ASIA-PACIFIC DEVELOPMENT JOURNAL

Vol. 14, No. 1, June 2007

United Nations
ESCAP

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

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United Nations
New York, 2007

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United Nations publication
Sales No. E.07.II.F.29

Manufactured in Thailand
ISBN: 978-92-1-120524-4
ISSN: 1020-1246
ST/ESCAP/2459

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Editorial statement

The *Asia-Pacific Development Journal* is published twice a year by the Economic and Social Commission for Asia and the Pacific.

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 Asian and 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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CONTENTS

A note from the Editor

This mid-year issue of the *Asia-Pacific Development Journal* presents six papers on a wide range of development topics of contemporary interest with significant policy implications. The first paper discusses the nexus between growth and the Millennium Development Goals (MDGs) and explores the role of policy in harnessing that nexus. Through the introduction of two interrelated concepts of growth within the MDG context, the paper makes a valuable contribution to the understanding of the policy mix that needs to be pursued in addressing the critical areas in which some of the countries in the region are facing particular difficulties. The next four papers address some of the most topical issues in the Asian and Pacific region and draw on country experiences from India, Indonesia, Sri Lanka and Thailand. In this cluster of four papers, there is a paper on remittances in the context of Sri Lanka. It is a sequel to one published in the last issue which dealt with a micro study on domestic remittances in the state of Andhra Pradesh in India. This partly reflects the current interest in workers' remittances as a development resource and its potential role in poverty reduction. The paper on Thailand looks at labour market issues in the wake of trade liberalization and provides some important insights in identifying sectors which require attention in order to mitigate some of the negative impacts. The third paper looks at the impact of economic reforms introduced by India in its manufacturing sector. The paper on Indonesia explores the role of aid in the country's fiscal behaviour. The last paper revisits the much-discussed topic of competitiveness and its importance for the Asian and Pacific region in a globalizing world with reference to the rise of China as a manufacturing and trading powerhouse.

With the adoption of the Millennium Declaration[1] in 2000, the achievement of the internationally agreed development goals, including the MDGs, has become a major part of development agenda of the developing countries of the Asian and Pacific region. The importance of economic growth has always been explicitly or implicitly recognized in achieving those goals. The paper by Hiren Sarkar, "The nexus between achieving the Millennium Development Goals and economic growth: the role of policy", introduces an ingenious way to highlight this connection. The search for the optimal mix of polices has become all the more imperative as the region is still home to 641 million poor people.[2] Although the region as a whole is expected to reach the poverty target by 2015, there are other areas and indicators where progress has been either slow or insufficient. In particular, millions of people continue to suffer from malnutrition, a large number of children drop out of school, and the region's overall infant and maternal mortality numbers remain unacceptably high. With this as the backdrop, the paper introduces the concepts of pro-MDG economic growth and

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[1] See General Assembly resolution 55/2 of 8 September 2000.

[2] See ESCAP/ADB/UNDP, *The Millennium Development Goals: Progress in Asia and the Pacific 2007* (ST/ESCAP/2465), available online at http://www.mdgasiapacific.org.

MDG economic sectors. Optimal policies are then those which achieve these dual objectives: promoting pro-MDG economic growth and promoting economic growth in MDG sectors. In essence, pro-poor economic growth policies should be able to facilitate the achievement of these two dual objectives. The author uses an MDG-consistent CGE model to evaluate alternate sets of policies in meeting the dual objectives. Not only are the results interesting and highly intuitive, but they also validate the results of other studies and reports. The paper shows that the MDG areas in the Asian and Pacific region that require the most policy attention are underweight children, maternal mortality, carbon dioxide emissions, malnutrition and infant mortality. As regards the policy mix, priority attention should be given to increasing (a) the expenditure on the education-to-GDP ratio, (b) financial inclusiveness and (c) the ratio of direct tax-to-total tax. However, it should be noted that over-reliance on growth policies can have its own limitations. Pro-poor economic growth policies would have to be combined with micro-level interventions to create the right kind of synergy to achieve the MDGs. For instance, policy and programme interventions are needed along a whole range of interrelated issues and areas in order to reduce maternal deaths. Additionally, growth polices not only need to be inclusive but should also have social protection as a key strategic component, particularly for the poor and other vulnerable groups, including those living in remote and difficult-to-reach areas. Another issue that deserves policy attention is the quality of institutions that are tasked with the formulation and implementation of policies. Good policies sometimes do not yield desired results simply because of insufficient or inefficient institutions.

There is a growing recognition that workers remittances are fast becoming a significant development resource for the developing countries of the region. A study[3] released by the International Fund for Agricultural Development in October 2007 shows that some 150 million migrants worldwide remitted more that US$ 300 billion to their families in developing countries during 2006. In the Asian and Pacific region alone, remittances reached an all time high of US$ 114 billion, led by South Asia with US$ 47 billion. Total remittance flows to developing countries now far exceed that of official development assistance. In addition to their poverty reduction impact, such remittance flows have a significant impact on growth and investment in the recipient countries. Being private flows, remittances are also non-debt-creating, a particularly attractive feature for developing countries. Remittances also act as a cushion against economic shocks. Vibrant literature has grown around the recent surge in workers' remittances. The paper by Erik Lueth and Marta Ruiz-Arranz, illustrative of the trend, probes the way in which workers' remittances act as a hedge to absorb macroeconomic shocks. The authors look at

[3] International Fund for Agricultural Development, *Sending Money Home: Worldwide Remittance Flows to Developing Countries,* available at http://www.ifad@org.

recent data from Sri Lanka and estimate a vector correction model to determine the response of remittance receipts to macroeconomic shocks. They argue that, despite solid macroeconomic performance, the economy of Sri Lanka remains highly vulnerable to external shocks. With a narrow export base and heavy dependence on imported oil, the expiration of the Multifibre Arrangement and the prevailing security situation have compounded the economic challenges faced by Sri Lanka. A bright spot in this environment is the country's growing access to foreign exchange in the form of remittances sent home by those citizens who work abroad. The authors provide a succinct analysis of the evolution of inward remittances in Sri Lanka and their correlations with macroeconomic variables. In the medium term, the outlook for a stable inflow of remittances looks good for Sri Lanka due to persistent rural poverty, growing inequality and ethnic tensions. The literature on remittances suggests that a variety of macroeconomic and other variables influence decisions to send money home. Among the macroeconomic variables that influence remittances are home country income and interest differentials between home country and host country. Relative price levels and the exchange rate also influence those flows. The authors position their enquiry within this framework, pointing out that attempts to construct a relationship between remittances and a set of macroeconomic variables have their own pitfalls. By estimating a vector error correction model for Sri Lanka, they try to overcome these pitfalls and report that "remittance receipts in Sri Lanka may be less of a shock absorber than usually believed". Using a number of macroeconomic variables, namely real GDP, consumer price index, exchange rate, interest rate and oil price, and the response of remittances to those variables, the authors offer some interesting results. There is a positive correlation between remittances and the price of oil, a result that is consistent with the experience of a few other developing countries of the region in the wake of recent oil price hikes. In addition, remittances decline when the currency of Sri Lanka depreciates, a result that is quite in line with regional experience. But the result standing out prominently in this paper is that remittances into Sri Lanka are strongly pro-cyclical, more so than any other source of foreign exchange. Few other countries have also shown similar tendencies. This finding would suggest that a country faltering in its growth can experience declines in remittances, possibly complicating its foreign exchange situation. Policymakers need to remain alert to such possibilities.

Trade liberation and its impact on the labour market is a much debated issue. The paper by Piriya Pholphirul, "Labour market issues under trade liberalization: implications for Thai workers", provides some evidence of that impact on the labour market in Thailand. The paper positions trade liberalization and its impact on the labour market within the broader context of globalization. It argues that, unlike previous waves of globalization, during which labour and capital were more or less equally mobile, the current phase of globalization is characterized by a higher degree of mobility of capital than labour. This raises some important distributional issues and the relative bargaining power of labour and capital. With heightened uncertainties,

workers have become more concerned about their incomes and job security. As both physical and financial capital become more mobile, labour has to compete more vigorously in order to attract capital, resulting in lower wages for workers. The paper reports that trade liberalization has had several impacts on the labour market in Thailand, the most important of which are those related to wages, employment, gender, labour standards and protection, human development and unionization. These impacts vary from sector to sector, as expected, and particularly depend on factor intensity, type of technology used, and structural changes occurring within the industries. These impacts are also highly nuanced as the Thai labour market continues to have large numbers of workers who are non-wage employees and who work in the non-formal sector. Using data from Thailand's labour force survey, the paper shows that trade liberalization, within the present context, has led to bad working conditions and low levels of protection and bargaining power. An important insight provided by the paper relates to the issue of social protection and its role in times of rapid changes in employment and earnings. Thailand introduced labour protection mechanisms more than a century ago. However, labour protection laws would have to be upgraded in order to better cope with greater openness to trade and to comply with international standards. Since job security is one of the primary concerns of trade liberalization, a comprehensive package of social protection, involving all segments of the labour market and paying particular attention to gender dimensions, would go a long way towards allaying some of these concerns.

The rise of India as an economic power has renewed the interest of academics and experts alike in its development path. Many observers of India's ascent take the economic reforms introduced in early 1990s as the main contributing factor to that ascent, although the issue has by no means been settled. Eckhard Siggel's paper, "Economic reforms and their impact on the manufacturing sector: lessons from the Indian experience", continues that debate. However, most of the studies on India's reforms have principally focused on macroeconomic impacts and consequences. This paper is therefore a welcome addition to the existing literature. It focuses on the period from 1987/88 to 1997/98 and analyses the impact of India's economic reforms on its exports and employment by using indicators of competitiveness and comparative advantage. The author concentrates on the reforms introduced soon after the 1991 crisis and their impact on the performance of the manufacturing sector. Changes in manufacturing competitiveness due to changes in trade policy, exchange rate policy and interest policy are used to evaluate the export and employment performance of the manufacturing industries. The paper explains in rich detail the main reform components and the methods of analysis employed. The main reform components are well known and have been widely documented. The methods used by the author to assess the competitiveness of the manufacturing industries under study are interesting. The study results are of particular interest. The author finds that the competitiveness of the manufacturing industries increased significantly after the reforms were introduced. Consequently, real resources began to move into the industries

with increased comparative advantage, leading to increased exports in a number of industries. As unit costs declined and productivity grew, these industries expanded rapidly. Employment grew by an annual average rate of more than 2 per cent. The author notes with interest the gradualist approach of India to trade and financial liberalization, and the sequencing of internal and external reforms, both of which could be of considerable value to policymakers in other countries of the Asian and Pacific region.

The impact of foreign aid has long been debated in the development literature. Foreign aid can have multidimensional impacts, affecting, among others, economic growth, domestic savings and investment, fiscal and monetary policies, exports and imports. It can have a powerful impact on domestic price levels, interest rates and exchange rates. Foreign aid can also have systemic impacts. The paper by Iman Sugema and Anis Chowdhury, "Has aid made the Government of Indonesia lazy?", focuses on the impact of foreign aid on the fiscal behaviour of Indonesia and adds to the ongoing debate on aid effectiveness. Using the empirical model advanced by Franco-Rodriguez and others (1998) and McGillivray (2002), the paper's chosen vector regression consists of a vector of five variables: project aid, programme aid, non-oil tax revenue, development expenditure and routine expenditure. The authors report four main findings. First, foreign aid provides budgetary support by filling up the fiscal gap. It is therefore demand-driven. Second, project aid frequently translates into routine government expenditure, making foreign aid quite fungible and reducing government incentives to adhere to budgetary discipline. Third, programme aid tends to increase routine expenditure but not development expenditure. Lastly, aid discourages domestic resource mobilization efforts in Indonesia. These findings have important lessons for Indonesia and other developing countries that rely on foreign aid to finance a significant part of their development expenditures. Indonesia has always succeeded in securing comfortable levels of foreign aid. One of the most interesting aspects of recent Indonesian development history is its continuous reliance on foreign aid despite its relatively high domestic savings rate. Why did Indonesia find foreign borrowing more attractive than domestic borrowing? The authors put forward five reasons which, again, can be of interest to other developing countries. Firstly, the domestic financial market could have been underdeveloped and incapable of raising sufficient resources. Secondly, it was cheaper to borrow externally from official sources than from domestic sources. Thirdly, the Government wanted to avoid the crowding-out effects of budget deficits. Fourthly, aid made it possible to avoid inflationary financing. Fifthly, aid in a crisis situation could help in preserving fiscal sustainability and ensuring growth. These factors can explain why a particular Government would remain keen to retain its access to foreign aid even if other domestic factors indicated otherwise.

The economic and social panorama of the Asian and Pacific region is rapidly changing. In such a scenario, the role of competitiveness in shaping the economic

fortunes of the countries of the region remains a key area of interest. In their paper, "Competitiveness: an essential ingredient for growth in Asian and Pacific developing countries in a globalizing world", Marin Yari and Ron Duncan argue that an integrated approach is required in order to foster and sustain competitiveness. By positioning their paper within the broader context of globalization and evolving competitive advantages of countries in the region, they bring new perspectives to the issue of competitiveness. In the neoclassical paradigm, the issue of competitiveness, either as a concept or as a practical option, can be viewed essentially as a micro issue, involving firms and enterprises. Investments decisions are made by individual firms, which also make decisions regarding trade and expansion into new areas of production. In making these decisions, the firms are required to ensure that their shareholders receive a competitive return on their investment. They must also contribute to an increase in the net worth of all the shareholders in those firms. The role of public policy remains confined to creating an environment that encourages entrepreneurship, innovation and risk-taking. The authors take this issue further and argue that Governments have important roles to play as well. In particular, Governments need to invest in social and physical infrastructure, to provide time-bound incentives and inducements through judicious regulations and policies, to ensure macroeconomic stability, and to foster entrepreneurship and risk-taking. However, it should be remembered that government interventions to create competitiveness in industry can carry risks and that each country would to have weigh the risks and benefits and take decisions in the light of their own circumstances.

Syed Nuruzzaman
Editor

THE NEXUS BETWEEN ACHIEVING THE MILLENNIUM DEVELOPMENT GOALS AND ECONOMIC GROWTH: THE ROLE OF POLICY

*Hiren Sarkar**

Achieving the Millennium Development Goals is increasingly being accepted as a major development objective in Asian and Pacific countries. In this paper, it is argued that, in order to fulfill this objective, attention needs to be paid to the nexus between achieving the Goals and economic growth. Pro-growth MDGs are as important as pro-MDG growth. Appropriate macroeconomic and sectoral policies can help in achieving both objectives.

In line with pro-poor economic growth and the pro-poor sectors, the concepts of pro-MDG economic growth and MDG economic sectors are introduced. The MDG sectors are agriculture and construction, which are traditional pro-poor sectors, three infrastructure sectors, namely transport, energy and water, and two social infrastructure sectors, health and education. The relevance of these sectors for achieving MDGs and as growth engines is discussed. In this regard, the contours of an MDG-consistent computable general equilibrium model, which can evaluate the effectiveness of alternate policy packages in fulfilling the dual objectives are cited. The role of policies and institutions in achieving MDGs is further investigated through an analysis of the track record of selected Asian and Pacific countries in implementing macroeconomic policies as well as the progress they are making towards achieving the Goals. Using a tracking exercise, it is shown that the MDG areas which need priority attention are underweight children, maternal mortality, carbon dioxide emissions, malnourishment and infant mortality. Through a corresponding exercise comparing macroeconomic indicators for the on-track and off-track countries it is found that the priority of the off-track group of countries is increasing financial inclusiveness, improving the expenditure on the education-to-GDP ratio and increasing the ratio of direct tax-to-total

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tax. While the policies leading to increases in the last two indicators will directly increase resources in two important MDG areas, health and education, those which will improve the financial inclusiveness index, leading to financial deepening, will help the off-track countries to benefit from globalization and sustain enhanced inclusive economic growth. This will go a long way towards helping countries to achieve the Goals. Altering the tax structure from an emphasis on indirect tax is a well-known pro-poor stance and will also contribute positively to such achievements.

I. INTRODUCTION

Achieving the Millennium Development Goals (MDGs)[1] is increasingly being recognized and accepted as the centrepiece of development objectives in Asian and Pacific countries. A number of countries already have prepared, or are in the process of preparing, MDG-based national development strategies. One of the major objectives of such strategies is to achieve the Goals for their countries within the time horizon of 2015. Such strategies have many advantages. First, the Goals address the development issues in a comprehensive manner by considering the broad dimensions of poverty rather than income poverty alone. In this manner, an MDG-based strategy will be efficient, as it is able to exploit the synergy between the various Goals. Second, deadlines on various review targets make such a strategy results-oriented. Third, an MDG-based strategy is consistent with the right to development, which is a fundamental human right (Sarkar, 2003). For implementing the MDG-based strategy, the role of economic growth is crucial. In this context, the concept of "pro-poor growth" facilitated by "pro-poor economic policies" is similar to that of "pro-MDG economic growth" and "pro-MDG economic policies", so the concepts are of practical interest. The purpose of this paper is threefold. First, it elaborates the concept and characteristics of pro-MDG economic growth and that of pro-growth MDGs and corresponding policies. The contours of a macro model are developed to explain further the use of some of the concepts for helping countries to achieve the Goals. Second, progress in achieving MDGs in Asian and Pacific countries is tracked and analysed in order to determine the

[1] There are eight MDGs, namely eradicating extreme poverty and hunger; achieving universal primary education; promoting gender equality and empowering women; reducing child mortality; improving maternal health; combating HIV/AIDS, malaria and other diseases; ensuring environmental sustainability; and developing a global partnership for development.

priority problem areas. Third, selected pro-MDG macroeconomic and sectoral policies are discussed. An illustrative attempt is made to compute the value of the indicators for selected "off-track" countries and compare these with the same for selected "on-track countries". Based on the results of the comparison, priority areas which need attention for helping countries to achieve MDGs will be indicated.

II. THE CONCEPT OF PRO-GOALS GROWTH AND PRO-GROWTH GOALS

In the literature, the concept of pro-poor economic growth has been discussed widely. In short, growth is pro-poor if the measure of poverty falls. According to this definition, the potential sources of pro-poor growth are (a) a high rate of average income, (b) high sensitivity of poverty to the growth in average incomes and (c) a poverty-reducing pattern of growth in relative income. An operational definition of pro-poor growth has been provided by Pasha (2007).

Following Pasha, for growth to be poverty-reducing, it should meet the following criteria:

- Occur in sectors where the poor find employment, such as agriculture
- Occur in sectors the outputs of which are consumed by the poor, such as food
- Occur in areas where the poor live, such as rural areas
- Utilize factors of production which the poor possess, such as labour, which is often of an unskilled nature

In line with the above-mentioned definition, labour-intensive sectors using relatively low levels of technology can be identified as pro-poor sectors. Two major examples of such sectors are agriculture and construction. Among these, most of the activities of the agricultural sector also take place in rural areas where most of the poor live. From a structural point of view, if economic growth is generated by an expansion in the outputs of these sectors or expansion in these sectors is induced, through strong linkage effects, the growth is pro-poor.

In the context of achieving MDGs, a reduction in income poverty jointly with a decrease in hunger works towards the achievement of only one Goal. Other Goals refer to the areas of child and maternal health, communicable diseases, education, gender, the environment and global cooperation. Economic growth, if it

is pro-poor, has a major and direct impact on achieving the income poverty target of Goal 1. In fact, a reduction in income poverty is, in some sense, totological; if a person's income crosses the poverty line (US$ 1 per day), the person is no longer considered poor. However, this is not the situation with Goals 2 to 7. For achieving these Goals, a person has to consume a minimum quantity of goods and services. For example, whereas a person need only consume a minimum amount of food in order to reduce his or her hunger, for maternal mortality to be reduced, a pregnant woman is required to visit a medical clinic for a check-up on a regular basis, or in other words "consume" a minimum (required) quantity of health services. Similar examples of consumption for achieving other Goals are education for Goals 2 and 3, health for Goals 4 and 6, and water and sanitation for Goal 7.

The consumption of goods and services is determined by income level, non-income factors and price. For the consumption of "MDG goods and services,"[2] the common non-income factors refer to social barriers and customs which prevent people from using many such items despite possessing the required level of income. For example, in many Asian and Pacific countries, pregnant women from relatively rich families do not visit medical clinics regularly owing to a lack of awareness of its importance to their health and that of the foetus or the existence of social customs which forbid women from being examined by male doctors.

The price of goods and services is determined by the conditions of demand and supply. Very often, severe supply constraints are responsible for the high cost of MDG goods and services. There can also be both direct and indirect supply constraints. For example, with reference to health services, the absence of health clinics/hospitals in the neighbourhood (village, locality, town) compels a person to walk or hire transport to visit the nearest health facility. Such a situation increases the implicit price of health services and inhibits the consumption of such services. Over and above this, the absence of proper road infrastructure further adds to the extent of the price increase. Similar examples can be provided for other MDG goods and services, such as education and safe drinking water.

In the background of the above discussion, in addition to the "pro-poor" sectors, such as agriculture and construction, certain key sectors of the economy assume special importance in enabling countries to achieve the MDGs. These are transport, energy, water, health and education. If the outputs of these sectors do not expand, MDGs cannot be achieved. Growth can be termed as pro-MDG if it is generated by, or generates through strong linkage effects, an expansion in the outputs of the pro-poor sectors, the physical infrastructure sectors and the social

[2] Broadly, "MDG goods and services" refer to food, clean water and sanitation, health and education.

infrastructure sectors. In short, if economic growth entails income generation for the poor as well as improvements in both the physical and the social infrastructure, which will enable adequate availability of "MDG goods and services" so that a large section of the population (including the poor) will be able to consume those goods and services in appropriate quantities, there is a very good chance that the Goals will be achieved.[3] On the other hand, an expansion in the MDG goods and services sector can also act as an engine of growth, turning "pro-MDG growth" into "pro-growth MDGs" (see box 1).

Box 1. Pro-Millennium Development Goal economic growth to pro-economic growth Goals

Is it possible to turn around and directly link economic growth with the achievement of MDGs through an expansion of the MDG sectors? The available evidence indicates that such linkages can do so; hence, MDG-based national development strategies, which the countries agreed to formulate and implement, represent a win-win situation for both groups: those which consider MDGs to be essentially soft social/welfare issues and those who have misgivings about the supremacy of economic growth in national policymaking. It can be argued that, if attention is not given to MDG goods and services, the growth process will be non-inclusive and not sustainable in the long run. On the other hand, appropriate investments in the MDG goods and services sectors not only can act as a direct engine of economic growth but also have strong positive impacts on all sectors of the economy and unleash the full growth potential of developing countries. Pro-economic growth MDGs can be a strategy through which the MDG goods and services sectors will become major sources of growth.

In the economic and business arena recently, a number of MDG goods and services sectors have been designated as "engines of growth", examples include the following.

[3] Similar concepts have been implicit in the findings of the paper entitled "Growth and MDG attainment: A technical note based on cross-country data" by Shiladitya Chatterjee. Chatterjee (2006) observed that mere economic growth is "woefully insufficient" for the attainment of MDGs without conscious allocation of budgets for the provision of basic services and the adoption of programmes for capacity-building and investments to realize them. Some of the interventions must be aimed at turning the growth process into the pro-MDG variety.

Infrastructure and construction-led growth

A success story in this area is China. The country is marching ahead with a GDP growth rate of over 10 per cent annually for over two decades. It followed a conventional path in transiting from an agricultural economy, by building linkages among its agricultural, industrial and service sectors. In this endeavour, massive infrastructure development played crucial multiple roles. Infrastructure investment acted as a major source of short-term economic growth by boosting construction activities in a very significant manner. The resulting improved infrastructure facilities (roads, airports, ports, electricity and water) enabled manufacturing activity to grow at breakneck speed and contribute to the high rates of export growth. The country's strong export performance is well known. It is also well known that a major determinant of inward foreign direct investment flows is the high quality of China's infrastructure. This concept is vindicated by its excellent record in this area, $60 billion having been poured into the country in 2005 alone.

The concept of infrastructure as an engine of growth is further exemplified in the preparations for hosting the Olympic Games in China in 2008. Public and private-sector investments for infrastructure development in preparing for the Olympics are expected to touch $180 billion by 2008. The impact of such investments will be significant in terms of jobs for millions of low-income and low-skilled workers. Also, hosting the Olympics will help to enhance the country's psyche and self-confidence. China is also using the Olympics to prepare its inefficient State-owned enterprises for competing in the global economy, which will have significant positive short, medium and long-term impacts on economic growth.[a]

In India, the Government in trying to boost economic growth by improving the country's infrastructure. The Indian economy has grown by an average rate of 8 per cent annually during last three years and the Government wants to increase that rate to 10 per cent by building better roads, ports and power supplies. Recognizing that infrastructure development can be an effective growth engine for the country, India intends to invest $150 billion in the sector in the next few years.[b]

Agriculture-led growth

The contribution of the agricultural sector in jumpstarting economic growth in China after the country started breaking away from the centrally planned system is well documented. The introduction of the responsibility system at the end of 1978, which recognized private agricultural activities at the household level, unleashed the growth potential of the country; since then it has never looked

back. India's green revolution was the backbone of its development strategy in the early years. Agricultural production resulted in a record grain output of 131 million tons in 1978/79 and established India as one of the world's largest agricultural producers. Agricultural production through improved techniques required more water, fertilizer, pesticides and other chemicals. This spurred the growth of the manufacturing sector; the resulting industrial growth created new jobs and further contributed to the country's GDP.

However, the scenario started changing in 1990 when India began to implement aggressive economic reform and liberalization programmes. It promoted non-agricultural sectors, especially certain service sectors, which became new engines of growth. The lack of investment in the agricultural sector became apparent in 2005 when for the first time in decades India had to import wheat because domestic production had not increased in the previous 10 years.

It is interesting to note that agriculture, which seemed to have lost its clout as an engine of growth, is re-emerging. India's countryside has long been regarded as a primary market for domestic businesses, which now see the rural agricultural sector as an engine of growth and a source of tremendous profit. A leading business group is planning to create 1,000 outlets around the country for stocking agricultural implements manufactured by both domestic and foreign producers and provide a variety of financial and health services in rural areas. By consolidating services and sales, it is possible to improve farmers' access to inputs and thus unleash a virtuous cycle of increased sales and increased agricultural production, thus contributing to the country's economic growth. Also, a number of corporate sector-led vertically integrated models are being implemented. All these efforts recognize the strong role of agriculture in creating economic growth.[c]

Health and education-led growth

Should the notion of health and education-led growth be followed by a question mark? Is it only food for thought or is there some reality in that notion? With regard to health, recent research done at the Harvard School of Public Health suggests that, for the two "Asian giants", improvements in health and the consequent changes in the size and age profile of the population were major factors propelling the countries' economic take-off. The notion of "health-led growth", i.e. health improvements boosting developing economies under which health programmes, such as preventive health care (e.g. inoculation) strengthened over time and increased the number of healthy children who when they matured became a "bulge generation", represents a potent economic force.[d] The resulting "demographic dividend" significantly contributed to the success of the "Asian Tiger Economies" in the post-Second World War period.

There are other direct examples of the health sector functioning as an engine of growth. The recent emphasis on health tourism in countries such as India and Thailand, the growing domestic health market and the increase in various forms of care-giving "industries", including those in developed countries which can be exploited by Asian and Pacific developing countries, are areas capable of attracting significant investment (private, public, public-private). Investment in the modern health sector, which has strong linkages with the industrial, construction and service sectors, is capable of promoting widespread economic activities and growth.

On the other hand, from a growth perspective, public resources allocated for the provision of educational services can generate growth. The benefit of investing in "knowledge-generation sectors", which are central to endogenous growth as brought forward by Lucus,[e] amply justifies such actions. However, as in the case with health, examples of the direct contribution of education as a generator of economic growth are also abundant.

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[a] Konana, P., Doggett, J.N., Balasubramanian, S. (2005). Advantage China, *Frontline*, vol. 22, No. 6, 12-25 March 2005.

[b] IDFC sees strong infrastructure-led growth, Reuters Hyderabad, May 2006.

[c] Will agriculture be the next engine of growth in India's economy? Asia Pacific Bulletin, 18 October 2006.

[d] HSPH Report: China and India "What's Behind Asia's Gold Rush". <www.hsph.harvard.edu/review/rvwsf06_bloom.html>, accessed on 13 Nobember 2006.

[e] Lucas, R.E., "On the Mechanics of Economic Development", *Journal of Monetary Economics*, 22, 1988: 3-42.

The structure of a macroeconomic model with two sectors, namely MDG goods and services, and the rest, is shown in box 2. The model can be used to evaluate options for generating economic growth by expanding MDG goods and services as well as ensuring minimum levels of consumption in these areas.

Box 2. An MDG-consistent Macroeconomic Model

$$X = AX + C + I + E - M \quad \text{... (1)}$$

$$Y_j = V_j X \quad \text{... (2)}$$

$$C_j = (1-S_j)Y_j, \; j = 1, n \quad \text{... (3)}$$

$$C_{ji} = \theta_{ji} + (m_{ji}/P_i)^* (C_j - \sum_i \theta_{ji} P_i),\ i = 1, 2 \text{ and } j = 1, n \quad \text{... (4)}$$

$$\sum_i C_{ji} = C_j,\ i = 1, 2 \text{ and } j = 1, n \quad \text{... (5)}$$

$$\sum_j C_j = C,\ j = 1, n \quad \text{... (6)}$$

Where

X : Output

A : Intermediate input coefficient

C : Consumption

I : Investment

E : Export

M : Import

j : The income groups (could be classified by size, class, origin (rural/urban) or occupational class) to be considered

V_j : Value added share of j^{th} income class

C_j : Consumption expenditure of j^{th} income class

S_j : Savings rate of j^{th} income class

i : Consumption categories (1 referring to MDG goods and services and 2 referring to the rest)

C_{ji} : Consumption of j^{th} income class on i^{th} item

θ_{ji} : Minimum consumption of j^{th} class on i^{th} item

m_{ji} : Marginal budget share of j^{th} class, with reference to i^{th} item

P_i : Price of i^{th} category

The model above is an example for exploring some basic elements of a much more elaborate framework of an MDG-based structural model that would be required to carry out actual simulation exercises for a particular country. However, a complete model would be able to incorporate all the concepts introduced in this paper and could be used as a tool for evaluating policy options and strategies for "pro-growth MDGs", ensuring minimum consumption of MDG goods and services, which is consistent with the achievement of the Goals by 2015.

III. PRO-MDG ECONOMIC POLICIES

Economic policies which enable pro-MDG economic growth processes to take place can be classified into four groups: structural adjustment policies, macroeconomic stabilization policies, sectoral policies and redistributive policies.[4]

Structural adjustment policies

The standard sets of measures which are applied to stimulate growth in developing countries under the rubric of economic reform are privatization, deregulation, liberalization of the trade and financial sectors and convertibility of the capital account. These measures are expected to unleash entrepreneurship and dynamic forces in the private sector, both domestic and foreign; exploit the comparative advantage of the country in increasing exports; attract foreign capital, especially in the form of direct foreign investment; and significantly contribute to economic growth.

Although the above measures have been able to enhance GDP growth rates quite significantly in several Asian and Pacific countries, especially those in East and South-East Asia, single-minded adherence to this approach in many circumstances could not guarantee that the growth was contributing adequately to the achievement of MDGs in a sustained manner. In fact, the well-known sequencing problems which led to the 1997 Asian financial crisis and the adverse impact on employment of privatization are some of the negative aspects of the above-mentioned policies.

Macroeconomic stabilization policies

The centerpiece of macroeconomic stabilization is ensuring a low inflation regime through fiscal discipline, that is, reducing the fiscal deficit and thereby the current account deficit. A low inflation regime is congenial for boosting the confidence of both consumers and investors, and keeping moderate real exchange rates and interest rates thus contributing to the generation and maintenance of an enabling atmosphere where economic activities and growth can flourish. However, the traditional Washington Consensus interpretation of macroeconomic stabilization, in many circumstances, overemphasizes the virtues of low inflation, which is often achieved through demand management at the expense of growth and development. For example, a reduction of the fiscal deficit, which is a major instrument for controlling inflation, if achieved by reducing public expenditure, especially on physical and social infrastructure, can easily retard the process of growth itself in the short and medium term.

[4] The classification broadly follows that of Pasha (2007).

Sectoral policies

A major sector, the growth of which ensures poverty reduction, is agriculture. Agriculture utilizes a substantial input of labour, a factor which is abundant among the poor. Agricultural activities take place in rural areas where many of the poor live. The experience with agricultural growth suggests a strong correlation between investments in rural infrastructure: irrigation networks, farm-to-market roads and rural electrification. Adequate infrastructure, as argued previously, contributes not only to increased income for the rural poor, thus helping to achieve Goal 1, but also to the achievement of other Goals.

Another pro-poor sector is construction. Rapid growth in construction produces a twofold benefit. Because it is labour-intensive, it can absorb a large population of unskilled labour. In many South-East Asian countries, the growth in construction was instrumental in relocating workers from the low-wage agricultural sector where they were underemployed communities to the relatively well-paid non-agricultural sector. Construction activities in urban slums and squatter as well as in public works programmes for the creation of the rural infrastructure are pursued in many countries in order to provide income to seasonally unemployed agricultural workers. Thus, these activities act as "insurance", preventing the poor from slipping back into poverty.

In a large number of Asian and Pacific developing countries, the demand for infrastructure services, such as transport, energy and water, outstrips the supply (output) of such services by a wide margin. The outputs of these sectors are not only consumed directly, which also, as discussed previously, contributes to the achievement of many MDGs, but also are crucial intermediate inputs for all other economic activities. The opportunity cost of infrastructure constraints could be very large in terms of lost economic growth and the non-achievement of MDGs. Investing in infrastructure sectors is crucial for improving the situation. Research has shown that the infrastructure investment requirement for Asian and Pacific countries can be enormous, exceeding $600 billion per year (ESCAP, 2006).

A similar situation is observed in the social infrastructure sectors, especially the health and education sectors. The expansion of the output (supply) of these sectors is crucial for enhancing economic growth as well as for achieving MDGs. Adequate investment in theses sectors is needed for creating the capacities required.

Redistributive policies

These policies can be the essential ingredient for achieving an MDG-friendly economic growth process. One key area for implementing policies for achieving

MDGs is altering the quota and allocation of public resources by changing the pattern of taxes and expenditures so as to lessen the burden on the poor and increase the availability of "MDG goods and services". Measures taken to correct the following types of situation will contribute to the improvement of those situations.

Subsidies and pricing of public services

Certain subsidies, including subsidies on services and even fertilizer subsidies, can accrue to and benefit higher-income groups disproportionately. On the other hand, underpriced pro-rich services can include irrigation, electricity for agricultural use and higher education. Rationalization of the subsidies as well as the proper pricing of public services would save or generate revenue, which could be used to cross-subsidize the poor in order to increase their consumption of MDG goods and services.

Tax restructuring

Tax expenditures, in the form of exemptions or concessions in the application of tax laws (especially relating to direct taxes), are common in many countries. These can include favoured tax treatment of various forms of unearned income, including income from capital gains or interest income, very low effective rates of taxation on real estate and tax exemption for agricultural income. Recently, in many countries policy debates have been taking place concerning the efficiency of tax concessions in special economic zones.[5] One effective way of broadening the tax base is minimizing the tax concessions while simultaneously reducing the rates of indirect taxes, which are generally regressive in nature and have an adverse impact on the poor.

Restructuring of public expenditure

Another major area of reform in public expenditure is the change in its composition. For example, outlays for defence in many Asian and Pacific countries substantially exceed social expenditures. Efforts aimed at achieving greater peace and stability in the region could yield a substantial dividend in terms of creating the fiscal space for greater spending on the physical infrastructure, health and education.

[5] For example, see the following URL for information on criticism of India's policy on special economic zones <www.wsws.org/article5/2006/India-027.shtml> accessed on 15 January 2007.

Reallocation of bank credit

An area where redistributive policies could be effective in enhancing the achievement of MDGs is the allocation of bank credit. This approach would involve orienting the banking sector towards the extension of microcredit for low-income households as well as loans for small and medium-sized enterprises, which would improve financial inclusiveness. The emphasis should be on increasing people's access by rationalizing the collateral requirements and the criteria for establishing credit worthiness rather than on subsidizing credit. The experience of financial institutions, such as the Grameen Bank of Bangladesh, is that intermediation costs could be kept low through group-based lending, while repayment performance could be sustained at high levels through peer-group pressure and improved prospects for repeat borrowing through an interlocking loan arrangement. On the contrary, large borrowers are more likely to be prone to "willful default" owing to the system of political patronage. In addition, the credit made available to small borrowers can contribute to substantially larger income and employment multipliers, thereby directly contributing to poverty reduction.

IV. TRACKING THE PROGRESS IN THE ACHIEVEMENT OF THE MILLENNIUM DEVELOPMENT GOALS: WHERE ARE THE GAPS?

Research carried out by ESCAP,[6] with recent data and information provided by the United Nations Statistics Division (mid-2006), highlights the progress being made towards achieving MDGs in the Asian and Pacific region. In the background of the vastness and diversity of the region, the "progress story" is mixed; many indicators are "on track", although a number of other indicators are "off track".[7] ESCAP has documented and discussed the behaviour of a large number of indicators for which data are available. Using the information provided by ESCAP, an attempt has been made here to take the analysis further and to extract some conclusions which have relevance to policy and programme formulation, especially with regard to making some of the off-track indicators on track.

[6] The information is contained in the second draft for 2006, which is an update of the regional MDG report. For further information, see <http://www.mdgasiapacific.org>

[7] On-track countries with respect to a particular indicator are those which, with trend performance (or under a "business as usual" scenario), will achieve the target value (as stipulated in the Millennium Development Goals) of the indicator by or before 2015. Off-track countries are those which, under similar situations as described above, will miss the target in 2015.

Tables 1, 2 and 3 show some of the salient features of the status of MDG indicators and the achievement of the Goals for the Asian and Pacific region. Table 1 concerns the availability of the data on the indicators. In addition to the underweight children indicator (Goal 1), the paucity of information on reaching grade 5 (60 per cent of the Asian and Pacific countries do not have data on reaching grade 5), poverty (56 per cent), malnourishment (49 per cent), sanitation rural (44 per cent) and HIV prevalence (42 per cent) is noteworthy.

Table 1. Availability of data on MDG indicators

Indicator	*Indicator*	*Goal*	*Number of countries for which data are not available as a percentage of the total number of developing countries in the Asian and Pacific region (%)*
Underweight children	4	1	69.09
Reaching grade 5	7	2	60.00
$1 poverty	1	1	56.36
*Malnourishment	5	1	49.09
Sanitation rural	31 b	7	43.64
HIV prevalence	18	6	41.82
Primary enrolment	9	2	38.18
Gender tertiary	9 c	3	34.55
Primary completion rate	8	2	34.55
Sanitation urban	31 a	7	34.55
Water rural	30 b	7	32.73
Water urban	30 b	7	27.27
*Maternal mortality	16	5	23.64
Gender secondary	9 b	3	21.82
Gender primary	9 a	3	20.00
Protected area	26	7	20.00
Infant mortality	14	4	14.55
Under-five mortality	13	4	14.55
ODP CFC consumption	28	7	14.55
CO_2 emissions	28	7	7.27
Forest cover	25	7	7.27
TBC death rate	23	6	0.00
TBC prevalence	24	6	0.00

Source: ESCAP (2006). *The Millennium Development Goals: Progress in Asia and the Pacific 2006.*

Note: **Maternal mortality and malnourishment figures are from* ESCAP (2005). *Future within Reach: Reshaping institutions in a region of disparities to meet the Millennium Development Goals in Asia and the Pacific,* (United Nations publication, Sales No. E.05.II.F.27).

Table 2. Current status of the achievement of MDGs in the Asian and the Pacific region (2006)

Indicator	*Indicator*	*Goal*	*Number of countries for which data is available*	*Number of off track countries as percentage of total number of countries for which data is available (%)*
Underweight children	4	1	17	64.71
*Maternal mortality	16	5	42	66.67
CO_2 emissions	28	7	51	58.82
Forest cover	25	7	51	45.10
Water rural	30 b	7	37	45.95
Sanitation rural	31 b	7	31	41.94
*Malnourishment	5	1	28	42.86
Infant mortality	14	4	47	38.30
Gender tertiary	9 c	3	36	36.11
Reaching grade 5	7	2	22	36.36
Under-five mortality	13	4	47	34.04
Primary enrolment	9	2	34	32.35
Water urban	30 b	7	40	32.50
Primary completion rate	8	2	36	30.56
Sanitation urban	31 a	7	36	27.78
HIV prevalence	18	6	32	21.88
$1 poverty	1	1	24	20.83
Gender primary	9 a	3	44	20.45
TBC death rate	23	6	55	20.00
TBC prevalence	24	6	55	14.55
Gender secondary	9 b	3	43	13.95
ODP CFC consumption	28	7	47	10.64
Protected area	26	7	44	0.00

Source: ESCAP (2006). *The Millennium Development Goals: Progress in Asia and the Pacific 2006.*

Note: **Maternal mortality and malnourishment figures are from* ESCAP (2005). *Future within Reach: Reshaping institutions in a region of disparities to meet the Millennium Development Goals in Asia and the Pacific,* (United Nations publication, Sales No. E.05.II.F.27).

Table 2 focuses on the current progress being made towards achieving MDGs and the priority gap areas which need attention. According to the data, 67 per cent of the countries were found to be off track in terms of maternal mortality (Goal 5, indicator 42), followed by underweight children (65 per cent) and environment indicators, especially CO_2 emissions (59 per cent for CO_2 emissions

to 46 per cent for water (rural)). Malnourishment and infant mortality (43 per cent and 38 per cent, respectively) also score high in the list of off-track indicators. These are the priority gap areas which need attention through the development of appropriate policies and programmes both at the country and regional levels.

In developing countries, an overarching development objective has always been the reduction of income poverty. As a result, antipoverty and pro-poor growth policies and programmes have been designed and implemented in almost all countries of the region. These policies and programmes are often holistic and, in addition to addressing income generation, also benefit other MDG areas, such as health, education and the environment. The extent of such "spillovers", however, differs between countries. In the context of the Asian and Pacific region, it is of interest to determine which areas (or more specifically which MDG indicators) have benefited more than others. Such an attempt is made in table 3.

Table 3. Relationship between income-poverty reduction and other indicators

Indicator	*Number of on-track countries as a percentage of the total number of countries for which data on both indicators are available (%)*
On-track in indicator 1 (income poverty) and on-track in indicator 30a (water (urban), Goal 7)	85
On-track in indicator 1 (income poverty) and on-track in indicator 26 (protected area, Goal 7)	79
On-track in indicator 1 (income poverty) and on-track in indicator 28b (ozone depleting potential chlorofluorocarbon consumption, Goal 7)	75
On-track in indicator 1 (income poverty) and on-track in indicator 9a (gender (primary), Goal 3)	69
On-track in indicator 1 (income poverty) and on-track in indicator 9b (gender (secondary), Goal 3)	69
On-track in indicator 1 (income poverty) and on-track in indicator 24 (tuberculosis prevalence, Goal 6)	67
On-track in indicator 1 (income poverty) and on-track in indicator 18 (HIV prevalence, Goal 6)	64
On-track in indicator 1 (income poverty) and on-track in indicator 23 (Tuberculosis death rate, Goal 6)	62

Table 3. *(continued)*

Indicator	*Number of on-track countries as a percentage of the total number of countries for which data on both indicators are available (%)*
On-track in indicator 1 (income poverty) and on-track in indicator 25 (forest cover, Goal 7)	54
On-track in indicator 1 (income poverty) and on-track in indicator 9c (gender (tertiary), Goal 3)	50
On-track in indicator 1 (income poverty) and on-track in indicator 13 (under-five mortality, Goal 4)	50
On-track in indicator 1 (income poverty) and on-track in indicator 31a (sanitation (urban), Goal 7)	50
On-track in indicator 1 (income poverty) and on-track in indicator 14 (infant mortality, Goal 4)	46
On-track in indicator 1 (income poverty) and on-track in indicator 6a (primary enrolment, Goal 2)	45
On-track in indicator 1 (income poverty) and on-track in indicator 6b (primary completion rate, Goal 2)	44
On-track in indicator 1 (income poverty) and on-track in indicator 31b (sanitation (rural), Goal 7)	44
On-track in indicator 1 (income poverty) and on-track in indicator 5 (malnourishment, Goal 1)	42
On-track in indicator 1 (income poverty) and on-track in indicator 30b (water (rural), Goal 7)	40
On-track in indicator 1 (income poverty) and on-track in indicator 4 (underweight children, Goal 1)	36
On-track in indicator 1 (income poverty) and on-track in indicator 7 (reaching grade 5, Goal 2)	30
On-track in indicator 1 (income poverty) and on-track in indicator 28a (CO_2 emission, Goal 7)	21
On-track in indicator 1 (income poverty) and on-track in indicator 16 (maternal mortality, Goal 5)	21

The column on the right-hand side of the table shows the number of countries which are on track for indicator 1 (income poverty) and indicator i (i = 2....48) as a percentage of the total number of countries for which data for both indicators are available. There are 22 indicators for which data on income poverty are also available for a significant number of countries. The analysis reveals

that the indicators which appear to have benefited less from antipoverty policies and programmes are maternal mortality, CO_2 emissions, reaching grade 5, underweight children and malnourishment. It seems that, even in the countries where development policies have successfully reduced income poverty, maternal and child health and malnourishment issues were not addressed. The gap areas identified in table 2 are vindicated by the findings shown in table 3.

V. ESTIMATION OF PERFORMANCE OF PRO-MDG POLICIES THROUGH GAP ANALYSIS OF THE INDICATORS

Strong or weak performance of pro-MDG economic policies is responsible for whether or not a country is on track for achieving the Goals by 2015 by generating a pro-MDG growth process. Based on the discussions of the previous chapters, it is possible to identify indicators which can measure the effectiveness of economic policies (stabilization, structural adjustment, sectoral and redistributive) in transforming the growth process into a pro-MDG one. For example, the infrastructure investment-to-GDP ratio, the increment of which (with a lag) signifies the expanded availability of infrastructure, which in turn facilitates the consumption of MDG goods and services, is an example of such an indicator. Although the identified indicators ideally may be studied and their behaviour analysed, the availability of information can be a constraint. In such situations, it may be necessary to select a subset of the indicators for actual quantification regarding the selected countries, which are commonly termed as off-track countries, and compare the values with those for well-performing on-track countries. The exercise would involve identifying and computing the indicators for the selected (off-track and on-track) countries, with data having been compiled from various sources and the consistency of the data checked before performing the required calculations. The difference between the values of the selected indicators between the off-track and on-track countries and their behaviour over time can then be computed, which would be expected to provide guidance with regard to the changes possibly needed in the priority areas.

In this paper, such an exercise is undertaken on a very limited scale in order to illustrate the methodology, results and the types of conclusions which can be derived as well as their possible use.

The macroeconomic indicators considered are GDP growth rate, tax-to-GDP ratio, direct tax-to-total tax ratio, export-to-GDP ratio, expenditure on health-to-GDP ratio, expenditure on education-to-GDP ratio, financial inclusion index and M3-to-GDP ratio. The countries considered are Bangladesh, Cambodia, China, the Lao People's Democratic Republic, Mongolia, Nepal, Pakistan and Thailand.

Of these, China and Thailand are broadly considered as on track and the others off track. The values of the indicators averaged over the period 2004-2006 are shown in table 4. The "gaps" or differences in the values of the indicators between the off-track countries and the "benchmark" indicator values, corresponding mostly to the on-track countries (as shown in table 5), are then calculated. Table 6 documents these gaps for the six off-track counties and presents data on the gaps as percentages of the relevant benchmark values.

Table 4. Selected macroeconomic indicators for selected Asian and Pacific countries

Indicators	*Bangladesh*	*Cambodia*	*China*	*Lao People's Democratic Republic*	*Mongolia*	*Nepal*	*Pakistan*	*Thailand*
GDP growth rate	5.2	6.3	9.4	6.0	5.2	2.5	4.1	5.4
Tax-to-GDP ratio	7.8	6.4	7.6	–	22.6	9.1	11.0	15.4
Direct tax-to-total tax ratio	16.1	–	9.5	–	28.2	19.9	28.5	36.4
Export-to-GDP ratio	14.2	52.9	27.4	29.7	65.1	20.7	17.8	64.3
Expenditure on health-to-GDP ratio	3.2	11.6	6.0	3.0	6.3	4.9	3.3	3.8
Expenditure on education-to-GDP ratio	1.3	1.8	2.0	1.8	5.7	3.2	2.3	3.6
Financial inclusion index	37.2	6.5	149.1	11.7	18.3	42.1	39.6	121.0
M3-to-GDP ratio	36.5	15.5	165.7	17.2	33.0	41.8	44.0	114.9

Table 5. Benchmark values of the indicators

Indicators	*Benchmark country*	*Benchmark value*
GDP growth rate	China	9.4
Tax-to-GDP ratio	Thailand	15.4
Direct tax-to-total tax ratio	Thailand	36.0
Export-to-GDP ratio	China	27.4
Expenditure on health-to-GDP ratio	China	6.0
Expenditure on education-to-GDP ratio	Thailand	3.8
Financial inclusion index	Thailand	121.0
M3-to-GDP ratio	Thailand	114.9

For a particular off-track country, a positive gap in one of the indicators signifies that efforts have to be made in order to bring the indicator up to the level of the benchmark country. The greater the extent of the gap, the greater is the effort required to accomplish this. Under this logic, the percentage gap numbers (in parentheses) shown in table 6 can be used to prioritize the areas that need more effort. Such an attempt is made in table 7, where the macroindicators corresponding to the six countries are arranged by the size of the percentage gaps, that is, from the highest (1) to the lowest (7).

Two observations may be made. First, the priority areas (a particular indicator is associated with one area) are somewhat different between the six countries. Second, the financial inclusion index (with behaviour similar to the M3-to-GDP ratio), direct tax-to-total tax ratio, expenditure on education-to-GDP

Table 6. Gaps (differences) between benchmark values and actual values of selected macroeconomic indicators

Indicators	*Bangladesh*	*Cambodia*	*Lao People's Democratic Republic*	*Mongolia*	*Nepal*	*Pakistan*
GDP growth rate	4.2	3.1	3.4	4.2	6.9	5.3
	(44.0)	(33.0)	(36.0)	(45.0)	(73.0)	(56.0)
Tax-to-GDP ratio	7.6	9.1	n.a.	-7.2	6.4	4.5
	(49.0)	(59.0)		(-46.0)	(41.5)	(29.0)
Direct tax-to-total tax ratio	19.9	n.a.	n.a.	7.8	16.2	7.5
	(55.2)			(22.0)	(45.0)	(21.0)
Export-to-GDP ratio	13.0	-26.0	-3.0	-38.0	6.0	9.0
	(48.0)	(-72.0)	(17.0)	(-105.0)	(22.0)	(33.0)
Expenditure on health-to-GDP ratio	3.0	-6.6	3.1	-0.35	1.1	2.67
	(50.0)	(83.0)	(56.0)	(-0.5)	(18.0)	(44.5)
Expenditure on education-to-GDP ratio	2.3	1.8	1.8	-2.1	0.4	1.3
	(69.0)	(94.0)	(90.0)	(84.0)	(65.0)	(67.0)
Financial inclusion Index	82.8	113.5	108.3	101.7	77.9	80.4
	(69.0)	(94.0)	(90.0)	(84.0)	(65.0)	(67.0)
M3-to-GDP	78.5	99.5	97.8	82.0	73.2	71.0
	(69.0)	(86.5)	(85.0)	(72.0)	(63.6)	(62.0)

Note: Figures within parentheses represent percentage gaps, i.e., gaps as a percentage of the relevant benchmark values.

Table 7. Macroeconomic indicators arranged by size of percentage gap for selected off-track countries

Country	*1 (highest)*	*2*	*3*	*4*	*5*	*6*	*7 (lowest)*
Bangladesh	Financial inclusion index	Expenditure on education-to-GDP ratio	Direct tax-to-total tax ratio	Expenditure on health-to-GDP ratio	Tax-to-GDP ratio	Export-to-GDP ratio	GDP growth ratio
Cambodia	Financial inclusion index	Tax-to-GDP ratio	Expenditure on education-to-GDP ratio	GDP growth rate	Export-to-GDP ratio	Expenditure on health-to-GDP ratio	–
Lao People's Democratic Republic	Financial inclusion index	Expenditure on health-to-GDP ratio	Expenditure on education-to-GDP ratio	GDP growth rate	Export-to-GDP ratio	–	–
Mongolia	Financial inclusion index	GDP growth rate	Direct tax-to-total tax ratio	Expenditure on health-to-GDP ratio	Expenditure on education-to-GDP ratio	Tax-to-GDP ratio	Export-to-GDP ratio
Nepal	GDP growth rate	Financial inclusion index	Direct tax-to-total tax ratio	Tax-to-GDP ratio	Export-to-GDP ratio	Export-to-GDP ratio	Expenditure on health-to-GDP ratio
Pakistan	Financial inclusion index	GDP growth rate	Expenditure on health-to-GDP ratio	Expenditure on education-to-GDP ratio	Export-to-GDP ratio	Tax-to-GDP ratio	Direct tax-to-GDP ratio

ratio and GDP growth rates are priority indicators, which need improvement if the countries are to achieve the Goals.

The second observation holds some very interesting implications for the priority policy areas which require immediate attention if the Goals are to be achieved in the six countries. Specifically these are the need to allocate more resources (both public and private) to education and to increase the efficiency of and access to financial institutions as well as to alter the tax structure away from indirect taxes. Although no immediate linkage can be established between financial

inclusiveness and achieving the Goals, there is no doubt that a strong and inclusive financial sector is needed for exploiting the opportunities arising from the strengthening of the globalization process and sustaining the momentum of growth, which is undoubtedly a necessary element for achieving the Goals. Decreasing the importance of indirect tax is a well-known pro-poor stance; it will help countries in the achievement of the Goals.

VI. ASSUMPTION UNDERLYING THE "GAP" METHODOLOGY

As with any economic analysis, there are a number of assumptions concerning the methodology used. The selection of appropriate benchmark countries can be difficult. It can be easily seen that benchmark values can change the ordering of the priority indicators. There are also assumptions in interpreting the results for the purpose of identifying the required action (effort). It is assumed that benchmark countries are "role models" for using the macro (and sectoral) policies for helping countries to achieve MDGs. Prioritization of the indicators assumes that the same importance is accorded to of all the indicators for achieving MDGs. A 45 per cent "gap" in the health expenditure-to-GDP ratio and a 30 per cent gap in the tax-to-GDP ratio means that increasing the expenditure on health is more important than increasing the buoyancy of taxes. However, with a careful selection of benchmarks, the "gap analysis" method can be used as one of the methods for identifying priority areas in which assistance (both financial and technical) should be given to off-track countries in helping them to achieve MDGs.

VII. CONCLUSION: MAINSTREAMING THE MILLENNIUM DEVELOPMENT GOALS IN THE DEVELOPMENT FRAMEWORK AND POLICIES

The introduction mentioned that the present paper has three objectives. The first is to introduce the concepts of pro-MDG economic growth and pro-growth MDGs. In explaining these concepts, seven "MDG sectors" are identified: agriculture, construction, transport, energy, water and sanitation, health, and education. The growth process which generates, or is generated by, expansions in these sectors will help countries in achieving MDGs. These sectors in turn can also be used as engines of growth. These concepts are used to develop the contours of MDG-consistent macroeconomic models which can evaluate alternative policies, including those using the MDG sectors as growth engines. These elements will help in mainstreaming MDGs in the conceptual development framework of the countries of the Asian and Pacific region.

Second, in observing that development policies in all Asian and Pacific countries have always paid attention to the reduction of poverty in particular and other MDG areas in general, the paper has reviewed and analysed the exercise of tracking the achievement of the MDGs, which had been undertaken earlier by ESCAP. The objective has been to identify priority areas where achievements are relatively slow and need to be immediately accelerated. Such areas are maternal mortality, underweight children, CO_2 emissions, malnourishment and infant mortality.

It is recognized that macroeconomic and sectoral policies are the major instruments for achieving MDGs. As a third objective, the paper has analysed the performance of indicators reflecting the effectiveness of the above-mentioned policies for selected "slow achieving" countries with respect to the benchmark for on-track countries in order to identify policy areas which need to be strengthened. The indicators which need improvement are the financial inclusion index, the education expenditure-to-GDP ratio, and the direct tax-to-total tax ratio. Can it be expected that the policies and institutions which will improve the above-mentioned macroeconomic indicators will also address the priority MDG indicators identified previously? Allocating more resources to the education sector (which would improve the education-to-GDP ratio) will contribute to the improvement of maternal mortality, malnourishment and infant mortality directly and CO_2 emissions indirectly. However, the linkage between policies and institutions, which would improve financial inclusion and the MDG indicators, needs to be studied further; and, it should be of considerable interest to economists and policymakers. It is apparent that the linkage will be through the impact of a financial sector characterized by depth and inclusiveness in enabling wider participation in the economic growth process and thus ensuring its sustainability.

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ARE WORKERS' REMITTANCES A HEDGE AGAINST MACROECONOMIC SHOCKS? THE CASE OF SRI LANKA

*Erik Lueth and Marta Ruiz-Arranz**

This paper estimates a vector error correction model for Sri Lanka in order to determine the response of remittance receipts to macroeconomic shocks. This is the first attempt of its kind in the literature. The authors found that remittance receipts are pro-cyclical and decline when the country's currency weakens, undermining their usefulness as a shock absorber. On the other hand, remittances increase in response to oil-price shocks, reflecting the fact that most overseas Sri Lankan are employed in the Persian Gulf States. The pro-cyclicality of remittances calls into question the notion that remittances are largely motivated by altruism.

I. INTRODUCTION

Despite Sri Lanka's astonishing resilience, the island country remains vulnerable to external shocks. With average annual economic growth of close to 6 per cent over the last five years and a single recession since its independence in 1948, Sri Lanka's growth performance has been remarkable. Nevertheless, the country's export base is narrow, with garment and tea exports accounting for two thirds of the merchandize exports. The expiration of the Multifibre Agreement in 2005 has added to the competitive pressures it feels. Tourism, another major foreign exchange earner, has recovered from the effects of the 2004 tsunami, but faces new threats from a deteriorating security situation. Finally, the country's heavy reliance on imported oil, particularly in energy generation, exposes it more than some others to movements in global prices. Between 2003 and 2005 Sri Lanka's oil balance deteriorated by 2.4 percentage points of GDP, compared with 1.7 percentage points of GDP for average low-income countries in Asia.

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Sri Lanka has access to a large and relatively stable source of foreign exchange in the form of workers' remittances. Over the last two decades, workers' remittances have increased by an annual average of 10 per cent; since 1994, they constitute the largest source of foreign financing for the island. Some 4 per cent of the Sri Lankan population work abroad, mostly in the oil-rich Persian Gulf States, making Sri Lanka one of the leading recipients of remittances as a share of GDP. Remittances are a particularly attractive source of foreign financing, because they are much more stable over time than private capital flows. In addition, they are unrequited transfers, which unlike other capital flows, do not create obligations in the future.

This paper explores to what extent workers' remittances have helped to cushion Sri Lanka against economic shocks and are likely to do so in the future. It is widely believed that workers' remittances are, to a great extent if not solely, motivated by altruism (see, for example, Lucas and Stark, 1985; Rapoport and Docquier, 2005). Under this assumption, they should be negatively correlated with income in the home country and as such constitute an "insurance" against shock. Similarly, they should be positively correlated with incomes in the host countries – in this case the Persian Gulf States – and, hence, provide a welcome hedge against rising oil prices. Alternatively, remittances could be motivated by portfolio considerations, in which case they should respond to interest rate differentials and, in general, be more aligned with the business cycle in the home country. Under either hypothesis, other macroeconomic variables are likely to have a bearing on the amount of money sent home, notably the exchange rate and the price level in the home country.

A few studies investigate the cyclicality of inward remittances, but most do not go beyond descriptive statistics. The International Monetary Fund (IMF) (2005) reported the correlation between de-trended global remittances and de-trended global GDP and found that remittances are pro-cyclical, albeit to a lesser extent than official aid, exports and portfolio investment. Using the same approach on a country-by-country basis, Giuliano and Ruiz-Arranz (2005) showed that remitting patterns vary across countries, with pro-cyclical remittances observed in two thirds of the countries studied and counter-cyclical remittances in the rest. Cross-country differences in the cyclicality of remittances were confirmed by Sayan (2006). In a recent cross-country study (Lueth and Ruiz-Arranz, 2006), the authors estimated a gravity model of bilateral remittance flows for a limited number of developing countries and found that remittances are aligned with the business cycle in the home country. The remittances also decline when the investment and political climate worsen and do not seem to respond to adverse shocks at home.

A few papers have tried to establish correlations between remittances and macroeconomic variables for a single recipient country. Straubhaar (1986) regressed real Turkish inward remittances on German real wages and employment, exchange rate overvaluation, real interest rate differentials (all in variations) and a dummy for changes in the Government of Turkey. He found that wages and employment in the sending country have a positive impact on remittances. El Sakka and McNabb (1999) tried to explain nominal remittances received by Egypt using as regressors real income levels in the sending and receiving country, interest differentials, inflation in Egypt and the black-market premium for foreign exchange. The authors found that remittances increased with inflation in Egypt and income abroad and declined with the black-market premium. For India, Gupta (2005) regressed real inward remittances on oil prices and migrants' real overseas earnings and found that the latter entered significantly and positively. In a second class of regressions, she found that changes in United States employment and dummy for a drought in India had a positive impact on the cyclical component of remittances. Bouhga-Hagbe (2004) used a vector error correction specification to model workers' remittances received by Morocco. The cointegration vector suggested that, over the long-run, inward remittances are positively correlated with French wages and negatively correlated with real GDP in Morocco.

These attempts to establish a relationship between workers' remittances and a set of macroeconomic variables suffer from a number of pitfalls. Some studies fail to discuss and account for the time-series properties of the variables under investigation, although regressions of non-stationary variables are known to be spurious. One study ran a regression in variations – supposedly removing any non-stationarity – but failed to test for cointegration, thus opening the door for omitted variable bias. Moreover, some of the macroeconomic variables, such as the exchange rate, the price level or GDP, could be affected by remittances on top of affecting remittances. However, most studies ignore issues of endogeneity and reverse causality. Bouhga-Hagbe (2004) is the noteworthy exception in accounting for time-series properties and endogeneity, but his findings are questionable given that a vector error correction model with 22 parameters is estimated using 35 observations.

Our analysis attempts to overcome the weaknesses of earlier studies and shows that remittance receipts in Sri Lanka may be less of a shock absorber than usually believed. The authors estimated a vector error correction model for Sri Lankan remittance receipts, using quarterly data from 1996 to 2004. The main focus is on the response of remittances to a number of macroeconomic variables, namely real GDP, consumer price index, exchange rate, interest rate and oil price. We found that the remittances are positively correlated with the oil price, but behave

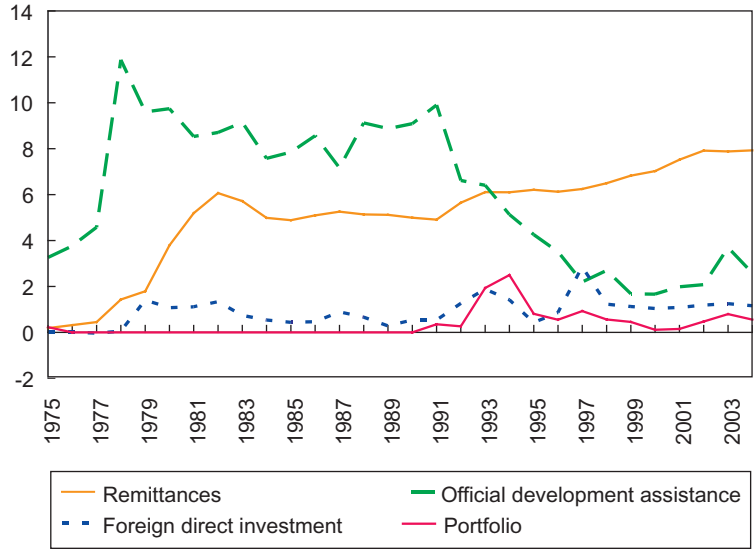
strongly pro-cyclically, and decline when the Sri Lankan currency weakens. Accordingly, remittances to Sri Lanka seem to be less of a hedge against shocks than commonly believed.

The paper proceeds as follows. Section II presents some stylized facts on Sri Lankan workers' remittances, including initial evidence on macroeconomic correlations. Section III contains the econometric analysis and section IV concludes.

II. STYLIZED FACTS

Reported workers' remittances increased at an average annual rate of 10 per cent over the last 20 years. Since the mid-1990s they constituted the largest source of foreign financing (see figure 1). In 2005, workers' remittances amounted to 8.3 per cent of GDP, compared with 2.5 per cent of GDP in official development assistance (ODA), 1 per cent of GDP in foreign direct investment (FDI), and 0.5 per cent of GDP in portfolio investment. Sri Lanka's prime exports, textiles and garments, amounted to 12 per cent of GDP.

Figure 1. Sources of foreign financing, 1975-2004 (Percentage of GDP)



The evolution of Sri Lanka's inward remittances is broadly in line with the trend observed in global remittance flows. As a global aggregate, workers' remittances have become the largest source of foreign financing after FDI, exceeding both ODA and portfolio investment by a wide margin. In 2005, remittances to developing countries amounted to $165 billion. The Asian and Pacific region is the main destination for remittances, accounting for 45 per cent of the global total. Some of the surge in workers' remittances may be attributable to better recording and a shift from informal to formal channels, particularly after 11 September 2001. However, underpinned by mounting demographic pressures in the developing world, remittance flows are unlikely to abate soon. In the case of Sri Lanka, persistent rural poverty, growing inequality and ethnic tensions will continue to secure stable flows of remittances in the medium term.

Inward remittances are large relative to the Sri Lankan economy. Among 13 countries of broadly equal size, Sri Lanka exhibits the fourth largest remittances-to-GDP ratio (see figure 2). In Asia, Sri Lanka is surpassed only by the Philippines (13.7 per cent of GDP), Mongolia (13.3 per cent of GDP) and Nepal (12.9 per cent of GDP) in terms of their remittances-to-GDP ratios.

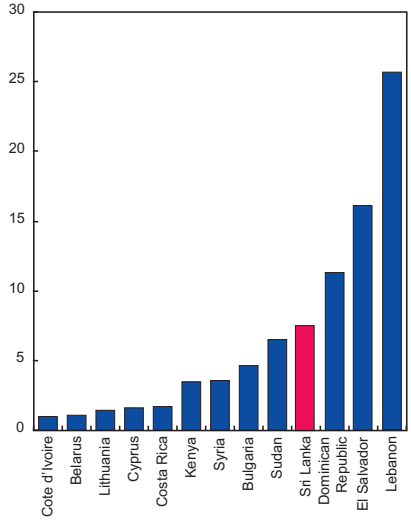
Inward remittances are sensitive to swings in oil prices, as close to 85 per cent of Sri Lankan migrants reside in countries which are net oil exporters. According to the Sri Lanka Bureau of Foreign Employment (2004), the number of overseas workers amounted to 744,100 in 2004, or 3.8 per cent of the country's total population. These workers are concentrated in a few countries, with Saudi Arabia, Kuwait, the United Arab Emirates, and Qatar hosting 80 per cent of them.

Sri Lankan remittances are less volatile than private capital flows and ODA, confirming a pattern observed for global aggregates (IMF, 2005). The standard deviation of remittances amounts to 43 per cent of the mean, compared with 51 per cent for ODA, 68 per cent of FDI and 164 per cent for portfolio investment. Merchandise exports, on the other hand, are less volatile than remittances, deviating only 21 per cent from the mean.

Remittances sent to Sri Lanka seem to be pro-cyclical and, strikingly, more so than any other source of foreign exchange. Remittances and GDP, when de-trended by the Hodrick-Prescott filter, show a correlation of almost 70 per cent over the period 1975-2004, slightly higher than the correlation of exports and GDP. Private capital flows and GDP are positively correlated at only 20 per cent, while ODA is counter-cyclical. Figure 3 plots remittance receipts against some macroeconomic aggregates. The pro-cyclicality of remittances is born out by the first figure, which plots the log-differences of Sri Lankan remittance receipts and GDP over the period 1985-2005. Since the mid-1990s, remittances and GDP seem

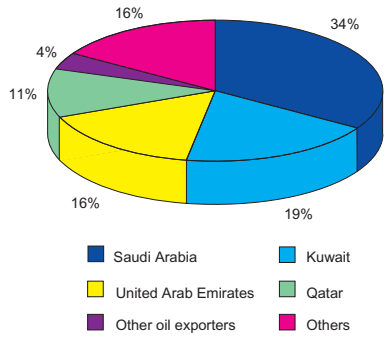
Figure 2. Sri Lanka: Stylized facts about remittances

Workers remittances for selected countries in recent years
(Percentage of GDP)

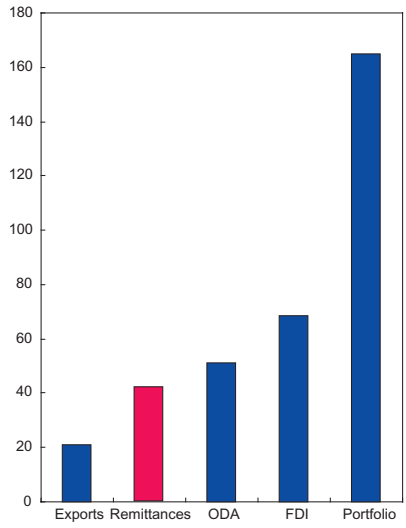


Source: IMF, *Balance of Payments Statistics Yearbook.*
Note: Countries have a similar GDP in United States dollar terms.

Overseas workers, by hosts, 2004

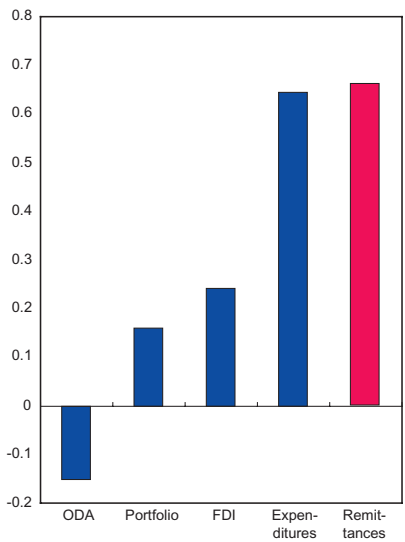


Volatility of inflows, 1975-2004



Source: IMF, *Balance of Payments Statistics Yearbook.*
Note: Volatility is expressed in standard deviation as a percentage of the mean.

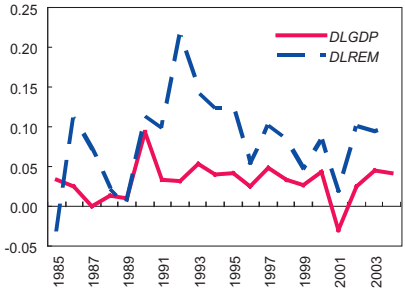
Cyclicality of inflows, 1975-2004



Source: IMF, *Balance of Payments Statistics Yearbook.*
Note: Cyclicality is defined as the correlation between the inflows and GDP, both detrended.

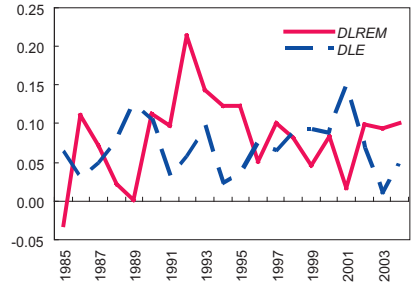
Figure 3. Sri Lanka: correlations of remittances and macroeconomic variables

Remittances and real GDP, 1985-2004
(In log differences)



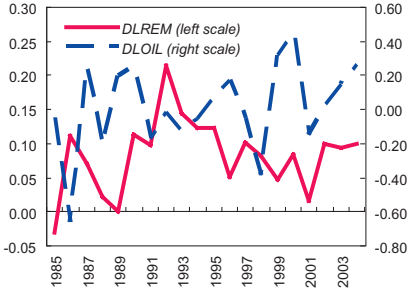
Sources: IMF, *Balance of Payments Statistics Yearbook* and World Economic Outlook database.

Remittances and exchange rate, 1985-2004
(Sri Lankan rupee/U.S. dollar, in log differences)



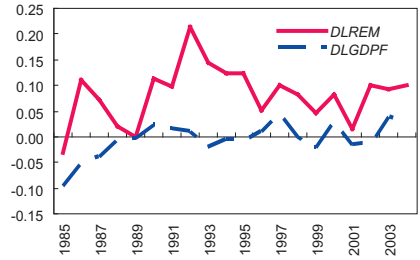
Sources: IMF, *Balance of Payments Statistics Yearbook* and *International Financial Statistics Yearbook.*

Remittances and oil prices, 1985-2004
(In log differences)



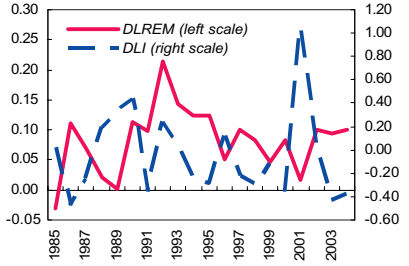
Sources: IMF, *Balance of Payments Statistics Yearbook* and *International Financial Statistics Yearbook.*

Remittance and real GDP per capita in Persian Gulf, 1985-2004
(In log differences)



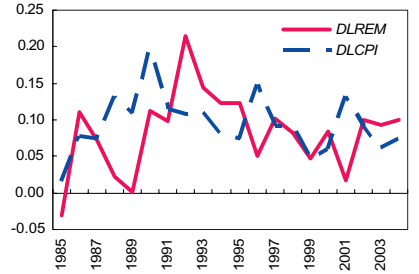
Sources: IMF, *Balance of Payments Statistics Yearbook* and *International Financial Statistics Yearbook;* World Bank, *World Development Indicators.*
Note: Average real GDP per capita of Saudi Arabia, Kuwait, United Arab Emirates, Qatar, Bahrain and Oman weighted by stock ot Sri Lankan residents in 2004.

Remittances and interest rate differential, 1985-2004
(In log differences)



Sources: IMF, *Balance of Payments Statistics Yearbook* and *International Financial Statistics Yearbook; World Bank, World Development Indicators.*
Note: Interest differential between the three-month deposit rate in Sri Lanka and the three-month LIBOR.

Remittances and consumer price index, 1985-2004
(In log differences)



Sources: IMF, *Balance of Payments Statistics Yearbook* and *International Financial Statistics Yearbook.*

to be moving in log-step. Noteworthy also is the year 2001, when Sri Lanka was affected by a number of severe shocks, including a military attack on the Colombo airport, disruptions in the power supply and severe weather. GDP contracted for the first time in 50 years and remittances recorded the lowest growth in more than 10 years. Similar responses of remittances to dramatic changes in the home country's economic conditions have been observed for other countries (World Bank, 2003). In the Philippines, remittances rose steadily throughout the early 1990s, but became more volatile with the financial crisis in the late 1990s. In Turkey, remittance receipts increased for most of the 1990s, but started to decline when the effects of the crisis were felt in 1999 and 2000.

Since the mid-1990s, a strong positive correlation between remittance receipts and GDP of the workers' host countries can be observed. Although Sri Lankans seek employment mostly in oil-exporting countries, the correlation with oil prices is less clear-cut. Moreover, remittances appear to be negatively correlated with the exchange rate (implying less remittances when the currency weakens) and the interest rate (if at all), but not correlated with the price level.

III. ECONOMETRIC ANALYSIS

In this paper, we estimate a vector error correction model for Sri Lanka in order to determine the response of remittance receipts to shocks in macroeconomic variables. This approach seems warranted on several grounds. First, most of the macroeconomic variables are endogenous, suggesting a multi-equation estimation. Second, many of the variables are non-stationary, suggesting an estimation in first (or higher) differences. Finally, the variables may be cointegrated, suggesting the inclusion of the cointegration relationship as an additional regressor.

Our dataset covers the period 1996-2004 on a quarterly basis. While annual remittance data are available back to 1975, such a series would contain fewer observations and would more likely to contain structural breaks. As potential shock variables, the dataset includes what the literature usually refers to as macroeconomic determinants of remittances, namely real GDP and CPI in the receiving country, the exchange rate and a relative rate of return. Another common determinant, real GDP in the host country, is not available on a quarterly basis for the Persian Gulf States. It is proxied by the global oil price, which actually is of more immediate interest for this study.

The data used in the analysis are drawn from the IMF databases and the country's national statistics. Remittance (REM) data, in millions of United States dollars, are taken from various issues of the IMF *Balance of Payments Statistics*

Yearbook and comprise the line items workers' remittances, compensation of employees and capital transfers of migrants. Real GDP, in billions of Sri Lankan rupees at 1996 prices, is taken from the World Economic Outlook database. The relative rate of return (I), in percentage points, is calculated as the difference between Sri Lanka's interest rate on three-month fixed deposits and the LIBOR on three-month dollar deposits. The data on interest rates, the Colombo consumer price index (CPI), the rupee/dollar exchange rate (E) and the oil price (OIL) – a simple average of to United Kingdom Brent, Dubai and West Texas crude prices – all stem from the *International Financial Statistics Yearbook*. The data are in levels and not seasonally adjusted.

We first tested for the presence of unit roots in the macroeconomic time series, using the augmented Dickey Fuller test, and found that all series are integrated of order one. To determine the appropriate lag length, we started with a large number of lags and subsequently eliminated lags with insignificant coefficients. The choice of model, that is, whether to include an intercept or time trend, was based on the approach of Doldado and others (1990). In using this approach, one starts with the least restrictive of plausible models and then introduces restrictions until the null hypothesis of a unit root is rejected (if at all). As shown in table 1, the data series are found to be non-stationary in levels (have unit roots) and stationary in first differences. Hence, all series are integrated of order one.

Table 1. Augmented Dickey Fuller test for non-stationarity
(Sample: 1995Q1-2004Q4)

	Level			*First Difference*		
	t-ADF	*lags*	*model*	*t-ADF*	*lags*	*model*
Remittances	1.28	3	2	-5.34 ***	2	3
Real GDP	1.16	3	2	-13.28 ***	1	3
Consumer price index	0.84	0	2	-2.91 ***	0	3
Exchange rate	-0.25	1	2	-4.43 ***	0	2
Interest differential	-1.13	1	3	-2.66 ***	0	3
Oil price	1.57	0	3	-4.68 ***	0	3

Note: Model 1 includes trend and intercept; model 2 includes intercept, but no trend; and model 3 includes neither. *** denotes rejection at the 1 per cent level.

Next, we tested for the existence of a cointegration vector, following Johansen (1991), and found one cointegrating relationship. We used one lag to preserve sufficient degrees of freedom. Both the trace statistic and the eigenvalue

statistic confirmed the existence of a cointegration relationship between remittances, real GDP, oil prices, the exchange rate and the price level. No cointegration relationship was found between these variables and the rate of return. Over the long run, remittances move with the other macroeconomic variables based on the following cointegrating relationship (t-statistic in parentheses):

$$\underset{}{REM} = \underset{}{-467.83} \underset{(1.36)}{-1.40*OIL} + \underset{(10.18)}{4.33*GDP} \underset{(2.02)}{-3.54*E} + \underset{(1.27)}{1.62*CPI}.$$

Table 2. Cointegration test for remittances, GDP, consumer price index, exchange rate, oil price

Hypothesized number of cointegrating vector(s)	*Eigenvalue*	*Trace statistic*	*Maximum eigenvalue statistic*
None	0.751	86.684 ***	47.336 ***
At most 1	0.510	39.348	24.280
At most 2	0.216	15.069	8.287
At most 3	0.179	6.782	6.710
At most 4	0.002	0.072	0.072

*** Rejection at the 1 per cent level.

Over the long run, remittance receipts decline as oil prices soften, increase as the Sri Lankan economy grows, decline as the currency weakens (E increases) and increase as the domestic price level rises.

The estimation of the vector error correction model and the impulse response functions confirm the evidence presented in section II, namely that remittances respond to shocks in GDP, the exchange rate and oil prices. The estimates of the vector error correction model are presented in table 3. The impulse response functions (figure 4) illustrate how remittances react to one standard deviation shocks in the oil price, the exchange rate, domestic GDP and the price level before they are forced back onto their long-term path. The variables are ordered as listed, but other Cholesky orderings do not affect the qualitative results, with one exception. The response of remittances to a CPI shock is ambiguous and will be ignored henceforth.

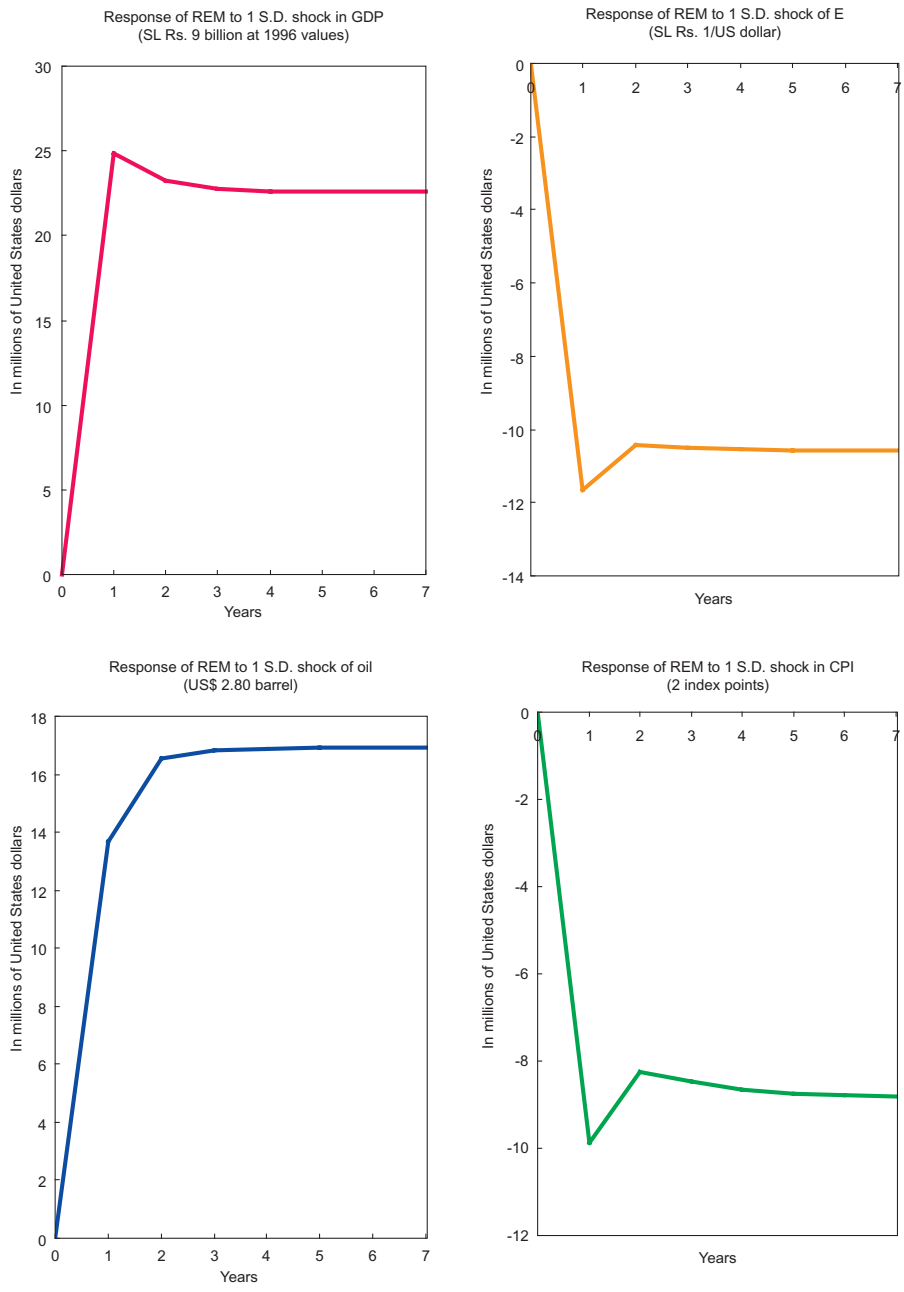
- *Remittances are procyclical:* remittances increase when economic activity in the home country accelerates and they decrease when economic conditions deteriorate, an indication that investment considerations are at play. In particular, an increase in real GDP by 9 billion rupees at 1996 values (1 per cent) leads to an increase

Table 3. Vector error correction estimates

Error correction:	*D(REM)*	*D(OIL)*	*D(GDP)*	*D(E)*	*D(CPI)*
CointEq	-0.113534	0.00147	0.2779	-0.013458	-0.00704
	-0.11812	-0.01379	-0.045	-0.00502	-0.01008
	[-0.96120]	[0.10664]	[6.17586]	[-2.67999]	[-0.69852]
D(REM(-1))	-0.524285	-0.021412	-0.239286	0.003048	0.024349
	-0.1467	-0.01712	-0.05589	-0.00624	-0.01252
	[-3.57387]	[-1.25064]	[-4.28168]	[0.48871]	[1.94531]
D(OIL(-1))	1.689807	0.178597	0.767339	-0.050722	-0.160572
	-1.64257	-0.1917	-0.62575	-0.06983	-0.14015
	[1.02876]	[0.93166]	[1.22628]	[-0.72634]	[-1.14575]
D(GDP(-1))	0.652621	-0.027688	0.564161	-0.030071	0.04461
	-0.45764	-0.05341	-0.17434	-0.01946	-0.03905
	[1.42604]	[-0.51841]	[3.23594]	[-1.54554]	[1.14249]
D(E(-1))	-0.822238	0.169508	1.053604	0.356092	0.274836
	-3.87406	-0.45213	-1.47585	-0.1647	-0.33054
	[-0.21224]	[0.37491]	[0.71390]	[2.16204]	[0.83148]
D(CPI(-1))	1.367758	-0.267747	-1.864842	0.072443	0.264021
	-2.39355	-0.27934	-0.91184	-0.10176	-0.20422
	[0.57143]	[-0.95849]	[-2.04515]	[0.71190]	[1.29283]
C	4.080536	0.733863	4.372535	0.745378	0.966418
	-7.86056	-0.91738	-2.99453	-0.33418	-0.67067
	[0.51912]	[0.79996]	[1.46018]	[2.23044]	[1.44098]
R-squared	0.455445	0.108211	0.714078	0.427612	0.293689
Adj. R-squared	0.334433	-0.089965	0.65054	0.300415	0.136731
Sum sq. resids	15466.09	210.6545	2244.554	27.95403	112.5873
S.E. equation	23.93362	2.793209	9.117654	1.017514	2.042033
F-statistic	3.763627	0.546035	11.23856	3.361801	1.871134
Log likelihood	-152.2847	-79.24951	-119.4722	-44.91532	-68.59916
Akaike AIC	9.369686	5.0735	7.439543	3.053842	4.44701
Schwarz SC	9.683937	5.387751	7.753794	3.368093	4.76126
Mean dependent	4.324891	0.328922	1.702641	1.34059	2.013648
S.D. dependent	29.33678	2.675453	15.42355	1.216522	2.197808
Determinant resid covariance (dof adj.)		786646.3			
Determinant resid covariance		248429.8			
Log likelihood		-452.4091			
Akaike information criterion		28.96524			
Schwarz criterion		30.76096			

Note: Included observations (after adjustment): 34; standard errors in () and t-statistics in [ ].

Figure 4. Sri Lanka: impulse response functions



in remittances by $25 million (2 per cent). This suggests that remittances respond to investment opportunities and the business and political climate in the home country as much as to altruistic and insurance considerations. It also implies that remittance flows may not be as important to smooth fluctuations or shocks in the economy as commonly believed.

- *Remittances fall when the exchange rate weakens:* a 1 per cent depreciation of the rupee against the dollar leads to a $10 million to $12 million (0.8 per cent) reduction in remittances. Depreciation of the rupee reduces remittances, as migrants may be able to purchase the same basket of good with fewer dollars.

- *Remittances increase with oil prices:* an oil price increase of $2.80 per barrel increases remittances by $14 million (1 per cent) in the first year and another $3 million in subsequent years. In the case of Sri Lanka, oil prices may be a good proxy for the economic activity in its migrants' host countries. This result suggests that greater economic activity in the host country increases the chances of employment and wages, enabling migrants to send more remittances.

IV. CONCLUSION

Remittance receipts seem to be procyclical in Sri Lanka, undermining their usefulness as a shock absorber. This paper explored to what extent Sri Lanka's large receipts of workers' remittances serve as a hedge against macroeconomic shocks. Both descriptive evidence and econometric analysis show that workers' remittances are positively correlated with real GDP, undermining their usefulness as a shock absorber. Moreover, the paper finds strong evidence that remittance receipts decline when the currency weakens and, hence, provide little insurance against a balance of payment crisis.

However, remittances are positively correlated with oil prices, offering a hedge against oil shocks. This is particularly important in Sri Lanka, since oil imports account for more than 20 per cent of total imports. During the most recent oil shock, robust growth in remittance flows has contributed to the financing of the current account, strengthened the balance of payments and accumulated reserves.

The pro-cyclicality of the remittances calls into question the notion that remittances are motivated largely by altruism. At the same time – and in line with earlier research – we fail to confirm portfolio considerations as a prime motive, since no positive link is established between remittances and relative rates of return.

The results suggest that, while remittances should be encouraged, they should not be seen as a panacea. Remittances can yield important economic benefits for Sri Lanka, providing financing and supporting consumption and investment. They can also play an important role in the regional development of the country and in reducing vulnerability to oil shocks. On the other hand, they may be of limited value in absorbing shocks to the macroeconomic fundamentals (GDP and exchange rate). While it is important to continue facilitating remittance inflows with policies directed at reducing transaction costs, promoting financial sector development and improving the business climate, remittances should not be seen as a substitute for government policy and structural reform.

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LABOUR-MARKET ISSUES UNDER TRADE LIBERALIZATION: IMPLICATIONS FOR THAI WORKERS

*Piriya Pholphirul**

This paper analyses the impact of trade liberalization on the labour market in Thailand. The impacts on wages, employment, gender roles, labour standards and protection, human development and unionization are investigated. Such impacts vary among different sectors and in different aspects. The negative impact on workers, compared with other stakeholders, is shown to be a major concern. Workers are shown to have bad working conditions and low levels of protection and bargaining power. Since a more competitive atmosphere resulting from freer trade forces businesses to adjust their working environment, those businesses have to consider upgrading their human resources, which will thereafter help those businesses to make cost-effective adjustments and enhance the working conditions of labour. In order to cope with the international standards resulting from trade liberalization, the labour protection law of Thailand should be amended to include workers in the informal sector, such as home workers, part-time workers, subcontracted workers and temporary workers. In addition, the labour protection law should be linked to the development of skills and work safety.

I. INTRODUCTION

In the last few decades, most developing countries have been living in a world characterized by the conjucation of three factors, namely globalization, rapid technical change and intense competition. An analysis of the current economic situation starts with globalization; it then considers technical changes and competitiveness as they relate to the decisions of policymakers. Globalization has given rise to concerns about its impacts and about the effects of the mobility of

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capital on inequality, in particular about how globalization affects both capital and labour. Workers are concerned about their incomes and job security: in other words, with the consequences of globalization and how much bargaining power labour has. Workers are greatly exposed to the uncertainties that may come along with globalization, and they are particularly fearful of "immiserisation" and the possibility of unemployment. The main difference between the current era of globalization and earlier times is that, previously, both labour and capital were equally mobile, whereas now, financial capital is more mobile while labour is remarkably less mobile.[1] Diwan (2001, 2002) argued that there are two implications of globalization affecting capital and labour. First, the burden-sharing of negative shocks between labour and capital is most likely unequal, and labour ends up bearing a larger burden. On the other hand, if globalization benefits certain sectors, labour benefits less in comparison. Second, in a world of greater mobility of both financial and physical capital, labour for each country will have to compete harder to attract capital, leading to lower wages.[2] Currently, the existing degree of globalization is driven more by the opening of trade and investment of the respective country. Detailed studies of trade liberalization are needed in order to investigate those implications linked to production factors in the market.

Also, in Thailand trade globalization or trade openness brought about by trade liberalization has created both benefits and costs for the Thai economy, both changes and responsive reactions and both wider choices and social tensions. It is possible that trade will produce a positive net gain on overall welfare, but it may not be realized unless domestic structural adjustment takes place. As Thailand has an abundant labour force, its labour force should gain from higher demand for labour-intensive products owing to greater trade liberalization. However, its impact on income distribution is a cause for concern. To start thinking about the impacts of trade on labour, the following theoretical approaches in trade can be used:

[1] Physical capital is also much less mobile and cannot credibly threaten to flee abroad easily. Thus, when we speak of the mobility of capital we mean the mobility of financial capital, while the international movement of physical capital would be related to the role of foreign direct investment or investment in the real sectors (Felipe and Sipin, 2004).

[2] However, this argument has been given less credence since a number of studies explain the behaviour of capital inflow as caused mainly by the productivity and economic performance of the countries involved.

(a) the Heckscher-Ohlin theorem (H-O),[3] (b) the Stolper-Samuelson theory (S-S)[4] and (c) the Rybczynski theory.[5]

For a number of reasons, the relationship between trade liberalization and its implications for labour in Thailand cannot be explained by using theoretical predictions alone. First of all, Thailand has gone through structural adjustments including the adoption of unprecedented economic reforms involving trade liberalization, privatization of State-owned enterprises and deregulation of the financial and capital markets, all of which have caused fast and deep changes in the Thai economy. Second, what the country did in the past was to launch a policy of promoting import substitution, which had been followed since the 1960s, and determined how its resources were used. Consequently, the remuneration of productive factors and the rate of investment were influenced directly by the orientation of the country's industrial and trade policies. Moreover, the allocation of resources is sensitive to the structure of protection. As a result, the allocation of labour, including the return on wages, may differ.[6] Third, because Thailand, as well as many other developing countries, has received large amounts of foreign direct investment (FDI), the country tends to rely on foreign technologies by importing them from developed countries, such as Japan, the United States, and those in Europe, rather than create its own technologies.

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[3] The H-O theorem states that, for a country that has a comparative advantage in the production of goods that involve intensive but abundant labour, a relatively cheaper price should result. Thus, countries in which the labour supply is relatively abundant, especially various developing countries including Thailand, should specialize in the production of labour-intensive goods and vice-versa for countries whose capital supply or capital stock is relatively large (e.g. developed countries).

[4] The S-S theorem was the first theoretical formulation to explain the effects of free trade on income distribution among production factors. The basic result of the S-S theorem is that protectionism increases the returns to a scarce production factor, such as labour in developed countries and capital in developing countries. On the contrary, trade liberalization should increase labour wages in developing countries and improve income inequality where labour is abundant. The opposite is expected to result in developed countries due to capital abundance. In cases when a country faces a policy of trade liberalization, inverse results would be observed. The return to capital falls by a larger proportion than the price reduction of the imported good, at the same time that the return to labour increases, since the country specializes in the production of good A.

[5] The Rybczynski theory claims that, with the production with labour-intensive goods, the growth of labour employment should increase, thus creating more jobs. Therefore, given this theoretical prediction, had Thailand become involved in trade liberalization and produced more labour-intensive goods, the overall wage earnings and numbers of workers employed would have increased.

[6] Krueger (1998) argued that such a policy can distort relative prices by moving resources away from activities in which the country has comparative advantages and by causing more production of goods of lesser quality but at a higher price.

Nonetheless, how trade liberalization affects the different production sectors depends on a number of factors, for example the factor intensity of production (i.e. whether it is capital-intensive or labour-intensive), status of the technology used (i.e. whether it is up to date or not) and structural changes within the industries. However, a number of studies have analysed the impacts of trade liberalization on labour markets, such as job creation or job loss. Studies on the effects of international trade exposure to job creation often focus on the effects at the aggregate level of employment and production, without distinguishing among part-time, full-time and overtime employment. More desegregated studies of trade liberalization's effect on wages, skill premiums, unemployment, job security and gender inequality have, however, received less consideration. The intention of this paper is to explain the conceptual linkages of trade liberalization, such as the ASEAN Free Trade Area and other forms of liberalization, on various labour-market outcomes in Thailand. It starts with an examination of the general issues of wage earnings and the share of employment before covering labour standards and protection, the flow of labour through migration, human development, gender issues and unionization. Also carried out were tripartite interviews with employers, employees and government officials in order to obtain more information about the linkages. In the end, we discuss various policy implications of trade liberalization on labour issues in Thailand.

Table 1. Labour force by industry

	1995	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*
	(Thousands)							
Total labour force	32 750	32 603	33 194	33 254	33 106	33 849	34 526	35 029
Economically active population	32 702	32 442	33 090	33 177	32 969	33 690	34 418	34 938
Employed	32 339	32 093	32 797	32 047	31 991	32 882	33 523	34 322
Breakdown by sector:								
Agriculture	16 748	16 030	16 464	16 387	15 487	16 021	15 451	15 843
Manufacturing and mining	4 409	4 368	4 316	4 225	4 436	4 813	4 787	5 080
Construction	1 843	2 162	2 004	1 282	1 285	1 277	1 408	1 620
Utilities	168	143	177	178	158	172	101	96
Commerce	4 075	4 348	4 557	4 467	4 745	4 798	5 432	5 510
Transportation	987	956	974	925	990	951	977	964
Services	4 109	4 086	4 305	4 583	4 889	4 850	5 366	5 209

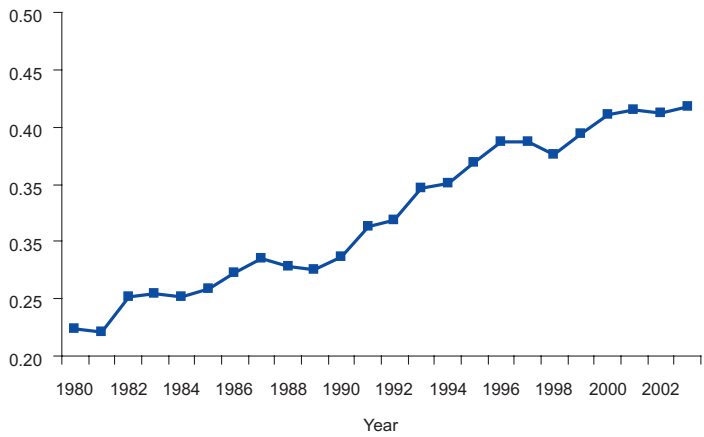
Source: Thailand's Labour Force Survey

II. TRADE LIBERALIZATION AND WAGES AND THE EMPLOYMENT OF THAI WORKERS

Theoretical support for this study comes from the views of labour economists. This study takes, as a starting point, a model similar to the H-O framework, in which trade liberalization should shift labour demand towards the factor with which an economy is relatively more endowed. In an economy that has liberalized trade, domestic producers and exporters often find themselves in imperfectly competitive market structures, such as oligopolistic and monopolistic competition. Hence, the fiercer competition due to trade liberalization in an imperfectly competitive product market opens up scope for bargaining in labour markets. The bargaining situation as a result of market imperfections varies among different types of workers.

Similar to the labour markets in many other developing countries, the Thai labour market consists of a large proportion of workers who are non-wage employees and who work in the informal sector. Non-wage workers are classified as (a) own-account workers and (b) unpaid family workers, who accounted for, respectively, about 32.7 per cent and 25.5 per cent of total employment in 2003. The sum of those two groups is the ratio of workers in the informal sector to total employment. These workers might be considered by the Labour Force Survey as non-wage workers; who include those who work in an enterprise that typically operates on a small scale with a low level of organization.

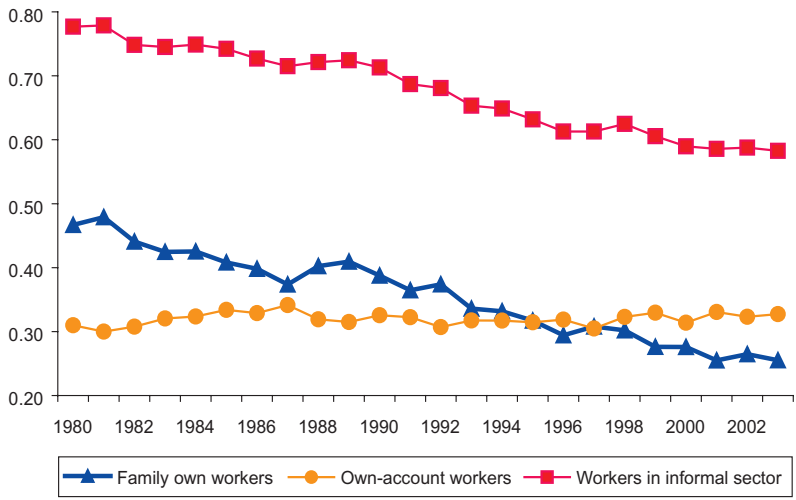
Figure 1. Share of wage and salaried workers (workers in formal sector) to total employment



Source: Author's calculation based on data collected from Thailand's Labour Force Survey.

During the period studied, the shares of workers in the informal sector dropped significantly, from 77.8 per cent in 1980 to 58.2 per cent in 2003. The share of own-account workers was found to be quite constant, about 32 per cent, during the period studied, while the share of unpaid family workers has been dropping substantially from 46.7 per cent in 1980 to 25.5 per cent in 2003. Therefore, this pattern means that the declining share of unpaid family workers is causing a decrease in the share of informal workers. Why did the share of unpaid family workers decline? It did so because the majority of unpaid family workers in Thailand are in the agricultural sector. Over time, a large number of these workers moved to formal sectors, especially to small and medium-sized enterprises.[7] The seasonal pattern of the number of workers in the formal sector is determined mainly by the seasonal mobility of labourers in private enterprises. Nevertheless, the seasonal movement of workers between the formal sector and the informal sector is also apparent, especially in the agricultural sector.[8]

Figure 2. Share of own-account workers, share of family own workers and share of workers in the informal sector to total employment



Source: Author's calculation based on data collected from Thailand's Labour Force Survey.

[7] Approximately 85 per cent of unpaid family workers are in the agricultural sector, followed by those employed in the commercial sector and in the service sector.

[8] Regarding the Labour Force Survey, the majority of unskilled workers move from the formal sectors to the informal sector, especially during the curvature period in the agricultural sector (i.e. the third quarter of the year). Approximately 68.8 per cent of unpaid family workers are female; they were found to have more seasonal (by quarter) movement compared with male workers.

By applying this percentage share of labour to the total employment series using the national account, the real wage rate of workers can be calculated using the definition of labour share, corresponding to two categories of workers: those in the formal sector and those in the informal sector. The real wage rate of workers in the formal sector (wage and salaried workers) is calculated as the product of the raw labour share multiplied by the nominal GDP at factor cost divided by the number of workers in the formal sector (wage and salaried workers), after which the wages are adjusted using the 1988 GDP deflator.[9] The most significant feature of this series is its substantial increase during the boom decade, namely from 47,928 baht in 1986 to the maximum of 75,483 baht in 1996, and its slight drop during the period following the 1997 financial crisis to 73,328 baht in 2003. Consistent with the rapid growth of the Thai economy, the real wage rate of salaried workers increased substantially during the boom decade from the late 1980s to the late 1990s. The wage rate in 2003 was about 57 per cent higher than what it was in 1980. During the above-mentioned crisis, the real wage rate of workers in the formal sector was found to be quite stagnant. It was consistent with the situation existing in Thailand; many corporations decided not to immediately lower their employees' wages, but rather to choose other options.[10]

Figure 3 also illustrates the real wage rate of workers in the informal sector. Similar to what we computed for wage and salaried workers, the real wage rate of informal workers is calculated as the difference between the adjusted labour share and the raw labour share, multiplied by the real GDP at factor cost (in 1988 prices), divided by the number of workers employed in the informal sector (own-account workers plus unpaid family workers). Unlike those in the formal sectors, the computed wages of workers in the informal sector increased slightly during the boom decade from 26,169 baht in 1987 to 28,874 baht in 1998. However, it significantly increased to 40,092 baht in 2003. The sharp increase in real wages in the informal sector, from 28,874 baht in 1998 to 37,106 baht in 1999, was due to a sharp increase in the share of income from unincorporated enterprises during the crisis period.

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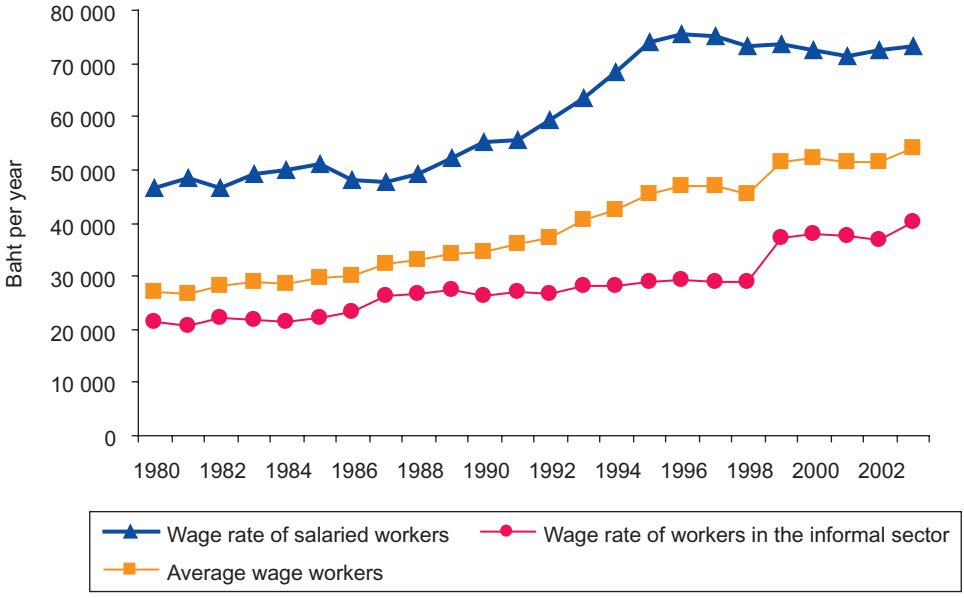
[9] The Labour Force Survey also provides the monthly wages of those workers in the formal sector. Nevertheless, computing real wages from the account identity also introduces another approximation. Comparing the series to the minimum wages in each period, wages computed from the national account seem to be reliable, since those computed wages are slightly higher than the minimum wages (see Pholphirul, 2005).

[10] Those options included, for example encouraging executives and high-level managers to retire early, with hefty compensation, cutting the bonuses and other fringe benefits that were normally given to the employees, or saving on other expenditures, such as the cost of transportation, advertising and production.

Figure 3. Real wage rates: salaried workers, workers in the informal sector and the average wage workers



Source: Author's calculations based on data collected from Thailand's Labour Force Survey.

On average, the real wages of salaried employees or workers in the formal sector are about 2.2 times higher than those of workers in the informal sector. The gap became larger when the boom decade started. In 1987, the real wages of workers in the formal sector were about 1.8 times higher than those of workers in the informal sector. In 1996, real wages of workers in the formal sector were about 2.6 times higher than those of workers in the informal sector. It sounds intuitive to say that the wage rates of salaried workers are higher than those of informal workers. Since the majority of informal workers are unpaid family workers, and about 85 per cent of such workers are employed in the agricultural sector, the wages of those workers are much lower than those of the workers in the manufacturing sector.[11]

[11] Even though some own-account workers, such as doctors and lawyers, might have higher earning than salaried employees, the share of those own-account workers is still low and relatively stable at approximately 30 per cent of total employment throughout the periods studied.

Furthermore, why did the wage gap between workers in the formal and informal sectors widen during the boom period? Again, since the majority of informal workers are in the agricultural sector, the wages of informal workers are determined by agricultural outputs, whereas the wages of formal workers are mainly from non-agricultural outputs. The gains from the boom were not equally shared among the sectors. Thailand's successful development strategy has been built mainly on the export of labour-intensive manufactured goods. The agricultural sector captured only a tiny gain from the investment boom. The wages offered in this most labour-intensive sector were not as competitive as those offered in other sectors. As a result, while industrial employment grew significantly during the export-led boom period, the share of workers in the agricultural sector declined.[12]

However, the influence of trade liberalization on employment and wages is still ambiguous and it varies by industry. Thus, more studies on market access are required. To many critical observers, international trade presents major threats to Thailand's job creation and job security, especially in the manufacturing sector. In the past, trade liberalization also facilitated the transfer of certain types of jobs to export-oriented production, which also varied in terms of several other characteristics of plants and industries. In many general cases, it has been found that the growth of net employment possibly increases in capital-intensive industries, especially for those employing skilled workers because in some capital-intensive industries human capital and physical capital tend to be complementary inputs into the production process. However, trade linearization might harm some sensitive sectors, and may adversely affect the job security and wage earnings of labourers.[13]

According to trade theories, people should prosper if they live in a society where free trade, free capital movement and free labour movement are practised. However, these theories may not be applicable under conditions of actual trade liberalization once political and labour concerns are involved. Politically, free trade may hurt some segments of the society; yet more and more countries have argued for the long-term benefits of free trade. In investigating the impacts of trade liberalization on Thailand's labour employment and wage earnings, account also needs to be taken of the differences among industries, depending on whether the

[12] The reasons for the decline are changes in domestic terms of trade from a decline in relative agricultural prices (known as Stolper-Samuelson effects) and unequal rates of factor endowment growth, which cause factors to migrate to sectors where their relative productivity is higher (Rybczynski effects). Both of these intersectoral effects have been observed to be important features of explanations for the relative decline of Thai agriculture over the boom period.

[13] Bhagwati and Vivek (1993) explain that the openness of trade may increase uncertainty about employment possibilitie and undermine job security. More general forms of human capital, as gauged, for example by skills, education, or occupation, need to be investigated.

sector is expected to gain or lose from trade liberalization. The losing industries often endure negative impact with regard to labour employment and wage earnings. Industries that benefit from trade liberalization caused by output expansion, however, may experience either positive or negative impacts on labour, depending on the rate of complementarity (or substitution) between the labour and the physical capital used. Output expansion from trade liberalization that causes producers to adopt and use physical capital, such as machines, and reduce the number of employed workers should therefore generate negative impacts on employment and wage earnings, and vice versa. In addition, the direction and the magnitude of the impacts also depend on the factor intensity of the industry.

III. TRADE LIBERALIZATION AND LABOUR PROTECTION AND LABOUR STANDARDS OF THAI WORKERS

Trade liberalization in Thailand no doubt undermines job security for Thai workers in some industries, but it also enhances job security for others. It also opens up new job opportunities for industries that have benefited from the free trade agreements into which the country has entered. Therefore, the social safety nets and other forms of labour protection in Thailand need to be crafted so as to address the negative effects of job losses from trade liberalization. As a member of the International Labour Organization (ILO), Thailand has tried to comply with ILO conventions related to the International Labour Standards. In 1975, in a period when democracy had begun to flourish, the first labour protection law was enacted. Currently, Thai workers are covered under the Labour Protection Act 2541 (1998). The Act protects workers, including women and child labourers, in terms of their basic rights, working hours, wages and other payments, holidays and leave, labour welfare, occupational safety, severance pay, and right to petition against unfair practices. In addition to the Labour Protection Act, the Labour Welfare Fund and the Minimum Wage Committee were also established to provide benefits for workers. In 2004, the unemployment insurance programme went into effect.[14] Nevertheless, adverse shocks to job security are still of great concern for those employed in the informal sector since such workers receive no social protection from employers

[14] Employees and employers contribute 5 per cent, and the Government contributes 2.75 per cent of insured earnings for benefits under the Social Security Act. Employers contribute 0.2-1 per cent of insured earnings for benefits extended under the Workmen's Compensation Act.

nor from the Government.[15] Our formal-informal distinction is therefore closely related to firm size. Workers in the formal sector are protected by the labour protection law and receive many kinds of social insurance. Nevertheless, those who wish to work in the formal sector face various entry barriers, such as having to have a high level of education, channels to job-related information and good networking skills.

Social protection, although provided to both formal and informal workers, is different in each case. Workers who receive full protection from society would be affected much less when problems with their jobs arise. Even though their job security is less owing to the impact of trade liberalization, insurance against the risk of being laid-off can minimize workers' difficulties. Labour protection mechanisms in Thailand have been in place for more than a century. As of 2003, the types of social security benefits provided to Thai people could be grouped into health care, disability, death, old-age and survivor's benefits, as well as child-allowance and child-education benefits. Unemployment insurance has been in place since 2004 to help those who have lost their jobs. People provided with different types of benefits can be classified into private employees in the non-agricultural sector, private school teachers, government employees, State-enterprise employees, private employees in the agricultural sector, self-employed workers, other work cohorts and people not in the labour force. Generally, all people, from both the formal and informal sectors, receive health-care benefits. However, only those employed in the formal sector receive additional benefits, for example disability, death and old age, child allowance and provident fund. Private school teachers do not receive survivor benefits, and private employees in the non-agricultural sector do not receive benefits for child education. These differences suggest that trade liberalization has affected workers in different sectors differently, thus initiating income inequality among various groups of workers. Workers in the formal sector, who receive the benefits from the labour-protection schemes, can be expected to receive more benefits from trade liberalization. On the other hand,

[15] Social protection programmes for private employees are administrated by a government organization, the Social Security Office (SSO), which controls two funds, the Social Security Fund (SSF) and the Workmen's Compensation Fund (WCF). The SSF was set up under the Social Security Act B.E. 2533 (1990), which is aimed at providing social security to people on a contributory basis. SSF provides a wider range of non-work related benefits. According to data provided by Thailand's Social Security Office, major proportions of SSF funds paid to workers are for sickness, maternity and child allowances. Social security paid out as unemployment insurance still remains low, about 30.6 million baht, compared with other expenses. In addition, social security payments in the categories of child allowance and old-age pension have been significantly increasing. Since unemployment insurance was just introduced in the year 2004, the provision rate must be raised, particularly for these categories. See Chandoevwit and Pholphirul (2003) for more details regarding the benefits provided by the Social Security Fund.

the adverse effects of trade openness on job security do seem to affect those workers employed in the informal sector, for which unemployment insurance and other forms of protection do not apply.

One of the greatest concerns of trade liberalization with regard to the security of jobs should be whether or not the employees affected are covered under unemployment insurance. According to the Social Security Act, unemployment insurance benefits are provided to insured persons based on the contributions from employees, employers and the Government. According to the Act, a maximum of 5 per cent from each contributor is applied. Thus, the Social Security Act insures on a voluntary basis the unemployed, the self-employed and other excluded people. The unemployed who previously had been insured (for at least 12 months) and who want to continue receiving benefits from the Social Security Office must pay a higher premium at their own expense. In general, the

Table 2. Benefit paid within categories of the social security system, 1991-2004

Year	*Benefits paid (Millions of baht)*							
	Illness	*Maternity*	*Death*	*Invalidity*	*Child allowance*	*Old age*	*Unemployment insurance*	*Total*
1991	753.2	3.7	16.9	–	–	–	–	773.7
1992	1 823.0	189.9	42.6	1.4	–	–	–	2 056.9
1993	2 136.4	326.9	60.7	120.4	–	–	–	2 644.4
1994	2 622.1	433.5	86.4	116.8	–	–	–	3 258.8
1995	2 912.3	1 072.6	187.0	311.0	–	–	–	4 482.8
1996	4 076.7	1 857.4	269.1	35.4	–	–	–	6 239.0
1997	5 295.0	4 382.0	514.0	54.0	–	–	–	10 245.0
1998	6 808.0	493.0	273.0	63.0	–	–	–	7 637.0
1999	5 565.0	1 545.0	459.0	83.0	23.0	1.0	–	7 676.0
2000	6 648.0	2 059.0	518.0	117.0	1 184.0	28.0	–	10 554.0
2001	7 792.0	1 527.0	399.0	92.0	1 336.0	77.0	–	11 223.0
2002	9 243.1	2 030.2	567.9	138.1	1 410.6	152.5	–	13 542.5
2003	11 904.0	226 841.0	682.0	156.0	1 905.0	340.0	–	17 358.0
2004	7 999.1	2 126.6	498.1	122.6	1 663.8	426.9	30.6	12 867.5

Source: Social Security Office.

Note: As of September 2004.

Table 3. Contribution rate under the social security system

Types of benefit	*Contribution rate (percentage of wages)*			
Illness, maternity, death and disability	*1991-1997*	*1998-2003*	*2004*	
Government	1.5	1.0	1.5	
Employers	1.5	1.0	1.5	
Employees	1.5	1.0	1.5	
Child allowance and old-age pension	*1991-1997*	*1998-1999*	*2000-2002*	*From 2003*
Government	–	1.0	1.0	1.0
Employers	–	1.0	2.0	3.0
Employees	–	1.0	2.0	3.0
Unemployment Insurance				*2004*
Government				0.25
Employers				0.50
Employees				0.50

Source: Social Security Office.

Note: As of September 2004; wages applied for all workers who receive 15,000 baht or more per month.

benefits package the Social Security Office provides to the self-employed and other excluded people (under Article 40) is less favourable compared with that of private employees.

In addition, the Workmen's Compensation Fund (WCF) is considered another form of labour protection. Under Article 33, WCF provides the benefits that insure persons who might have been injured or got ill as a result of their work. Benefit types include benefits for illness, disability and, in the case of death, benefits for one's survivors. However, it is financed solely by employer's contributions, which for the period 1992-1997 ranged between 0.2 and 2.0 per cent of the insured earnings of the companies concerned. Enterprises that have registered with WCF for four years but which have not reported any work-related accidents are entitled to a reduced contribution rate, which is set at a maximum of 80 per cent of the normal contribution rate. However, enterprises that have reported work-related injuries among their workers may see their contribution rates rise.

As of December 2003, 324,079 establishments and 7,434,237 persons had registered with the Social Security Office. There were 226,321 establishments and 804,672 persons respectively who employed or were employed by firms with fewer than 10 workers. There were 97,758 establishments and 6,629,565 persons

respectively who employed or were employed by firms employing 10 or more workers. Nonetheless, such jobs vary in terms of safety and the dangers that employees have to face. The table below shows that the majority of establishments and insured persons in 2003 were concentrated in the trade sector, followed by construction, metal products, the manufacture and assembly of vehicles, and transport and communications. However, the contribution of employers to WCF varies by industry, according to the degree of risk, that is, from 0.2 to 1.0 per cent of wages. The more risk that is faced by the workers, the higher are the contributions that employers need to provide to WCF. For example, the contributions to WCF for the textile and garment industries are between 0.2 and 1.0 per cent, while those from the automotive parts and components industry are 1.0 per cent, and those from the gems and jewellry industry only 0.2 per cent. Therefore, statistics based on the WCF provision and benefits might be used as a sufficient indicator of the working conditions of Thai labourers, in terms of exposure to risk. Even though workers in the formal sector receive benefits provided by both the social security system and WCF, the efficiency of programme fund management by the Government should be a matter of concern. Such concern should focus on budgeting sufficiency and the coverage of the insured workers. Thus, the negative shock of trade liberalization on private employees working in the formal sector should be milder compared with those in the informal sector since they are technically insured by some programme fund or another. Government and State-enterprise employees should experience the least negative impacts, in terms of job security, from the expansion of free trade.

However, social security and the social safety net set up to counter the possible negative effects of trade liberalization still leave gaps, even within the formal sector. The Labour Force Survey and administrative data show that in 2001 many employees were not covered by the social security system. About half the employees in the north-eastern region of the country and in the construction sector were excluded from the social security system; only 60 per cent of the employees working in firms with 10-99 employees were covered. Moreover, a special module of the Labour Force Survey in 1998 showed that approximately 95, 80 and 50 per cent of laid-off workers in firms with 1-9 employees, 10-99 employees and 100 and more employees respectively received no severance pay as called for under the Labour Protection Act. In addition, labour protection and safety nets for private employees are also administered inequitably with respect to the size of the firm and other criteria. In general, larger sizes of firms enjoy better protection than smaller firms. Those workers in the informal sector, such as those employed in agriculture or those employed in home-based industries, receive no social security and have no legal protection from the negative effects of free trade.

Table 4. Number of establishments and insured persons, by types of business, 2003

Code	*Industrial classification*	*Establishments (places)*	*Insured persons (number)*
100	Survey and mining	1 483	39 677
200	Food and beverage	10 938	650 687
300	Textiles and accessories	9 007	749 191
400	Forestry and wood products	4 838	219 810
500	Paper products and printing	5 863	166 454
600	Chemical products and petroleum	8 585	532 294
700	Non-metallic products	4 035	157 508
800	Manufacture of basic metal	5 854	105 619
900	Metal products	17 732	862 335
1000	Assembly of vehicles	16 270	299 003
1100	Other manufacturing industries	3 155	146 089
1200	Public utilities	1 051	30 954
1300	Construction	17 130	310 148
1400	Transport and communication	14 581	308 461
1500	Trade	98 503	1 104 156
1600	Other types of business	81 564	1 351 521
	Total	300 589	7 033 907

Source: Social Security Office.

Table 5. Injuries and degree of losses of workers in the whole country

Year	*Death*	*Permanent total disability*	*Permanent partial disability*	*Temporary disability more than 3 days*	*Temporary disability less than 3 days*	*Total*
	(Number of cases)					
2000	620	16	3 516	48 338	127 076	179 566
(%)	*(0.35)*	*(0.01)*	*(1.96)*	*(26.92)*	*(70.77)*	*(100)*
2001	606	20	3 510	48,077	137 407	189 620
(%)	*(0.32)*	*(0.01)*	*(1.85)*	*(25.35)*	*(72.46)*	*(100)*
2002	650	14	3 424	49 012	137 879	190 979
(%)	*(0.34)*	*(0.01)*	*(1.79)*	*(25.66)*	*(72.20)*	*(100)*
2003	787	17	3 821	52 364	153 684	210 673
(%)	*(0.37)*	*(0.01)*	*(1.81)*	*(24.86)*	*(72.95)*	*(100)*

Source: Social Security Office.

The impact of trade liberalization also varies according to the skills of the labourers and according to the labour sector. Although workers in the formal sector receive more benefits and suffer fewer adverse impacts, trade liberalization would nevertheless diminish job security for unskilled labour. Trade liberalization also leads to rising income gaps among labourers according to their skill type and level (e.g. among skilled, semi-skilled and unskilled labourers), especially those in labour-intensive industries, such as textiles and jewellry.

Higher demand for labour in the labour-intensive sectors as a result of trade liberalization is consistent with the positive trade impact of output growth in more globalized firms. Thereafter, benefits to those labourers accrue in the form of higher wages. Nevertheless, those wage benefits seem to vary according to differences in skill level. Skilled workers, especially those employed in the formal sector, receive more benefits from trade than do unskilled labourers. In addition, adverse impacts from trade on labourers are still ambiguous with regard to skilled and unskilled labourers. Firms that might have to face more competition might decide to employ fewer unskilled labourers and introduce new labour-saving machines and technology if there is a sufficiently high degree of substitution between capital and labour.[16] Nonetheless, many firms might decide to reduce the number of skilled workers in order to save a portion of the wages paid to those workers.

IV. TRADE LIBERALIZATION AND THAI FEMALE WORKERS

Issues related to globalization, international trade and gender have taken on new meaning and dimension since 1995, when multilateral trade agreements embodying the results of the Uruguay round were put into place. At this stage, assessments of the gender-differential impacts of the WTO agreements on employment were considered. In addition, lack of evidence in most developing countries on the gender-disaggregated composition of the labour force by sector and on the response of the labour force to economic reform limits any attempt at conducting a comprehensive analysis of this issue. Trade policies may have different consequences for women and men because women and men differ in their economic and social status. Gender analysis of trade policy focuses mainly on income and employment effects. Evidentially, the impacts of structural adjustments, especially in many developed countries, tend to be relatively disadvantageous for women compared with men. Basically, Thai economists and specialists examining the gender dimension of globalization have focused on structural adjustments associated with trade and international competition. A critical issue is that the benefits of

[16] The technical term used in international trade theory refers to the ability to substitute between machines and labour “factor-intensity reversal”.

trade liberalization that might lead to the expansion of export volumes should be differentiated not only between male and female workers, but also among groups of women themselves. Thai women have less access to resources and are also less likely to have job choices given their responsibilities for child care and pregnancy, and the constraints of education.

There are two basic premises for explaining the interaction of international trade and gender issues: (a) trade liberalization involves different costs and benefits for men and women and (b) the impact of trade liberalization is mediated by gender relations and gendered social, economic and political structures. These structures may be in the form of gender gaps in education and health, which result in different levels of wage earnings and labour-force participation. Many feminists argue that women are less likely than men to own or have access to resources. They are likely to be less mobile, given their responsibility for child care and other human resource requirements of the family and given the constraints of education and training that maybe required for new jobs. These disadvantages facing female workers may comprise barriers to the full employment of labour. The result is that women are channeled into areas of the informal sector where entry barriers and remuneration are lower.

The manner and the extent to which trade liberalization affects men and women differently are still less than obvious. During the period 1994-2002, even though females accounted for about 43.5 per cent of all employees, they accounted for a slightly smaller share (40 per cent) of the wages because more females than males are employed as unpaid family workers. Real wage rates for females average about 90 per cent of those for males in all sectors. Behrman and others (2000) explain this type of gender segregation by noting that the adverse impacts of the financial crisis that emerged in Thailand affected women more than men, especially in sectors such as construction, which was hit very hard and had a large majority of male workers. However, those sectors which had a major proportion of female workers, such as the textile and garment industry, also experienced a much larger percentage drop in the wages paid to females than to males and a larger percentage increase in the number of females underemployed. In addition, female labour supply was found to have been increasing in percentage terms more than that of males.

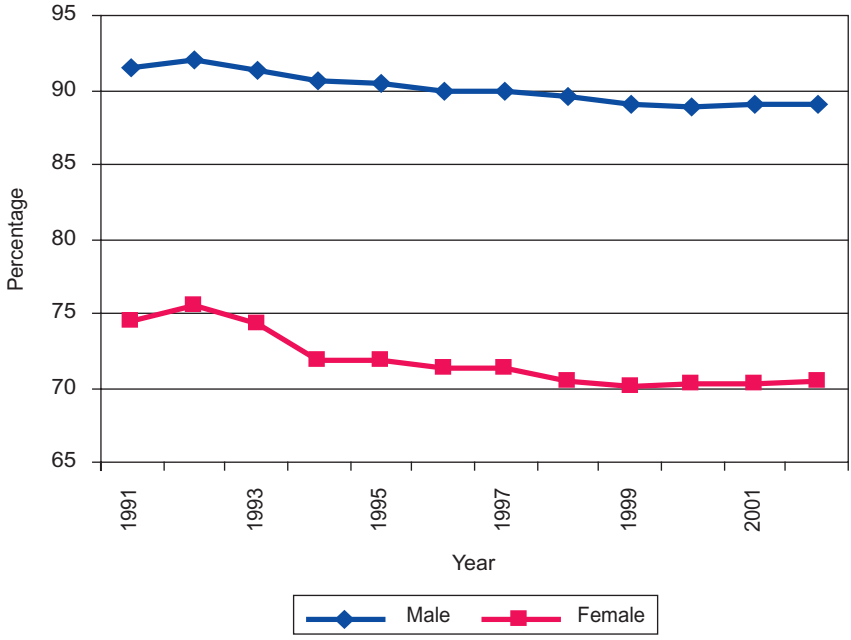
However, the trend in the proportions of males and females in the labour force shown in figure 4 present an overall picture of labourers in the market. Figure 4 shows that in 1994 male workers accounted for 54 per cent of the total labour force, or 17.7 million male workers out of 32 million workers. In 2002, male workers increased to 19.3 million, whereas the total labour force was 35 million. In addition, according to data from the Labour Force Survey, labour-force participation

Figure 4. Proportions of males and females in the labour force

Source: Author's calculation based on data collected from Thailand's Labour Force Survey.

rates for male workers are always higher than those of the female labour force. In 1991, the labour-force participation rates for male and female workers were 92 and 74 per cent respectively. In 2002, the male and female labour-force participation rates were 89 and 70 per cent respectively. The labour-force participation rate of female workers is usually high in the third quarter of any given year, which is the rainy season. Note that a classification of workers by skill and sex may exhibit a different trend from that of the overall labour-force participation rate of males and females. For example, the wage differential between male and female skilled workers should be less than that between male and female unskilled workers. Besides, higher-wage male workers slightly dominate the Thai labour market. Also, since on average female workers, not only in Thailand but also in many other developing countries, have less access to education than male workers, the link between free trade agreements and gender issues should be extended to consider those workers with different age and education levels. Ideally, AFTA and other trade liberalization agreements should take into consideration those female workers in industries in which unskilled female workers are the majority. However, since we still do not have very clear-cut data to conclude that females always receive fewer benefits than do males, each particular sector needs to be investigated.

Figure 5. Labour-force participation rates between males and females



Source: Author's calculation based on data collected from Thailand's Labour Force Survey.

V. TRADE LIBERALIZATION AND HUMAN DEVELOPMENT

Another positive impact of globalization on the labour market is the drive towards human capital development, especially for those industries in which skilled workers are required. The development of human capital will be an area of great importance for Thailand, with the advent of numerous free trade areas. Human capital must be developed for two obvious reasons: to produce good-quality products to satisfy increased demand and to remain competitive, once there is no more tariff protection. Trade liberalization therefore drives firms to enhance the competitiveness of their workers. The question that arises is who should bear the adjustment costs.

Under the existing circumstances, it is more likely that the Thai firms will have to bear their own adjustment costs. Under the current system of capitalism, increased competition will make it necessary for domestic producers to improve production efficiency. One rational way of achieving this goal is to lay off unproductive workers. This would serve to motivate workers to work harder and raise their productivity levels, which in turn would positively affect the human capital

accumulation of the country and industries overall. In addition, increasingly rigorous rules and regulations would force producers to acquire knowledge and seek new methods to improve the quality of their products in order to meet the requirements agreed upon in the trade liberalization frameworks (Leelawath and Suntavaruk, 2004).

Moreover, regional and bilateral free trade liberalization would create a higher demand for goods and services, for which individual countries have comparative advantages. As a result, the demand for knowledgeable workers in the production of these goods and services would rise and stimulate both the public and the private sectors to provide on-the-job training programmes for workers in order to enhance their production capacity. Since trade liberalization also promotes inflows for foreign direct investment into Thailand, multinational firms might need to use Thailand as a site for their offshore production facilities. An increase in foreign direct investment will result in an increase of both skilled and unskilled workers. Workers will be motivated to seek more education and training, which will raise their productivity levels and further enhance the level of human capital in the country. In addition, human capital accumulation can be accelerated through the knowledge and technological transfers that accompany foreign direct investment. Thai workers would acquire knowledge from the training programmes organized by transnational enterprises, and also through the process of learning-by-doing. Furthermore, regional and bilateral trade liberalization is likely to promote and strengthen cooperation in education through joint research projects and exchange programmes. Certainly, this would improve the quality of the education system in Thailand and would speed up the country's accumulation of human capital.

VI. TRADE LIBERALIZATION AND LABOUR MIGRATION IN THAILAND

Immigrant workers in Thailand include both skilled and unskilled workers. Skilled immigrants enter the Thai labour market legally. Approximately 70 per cent of them are professional managers and technicians and thus receive industrial promotional privileges extended by the Board of Investment. Thailand has a relatively large proportion of foreign skilled workers compared to other ASEAN countries as a consequence of a decades-long policy of adopting an FDI-based growth strategy. The Ministry of Labour of Thailand has indicated that there were nearly 60,000 skilled foreign workers in the country, the majority being from Japan (23.3 per cent), followed by the United Kingdom (8.8 per cent), India (8.8 per cent), China (7.8 per cent), the United States (7.0 per cent), Taiwan Province of China

Table 6. Number of foreign skilled workers in Thailand, 2002

Country/area	*Number*	*Occupation*	*Number*
Japan	13 675	Managers and executives	33 638
United Kingdom	5 148	Professionals	11 832
India	5 135	Technicians	3 775
China	4 593	Craftsmen	1 037
United States	4 099	Clerks	743
Taiwan Province of China	3 681	Plant/machine operators	426
Others	22 266	Others	7 146
Total	58 597	Total	58 597

Source: Department of Employment, Ministry of Labour.

(6.3 per cent) and others (38.0 per cent) (all approximate numbers). Positions filled are generally managers and executives, professionals, and technicians.

In addition, trade liberalization increases job opportunities not only for Thai workers, but also for international irregular migrant workers residing in Thailand. These are mostly unskilled immigrants working mostly in the informal sector; they generate high economic benefit but also social costs for the Thai economy. Thailand hosts foreign unskilled immigrants from neighbouring countries such as Myanmar (80 per cent), Cambodia (8 per cent), and the Lao People's Democratic Republic (7 per cent), many of whom are working and/or residing in Thailand illegally. As trade liberalization under AFTA becomes more effective, it is likely that intra-ASEAN trade will grow dramatically, not only in goods but also in services. The targeted priority areas of the trade in services include financial services, maritime transport, air transport, telecommunications, tourism, construction and business services. In addition, the appearance of small and medium-sized enterprises will definitely play a vital role in Thailand's economic development. Therefore, with free trade of both goods and services resulting from closer economic integration, the elimination of tariff and non-tariff barriers is expected not only to expand regional trade dramatically, but also to enhance the industrial competitiveness of ASEAN member countries in a cost-efficient way. One such way is to rely on foreign immigrants, who are paid lower wages than their Thai counterparts. However, labour migration is expected to generate one of the most salient social and political problems that Thailand will have to face. In the case of Thailand, labour migration today occurs mostly, for both legal and irregular migrants, as "cross-border" movement. Cross-border migration is often pictured as a threat to national security and a cause of many social problems in the country of destination. Such problems

arise from the causes of migration itself, namely unequal socio-economic development levels among countries and the arrival of job-seeking migrants from countries with lower per capita income (economic refugees), as well as disequilibrium in the demand for and supply of labour in the market. Once irregular migrants have arrived in the target country, there are other costs, for example the costs borne by public hospitals to care for them if they become ill. Whether justifiably or not, irregular migrants are also often blamed for rising crime rates. It is believed that the trend towards economic and trade liberalization and thus towards inward flows of population movement among the ASEAN countries will become an even more significant problem in the future. An inventory of the current problems and national policies to deal with them should also include a migration policy that would identify what role ASEAN could be expected to play.

Within AFTA, it is likely that some industries will prosper and grow and thus absorb some of the unemployed in their own countries, thereby reducing the number of migrants seeking job opportunities in other countries. As has occurred in Malaysia and Singapore, Thailand will possibly face a more serious shortage of skilled manpower in, for example, accounting, engineering, and information technology, with the prospects for growth as a result of economic liberalization. At the same time, the immigration to Thailand of unskilled workers from Thailand's neighbouring countries should also be expected to increase as demand grows, especially in labour-intensive industries, such as agriculture and fisheries, as well as in domestic employment (for gardeners, maids, nannies etc.). The "new" ASEAN member countries, which share borders with Thailand (Cambodia, the Lao People's Democratic Republic and Myanmar) will most likely contribute to the influx of illegal and unskilled labour in the future as AFTA schemes are fully implemented at the same level as they have been for the original six members of ASEAN.[17]

VII. TRADE LIBERALIZATION AND LABOUR UNIONIZATION IN THAILAND

Labour unions are an institution that can protect the workers' interests. By law, private enterprise and State-enterprise employees have the right to form labour unions under the Labour Relations Act 2518 (1975), which provides

[17] However, Thailand's policy towards illegal workers from its neighbouring countries has been ambivalent. Foreign workers are required to register and are allowed to work in selected occupations by resolutions of the Thai Cabinet. Most unskilled foreign workers are found mainly in agriculture (especially on rubber and sugarcane plantations and on fruit and vegetable farms), fisheries and fish processing, construction, manufacturing (especially in textiles and garment manufacturing) and housemaids. More detailed studies can be found in Martin (2004).

regulations for employers and employees wishing to form unions, associations and federations. Even though they were relatively strong before 1991, after 1991 State-enterprise employees were not allowed to form unions or allowed to go on strike under any circumstances, as prohibited under Article 19 of the State Enterprise Employee Relations Act 2534 (1991).[18] In contrast, private employees formed more labour unions between 1991 and 1996. Nevertheless, the number of unions actually decreased by 5 per cent in 1997, which was the year that the financial crisis started in Thailand. The Labour Force Survey showed that in the third quarter of 1998 only 2.9 per cent of wage earners in the private sector were members of a labour union, the lowest proportion compared with other Asian countries. In Malaysia, the Philippines and Republic of Korea, about 9, 11 and 11.2 per cent of the labour force respectively were members of a labour union in 1998. It can be surmised that the low rate of unionization in Thailand is one reason for the lack of labour protection. Collective bargaining has not played an important role in the Thai labour market. However, a problem of "free riders" has been generated as a result of unionization since current Thai law states that a negotiated work agreement applies to all workers in a factory, regardless of whether or not they are members of the union. The low numbers of aggregate union membership, therefore, understate the importance of Thai labour unions in influencing the "social dialogue" among labour, industry and government. (Behrman and others, 2000).[19]

Only 0.2 per cent of employees working in small establishments (fewer than 10 workers) reported belonging to a union. Even among medium-sized establishments (10-99 workers), union penetration was still very low, with only 2 per cent of workers being union members. Only among large establishments with 100 or more workers was the proportion of workers belonging to a union appreciably higher (about 14 per cent). Even within this group, less than two thirds, or 9 per cent, of all employees reported being union members. In addition, since unions are commonly found in large establishments, this means that there is a greater tendency for the better-off workers in Thailand to have access to and be members of labour unions.[20] Therefore, unionization does not protect these

[18] In 1990, there were 713 labour unions, of which 129 had been formed by State-enterprise employees. After the law was amended in 1991, State-enterprise employees could set up only 36 associations.

[19] Campbell (1999) estimated that the number of collective bargaining agreements was a better indicator of labour unions' influence. However, the number of collective bargaining units is much smaller than the number of labour unions in Thailand. As of December 1997, there were only 271 collective agreements in the country (Campbell, 1999).

[20] The Labour Force Survey data show that, while the rate of unionization among the highest-wage workers in the country, say those who make more than 15,000 baht per month, is about 9 per cent, that of low-wage workers (those who make less than 3,000 baht per month) is only 0.3 per cent.

low-wage workers from the effects of trade liberalization, even though workers in low-wage industries and in small and medium-sized enterprises (SMEs) are the ones most likely to need and benefit from collective bargaining.

However, the rate of unionization will likely increase in the near future since the State Enterprise Employees Relations Act of 2000 is now being enforced. According to the Act, a minimum 10 employees can initially set up a union. After the establishment of a union, the union members must comprise at least 25 per cent of the State-enterprise employees. In addition, the existing Thai labour unions continue to cooperate with other international labour unions and receive external support from international organizations to improve their position. External sources of funding from international organizations have been found to enhance the negotiating power of Thai labour unions when bargaining for better living standards and in dealing with issues brought about by globalization (Charoenloat and others, 2003). The data from the Ministry of Labour also show a significant increase in the number of labour disputes that were referred to the Central Labour Court since mid-1997, when the crisis began. It indicates that, since the financial crisis, there has been a greater awareness among workers of their rights and a greater willingness to take their disputes with employers to the labour courts.

VIII. QUALITATIVE ASSESSMENT

Quantitative assessment and analysis using secondary data alone may not provide strong enough arguments as to how AFTA or other trade liberalization agreements affect Thai labour. Thus, we conducted interviews with government officials, employer representatives and labour unions in August 2004. The detailed information from the in-depth interviews was useful in terms of providing valuable qualitative data to add to the analysis of the effects of trade liberalization. The interviewees were asked not only about their past experience with AFTA but also about their opinions on various aspects of the bilateral agreements to which Thailand will be partner in the future. Information regarding the impacts of trade liberalization on labour demand, income and labour standards in different sectors was extracted from the interviews. Policy recommendations on the adjustment needed in the Thai economy is discussed in the next section.

Generally, trade liberalization creates more linkages among markets and countries. Thailand seems to have become more involved in global trade and in the global economy since its export promotion policy was put into place, replacing the import substitution policy. Under trade liberalization, the manufacturers benefited most from increased growth in trade, compared with the agricultural sector, which grew at a much lower rate. As revealed in the interviews, both employers and

workers realize both the benefits and downside that come with trade liberalization, especially when it comes to facing more competition and having to improve the quality of their products in a cost-effective way.

In the view of the Government and policymakers, AFTA did not affect the Thai economy very much. However, the trade liberalization agreements that the country intends to sign in the future will have overall positive effects on the economy. Policymakers believe that, given the forces of globalization, free trade agreements cannot be avoided. The reduction of tariffs and other trade barriers should stimulate more competition among firms, which thereafter will help to reveal the real production potential of firms. Furthermore, integration will strengthen bargaining power with other non-member countries. The Thai Government is in the process of implementing FTA policies and promoting investment to integrate Thailand into the global economy. Firms also realize the necessity for Thailand to form trade liberalization. Awareness of more intense competition is now starting to grow in the private sector, which realizes that it must increase competitiveness by enhancing product quality in a cost-efficient way.

Nevertheless, many NGOs and labour unions are still not in favour of trade liberalization, since they know that benefits will accrue only to capitalists, producers and high-level government officials whose relatives own big businesses in Thailand. SMEs and businesses owned by people at the grass-roots level will have to be shut down. This will result in a worsening of the unemployment problem in Thailand since the majority of employment is provided by SMEs. On the other hand, firms that benefit from trade liberalization will be those that are relatively more capital-intensive in their production and so do not require many workers.

From the perspectives of the benefiting firms, the impact of the full implementation of AFTA on the Thai labour market does not concern them much since many believe that Thailand has a comparative advantage compared with other AFTA countries. Furthermore, the volume of intraregional trade between Thailand and other ASEAN countries is still quite low, so that the harm that AFTA might bring to Thailand's labour market is not considered to be significant. Therefore, the effects of AFTA on the Thai labour market are regarded as minimal. However, other trade liberalization agreements, both bilateral and multilateral, that are planned to be signed in the future are arousing greater concern. In terms of the effects on the labour market, the impact of trade liberalization should lead to greater demand for unskilled and semi-skilled labour in labour-intensive industries, such as textiles and jewellry industries, and greater demand of skilled labour in capital-intensive industries, such as vehicle parts and components. The higher demand for labour follows from the positive impact of trade on the increase in output, especially in globalized firms and export-oriented firms, more than in firms

that produce for the domestic market. Nonetheless, highly skilled workers and technicians will be able to demand more in Thai firms whose sales are dominated by the domestic market. This might suggest that the cheaper wages of skilled and semi-skilled workers compared with those in other countries are still an important factor in producing goods cost-effectively.

The impact of trade liberalization varies by sector. In the case of negative impacts, trade liberalization would hurt the job security of females, who tend to be less skilled than males, who tend to be more skilled. However, based on the experience of the 1997 financial crisis, if firms suffer negative shocks in output and reduce the cost of production by laying off some employees, the employers tend to implement the layoff by giving incentives to employees to volunteer to quit. The incentives could be in the form of a financial compensation package or temporary employment agreements. When the temporary employment term expires, the employers have the right to terminate the employment. However, there are more negative effects of trade liberalization on the informal sector than on the formal sector of the labour markets. This occurs because informal workers are not protected by the social security scheme; most are employed as temporary and subcontracted workers. By contrast, temporary and subcontracted workers, especially in the textile industry, may not receive higher compensation from freer trade. Nevertheless, it is argued that the firms that cannot compete in the global market may not shut down their operations immediately since an immediate shutdown would cause huge losses to such firms. Firms may instead produce new products by subcontracting with bigger firms that benefit from free trade or by subcontracting with multinational firms. Firms then might have to adapt to learn how to make the new products by using existing workers. In addition, when adversely affected by trade liberalization, firms may not lower the cost of production by reducing the benefits they give to labour because they realize that good benefits and a good working environment help to increase the productivity of employees.

Regarding working standards, firms need to improve safety and working conditions for the following reasons:

(a) To protect the good name of the firm in the eyes of the public;

(b) To avoid non-tariff barriers that might be imposed by clients from developed countries such as the United States, those in the European Union or Japan if a poor working environment exists;

(c) To keep down costs, since, in the formal sector at least, the cost of maintaining a safety programme in the workplace is considerably lower than the cost arising from illness, accidents and injuries;

(d) To improve productivity and develop human capital.

In terms of the Government's role, social safety nets, job security and better working conditions should be guaranteed and extended by improving social security programmes and increasing the Workmen's Compensation Fund. This should help to minimize losses and negative impacts from trade liberalization. Unemployment insurance under the social security scheme is thought to be the most important form of direct insurance for workers. Nonetheless, since the unemployment insurance programme covers only workers in the formal sector, the Government should consider extending the programme to include workers in the informal sector in the future. For human capital development, the Department of Labour Training should emphasize skill development for workers, which includes the promotion of labour skill standards. In terms of policies on trade liberalization, it helps to develop skills for workers in those sectors that enjoy a high demand for their products.[21] In the industries that are negatively affected by trade agreements, the Government is now establishing programmes to develop skills for unemployed workers in order to assist those workers to find new jobs, as well as to enter sectors that will benefit from trade liberalization. Social tensions would result, particularly, if labour and domestic industries lacked the capability to adjust themselves to fit a changing environment.

IX. POLICY IMPLICATIONS AND CONCLUSION

The impacts of AFTA and other prospects of trade liberalization discussed in this paper suggest the policy implications with regard to the adjustment of trade policy, industrial policy and labour-market policy. There are linkages among those three policy measures. Trade policy under liberalization causes the industries concerned to adjust themselves to meet the more competitive atmosphere in the global market. Industrial policy should help to enhance industrial competitiveness, which in turn is linked to adjustments in the labour markets. Since labourers are important for firms not only in terms of production costs, but also as an indication of a firm's productivity.

International trade policy

Thai economic policy follows the Government's "dual track" development approach to strengthening the domestic economy while also facilitating trade and investment. The aim is to further integrate itself into the global economy by

[21] Examples of the training activities are industrial sewer, ladies' dressmaker and embroidery using sewing machine training programmes. In the jewellry industry, training activities are currently conducted in Chanthaburi, Chiang Mai, and Ubon Ratchathani. In the auto parts industry, there are training activities on repainting cars, electrical wiring of vehicles and electrical arc welding.

increasing exports and developing a world-marketing network. Therefore, this approach involves proactively committing to voluntary trade liberalization within APEC and regional liberalization within ASEAN. The plan is to expand Thailand's bilateral trading arrangement with a number of countries such as the United States, Japan, Australia and New Zealand. Therefore, export promotion, including diversification of markets and the production of higher-valued goods, is a major thrust of Thailand's trade policy, which will guide future trade negotiations. In addition, Thailand generally can be said to have a liberalized foreign investment regime. Direct foreign investment is considered to be the key to stimulating the growth of the economy by encouraging investors from all sources to put their resources into Thailand. To this end, the tax structure and the tariff system have been restructured to remove hindrances to trade and investment, to improve customs procedures and to reduce production costs for enhancing the country's export capacity. In sum, trade policy must continually be reviewed in the face of changing global circumstances and evolving comparative advantages. Policymakers should continuously review each agreement for both consistency and efficiency. Trade policy should concern itself not only with the benefits and losses to Thailand's trade volume, but also with the measures of the gains/losses of firms, workers and consumers. Liberalization has to be pursued more carefully in the future to ensure that Thai workers reap benefits overall rather than incur losses by strengthening competitive industries in the context of trade openness.

Industrial policy

Thailand's international trade policy is aimed at maintaining and strengthening industrial policy to enhance the country's competitiveness, especially in the global market. Current Thai industrial development policies are concurrent with the Ninth National Economic and Social Development Plan, which is aimed at enhancing the well-being of the Thai people by increasing the productivity in all industrial sectors. The policy implications include also increases in production capacity and efficiency along with greater protection of Thai industries from the effects of trade liberalization and the various trading blocks that now exist. Since Thai small and medium-sized industries function as a major engine of economic development, the labour productivity in SMEs should be developed. First, SMEs should link with larger establishments in the form of supplier arrangements, the transfer of know-how and training. Second, productivity can be greatly increased by encouraging SMEs to invest in new equipment and model production facilities, especially those firms that have new business linkages with larger firms. Given the urgent need for Thailand to develop human capital and industrial skills, it is important to pursue training, either in individual firms or through taking advantage of the training capability of larger firms. Since traditional policy instruments, for example

local content requirements and investment performance requirements, are nowadays less relevant and more subject to the rules of globalization (e.g., WTO agreements), well-targeted incentives to support particular industries will be less likely. Investment should be more decentralized and extended to rural areas through the expansion of infrastructure networks and public utilities and the establishment of industrial estates and special zones, which offer incentives to encourage local employment. The private sector should also be encouraged to cooperate in this direction towards industrial development. Improved product quality and design are also necessary to enhance competitiveness, the development of labour skills and widen marketing channels, in line with industrial policies. Thailand's Ministry of Industry should play a more important role in providing policy and institutional support for technology development. Lastly, recent Thai industrial policy includes controls on pollution and measures to protect the environment and the ecological balance according to international standards. Briefly defined, the goal is to increase industrial productivity by 0.5-1.0 per cent within 3-5 years, as well as to prevent a rise in the current level of pollution.

Labour policy

With fiercer competition in global content, labour, which is absolutely the most important factor in industrial production, has been awarded new respect in labour policy. The governmental policies related to labour markets changed in this regard during the 1997 financial crisis. Particular attention was paid to minimum wages, severance pay, social security coverage, unionization, employment creation and public-sector employment. Since the time of that crisis, active employment and labour-market policies have been launched, as a result of job losses, wage reduction and the lack of social protection among workers. Those workers who face the greatest risk are, in general, female workers, younger workers, less skilled workers and workers in the informal sector, including part-time and subcontracted workers. In addition, the Government has started an employment-creation programme, an economic stimulus package consisting of expenditure measures, tax reductions and measures to lower energy prices. These kinds of measures are aimed at creating jobs and increasing income for those who had been severely affected by the crisis. Through its labour policy, Thailand tries to offer meaningful social protection to vulnerable workers. One way to do so is to ensure that employers comply with existing laws and employees are provided with better information about the ongoing changes in the labour market. Thai labour policies have been changed not only as part of the recovery process of the economy, but also as trade liberalization and globalization progress. Under the trade liberalization regime, each industry has to adjust itself and at the same time labour can be shifted to newly emerging industries. To cope with global competition, policymakers

need to improve their efforts at capacity-building in order to design offensive plans under rapidly changing circumstances. The Government should move further into the realm of economic affairs and should stress the increasing need for the authority to handle economic problems under a global trade agenda. The sectoral approach in targeting labour problems should be taken into consideration as different groups of workers and industries are affected differently by trade liberalization. Nevertheless, the Government should focus more on promotional schemes for strengthening understanding and fostering a cooperative attitude between employers and employees. This approach should help to resolve disputes between employers and employees.

In conclusion, since the working conditions in Thai firms are still considerably below standard, workplace safety should be improved. Various agencies, related technical centres, or the Government itself should establish rules and regulations to monitor the labour standards and to encourage more participation from the private sector. In this case, the role of research and labour standards must be promoted in order to meet the changes occurring in terms of economic development. The industrial relations law should be improved in such a way as to allow it to cope well with future trade liberalization. In addition, formal social protection and social safety net measures provided by the Government should be considered in order to cover workers who are likely to face negative impacts from liberalization. The Labour protection law should be amended to include the workers in the informal sector, including workers labouring under other types of employment contracts, such as home workers, part-time and subcontracted workers and temporary workers. This law should also be linked to skills development and worker safety. For the sake of long-term stability, improvement in skills and qualifications are critical to economic development and competitiveness, which are governed by the availability of qualified workers. The Thai Government already has a policy to extend compulsory education to secondary school. However, the training of engineers and technicians is still an urgent task, which is necessary to maintain high-technology operations. In higher education, the Government needs to assist universities in educating more engineers and by removing the ceiling on its coverage of school expenses. In sum, the Thai Government should be more alert to ongoing changes occurring under international trading schemes when prioritizing policies regarding labour markets. Special attention should be paid to capacity-building of domestic workers to enhance productivity and competitiveness and workers' protection with regard to different types of workers, especially unskilled and informal workers.

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ECONOMIC REFORMS AND THEIR IMPACT ON THE MANUFACTURING SECTOR: LESSONS FROM THE INDIAN EXPERIENCE

*Eckhard Siggel**

This paper analyses the impact of the Indian reforms of the early 1990s on exports and employment by using indicators of competitiveness and comparative advantage. These indicators are unit cost ratios, which differ by using domestic prices, international or export prices and shadow prices. They are broken down into cost components which show the sources of competitiveness or the lack of it, such as productivity or price and cost distortions. The changes in competitiveness following the reforms are then used to examine whether the export and employment performance of the manufacturing industries can be attributed to the reform-induced cost changes.

I. INTRODUCTION

The reforms of the Indian economic system in the early 1990s have been wide-ranging in terms of the policy areas and sectors targeted. In this paper we focus on the large-scale manufacturing sector as recorded by the Annual Survey of Industries (ASI). The policy areas that affect this sector most strongly, by creating incentives and disincentives, are the policies regulating imports and exports, the exchange rate and the interest rate, as well as changes in the regulatory framework directed towards industries. Unfortunately not all of these reform components can be quantified. Therefore, it is difficult to attribute unambiguously the changes in the growth of the value added, employment and exports to changes of specific policy variables. An attempt is made, however, to isolate some of the observable

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changes and to relate them statistically to the measurable changes in policy variables.

Our approach is to use the available quantitative evidence of changes in trade policy (rates of protection), in exchange rate policy (the real exchange rate) and in interest rate policy (the market and shadow rates of interest), together with output and cost data from ASI, during the study period (1987/88 to 1997/98), and to relate observable changes in competitiveness, comparative advantage, exports and other variables to the changes of these policy variables. The definition of the study period as well as the choice of manufacturing as representative of the modern sector were dictated by the availability of the data for the chosen method of analysis.

The paper enables one to draw lessons from India's experience with reforms that may be of interest to other late-reforming countries. Of particular interest may be India's gradualist approach to trade and financial liberalization, as well as the sequencing of internal and external reforms. Similar approaches have been chosen by several countries in the Asian and Pacific region.

The next section reviews the main reform components, focusing on industrial protection, the exchange rate and the cost of capital. The third section explains the method of analysis, in particular the measurement of competitiveness and comparative advantage. In the fourth section we discuss the changes in competitiveness and comparative advantage, using unit cost ratios, which are the core of the current approach. The export performance of industries and its determinants are examined in section five and the employment record of the sector in section six. The conclusion summarizes the study and offers some policy recommendations.

II. REFORM INCIDENCE: A VIEW FROM THE MANUFACTURING SECTOR

There is an ongoing debate in the literature (as well as in political circles) as to whether the recent acceleration of economic growth in India can be attributed to the reforms implemented in the pre-1991 era and if the reform movement as a whole actually started with those initial steps taken throughout the 1980s. Rodrik (2002) argued that tentative measures taken under the Rajiv Ghandi Government in the 1980s led to disproportionately high growth, while the reforms undertaken in and after 1991 had a far smaller impact with respect to GDP growth. Panagariya (2004) refuted this argument, arguing in favour of the 1990s reforms by stating: "Growth during the 1980s was fragile, highly variable from year to year, and unsustainable. In contrast, once the 1991 reforms took root, growth became less

variable and more sustainable with even a slight upward shift in the mean growth rate" (Panagariya, 2004, p. 5).

Panagariya went on to argue that, despite the limitations of the 1980s reforms in terms of their scope and vision, they differed markedly from the "isolated and sporadic" liberalization measures implemented throughout the 1960s and 1970s, and can therefore be seen as forerunners to more "systematic and systemic" reforms of the 1990s. In providing this argument, Panagariya drew on support from Ahluwalia (2002, p. 67), who stated that "while the growth record in the 1990s was only slightly better than that in the 1980s, the 1980s growth was unsustainable, fuelled by a build-up of external debt that culminated in the crisis of 1991".

Srinivasan and Tendulkar (2003) provided an export-oriented view of the reforms undertaken in the 1980s by stating that the increase in Indian exports over the 1980s reform era was due (mostly) to an exchange rate depreciation attributed more to exogenous forces than to "explicit policy reforms aimed at reducing the trade barrier".

We concentrate on the reforms undertaken in the aftermath of the 1991 crisis and their subsequent effects on the performance of the manufacturing sector. First, we provide evidence of the reform incidence as it affects the industrial sector. In the area of trade and industrial policies we present estimates of the nominal rates of protection, both from earlier studies and our own estimates, as well as their changes during the study period. Similar observations are then made about foreign exchange and interest rate policies.

Trade and industrial policy reforms

In the area of trade and industrial policies, the reforms included first the elimination of quantitative restrictions, which had formerly affected most industries. However, their elimination was not completed until 2001. This policy change meant that protection shifted entirely, albeit gradually, to import tariffs. The second important change was the reduction of the tariff rates and the resulting change in the structure of protection. Both policy interventions were accompanied by a host of other changes in the regulatory framework and in particular the industrial licensing regime.

Panagariya (2004) provided us with a more detailed perspective on the incidence of tariff reductions undertaken after the June 1991 crisis. According to the World Trade Organization (WTO) (1998), as surveyed by him, the import-weighted average tariff rate stood at 87 per cent throughout the 1990-1991 period, with the highest reaching 355 per cent. Tariff reform was undertaken through effective

reductions in the number of tariff bands and a consistent compression of the top tariff rate falling to 85 per cent in the 1993-1994 period, 50 per cent in the 1995-1996 period and finally 25 per cent in the 2003-2004 period.

As far as regulatory policies for the manufacturing sector are concerned, Panagariya (2004) outlined the effectiveness with which the July 1991 "Statement of Industrial Policy" sought to (and did) eliminate investment licensing and entry restrictions on companies under the purview of the Monopolies and Restrictive Trade Practices (MRTP) Act. Throughout the 1990s reform period and following the July 1991 "Statement of Industrial Policy", all investment licensing (irrespective of amount) was abolished across all sectors except 18 (outlined in annex II of the policy statement) which were later reduced to five, the public sector monopoly was limited to eight sectors (listed in annex I of the policy statement and selected according to security and strategic considerations), and pre-entry inspection of investment decisions of MRTP companies, along with provisions relating to mergers, takeovers and amalgamations, was repealed.

The level and structure of protection are of particular importance in the present study of competitiveness, since the unit cost ratios used for measuring competitiveness depend crucially on the difference between domestic and international prices. It is therefore important to establish whether the true nominal rates of protection (NRPs) are well approximated by the frequently used tariff-based NRPs.

In order to measure actual protection, i.e. the combined effect of the tariff, of quantitative restrictions, exemptions and other factors on prices, it would be necessary to compare the domestic ex-factory prices with the corresponding free-trade or border prices. This is a very difficult task and has been undertaken systematically only in a few countries and by a few Governments or expert agencies.[1] In an earlier version of this paper we had used the tariff-based NRPs and effective rates of protection (ERPs) from the National Council of Applied and Economic Research (1998), but after discussions with several Indian economists,[2] it was concluded that these rates considerably overstate the actual level of protection. The phenomenon known as "water in the tariff" is likely to result from factors such as exemptions and underinvoicing, as well as from domestic price competition. It has apparently grown in importance since the reforms of the early

[1] The World Bank has undertaken studies of nominal and effective rates of protection based on price controls in various countries in the 1970s and 1980s. One of the few countries, in which government agencies undertook such studies is Mexico (ten Kate, 1992).

[2] The advice of Dr. Goldar, Dr. Pradeep Agrawal and a referee in the dissemination seminar is gratefully acknowledged.

1990s. In order to get closer towards price-based NRPs, we have adopted, for 1987/88, the collection rates computed by Nouroz (2001). Collection rates are obtained by dividing the tariff revenue by the value of imports. They capture only exemptions, which are part of the "water in the tariff", but not the effects of smuggling and domestic price competition. They are not a perfect substitute for true and price-based rates of protection, but provide, in the presence of tariff redundancy, a somewhat more realistic measure of protection than the tariff-based rates. For 1997/98, the collection rates are replaced here by estimates based on the collection rates for 1987/88 and on a projection using Indian and international wholesale price indices. According to this procedure, even the collection rates for 1997/98 seem to overstate the margin between Indian and international industry prices, as Indian wholesale prices have increased less (annually by 8.7 per cent) than the corresponding international prices expressed in rupees (12.6 per cent), where most of the international price margin is attributable to the exchange rate (9.9 per cent). This was observed by comparing Indian industry wholesale prices with international (Canadian) industry wholesale prices. This procedure leads to NRP estimates for 1997/98 that are below the collection rates for 1997/98 and suggest that even in 1987/88 the collection rates may have overstated the true margin of Indian over international prices. The estimates adopted for the present study and shown in table 1 are the average between the wholesale price-based projections described above and the collection rates, after adjustment for the relative importance of exports.

Based on this approach, the following picture emerges of the structure of protection and its changes between 1987/88 and 1997/98. As table 1 shows, in comparing columns 3 and 6, the average protection (NRP) of manufacturing as a whole declined from 42 to 10 per cent. The standard deviation of NRPs was reduced from 0.26 to 0.10. The reduction of nominal protection was most dramatic for the chemical (-67 per cent); rubber, plastics, petrol and coal products (-59 per cent); wool and silk textiles (-49 per cent) and basic metal (-48 per cent) industries. Only one industry, beverages and tobacco products, experienced increasing protection, which was most likely the consequence of changes in the incidence of tariff exemptions.

Although it is common to measure the level of protection by tariff-based NRPs and ERPs, this is not a satisfactory approach when for various reasons the law of one price may not hold. Situations in which this happens are the aftermath of strong currency realignments, or when strong domestic competition makes the existing tariff structure redundant. In the case of the present study, it is of great importance to use realistic NRPs because they are an important input in the analysis of competitiveness and comparative advantage.

Table 1. Nominal rates of protection, 1987/88 and 1997/98

International Standard Industrial Classification code	*NRP 1987/88 tariff-based*	*NRP 1987/88 collection rate*	*NRP 1997/98 tariff-based*	*NRP 1997/98 collection rate*	*NRP 1997/98 wholesale price index-based*
20-21	1.1558	0.2998	0.3222	0.7605	0.0541
22	1.6390	0.0145	0.8950	0.5660	0.1637
23	1.2380	0.0320	0.3890	0.0090	0.0243
24	1.2177	0.5520	0.3720	0.1017	0.0585
25	1.2000	0.0900	0.4200	0.0250	0.0275
26	1.3880	0.2663	0.4140	0.3613	0.0286
27	1.1950	0.5930	0.3745	0.2950	0.2643
28	1.1630	0.2080	0.2390	0.0280	-0.0920
29	1.2980	0.2200	0.3580	-0.0305	-0.0429
30	1.1228	0.7603	0.2955	0.4878	0.1677
31	1.1892	0.8282	0.3166	0.3156	0.1549
32	1.1683	0.4743	0.4020	0.2397	0.1568
33	1.2325	0.6813	0.2870	0.2545	0.2068
34	1.1750	0.6660	0.2915	0.4750	0.2394
35-36	0.9432	0.5127	0.3008	0.2924	0.1647
37	0.8853	0.4777	0.3935	0.4690	0.1526
38	1.2050	0.5065	0.3335	0.3335	0.0434
Total	1.1355	0.4225	0.3507	0.2931	0.1043

Sources: In columns 2 to 5, the data are computed as simple averages from tables 4.1 and 4.4 in Nouroz, H. (2001). *Protection in Indian Manufacturing: An Empirical Study*, Macmillan, India. In column 6, the projection is based on column 3 and the wholesale price index from tables 119 and 125 in the Ministry of Industry, *Handbook of Industrial Statistics 1991*, Government of India, and tables 14 and 15, *Industrial Product Price Indices, Wholesale Trade*, Statistics Canada.

Note: NRP = nominal rates of protection.

Foreign exchange policy

Perhaps the most powerful policy instrument with regard to the incentive regime is the exchange rate. Countries adhering to a fixed exchange rate regime have a tendency to function with a misaligned exchange rate. Fixed exchange rates become misaligned when the fixed rate is not periodically adjusted to the differential between domestic and foreign rates of inflation. Trade liberalization often goes in tandem with liberalization of the exchange rate, which implies letting the price of foreign currencies be determined by supply and demand. The Indian reforms of 1991 and consecutive years also included such a re-alignment of the rupee.

The July 1991 reform package included a devaluation of the rupee by 22 per cent against the United States dollar, driving it from Rs. 21.2 to Rs. 25.8 per US$ 1. Following this devaluation, the Government introduced a dual-exchange rate system in February 1992, allowing importers to operate fully on the open foreign exchange market; exporters were authorized to sell 60 per cent of their foreign exchange at open market prices while the other 40 per cent was sold at the lower official price (Panagariya, 2004). Within one year the exchange rate was unified.

The degree of misalignment can be computed using the real exchange rate. In other words, rather than observing a shadow exchange rate and the divergence of the market rate from the shadow rate, one infers the degree of misalignment by observing domestic and foreign price changes, by computing the real exchange rate over time and by identifying a base year in which the misalignment was known to be minimal.

The shadow exchange rate and the implicit rate of currency overvaluation are estimated here using this method based on the real exchange rate. It is assumed that the year 1994, in which the exchange rate was unified and the rupee was made fully convertible on the trade account, was a year of minimal misalignment; it is taken as the benchmark year, in which the real exchange rate index equals 100. The real exchange rate depreciated from 35 to 48 per cent between 1987/88 and 1994, depending on which price index is chosen.[3] Based on the assumption of zero misalignment from 1994 onwards, an estimate of 40 per cent overvaluation is used for 1987/88 and zero overvaluation for 1997/98.

One could argue that this rate may overstate the real overvaluation because the exchange rate may have overshot its target in 1994 and may have been undervalued after several years of strong nominal depreciation. This is unlikely, however, because the rupee continued to depreciate slightly in real terms in 1995; it appreciated somewhat in 1996, but depreciated again in 1997 and 1998, returning to its benchmark value of 100 in 1998. The elimination of currency overvaluation implies that Indian industries became more competitive as a result of this aspect of external policy reform.

[3] Using wholesale prices, for which the inflation differential is largest, the real exchange rate depreciated by 32 per cent, while using the GDP deflator leads to real depreciation of 53 per cent. Using consumer prices, the real depreciation was 40 per cent. The exchange rate used in this calculation is the one of rupees per SDR, and the foreign price indices relate to the industrial country aggregate, as reported by IMF, *International Finance Statisics*, current issues.

The price of capital and foreign investment

One of the main targets of policy reform is the price of capital and the access to foreign capital markets. To the extent that the capital account is liberated, the price of capital is increasingly determined by international interest rates, such as LIBOR. Capital account liberalization is usually the last step in financial reforms. In the earlier stages of reform, the price of capital remains a domestic variable and tends to be influenced mainly by the state of the financial sector, the degree of financial repression and the interest rate policies of Governments.

India's reforms have included financial reforms, which have had the double effect of reducing the domestic cost of capital and opening the country to foreign capital inflows. The domestic price of capital is measured here by the lending rate, which was lowered from 16.5 per cent in 1987/88 to 13.8 per cent in 1997/98. The shadow price of capital is computed here as LIBOR adjusted for the inflation differential between India and countries in the Organisation for Economic Co-operation and Development. It remained fairly stable at about 11 per cent (11.5 per cent in 1987/88 and 11.3 per cent in 1997/98). Therefore, the interest rate premium paid by Indian investors has been reduced by 2.5 per cent; this reduction may be considered as an indicator of modest financial liberalization.

More important than the cost of capital, however, may be the influx of foreign investment, which also occurred under the reforms. Its potentially greater importance stems from the fact that it comes bundled with foreign technology whenever it is in the form of direct and long-term investment. In 1987/88 foreign direct investment was literally non-existent in India, but it started to flow in by 1991 and reached a total of about three billion dollars in 1997/98. Unfortunately, we have no information on the amount of foreign direct investment received by each industry in the manufacturing sector.

The 1991 reform package called for abolishing the 40 per cent threshold on foreign direct investment, and empowered the Reserve Bank of India to approve equity investments of up to 51 per cent in 34 industries through the development of an automatic approval concept (Panagariya, 2004).[4]

[4] A comprehensive list of the industries concerned is listed in annex 3 of the 24 July 1991 "Statement of Industrial Policy", Government of India.

III. METHOD OF ANALYSIS AND THE DATA USED

The reduction of protection observed during the study period has clearly had the effect of increasing competition from foreign imports, which must have induced firms to cut costs. Such cost reductions could have taken a number of forms: the shedding of redundant workers (to the extent possible under existing laws); adopting new production processes, which usually require new investments; and varying the composition and sources of intermediate inputs. Successful cost reductions should then result in greater competitiveness, both in the domestic market, vis-à-vis imports, and in export markets. Given the importance of competitiveness and comparative advantage in the process of adjustment to the reforms, the measurement of these attributes using three unit cost ratios is central in the present study. It is worth tracing the reform impact from its incidence in terms of protection to the changes in costs and further to the changes in export and employment performance.

The measurement of competitiveness

Competitiveness is measured here by three unit cost ratios developed and applied in several earlier studies (Siggel and Ssemogerere, 2004; Cockburn and others, 1999), including one on India in the 1980s (Siggel, 2001).[5] The first ratio, UCd, which we consider to be an indicator of domestic competitiveness, is the ratio of the total costs to the output value, both measured in domestic, possibly distorted, prices. Since unit costs differ from the domestic price only by excess profits, this indicator is simply a measure of profitability in the protected domestic market. It differs, however, slightly from the rate of return, because own capital enters into the unit costs with its opportunity costs at market prices.

The second unit cost ratio, UCx, is an indicator of export competitiveness. It divides the total costs at domestic prices by the free-trade value of output. This indicator assumes that the total output is destined for the export market, which in reality is rarely the case. Therefore, UCx tends to be significantly larger than 1 for many industries.

The third unit cost ratio, UCs, is an indicator of comparative advantage. It divides the total cost in shadow prices by the shadow value of output. The indicator is similar to the domestic resource cost (DRC) ratio, which is well known in the literature. UCs, however, measures full costs, whereas the DRC ratio, applied at the firm or industry level, uses the value added and thereby ignores the contribution

[5] The method is briefly explained in the annex.

of intermediate inputs to comparative advantage. The computation of the three indicators is further explained in the annex.

Data sources and limitations

While the data on protection originate from various sources, in particular Nouroz (2001), the revenue, cost and employment data are from ASI, supplemented by price and exchange rate data from the International Financial Statistics of IMF as well as the author's computations of shadow prices. The export data are taken from a World Bank data bank (Trade and Production Database, 3-digit level). Some commentators of the present study have cast doubt on the validity of the ASI data, arguing that the coverage of this data source is increasingly restrictive. That may be so, but we have no clear understanding of the magnitude of the potential inaccuracy. The most serious limitation in the present method of analysis, however, is the absence of price comparisons between Indian prices and international prices, as measured by true NRPs and discussed in section II.

IV. CHANGES IN COMPETITIVENESS AND COMPARATIVE ADVANTAGE

The changes in unit costs are reported here in the same order as the indicators were presented previously, i.e. with increasing dependence on assumptions. The first indicator, UCd, relies almost exclusively on the data published by ASI; only the opportunity cost of capital is added. The indicators UCx and UCs rely on additional assumptions about true protection and shadow prices. The indicator UCx is also used for decomposition into price and real cost effects. Finally, the analysis of distortions reveals the importance of existing obstacles to competitiveness.

Increased profitability

Under trade liberalization and globalization, industries are expected to become less profitable in the short run because their protective price margin on output shrinks and is usually more important than the one on traded intermediate inputs. However, when the reduction of import restrictions is accompanied by real currency depreciation, the combined outcome can be the opposite. This is the situation we observe in Indian manufacturing during the study period. The real depreciation of the exchange rate, which eliminated the substantial overvaluation of the 1980s, had the consequence of raising the price of tradable products, which counteracted the price-reducing effect of cutting the tariff. The unit cost ratio in terms of domestic prices (UCd) declined slightly from an average of 0.9919 in

1987/88 to 0.9842 in 1997/98. It must be remembered that this indicator essentially measures the profitability of industries but differs from the profit rate as it includes the opportunity cost of own capital within the cost of capital. The condition UCd <1 is equivalent to a profit rate exceeding the market interest rate.

Table 2 shows that the most profitable industry has been, and still is, the beverage and tobacco industry, followed by basic metals and machinery. This may be due to relatively high protection, but as shown later, for the beverages and tobacco industry, that cannot be the cause. The least profitable industry in 1987/88 was the basic metals industry, but it has dramatically reversed its position to become the second most profitable one in 1997/98. The cotton textile branch registered losses and was the least profitable industry in 1997/98. This may be the result of strong competition in export markets.

Table 2. Domestic competitiveness, measured as unit cost ratio in domestic prices (UCd), in Indian manufacturing industries

	Code	UCd		UCd	
		1987/88	Rank	1997/98	Rank
Food products	20-21	0.9793	8	0.9881	8
Beverages and tobacco	22	0.9225	1	0.8770	1
Cotton textiles	23	1.0209	12	1.0482	17
Wool and silk-based textiles	24	1.0123	11	1.0066	13
Jute and hemp textiles	25	1.0212	14	1.0021	10
Clothing industry	26	0.9520	5	0.9799	7
Wood products	27	0.9861	10	1.0367	16
Paper and printing	28	1.0430	16	1.0359	15
Leather products	29	0.9662	7	0.9749	6
Rubber, plastics, petroleum and coal	30	0.9417	2	0.9720	5
Chemicals	31	0.9819	9	1.0030	11
Non-metallic minerals	32	1.0266	15	1.0175	14
Basic metals	33	1.0644	17	0.9510	2
Metal products	34	0.9523	4	1.0056	12
Machinery	35-36	0.9642	6	0.9633	3
Transport equipment	37	1.0210	13	0.9973	9
Other manufacturing	38	0.9431	3	0.9675	4
Total	Total	0.9919		0.9842	

Export competitiveness

International or export competitiveness is interpreted here as the situation where full unit costs in terms of domestic prices are inferior to the prices on the international market. This condition is reflected by a unit cost ratio (UCx) inferior to 1, as this index divides the total unit cost in market prices by the border or free trade price. This indicator is shown in table 3, which also ranks the industries based on this indicator.

The UCx values in table 3 suggest that in the manufacturing sector as a whole export competitiveness has increased significantly, by about 40 per cent, but even in 1997/98 unit costs still exceeded free-trade prices by about 6 per cent, on average. Industries also have become more uniform in terms of export competitiveness, since the standard deviation has declined from 25.4 to 8.3 per cent. In spite of this gain in international competitiveness by 1997/98, in the majority of industries costs exceeded the value of output at global prices. This

Table 3. Export competitiveness measured by unit cost ratios and industry ranking

		UCx	*UCx*	*Rank*	*Rank*	*Rising/ declining rank*
		1987/88	*1997/98*	*1987/88*	*1997/98*	
20-21	Food products	1.2730	1.0207	7	3	R1
22	Beverage and tobacco	0.9359	0.7870	1	1	
23	Cotton textiles	1.0535	1.0460	2	7	D3
24	Wool, silk etc.	1.5711	1.1045	13	14	
25	Jute, hemp etc.	1.1131	0.9706	3	2	
26	Garments	1.2056	1.0237	5	5	
27	Wood products	1.5709	1.1729	12	17	D1
28	Paper, printing	1.2599	1.0646	6	9	
29	Leather products	1.1788	1.0216	4	4	
30	Rubber, plastic etc.	1.6576	1.0703	15	10	R2
31	Chemicals	1.7952	1.0895	17	12	R3
32	Non-metallic minerals	1.5135	1.0851	11	11	
33	Basic metals	1.7895	1.1211	16	16	
34	Metal products	1.5865	1.1082	14	15	
35-36	Machinery	1.4586	1.0487	9	8	
37	Transport equipment	1.5088	1.0932	10	13	D2
38	Other manufacturing	1.4208	1.0407	8	6	
	Standard deviation	0.254	0.083			
Total		1.4687	1.0624			

reflects the fact that the proportion of exports in the total output is still low in most industries and most industries still depend on protection in the domestic market.

The most export-competitive industries in 1997/98 were, aside from the beverages and tobacco products industry, the jute and hemp products, food products and leather products industries. The "rising stars" were the food products; rubber, plastics petroleum and coal products; and chemicals industries. Surprisingly, the garment industry ranks only fifth in terms of export competitiveness. This finding is not easily reconciled with the industry's export success. Possibly, the collection NRP overstates the actual domestic/foreign price differential, so that the computed international value of output is downward biased, implying an upward bias for the unit cost ratio.

Comparative advantage

The expected effect of the reforms on unit costs at shadow prices is complex and consists of the elements described below. First, some firms that cannot compete in the more open environment are likely to disappear. Those that survive must cut their costs by reducing inputs per unit of output. Both of these effects should lead to a reduction in unit costs.

Second, price adjustments are also likely to take place. Expanding industries are likely to increase their demand for intermediate inputs, capital and labour, which may lead to certain cost increases. With accelerating industrial growth, unit cost increases are possible; however, just which of the opposing effects dominates is not obvious *a priori*. Third, when the currency is overvalued the shadow prices of all tradable inputs and outputs exceed their market value so that the unit cost ratio at shadow prices tends to be low, as observed in 1987/88. When currency overvaluation vanishes, as we assume was the case in the early 1990s, the shadow value of the tradable output no longer exceeds its market value, so that the unit cost ratio at shadow prices tends to be higher. This effect of the devaluation of an overvalued currency on prices is well known and can, at least temporarily, lead to negative nominal rates of protection. Without price comparisons, however, and when tariff-based NRPs or collection rate-based NRPs are used, the unit cost ratios at shadow prices may easily overstate true unit costs and thereby understate comparative advantage.[6]

[6] This is demonstrated in a simple numerical example. Let UCd equal 1 in both periods (i.e. normal rate of return), let the currency be overvalued by 40 per cent in period 1 and well aligned in period 2, and let NRP be diminished from 40 per cent in period 1 to 10 per cent in period 2. The shadow value of output declines from 100 to 91, which leads to an increase in unit costs at shadow prices. This follows because the same effect on the cost side is much smaller than for the output value, as tradable inputs are only a fraction of total costs.

As table 4 suggests, the industry average of unit costs in terms of shadow prices has increased from 0.98 to 1.02 during the study period. At the surface, this means that the manufacturing industries on average would have lost some of their comparative cost advantage. The argument presented above, however, explains the phenomenon. The slight increase in the average unit cost ratio also hides the fact that several industries gained in terms of comparative advantage, such as garments (26), leather goods (29), chemicals (31), basic metals (33) and other manufactures (38). Declining industries in terms of comparative advantage seem to be wood products (27), metal products (34), rubber, plastics, petroleum and coal products (30), as well as non-metallic minerals (32).

The ranking of industries according to unit costs at shadow prices is similar to that of export competitiveness. This follows from the fact that in the absence of currency misalignment the two indicators are very similar. Their only difference lies in the shadow prices of unskilled labour and of capital, which does not strongly

Table 4. Comparative advantage and its change

		UCs	*UCs*	*Rank*	*Rank*	*Relative change (rising/ declining)*
		1987/88	*1997/98*	*1987/88*	*1997/98*	
20-21	Food products	0.9527	0.9904	9	4	
22	Beverage and tobacco	0.7294	1.0188	1	9	
23	Cotton textiles	0.9103	1.0038	3	6	
24	Wool, silk etc.	1.0352	1.0503	15	14	
25	Jute, hemp etc.	0.8136	0.9249	2	1	
26	Garments	1.0009	0.9735	11	2	R2
27	Wood products	0.9614	1.0897	10	17	D1
28	Paper, printing	0.9526	1.0366	8	13	
29	Leather products	1.0094	0.9803	13	3	R1
30	Rubber, plastic etc.	0.9359	1.0320	6	11	D3
31	Chemicals	1.0890	1.0358	16	12	
32	Non-metallic minerals	0.9355	1.0271	5	10	D4
33	Basic metals	1.1213	1.0170	17	8	R3
34	Metal products	0.9371	1.0566	7	15	D2
35-36	Machinery	0.9172	1.0090	4	7	
37	Transport equipment	1.0137	1.0646	14	16	
38	Other manufacturing	1.0029	0.9907	12	5	R4
Total		0.9786	1.0194			

affect the unit cost indicators. Industries with greatest comparative advantage are therefore jute and hemp products (25), garments (26), leather goods (29) and food products (20-21).

The changing structure of the manufacturing sector can be seen in table 5, where the relative size of each industry is shown in terms of value added and the changes in relative size (proportion of total sector value added) are identified by increasing or decreasing arrows. Although the growth rate of value added is most strongly correlated with UCd (-0.46), which is a measure of profitability, the correlation of value added growth rates with UCx (-0.34) and UCs (-0.26) also have the expected sign, indicating an expansion of export-competitive industries and a slight tendency for growth to favour those industries with a comparative advantage. The highest annual growth rates in terms of real value added were experienced by

Table 5. Value added and its change

		Value added	*Value added share*	*Value added*	*Value added share*	*change*
		1987/88	*1987/88*	*1997/98*	*1997/98*	
Food products	20-21	26 236.9	0.0903	1 335 856	0.0901	decrease
Beverage and tobacco	22	7 536.8	0.0259	429 800	0.0290	increase
Cotton textiles	23	18 994.2	0.0654	703 419	0.0474	decrease
Wool, silk etc.	24	11 398.3	0.0392	613 083	0.0413	increase
Jute, hemp etc.	25	3 072.5	0.0106	122 522	0.0083	decrease
Garments	26	3 918.2	0.0135	358 545	0.0242	increase
Wood products	27	1 408.8	0.0048	43 354	0.0029	decrease
Paper, printing	28	11 537.8	0.0397	432 819	0.0292	decrease
Leather products	29	2 198.1	0.0076	130 307	0.0088	increase
Rubber, plastic etc.	30	26 434.7	0.0910	2 744 686	0.1851	strong increase
Chemicals	31	47 234.4	0.1625	951 879	0.0642	strong decrease
Non-metallic minerals	32	15 378.6	0.0529	718 414	0.0484	decrease
Basic metals	33	33 813.5	0.1164	2 395 261	0.1615	increase
Metal products	34	8 289.4	0.0285	369 798	0.0249	decrease
Machinery	35-36	47 114.6	0.1621	2 052 908	0.1384	decrease
Transport equipment	37	22 284.6	0.0767	1 162 957	0.0784	increase
Other manufacturing	38	3 751.1	0.0129	263 129	0.0177	increase
Total		290 602.5	1.0000	14 828 737	1.0000	

the following industries: rubber, plastics, petroleum and coal products (19.8 per cent), garments (14.1 per cent), basic metals (11.8 per cent), leather products (11.3 per cent) and transport equipment (9.9 per cent). Chemicals and wood products on the other hand registered a slight decline in terms of real value added.

Distortion analysis

One of the advantages of the present method for measuring unit costs at three different levels, namely domestic prices, international prices and shadow prices, is the ability to isolate those cost effects that are attributable to policy-induced price distortions. The numerical difference between UCx and UCs, for instance, is the sum of all factors that influence total costs and which influence the output value at international prices. Since export competitiveness is measured here at costs that exclude import duties on intermediate inputs, assuming the duty draw-back available to exporters, this cost distortion is not part of the difference between UCx and UCs; it would raise the average UCx from 1.05 to 1.10. The difference between UCx and UCs, which is an average of 3.3 per cent for total manufacturing in 1997/98, has essentially two components: the cost of credit and the cost of labour. The cost of credit adds about 2.3 per cent on average to the unit cost at export prices. It is caused by the fact that the average lending rate (13.8 per cent) exceeds the shadow price of capital (11.3 per cent). In addition, the rate of interest actually paid by some industries substantially exceeds the average lending rate. In the area of labour payments the actual cost also exceeds the shadow cost of labour owing to a discrepancy between the wages of unskilled workers and their shadow wages, which are taken to correspond to informal-sector wages. This cost differential excludes the cost imposed by the rigidity of labour legislation, for which we have not found any data or estimates. Since the total of these cost differentials is positive (i.e. UCx > UCs), this means that in most industries export competitiveness is hampered by the distortions in the capital and labour costs.

Price effects versus real cost effects

The impact of various policy reforms on manufacturing unit costs can be analysed as a combination of two kinds of change, a price effect and a real cost effect. First, the elimination or reduction of price distortions can be seen as a direct and immediate consequence of the combined trade reform and currency realignment. This does not mean that prices adjust instantaneously, but for analytical purposes we assume that the price adjustment occurs in the short run. The cost adjustments by way of changing inputs per unit of output are less predictable and may take more time. They depend on entrepreneurial decisions, whereas the price effect measures the incidence of policy changes.

The lowering of trade barriers diminishes the prices of tradable output and inputs. On the other hand, currency depreciation raises the values of tradable outputs and inputs. The combined effect of trade liberalization and currency depreciation may be positive or negative, depending on whether the tariff reduction or the depreciation dominates. Inputs and costs are less affected than output because part of the input cost is non-traded (non-traded intermediate inputs and value-added). Therefore, the unit cost ratios, which divide total costs by output value, tend to rise as long as the reduction of the protection exceeds the effect of the real currency depreciation. The analysis of the data from Indian manufacturing during the period from 1987/88 to 1997/98 shows the opposite outcome: the policy impact on unit costs (price effect) has been a substantial decline, because the currency depreciation was stronger than the reduction of protection as measured by NRP. This is demonstrated in table 6.

Table 6. Price and real cost effects of trade liberalization plus currency depreciation on the unit cost ratio at export prices (UCx)

	UCx87/88	*UCx'*	*Price effect*	*UCx97/98*	*Real cost effect*
20-21	1.2730	0.9844	-0.2885	1.0207	0.0363
22	0.9359	1.0359	0.0999	0.7870	-0.2489
23	1.0535	0.9508	-0.1028	1.0460	0.0952
24	1.5711	1.0242	-0.5469	1.1045	0.0803
25	1.1131	0.8904	-0.2227	0.9706	0.0802
26	1.2056	0.9977	-0.2078	1.0237	0.0260
27	1.5709	1.1397	-0.4312	1.1729	0.0332
28	1.2599	0.8723	-0.3876	1.0646	0.1923
29	1.1788	0.9164	-0.2623	1.0216	0.1052
30	1.6576	1.0278	-0.6298	1.0703	0.0425
31	1.7952	1.1795	-0.6156	1.0895	-0.0900
32	1.5135	1.0584	-0.4551	1.0851	0.0267
33	1.7895	1.1985	-0.5911	1.1211	-0.0774
34	1.5865	1.1024	-0.4841	1.1082	0.0058
35-36	1.4586	1.0212	-0.4373	1.0487	0.0275
37	1.5088	1.1086	-0.4002	1.0932	-0.0154
38	1.4208	0.9763	-0.4445	1.0407	0.0644
Total	1.4687	1.0593	-0.4094	1.0624	0.0031

Abbreviations: UCx87 = costs per unit of export value in 1987/88; UCx' = unit cost ratio; and UCx97 = costs per unit of export value in 1997/98.

Table 6 shows the price and real cost effects at the level of costs per unit of export value (UCx). The unit cost ratios UCx' in the third column are based on the output and cost data for 1987/88 but the prices in 1997/98, i.e. after the policy changes had taken their full effect on prices but before the input and output quantities were adjusted. The price effect is computed as the difference between UCx' and UCx87/88 and the real cost effect is the difference between UCx97/98 and UCx'. For the total manufacturing sector the price effect on unit costs at international prices is a reduction of 41 per cent. This may be unexpected as trade liberalization is usually associated with shrinking profit margins due to increased competition in domestic markets. Here, however, we measure the impact in export markets, i.e. excluding tariff protection on the output side, and in the context of substantial currency depreciation. This means that the combined effect of currency realignment and trade liberalization has been to increase output prices more strongly than the manufacturing costs. It means that exporting was rendered more profitable by the combined impact of tariff cuts and currency depreciation.

The effect of cost-cutting on unit costs by way of input and output adjustments has been minimal on average for the manufacturing sector, as the last column in table 6 suggests. This result also can be explained in the same way as the price effect since it is computed as residual, i.e. by deducting the unit cost in 1997/98 from the UCx' value. To the extent that the price effect tends to be overstated, the real cost effect tends to be understated. The effect is not insignificant for single industries and its sign alternates. It is likely, however, that the present method of measuring the two effects overstates the price effect to the detriment of the real cost effect.

The real cost effect deserves further attention because it results from four different kinds of action. When redundant workers are dismissed, labour productivity increases. When capital equipment is renewed, this can lead to increased or decreased capital productivity, depending on the capital and investment values. Intermediate input reductions are also important, especially energy savings, as they are also a reflection of rationalization. Non-tradable intermediate inputs are of particular interest here because they include service contracts with external agents and may capture the subcontracting and outsourcing phenomena.

As table 7 shows, the real cost effect differs for the four types of inputs. While tradable inputs and labour costs decline in most industries and for the sector as a whole, by 1.8 and 2.0 per cent, respectively, non-traded inputs and capital costs are increased; capital costs are increased by 1.6 per cent and non-traded inputs more strongly by 7.0 per cent. While some of these cost changes may be explained by substitution between capital and labour and some traded and non-traded inputs, they may also reflect the substitution of direct labour by contract

Table 7. Changes in factor input costs between 1987/88 and 1997/98 in two-digit manufacturing industries in India

Industry	*Code*	*Change in tradable input costs*	*Change in non-tradable input costs*	*Change in labour costs*	*Change in capital costs*
Food products	20-21	-0.038	0.0697	-0.0022	0.0087
Berage and tobacco	22	-0.090	0.0655	0.0145	0.0378
Cotton textiles	23	-0.001	0.0961	-0.0373	0.0353
Wool, silk etc.	24	0.011	0.0416	-0.0384	0.0108
Hemp and mesta	25	0.013	0.0474	0.0372	0.0141
Clothing	26	-0.144	0.0863	0.0078	0.0353
Wood products	27	-0.028	0.1237	-0.0081	0.0439
Paper products	28	0.077	0.0256	-0.0151	-0.0029
Leather products	29	-0.132	0.0931	-0.0056	0.0251
Rubber, plastic etc.	30	-0.142	0.1461	0.0265	0.0661
Chemicals	31	0.107	-0.0247	-0.0557	-0.0513
Non-metallic minerals	32	0.034	0.0611	-0.0166	0.0141
Basic metals	33	-0.047	0.0540	-0.0319	0.0099
Metal products	34	0.033	0.1091	-0.0319	0.0145
Machinery	35-36	0.010	0.0976	-0.0233	0.0088
Transport equipment	37	0.011	0.0576	-0.0450	0.0295
Miscellaneous industry	38	-0.029	0.0821	-0.0521	-0.0049
Manufacturing	Total	-0.018	0.0732	-0.0203	0.0163

Note: All costs in this table are measured in terms of shadow prices in order to exclude price changes as much as possible.

labour. This observation supports the hypothesis that the decline in labour costs can at least partially be explained by increasing service contracts, which are included in the non-traded input category. The phenomenon of outsourcing has been one of the ways that Indian industries cope with the rigidities of labour legislation. It is possible that the simultaneous decline in labour costs and the increase in service contracts is evidence of increased outsourcing in the aftermath of the Indian reforms. The industries that are known to have used outsourcing extensively are the textile industries (23 to 26); however, other industries may have a similar record. More research at the industry level is required to confirm this hypothesis.

V. MANUFACTURING EXPORTS AND THEIR CHANGES

Manufacturing exports have grown substantially during the study period. Annual average growth amounted to 14 per cent in United States dollar terms and 11 per cent in real terms. This performance is superior to the growth in the preceding 10-year period. Table 8 shows the growth performance of 15 two-digit-level industries. The number is reduced from the earlier used number of 17 because in the export data the cotton, wool, silk and synthetic textile products, as well as jute and hemp-based products, are aggregated into a single textile industry, although separate from the clothing industry.

Table 8. Export growth in manufacturing industries from 1987/88 to 1997/98

Industry	*Code*	*Average annual growth rate (%)*	*Export value 1997/98*	*Leading products (by increase in export value)*
Food products	20-21	10.7	3 786 580	Grain mill products
Beverage and tobacco	22	0.7	88 125	Malt liquors
Textiles	23-25	11.0	5 748 024	Spinning, weaving and finishing, knitting mills
Clothing	26	10.4	3 699 960	Garments
Wood products	27	9.6	36 002	Furniture
Paper and printing	28	15.5	119 950	Pulp and paper
Leather products	29	3.1	1 284 243	Leather products
Rubber, plastic etc.	30	3.5	728 176	Tyres, tubes
Chemicals	31	15.0	3 546 665	Pharmaceuticals
Non-metallic minerals	32	20.9	413 051	Diverse non-metallic mineral products
Basic metals	33	17.1	1 305 982	Iron and steel products
Metal products	34	12.7	817 889	Fabricated metallic products
Machinery	35-36	10.5	1 802 006	Radio, television communication equipment
Transport equipment	37	12.7	874 087	Motor vehicles
Other manufacturing	38	8.1	5 859 121	Jewellery
Total			30 109 858	

The growth in exports is also evident at the level of export/output ratios, which are shown to have increased in 11 out of 16 industries (see table 9); the average export/output ratio for the whole sector has increased from 9.7 to 14.3 per cent.

Table 9. Export/output ratio in Indian manufacturing industries, 1987/88 and 1997/98

Code		*1987/88*	*1997/98*
20-21	Food products	0.0775	0.1350
22	Beverages and tobacco	0.0349	0.0247
23-25	Textile industry	0.1538	0.2483
26	Clothing industry	1.2980	1.1081
27	Wood products	0.0260	0.0704
28	Paper and printing	0.0075	0.0162
29	Leather products	0.8593	0.6933
30	Rubber, plastics etc.	0.0372	0.0341
31	Chemicals	0.0478	0.1062
35	Non-electronic machinery	0.0583	0.0741
36	Electronic machinery	0.0329	0.0641
37	Transport equipment	0.0338	0.0461
38	Other products	2.6714	2.2514
Total	Manufacturing	0.0966	0.1434

The changing structure of exports

The export performance varies substantially between the industries, as shown in table 8 by the annual average growth rates during the study period. The table suggests that the non-metallic mineral (32) and basic metal (33) industries have experienced the strongest export growth in terms of percentage growth rates. The most important export industries, however, remain the group of other manufactures (38), which includes jewellery, textiles (23, 24 and 25), food products (20-21) and the clothing industry (26). The growth rates in the third column refer to export values in the fourth column, which are given in current United States dollars. The last column of table 8 shows the main products exported.

Determinants of export growth

Export expansion may result from a number of factors, some of which are likely a consequence of the reforms. When trade liberalization, as reflected by

declining rates of protection, increases foreign competition and when competitive pressure forces the producers to lower their production costs, their competitiveness increases. The reduction in production costs may affect intermediate inputs as well as labour and capital. The cost prices of traded intermediate inputs decline when the tariff on traded inputs is reduced and to the extent that industries are not yet benefiting from duty drawbacks. The quantities of intermediate inputs may also be reduced and, as we saw previously, they have declined for tradables, but increased for non-tradables. As to the primary inputs, labour inputs may decline to the extent that labour laws allow firms to reduce employment. However, as argued previously, Indian firms seem to have found ways to reduce labour costs by subcontracting. Capital costs can be reduced by increasing the utilization rate of existing capital stocks. Firms may also change their technology through new investments, which is most likely when industries have benefited from foreign investment. The inflow of foreign direct investment may be an important determinant of export expansion, but the lack of relevant data limits the analysis at this point.

Another source of export expansion may be the reduction of export restrictions, especially licensing. Unfortunately we do not possess enough quantitative evidence to examine this potential explanation of export success. Export incentives in the form of duty draw-back for imported inputs are taken into account in the unit cost ratios discussed previously. On the other hand, corporate income tax remissions are not taken into account, because the data are lacking in this regard. Further changes that may have encouraged exports are institutional changes, such as privatization and hardened budgets in the case of State-owned enterprises. Here again we miss the quantitative evidence necessary to analyse this type of reform-related factor.

Given that some, if not most, of the relevant export incentives should be reflected by unit costs, we examine here to what extent export growth is related to the three unit cost indicators reflecting domestic and international competitiveness, as well as comparative advantage. Since the sample of 16 industries is too small to do serious econometric analysis, we just examine the degree of correlation between exports and export growth on the one hand and the unit cost ratios, rates of protection, capital intensity and labour productivity on the other. The regression coefficients are shown in table 10. According to equations 1 and 4, the level of exports and their rates of increase are negatively correlated with the level and rate of change of nominal protection; their correlation coefficient is on the order of -0.5. This outcome, although not unexpected, may be partially attributed to the realignment (depreciation) of the rupee. This effect is captured by the unit cost ratio at shadow prices (UCs), which is shown in equation 3; it provides the strongest explanation of export performance. Exports are highest in those industries which

Table 10. Determinants of export growth

Equation number	*Dependent variable*	*Independent variable*	*Coefficient*	*t-stats*	*R*
1	X	NRP	-4.3 m **	-2.4	-0.53
2	X	UCx	-9.1E06 **	-2.3	-0.51
3	X	UCs	-1.2E07 ***	-2.8	-0.59
4	dX/X	dNRP/NRP	-0.93 **	-2.2	-0.50
5	dX/X	dUCx/UCx	-17.9 **	-2.2	-0.49
6	dX/X	dUCs/UCs	-18.9 **	-1.7	-0.41
7	X	K/L	-809	-1.05	-0.26
8	X	VA/L	-02E06	-0.78	-0.20
9	dX/X	d(VA/L)/(VA/L)	1.92 *	1.4	0.34

Note: Confidence levels: */**/*** 10 per cent, 5 per cent and 1 per cent respectively.

exhibit the greatest comparative cost advantage. The growth in exports is also strongly correlated with the decline in unit costs at shadow prices, i.e. enhanced comparative advantage and export growth are closely related. Export competitiveness and its change are also correlated with exports and export growth, but in a slightly less significant way. This can be explained by the fact that export competitiveness is still lagging behind comparative advantage due to the distortion factors discussed previously, especially for the cost of credit and the cost of labour.

Finally, export performance was also examined with respect to capital intensity and labour productivity. While the correlation between exports and capital intensity, as well as between exports and labour productivity, is negative (see equations 7 and 8), indicating that exports tend to be relatively labour intensive, the growth in labour productivity is positively, although weakly, correlated with export growth (see equation 9). This suggests, although statistically weakly, that in spite of the existing labour laws, the industries whose exports were growing seem to have reduced their labour costs and increased their labour productivity.

VI. EMPLOYMENT GROWTH UNDER THE REFORMS

Employment growth is a crucial aspect of this investigation because of its role with regard to income growth and poverty alleviation, which are the ultimate goals of the policy reforms. Employment growth implies income growth, but it also raises costs and thereby diminishes competitiveness, which in turn may reduce exports and growth. Under trade liberalization and globalization, the short-run

impact is usually employment reduction, but the long-run effect is expected to be employment growth through raised productivity and competitiveness. Since this study compared two points in time over a 10-year period, where the main policy changes fall into the first half of the period, we expect to observe more of the longer-run effects. The questions of interest are then (a) whether there is substantive evidence of employment growth and (b) whether employment growth is driven by exports.

Employment versus productivity and export growth

As table 11 shows, employment in manufacturing has grown at an average annual rate of 2.24 per cent over the study period. The growth rate was particularly high in the rubber, plastic, petroleum and coal industry (13.2 per cent), as well as in the clothing industry (10.5 per cent). It was particularly low in chemicals (4.6 per cent), as well as in cotton textiles (0.3 per cent), non-metallic minerals (0.46 per cent), wood products (0.69 per cent), basic metals (0.77 per cent) and jute and hemp textiles (0.96 per cent).

Table 11. Employment in Indian manufacturing industries, 1987/88-1997/98

Industry code	*Industry*	*Employment 1987/88*	*Employment 1997/98*	*Annual growth*
20-21	Food	997 483	1 333 822	0.0291
22	Berage and tobacco	436 442	599 345	0.0317
23	Cotton textiles	834 922	860 690	0.0030
24	Wool and silk	307 606	354 049	0.0141
25	Other textile	196 008	215 986	0.0097
26	Clothing	128 815	369 639	0.1054
27	Wood products	70 490	75 502	0.0069
28	Paper and print	290 419	336 664	0.0148
29	Leather products	76 389	122 015	0.0468
30	Rubber, plastic etc.	209 483	785 571	0.1322
31	Chemicals	549 697	347 792	-0.0458
32	Non-metallic minerals	422 720	442 791	0.0046
33	Basic metals	617 278	666 591	0.0077
34	Metal products	201 214	278 780	0.0326
35-36	Machinery	810 488	899 492	0.0104
37	Transport equipment	481 482	551 705	0.0136
38	Other manufacturing	77 357	148 383	0.0651
Total		6 708 293	8 388 817	0.0224

Although some industries, the exports of which have grown most strongly in value terms, have also experienced strong employment growth, for instance the clothing industry (10.5 per cent) and other manufactures (6.5 per cent), the whole manufacturing sector exhibits a negative correlation between employment growth and export growth, as seen in the following regression:

Dependent variable	Independent variable	Coefficient	t-ratio	R
dE/E	dX/X	-0.0044	-2.49	-0.54

The observation that strong export growth tends to coincide with weak employment growth or employment reduction is taken as evidence of ongoing adjustment. In other words, industries with expanding exports seem to be adjusting downwards their labour intensity. This is consistent with the previous observation that export growth is positively correlated with labour productivity. The observation also leads to the conclusion that employment growth is not yet driven by export growth but by domestic demand, although exports increasingly seem to play the role of a driving force.

The growth of labour productivity shown in table 11 occurred most strongly in the basic metals, wool and silk textiles and transport equipment industries, which were not among the main exporters, with the possible exception of wool and silk textiles. It is possible that they were still in the adjustment process during the study period and that their productivity growth and unit cost decline prepared them to become important exporters in the future. This conjecture is confirmed by the high export growth rates, albeit from a small base, of basic metals (17.1 per cent) and transport equipment (12.7 per cent).

A similar picture arises from observing the potential relationship between employment growth and productivity growth (R = -0.31), as well as changes in competitiveness. Industries with the largest employment gains were not the ones whose output grew even faster and thereby raised their labour productivity. Also there is no significant correlation between employment growth and unit cost reduction. Since the growth of labour productivity was substantial, over 8 per cent real as an annual average, these observations imply that employment growth was driven more by general demand expansion than by gains in competitiveness and exports.

It follows from the evidence presented above that during the study period total employment in manufacturing did not shrink, as could have been expected under competitive pressure, which resulted from the substantive decline of protection and globalization. Instead, it expanded at a rate of 2.2 per cent, with some industries generating more than or close to 10 per cent employment growth. This

Table 12. Labour productivity and its changes, 1987/88-1997/98

Industry	*Code*	*1987/88*	*1997/98*[a]	*Growth rate*
Food industry	20-21	26.303	54.011	0.0746
Beverage and tobacco	22	17.269	38.673	0.0840
Cotton textile	23	22.750	44.074	0.0684
Wool and silk textiles	24	37.055	93.385	0.0968
Jute and hemp textiles	25	15.675	30.592	0.0692
Garments	26	30.418	52.310	0.0557
Wood products	27	19.987	30.966	0.0448
Paper and print	28	39.728	69.331	0.0573
Leather products	29	28.775	57.594	0.0719
Petroleum, rubber, plastics	30	126.191	188.420	0.0409
Chemical industry	31	85.928	147.599	0.0556
Non-metallic minerals	32	36.380	87.498	0.0917
Basic metals	33	54.778	193.782	0.1347
Metal products	34	41.197	71.536	0.0567
Machinery	35-36	58.131	123.081	0.0779
Transport equipment	37	46.283	113.678	0.0940
Other industries	38	48.491	95.632	0.0703
Manufacturing	Total	43.320	95.329	0.0821

Source: Based on value added and employment data from Annual Survey of Industries.

[a] The 1997/98 value added is deflated to 1987/88-prices (deflator: 1.8543).

means that, in spite of the painful adjustments required by trade liberalization and globalization, the manufacturing sector contributed positively to the growth of income and employment.

VII. CONCLUSION

The Indian experience with economic reforms is interesting in its own right, but also for other late reforming countries. The present research has focused on the reform impact on manufacturing industries. We found first that the level and structure of protection was drastically changed by the reforms and that the traditional way of measuring protection by use of tariffs may no longer be valid due to widespread tariff redundancy. Using the collection rates for the base period (1987/88) and domestic and international price indices for the end period (1997/98), we computed nominal rates of protection that are systematically lower

than the ones based on the tariff. Using these NRP estimates, as well as the cost data from ASI, we find that export competitiveness was significantly increased and comparative advantage was enhanced in some industries. Resources seem to have moved in the direction of industries endowed with comparative advantage. In a number of industries this has led to increased exports. It is particularly interesting to observe that exports were strongly driven by comparative advantage and their expansion by unit cost decline and productivity growth. Finally, it was also seen that the sector managed to increase its employment base at an average annual rate larger than 2 per cent. This suggests that the reforms, although painful for those workers losing their employment in less successful industries, did not lead to drastic employment loss.

The reasons for these developments are seen in three characteristics of the reforms. First, the fact that trade liberalization was accompanied by currency realignment meant that the potential hardship of increased foreign competition was softened by rising import and export prices. Second, trade liberalization was accompanied by an alleviation of industrial regulation and by the country's opening to foreign investment. Third, the drive for higher efficiency and lower unit costs was facilitated by the increased use of subcontracting, which may have been a way of circumventing the constraints of the existing labour legislation.

Based on these findings, Indian policymakers must be encouraged to pursue further reforms, mainly in the areas of internal regulation of manufacturing activities and the labour market, but also with regard to the remaining structure of protection. Maintaining a well-aligned exchange rate and the encouragement of foreign investments are two further important concerns in future trade and industrial policies.

For analysts and policymakers in other countries the gradual Indian approach and the sequencing of internal and external liberalization, combined with currency realignment, may be of interest as it has strengthened rather than weakend the manufacturing sector.

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ANNEX

INDICATORS OF COMPETITIVENESS AND COMPARATIVE ADVANTAGE

The indicator of competitiveness used in the present study is unit cost ratio (UC), defined as total cost (TC) divided by the value of output (VO), which in turn equals output quantity multiplied by the ex-factory price. For domestic sales, the ex-factory price is the domestic market price (Pd), which is typically higher than the international price of a similar imported product by a margin equal to the nominal rate of protection. For export sales, on the other hand, the ex-factory price is equal to the international (f.o.b.) price (Pw).

This particular definition of the unit cost ratio serves a double purpose. First, it helps to overcome the differences in product mix and quality that make interfirm comparisons always problematic. We assume that the output price is usually proportionate to the quality attributes of the products. Therefore, when two firms have the same total cost, but one produces a higher-quality product with a higher price and total output value, its unit cost ratio would be lower, implying that it is deemed to be more competitive than the other firm. Second, it makes the unit cost indicator independent of the data of an international competitor, whose cost we would otherwise need for comparison. We assume, therefore, that the international price (Pw) corresponds to the unit cost of a typical international best-practice producer. The fact that Pw is measured as the border price (c.i.f.) means that the benchmark for international comparison includes the transport cost to the border and therefore a margin of natural (geographic) protection. Our criterion for international competitiveness or export competitive advantage is as follows:

$$(1) \qquad UCx = TC/(Q\ Pw) \leq 1$$

meaning that a firm is deemed to be competitive if its cost per unit of output is less or equal to the free-trade price of an equivalent import. This concept of cost competitiveness is multilateral, as opposed to a bilateral firm-to-firm or country-to-country comparison, but it allows bilateral comparison as well. For instance, if $UCx_A > UCx_B > 1$, then neither country A nor country B is export competitive, but B is more competitive than A.

Domestic competitiveness, as defined previously, means a cost advantage under protection. In this case the denominator of the unit cost ratio is the output value at domestic prices (VOd = Q Pd), so that the criterion of domestic competitive advantage becomes as follows:

(2) $UCd = TC/(Q\ Pd) \leq 1$

For those firms that export part of their output, Pd of the exported output equals Pw.

In both indicators, UCx and UCd, total cost (TC) includes the interest paid on borrowed capital as well as the opportunity cost of own capital, taken as the capital stock minus outstanding debt multiplied by the market interest rate. UC exceeds unity if the rate of return is lower than the interest rate and it is less than 1 if the rate of return is higher. Clearly, the indicator sets a high standard of competitiveness, because the criterion implies that the firm is able to replace its total capital stock by borrowing at the current interest rate. In times of high interest rates, this may be difficult even for otherwise truly competitive firms. The indicator has, therefore, this long-run characteristic.

However, the most important distinction and the hallmark of our method of analysis is the one between competitiveness and comparative advantage. While competitiveness is understood as a cost advantage based on market prices, including various price distortions, subsidies and penalties, comparative advantage corresponds to a cost advantage at equilibrium prices. In order to measure comparative advantage, we replace all prices, in output as well as all inputs, by shadow prices. A firm or industry has then comparative advantage if the unit cost ratio in terms of shadow prices does not exceed unity:

(3) $UCs = TCs/(Q\ Ps) \leq 1$

where TCs is total cost in shadow prices and Ps is the shadow price of output. For tradable goods, the shadow price is usually equal to the international price (Pw), but adjusted for any distortion of the exchange rate. TCs is the sum of all cost components adjusted for all price distortions and subsidies.

It is now evident that the concept of competitiveness differs from the one of comparative advantage only by including the sum of all price distortions. When UCd is smaller than UCs, the price distortions act as subsidies; when UCd exceeds UCs they act as penalties. Since price distortions affect both inputs and outputs, they have the opposite effect on the cost and output sides. A tariff on output lowers the unit cost ratio (i.e. increases domestic competitiveness), whereas a tariff on tradable inputs raises it and thereby lowers competitiveness. This shows that in the protected domestic market a producer is more competitive than under free trade, as production tends to be more profitable under protection. However, comparative advantage, which is the real core of competitiveness, is not affected by the existing price distortions. However, as a consequence of protection and

other distortions, input coefficients at shadow prices may be affected as well. In other words, price distortions may lead to lower efficiency and loss of international competitiveness in the longer run.

Finally, total unit costs net of distortions are broken down into four components, tradable inputs, non-tradable inputs, labour cost and capital cost; the distortions are calculated and added to the unit costs at shadow prices to obtain unit costs at market prices. This leads to the following schema, showing how UCd, UCx and UCs are related to each other:

(4)	VITs/VOs	(Shadow unit cost of tradable inputs)
	+VINs/VOs	(Shadow unit cost of non-tradable inputs)
	+LCs/VOs	(Shadow unit cost of labour inputs)
	+KCs/VOs	(Shadow unit cost of capital inputs)
	_____	
= TCs/VOs = UCs		(Total unit cost at shadow prices)
	+dpe	(Exchange rate distortion of output)
	+dpj	(Tradable input price distortion)
	+dpje	(Exchange rate distortion of tradable inputs)
	+dw	(Wage rate distortion)
	+dpk	(Capital goods price distortion)
	+dr	(Interest rate distortion)
	+ds	(Direct subsidy, negative)
	_____	
= TC/VOw = UCx		(Total cost per unit of output at international prices)
	+dpp	(Output price distortion)
	_____	
= TC/VOd = UCd		(Total unit cost at domestic prices)

In other words, total unit cost in shadow prices (indicator of comparative advantage), augmented by all cost distortions, adds up to unit cost per output value at free-trade prices (indicator of export competitiveness); adding the output price distortion leads to the unit cost in domestic prices (indicator of domestic competitiveness). This accounting framework enables us to identify, with some limitations, the sources of competitiveness. The distortions are all expressed as proportions of unit costs, so that the highest proportions indicate the strongest influence on unit costs.

HAS AID MADE THE GOVERNMENT OF INDONESIA LAZY?

*Iman Sugema and Anis Chowdhury**

This paper is aimed at assessing the effects of aid on fiscal behaviour in Indonesia. There are four main findings. First, the inflow of aid is driven primarily by the need to fill the fiscal gap; that is, aid is demand driven. Second, although project aid is by definition intended for development expenditures, it results in an increase in routine expenditure as well. This suggests that project aid is fungible: it creates extra resources available to increase non-discretionary spending. Third, programme aid tends to increase routine expenditure but not development expenditure; thus, it mainly serves as budgetary support. Fourth, aid flows make the Government of Indonesia fiscally "lazy". The availability of aid is a disincentive to mobilize domestic revenue through a more efficient and effective taxation system.

I. INTRODUCTION

Foreign economic assistance is believed to have played a crucial role in Indonesia's phenomenal transformation since the early 1970s. Foreign aid to Indonesia rose steadily from about 3 per cent of GDP in 1971 and peaked at about 6.5 per cent of GDP in 1988. Since then, aid dependence has declined; the aid-to-GDP ratio stood at 2 per cent prior to the 1997 Asian financial crisis. Foreign aid financed nearly 70 per cent of total development expenditure in 1971, dropping

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to about 22 per cent of that total in 1974. It fluctuated between 20 and 30 per cent during the period 1975-1985. The contribution of foreign aid to development expenditure rose to about 78 per cent in 1988.

The issue of foreign aid effectiveness has become a concern in the wake of the 1997 crisis, which saw Indonesia's aid dependence rise again as the aid-to-GDP ratio rose to 4.5 per cent in 1999. During the period 1998-2001, over 80 per cent of development expenditure was financed through foreign aid. Thus, Indonesia's present scale of aid-dependence resembles that of late 1969 at the start of the New Order regime.[1]

However, the discussions have remained focused mainly on microeconomic aspects of management, such as coordination, fiduciary standards and absorptive capacity. Broader macroeconomic issues, such as the relationship between aid and national efforts in mobilizing domestic resources, in particular the impact of aid on government revenue and expenditure, has not received much attention from policymakers and academic researchers. Also, the discussion of aid-effectiveness has not been helped by the lack of any serious academic research. In the words of Hill (1996, p. 81),

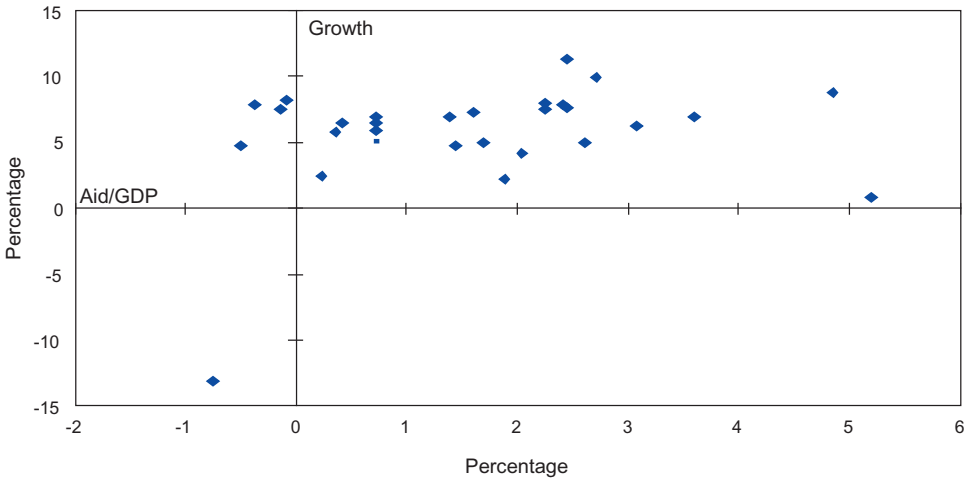
> It is surprising ... that there has been no serious academic study of one of the world's largest and most successful aid programmes over the past quarter-century, examining in detail the impact of the various aid programmes and projects, and assessing the importance of expatriate economic policy advice from the World Bank, the Harvard group, and other organizations.

The discussion of aid effectiveness is further complicated by a lack of consensus in the wider literature. Thus, this paper, seeks to fill the research gap in the Indonesian context and in the process shed light on the debate.

This study focuses on the fiscal response of aid rather than aid-growth relationships for three reasons. First, at least for the Indonesian case, there seems to be no strong correlation between aid and growth (see figure 1). Various regression models have been constructed to establish the relationship, but the results are very unsatisfactory. This raises concern about whether aid has been effective in stimulating growth.

[1] Nearly 80 per cent of the development budget of the 1969/70 fiscal year was financed through foreign aid. See Hill (1996, figure 4.3, p. 46).

Figure 1. Scatter plot: Percentage of aid and growth



Second, after more than 30 years of engagement with donors, Indonesia has not been able to reduce its dependence on foreign assistance. It is an irony that Indonesia, with a domestic savings rate of about 27 to 30 per cent of GDP, remained one of the world's most indebted countries. Because the country had to request rescheduling of its debt repayment through the Paris Club three times, a question arises: Has Indonesia fallen into a debt trap?

Third, in almost all difficult circumstances, Indonesia has had to seek foreign assistance. For example, foreign assistance played a significant role in overcoming Indonesia's difficulties in the late 1960s and early 1970s when aid financed nearly 80 per cent of development expenditure. Foreign assistance also helped to ease the difficulties faced in the mid-1980s after the collapse of oil prices. Certainly, it also cushioned against the adverse economic situation during the crisis in the late 1990s. This leads us to a hypothesis that the country has no internal mechanism to deal with adverse economic shocks. If this the case, the question is then: why?

One possible answer to the above questions is that the easy access to foreign assistance made the regime that was in power for decades lazy and it was lax in its revenue efforts. By treating aid as revenue in the government budget, the regime could hide the fiscal deficit and remain profligate. Thus, while the household sector was saving at a fantastic rate, the Government was in fact "dissaving" under the disguise of fictitiously achieved balanced budgets, made possible by high inflows of aid treated as revenue.

In light of the above, it is imperative that this paper examines the impact of aid on government expenditure and revenue. The paper is organized as follows: section II provides a brief review of the literature as a background to this study; section III describes the empirical model and section IV reflects on the close association between budget deficits and aid flows. Section V analyses the effects of aid on public expenditures and non-oil revenues. The final section draws out the implications of the findings for policy purposes.

II. AID EFFECTIVENESS: A BRIEF REVIEW OF THE LITERATURE

Extensive research has been conducted in this area for more than 30 years. Much of this research has been dominated by empirical testing of whether aid contributed to economic growth, using cross-country data.[2] The theoretical foundation for the empirical research originated from the two-gap model of Chenery and Bruno (1962) and Chenery and Strout (1966): developing countries have deficient levels of domestic savings to finance the investment necessary to achieve a desired rate of economic growth, and/or limited foreign exchange reserves needed to acquire imported capital goods. These savings and foreign exchange gaps constraint growth, but foreign aid can fill these gaps.

From the very beginning there has been no solid consensus on aid-growth relationships. The early studies of the relationship between aid and savings produced contradictory conclusions. For example, Rahman (1968), Griffin (1970) and Griffin and Enos (1970) found a negative relationship between aid and domestic savings, whereas Papanek (1972; 1973) and Kennedy and Thirlwall (1971) broadly supported the positive view of the Chenery-Bruno-Strout hypothesis. Among the more recent studies, the influential works by Mosley and others (1987; 1991) and Boone (1994; 1996) found that aid had an insignificant effect on growth.[3] On the other hand, based on a study of 31 sub-Saharan African countries, Hadjimichael and others (1995) suggested that aid significantly affected the economic growth rate of countries, as do a number of policy variables (government investment, human capital, population growth, terms of trade, real effective exchange rate and

[2] See Tarp (ed.) (2000) for a comprehensive survey of aid-effectiveness literature. White (1992) is a useful critical survey of macroeconomic impact of aid. Also see Symposia in Annual World Bank Conference on Development Economics 2003, Economic Journal, vol. 114 (June, 2004), and International Review of Economics & Finance, vol. 13 (2004) for most recent and comprehensive discussions of issues pertaining to aid effectiveness and aid allocations.

[3] Boone's results are described as "surprising" by Tsikata (1998) and his approach is criticised by Hansen and Tarp (2000).

the budget deficit). Similarly, Durbarry and others (1998), drawing on a larger sample of 58 countries from 1970 to 1993, provided robust evidence that greater foreign aid inflows have had a beneficial impact on growth, as again do several policy/economic variables (domestic savings, private net inflows, terms of trade, inflation and the budget deficit).

The much-cited Burnside-Dollar study (1997) concluded that aid works only in countries with "right" policies in place.[4] Right policies are defined as those that produce low inflation, small budget deficits, openness to trade, strong rule of law and a competent bureaucracy. The Burnside-Dollar study generated much interest and influenced policymakers both at the multilateral and bilateral levels. However, critics claim that the methodology of the Burnside-Dollar study is seriously flawed, and Easterly and others (2003) expressed alarm at the influence of the Burnside-Dollar study at the policy level.

The main deficiency of the aid-growth studies is that they ignore a simple fact: that aid is primarily channelled through the budget of the recipient countries (McGillivray, 2000; 2002). Thus, the ultimate impact of aid on the economy by and large will depend on how aid affects public expenditures and revenues. If aid is directed mostly towards financing public investment rather than consumption and it does not substitute tax revenues, then aid-growth co-movement may be clearly observed. Some recent works have focused on this strand of reasoning. Following the seminal work of Heller (1975), Mosley and others (1987), Gang and Khan (1991; 1999) and Franco-Rodriguez (2000) modelled the interaction between aid flows and various categories of public expenditures and revenues.[5] Others such as Swaroop and others (2000) and Feyzioglu and others (1998) used the framework of McGuire (1978), and focused on the fungibility issue, that is, whether aid is directed towards its intended purposes. These studies reveal that the impacts of aid on fiscal behaviour vary across countries. In some, aid did not lead to a reduction in revenue-raising efforts and aid was not diverted to unproductive uses. However, studies also found that aid was diverted away from its intended purpose. Some

[4] Both Boone and Burnside-Dollar studies were reviewed in The Economist. Boone's findings were summarised in one short sentence – aid is 'Down the Rathole' (The Economist, December 10, 1994). Findings of Burnside-Dollar were reviewed under the title, "Making Aid Work" (The Economist, November 14, 1998). Aid will only work if it is spent on right countries with low inflation, small budget deficits, openness to trade, strong rule of law and a competent bureaucracy. The Burnside-Dollar (BD) study generated much interests and influenced policymakers both at the multilateral and bilateral levels. However, the critics claim that the methodology of the BD study is seriously flawed, and Easterly et al (2003) expressed alarms at the influence of the BD study at the policy level. Easterly (2003) expressed doubt about the soundness of policy contingent lending.

[5] See also Khan and Hoshino (1992), McGillivray and Morrissey (2000; 2001) and White (1994).

studies found that aid had a positive impact on public investment but a negative impact on tax efforts; others found very small impacts of aid on public-sector fiscal behaviour.

The only academic study of the aid-fiscal behaviour relationship in Indonesia is by Pack and Pack (1990). This study used a McGuire type model of aid fungibility, and found that foreign aid between 1966 and 1986 did not displace development expenditure; instead, aid stimulated total public expenditure. They further found that most categorical aid was spent on the purposes intended by the donors. More importantly, their findings revealed that aid did not lead to a reduction in domestic revenue. Thus, this study provided an overall positive assessment of foreign aid. However, the findings are a bit odd given the continued rise in the aid-to-GDP ratio during this period.

III. EMPIRICAL MODEL

The empirical model of public-sector fiscal response to aid used in the study follows the model advanced by Franco-Rodriguez and others (1998) and McGillivray (2002). The main difference is that the response is established within a vector autoregression framework, enabling us to capture fully the dynamics of aid-fiscal inter-relationships. The model is outlined as follows and technical aspects are provided in the annex.

For the purpose of this study, the vector autoregression consists of a vector of five variables, each of which is a function of its own lags plus a vector of error term. The five variables are: project and programme aid, non-oil tax revenue and development and routine expenditure. Thus, in our case the vector autoregression consists of a system of five equations and each equation corresponds to a particular variable.

Generally speaking, we have five dependent variables in the system, which will be regressed to the lags of all variables. Hence, we have the same explanatory variables for all equations. In doing this, we treat aid and fiscal behaviour as interdependent. An adverse shock on the fiscal side will have follow-up impacts on aid. For example, a fall in domestic revenue may generate the need to increase aid inflows. In exchange, there should be feedback effects from the aid: the availability of the aid may reduce the need to adjust the budget both from the revenue and the expenditure sides. Thus, rather than a uni-directional relationship, aid and fiscal behaviour interact in a dynamic manner.

The above representation is slightly different from the original model of McGillivray (2002). In his model, the variables are separated into target (planned) and actual (realization) where, in a reduced equation format, it turns out that a particular realization is a function of all target variables. This is problematic, especially when target data are not available. McGillivray, in fact, estimates the target as a function of past realization. In effect, current realization is indirectly a function of past realization. This is a relatively perfect case of a vector autoregression model. Thus, rather than going into a cumbersome methodology, it is more convenient to use directly the vector autoregression as an empirical model.

Moreover, with a vector autoregression representation it becomes easy to assess the effect of a particular shock on all variables by using the so-called impulse response analysis. That analysis traces the effect on the system of an exogenous shock to one of the variables in the model. The effect of any unexpected shock to the system can be traced through deviations of the shocked time-paths from the expected time-path given by the model. This technique is quite useful in certain types of policy and sensitivity analyses. The procedure to obtain an impulse response function from a vector autoregression can be outlined as follows.

Technically speaking, an impulse response analysis is a moving average representation of a vector autoregression system; that is, the current value of a variable is a function of the value of all variables in the past, from the beginning of time until the previous period. Thus, one can express a recursive law of motion of all variables once the coefficients and error term are obtained from the regression on the vector autoregression system.

The regression coefficients from the vector autoregression are used as the basis for calculating the impacts of a shock to a variable on all variables in the next periods. For instance, given a one-unit shock to project aid, we can calculate the impacts on all five variables (including project aid) in the period t+0, t+1, t+2 and so forth. Of course, the coefficients will determine the scale and time-path of the impact. One should keep in mind that the impact should be stable, i.e. converge to a certain value.

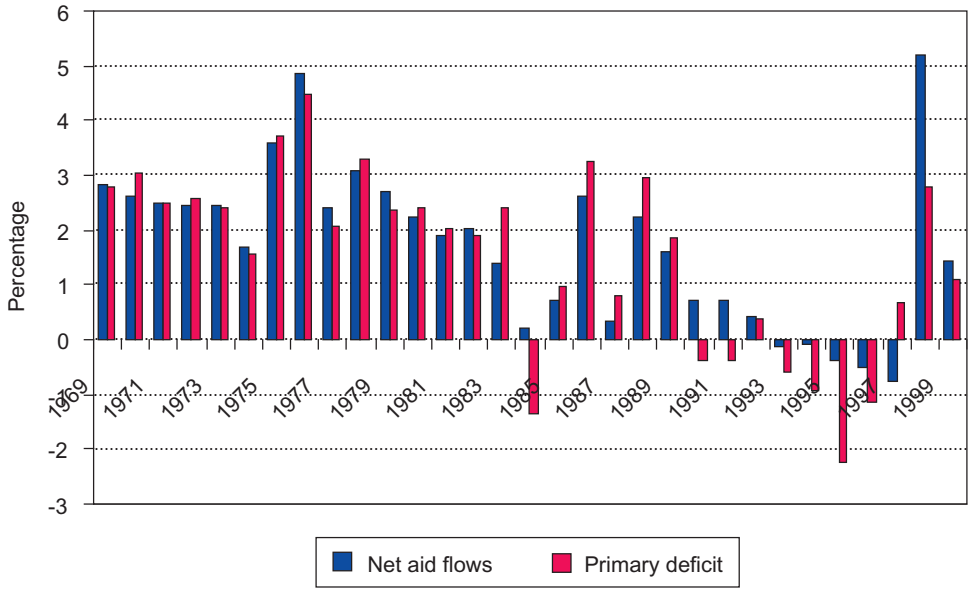
The other aspect is that we need to define the size of the shock. In order to make it comparable across variables, we need to compute their relative contribution to the variation of the system. The overall variation of the system depends on the distribution of the error term in each equation, i.e. the deviation of the observed value from the estimated or predicted value. Such deviation is usually measured in terms of the standard deviation. Thus, the shock is usually set to be equal to one standard deviation. This can be obtained easily from the variance-covariance matrix of the error term.

By applying the above procedures we can assess fiscal effects of aid. Note that, in McGillivray's model, fiscal responses are captured by analysing the coefficients of the aid variables in the fiscal equations. This technique does not allow for intertemporal dynamic effects; in contrast, impulse response analysis stresses the dynamics.

IV. AID AND BUDGET DEFICITS

Perhaps the very reason for obtaining foreign loans is to fill the fiscal gap. As can be seen from figure 2, aid flows almost mirror the size of government budget deficits. The fact that there is a strong correlation between aid flows and budget deficits opens up two possibilities.

Figure 2. Net aid flows and primary budget deficits as a percentage of GDP



Note: Deficit (+); surplus (-).

First, aid may be demand driven; that is, the Government intentionally creates a deficit for various reasons and then seeks to fill the deficit, using aid. Second, aid can be supply driven and therefore induce a deficit. The latter case represents the interests of donors more than those of the debtors.[6]

In order to assess whether net aid inflow to Indonesia was driven by the necessity to fill the fiscal gap, the "Granger causality test" is employed. The test suggests that budget deficits cause net aid flows, which indicates that the size of the deficits determine the size of the net aid inflows (see table 1). In other words, the Government planned the deficit in the first place, and then negotiated with creditors to fill the intended deficit.

Table 1. Results of causality test

Causality		*Test statistics*	*Prob (df = 5, sl = 0.05)*
From	*To*		
Net aid flows	Budget deficit	5.441	0.367
Budget deficit	Net aid flows	11.735	0.047

We also use the causality test to assess whether there was a reverse causality between fiscal deficits and aid flows. The test shows that net aid flows did not cause fiscal deficits, and therefore there was no strong evidence that aid was supply driven. However, this does not mean that creditors has no interest in directing aid to certain activities that meet their objectives in providing loans. Rather, it says that aid is made available upon demand (request) by the Government of Indonesia.

These findings suggest that it is up to the Government of Indonesia to create or close the fiscal gap. Over the period of analysis, the fiscal policy stance of the Government was mainly expansionary and only on a few occasions during the first half of the 1990s did the Government create fiscal surpluses. The creation of deficit was probably motivated by the need to stimulate the economy by means of increasing public expenditure. The increase in public expenditure was very difficult to match with tax revenue in a situation where the domestic taxation regime was very rudimentary. There was no serious attempt to overhaul the complicated

[6] Easterly (2003) has argued that donors are judged by the amount of money spent and hence are driven by the desire to "move money". According to him, Judith Tendler's observation as far back in 1975 that "A donor organization's sense of mission ... relates not necessarily to economic development but to the commitment of resources, the moving of money..." remains valid even today.

tax administrative structures, some inherited from the colonial era, or to ensure tax compliance. The collection process was inefficient and corrupt. Only a significant decline in oil revenue provided the initial stimulus for tax reforms in 1984 and a decade of continuing low oil prices ensured that these reforms were actually implemented seriously.[7] A series of tax reforms, first implemented in the period 1984-1985, attempted to produce a more efficient and buoyant tax system. The results of these reforms were impressive. In 1984, non-oil development revenue contributed to about 30 per cent of total government revenue. In 1996, just before the crisis, the share increased to 68 per cent.

With this improvement, why did the Government continuously rely on aid? More puzzling, with relatively high domestic savings, why was foreign financing found to be more attractive than domestic borrowing?

There were five reasons for this situation. First, financing the deficit through the commercial domestic market may be difficult when the market is underdeveloped. Before the crisis, the size of the market was only about 6 trillion rupiahs.[8] Second, obtaining concessionary loans from bilateral and multilateral donors could reduce financial costs. Government projects are typically less commercially oriented than those of the private sector, and therefore it is more reasonable to seek funds with the actual cost below the market rate. Besides, the financial terms from non-commercial sources is generally favourable, with lower interest rates and longer repayment periods. For instance, in 1999, the average interest rate of official creditors was only about 3.8 per cent per annum, with the average maturity being about 16.7 years and a grace period of about 5.2 years, and the grant element of the total aid was about 38.1 per cent (see table 2).[9]

Third, even if the domestic bond market is relatively sizeable, aid financing is still more attractive when the Government wants to avoid the crowding out effects of budget deficits. Deficits can directly reduce private investment through increases in domestic interest rates. However, the adverse impact of aid financing

[7] Hill (1996) and Gillis (1985)

[8] After the crisis, although the Government has issued bonds amounted to IDR 660 trillion as a result of bank bailout, only IDR 35 trillion is actively traded in the market. Hence, it would be difficult for the Government to "recycle" the bonds. Thus, developing domestic bond market remains the biggest challenge in the near future in order to warrant fiscal sustainability.

[9] However, these favourable financial terms has to be compensated by non-financial conditionality such as donor determined procurement, earmarking, and policy reform. Thus, effectively the Government may lose its policy independence.

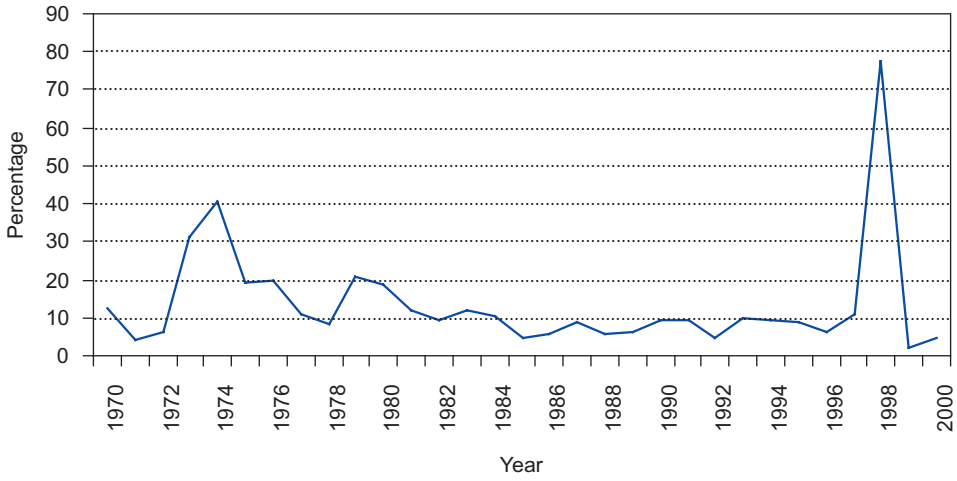
Table 2. Average terms of aid

	1970	*1980*	*1990*	*1995*	*1997*	*1999*
Interest (%)	2.4	5.4	5.6	5.1	6.3	3.8
Maturity (years)	35.9	25.5	23.1	21.3	19.5	16.7
Grace period (years)	9.5	7.3	6.6	5.8	4.9	5.1
Grant element (%)	62.9	36.2	32.8	33.3	22.7	38.1

on the private sector may not be fully contained when it leads to a real exchange rate appreciation.[10]

Fourth, aid can also avoid the inflationary financing of budget deficits by means of "printing money". This was indeed the main success story of aid and technical assistance to Indonesia in the late 1960s and 1970s. The runaway inflation during the period 1973-1974 and again after the crisis started in the late 1990s was successfully scraped in just a few years (see figure 3).[11]

Figure 3. Inflation in Indonesia



[10] Gray and Woo (2000).

[11] The same was the case with the hyperinflation of the mid-1960s.

Fifth, in a crisis situation, aid could play a more significant role in preserving fiscal sustainability and sustaining growth. With the economy entering a downturn, tax revenue falls. In such circumstances, the need to stimulate growth can be facilitated by creating an aid-financed fiscal deficit. By doing so, cuts in public expenditure, which tend to propagate the crisis, can be avoided.

Because the aid was by and large found to be demand driven, there is a need to assess whether it was used effectively, or whether it was directed towards productive activities that could stimulate growth and increase the capacity to repay the debt at the same time. The following section discusses the fiscal response to aid.

V. FISCAL RESPONSE

Effects on government spending

In order to assess the impacts of net aid flows on government spending, an impulse response function analysis is employed. Aid is classified into two categories, project and programme aid, and each category should have different impacts on different types of government expenditure. Project aid is usually directed towards financing development expenditure; therefore, it can be expected that an increase in the disbursement of project aid will tend to induce a higher level of development expenditure. The impact of project aid on routine expenditure will depend on whether it is fungible or not. If it is not fungible, routine expenditure should not increase. On the other hand, it is natural to expect that programme aid is fungible. Programme aid is typically used in hard times, mainly to maintain essential social and routine expenditure. In other words, programme aid comes as budget supports.

The results of impulse response analysis are displayed in figures 4 and 5. Two shocks are exercised: one standard deviation shock each on project and programme aid. The figures display the response of fiscal variables to the shocks. The responses are measured in terms of deviations from the expected time paths. A positive value indicates that the variable in question will increase due to a given shock. The effect can be either transitory or permanent. The effect will be transitory if the response, which can be initially either positive or negative, stabilizes at zero in the latter periods. The effect is said to be permanent if it stabilizes at a value below or above zero.

Figure 4 indicates that a one standard deviation shock on project aid will lead to increases in both development and routine expenditure, permanently. However, it has a stronger effect on routine expenditure compared with development expenditure. This means that the availability of project aid provides free resources to increase routine spending. In other words, project aid is fungible. This finding is contrary to that of Pack and Pack (1990).

Figure 4. Effects of one standard deviation shock of project aid on development and expenditures and non-oil revenue

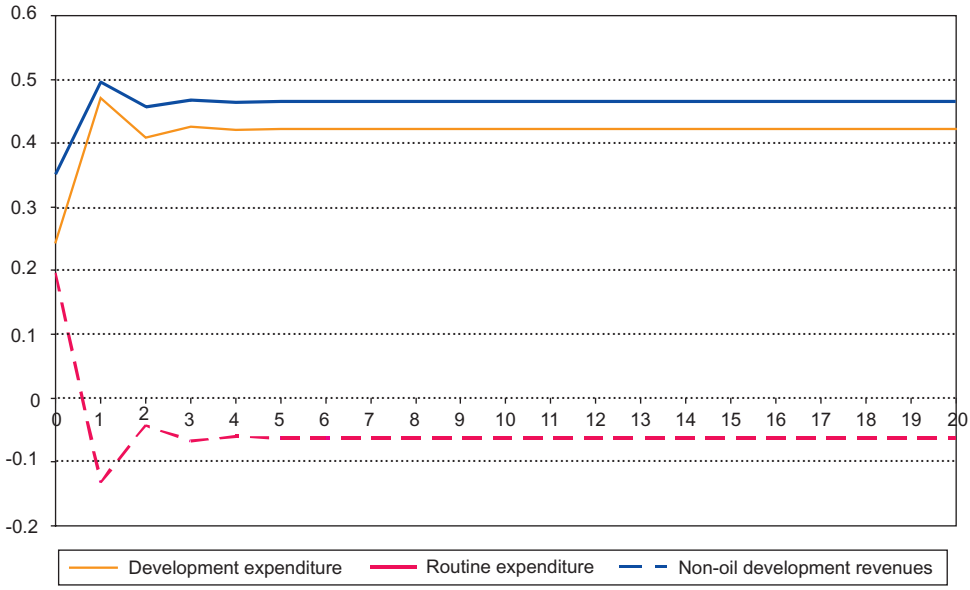
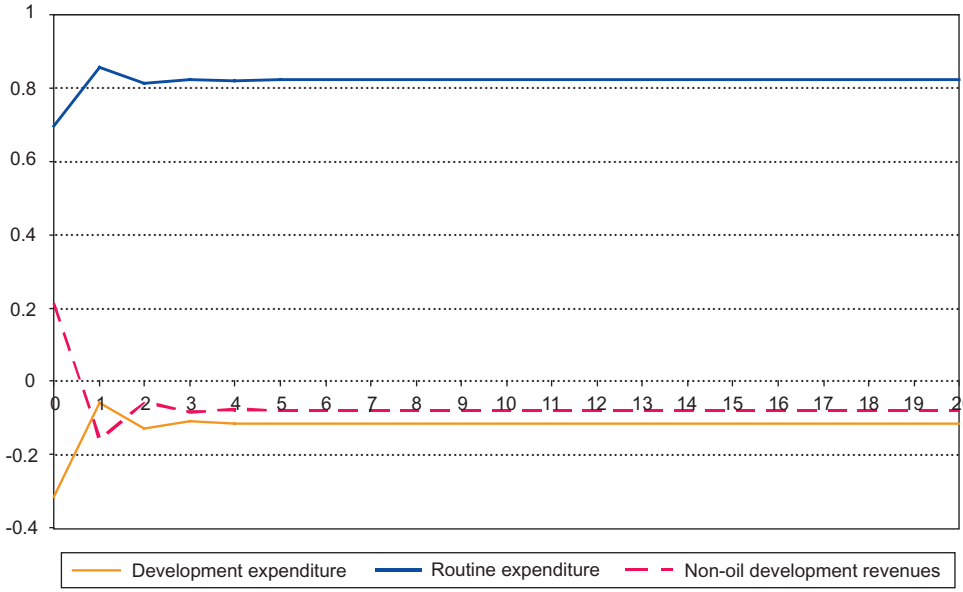


Figure 5 suggests that a one standard deviation shock on programme aid will lead to increases in routine expenditure and decreases in development expenditure. In a difficult time, it is understandable that the objective of obtaining programme aid is to preserve routine expenditure, the bulk of which is unavoidable (salaries and wages). However, the interpretation of the responses of development expenditure requires caution. The decline in development expenditure may not be due to the availability of programme aid; rather it is a necessary adjustment in a crisis situation when the programme aid begins to flow. Hence, there is a negative correlation between programme aid and development expenditure.

Figure 5. Effect of one standard deviation shock of programme aid on development and expenditures and non-oil revenue



In sum, it is found that aid is used mainly to preserve an intended level of routine expenditure, rather than development expenditure. In addition, aid is fungible: aid provides additional resources to be used for consumptive purpose. Thus, it is not so surprising that there is no strong correlation between aid flows and growth. To the extent that aid is not directed to increase spending on productive purposes or to support productive activities, on which government revenue largely depends, debt repayment may become a serious problem. The increase in the debt burden needs to be matched with increasing tax efforts. Thus, we investigate the impact of aid on the Government's revenue-raising efforts.

Effects of aid on non-oil domestic revenue

In this section, we assess the impact of the availability of project and programme loans on the Government's tax efforts. The analysis is facilitated by impulse response functions presented in figures 4 and 5. Note that the capacity of the Government to raise funds domestically is represented by non-oil development revenues. Oil revenue is excluded because the production level of oil is determined through OPEC quotas. Hence, the revenue from oil production-sharing is not related to the government, "effort" to raise tax.

As can be seen from figures 4 and 5, both programme and project aid have a small adverse impact on non-oil development revenues over the long run. Thus, it can be said that aid acquisition is not followed by improvement in the government revenue. This is a relatively surprising result, given that programme aid generally imposes structural reforms, including improvement in the taxation system. One possible explanation for this unexpected result is that tax reform has never been part of the conditionality of any structural adjustment loans from the World Bank and the IMF. In fact, the World Bank's adjustment loan of 1987 was approved entirely on the basis of reforms already implemented.[12] This favourable treatment might have had an adverse impact on fiscal behaviour; that is, the Government did not have any incentive to further reform the taxation system. From 1990 to 1996, indeed, the tax-to-non-oil GDP ratio remained stagnant at about 10.4 per cent, indicating that there was no substantial attempt to improve tax efforts. Hill (1996, p. 47) noted: "... notwithstanding the gradual decline in the importance of aid after 1988, Indonesia has not yet achieved one of its major fiscal objectives, that of reduced dependence on foreign aid". Hill (1996) concluded that oil revenues and steady flows of aid had made the Indonesian Government lazy to collect tax from non-oil sectors. Every time the Government ran into a budget deficit, the donors filled the financing gap. Thus, the Government had little incentive to increase its capacity to raise funds from domestic sources.[13]

VI. CONCLUSION AND POLICY IMPLICATIONS

This paper was aimed at assessing the effects of aid on fiscal behaviour. There are four main findings worth highlighting. First, the aid flow is generally demand driven in the sense that it is a result of a continuous lax fiscal regime. It is created by the desire to fill the fiscal gap. However, this does not suggest that aid agencies play a passive role. The fact that the Government can always obtain aid, in amounts almost equal to the deficit, suggests that the supply of aid is always made available upon request. Moreover, government agencies can also have an interest in directing aid allocated for specific purposes that meet the donors' interests.

Second, although project aid is by definition intended to finance development expenditures, it results in an increase in routine expenditure as well. This suggests that project aid is fungible: it creates extra resources available to

[12] Mosley *et al* (1991)

[13] It took a crisis to change this. After a slight fall in 1998-2000, the tax ratio increased to 12.6 per cent in 2001. By the end of 2004, the ratio is expected to become just about 15 per cent.

increase non-discretionary spending. Thus, the effectiveness of project aid in stimulating growth through an increase in public investment is jeopardized.

Third, programme aid tends to increase routine expenditure but not development expenditure. Thus, this type of aid serves only as a buffer to maintain a certain level of routine expenditure. In times of economic hardship, fiscal revenue usually declines and thus the dependence on aid revenue increases. This also suggests that the economy has no internal mechanism on the fiscal side to deal with economic downturns. Persistent budget deficits over a long period before a crisis makes no fiscal resources available to exercise a "fine tune" policy mix.

Fourth, aid flows make the Government fiscally "lazy". The availability of aid is a disincentive to expand domestic revenue through a more efficient and effective taxation system. In five years leading to the Asian financial crisis of 1997, the tax ratio remained constant at about 10.4 per cent despite the fact that that period was characterized by an economic boom, which is favourable for increasing tax efforts.

Our findings suggest that the Government of Indonesia has to reduce its dependence on aid. In the longer term, the objective of the Government should not be just filling the fiscal gap, but actually to create fiscal discipline. Closing the fiscal gap can be attained by increasing government revenues and improving expenditure management. However, the dilemma is that the arithmetic of closing the fiscal gap, that is, increasing tax and lowering expenditures, is not very simple. Public investment may be very crucial for sustaining growth, and increasing taxes may not be an easy task. Thus, where public expenditure cannot be cut, taxation cannot be simply increased, as doing so requires an overhaul of the taxation system. Such an overhaul may take time to be fully effective. At the same time, both the widening of the tax base and the cutting of public expenditure face strong political resistance. Therefore, over the short run, the Government may still have to rely on aid inflows to finance public investment and on rescheduling debts and debt forgiveness in order to lower the debt burden. Hence, the donors and the Government will have to cooperate in a constructive manner in the foreseeable future.

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ANNEX

TECHNICAL NOTES

In a vector autoregression representation, the interrelationships between aid and fiscal behaviour can be specified as follows:

$$\mathbf{Z}_t = \sum_{i=1}^{p} \Pi_i \, \mathbf{Z}_{t-i} + \varepsilon_t \qquad (1)$$

where $\boldsymbol{Z}_t$ is a vector of aid and fiscal variables and ε_t is a Gaussian error term. Aid is disaggregated into two components: project and programme aid. Fiscal variables include non-oil tax revenue, development and routine expenditures. Thus $\boldsymbol{Z}_t$ is a vector of five variables.

Assuming that Π is not a full-rank matrix, the solution of (1) involves common stochastic trends, and is given by the following formula:

$$Z_t = Z_0 + C(1)S_t + C^*(L)(h_t - h_0) \qquad (2)$$

where $h_t = \Psi W_t + u_t$

$$S_t = \sum_{i=1}^{t} u_i, \quad t = 1, 2, 3, \ldots\ldots$$

$$C(L) = C(1) + (1 - L)\, C^*(L)$$

$$C^*(L) = \sum_{i=0}^{\infty} C_i^* L^i$$

Note that L is the one period lag operator and C_i^* matrices are obtained recursively from the following formula:

$$C_i^* = C_{i-1}^* \Phi_1 + \ldots\ldots + C_{i-p}^* \Phi_p \qquad (3)$$

for $i = 1, 2, \ldots$, with $C_0^* = I - C(1)$, and $C_i^* = 0$ for $i<0$. Matrix C(1) can be obtained directly such that:

$$C(1)\Pi = 0 = \Pi C(1) \qquad (4)$$

The matrices, Φ_i can be obtained from coefficient matrices such that:

$$\Phi_1 = I - \Pi + \Gamma_1$$

$$\Phi_i = \Gamma_i - \Gamma_{i-1}, \quad i = 1, 2, \ldots, p\text{-}1$$

$$\Phi_p = \Gamma_{p-1}$$

Let $A_i = C(1) + C_i^*$, and A_i can be obtained recursively as:

$$A_i = A_{i-1}\Phi_i + ... + A_{i-p}\Phi_p, \quad \text{for } i = 1, 2,.... \qquad (5)$$

where $A_0 = I$, $\lim_{i\to\infty} A_i = C(1)$, and $A_i = 0$ for $i<0$.

Let Σ be the covariance matrix of the innovation, ε_t, and σ_{ij} be the component of the matrix. For a shock in variable *i*, it is necessary to define the size of the shock and an 1X*m* matrix, e_i = (0,....,1....,0) where the *i*-th component of the matrix is set to 1, while other components are set to zero. The size of the shock is usually set such that $\delta_i = \sqrt{\sigma_{ii}}$. The corresponding generalized impulse responses at time T+N are given by the following formula:

$$GI_i(\beta_j' Z_t, N) = \frac{\beta_j' A_N \Sigma e_i}{\sqrt{\sigma_{ii}}} \qquad (6)$$

where $i = 1, 2,.... m$; $j = 1, 2,...., r$ and N = 1, 2,....

The above impulse-response function may be used to assess the fiscal effects of aid. The pattern and size of the impulse will tell us about the direction and significance of the impacts.

COMPETITIVENESS: AN ESSENTIAL INGREDIENT FOR GROWTH IN ASIAN AND PACIFIC DEVELOPING COUNTRIES IN A GLOBALIZING WORLD

Marin Yari and Ron Duncan***

This paper sets out the opportunities and challenges that continuing globalization and technological progress present to the competitiveness of firms in the Asian and Pacific region. It also defines the important roles for Governments in the areas of education, research and development, and physical infrastructure so that they can enhance the possibilities for firms in the region to improve their productivity and competitiveness. The impact of the rapidly growing Chinese economy on the competitiveness of firms in other Asian and Pacific countries is also discussed.

I. INTRODUCTION

Rapid globalization has increased the interest of Governments and policymakers in policies that will improve national competitiveness and hence improve national economic performance.[1] Many countries have set up special committees and produced reports in efforts to better understand what competitiveness is all about. Two indicators of the economic competitiveness of countries are regularly published in the World Economic Forum's (WEF) *Global Competitiveness Report* and the International Institute for Management

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Research assistance was provided by Somchai Congtavinsutti, Poverty and Development Division, ESCAP. The views expressed are those of the authors and not the organizations to which they belong. The authors wish to thank Ngo Van Lam and Shahid Ahmed for their valuable comments.

[1] Paul Krugman (1994) argues that we should talk only of the competitiveness of a firm and not the competitiveness of a country.

Development's (IMD) *World Competitiveness Yearbook*, and these indices are widely used to compare and benchmark the competitiveness of countries.

The purpose of this paper is twofold: first, to revisit some of the major issues pertaining to competitiveness, especially as they relate to Asian and Pacific countries; and second, to identify options for increasing competitiveness in Asian and Pacific countries. The second section of the paper discusses competitiveness and its importance in the globalizing world. The third section briefly examines some of the factors that affect competitiveness, with special reference to Asian and Pacific countries. The fourth section highlights the performance of selected Asian and Pacific countries in recent competitiveness rankings. The fifth section looks into the impact on competitiveness in Asia and the Pacific of the emergence of China as an economic powerhouse and the excess of capacity in the electronics industry. The sixth section discusses major policy issues relating to the competitiveness of firms and economies. Concluding observations are made in the last section.

II. COMPETITIVENESS AND ITS IMPORTANCE FOR ECONOMIC GROWTH AND DEVELOPMENT

The concept of competitiveness is somewhat elusive, particularly as it is applied at the national level rather than at the firm or industry level. It is no surprise, therefore, that there has been an intense debate over its meaning and economic relevance. Many Asian and Pacific countries have commissioned special studies of their economic competitiveness, and the Asian Development Bank (ADB) has also recently contributed towards a better understanding of the subject matter (ADB, 2003).

Competitiveness may be defined as the ability of firms to be profitable in delivering the products and services that consumers demand. Therefore, competitiveness may be seen as a firm-level concept having an impact on growth at the national level. It is an ongoing process and a way of seeking a better future for individual firms, industries and, ultimately, national economies. Krugman (1994) argued that it was competitiveness of firms and not of countries that was relevant. According to Krugman, the competitiveness of firms has a clearly defined bottom line: "if a corporation cannot afford to pay its workers, suppliers, and bondholders, it will go out of business. So when we say that a corporation is uncompetitive... it will cease to exist. Countries, on the other hand, do not go out of business... they have no well-defined bottom line".

Competitiveness has often been equated with macroeconomic determinants, such as the level of the exchange and interest rates, and wages, or with microeconomic factors, such as entrepreneurship, economic incentives, regulations affecting business activities, technological capabilities and institutional support. Although macroeconomic and microeconomic approaches offer valuable insights into competitiveness, there is increasing recognition that building technological capabilities at the firm level is most important for competitiveness in a world of rapid globalization and technological progress (Lam, 2004). Many of the macroeconomic and microeconomic factors are "givens" and often not susceptible to government action, at least not in the short term (infrastructure, for instance). In addition, at the microlevel, the work ethic can be a critical factor, which may not be responsive to monetary incentives.

Competitiveness is a term used to cover almost every aspect of market performance, but the key variable for the economic analysis of competitiveness is the growth of productivity since this, ultimately, is the main determinant of living standards. As such, competitiveness is primarily a firm-level concept. A firm is competitive if it can create products and services of a superior quality and at a lower cost than its domestic and international competitors. Being competitive means a firm is successful in an environment where firms try to stay ahead of each other by reducing prices, by raising the quality and safety of their products and services, and by creating new or differentiated ones.

A firm's competitiveness is a function of factors, such as (a) its own resources, for example, its human and physical capital, and technological capabilities, (b) its market power, (c) its behaviour towards rivals and other economic agents, (d) its ability to adapt to changing circumstances, (e) its capacity to establish new markets and (f) the institutional environment, which is largely provided by the Government, including physical infrastructure and the quality of government policies (ADB, 2003).

The short-run competitiveness of a firm is indicated by (a) the price, quality and functionality of the product or service, (b) the firm's market share, (c) the firm's profitability, (d) the firm's return on assets and (e) the share price (if listed). Its long-run competitiveness is a result of how well it performs compared with similar firms in developing new or differentiated technologies to generate new products and processes, and, ultimately, new markets. Therefore, research and development (R&D) in new product and process inventions and innovations is crucial. An example of good long-run performance is that of Samsung; its sales were once smaller than those of Sony but are now much larger as the result of R&D and innovations (Wattanapruttipaisan and Lam, 2006).

While competitive enterprises are the key factor in a country's competitiveness, the economic responsibilities of Governments are such that it is impossible to ignore public sector influence on the competitiveness of firms. Governments have their most important role in shaping the environment in which enterprises operate. It is important that Governments provide the necessary institutional infrastructure and services to facilitate competition among firms. They must provide macroeconomic stability; establish the necessary legal system, including competitive entry and exit laws; address market failures; and foster R&D in the public and private sectors.

There has been a long-standing controversy over whether Governments should also play a role in identifying areas or sectors of economic activity with a view to promoting competitiveness. Such involvement has emphasized incentive policies, such as tax holidays and subsidies, which are principally designed to attract foreign investment in particular sectors and industries, and to affect the future course of technological developments and capabilities. Other forms of government intervention include the creation of export processing zones and industrial parks, which is done to reduce trade-related transaction costs. However, most of the research done on investment incentives (such as tax breaks and subsidies), which is principally research by the International Monetary Fund – shows that these kinds of incentives are of very doubtful value. They mainly serve to shift investment away from activities not receiving the incentives and promoting the development of capital-intensive activities instead of the more desirable labour-intensive activities.[2] Firms or industries may be helped to become competitive through government assistance. However, where the Government is not providing a public good or correcting a market failure in giving this assistance, the firm or industry is not economically efficient, and the country as a whole is worse off because of the distortion in the allocation of the nation's resources.

Governments may legitimately provide assistance to the private sector, and thereby assist them in being more competitive, in three major areas: education, technology and innovation, and physical infrastructure. A major prerequisite for competitiveness is the availability of skilled labour through the provision of education and training, whether through facilities or through on-the-job training. The State and the private sector have a shared responsibility for developing human resources, especially at the tertiary level. The ability of a country to develop the relevant

[2] There is considerable international competitiveness in corporate tax rates, for example, in Singapore (20 per cent), the Republic of Korea (25 per cent), Malaysia (28 per cent), Thailand (30 per cent), the Philippines (32 per cent), China (33 per cent) and Japan (37 per cent). Two countries have a sliding tax rate: Viet Nam (25-50 per cent) and Indonesia (10-30 per cent).

skills and to improve the supply of knowledge workers and managers through education and training is vital to competitiveness, as shown by the achievements of most East Asian economies.

At first, East Asian countries were competitive because of their low unit labour costs.[3] However, they have striven to base their competitiveness on an educated workforce and knowledge creation. Economies such as those of Singapore, the Republic of Korea and Taiwan Province of China have continued to invest massively in human capital, particularly technical skills, to foster R&D and build strong and reliable support institutions. Singapore has tapped foreign direct investment (FDI) by participating effectively in global production systems, while the Republic of Korea and Taiwan Province of China have accessed new technologies via arm's length means, such as licensing and original equipment manufacturing.[4] By comparison, Malaysia, Thailand, Indonesia and the Philippines have relied more heavily on FDI in export processing enclaves and less on building indigenous capabilities. The export success of these countries was thus driven largely by global value chains, particularly in electronics. Except for Singapore, there seems to have been an inadequate allocation of public and private sector resources to developing science and technology in Association of Southeast Asian Nations (ASEAN) countries. Public spending on R&D averages less than 0.3 per cent of gross domestic product among ASEAN countries, well below the 2.5-2.8 per cent range in Japan, the Republic of Korea and the United States of America. This low level of R&D has created a bottleneck and a vicious circle in terms of inadequate job creation in science and technology in ASEAN countries that have an inadequate supply of knowledge workers and professionals and an over-reliance on mature and low value-adding technologies (Lam, 2004).

Governments in the Asian and Pacific region have long considered infrastructure development to be primarily within the realm of the public sector because they have accepted that good infrastructure plays a crucial role in fostering economic growth and poverty reduction. For a number of reasons, including sensitivities about infrastructure pricing, the involvement of the private sector in this area was slow and uneven. However, with the emergence of trade as an engine of economic growth, the importance of infrastructure in the production of tradables has increased the incentives for the private sector to contribute in this area.

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[3] It was the low unit labour costs, i.e., wages times productivity, that was important and not the wage level per se.

[4] For a detailed discussion of the technological transformation of these two East Asian economies, see Lam and Wattanapruttipaisan (2005 a and b).

The liberalization of trade restrictions will open new markets, and appropriate transport infrastructure can facilitate the timely delivery and quality of goods and services traded. Competitiveness in certain high-value export markets is especially dependent on high-quality infrastructure. In addition, the availability of good quality physical infrastructure improves the climate for FDI.

The availability of good quality infrastructure, especially transport, energy, information and communications technologies (ICTs) and water, is essential for sustained economic growth in Asian and Pacific countries. It is estimated that total investments in basic ICT infrastructure in the Asian and Pacific region for the next 10 years (2006-2015) will total US$ 327 billion, of which developing countries will account for US$ 191 billion (ESCAP, 2006). Among developing countries, the main players will be China (US$ 65 billion) ASEAN countries and India (US$ 49 billion), and the Republic of Korea (US$ 22 billion). The financing needs of other Asian and Pacific developing countries in ICT are projected at US$ 55 billion during this period, which is approximately 17 per cent of the total requirements for the region. There is unquestionably a need for increased public sector spending on physical infrastructure, which if forthcoming, could ease some of the blockages to private investment. But any push on infrastructure will have to be carefully managed so that it does not undermine fiscal objectives. Despite the differences among countries in the Asian and Pacific region, there exist opportunities for regional cooperation. Such cooperation could follow a two-track approach: cooperation in cross-border infrastructure-building initiatives, such as the harnessing of transboundary infrastructure resources (for example, energy and water) and the financing of their investment; and the harmonizing of cross-border rules and regulations.

III. FACTORS DRIVING COMPETITIVENESS

The significance of competitiveness for firms and policymakers in Asian and Pacific countries should be understood within the broad context of the constantly evolving environment that has been created by the forces of globalization and technological progress and where knowledge is, perhaps, the most important resource and determinant of sustained competitiveness. New challenges and opportunities are created by globalization and technological progress, and Governments and firms in the Asian and Pacific region need to devise strategies to take full advantage of the potential benefits that globalization, technology and competition offer.

Globalization is the process of the global economic integration of economies and regions through the removal of barriers to trade in goods and services and

capital, and through the diffusion of knowledge and information. The establishment of the World Trade Organization was an important step in the process of globalization and, since its creation, the Organisation for Economic Co-operation and Development has promoted the free movement of capital, goods and services, at first among industrialized nations, and then worldwide. The establishment of preferential trade blocs, such as the North American Free Trade Agreement in the Americas and the ASEAN Free Trade Area in Asia, and regional organizations, such as the European Union and ASEAN, has reinforced the rapid pace of cross-border cooperation and integration, mainly through trade and investment.

Many countries have lowered tariff levels and dismantled other trade barriers in response to World Trade Organization membership requirements and regional trade agreements. This liberalization has increased competition between firms and industries and created opportunities for perceptive entrepreneurs. Today, tariffs on goods traded among World Trade Organization member countries average less than 4 per cent. As a result, most domestic markets are facing increasing competition from foreign firms.

In the broadest sense, therefore, the adoption of the open-market paradigm likely had the most important impact on the competitiveness of firms and industries in the latter half of the twentieth century. Judging by the competitiveness rankings of countries shown in the next section, this certainly is the case for countries in the Asian and Pacific region.

The revolution in ICTs and in transportation technologies has made cross-border communication much cheaper and faster than ever before. The end result is that the transaction costs of transferring ideas, information and products have been substantially reduced. A new culture of doing business has evolved; there is now a fragmented world in which firms seldom make complete products or provide a full service in a country but source components of the product or service from the lowest-cost country. These new modalities in value creation have offered many opportunities for trade and investment linkages between countries and firms.

Competitiveness has become increasingly international and, in many industries, completely global. The expansion of ICTs, for example, has resulted in new production processes. Investing in new technologies is necessary for firms to maintain or increase their competitive advantage. However, doing this requires considerable expenditure on R&D and on the commercial exploitation of the results. Such investment also gives firms the opportunity to differentiate their products more clearly from those of their competitors. Firms become more competitive by competing and slowly and patiently learning how to do business better. They accomplish this by striving to enhance their entrepreneurial and technological

capabilities. Firms therefore become more competitive not only by reducing their production costs but also by developing their capability to create new and more technology-intensive products or new generations of existing products. This involves firms moving into new areas, such as services, as well as taking risks and working through the process of trial and error.

In their quest for profits, firms face the challenge of having many competitors who are pursuing the same goals, and this competition forces the adoption of the cheapest methods of production and improvement in the quality of products. Technological upgrading, in the form of new machinery and enhanced technological capabilities, provides firms with the means to be successful in competition. In the process of introducing new and better technologies, new, lower-cost methods become available, thus enabling the firms to increase the productivity of their workers.

IV. RECENT COMPETITIVENESS RANKINGS OF SELECTED ASIAN AND PACIFIC COUNTRIES

As we have argued, competitiveness is largely a firm-level concept, and hence the notion of "national competitiveness" must be treated with caution. Nevertheless, a better appreciation of the concept of competitiveness, as outlined above, and of their country's competitiveness performance can guide policymakers in adopting the economic policies needed to assist their firms and industries. Countries can be ranked in terms of their competitiveness performance, and this ranking can pressure policymakers to try to improve the Government's own performance. The two best-known composite indices benchmarking competitiveness across countries are found in the WEF *Global Competitiveness Report* and the IMD *World Competitiveness Yearbook*. Both indices focus on the microlevel business perspective and examine the extent to which countries provide an environment in which enterprises will compete effectively.

However, both the WEF and IMD competitiveness indices have attracted criticism. For example, Lall (2001) analysed the WEF index of 2000 and found flaws in its definition of competitiveness model specification, choice of variables, identification of casual relationships and use of data. Wignaraja and Taylor (2003) offered critiques of the theory and methods used by WEF and IMD. Building on such critiques, recent work by the United Nations Industrial Development Organization (UNIDO) (2002) and by Wignaraja and Taylor (2003) have emphasized the industrial competitiveness performance of developing countries, which is a departure from the concept of national competitiveness implicit in the WEF and IMD indices.

The UNIDO competitive industrial performance index focuses on a nation's ability to produce manufactures competitively and provides valuable insights into the industrial record of developing countries. Wignaraja and Taylor (2003), using an analysis similar to that of UNIDO, constructed a manufactured export competitiveness index of 80 developing countries. Table 1 presents the main features of the four competitive indices. One disappointing feature of these indices

Table 1. Features of recent competitiveness indices

	Publication			
	World Economic Forum (2003)	*International Institute for Management Development (2003)*	*United Nations Industrial Development Organization (2002)*	*Wignaraja and Taylor (2003)*
Name of index	Growth competitiveness index	World competitiveness scoreboard	Competitive industrial performance index	Manufactured export competitiveness index
Concept	Business school approach to measuring national level competitiveness, using both performance and explanatory variables	Business school approach to measuring national level competitiveness, using both performance and explanatory variables	Focus on industrial performance and national ability to produce manufactures competitively	Focus on industrial performance and national ability to produce manufactures competitively
Number of variables	160	321	4	3
Weighting system	Two-tier approach based on a concept of "core" and "non-core" innovator countries; different aggregations and weightings apply to each group in the final index	20 categories each weighted at 5 per cent	4 variables, equally weighted	3 variables weighted at 30, 30 and 40 per cent (with the technology intensity of exports weighted highest)

Table 1. *(continued)*

	Publication			
	World Economic Forum (2003)	*International Institute for Management Development (2003)*	*United Nations Industrial Development Organization (2002)*	*Wignaraja and Taylor (2003)*
Data source type	Published data and entrepreneur surveys (7,741 responses)	Published data and entrepreneur surveys (over 4,000 responses)	Published data	Published data
Country coverage (including small States)	Covers 102 countries (8 small States)	Covers 59 countries (no small States)	Covers 87 countries (3 small States)	Covers 80 countries (11 small States)
First published/ frequency)	Yearly since 1979	Yearly since 1990	2002 and henceforth periodically	2003

Source: Reproduced from Asian Development Bank, "Measuring competitiveness in the world's smallest economies: introducing the SSMECI", ERD Working Paper Series No. 60 (Manila, November 2004).

is the limited coverage of small States.[5] The WEF 2003 report includes only eight small States of the 102 economies covered, while the IMD 2003 report includes no small States out of the 59 States included in its coverage. At twenty-second, Estonia is the highest ranked among the small States in the WEF 2003 report. The areas in which it scores well include macroeconomic environment (access to credit), technology (favourable laws relating to ICTs) and the efficiency of the tax system. By comparison, Gambia, ranked fifty-fifth in the WEF 2003 report, was the lowest ranked among the small States as a result of its macroeconomic environment score (low national savings rate), public institutions (poor compliance in payment for public utility services and tax collections), technology (inadequate telephone lines and internet users) and a lack of health services. The UNIDO 2002 report covers only three small States, while the Wignaraja and Taylor 2003 report covers 11. To help fill the gap, and building on the empirical work of Wignaraja and Taylor (2003), Wignaraja and Joiner (2004) constructed a small States' manufactured export competitiveness index (SSMECI) covering 40 small States.

[5] This is most likely because of the unavailability of data.

Let us now compare the results from the WEF 2004 and IMD 2004 indices to see how developing Asian and Pacific countries have fared on competitiveness scores. Of the 104 countries included in the WEF report, 8 developing Asian and Pacific economies made the top 60 (table 2). These economies were Taiwan Province of China (4), Singapore (7), Hong Kong, China (21), the Republic of Korea (29), Malaysia (31), Thailand (34), China (46) and India (55). By contrast, Indonesia (69), Sri Lanka (73), the Philippines (76), Viet Nam (77), Pakistan (91) and Bangladesh (102) were in the bottom half of the indices. The rankings of Asian and Pacific economies between the WEF 2003 and 2004 indices were stable except for those of the Republic of Korea and Viet Nam. The drop in ranking of the Republic of

Table 2. Comparison of the International Institute for Management Development competitiveness index and the World Economic Forum competitiveness index rankings, 2003 and 2004

	International Institute for Management Development			*World Economic Forum*		
	Index 2004	*Rank 2004*	*Rank 2003*	*Index 2004*	*Rank 2004*	*Rank 2003*
United States	100.000	1	1	5.82	2	2
Singapore	89.008	2	4	5.56	7	6
Australia	86.046	4	7	5.25	14	10
Hong Kong, China	85.765	6	10	5.06	21	24
Taiwan Province of China	79.543	12	17	5.69	4	5
Malaysia	75.919	16	21	4.88	31	29
New Zealand	74.394	18	16	5.18	18	14
Japan	71.915	23	25	5.48	9	11
China	70.725	24	29	4.29	46	44
Thailand	68.235	29	30	4.58	34	32
India	62.971	34	50	4.07	55	56
Republic of Korea	62.201	35	37	4.90	29	18
Philippines	49.666	52	49	3.51	76	66
Turkey	43.459	55	56	3.82	66	65
Indonesia	38.095	58	57	3.72	69	72

Sources: International Institute for Management Development *IMD World Competitiveness Yearbook 2004* (Lausanne, 2004); and World Economic Forum, *The Global Competitiveness Report 2004-2005* (Oxford University Press, 2005).

Note: The indices listed are based on 2004 International Institute for Management Development competitiveness rankings up to number 60.

Korea to 29 in 2004 from 18 in 2003 was linked to a significant decline in the macroeconomic environment. In the case of Viet Nam, the drop in ranking from 60 in 2003 to 77 in 2004 was linked to public institutions and technology.

In the case of the IMD 2004 indices, 11 Asian and Pacific developing economies were included in the 60 countries and regions covered. Except for the Philippines and Indonesia, the other nine economies improved their position in 2004, with India recording a significant improvement from fiftieth in IMD 2003 to thirty-fourth in 2004 due to improvement in economic performance (the relocation of production, R&D and services facilities), government efficiency (effective personnel income tax rate), business efficiency (high remuneration in service professions) and infrastructure (qualified engineers). Singapore and Hong Kong, China, made the top 10 of the IMD 2004 report, while Singapore and Taiwan Province of China made the top 10 of the WEF 2004 ranking (table 3).

The main factors responsible for the high ranking of Singapore and Taiwan Province of China included economic performance (high export performance, low inflation and surplus current account balance), government efficiency (effective government decisions, high foreign reserves and consistent government policy directions), business efficiency (positive attitudes towards globalization, productive labour relations and low level of industrial disputes) and infrastructure (adequate science education, good transport network and good R&D). Countries such as the Philippines, Indonesia and Turkey ranked poorly due to economic performance (low gross domestic product per capita and low FDI), government efficiency (high political instability, ineffective government decisions and poor public services), business efficiency (poor image abroad, low productivity, inadequate skilled labour and poor labour relations), infrastructure (pollution problems, the inefficient distribution of infrastructure, inadequate cyber security and inadequate patent and copyright protection).

V. THE INFLUENCE OF CHINA AND CYCLICAL OVERCAPACITY ON COMPETITIVENESS IN THE ASIAN AND PACIFIC REGION

Two major developments have had a significant bearing on competitiveness in the Asian and Pacific region, especially after the financial crisis that began in 1997. First, there is the rise of China as an industrial powerhouse. Second, there is the cyclical overcapacity that has occurred in several key electronics sectors, such as dynamic random-access memory, personal computers and mobile telephones. As noted earlier, electronics has become the mainstay of the East and

Table 3. Analysis of competitiveness rankings of developing Asian and Pacific economies, 2003 and 2004

Rankings	*International Institute for Management Development*		*World Economic Forum*	
	2004	*2003*	*2004*	*2003*
Rank 1-10	2 (Singapore and Hong Kong, China)	2 (Singapore and Hong Kong, China)	2 (Taiwan Province of China and Singapore)	2 Taiwan Province of China and Singapore
Rank 11-20	2 (Taiwan Province of China and Malaysia)	1 (Taiwan Province of China)	0	1 (Republic of Korea)
Rank 21-30	2 (China and Thailand)	3 (Malaysia, China and Thailand)	2 (Hong Kong, China; and Republic of Korea)	2 (Hong Kong, China; and Malaysia)
Rank 31-40	2 (India and Republic of Korea)	1 (Republic of Korea)	2 (Malaysia and Thailand)	1 (Thailand)
Rank 41-50	0	2 (India and Philippines)	1 (China)	1 (China)
Rank 51-60	3 (Philippines, Turkey and Indonesia)	2 (Turkey and Indonesia)	1 (India)	2 (India and Viet Nam)
Number of economies	11	11	8	9

Sources: Taken from the International Institute for Management Development, *IMD World Competitiveness Yearbook 2004* (Lausanne, 2004); and World Economic Forum, *The Global Competitiveness Report 2004-2005* (Oxford University Press, 2005).

South-east Asian supply chains.[6] The combination of these two factors has led to fierce competition in the Asian and Pacific region, resulting in lower profit margins and excess capacity in some industries.

[6] The intraregional trade structure and the related opportunity costs and policy implications are discussed by Lam and Wattanapruttipaisan (2005 a and b).

China is now the world's fourth largest economy. Its economic rise in recent years has presented both opportunities and challenges for the global economy, including the economics of the Asian and Pacific region. Much has been written recently about the rise of China and its implications for developing countries. For example, a recent study by Wattanapruttipaisan (2005) showed that the competitive impact of China on ASEAN countries has been formidable, although it has not been uniform across industries and sectors. The study showed that there is considerable evidence of adjustment and adaptation by South-east Asian manufacturers to the intensifying competition. But the study also pointed out that ASEAN countries need to make improvements in their R&D if they are to boost their efficiency and competitiveness to become useful partners with Chinese firms and to compete effectively with China.

A study by Lall and Albaladejo (2004) examined China's competitive threat to its East Asian neighbours in the 1990s, benchmarking performance by technology and markets. This study found that the main issue is not so much direct competition between China and its neighbours (which is clearly growing) but how the latter's trade specialization has changed in response. It was found that market share losses are mainly in low-technology products, with Japan being the most vulnerable. However, the threat from China also exists in high-technology product segments that rely on low-end functions. The threat from China is least for countries that have developed new capabilities (including not only skills and technologies but also infrastructure, institutions and governance structures) to overcome their wage and other disadvantages vis-à-vis China. As the East Asian economies differ widely in their industrial capabilities, they face different levels of competitive threat from China.

Generally, the outcome will depend much on the growth of technological[7] and other capabilities in China and its neighbouring countries, with China having the advantages of lower wages or higher productivity, larger domestic scale, more industrial depth, bigger pools of skills, a Government willing to use its market size to bargain for greater technology transfer, and external and local linkages. If China's neighbours with higher wages can upgrade into more advanced activities enough to justify their wage levels as China moves into their present activities, they can continue rapid export growth. If they cannot, they risk export deceleration.

[7] A recent International Telecommunication Union report (2006) indicated that the Republic of Korea and Japan top the rankings for the use of information and communication technologies. The report noted that, since 2001, India has shown the fastest progress, followed by China, the Russian Federation, Hungary and Peru, with the strongest advances being noted in infrastructure and broadband uses.

Over time, Chinese workers will become scarcer and more expensive, especially in the increasingly affluent cities along China's eastern seaboard. The country will face growing economic pressures to move out of assembly work and other labour-intensive manufacturing (which will be taken up by poorer economies in Asia and beyond) and move into industries based more on services and information. With the working-age population declining, China's labour costs could become less competitive, and industries in countries such as Viet Nam and Bangladesh could become more attractive to investors. India, the world's other emerging giant, also stands to benefit from its lower wages and a far younger population structure than China (French, 2006).

The United States and the European Union are also concerned about China's dominance in textiles exports. The United States has already imposed caps on products, and the European Trade Commissioner was in Shanghai in June 2005 for talks with the Government of China to defuse tensions over the surge of Chinese textile exports to Europe. Following the abolition of global trade quotas on textiles and clothing on 1 January 2005, apparel shipments from China to Europe and the United States have increased sharply, in some cases by 400 per cent or more (*Bangkok Post*, 2005).

Many firms in East and South-east Asia are concerned about losing their competitiveness to exports from China. But the emergence of China as an economic powerhouse presents great opportunities to be exploited. Indeed, the emergence of China has had profound effects on the evolving structure of trade and investment in East and South-east Asia, and the idea that it has drained investment from other countries does not readily square with facts. For many East and South-east Asian countries, China has become an important market for exports. As the developed countries' share has declined, China's has risen. Indeed, China now runs a large trade deficit with the countries of East and South-east Asia. At the same time, the proportion of intermediate goods to total trade is rising within the Asian and Pacific region. Increasingly, the Asian and Pacific region has taken on the appearance of a vast assembly line, in which parts and components are shipped from country to country, often for eventual assembly in China.

Asia has witnessed increasing trade openness, which has been accompanied by significant progress in the diversification of its exports. A study done by ADB (2007) shows that, although Asia's direct exposure to the European Union, United States and Japan is declining, final demand from these developed countries plays an important role beneath the surface of rising intra-Asian trade. Much of this trade is dominated by intra-industry and intra-firm shipments of intermediate goods that are eventually consumed outside the region. For example, a microprocessor may be produced in Malaysia, exported to Indonesia, soldered

onto a circuit board and exported to China for final assembly in a laptop computer destined for the United States market. Dissecting East and South-east Asia's exports in this way suggests that nearly 80 per cent of all the region's exports are eventually bound for external markets, of which two thirds are headed for developed countries, and only one fifth of exports can be traced to consumption and investment demand inside the Asian and Pacific region.

As intra-Asia trade originates from demand outside the region, growth in the intraregional trade's share in total Asian exports does not automatically lead to Asia's insulation from external demand shocks. On the contrary, the extent to which intraregional trade is dictated by intra-firm and intra-industry processing and assembly through vertically integrated production chains determines how vulnerable the Asian economy can be to a shock, particularly an industry-specific one emanating from major demand destinations. For example, the last United States economic slowdown, in 2001/02, originated in the ICT industry, and its ripple effects through the global ICT industry was a vivid example of such vulnerability.

VI. MAJOR POLICY ISSUES IN INITIATING AND SUSTAINING COMPETITIVENESS

As noted, the State has an important role in establishing an environment in which firms can compete effectively. If firms are to achieve international competitiveness, it is clear that the most important role of the State is to provide a conducive environment for investment, including in education and training, R&D, and infrastructure. The State is continually called upon to shape the competitiveness environment by adopting of appropriate policies in taxation, education and health, and to invest in infrastructure, such as transport, energy, communications, and science and technology. Although most developing countries have initiated the privatization of utilities, such as telecommunications, energy and transport operations, the State is normally expected to be the guarantor of the integrity of the infrastructure, even if it has delegated the operational responsibility to the private sector.

The globalization of value chains implies that international firms have to manage and control their various components on a worldwide basis. These firms now use advanced ICTs to keep track of their assets, operations and customers. Therefore, it is important that States invest not only in traditional infrastructure, such as transport and water supplies, but also in technological infrastructure, such as fixed-line and wireless telecommunication infrastructure, in order to provide the necessary environment in which firms can operate. In some countries, the costs of such investments have been reduced by concentrating these infrastructure

investments in special economic zones, such as in China, India and ASEAN countries.

The importance of competitiveness in the context of globalization has brought to the forefront the significance of the role of education and training, and States have an important responsibility in these areas. This is particularly true for higher education, especially in science and technology and R&D. The engines of competitiveness and economic success remain science, product and process innovation, technology, education, and entrepreneurship, and all of these are intertwined. But in the end, science, supported by education, is at the core of competitiveness. East and South-east Asian economies did very well in providing basic education. But as these economies move from labour-intensive manufacturing to technology-intensive manufacturing, they will need new and increased FDI flows and the development of R&D to sustain their competitiveness. It is essential that they develop high-technology enterprises in such areas as information technology, computer software, Internet and e-commerce, biotechnology, and microelectronics. It is also necessary for them to apply, in parallel, new technologies for the revitalization of existing enterprises, including small and medium-sized enterprises in traditional economic sectors, and to facilitate the development of new enterprises based on their comparative advantages.

Many Asian and Pacific economies are focusing their efforts on improving competitiveness in assembly and manufacturing, but their efforts should also include diversifying into the services sector. These developing countries must also be mindful of the fact that the rapid development of industrial activities should not mask the importance of developing, in parallel, a financial system that can provide appropriate financial resources and corporate governance.

At the same time, many developing countries still suffer from an overdependence on one business sector or market, which ultimately leads to their suffering unnecessarily high levels of economic volatility. For example, South-east Asian countries suffered from overcapacity in semiconductors. Prices of semiconductors experienced a sharp fall in 1996 and again in 2000 due to the decline in the price of dynamic random-access memory chips. More recently, some of these countries have succeeded in diversifying their approaches, with excellent results in competitiveness.

VII. CONCLUSIONS

Competitiveness, like development, requires an integrated approach towards investment and human and institutional capacity-building, at both the aggregate and firm levels. Investment and capacity-building have to be ongoing, not least because of the accelerating technological advances, the constant emergence of lower-cost producers, the greater mobility of scarce resources through liberalization and globalization, and the growing sophistication and fickleness of consumer demands. All these mean ever higher thresholds of performance and efficiency expected of workers, enterprises and government agents.

Government has an important and evolving role to play in sustaining and enhancing the domestic competitiveness of enterprises, industries and sectors, including the service sector. Its role is to lay the needed foundation (for example, investment in infrastructure, especially education), perhaps to provide (temporary) incentives and inducements through judicious regulations and policies, to ensure that the macroeconomic fundamentals of the economy are relatively stable so that investors (domestic and foreign) can make long-term investment decisions, and to foster entrepreneurship and risk taking. These activities can be mediated through the encouragement of inter-firm networks and supply chains, both domestic and transboundary, involving local enterprises and industries. In addition, there is a need for the Government to balance the ongoing importance of the nation State as a legal entity with its own traditions, national attitudes, aspirations and relationships with others, despite globalization and the transnational operations of multinational corporations. At the same time, the Government has to balance the competing demands of regional and subregional integration on the one hand, and the preservation of a national identity on the other, as it strives to ensure that firms operating within its domain remain competitive.

The private sector has its own contribution to make to competitiveness, not least because the vitality and sustainability of industries and enterprises depend directly on efficiency, flexibility and productivity in resource utilization. Indeed, it is imperative that there be cooperation between the Government and the private sector in such areas as education, science and technology, innovation, and physical infrastructure in order to enable firms to compete. It should be noted, however, that competitiveness has both a price and a non-price dimension. The latter includes such issues as labour relations, working conditions, and social, ethical and environmental matters. These last-mentioned issues are not discussed here but they should, nevertheless, feature in any overall assessment of a country's competitiveness.

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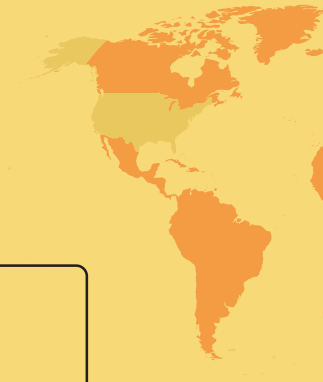

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