing in the five ASEAN countries. On this basis, we propose that there is likely to be a spillover effect from services into manufacturing and vice versa, as each of these sectors experience expansion. However, an empirical examination of the relationship may lead to additional support of our assumption. We formulate our hypotheses and empirically test them in the next section.

Hypotheses formulation and analysis

We have constructed below our analysis to provide empirical support for our hypotheses concerning the spillover effects of services into manufacturing and vice versa. However, we also consider the key variables that contribute to the growth of both the services and manufacturing sectors.

We hypothesize that the growth of services sector (ss) is influenced by the growth of the manufacturing sector (ms). In addition, we hypothesize that growth of the manufacturing sector (ms) is influenced by growth in the services sector (ss). We also hypothesize that several other variables also influence the
expansion of both of these sectors. These control variables include the growth rate of real output \((y)\), the growth in exports \((x)\), the growth in imports \((i)\), and the role of government \((g)\). As such, the structural equation for the services sector is represented by equation (1).

\[
ss_{it} = \alpha_0 + \alpha_1 y_{it} + \alpha_2 m_{st} + \alpha_3 x_{it} + \alpha_4 i_{it} + \alpha_5 g_{it} + u_{it}
\]  

(1)

In equation (1), \(i\) is the country, \(t\) is the time period and \(u\) is the random error term.

We also formulate our testable equation for the spillover effects of service expansion into the manufacturing sector. However, the growth of the manufacturing sector is also influenced by several variables other than the growth of the services sector. Our control variables are the same as those in equation (1). Hence, the structural form for the manufacturing sector is represented by equation (2).

\[
ss_{it} = \beta_0 + \beta_1 y_{it} + \beta_2 m_{st} + \beta_3 x_{it} + \beta_4 i_{it} + \beta_5 g_{it} + u_{it}
\]  

(2)

Our theoretical justification for the use of the right-hand-side variables is as follows.

**Growth of real output \((y)\)**

In equations (1) and (2), the growth of real output (growth rate of real gross domestic product) reflects that it may have an impact on the growth of the services and manufacturing sectors. In general, the theoretical notion is that a country’s state of growth and development is expected to have a favourable influence on its sectoral growth. The inclusion of the growth variable is further justified on the grounds that a faster rate of growth leads to quicker change in income and consumption patterns that positively impact both the services and manufacturing sectors.

**Growth rate of manufacturing sector \((ms)\)**

The manufacturing sector includes industries like machinery, metal products, transport and equipment, electrical machinery, industrial chemicals and food industries. As discussed in section 3, the contribution of manufacturing to GDP has been increasing in the ASEAN countries. The manufacturing sector in fact has been identified as a growth engine (see for example, Mahadevan, 2002). In equation (1), we include the variable \(ms\) to account for the improvement of efficiency in the manufacturing sector that is likely to have an effect on the growth and development of the services sector.
Growth in services sector (ss)

It is important to examine if services growth has any spillover effects on manufacturing growth. The basis of our argument is that an expanding services sector, in addition to its direct contribution to the growth of gross domestic product, may also have a positive, indirect effect on the growth of manufacturing through its impact on total factor productivity. An efficient services sector should lead to improved performance of the manufacturing sector by improving distribution and information transactions. In modern economies, there is increasing demand from both consumers and business for efficient service sectors. In many cases, competitive parity has already been reached in manufactured goods making it difficult for most global corporations to differentiate their tangible outputs on product quality alone. This forces business to increasingly turn to higher levels of customer service to facilitate their homogeneous product offerings, increase their overall productivity, improve their competitive advantage and ultimately to create customer value.

Growth in exports (x)

The export variable is included since the exposure of the domestic economy to the world economy may have a positive effect on service sector growth. The export theory suggests that exports are important for growth and this has been determined even in the case of Asian countries (see for example, World Bank, 1994). Past researchers have identified positive links between export growth rates and overall economic growth (see for example, Balassa, 1978; Ram, 1987; and Fosu, 1996). The argument is that growth in exports introduces a greater degree of competition, keeps the economy connected with the latest technological developments, brings in much needed foreign income and leads to higher levels of investment. In general, a flourishing export sector may induce an improved allocation of resources in the services and manufacturing sectors. This approach is in line with the standard theoretical contention in the literature that growth in exports often reflect one, or a combination of, several factors such as a greater degree of competitiveness, achieving scale economies, improved technology, higher production according to a country’s comparative advantage and greater market outreach. Exports also facilitate the import of goods, services and capital and thereby also new technology.

Growth in imports (m)

The import variable is included as it is a means of delivering vital inputs to organizations. Its also brings in foreign technology and is expected to have a positive effect on the productivity of the services and manufacturing sectors. Technology is embodied in goods and therefore transferred in international trade. Productivity gains from imports of input goods are likely to be high. According to Sjohollm (1999),
imports are one channel through which countries and establishments can benefit from foreign research and development.

**Government (g)**

The variable $g$ is included because government spending, for example, on infrastructure development, can have a beneficial effect on sectoral growth. It has been noted, for example, Temple (1999), that government spending on infrastructure such as telephone networks and electricity has been found to have a significant effect on overall growth. Other researchers share similar opinions, for example, Easterly and Rebelo (1993) found that the share of public investment in transport and communications was robustly correlated with growth.

In terms of our analysis, we estimated equations (1) and (2) based on data for five ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, and Thailand). Brunei Darussalam and Viet Nam are two ASEAN countries that we excluded from our analysis due to data deficiencies. We compiled data for the years 1965-1994, averaged over six sub-periods (1965-1969; 1970-1974; 1975-1979; 1980-1984; 1985-1989; and 1990-1994). Our data sources were World Development Indicators CD-ROM 2001 and various issues of *Key Indicators of Developing Asian and Pacific Countries* published by the Asian Development Bank.

**Findings**

Our findings are presented in table 4, which includes the regression results of equations (1) and (2).

The results of equation (1) confirm the positive influence of several variables on the growth of services. The $ms$ variable has a positive coefficient and is statistically significant, providing strong confirmation that the growth of the manufacturing sector is strongly correlated with the growth of the services sector. As such, we contend that the growth of manufacturing sector is highly likely to spillover into the services sector. The findings also confirm that the growth of output, imports and government spending have a strong influence on the growth of services. Evidence of their strong influence is revealed by the coefficients of all these variables that have the expected positive sign and are statistically significant at the 1 per cent level. The results of equation 2, in table 3, show the impact of services on manufacturing. The findings show that the coefficient of services growth has the expected positive sign and is statistically significant. This supports our hypothesis that growth in services is influenced by growth in the manufacturing sector. Our hypothesis, that growth in the manufacturing sector is influenced by growth in the services sector, is also supported. In addition, our hypothesis that other variables influence the expansion of both of these sectors is also supported.
Table 4. Estimation results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Equation 1</th>
<th>Equation 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-0.007</td>
<td>4.621</td>
</tr>
<tr>
<td></td>
<td>(0.013)</td>
<td>(2.516)*</td>
</tr>
<tr>
<td>y</td>
<td>0.881</td>
<td>0.078</td>
</tr>
<tr>
<td></td>
<td>(27.900)*</td>
<td>(0.905)</td>
</tr>
<tr>
<td>ss</td>
<td>...</td>
<td>0.123</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.381)*</td>
</tr>
<tr>
<td>ms</td>
<td>0.086</td>
<td>...</td>
</tr>
<tr>
<td></td>
<td>(3.088)*</td>
<td></td>
</tr>
<tr>
<td>ms (lagged)</td>
<td>...</td>
<td>0.268</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.064)*</td>
</tr>
<tr>
<td>x</td>
<td>0.009</td>
<td>-0.047</td>
</tr>
<tr>
<td></td>
<td>(0.358)</td>
<td>(1.357)</td>
</tr>
<tr>
<td>m</td>
<td>0.098</td>
<td>0.073</td>
</tr>
<tr>
<td></td>
<td>(3.426)</td>
<td>(1.011)</td>
</tr>
<tr>
<td>g</td>
<td>0.148</td>
<td>0.106</td>
</tr>
<tr>
<td></td>
<td>(3.333)*</td>
<td>(0.637)</td>
</tr>
<tr>
<td>F</td>
<td>237.61</td>
<td>14.24</td>
</tr>
<tr>
<td>R-square</td>
<td>0.97</td>
<td>0.74</td>
</tr>
</tbody>
</table>

Note: t – statistics are in parentheses.
* indicates statistically significant at the 5 per cent level.

III. CONCLUSION

The purpose of this study has been to determine if there are two-way spillover effects between the services and manufacturing sectors; that is, does the expansion of services sector contribute to the expansion of the manufacturing sector and vice versa? We used the case of ASEAN countries to test for the presence of such spillover effects. Our empirical results confirm the positive and statistically significant effect of service sector growth on the growth of the manufacturing sector. They also confirm the positive effect of manufacturing sector growth on service sector growth. Further, they confirm that several other variables influence the expansion of both of these sectors.
REFERENCES


HUMAN RESOURCE DEVELOPMENT AND REGIONAL COOPERATION WITHIN BIMP-EAGA: ISSUES AND FUTURE DIRECTIONS

Ishak Yussof* and Mohd Yusof Kasim**

BIMP-EAGA, which includes Brunei Darussalam, the provinces of Sulawesi and Kalimantan, Maluku and Irian Jaya in Indonesia, Sabah, Sarawak and Labuan in Malaysia and the islands of Mindanao and Palawan in the Philippines, was formed with the vision of accelerating economic cooperation for the greater prosperity of the member nations of the region. Since the human factor is critical for development it is pertinent to study and link it with the overall development policy framework. In this regard, it is essential that member nations examine possibilities of reducing the cost of producing highly and semi-skilled labour through measures including cooperation in joint human resources development programmes. The paper attempts to look at some of the issues underlying collaborative human resources development programmes within the BIMP-EAGA region, including the feasibility of a growth triangle structure for less developed regions.

Economic integration through either the concept of a ‘growth triangle’ or a ‘growth area’ is consistent with the worldwide trend towards more open trade via subregional integration. The emergence of global markets for new products and services, international competition, technological change and rapid globalization has dramatically increased the integration of economic activities in many parts of the world today. Past experience has shown that such a strategy can be a catalyst in enhancing regional economic growth benefiting the participating countries. However, successful implementation of such economic integration requires collaborative efforts as well as close cooperation among the participating countries. Collaboration and cooperation are required within the whole spectrum of economic development policies

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that cut across the region. Therefore, the success of economic integration hinges on the active participation of the partner countries towards providing a conducive economic environment through the implementation of appropriate policies, sufficient incentives and adequate infrastructure.

The Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area, or currently known as the BIMP-EAGA (established in March, 1994), is an emerging growth area with the vision of economic integration using the growth triangle strategy. The BIMP-EAGA, which covers a huge land area of over 1.5 million sq km and a population of 45.6 million, is consistent with the economic policies and specific agreements between the members of ASEAN in the implementation of its Free Trade Area (e.g. AFTA). The growth area includes the whole of Brunei Darussalam, 10 Indonesian provinces in the islands of Sulawesi and Kalimantan, Maluku and Irian Jaya, Sabah, Sarawak and Labuan in East Malaysia, and the islands of Mindanao and Palawan in the Philippines. It is envisaged to follow the success of similar subregional economic cooperation formerly established within the ASEAN economy such as the SIJORI-GT and IMT-GT.\(^1\) Close cooperation within these subregional economic groupings is expected to lead to a higher rate of economic growth, greater export competitiveness and more balanced regional development. This is to be achieved by facilitating the free flow of people, goods and services, sharing common infrastructure and natural resources, and through economic complementarity (East Asian Business Council, 1994).

An investigative report by the Asian Development Bank (ADB, 1996) had issued a viability statement of BIMP-EAGA and formulated a development strategy that is based on economic complementarities; shared natural resources, information and technology; the specialization and regionalization of production, in which the private sector is to take a leading role in expanding economic cooperation. A working group composed of representatives from the participating states covers each area of cooperation. One of the four countries is designated as lead country in a particular working group, and thirteen areas have been identified for priority development as follows:

An area of concern that needs special attention from the participating countries is human resource development (HRD) where Malaysia plays a leading role in the working group. Literature and previous studies have shown that HRD, in particular education and training, contributes significantly to economic development in terms of increased worker productivity and income. The economy becomes more productive, innovative and competitive through the existence of more skilled human capability.

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\(^1\) SIJORI-GT – Singapore-Iskandar-Riau Growth Triangle IMT-GT – Indonesia-Malaysia-Thailand Growth Triangle (consists of Northern Sumatera and Aceh in Sumatera; Kedah, Perak, Penang and Perlis in Malaysia; and the southern provinces of Satun, Songkhla, Narathiwat and Pattani in Thailand.
Thus, the quality of human resources will determine the success or failure of any development effort, especially concerning industrialization, adopting technical change and global market response. Viewed from this perspective, HRD therefore requires special attention to complement changes in the economic profile of the proposed growth regions. All issues related to HRD need to be properly addressed and appropriate policies, recommendations and programmes must be in place.

The purpose of this paper is twofold. Firstly, we wish to examine and assess the issues underlying the effort of collaborative human resource development programmes within the intended regions. As developing nations, governments in the BIMP-EAGA region need to make important decisions, which could involve trade-offs between the need to emphasize basic and vocational education or skills training. Also, the governments need to identify existing training institutional complementarities and ensure that the limited resources can be effectively utilised. We will therefore examine economic issues, government policies and regulations, and other related issues that may hinder efforts towards achieving an effective mechanism for regional economic integration. Secondly, we will identify and discuss several policy options and models for institutional network that may help to further develop and exploit complementarities in HRD efforts within the regions.

The paper is structured as follows. In the following section, we briefly discuss the concepts of ‘growth triangle’, ‘growth area’ and economic cooperation through the perspective of regional economic integration literature. The next sections examine the need for planned HRD programmes within the BIMP-EAGA states and review the state of existing economic cooperation in HRD. In another section we identify and discuss related issues towards promoting such cooperation and consider

<table>
<thead>
<tr>
<th>Areas of cooperation</th>
<th>Lead country</th>
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<tbody>
<tr>
<td>Expansion of air linkages</td>
<td>Brunei Darussalam</td>
</tr>
<tr>
<td>Sea linkages, transportation and shipping services</td>
<td>Indonesia</td>
</tr>
<tr>
<td>Joint tourism development</td>
<td>Malaysia</td>
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<tr>
<td>Expansion of fisheries cooperation</td>
<td>Philippines</td>
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<tr>
<td>Construction and construction materials</td>
<td>Philippines</td>
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<tr>
<td>Telecommunications</td>
<td>Brunei Darussalam</td>
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<tr>
<td>Environmental protection and management</td>
<td>Brunei Darussalam</td>
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<td>Forestry</td>
<td>Indonesia</td>
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<tr>
<td>People mobility</td>
<td>Indonesia</td>
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<tr>
<td>Human resource development</td>
<td>Malaysia</td>
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<tr>
<td>Capital formation and financial services</td>
<td>Malaysia</td>
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<tr>
<td>Energy</td>
<td>Malaysia</td>
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<td>Agro-industry</td>
<td>Philippines</td>
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</table>
some of the policy implications for HRD programmes. We conclude in the final section, by summarising our main points and discussing the future direction of HRD cooperation within the BIMP-EAGA framework.

I. THE THEORETICAL PERSPECTIVE

Concepts and definitions

The ‘growth triangle’ concept is based on the philosophy of regional economic integration. Myrdal (1956) and Balassa (1961) define the word ‘integration’ as “bringing or combining parts into a whole”. Economic integration may occur at the national or international level. For the national level, Kim (1992) defines national economic integration as “the process in which various economic sectors in a country are organically and self-correctingly brought together into an independent national economy”. Similar processes may occur internationally, which involve three or more countries. Such regional economic integration or combination is achievable through the concept of growth triangle. In relation to this, Kumar (1991) describes the growth triangle as a framework to “link three areas with different factor endowments and different comparative advantages to form a larger region with greater potential for economic growth”. He argues that the differences in comparative advantage would serve to complement one another rather than competing against each other.

Overall, the idea of BIMP-EAGA is to exploit each other’s complementarities for the purpose of creating borderless economies and new regional growth centres to improve the people’s standard of living. Such regional economic integration, based on differences in comparative advantages, has tremendous potential for sustaining competitiveness, speeding up development, creating jobs and improving technology. Through harnessing the regions’s respective strengths, economic cooperation can be more cost effective and thus benefit the participating countries.

The framework

Tang (1994) suggested that the structure underlying any growth triangle concept would have a group of investing countries and a group of receiving countries. The characteristics of the investing countries are rapid economic growth, high productivity, a high level of capital investment, higher living standards due to expensive labour and real estate and scarce natural resources (including land). On the other hand, the receiving countries are less developed, have low productivity, lack capital, have low wages and an abundant labour supply and land. Therefore, the mechanism of a growth triangle is to take advantage of the more efficient infrastructure and higher skilled workers in one location, and of the lower costs and ample supply of cheaper labour and land in other locations (see Kumar, 1991). Through this approach,
the more developed regions will be the investing group, providing capital, technology and management skills. In contrast, the less developed regions will be the receiving group, providing skilled and non-skilled labour, land and other natural resources.

Earlier efforts towards economic cooperation through the idea of growth triangle within ASEAN operated within this framework. This includes the SIJORI-GT and the IMT-GT. Within this framework, Singapore and the northern states of peninsular Malaysia, in particular Penang, act as the investors in the growth triangle. In contrast, Johore and Riau (the SIJORI-GT) as well as all regions in the southern provinces of Thailand and Indonesia (the IMT-GT) are considered as the receiving countries, providing skilled and non-skilled labour, land and other natural resources for the investing countries.

The issue is whether a similar framework can be applied to BIMP-EAGA since it is observed that most provinces or states, except for Brunei Darussalam, are still less developed relative to their respective national capital regions. In addition, these provinces or states also rely heavily on agricultural products and agro- or resource-based industries. Similarity in resource endowments and economic activities are likely to make these economies compete rather than complement each other. Notwithstanding this, notable economic complementarities do exist in human resource development matter and the tourism industry, which make economic cooperation between the states in the region significant.

II. THE NEED FOR PLANNED HRD WITHIN BIMP-EAGA

Rationale

Human resources, traditionally known as labour, are vital in order to support and ensure continuous economic growth. In meeting this objective, two important issues need to be addressed. First, an adequate supply of a work force required by the economy, and second, the quality of human resources available to ensure its efficient use. Both are interrelated issues that are likely to determine the success or failure of any development effort. Following the work of Schultz (1961, 1963), Becker (1962, 1975), and Mincer (1962, 1974) human capital theory focuses on the need to invest in people in order to achieve and sustain the competitive edge. Inefficient use of available human resources will increase the labour costs that will result in higher production costs. Therefore, in order to remain competitive in the market it is imperative for all participating countries in the BIMP-EAGA to provide special attention towards developing their human resources. Close cooperation is crucial in order to formulate and coordinate various joint human resource development programmes that may bring benefits to the participating countries.
The Governments of BIMP-EAGA member countries have recognized the importance of continued investment in formal education, acquisition of relevant technological knowledge and managerial skills in order to sustain rapid economic growth. It is agreed that human resource investments are essential if the economies within the growth area are to be transformed away from a heavy reliance on primary products to producing high value-added goods. Thus, the main aim of BIMP-EAGA is to increase trade, tourism, and investments in the region through the following mechanisms:

- by facilitating the free movement of people, goods, and services;
- by sharing common infrastructure and natural resources; and
- by implementing appropriate economic activities

In relation to this, human resource development is amongst the 13 areas identified for economic cooperation within the growth area regions. It has been recognized that the majority of the subregions in BIMP-EAGA are characterized by a relatively low skilled/productivity labour force and the entrepreneurial capability to develop many of the identified opportunities does not exist in EAGA. Thus, appropriate human resource development efforts are essential to increase the capacity and capability of EAGA economies.

**Economic achievements of the participating countries**

Since its inception in 1994, BIMP-EAGA has developed rapidly. It has been recognized that strong support by the four participating governments and the active role of the private sector has contributed to this rapid development. Although the Asian financial crisis in 1997 reduced the capability of most of its member countries to sustain and promote further economic growth within the regions, recent economic indicators show that these economies are reviving. In terms of their national economy, GDP growth is picking up in most areas (see figure 1).

GDP for each country grew at 6.3 per cent in Malaysia, 4.1 per cent in Indonesia and 4.6 per cent in the Philippines during the year of 2003 and is expected to sustain this momentum in the coming years. Such a pace of growth is likely to have a significant impact on the structure of demand for labour and the types of skill required by the economies.

In terms of GDP, table 1 shows that at the national level, except Brunei Darussalam, the manufacturing and other sectors are the leading sectors in all participating economies of BIMP-EAGA. For the state of Brunei Darussalam, the oil sector contributes more than 36 per cent to its GDP, followed by government services (29 per cent) and private sector services (34 per cent).
Figure 1. Real GDP Growth, 1998-2003
(per cent per annum)

Table 1. Gross domestic product (GDP) by sectors in BIMP-EAGA states

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<tbody>
<tr>
<td><strong>Agriculture:</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysia (at 1987 Prices)</td>
<td>9.6</td>
<td>8.9</td>
<td>9.1</td>
<td>6.9</td>
<td>6.5</td>
</tr>
<tr>
<td>Philippines (at 1985 Prices)</td>
<td>21.1</td>
<td>20.7</td>
<td>19.5</td>
<td>20.1</td>
<td>20.1</td>
</tr>
<tr>
<td>Indonesia (at 1993 Prices)</td>
<td>15.4</td>
<td>14.9</td>
<td>16.9</td>
<td>17.2</td>
<td>16.7</td>
</tr>
<tr>
<td><strong>Mining:</strong></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Malaysia (at 1987 Prices)</td>
<td>7.5</td>
<td>7.1</td>
<td>7.5</td>
<td>6.9</td>
<td>6.5</td>
</tr>
<tr>
<td>Philippines (at 1985 Prices)</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>Indonesia (at 1993 Prices)</td>
<td>9.1</td>
<td>8.9</td>
<td>10.0</td>
<td>9.6</td>
<td>9.4</td>
</tr>
<tr>
<td><strong>Manufacturing:</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Malaysia (at 1987 Prices)</td>
<td>28.6</td>
<td>29.0</td>
<td>26.5</td>
<td>28.5</td>
<td>31.7</td>
</tr>
<tr>
<td>Philippines (at 1985 Prices)</td>
<td>25.3</td>
<td>25.0</td>
<td>24.9</td>
<td>24.5</td>
<td>24.8</td>
</tr>
<tr>
<td>Indonesia (at 1993 Prices)</td>
<td>24.7</td>
<td>24.8</td>
<td>25.3</td>
<td>26.1</td>
<td>26.4</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysia (at 1987 Prices)</td>
<td>54.3</td>
<td>55.1</td>
<td>56.8</td>
<td>56.0</td>
<td>53.8</td>
</tr>
<tr>
<td>Philippines (at 1985 Prices)</td>
<td>52.4</td>
<td>53.1</td>
<td>54.4</td>
<td>54.4</td>
<td>54.1</td>
</tr>
<tr>
<td>Indonesia (at 1993 Prices)</td>
<td>50.7</td>
<td>51.4</td>
<td>47.8</td>
<td>47.1</td>
<td>47.5</td>
</tr>
</tbody>
</table>


Note: Other sector includes construction, trade, government and private sector services.
However, the economic profiles of the BIMP-EAGA subregions do not seem to be reflected at the national level. Within these subregions, resource-based activities and the agricultural sector are still dominant. Although the EAGA nations had experienced dramatic industrialization for the last few decades, this has lightly touched the EAGA subregions. It is observed that each EAGA subregion is amongst the least industrialized part of its respective nation. There are a lot of similarities in terms of economic activities and human resource capabilities within these subregions. In terms of HRD, the majority of the working age population in most of the subregions has received only limited primary school education or no formal education at all. Thus, in order to improve the economic performance and the competitive position of these subregions, HRD should be given greater emphasis. Central government in all four sub-national regions should look into the possibility of developing complementarities in labour, education and the training systems through the spirit of economic cooperation.

*Labour market and human resource issues within BIMP-EAGA*

Table 2 shows that apart from the service sector, agriculture accommodates a significant quantity of labour in both the Philippines and Indonesia. This shows that the demand for labour in this sector is relatively high. However, labour productivity in this sector is still relatively low as reflected by its output (in terms of share of GDP), especially if compared with the manufacturing sector. For Malaysia,

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<tbody>
<tr>
<td>Agriculture:</td>
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<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>19.4</td>
<td>17.3</td>
<td>18.8</td>
<td>18.4</td>
<td>18.4</td>
</tr>
<tr>
<td>Philippines</td>
<td>41.7</td>
<td>40.4</td>
<td>39.9</td>
<td>39.1</td>
<td>37.4</td>
</tr>
<tr>
<td>Indonesia</td>
<td>44.0</td>
<td>41.2</td>
<td>45.0</td>
<td>43.2</td>
<td>45.3</td>
</tr>
<tr>
<td>Mining:</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>0.4</td>
<td>0.4</td>
<td>0.3</td>
<td>0.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Philippines</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Indonesia</td>
<td>0.9</td>
<td>1.0</td>
<td>0.8</td>
<td>0.8</td>
<td>0.6</td>
</tr>
<tr>
<td>Manufacturing:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>22.8</td>
<td>23.4</td>
<td>22.2</td>
<td>22.5</td>
<td>22.8</td>
</tr>
<tr>
<td>Philippines</td>
<td>10.0</td>
<td>9.9</td>
<td>9.5</td>
<td>9.6</td>
<td>10.1</td>
</tr>
<tr>
<td>Indonesia</td>
<td>12.6</td>
<td>12.9</td>
<td>11.3</td>
<td>13.0</td>
<td>13.0</td>
</tr>
<tr>
<td>Others:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>57.5</td>
<td>58.9</td>
<td>58.7</td>
<td>58.6</td>
<td>58.5</td>
</tr>
<tr>
<td>Philippines</td>
<td>47.8</td>
<td>49.3</td>
<td>50.2</td>
<td>51.0</td>
<td>52.1</td>
</tr>
<tr>
<td>Indonesia</td>
<td>42.5</td>
<td>44.9</td>
<td>42.9</td>
<td>43.0</td>
<td>41.2</td>
</tr>
</tbody>
</table>

although at the national level labour in the agriculture sector is relatively small, within the subregion of Sabah and Sarawak, labour in agriculture is still considerable. For Sabah and Sarawak, it represents 37 per cent and 34 per cent respectively (based on 1998 figures). This, once again indicates some similarities in terms of demand for labour within the subregion states.

However, in terms of the level of unemployment, the Philippines and Indonesia have relatively higher unemployment compared to Malaysia as shown by figure 2. Nonetheless, the unemployment rate in Sabah and Sarawak may be slightly higher compared to the national figures, despite labour shortages in some sectors. In Malaysia, labour shortages occur not only in the manufacturing and the service sectors, but also in the plantation and construction industries. Thus, the Malaysian labour market has to rely heavily on the supply of foreign labour, especially for less skilled and unskilled workers. It was estimated that in Sabah alone, there are more than a million foreign workers in various economic sectors.

![Figure 2. Unemployment rate, 1996-2000](image)


Although the importation of foreign labour has helped relieve the shortage, the heavy and increasing dependence on foreign labour supply may have undesirable social and political repercussions. It is therefore important for the Malaysian subregion nations to initiate a shift in the structure of production towards less labour-intensive through encouraging more capital-intensive means of production and higher value-added activities.
Even though comprehensive data on labour productivity is not available, it appears that labour productivity within the subregions of EAGA is generally low. For instance, labour productivity in Malaysia EAGA is lower than that of peninsular Malaysia, and it is reported to have fallen in the Philippines. The trend is also similar for all 10 provinces within the Indonesian subregions which rely heavily on agriculture products. The prevailing low productivity is highly correlated with the characteristics of indigenous subregion nations labour force, which are less educated and mostly unskilled.

In terms of labour costs, wages rates in most subregions of EAGA are generally low, particularly for Indonesia EAGA. However, wages are not the lowest in East Asia especially when compared to emerging transitional economies like China, Cambodia and Viet Nam. Table 3 shows that the average wages for unskilled, skilled labour and technical workers are relatively low compared to those at the national level, but much higher when compared to China and Viet Nam. Thus, it is unlikely that the subregion nations within BIMP-EAGA can successfully compete with these emerging economies solely on the cost of labour, especially in terms of attracting FDI (foreign direct investment) to the regions. Moreover, current investment trends within BIMP-EAGA are dominated by domestic sources and have been directed towards resource sectors of the economy.

<table>
<thead>
<tr>
<th>Country/region</th>
<th>Average wage for unskilled labour (US$/day)</th>
<th>Average wage for skilled labour (US$/day)</th>
<th>Average wage for technical workers (US$/month)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunei Darussalam</td>
<td>19.5</td>
<td>32.5</td>
<td>780</td>
</tr>
<tr>
<td>I-EAGA</td>
<td>2.3 to 3.3</td>
<td>6.0 to 13.0</td>
<td>220</td>
</tr>
<tr>
<td>M-EAGA</td>
<td>5.3 to 7.3</td>
<td>10.8 to 13.0</td>
<td>320 to 400</td>
</tr>
<tr>
<td>P-EAGA</td>
<td>4.5 to 5.0</td>
<td>7.0 to 8.5</td>
<td>130 to 160</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2.1 to 4.2</td>
<td>3.3 to 6.7</td>
<td>200 to 500</td>
</tr>
<tr>
<td>Malaysia</td>
<td>9.0 to 10.9</td>
<td>15.5 to 17.3</td>
<td>380 to 480</td>
</tr>
<tr>
<td>Philippines</td>
<td>4.8 to 6.2</td>
<td>6.4 to 6.8</td>
<td>150 to 223</td>
</tr>
<tr>
<td>Thailand</td>
<td>9.1</td>
<td>15.7</td>
<td>275 to 630</td>
</tr>
<tr>
<td>China</td>
<td>2.1 to 5.2</td>
<td>4.0 to 9.7</td>
<td>N/A</td>
</tr>
<tr>
<td>Taiwan</td>
<td>32.5</td>
<td>42.5</td>
<td>1,300</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>1.2</td>
<td>1.8 to 1.9</td>
<td>55 to 150</td>
</tr>
</tbody>
</table>

The current state of HRD cooperation

ADB (1996) has identified several human resource constraints in the subregions of BIMP-EAGA. It is observed that each subregion shares a common constraint that is related to the shortage of managerial, technical and skilled labour necessary for economic expansion and diversification.

Table 4. Human resource constraints within BIMP-EAGA subregion

<table>
<thead>
<tr>
<th>EAGA subregion</th>
<th>Human resource constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunei-EAGA</td>
<td>❑ little managerial expertise</td>
</tr>
<tr>
<td></td>
<td>❑ high unit labour costs</td>
</tr>
<tr>
<td>Indonesia-EAGA</td>
<td>❑ educational and skills deficiencies</td>
</tr>
<tr>
<td></td>
<td>❑ high unit labour costs</td>
</tr>
<tr>
<td>Malaysia-EAGA</td>
<td>❑ lack of skilled staff vis-à-vis the development of IOFC Labuan</td>
</tr>
<tr>
<td></td>
<td>❑ educational and skills deficiencies</td>
</tr>
<tr>
<td></td>
<td>❑ inadequate education of migrant children</td>
</tr>
<tr>
<td>Philippines-EAGA</td>
<td>❑ education and skill deficiencies</td>
</tr>
<tr>
<td></td>
<td>❑ high unit labour costs</td>
</tr>
</tbody>
</table>

ADB (1996) has proposed a strategic framework to overcome these constraints, which includes regularizing and improving the acceptability of people mobility, improving basic education, establishing high-demand training centres, promoting skill training for rural women, exploiting and developing complementarities in higher education and, encouraging research and development activities. In relation to this policy proposal, the working group for HRD under the chairmanship of the Malaysian Government has proposed several projects that could help facilitate people mobility and enhance skills training amongst workers, which includes:

❑ A training institute for the development of SMIs;
❑ A centre for technical and manufacturing training;
❑ A BIMP-EAGA studies centre – professorial chairs;
❑ Sharing of expertise in medicine and nursing; and
❑ An assessment of skills shortages and manpower needs up to 2005.

The aims of the proposed projects are twofold. First, to ensure an adequate supply of technically trained local personnel for resource based industries and, second, to anticipate the need for new skills and disciplines arising from the priority projects identified in the other sectors of economic cooperation within the framework of BIMP-EAGA. Thus, the creation and identification of appropriate skills training centres within the subregions of BIMP-EAGA is critical.
According to the working group, cooperation is established through identifying and linking a ‘focal’ institute in each subregion of the participating countries that has an interest in a particular subject, with one of those in the focal group acting either as a ‘lead’ or ‘coordinating’ institute. This is to take advantage of existing training institutional complementarities, developing new complementarities and promoting measures that could encourage economies of scale towards producing skilled workers. This could be achieved through special arrangements or MOUs to foster cooperation and collaboration on sharing expertise and training resources among member countries.

**Issues and models for cooperation**

The real measure of BIMP-EAGA’s success may be judged through the extent of economic cooperation that is being established in the identified areas which could bring benefits to all participating states. Since its inception in 1994, little progress has been reported so far. With regard to the HRD working group, although numerous efforts and projects have been identified and planned with the spirit to promote cooperation, not many have been implemented successfully. So far, the working group has only managed to produce a Directory of Training Institutions in EAGA and is still working on the setting up of the Labour Market Information. Both projects are still way behind in terms of the main objective of this working group, which is to promote cooperation in HRD that would ensure an adequate supply of the required human resources and also to take advantage of scale economies in providing education and training to the nations.

Perhaps, the main impediment to success regarding this growth area relates to the conceptual framework of a growth triangle discussed earlier in this paper. It is observed that the economic structure of BIMP-EAGA subregions does not rest on the functional concept of a growth triangle. In order to fully functionalize the growth triangle strategy, the concept suggested that there must be at least one investing country on the one side, characterized by its relatively advanced and efficient economy to boost economic growth of the subregions of the participating states. On the other side, there may be several receiving subregions that are relatively less developed but have an abundance of cheap labour, raw materials and land. Thus, the growth triangle approach is to take advantage of both situations through appropriate economic cooperation that could generate a ‘win-win situation’ to all participating regions. However, in the case of BIMP-EAGA, all participating subregions seem to share similar characteristics of a less developed economy with the main economic activities relying heavily on agriculture and resource-based industries. Past experience shows that the SIJORI-GT and the IMT-GT have been relatively more successful because they embrace the necessary conditions of a growth triangle framework, through which Singapore and Penang in Malaysia act as the investing states.
Although several efforts and discussions have taken place, and it has also been recognized that the role of the government and the private sector of the participating countries are crucial towards realizing cooperation and the success of BIMP-EAGA, the implementation is still very slow. It is observed that commitment from the central governments of the participating subregions has not been encouraging. Possibly, the Asia financial crisis that cropped up a few years after the inception of BIMP-EAGA could have had negative repercussions on progress since the crisis by reducing the capacity of the member countries to maintain the necessary level of investment to support the growth of BIMP-EAGA. In addition, with regard to HRD, not many private sectors are willing to invest more in their training programmes. Apart from this, although training requirements are apparent, investing in human capital is still too costly to most governments of the participating states. Thus, without strong commitment and active support from the governments and the private sector of the participating nations, the future success of BIMP-EAGA is still uncertain.

A bigger challenge towards realizing cooperation and the success of a growth triangle strategy is partly related to its political character. The fact remains that not all participating countries are equally enthusiastic to pursue the idea of greater economic cooperation implicit in the growth triangle framework. One may raise the issue of who gains most from the whole exercise. The diverging perception of benefits to the countries involved may hinder cooperation among the participating countries and thus lead to the failure of the strategy. Furthermore, as the regions move towards greater economic integration, the frequency of disputes in the implementation of economic initiatives is likely to rise. For instance, differences in the labour mobility policy between the participating states may raise barriers in such cooperation. It is observed that high migration fees, procedural delays, difficulty in obtaining work permits and other bureaucratic barriers have restricted the flow of labour within the participating subregions. In some instances, labour brought in for training purposes is regarded as foreign and hence subject to either foreign worker levy or the foreign worker ceiling operation which may increase the cost for training.

Thus, to ensure success, it is essential for the governments of the participating states to address all issues hindering cooperation in the regions. It is important that the government and the private sector both renew their commitment towards making BIMP-EAGA a success. It is important to note that full commitment and active support from the governments of the participating countries is essential to facilitate the overall development of the growth triangle concept. Without such commitment and support, it may be difficult to omit barriers for effective cooperation. Since the private sector plays the leading role in the economies of the growth regions, it is necessary to set up appropriate mechanisms whereby consultation and coordination between the private sector and the governments of the participating states can take place. It is also necessary to encourage collaboration between private sector organizations of the participating regions regarding human capital investment.
Although there have been several suggestions put forward by ADB and also by the secretariat of BIMP-EAGA to ease labour movement and to upgrade labour skills and quality, those proposals may not be effective if appropriate mechanisms for implementation do not exist. Thus, it is essential to set up stronger mechanisms such as an institution that could plan, implement and coordinate and monitor appropriate human resource development programmes for BIMP-EAGA. Such an institution should also be responsible to initiate and enhance HRD cooperation between the subregions.

At a more advanced level, in particular higher education, the governments of the participating states may like to follow the model of the ASEAN University Network (AUN) that has been successfully implemented elsewhere. The general objective of the AUN is to strengthen the existing network of cooperation among universities in ASEAN by promoting collaborative studies and research programmes in priority areas identified by ASEAN countries. Apart from enhancing cooperation, such a network system would likely reduce the costs of conducting research and help to produce and transmit scientific and scholarly knowledge efficiently through the sharing of expertise between regions. A similar framework could be applied to promote cooperation in BIMP-EAGA since there are several higher education and research institutions established in the existing subregions (see table 5).

Table 5. Higher education and research institutions within BIMP-EAGA

<table>
<thead>
<tr>
<th>EAGA subregion</th>
<th>Higher education and research institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunei-EAGA</td>
<td>University Brunei Darussalam</td>
</tr>
<tr>
<td>Indonesia-EAGA</td>
<td>Hasanuddin University</td>
</tr>
<tr>
<td></td>
<td>Samratulangi University</td>
</tr>
<tr>
<td></td>
<td>Mulawarman University</td>
</tr>
<tr>
<td>Malaysia-EAGA</td>
<td>Universiti Malaysia Sarawak (UNIMAS)</td>
</tr>
<tr>
<td></td>
<td>Universiti Malaysia Sabah (UMS)</td>
</tr>
<tr>
<td></td>
<td>Institute for Development Studies, Sabah</td>
</tr>
<tr>
<td>Philippines-EAGA</td>
<td>University of Philippines, Mindanao</td>
</tr>
<tr>
<td></td>
<td>Mindanao State University</td>
</tr>
</tbody>
</table>

There is also a need to review regulatory and administrative procedures at the national and BIMP-EAGA levels with a view to making them simpler and transparent and to ensure that new measures introduced have the effect of facilitating the progress of the growth area strategy. In addition, there must be greater understanding between government officials in the growth regions to reduce conflicts and problems that may arise. The formulation of an appropriate framework for dispute settlement should be in place so as to resolve disputes swiftly and effectively.
Regarding this, the governments of the participating countries may need to initiate a series of Memorandum of Understanding (MOU), specifically to resolve issues pertaining to HRD.

III. CONCLUSION

While subregionalism is vital for promoting growth and economic efficiency in the context of rapid globalization, the appropriate working framework is equally important in meeting the objectives of regional cooperation. This paper has argued that the progress of subregional cooperation and development in the BIMP-EAGA region has been quite slow due to many factors. These include similar economic characteristics of the participating countries, external factors such as global economic crisis and a lack of public and private initiatives. As discussed above, the role of HRD is crucial in promoting and sustaining growth. Thus, there is a need to plan, coordinate and implement HRD projects. This paper proposes several measures to solve HRD issues. Broadly, one tends to suggest that closer cooperation between public and private sectors as well as between academic and research institutions in the region is the route ahead.
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PRODUCTIVITY GROWTH IN INDIAN AGRICULTURE:  
THE ROLE OF GLOBALIZATION AND  
ECONOMIC REFORM

Renuka Mahadevan*

The Indian agricultural sector has been undergoing economic reforms since the early 1990s in the move to liberalize the economy to benefit from globalization. This paper traces this process, analyses its effects on agricultural productivity and growth and discusses the problems and prospects for globalization to draw policy implications for the future of Indian agriculture.

India, which is one of the largest agricultural-based economies, remained closed until the early 1990s. By 1991, there was growing awareness that the inward-looking import substitution and overvalued exchange rate policy coupled with various domestic policies pursued during the past four decades, limited entrepreneurial decision making in many areas and resulted in a high cost domestic industrial structure that was out of line with world prices. Hence the new economic policy of 1991 stressed both external sector reforms in the exchange rate, trade and foreign investment policies, and internal reforms in areas such as industrial policy, price and distribution controls, and fiscal restructuring in the financial and public sectors. In addition, India’s membership and commitment to World Trade Organization (WTO) in 1995 was a clear sign of India’s intention to take advantage of globalization and face the challenge of accelerating its economic growth.

One measure of economic growth is given by productivity growth as it forms the basis for improvements in real incomes and welfare. The concept of productivity growth gained importance for sustaining output growth over the long run as input growth alone is insufficient to generate output growth because of diminishing returns to input use. This paper, which examines India’s productivity growth in the agricultural sector in the context of globalization, has three main aims. First, it examines these possible links in the agricultural sector in general. Second, it discusses the problems and prospects for agricultural productivity growth of various Indian states. Third, the paper highlights the challenges of globalization and draws policy implications for the success of Indian agriculture.

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I. OVERVIEW OF INDIA’S AGRICULTURAL ECONOMY

In the early 1950s, half of India’s GDP came from the agricultural sector. By 1995, that contribution was halved again to about 25 per cent. As would be expected of virtually all countries in the process of development, India’s agricultural sector’s share has declined consistently over time as seen in the table below.

Table 1. Share of agricultural output in India’s GDP

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</thead>
<tbody>
<tr>
<td>Percentage share</td>
<td>52.2</td>
<td>43.6</td>
<td>37.4</td>
<td>32.8</td>
<td>28.3</td>
<td>24.4</td>
</tr>
</tbody>
</table>

Source: Estimated from various issues of Economic Survey, Government of India.

In the last five decades, the Government’s objectives in agricultural policy and the instruments used to realize the objectives have changed from time to time, depending on both internal and external factors. Agricultural policies at the sectoral level can be further divided into supply side and demand side policies. The former include those relating to land reform and land use, development and diffusion of new technologies, public investment in irrigation and rural infrastructure and agricultural price supports. The demand side policies on the other hand, include state interventions in agricultural markets as well as operation of public distribution systems. Such policies also have macro effects in terms of their impact on government budgets. Macro level policies include policies to strengthen agricultural and non-agricultural sector linkages and industrial policies that affect input supplies to agriculture and the supply of agricultural materials.

During the pre-green revolution period, from independence to 1964-1965, the agricultural sector grew at annual average of 2.7 per cent. This period saw a major policy thrust towards land reform and the development of irrigation. With the green revolution period from the mid-1960s to 1991, the agricultural sector grew at 3.2 per cent during 1965-1966 to 1975-1976, and at 3.1 per cent during 1976-1977 to 1991-1992. Acharya (1998) explains that the policy package for this period was substantial and consisted of: a) introduction of high-yielding varieties of wheat and rice by strengthening agricultural research and extension services, b) measures to increase the supply of agricultural inputs such as chemical fertilizers and pesticides, c) expansion of major and minor irrigation facilities, d) announcement of minimum support prices for major crops, government procurement of cereals for building buffer stocks and to meet public distribution needs, and e) the provision of agricultural credit on a priority basis. This period also witnessed a number of market intervention measures by the central and state Governments. The promotional measures relate to
the development and regulation of primary markets in the nature of physical and institutional infrastructure at the first contact point for farmers to sell their surplus products.

Acharya (1998) also notes that the rate of growth of productivity per hectare of all crops taken together increased from 2.07 per cent in the decade ending 1985-1986 to 2.51 per cent per annum during the decade ending 1994-1995. Similar evidence of an increase in yields, a partial measure of productivity gains given by output per unit of land area is seen below for various crops.

<table>
<thead>
<tr>
<th>Table 2. Yield for various crops (kg/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
</tr>
<tr>
<td>Wheat</td>
</tr>
<tr>
<td>Coarse cereals</td>
</tr>
<tr>
<td>Pulses</td>
</tr>
<tr>
<td>Food grains</td>
</tr>
<tr>
<td>Oil seeds</td>
</tr>
<tr>
<td>Cotton</td>
</tr>
<tr>
<td>Sugarcane</td>
</tr>
</tbody>
</table>


Although productivity gains were sustained in the 1990s after the liberalization process began, the yield rates for most of the agricultural products in India are far below comparable rates in a number of other countries. This is seen in table 3. Except for sugarcane, tea, coffee and jute, India’s yields are lower than the world average. It should be noted that India is ranked second both in area and output for sugarcane production and is the largest producer of tea and jute in the world. Although India is doing quite well in wheat production, the average yields in the Netherlands and Ireland are more than three times India’s yield rates. In all other major crops, India’s productivity performance seems to lag behind others.

**Why globalize?**

Globalization in the context of agriculture can be best discussed in the context of three components – improvement of productive efficiency by ensuring the convergence of potential and realized output, increase in agricultural exports and value added activities using agricultural produce, and finally, improved access to domestic and international markets that are either tightly regulated or are overly protected.
Table 3. Annual average yield based on 1995, 1996 and 1997 data

<table>
<thead>
<tr>
<th>Region</th>
<th>Wheat</th>
<th>Rice</th>
<th>Coarse Grains</th>
<th>Maize</th>
<th>Pulses</th>
<th>Groundnuts</th>
<th>Sugar-cane</th>
<th>Coffee</th>
<th>Cows Milk</th>
<th>Tobacco Leaves</th>
<th>Jute</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>2.565</td>
<td>3.757</td>
<td>2.678</td>
<td>4.050</td>
<td>4.050</td>
<td>1.318</td>
<td>63.266</td>
<td>1.158</td>
<td>538</td>
<td>2.062</td>
<td>1.616</td>
</tr>
<tr>
<td>Europe</td>
<td>4.764</td>
<td>4.311</td>
<td>5.698</td>
<td>5.698</td>
<td>6.459</td>
<td>64.159</td>
<td>697</td>
<td>1.055</td>
<td>1.845</td>
<td>2.522</td>
<td>1.827</td>
</tr>
<tr>
<td>India</td>
<td>2.569</td>
<td>2.848</td>
<td>1.540</td>
<td>1.540</td>
<td>1.059</td>
<td>1.776</td>
<td>71.040</td>
<td>741</td>
<td>7.543</td>
<td>1.442</td>
<td>1.827</td>
</tr>
<tr>
<td>USA</td>
<td>2.508</td>
<td>6.590</td>
<td>6.590</td>
<td>7.690</td>
<td>2.787</td>
<td>71.040</td>
<td>1.776</td>
<td>741</td>
<td>7.543</td>
<td>1.442</td>
<td>1.827</td>
</tr>
<tr>
<td>Canada</td>
<td>2.245</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.365</td>
<td>480</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>1.880</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Thailand</td>
<td></td>
<td>2.252</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.365</td>
<td>480</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td></td>
<td>4.473</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sri Lanka</td>
<td></td>
<td></td>
<td></td>
<td>67.718</td>
<td>1.385</td>
<td>582</td>
<td></td>
<td>1.473</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td></td>
<td>2.482</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.365</td>
<td>480</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Kenya</td>
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<td></td>
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</tr>
<tr>
<td>Bangladesh</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>7.772</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.155</td>
<td></td>
<td></td>
<td>1.580</td>
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</tbody>
</table>


These components are linked in various ways. For example, productive efficiency would enhance value added activities in agriculture through agro-processing and exports of agricultural and agro-based products. These activities in turn would increase income and employment in the industrial processing sector. Thus globalizing agriculture has the potential to transform subsistence agriculture to commercialized agriculture and to improve the living conditions of the rural community.

However, economic reforms within India are necessary to pave the path to successful globalization. The stated objective of the new economic policy is to raise the economy’s growth rate from the current 5.5 per cent achieved over 15 years to about 7 or 8 per cent per year. Ahluwalia (1996) explains that this indirectly requires an improvement in agricultural growth from between 2 and 3 per cent in the past to about 4 per cent per year. Although initially, with respect to agriculture, there was no major policy reform package in the 1990s, it was however anticipated that the opening up of the agricultural sector to foreign trade, the move to a market determined exchange rate and reduction of protection for industry would, over time, benefit the agricultural sector.

Mannmohan Singh (1995), the then Finance Minister, in his inaugural address at the 54th Annual Conference of the Indian Society of Agricultural Economics, brought to notice that a policy of heavy protection of the industrial sector operated to the
disadvantage of the agricultural sector when industrial prices were raised relative to world prices and thus the profitability of investing in industry was raised relative to agriculture. This would lead to a shift of resources from agriculture to industry. A policy of heavy industrial protection also led to an appreciation of the exchange rate. Ahluwalia (1996) noted that over-valuation of the exchange rate (before the Indian rupee was devalued by 18 per cent in two phases starting in July 1991) discouraged agricultural exports more than industrial exports because Indian industrial policy had sought to offset the constraints faced by industries via a system of export incentives for market support. Agricultural exports on the other hand were denied any such incentives as they did not use imported inputs.

Ahluwalia (1996) argued that in the past, the agricultural sector was negatively protected because of the above two reasons and the fact that farmers were denied access to the world markets due to trade barriers. Exports of plantation crops and a few commercial crops were free from export restriction but exports of essential commodities, particularly food products, were subject to bans, quotas and other restrictions. Interestingly, Kruger and others (1991) showed that while many developed countries continue to protect agriculture, developing countries do not do so. However, no formal attempt or theoretical framework has yet been used to assess the extent of negative protection in Indian agriculture. The implementation of economic reform in the Indian agricultural sector has been a gradual process. These include an 87 per cent cut in tariff on agricultural products, sustenance of high-yield crop varieties, removal of minimum export price on selected agricultural products, a lift on quantity restrictions on the export of some crops and various land reforms related to tenancy rights and land ceilings.

**Productivity gains from globalization and economic reforms**

In the wake of India’s efforts towards globalization and economic reforms, the expected benefits of total factor productivity (TFP) growth¹ can be represented using the production frontier. The production frontier traces out the maximum output obtainable from the use of inputs. In the figure below, F₁ and F₂ are the production possibility frontiers in time 1 and 2 respectively.

Opportunities from globalization and economic reforms can lead to:

a) shift from A to B due to technical efficiency
b) shift from B to C on existing frontier due to input growth
c) upward shift from C to D due to technological progress

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¹ TFP growth is productivity growth related to the use of all inputs in production and is given by the residual of output growth not accounted for by input growth.
Each of the above-mentioned shifts, which constitute various sources of TFP growth, can be linked with trade gains. The movement from A to B led by technical efficiency allows increases in output when inputs and technology are used to their fullest potential to obtain the greatest yield. Given that India has been involved in agricultural production for so long, there would be learning-by-doing gains that can help boost production given the expected increase in demand as India opens up. The increased production would enable a better utilization of inputs, especially that of advanced capital technology. The reduction in the tariff rate for agricultural products from 113 per cent in 1990-1991 to 26 per cent in 1997-1998 is also expected to motivate local producers into rethinking their production techniques and efficiently utilizing the inputs and technology to keep costs of production down in order to remain competitive. The optimum or efficient use of land and water resources would then allow agriculture to respond to the demand for other products such as horticulture and livestock which is expected to increase following a rising trend in the per capita incomes of both rural and urban groups.

The move from an overvalued exchange rate to that of a market determined rate would also make agricultural exports cheaper and hence boost exports. The new trading opportunities would necessitate an increased use in the quantity of inputs to boost output and this allows for the movement from B to C along the existing production possibility frontier. Increased exports would bring about economies of scale and as Verdoon’s law states, output growth would lead to productivity growth.
The scale of output under increased exports would justify the huge fixed costs underlying technologically advanced equipment and hence increase incentives to adopt high quality inputs. The use of such inputs would result in technological progress and this is represented by the shift from C to D. The reduction in tariff rates in industry from 1990-1991 to 1997-1998 range from 153 per cent to 25 per cent for consumer goods, 77 per cent to 18 per cent for intermediate goods and 97 per cent to 24 per cent for capital goods. This means that farmers now have relatively cheaper access to imported new technology and better capital equipment as well as the option of adopting better farming techniques and this should lead to technological progress. In particular, the development of agro-processing as an instrument for agricultural and rural modernization will bring benefits, given its capital-intensive and technology-intensive nature. Lower duty rates on plastics and metals also lower costs of packaging. These forms of cost efficiency should allow competitive pricing of products. In addition, external competition can be expected to motivate local producers into the production of improved quality intermediate inputs for agriculture.

The importance of technology in agricultural development was first demonstrated in the 1970s with impressive growth in yields following the introduction of new wheat and rice varieties. But this technology was limited to areas of assured irrigation as the new seeds also required heavy inputs of fertilizers and pesticides for optimal results. However, the potential for further extending this technology is not yet exhausted as there is scope for expanding irrigation further and improving the quality of irrigation in many areas. For further technological progress, genetic engineering and the biotechnology revolution provides a prospect of developing new varieties that can flourish with less dependence on water and chemical inputs. Such reduced dependence upon chemical fertilizers and pesticides is also desirable because of environmental considerations, which are an increasing concern.

It must however be acknowledged that the link between trade liberalization and productivity growth is two-way as they both feed on each other. The above discussion has shown how productivity gains can be obtained from openness but to benefit from openness via increased demand for exports, agricultural products need to be priced competitively. In other words, productivity growth is necessary to lower the costs of production.

Agricultural growth and performance: an economy-wide analysis

Although India’s economic reforms were initiated in June 1991, the process of liberalization was implemented gradually and thus it is difficult to assess the full impact of the liberalization measures. Nevertheless, an attempt is made to discuss what is observable in terms of agricultural growth.

One observation is that the expected increase in exports due to liberalization simply did not occur. India’s share in world exports was 0.6 per cent in 1997; India
has to aim for at least 4 per cent by 2005 in order to meet the growing import
demands for capital goods, raw materials and crude oil as well as to meet her external
financial commitments (Kalirajan and others 2001). For the last decade or so, India’s
share in world exports of agriculture has been between 2 per cent and 3 per cent.
Furthermore, as table 3 shows, India is not as competitive as the other countries and
calculations show that India’s crop yields have increased at a slower rate over the
1990s.

In addition, the agricultural sector’s output growth decreased to 2.9 per cent
reasons for the slowdown are that there was no major breakthrough in developing
new high-yielding varieties during the 1990s and there was a decline in the
environmental quality of land which reduced the marginal productivity of the modern
inputs. What could this mean in terms of the effectiveness of the policies of reduced
protection to industry, a market determined exchange rate and the opening of the
agricultural sector to foreign trade?

First, although the reduction to protection of industry is substantial, there is
reason to believe that the reduction was not necessarily sufficient to benefit the
agricultural sector whose tariffs were also drastically reduced. Hence, the expected
shift in resources to agriculture did not occur. Second, is the apparent ineffectiveness
of the market determined exchange rate in boosting exports. This is however not
surprising as the exchange rate may not be a key factor determining agricultural
export demand for India. In general, unlike manufacturing industries, agriculture did
not benefit much from these two policies because the share of imported inputs in the
value of agricultural production is small. It is likely that a change in the mindset and
attitude of farmers has yet to take place and there are delays or hesitation in embracing
India’s openness.

Third, in opening up the agricultural sector to foreign trade, India has taken
major steps towards trade liberalization since 1991, partly on its own initiative and
partly from its commitments to WTO. Kalirajan and others (2001) provide a detailed
review of these reform procedures. But why have the benefits from trade liberalization
been slow to come?

One reason is that prospects for growth in agricultural exports depend partly
on domestic policies and partly on the removal of protectionist policies pursued by
developed countries such as Japan and members of the European Union (EU). An
OECD report (1998) estimated that the producer equivalent subsidy in the OECD
countries increased by US$ 9.3 billion from 1988 to 1993 and this subsidy as a
percentage of the value of production in 1997 was 9 per cent in Australia, 20 per
cent in Canada, 47 per cent in EU and 70 per cent in Japan. These protectionist
practices do not seem likely to come to an early end. An UNCTAD report (1999)
noted that 29 member countries of the OECD spent an average of US$ 350 billion
a year in agricultural support between 1996-98. Schumacher (2000) further reports
that the EU provides product-specific trade distorting domestic support to at least 50 different agricultural products. The implication of these reports is that food exports from India may not show a large increase given the international environment and the still-existing restrictions on exports in the major importing markets based on the self-sufficiency argument and food security. Other macroeconomic factors, such as the recession in developed countries in 1996-98 as well as the 1997 South-East Asian financial crisis, have clouded the possibilities of increasing Indian exports.

Another problem faced by Indian agricultural exporters is the protectionist measures in the form of non-trade barriers that developed countries use to restrict market access. This is by tightening requirements of quality, testing and labeling, and anti-dumping and countervailing measures. For example, in May 1997, the EU banned marine products from India citing unhygienic processing conditions. The extra costs of meeting the standards required in export markets as well as costs associated with changes in the production mix and transactions associated with exports may well be discouraging Indian exporters.

One existing problem of India’s agricultural protection is the use of input subsidies. The general argument favouring this has been that it is necessary to encourage the use of particular inputs for production for various benefits. For India, Gulati and Sharma (1995) show that the input subsidy in per cent of GDP increased from 2.13 in the triennium ending 1982-1983 to 2.73 in the triennium ending 1992-1993. But the benefits of these subsidies have accrued to only certain classes of farmers in some regions cultivating irrigated crops. Furthermore, highly subsidized prices of inputs such as irrigation water and electricity for pump sets have encouraged cultivation of water-intensive crops, over-use of water, ground water depletion/salinity and water logging in many areas. Subsidy for nitrogen fertilizer on the other hand has resulted in nitrogen phosphorous potassium imbalance and acted as a disincentive for use of the environmentally friendly organic manure. As a result, the linkage between food crops and non-food crops, which include fodder, has been reduced. These adverse consequences are a drain on the fiscal burden of central and state Governments. Thus, if not properly monitored, input subsidies can be counterproductive and, in this context, protection to lower costs of production should be done selectively in the course of liberalization.

In fact, Agenda 21 of the United Nations Conference on Environment and Development in 1992 stressed that there is a need for integration of environmental considerations in the pricing of natural and other resources in such a way that prices reflect social costs. Such a pricing policy will not only lead to a more efficient use of scarce resources but also result in subsidy reductions and improvements in environmental quality. The money saved from the reduction of subsidies can be spent in the development of rural infrastructures, agricultural research, farmers’ education and other forms of support for agriculture.
Agricultural growth and performance: an inter-state analysis

While the above analysis has provided a general view of the impact of economic reforms, this section examines agricultural growth and performance in the states of Bihar, Karnataka, Tamil Nadu and Punjab with their attendant policy implications. The table below shows the yield for various crops in these four states.

Table 4. Yield of major crops (kg/ha)

<table>
<thead>
<tr>
<th>Year</th>
<th>Rice</th>
<th>Wheat</th>
<th>Coarse cereals</th>
<th>Pulses</th>
<th>Food grains</th>
<th>Oil seeds</th>
<th>Cotton</th>
<th>Sugar cane</th>
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<tbody>
<tr>
<td>Bihar</td>
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<tr>
<td>1960/61</td>
<td>867</td>
<td>679</td>
<td>730</td>
<td>515</td>
<td>749</td>
<td>398</td>
<td>–</td>
<td>33 879</td>
</tr>
<tr>
<td>1970/71</td>
<td>788</td>
<td>957</td>
<td>885</td>
<td>600</td>
<td>795</td>
<td>458</td>
<td>–</td>
<td>38 353</td>
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<tr>
<td>1980/81</td>
<td>1 015</td>
<td>1 314</td>
<td>828</td>
<td>609</td>
<td>989</td>
<td>423</td>
<td>–</td>
<td>31 412</td>
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<tr>
<td>1990/91</td>
<td>1 220</td>
<td>1 810</td>
<td>1 114</td>
<td>791</td>
<td>1 300</td>
<td>617</td>
<td>–</td>
<td>52 490</td>
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<tr>
<td>1995/96</td>
<td>1 370</td>
<td>2 020</td>
<td>1 566</td>
<td>610</td>
<td>1 450</td>
<td>620</td>
<td>–</td>
<td>45 510</td>
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<td>Karnataka</td>
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<td>1960/61</td>
<td>1 292</td>
<td>–</td>
<td>441</td>
<td>270</td>
<td>518</td>
<td>407</td>
<td>389</td>
<td>70 149</td>
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<td>1970/71</td>
<td>1 709</td>
<td>–</td>
<td>696</td>
<td>354</td>
<td>774</td>
<td>626</td>
<td>499</td>
<td>78 689</td>
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<tr>
<td>1980/81</td>
<td>2 029</td>
<td>–</td>
<td>793</td>
<td>319</td>
<td>873</td>
<td>520</td>
<td>590</td>
<td>78 232</td>
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<td>1990/91</td>
<td>2 070</td>
<td>–</td>
<td>780</td>
<td>333</td>
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<td>525</td>
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<td>76 287</td>
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<tr>
<td>1995/96</td>
<td>2 380</td>
<td>–</td>
<td>1 294</td>
<td>470</td>
<td>1 290</td>
<td>680</td>
<td>980</td>
<td>79 560</td>
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<td>Punjab</td>
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<tr>
<td>1960/61</td>
<td>1 009</td>
<td>1 244</td>
<td>904</td>
<td>785</td>
<td>1 032</td>
<td>654</td>
<td>270</td>
<td>36 541</td>
</tr>
<tr>
<td>1970/71</td>
<td>1 764</td>
<td>2 237</td>
<td>1 411</td>
<td>744</td>
<td>1 860</td>
<td>790</td>
<td>350</td>
<td>41 171</td>
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<tr>
<td>1980/81</td>
<td>2 733</td>
<td>2 730</td>
<td>1 548</td>
<td>589</td>
<td>2 561</td>
<td>786</td>
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<td>55 211</td>
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<td>1990/91</td>
<td>3 229</td>
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<td>1 907</td>
<td>755</td>
<td>3 390</td>
<td>958</td>
<td>463</td>
<td>59 410</td>
</tr>
<tr>
<td>1995/96</td>
<td>3 130</td>
<td>3 880</td>
<td>1 995</td>
<td>820</td>
<td>3 840</td>
<td>1 200</td>
<td>440</td>
<td>65 300</td>
</tr>
<tr>
<td>Tamil Nadu</td>
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<td>1960/61</td>
<td>1 413</td>
<td>–</td>
<td>787</td>
<td>265</td>
<td>1 058</td>
<td>900</td>
<td>167</td>
<td>80 000</td>
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<tr>
<td>1970/71</td>
<td>1 900</td>
<td>–</td>
<td>784</td>
<td>271</td>
<td>1 340</td>
<td>919</td>
<td>196</td>
<td>77 367</td>
</tr>
<tr>
<td>1980/81</td>
<td>1 861</td>
<td>–</td>
<td>841</td>
<td>324</td>
<td>1 340</td>
<td>846</td>
<td>201</td>
<td>100 820</td>
</tr>
<tr>
<td>1990/91</td>
<td>3 116</td>
<td>–</td>
<td>1 106</td>
<td>425</td>
<td>1 910</td>
<td>1 081</td>
<td>290</td>
<td>113 920</td>
</tr>
<tr>
<td>1995/96</td>
<td>3 390</td>
<td>–</td>
<td>1 154</td>
<td>370</td>
<td>2 140</td>
<td>1 470</td>
<td>350</td>
<td>110 010</td>
</tr>
</tbody>
</table>

Source: Statistical Abstract, Government of India. Tamil Nadu: Season and Crop Reports.
Table 4 shows that the yields for various crops in these states differ greatly. While Tamil Nadu had the highest yield in rice, oil seeds and sugarcane, Punjab enjoyed the highest yields in wheat, coarse cereals, pulses and food grains. Karnataka on the other hand is seen to do well in cotton and Bihar performed quite well in pulses and coarse cereals. Further analysis and findings by Kalirajan and others (2001) show that Punjab had made remarkable achievements on the agricultural front while Bihar had remained stagnant in the last two decades, with Karnataka and Tamil Nadu showing moderate achievement. Clearly, differences in physical endowments, climatic conditions and institutional characteristics are some of the reasons for the varying productivity performance. Thus, having across the board economic reforms is likely to work less effectively than state-specific policy measures that enable each state’s agricultural yields to reach their full potential. The comparative advantage of each state’s agricultural production should be determined and with inter-state restrictions removed, total agricultural output would see a very significant increase.

For example, Karnataka with less favourable soil and water resources should be given incentives to concentrate on agro-processed products and corporate agriculture in horticulture, floriculture and animal husbandry, or to undertake watershed development to help with dry land agriculture. Many studies have indicated that with watershed areas, productivity growth has been mainly due to seed and fertilizer use. Thus, this state has to be given input subsidies for high yielding seed varieties but at the same time, the farmers need to be educated on the over use of chemical fertilizers.

With Bihar, agricultural performance is problematic on many fronts. First, although demographic pressure has increased and agricultural technology has improved, most of the uncultivated land is concentrated in southern Bihar, where irrigation facilities have not kept pace and the soil is of poor quality. Given the physiography of southern Bihar, wells are also unsuitable and thus the dominant mode of irrigation has been through tanks whose expansion and maintenance has been neglected. Second, the infrastructural facilities of Bihar have been lagging as seen by the infrastructure development index in table 5. Due to infrastructural bottlenecks, availability of modern goods and services has not increased or their supply remains costly or unreliable.

<table>
<thead>
<tr>
<th>Year</th>
<th>Bihar</th>
<th>Karnataka</th>
<th>Punjab</th>
<th>Tamil Nadu</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980/81</td>
<td>83.5</td>
<td>94.8</td>
<td>207.3</td>
<td>158.6</td>
</tr>
<tr>
<td>1984/85</td>
<td>84.8</td>
<td>97.9</td>
<td>204.6</td>
<td>148.7</td>
</tr>
<tr>
<td>1989/90</td>
<td>83.1</td>
<td>95.2</td>
<td>195.8</td>
<td>147.4</td>
</tr>
<tr>
<td>1992/93</td>
<td>83.4</td>
<td>96.1</td>
<td>191.6</td>
<td>143.3</td>
</tr>
<tr>
<td>1993/94</td>
<td>81.1</td>
<td>96.9</td>
<td>191.4</td>
<td>144.0</td>
</tr>
</tbody>
</table>

Third, agriculture in Bihar is dominated by small and marginal farmers and the prevalence of mass poverty is largely related to the backwardness of agriculture. Fourth and importantly, the state agricultural policies in Bihar are in dire need of review. The semi-feudal production condition still exists in rural areas and the ineffective protection of tenancy rights has hindered agricultural growth. The slow pace of land consolidation reflects inadequate financial outlays and a shortage of manpower. Kalirajan and others (2001) note that marketing and extension services in Bihar are also rather weak compared to the other states.

Punjab on the other hand, was one of the few states which enjoyed the success of land reforms and the high priority of investment in rural infrastructure as seen in table 5. Also, the irrigation base of the small and medium sized farms was comparable to that of large farms. In addition, the Punjab Agricultural University at Ludhiana contributed to the development of new seed varieties. However, there are clear signs of a decline in crop yields since the 1990s and this has been associated with the increasing use of fertilizers and excessive water use which have increased the unit cost of production as a result of declining soil quality. Hence, care is needed when providing further input subsidies in fertilizer and water use. Another related fact is the steep increase in wages in Punjab and in the absence of productivity increases, the cost increase has affected the profitability of farmers.

With Tamil Nadu, the main crop has been rice as this state is blessed with two monsoons. But from 1992-1997, there has been a steady decline in the areas irrigated by canals and an increase in well-irrigated areas while the use of tanks remains an unreliable source of irrigation. However, major improvements in about 10 rice varieties released in the early 1990s can be expected to improve productivity growth in rice production although pests and diseases as well as imbalance in the use of fertilizers are major constraints.2 Thus Tamil Nadu could do with subsidies of pesticides and farmers should be educated on the more effective use of fertilizers to obtain high yields. Interestingly, the cropping pattern of late has shown increasing substitution of food crops by commercial crops but there is concern that the benefits will reach farmers only with the development of adequate infrastructure such as roads and markets. Table 5 shows, however, that Tamil Nadu has a higher index than the all India average of infrastructure.

Challenges of globalization

It is important to realize that globalization poses many challenges to a developing country like India, which had relied on a state directed and regulated policy regime for more than four decades. In moving to a more open, market-based

2 Kalirajan and others (2001) provides an extensive discussion on the average yields and special attributes of these rice varieties.
economy there are many transitional problems that the country has to manage. The Government must play a pro-active role in facilitating the globalization process so that the opportunity sets for the economic agents are widened and the adverse effects of globalization are minimized. The Indian Government must also prepare the necessary information base and develop its capacity to articulate India’s concerns and policy trade-offs in the international forums for multilateral trade and environmental negotiations.

In addition, the Government should embark on an extensive programme to educate farmers on the need to meet the standards required in the export markets. In fact, India needs to seek technical assistance in creating the capacity for meeting such standards and to consider watershed developments for environmental considerations. Equally important is the need to disseminate information about possible export markets to farmers, so that market access is achieved at minimum cost. Given the requisite information about markets and profitability, the likelihood of farmers investing in post-harvest and processing technologies and storage and efficient transportation arrangements as well as developing supporting infrastructure is very high.

Although the brave and bold move by India to reduce the tariff rate for agricultural products from 113 per cent in 1990-1991 to 26 per cent in 1997-1998 deserves to be applauded, the question of whether India is ready to compete in world markets remains to be seen. The infant industry argument may still hold for India to shield itself from external competition but one can easily question the length of time that is required to that end. Also, a delay in opening up to foreign trade has the danger that local producers may become too complacent and never be ready for competition.

As India opens up externally, it is also expected to face vulnerability in the wider international price fluctuations and thus Acharya (1998) claims that a minimum price support scheme is important. These prices can also act as a signal to adopt modern inputs and invest in yield-raising infrastructure for increasing production. For instance, keeping basic staple food grains at reasonable prices would induce farmers to switch over to high value crops. However, during the 1990s, Kalirajan and others (2001) shows that procurement prices especially for rice and wheat have been increasing faster than the general price level. Such high prices along with guaranteed purchases by the Food Corporation of India have pushed up market prices. These higher prices are partly responsible for the large buffer stocks with the Food Corporation. If this trend continues, India’s comparative advantage will be eroded.

With openness and high price instability, unstable export revenue can also be expected. One way of reducing such risk is for India to diversify her agricultural exports. For example, since 1990, even in commodities such as tea, coffee, cocoa and spices, where India is supposed to have a comparative advantage (Chadha, 1999) international prices have been unstable. Besides increasing the type of exports to obtain more export revenue, India should also seriously consider exporting more value
added agricultural products through agro-processing such as processed vegetables, fruits, fish and meat products given that export or even local demand for basic agricultural products would decline as incomes rise. The move to higher value added activities within the agricultural sector also spells greater opportunities for industrialization and vice versa as borne by Kalirajan and Shand’s (1997) findings of a bi-directional relationship between agriculture and industry for most Indian states. On the other hand, Sivakumar and others (1999) establish empirical evidence of high forward linkages of agriculture due to the presence of agro-industries while Satyasai and Viswanathan (1999) show the significance of the spillover effects to the industrial sector via the intensive use of purchased inputs in the agricultural sector.

The lack or slow pace of internal or domestic liberalization is also seen to hinder the possible gains from external or trade liberalization. For example, although central zoning restrictions have been abolished, state government restrictions on inter-state and even inter-district restrictions on marketing and movement of goods still exist in many cases. This interferes with the benefits from crop specialization and economies of scale arising from comparative advantage. The land market is another example of distortion whereby land ceilings exist preventing the operation of large-sized farms. This has led to the emergence of a large number of small economically unviable land holdings. The easy leasing of land should be permitted with assurance of resumption. Yet another problem lies with the insufficiency of credit to agriculture. From 1995-1996, the Rural Infrastructure Development Fund was set up to allocate funds for the completion of projects and the government has committed itself to strengthening the cooperative credit structure through substantial refinancing and restructuring of the Regional Rural Banks. However, as mentioned earlier, due to varying institutional factors in the Indian states, these domestic reforms can be expected to yield quite different results.

II. CONCLUSION

Although India missed the opportunity to open up two decades ago, its attempts to do so now must be regarded as better late than never. Others such as Desai (1999) observe that, “the logic of the global economy as well as India’s interests dictate that India become proactive in its liberalization policies. India must liberalize not because it has no choice but because it is the best choice”. His lament that India has adopted a ‘victim mentality’ when it really needs to adopt a ‘winner mentality’ has become less of a concern as over time, India has shown commitment to stay on the bandwagon of globalization. Having realized that globalization is a necessary but not a sufficient condition for high growth production, India has undertaken economic reforms, both internal and external. However, it must be ensured that these reforms are synchronized so that the pace of both reforms is set right in order to work hand in hand to promote agricultural productivity growth.
Thus, training the farmers and educating them appropriately to change their mindset and reorienting them to take up new activities or adopt foreign technology is of utmost importance. In this context, it is necessary to involve non-governmental organizations in training and mobilizing the rural poor to face the challenge of liberalization. Also, with domestic economic reforms, more care needs to be exercised to draw up state-specific liberalization measures to maximize their benefits. Lastly, in the implementation of these reforms for successful globalization, one crucial element, not entirely within control is the need for good governance and stability in the political and economic environment. Political leaders who are the ultimate decision makers in these matters need to examine their own role dispassionately.

It is quite apparent that at this relatively early stage, there is little observable evidence of gains to India’s agricultural performance after opening up. However, there could easily be benefits that have not yet surfaced, or are yet to be identified and perhaps too difficult or intangible to measure. Whatever the case, it is highly likely that it is too soon to assess the full impact of globalization and economic reforms. Furthermore, the process of liberalization has been gradual and remains incomplete. For example, the complete removal of quantitative restrictions after March 2001 will have provided an opportunity for Indian farmers to tap world markets and, if they are successful, results should start to become evident soon. Export promotion via the development of export and trading houses as well as effective liberalizing export promotion zone schemes for agriculture are fairly recent measures and only time will tell as to how effective these measures are. Other possibilities such as agro-industry parks for promoting exports are also in the pipeline.

In conclusion, India has successfully set sail on the waters of globalization and economic reforms and even in the wake of economic and political instability, she has to carefully steer her course in order to reap the benefits of increased productivity growth in the agricultural sector.
REFERENCES


THE IMPACT OF FOREIGN AID ON POVERTY AND HUMAN WELL-BEING IN PAPUA NEW GUINEA

Simon Feeny*

This paper evaluates the impact of foreign aid on poverty and human well-being in Papua New Guinea during the 1990s. The methodology of the paper involves comparing the mix of donors’ aid policies aimed at the promotion of economic growth, direct targeting of the poor and the provision of safety nets with the poverty and well-being situation in Papua New Guinea. Growth in Papua New Guinea has not been pro-poor and the high level of inequality reduces the impact of growth on poverty. The sectoral allocation of foreign aid to Papua New Guinea has been broadly consistent with a strategy to effectively reduce poverty and increase human well-being. However, the paper concludes by suggesting ways in which foreign aid donors can more effectively achieve these goals.

Despite a rich natural resource endowment and receiving large amounts of foreign aid, Papua New Guinea has failed to prosper. The country performs very poorly in comparison to its South Pacific neighbours for many indicators of well-being. Life expectancy is the lowest in the Pacific and only a little over half of the adult population is literate. In the crucial area of health, some indicators have deteriorated during the last decade. The latest UNDP’s Human Development Report (UNDP, 2002) reported that Papua New Guinea is ‘far behind’ in achieving its Millennium Goals by 2015.1 Moreover, a recent Centre of Independent Studies report states that Papua New Guinea shows signs of following the Solomon Islands “down the path to economic paralysis, government collapse and social despair” (Windybank and Manning, 2003, pp. 1). The report also states that the large amounts of Australian aid, provided since independence in 1975, clearly have not worked.

This paper examines this issue in more detail by investigating the impact of foreign aid on poverty and human well-being in Papua New Guinea. The debate on aid effectiveness has focused on evaluating the impact of aid on growth. Despite

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1 These goals include halving the proportion of people suffering from hunger, eliminating gender disparity in all levels of education, reducing under-five and infant mortality rates by two-thirds, and halving the proportion of people without access to improved water sources. The results are based on linear interpolation of trends in the 1990s. Data relating to the achievement of universal primary education were not available.
the increasing emphasis on poverty reduction as an objective of foreign aid, the empirical literature seeking to evaluate the direct impact of aid on poverty and human well-being is sparse. Growth is often viewed as the primary driver of poverty reduction and therefore inferences of the impact of aid on poverty are commonly drawn from the impact of aid on growth. However, foreign aid can reduce poverty via other channels than growth. For example, foreign aid can finance projects which directly benefit the poor. Alternatively, aid can have an indirect effect by financing areas of government spending which are likely to benefit the poor.

The empirical evidence that foreign aid has a direct impact on poverty is weak. Kosack (2003) finds that aid can directly increase welfare but only in democracies. However, there is strong evidence that foreign aid has an indirect impact on poverty and well-being through its impact on pro-poor expenditures of recipient countries (Mosley and Hudson, 2001, Verschoor and Kalwij, 2002, Gomanee and Morrissey, 2002, and Gomanee and others, 2003). These studies have used cross-country data with the headcount index, the Human Development Index (HDI) and infant mortality as measures of poverty and well-being.

A recent study has investigated the impact of aid policies on poverty for a single country case study. Le and Winters (2001) provide an excellent conceptual framework in evaluating the impact of aid policies on poverty in Viet Nam. This paper follows their framework in evaluating the impact of foreign aid on poverty in Papua New Guinea during the 1990s. Prior to the 1990s, Australia, (by far the largest donor of aid to Papua New Guinea) provided aid in the form of budget support. Since foreign aid therefore supplemented government revenue, it is very hard to isolate the effects of aid from the impact of other government expenditures. The general perception is that it had little impact on poverty reduction since successive governments directed little expenditure towards the social sectors. Moreover, a fiscal response model for Papua New Guinea indicates that foreign aid has led to small increases in investment expenditures but to minor reductions in health and education expenditures (Feeny and McGillivray, 2003).

A lack of time-series data relating to poverty and well-being prevents a rigorous econometric investigation. Income based measures of well-being such as per capita income are available for a number of years but mask the true level of changes in poverty in Papua New Guinea. The only major sources of reference for poverty and well-being in Papua New Guinea are the 1996 Household Survey (Gibson and Rozelle, 1998) and the 2001 Participatory Poverty Assessment (PPA) carried out by the Asian Development Bank (ADB, 2002).

The impact of foreign aid on poverty and well-being can be investigated by assessing how aid programmes have addressed basic needs in Papua New Guinea. Streeten and Burki (1978) classify essential basic needs into six areas: nutrition; basic education; health; sanitation; water supply; and housing and related infrastructure. There are a number of different strategies to address basic needs. “Meeting these
needs in nutrition, education, health, and shelter may be achieved by various combinations of growth, redistribution of assets and income, and restructuring of production” (Hicks and Streeten, 1979, pp. 568). The analytical framework adopted by this paper follows Le and Winters (2001). They assert that the effective use of foreign aid to reduce poverty requires optimally allocating aid among the following three components: promotion of economic growth; direct targeting of the poor; and the provision of safety nets and direct transfers. The optimal mix of the above components will depend upon the characteristics of the recipient in question. Inferences of the impact of aid on poverty are drawn from an examination of the sectoral composition and geographic distribution of aid in relation to the country’s poverty and well-being situation.

The remainder of this paper is organized as follows. Section I examines the poverty and human well-being situation in Papua New Guinea. The section identifies some of the characteristics of poverty in Papua New Guinea before identifying some of the causes which make people poor. Section II reviews the recent empirical literature on poverty reduction. The review provides insights into how aid policies should be designed in order to effectively reduce poverty in Papua New Guinea. Section III evaluates the extent that foreign aid flows have addressed poverty reduction and human well-being by examining the composition of foreign aid and its distribution. It investigates the proportion of foreign aid allocated to pursuing each of the strategies outlined in Section II. Finally, section IV concludes.

I. POVERTY AND HUMAN WELL-BEING IN PAPUA NEW GUINEA

Rather than suffering from a lack of food, poverty in Papua New Guinea relates more to a lack of infrastructure, opportunities, and access to services. The wantok system (a clan-based support system) helps to protect almost everyone from outright destitution in rural areas. Poverty and well-being indicators identified by the participants of the PPA include a lack of employment/cash; land; education; basic infrastructure (including proper health, living conditions and safe and regular water supply); communications; a fear of crime; and a breakdown of the family unit. The PPA defines poverty in Papua New Guinea as “a result of weak governance, weak social support systems, inefficient use of natural resources, the lack of economic and financial growth opportunities, a poorly maintained infrastructure network and the inefficient delivery of, and lack of access to basic services”, (ADB, 2002, p. iv). The situation in Papua New Guinea can be described in greater detail using poverty indicators, and income-based, social and composite indicators of well-being.

Poverty indicators

The headcount index measures the proportion of the population living below a certain poverty threshold. The measure provides information on the distribution of
poverty and the index is broken down by region in table 1. The 1996 household survey indicates that almost two million people, or 37.5 per cent of the population live in households where the real value of consumption per adult equivalent is below the poverty line of US$ 1 per day. Large inequalities exist, with the rural poverty rate almost three times that of urban areas. There are also significant differences between regions and 94.7 per cent of the poor live in rural areas (World Bank, 1999). The latest AusAID commissioned report into Papua New Guinea describes a ‘rural crisis’.\(^2\) This has important implications for the targeting of donor aid programmes. Rural areas which have played host to mining projects, are sometimes better off in terms of access to health and education services since the mining companies often assume responsibility for such activities during the lifetime of the project. Other areas have been neglected. The Momase region, covering much of the north coast is the poorest region with 45.8 per cent of the population living below the poverty line. The Highlands also host a large proportion of the poor, indicating that foreign aid should be targeted to these areas. The Southern region has the least poverty with 33.2 per cent of the population living below the poverty line.

<table>
<thead>
<tr>
<th>Region</th>
<th>Headcount index</th>
<th>Contribution to total (per cent)</th>
<th>Share of total population (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Capital District</td>
<td>25.8</td>
<td>3.8</td>
<td>5.5</td>
</tr>
<tr>
<td>Papuan/South Coast</td>
<td>33.2</td>
<td>13.2</td>
<td>14.9</td>
</tr>
<tr>
<td>Highlands</td>
<td>35.8</td>
<td>38.3</td>
<td>40.1</td>
</tr>
<tr>
<td>Momase/North Coast</td>
<td>45.8</td>
<td>35.5</td>
<td>29.2</td>
</tr>
<tr>
<td>New Guinea Islands</td>
<td>33.6</td>
<td>9.2</td>
<td>10.3</td>
</tr>
<tr>
<td>National Average</td>
<td>37.5</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Urban</td>
<td>16.1</td>
<td>5.3</td>
<td>15.1</td>
</tr>
<tr>
<td>Rural</td>
<td>41.3</td>
<td>94.7</td>
<td>84.9</td>
</tr>
</tbody>
</table>

Source: World Bank (1999). Figures are based on the upper poverty line calculated by Gibson and Rozelle (1996). The poverty line is based on the cost of a food consumption basket that meets a minimum food-energy requirement of 2,200 calories per adult equivalent per day and reflects the dietary patterns of low-income groups. Similar regional differences exist for the poverty gap index and the poverty severity index.

\(^2\) “Rural Papua New Guinea is in a serious social and economic crisis. Overall in rural areas, living standards are worsening, the population is increasing rapidly, the resource base is being depleted, income-earning opportunities are decreasing, the infrastructure itself is deteriorating and effective government support is uncommon”. (AusAID, 2001, p. ix).
The World Bank (1999) provides a breakdown of the poor by age, gender and education. The study finds that the extent and depth of poverty increases with the age of the head of the household and decreases with educational attainment. Gender difference are not large since differences between poverty measures for male and female household heads were not always statistically significant. However, more than 60 per cent of the poor are found in households where the household head is involved in agriculture.

Income-based measures of well-being

Per capita income levels in Papua New Guinea exhibit large year-on-year fluctuations which are predominantly driven by output in the mining and resource sectors and by external shocks experienced by the economy. Per capita income is, therefore, unlikely to effectively capture changes in the living conditions of the majority of the population in the informal sector. It also masks significant variations of income within and between regions. “Average per capita consumption in the urban National Capital District is almost 2.0 times that in the (poorest) New Guinean Islands region and 1.4 times the National average, even after spatial price variations are taken into account” (World Bank, 1999, pp. 74). Figure 1 depicts Papua New Guinea’s real GNP per capita since independence in 1975. Real GNP per capita has hardly changed since independence despite large scale mining and oil projects.

Figure 1. Real GNP per capita in Papua New Guinea (US$ in 1995 prices)

Social indicators of well-being

Indicators relating to education in Papua New Guinea are low despite their gradual improvement over the last two decades. The adult literacy has improved from 47 per cent in 1970 to 72.2 per cent in 1995. About 30 per cent of children never enroll in school and of the children who enter primary school, almost half drop out before they reach grade six. Secondary school enrolment rates are particularly low in comparison to other countries (World Bank, 2000). This is primarily due to supply side constraints with many students unable to attend secondary schools due to a lack of access. Again, large regional variations in educational attainment exist. 15 per cent of the National Capital District has never been to school while this figure is 57 per cent for those living in the Highlands region (World Bank, 1999). The plethora of isolated villages, a shortage of skilled teachers and poor infrastructure have hampered the provision of a basic education to all children.

Health indicators paint a gloomy picture of Papua New Guinea. According to the UN, in 1990-97 around 35 per cent of children under the age of 5 were underweight and in 1997, life expectancy at birth was just 58. Just 31 per cent of Papua New Guineans had access to safe water in 1995. According to the Papua New Guinea government, infant mortality declined from 134 per 1,000 births in 1970 to 72 in 1980, but then increased to 82 in 1990 (Department of Health, National Health Plan 1996-2000, Government of Papua New Guinea, Port Moresby, 1996, pp. 7). Once again, regional variations are large. All of these health indicators are notably inferior when compared to Papua New Guinea’s South Pacific and South-East Asian neighbours. Papua New Guinea ranks among the ten worst nations worldwide in terms of access to clean, safe water (World Bank, 1999). Poor health statistics partly reflect the high cost of delivering health services to remote rural communities. The country now faces a rapidly increasing problem of HIV infection. AIDS is now the biggest single killer in Port Moresby general hospital. An estimated 0.5 per cent of the population is believed to have been infected (AusAID, 2001). A high incidence of unprotected sex and sexual violence against women are the main contributory factors.

Composite indicators of poverty

The United Nations Development Programme’s (UNDP) Human Development Index (HDI) captures other measures of poverty by including information on life expectancy at birth, adult literacy, combined primary, secondary and tertiary gross enrolment, and GDP per capita (PPP US$) in a single composite index. In 2000, according to the HDI, Papua New Guinea ranked 133 out of 173 countries. Table 2 tracks Papua New Guinea’s HDI value through time and compares Papua New Guinea to other countries in its region. The HDI value for Papua New Guinea is much lower than for the country’s neighbours. Although the country has not made dramatic
improvements in the value of the HDI, it is encouraging that the trend in this indicator is upwards.

Table 3 provides the Human Poverty Index (HPI) and the HDI by province. The HPI measures deprivation through information on illiteracy, malnutrition among children, early death, poor health care, and poor access to safe water. Combined, they provide a composite index measuring the degree of deprivation in Papua New Guinea. Inspection of the data by region reveals that human poverty and development are at the lowest levels in the five provinces of the Highlands region and two provinces in the Momase region (West and East Sepik). This is in concordance with the analysis of the headcount index. The National Capital District of Papua New Guinea has a HDI that is more than double the national average and almost three times that of West Sepik.

This section has highlighted some of the large inequalities which exist in Papua New Guinea in terms of consumption, and geographic location. The Gini coefficient is a commonly used measure to represent the extent of income inequality. A value of zero indicates complete equality and a value of 1 indicates complete inequality. The Gini coefficient for Papua New Guinea is 50.9 and this is one of the highest in world. Only 17 of 114 countries with Gini coefficients reported in World Development Indicators 2001 have more inequitable income distributions (AusAID, 2001, pp. 11). “Real per capita consumption among the richest 25 per cent of the population is more than eight times that of the poorest quartile, and caloric availability is more than twice as high” (World Bank, 1999, pp. 74).

Causes of poverty in Papua New Guinea

A strategy to reduce poverty must tackle the causes of poverty. A lack of roads is often cited as a major factor which makes people poor in Papua New Guinea since it prevents goods being brought to market and restricts access to vital basic services. The 1996 Household Survey found that on average it takes people one hour to get to a community school, two hours to get to a health centre and three hours to
get to a high school or postal facility. The traveling times are double for a person living below the poverty line in comparison to those above the poverty line (World Bank, 1999). Most of Papua New Guinea’s roads were built after the second World War. However, little maintenance has been carried out on the road network since. Only four per cent of roads are paved in the country. The provinces of Manus, Sandaun, Oro and Gulf have no road links to a major urban centre. Roads become inaccessible during and after rainy periods and contribute to very high transportation costs.

Poor governance exacerbates the problem of poverty in Papua New Guinea. Law and order problems in particular are responsible for reducing the incentives

Table 3. A comparison of poverty between provinces

<table>
<thead>
<tr>
<th>Region</th>
<th>Province</th>
<th>Human Poverty Index</th>
<th>Human Development Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern</td>
<td>Western</td>
<td>32.2</td>
<td>0.472</td>
</tr>
<tr>
<td></td>
<td>Gulf</td>
<td>40.0</td>
<td>0.331</td>
</tr>
<tr>
<td></td>
<td>Central</td>
<td>30.9</td>
<td>0.408</td>
</tr>
<tr>
<td></td>
<td>Milne Bay</td>
<td>31.4</td>
<td>0.420</td>
</tr>
<tr>
<td></td>
<td>Oro</td>
<td>36.5</td>
<td>0.386</td>
</tr>
<tr>
<td></td>
<td>National Capital District</td>
<td>14.5</td>
<td>0.758</td>
</tr>
<tr>
<td>Highlands</td>
<td>Eastern Highlands</td>
<td>53.9</td>
<td>0.325</td>
</tr>
<tr>
<td></td>
<td>Simbu</td>
<td>54.1</td>
<td>0.320</td>
</tr>
<tr>
<td></td>
<td>Western Highlands</td>
<td>55.5</td>
<td>0.282</td>
</tr>
<tr>
<td></td>
<td>Enga</td>
<td>52.4</td>
<td>0.283</td>
</tr>
<tr>
<td></td>
<td>Southern Highlands</td>
<td>56.7</td>
<td>0.274</td>
</tr>
<tr>
<td>Momase</td>
<td>Morobe</td>
<td>39.3</td>
<td>0.389</td>
</tr>
<tr>
<td></td>
<td>Madang</td>
<td>43.4</td>
<td>0.336</td>
</tr>
<tr>
<td></td>
<td>East Sepik</td>
<td>47.3</td>
<td>0.304</td>
</tr>
<tr>
<td></td>
<td>West Sepik (Sandaun)</td>
<td>60.0</td>
<td>0.262</td>
</tr>
<tr>
<td>Islands</td>
<td>West New Britain</td>
<td>31.9</td>
<td>0.394</td>
</tr>
<tr>
<td></td>
<td>East New Britain</td>
<td>31.8</td>
<td>0.431</td>
</tr>
<tr>
<td></td>
<td>New Ireland</td>
<td>36.6</td>
<td>0.396</td>
</tr>
<tr>
<td></td>
<td>Manus</td>
<td>39.4</td>
<td>0.421</td>
</tr>
<tr>
<td>NATIONAL</td>
<td></td>
<td>43.7</td>
<td>0.363</td>
</tr>
</tbody>
</table>

Sources: ADB (2000) Country Economic Review: Papua New Guinea, UNDP (1999) Papua New Guinea Human Development Report 1998. Note that data for Bougainville are not available. HDI numbers are from the ADB and are not comparable with the numbers presented in the UNDP Human Development Report since domestic factor income is used rather than GDP. Note also that the report uses the term human deprivation index rather than the human poverty index. Lower values of the Human Poverty Index and higher values of the Human Development Index indicate greater well-being.
to harvest crops. “Deteriorating road transport and buyer safety have resulted in 30-50 per cent of the Highlands coffee crop – which is the main source of income for over half the rural population – not being harvested in recent years, and the trees themselves not being maintained” (AusAID, 2001, pp. 24). Tribal fighting, land compensation claims, roadblocks, and mob violence have all contributed to reducing production in Papua New Guinea.

A community-owned system of land tenure currently exists in Papua New Guinea whereby land is communally owned. Approximately 97 per cent of the land area in Papua New Guinea has no precisely defined title. Some rights to use roughly defined land exist but there are many disputes over ownership and boundaries. A lack of land was identified as an important indicator of poverty by participants of the recent PPA. Improvements in agricultural productivity may be limited since there is little incentive to make any fixed investments on the land under communal land ownership (Duncan, 2001). Further, credit from Papua New Guinea’s financial institutions is hard to obtain in rural areas, firstly because there are hardly any banks in rural areas and secondly, because credit is unlikely to be provided without the ownership of land as collateral. The lack of credit also restricts the scope for taking advantage of profitable investment opportunities.

Papua New Guinea is vulnerable to natural disasters, another cause of poverty for a large proportion of the population. In 1998, 2,200 were killed by an earthquake near Rabaul and from the resulting tsunami. Another large earthquake has recently rocked the north coast, resulting in the loss of at least 3 people and ripping coastal homes from their stilts. There are currently more than 4,000 Papua New Guineans in aid camps following the eruption of Mount Pago on the island of West New Britain, in August 2002. Villagers are unlikely to be able to return to their farmlands for decades. The country suffered a major drought in 1997 and is currently in the grip of another which threatens to close down the Ok Tedi copper mine. Papua New Guinea is vulnerable to El Nino, causing rivers to dry, seriously hampering the transportation of resources and goods. People are also vulnerable to commodity price shocks and death or illness in the family. As noted previously, the virtually non-existent financial sector in rural areas of Papua New Guinea makes the traditional management of risk through savings and insurance very hard.

II. WHAT DO WE KNOW ABOUT HOW TO REDUCE POVERTY?

Growth is commonly cited as the primary driver of poverty reduction. However, the poor may not necessarily reap any of the benefits from growth and this is especially true in countries with high levels of inequality. Moreover, growth does not ensure access to health, education and a clean water supply or a better standard of living for those living in some, usually remote, areas. Aid can contribute to poverty reduction by targeting the poorest regions and projects in the social sector. In addition,
safety nets should be provided to protect the most vulnerable from external shocks. “An effective anti-poverty aid policy is likely to simultaneously utilise each of these three strategies: promoting growth, direct targeting and safety nets” (Le and Winters, 2001, pp. 29). This Section addresses these three strategies in turn.

Increase growth

It is widely recognised that there is a positive correlation between sustained economic growth and poverty reduction (Bell and Rich, 1994, Ravallion and Datt, 1994, Ravallion and Chen, 1997, Dollar and Kraay, 2000). Increases in economic growth are expected to benefit the poor due to their participation in economic activities, and lead to larger tax revenues and higher government expenditures, which might include transfers to the least well off as well as increasing access to services such as health and education. The assumption is dependent on growth exceeding population growth and on a stable distribution of income.

Growth strategies that have contributed to successful poverty reduction in other countries include export promotion and trade openness; labour intensive manufacturing promotion (for example Taiwan Province of China, Malaysia, Thailand); and agricultural and rural development (for example in Chile, China, India and Viet Nam). Duncan (2001) notes that the encouragement of labour intensive manufacturing is likely to be ineffective in Papua New Guinea due to the high cost of labour (partly due to high minimum wages) and a low skilled work force. Crime, and high transport and utility costs also imply that Papua New Guinea does not have a climate favourable for manufacturing industries. Papua New Guinea has also proved that it has been unable to reduce poverty through the productive use of large revenues from its mining and oil sectors. Coupled with the fact that resources are running out, pursuing a strategy to reduce poverty through resource rents is not a sensible option for Papua New Guinea.

In developing countries which are predominantly agriculturally based, it is important for growth to be driven by growth in the agricultural sector rather than through the development of the capital-intensive resources sector. In Papua New Guinea, economic growth has primarily been driven by output in the capital intensive mining sector. The large informal sector has, in general, not participated in or benefited from, increases in economic activity in Papua New Guinea. Since the vast majority of the population in Papua New Guinea live in rural areas dependent upon agriculture, an aid strategy which is aimed at boosting agricultural productivity will be more effective at reducing poverty than a strategy aimed at the development of the capital-intensive resources sector.

Furthermore, there is some evidence that agricultural growth is more effective at reducing poverty than manufacturing growth in agriculturally dependent countries (Ravallion and Datt, 1996, Bourguignon and Morrison, 1998). If agriculture is the
primary occupation of the population, agricultural growth is likely to lead to higher output, greater employment opportunities and increases in incomes. The role of aid in such a strategy is to improve the productivity of the rural labour force through investments in health, education and the improvement of skills. The poorest people in Papua New Guinea obtain a large part of their income from the export of tree crops, coffee, cocoa and palm oil. Improving rural infrastructure and in particular the construction and maintenance of Papua New Guinea’s rural roads is likely to be effective at improving agricultural growth and boosting rural incomes. Strategies must recognise sustainability in their approach. Improvements in poverty reduction will not last in the long term unless the harvesting of trees and other crops is carried out in a sustainable manner. Consequently, aid programmes should also play a role in addressing these issues.

**Targeting and reducing inequality**

Given that the benefits of growth might not be shared by all, a further strategy for poverty reduction is the direct targeting of foreign aid to the poor. It is important for certain groups in the population, identified as poor, to receive the benefits from aid. Le and Winters (2001) identify three possible methods of targeting, (i) geographical, such as the rural poor (ii) special groups, such as women, the landless and ethnic minorities, and (iii) targeting needs such as food, water, and housing shortages as well as identifying areas which a lack access to roads and health and education services. The positive impact on poverty of pro-poor public expenditures in developing countries is confirmed by Gomane and Morrissey (2002), Verschoor and Kalwij (2002) and Mosley, and others (2002). Foreign aid can play an important role in supplementing these expenditures and by supporting projects in the social sectors. Since the vast majority of poor people in Papua New Guinea live in rural areas, targeting aid to these areas helps reduce poverty directly and reduce migration from rural to urban areas. Other targeted areas might include regions which are particularly isolated or prone to natural disasters.

Inequality potentially impacts on growth, and on the impact of growth on poverty. There is currently little evidence of a causal link between growth and inequality. Recent research refutes the Kuznets hypothesis by finding no systematic relationship between growth and inequality (Deininger and Squire, 1998, Ravallion and Chen, 1997). In contrast, there is strong evidence of a causal link between the initial level of inequality and growth. Empirical studies find a negative impact of high inequality on growth (Galor and Zeira, 1993, Persson and Tabellini, 1994, Alesina and Rodrik, 1994). Moreover, there is evidence that in countries with initially high levels of inequality, economic growth is less effective at reducing poverty (Bigsten and Levin, 2001, Lustig and others, 2002).
Recent explanations for why inequality is bad for growth include the proposition that inequality can lead to political instability, social tensions and conflicts which reduce growth by deterring foreign and domestic investment, increasing the cost of doing business and reducing the security of property rights. Furthermore, poverty reduction may not necessarily be reduced through economic growth if growth is accompanied by unfavourable changes in income inequality. Therefore, it is important that a strategy to reduce poverty should include policies which assist in redistributing income.

Given the potential importance of inequality to growth and poverty reduction, governments must be active in the process of redistribution. Policies of redistribution are important to reduce inequality. Fiscal policy is one example of an important tool for redistribution. For example, a progressive tax system can effectively reduce inequality. This is redistributive in itself but can also generate extra revenues for social sector expenditures. Although tax reform can be a useful redistributive tool it should be recognised that raising taxes runs the risk of deterring private investment. Previous government policies have tended to increase inequality in Papua New Guinea. Policies have been biased against the poor, favouring capital intensive production whereby the ruling elite have yielded the biggest rewards.

Land reform is another policy to redistribute assets, increase rural productivity and reduce inequality. “The redistribution of large farms, plantations and state-run farms to the landless and to poor smallholders can improve both equity and efficiency (as demonstrated by land reforms in Kerala and East Asia)”, (Addison and Cornia, 2001, pp. 21). Land reform is especially important in countries where a large proportion of the poor live in rural areas dependent on agriculture. As well as raising productivity and rural incomes, land reform can also reduce urban-rural inequality. It is recognized that a policy of redistributing assets may have a cost to growth in terms of lost output and efficiency. However, for a rural based agricultural economy such as Papua New Guinea, the benefits are very likely to outweigh these costs. As Banerjee and Newman (1993) recognise, the redistribution of assets will also increase the poor’s access to credit markets.

**The provision of safety nets and direct transfers**

A further strategy is to provide safety nets and direct transfers to the most vulnerable in case of extreme needs. Such transfers are needed to prevent some members of the population becoming destitute or to protect them from a sudden decline in earning capacity due to an external shock such as a drought or earthquake. Papua New Guinea is particularly vulnerable to natural disasters and illness of a member of the family can have serious repercussions due to the semi-subsistence existence of the majority of the population. Due to the extreme isolation of many small communities in Papua New Guinea, there can be very few linkages to society outside the local
community, increasing vulnerability to external shocks. Ensuring credit, insurance and saving facilities are readily available to the poor can provide them with the means to a better standard of living. Credit can enable the poor to undertake profitable investments which would otherwise be too costly while insurance and savings would cushion the effects of shocks such as natural disasters and illness or death of a family member. Microfinance institutions can play an important role in providing these safety nets for the poor although it is recognised they are difficult to operate in Papua New Guinea due to the low population density in rural areas.

In summary, economic growth alone is unlikely to successfully reduce poverty in Papua New Guinea. Growth driven by the agricultural sector will be most beneficial but in the absence of the rapid development of this sector, growth needs to be accompanied by other policies and strategies to ensure the poor benefit. Goudie and Ladd (1999) provide a good summary of the consensus on what constitutes good pro-poor growth policies. Not all of the strategies which have been successful at reducing poverty in other developing countries will be successful in Papua New Guinea due to the country’s characteristics. In the case of Papua New Guinea they include the promotion of labour intensive rather than capital intensive activities, emphasising growth in agriculture and remote rural and poor regions, and investments in primary health, education and roads.

III. EVALUATING THE IMPACT OF AID ON POVERTY IN PAPUA NEW GUINEA

The 1996 household survey was the first to be carried out nationally. This makes assessments of changes in poverty difficult to assess through time. However, using an urban household survey carried out in Port Moresby in 1986, Gibson and Rozelle (1996) show that there was no significant change in the portion of households with incomes below the poverty line between 1986 and 1996. Poverty, at least in Port Moresby, therefore appears to have remained static. However, Gibson (2001) finds that the depth and severity of poverty increased between 1986 and 1996 in the main urban areas of Papua New Guinea. His results suggest that increasing income inequality, rather than slow growth is the main cause of the increase in poverty measured by the headcount index. The 1996 household survey also provides insights into changes in poverty levels by asking respondents about their perceived welfare relative to 1994. “Half the population felt worse off in 1996 than two years earlier, while only one-tenth felt better off. The portion of people feeling better off is positively related to the level of income” (World Bank, 1999, pp. 80-81).

This evidence indicates that poverty levels in Papua New Guinea are unlikely to have improved in recent years and may even have got worse. It would be easy to conclude that the large amounts of foreign aid have been ineffective at reducing poverty in Papua New Guinea. However, this ignores the question of the counterfactual.
What would the poverty situation be in Papua New Guinea in the absence of the large amount of aid the country has received? This section attempts to evaluate the impact foreign aid has had on poverty by evaluating its distribution, performance on growth, how effectively it has been targeted at the poor and the extent it has provided the poor with safety nets.

Foreign aid flows to Papua New Guinea have been and remain important. In 1975 aid per capita amounted to US$ 125 and accounted for 24 per cent of GDP and 60 per cent of the Papua New Guinea Government budget. Foreign aid flows have waned but still account for 20 per cent of the budget. Australia has contributed approximately 90 per cent of all aid to Papua New Guinea since independence. Up to the 1990s, virtually all Australian aid was provided to Papua New Guinea in the form of budget support. During the 1990s Australian budget support aid has been slowly phased out in favour of jointly programmed project aid.

Japan is the second largest bilateral donor to Papua New Guinea. Grant aid has focused on human development, public health and education, while loans are targeted at the sectors of energy, transportation and agriculture. Smaller bilateral donors include the UK, Germany, New Zealand, and Taiwan Province of China and they are generally focused on human development. Despite increasing during the 1990s, multilateral flows to Papua New Guinea have remained small in comparison to bilateral aid flows. Most multilateral aid is from the EU and Asian Development Bank while Papua New Guinea undertook World Bank Structural Adjustment Programmes (SAPs) in 1990, 1995 and 2000. The impact of World Bank and IMF policy prescriptions on poverty in Papua New Guinea is an important issue but lies outside the scope of this paper. Since Australia has been by far the largest donor to Papua New Guinea, this section focuses on the specific objectives of this donor in evaluating aid programmes to Papua New Guinea as a whole.

In order to effectively reduce poverty, Australian aid is focused on achieving the following four objectives: (i) strengthening governance, (ii) improving social indicators, (iii) building prospects for sustainable economic growth, and (iv) consolidating the peace process in Bougainville. These objectives closely follow the priorities of the Papua New Guinea Government’s Medium Term Development Strategy (1997-2002). The priorities are elementary and primary education; primary health care; transport infrastructure maintenance; law and order; promotion of income-earning opportunities for local entrepreneurs (largely smallholding farmers), particularly in rural areas; and the peaceful resolution of the Bougainville crisis (AusAID, 2001).

Following Le and Winters (2001), the balance of the approaches of aid donors to poverty reduction in Papua New Guinea can be estimated by categorising sector aid flows. It is recognized that this approach uses inputs without effectively capturing outputs but it still provides a useful analytical framework to evaluate the likely impact of aid on poverty. Total Official Development Assistance (ODA) commitments to
Papua New Guinea by sector are available from the OECD (2001). Although commitments may differ from actual disbursements, they provide a good indication of the allocation of aid. In this paper, aid committed to the ‘Economic infrastructure and services’ and ‘Production’ sectors is categorized as promoting economic growth. Aid committed to ‘Social infrastructure and services’ sector is categorized as direct targeting to the poor, while aid committed to ‘Emergency’ sector is categorized as the provision of aid for safety nets and direct transfers. Remaining ODA commitments are allocated to ‘Multisectors’ and ‘Programme assistance’, commonly in the form of budget support.

There are fairly large annual variations in these categorisations during the 1990s. However, during the period 1990 to 1999, 28 per cent of aid was committed to increasing growth, 41 per cent for the direct targeting of the poor, 4 per cent to safety nets and direct transfers and 27 per cent to other activities. These figures are in broad agreement with a sectoral breakdown of Australian aid disbursements to Papua New Guinea. In 2000, Australian aid was targeted at infrastructure (32 per cent), education and training (26 per cent), governance (19 per cent) and health (13 per cent) sectors. This sectoral allocation has remained fairly constant throughout the 1990s although there has been increasing emphasis on health and infrastructure. A discussion of this balance in the allocation of aid to growth, direct targeting of the poor and the provision of safety nets follows.

Increased growth

Although all of the sectors targeted by aid will have some impact on growth in the long term, the impact of aid on growth will largely be attributed to the financing of infrastructure projects with aid funds. Infrastructure projects of the Australian aid programme typically relate to the transport and communications sector. Projects commonly involve the upgrading and maintenance of roads, bridges and airports. The emphasis has been on upgrading and maintaining existing infrastructure rather than undertaking new capital works. In terms of the allocation to the production sector, aid donors have favoured the agriculture, forestry and fisheries sector. This sector was committed US$ 151 m during the period 1990 to 1999 compared to US$ 35 m committed to the industry, mining and construction sector and US$ 1 m to the trade and tourism sector. However, Feeny (2003) finds little evidence that foreign aid has contributed to economic growth in Papua New Guinea.

Aid projects relating to growth have not focused on labour intensive agricultural projects which are more likely to benefit the poor than infrastructure.

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3 Social infrastructure and services includes aid flows directed to health, education and water supply and sanitation. Economic infrastructure and services includes aid flows to energy and transport and communications, while aid flows devoted to the production sector consists of aid flows directed to agriculture, forestry and fishing, mining and construction, and trade and tourism.
projects relating to airports and communications. The maintenance of existing roads will benefit those in rural areas which already have access to them. New roads need to be built in order to service those in more isolated rural communities. Duncan (2001) argues that in the Australian aid programme, the absence for new road construction is a concern. He recognizes the trade-off between building new roads in areas which have the greatest income-earning potential and providing access to those in the more remote areas. However, in the past there has been an overwhelming bias in favour of urban areas over rural areas.

Growth of the agriculture, forestry and fisheries sector has been poor during the 1990s. Since 1996, the sector has only recorded one year of positive growth. This is very disappointing since the vast majority of the Papua New Guinea population rely on this sector for their livelihood. On this evidence, aid projects have not been effective at increasing agricultural productivity and boosting rural incomes. Resources in Papua New Guinea are running out. All existing mines and oilfields are projected to close by 2014 (with the exception of one gold mine). Since there has also been a large reduction in exploration activity, public finances are likely to be much lower in a decade’s time than they are today. In the long term Papua New Guinea will primarily rely on the rural sector for its growth rather than the resources sector. This increases the importance of aid programmes investing in this sector and reversing the trend of falling investment in rural activities.

A significant proportion of Australian aid projects are directed at improving governance in Papua New Guinea. Governance programmes focus on improving public administration, law and justice and creating opportunities for the private sector. An incentive fund has was recently introduced in 2000, whereby agencies which have a good proven track record of good programme management and policy reform will obtain future Australian aid funding. Other projects are aimed at anticorruption, improving the performance of the legal and judicial system, and providing training for small and medium sized enterprises. It is recognized that if capacity is very weak, then public sector reform and programmes aimed at improving governance can improve the effectiveness of aid administration and contribute to poverty reduction. However, Duncan (2001) argues that although good governance is a crucial element in creating an environment in which public and private sector activities will create growth, projects in this area do more to enhance incomes in urban areas rather than effectively reduce poverty in rural areas. Priority should be given to roads and health and education in rural areas rather than to public sector reform if poverty reduction is the primary objective of donors.

**Targeting and reducing inequality**

Figure 2 provides a sub-sector breakdown of total bilateral ODA commitments from the OECD’s Development Assistance Committee (DAC) since 1990. The graph
highlights the importance of transport and communications, education and health in DAC donor aid programmes to Papua New Guinea. Surprisingly little aid (ODA) has been committed to the water supply and sanitation sector. Over two thirds of people obtain their drinking water from unprotected sources in Papua New Guinea. Aid projects have not been effective at securing a clean supply of water to rural communities and this should be a priority in the future.

**Figure 2. DAC commitments to Papua New Guinea by sub-sector 1990 to 1999**

As previously stated, the major causes of poverty in Papua New Guinea are a lack of transport infrastructure, and lack of access to health and education services, especially in rural areas. This sectoral breakdown is broadly consistent with a strategy to reduce poverty. Australian education and training projects focus on improving access to schools, greater provision of equipment and materials and teacher training and curriculum development. Primary and secondary schooling are targeted although more projects are directed towards the former. Increasing attention is being paid to the tertiary sector. Australia’s health aid programme has focused on improving low-cost primary and preventative health services in rural communities and establishing an effective structure for delivering health services to rural areas. Women and children in rural areas are particularly targeted.
Inferences on the allocation of aid by geographic location are difficult due to a lack of available data. Analysis of the distribution of Australian aid projects in 1995/96, 1997/98 and 1999/2000 indicates that most projects are national in nature and the poorest regions of the country have not been prioritized. Arguably, aid projects could have been more effective at reducing poverty if they had been more focused on the provinces of East and West Sepik (Momase) and the Highlands areas of the country since these are notably the poorest regions. However, the concentration of the Australian aid programme to the island of Bougainville will have a direct impact on poverty on the island and help restore peace and stability. The lack of geographic targeting implies that aid will have had a limited impact on the high level of inequality prevalent in Papua New Guinea. Reducing inequality would reduce poverty directly but is also likely to ensure that growth is more effective at reducing poverty. Inequality in Papua New Guinea is partly responsible for civil unrest and crime which is an important factor deterring foreign investment in the country.

The provision of safety nets and direct transfers

Small proportions of foreign aid flows to Papua New Guinea have been directed at the provision of safety nets and direct transfers. Given the vulnerability of a large part of the country’s population to shocks, aid projects have not been effective at providing greater security to the poor. Credit and financial services are still not available to those in rural isolated communities constraining their incomes and limiting their ability to manage risk. The large number of remote villages hampers the effectiveness of organizations such as microfinance institutions and aid donors need to provide greater assistance in this area.

IV. CONCLUSION AND POLICY IMPLICATIONS

A large proportion of the Papua New Guinea population suffer from a lack of infrastructure, opportunity and access to basic services. The primary responsibility for reducing the level of poverty in Papua New Guinea rests with the Government. The Papua New Guinea Government must pursue a much broader based growth strategy for the poor to benefit from increases in economic activity. Policies based on agricultural growth rather than further developments of the mining and resources sector would be more favourable to the poor. Land reform might also yield large benefits although it is recognized that this is inconsistent with Papua New Guinea’s culture.

Aid donors should support any attempts by the Papua New Guinea Government to initiate and pursue these strategies. However, there are also a number of actions that donors can take independently of the Papua New Guinea Government. This paper emphasises that the Australian and other aid programmes have been broadly consistent with a strategy to reduce poverty. In the absence of foreign aid, there is no doubt that the degree of poverty in Papua New Guinea would be even greater than that prevailing.
The Australian policy of phasing out aid provided as budget support in favour of project aid has ensured that aid is now used for important projects in the health and education sectors. Education for all should remain a top priority. This paper also argues that the aid programme could be better prioritised in the following five ways.

Firstly, greater targeting of foreign aid to those in the poorest regions of the country is required to reduce the very high level of inequality prevailing in Papua New Guinea. Reducing inequality will reduce tension between different ethnic groups. Recent research also indicates that growth is more likely to reduce poverty in countries with less inequality. A greater number of aid projects should therefore be established in Madang and East and West Sepik provinces of the Momase region and the five provinces of the Highlands region. Aid projects could be redirected from the relatively affluent National Capital District. Reducing inequality may also reduce crime and security problems.

The vast majority of the Papua New Guinea population live in rural areas and operate in the informal sector. They have not participated in economic growth which has been driven by the capital intensive mining sector. Although the Papua New Guinea Government is primarily responsible for pursing a growth strategy based on the development of agriculture, donors can still play an important role. Donors can play a role in developing new agricultural methods, assist in expanding agricultural production, identifying niche markets and in assisting with more effective marketing of Papua New Guinea’s agricultural products.

Thirdly, the provision of a clean water supply must take a higher priority in donor aid programmes. Difficulties in achieving and securing clean water to Papua New Guinea’s very isolated and remote villages are recognized. However, with less than one third of the population having access to safe drinking water, it is fair to deduce that this area has not been a high priority in aid programmes to date. Securing a clean water supply to a greater proportion of the population can be expected to have ‘knock-on’ effects, leading to improvements in both health and education indicators.

Fourthly, donors should assist in making financial services to the poor in rural areas. Microfinance schemes should be encouraged to enable greater access to credit and insurance. Not only will this help those in rural areas take advantage of profitable investment opportunities it will enable them to manage risk through savings. This is important due to the rural population’s vulnerability to natural disasters and illness. Donors should provide assistance to NGOs to assist in establishing these schemes.

Finally, it is argued that donors should prioritise the construction of new roads in addition to the maintenance of existing roads. Not only will this ensure greater access to health and education services, it will ensure that small scale producers face lower transportation cost, have greater opportunity to get their product to market and raise their rural incomes. Improving the transport networks across the country will improve communications between different ethnic groups and may reduce tensions and increase security.
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