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## Promoting learning and industrial upgrading in ASEAN countries

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## **ADB Working Paper Series**

### **Promoting Learning and Industrial Upgrading in ASEAN Countries**

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Lamberte, and Ginalyn  
Komoto

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**Abstract**

This paper traces the effects of the “East Asian Miracle,” the 1997–1998 Asian Crisis, the recovery, and the 2008–2009 global financial crisis on ASEAN countries. It also considers how ASEAN countries can sustain growth by leveraging production networks to facilitate technology transfer. To achieve this, ASEAN countries need to maintain an environment friendly to foreign investment by resisting corruption, providing consistent and coherent enforcement of laws and regulations at all governmental levels, and maintaining stable macroeconomic fundamentals. This paper then emphasizes that ASEAN countries should focus on climbing the value chain by investing in human capital. They can do this by providing children with adequate nutrition, healthcare, and primary education, providing high school students with a high quality education in science and math, and providing university students with scientific and engineering training. The educational system should also be careful to provide students with marketable skills that businesses need. Finally, the paper argues that ASEAN should promote regional financial integration to help channel savings to high-yielding investments in the region.

**JEL Classification: J24, O16**

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## 1. INTRODUCTION

Member countries of the Association of Southeast Asian Nations (ASEAN) have experienced many twists and turns on the path towards economic development.<sup>1</sup> Blessed with natural resources, a hard working labor force, and pragmatic policymakers, their economies grew at miraculous rates before the 1997–98 Asia Crisis. After recovering, their economies again grew quickly until the global financial crisis of 2008–9. The slowdown in developed countries posed severe challenges to countries such as Malaysia and Thailand that export sophisticated goods. Countries such as Indonesia that are less dependent on exports or countries such as Viet Nam that export lower value-added goods fared better. With signs that the world economy is recovering, the outlook for all ASEAN countries is improving.<sup>2</sup> This paper considers how growth and development in ASEAN countries can be nurtured and sustained.

During the “East Asian Miracle” phase, learning and technology assimilation played important roles. ASEAN countries relied on foreign direct investment (FDI) to produce and export labor-intensive goods. FDI then led to a surge of capital goods imports in which new technologies were embodied. The multinational companies (MNC) exporting these goods initially provided local firms with detailed engineering and managerial instructions and specifications, facilitating learning. The assimilation of the new technologies then continued as local engineers engaged in a process of reverse engineering, taking capital goods apart and reassembling them. Importing technologically-sophisticated capital goods and exporting labor-intensive manufacturing goods thus served as a learning vehicle for ASEAN countries.

More recently, trade-FDI-technology linkages have led to agglomeration and technology transfer in countries such as Thailand. As FDI firms increase their tenure in host countries, they increase their procurement from local firms. This leads to the formation of industrial clusters, and local engineers and skilled workers begin migrating among firms and sectors in the cluster. They bring their accumulated human capital with them and disperse it across the economy. The resulting learning-by-doing process contributes to a virtuous cycle of growth and development.

To facilitate these spillover effects ASEAN countries should sustain FDI-friendly environments. As Lim and Kimura (2009) discuss, once the seed of industrial agglomeration takes root, local firms receive abundant opportunities to join production networks. To attract FDI, ASEAN countries need to resist corruption, provide consistent and coherent enforcement of laws and regulations at all governmental levels and maintain stable macroeconomic fundamentals.

Going forward, ASEAN countries should continue to focus on learning and fostering the development of creative, knowledge-intensive industries. ASEAN countries other than Viet Nam will find it hard to compete with low-wage countries such as the People’s Republic of China (PRC) in low-skilled production activities. They thus need to climb the value chain and engage in knowledge-intensive activities.

Investing in human capital should proceed at several levels. It is essential that children in ASEAN countries have adequate nutrition, healthcare, and primary education. It is also desirable that high school students receive a high quality education in science and math and also that university students receive scientific and engineering training. The educational system should also be careful to provide students with marketable skills that businesses need. ASEAN governments can perhaps play a coordinating role in this process.

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1 ASEAN member countries include: Brunei Darussalam, Cambodia, Indonesia, Lao People’s Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam.

2 In this paper we use the term ASEAN to refer to Indonesia, Malaysia, the Philippines, Thailand, and Viet Nam.

To help finance these expenditures, funds that the government currently spends on promoting exports could be redirected towards human capital formation (Nambiar 2009). As Park (2009) argued, it is probably desirable for ASEAN countries to eliminate biases that favor exports. In some ASEAN countries export processing zones and subsidies require substantial government expenditures. These funds would be better spent improving health, education, and nutrition so that economies in the region can advance from simple to complex production activities and from assembling imported parts and components to participating in the engineering and design aspects of production.

The next section discusses how ASEAN economies were impacted by the East Asian Miracle, the Asian Crisis, and the Global Financial Crisis. Section 3 considers East Asian production networks, and how ASEAN countries can maintain FDI-friendly environments in order to promote industrial agglomeration and technology transfer. Section 4 uses data from the World Economic Forum Global Competitiveness Report (2009) to consider specific ways that countries in the region can improve productivity and attract foreign and domestic investment. Section 5 discusses the ASEAN Economic Community project and ASEAN financial integration. Section 6 concludes.

## **2. THE MIRACLE, THE ASIAN CRISIS, THE GLOBAL FINANCIAL CRISIS AND THE RECOVERY<sup>3</sup>**

The story of ASEAN's miraculous growth before the Asia Crisis is well known. High saving rates, high rates of investment in physical and human capital, flexible labor markets, an export-oriented approach, and pragmatic policies all contributed to per capita growth rates in Indonesia, Malaysia, and Thailand that approached 6% per year between 1970 and 1996.

During the 1970s, Indonesia and Malaysia invested the windfall accruing from high commodity prices wisely. They were thus able to prevent the outbreak of Dutch disease.<sup>4</sup> The accrued windfall profits were channeled into irrigation, fertilizer, agricultural extension services, and similar items, increasing output and productivity in the agricultural sector and raising the incomes of farmers.

After commodity prices fell in the 1980s, Southeast Asia's shifted to an externally-oriented strategy. As Thee (2006) discusses, the anti-export bias of the trade regime was reduced. For instance, export-oriented firms were allowed to purchase both imported and locally made inputs at international prices.

Because surplus labor in the region kept wages low, ASEAN countries adopted a strategy of relying on foreign direct investment (FDI) to produce and export labor-intensive goods. To attract FDI, governments used various incentives, such as tax holidays (especially in the 1980s), increasing the share of foreign ownership, reducing administrative barriers to foreign investment, and implementing a drawback system.

FDI into Southeast Asia led to the assimilation of new technologies and thus to productivity gains. These productivity gains worked partly through the need to compete with imported goods. Competition led to domestic technological improvement, and hence productivity enhancement. Productivity improvements occurred especially in high growth sectors such as textiles, apparel, leather, and machinery and equipment (Choudhri and Hakura 2000).

FDI in Southeast Asia often began with a joint-venture system with more limited technology spillovers, before allowing stand-alone operations of greenfield subsidiaries of foreign multinationals.<sup>5</sup> FDI also produced a surge of capital goods imports in which new

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<sup>3</sup> This section draws on the portions of Yoshitomi, (2003) written by Iwan Azis and Willem Thorbecke..

<sup>4</sup> A Dutch disease occurs when the ratio of tradable and non-tradable prices change to the disadvantage of the tradable sector.

<sup>5</sup> The role of FDI in Southeast Asia is discussed in Hill (1994).

technologies were typically embodied. Initially, importers in foreign markets provided exporters from developing countries with detailed engineering and managerial instructions and specifications, facilitating assimilation of the new technologies. Later, competitive pressure in foreign markets necessitated greater efficiency and TFP growth.

Exporting was thus not only a way for ASEAN members to exploit comparative advantage, but also an important learning vehicle and a mechanism for achieving technology transfer. The ability of countries in the region to assimilate new technologies depended on the quantity and technical capabilities of local engineers. Engineers were sent abroad to identify the state-of-the-art technology required to compete in world markets. Adoption of technology then led to a process of learning-by-doing for engineers and skilled workers, generating spillover effects within and among industries. Engineers and workers migrated among firms and sectors, bringing their accumulated human capital with them and dispersing it across the expanding economy. These positive externalities then contributed to a virtuous cycle of growth.

Beginning in the late 1980s, as productivity grew, manufacturing exports became a major engine of growth in ASEAN countries. These exports were largely generated by FDI enterprises or by domestic small- and medium-sized enterprises that produced low-skilled labor intensive exports such as garments (Thee 2006).

Investment functioned as a second engine of growth, and ASEAN countries adopted a new method of financing investment in the early 1990s. Following financial sector liberalization, massive amounts of short-term, dollar-denominated foreign capital flowed into ASEAN countries. The inflows were attracted by “miraculous” growth rates, higher interest rates, stable exchange rates, and strong macroeconomic fundamentals. These inflows were channeled into long-term domestic investments in real estate and manufacturing. A double mismatch (i.e., both a currency and a maturity mismatch) thus developed on bank and firm balance sheets.

The surge in credit creation was accompanied by a downplaying of risks. Borrowers in the region generally did not hedge against exchange rate risk. They were able to borrow in foreign currency at interest rates up to one thousand basis points below domestic rates.<sup>6</sup> They were also confident that exchange rates would remain stable, so they did not hedge against exchange rate risk. Foreign banks, lending in dollars at low rates, did not adequately incorporate default risk into the returns they required to lend to the region. This might have reflected irrational exuberance (if investors were blinded by miraculous growth rates) or moral hazard (if foreign lenders believed the IMF would bail them out if a crisis occurred). For whatever reason, default risks were not adequately incorporated into required returns (see the discussion in Yoshitomi 2003).

The underpricing of risk artificially inflated asset prices. Speculative bubbles developed in the equity and real estate markets. As Table 1 shows, stock and property prices in ASEAN countries more than doubled between 1991 and 1993.

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<sup>6</sup> For example, in Indonesia over the period 1987–1996 the average interest rate for US dollar loans was 9%, while that for local borrowing was 18% (Zhuang et al. 2000).



**Table 1: Stock Market and Property Market Indices in East and Southeast Asia**

Country	1991	1992	1993	1994	1995	1996	1997
<u>Stock Market Index</u>							
Indonesia	247	274	588	469	513	637	401
Malaysia	556	643	1275	971	995	1237	594
Philippines	1151	1256	3196	2785	2594	3170	1869
Thailand	711	893	1682	1360	1280	831	372
<u>Property Market Index</u>							
Indonesia	119	66	214	140	112	143	40
Malaysia	113	126	369	240	199	294	64
Philippines	34	39	81	80	87	119	59
Thailand	82	168	367	232	192	99	7

Source: Allen (2000).

Domestic corporations faced too low a cost of capital because they were able to raise funds in equity markets at inflated prices and to borrow in dollars at depressed interest rates. Thus they spent too much on capital formation.

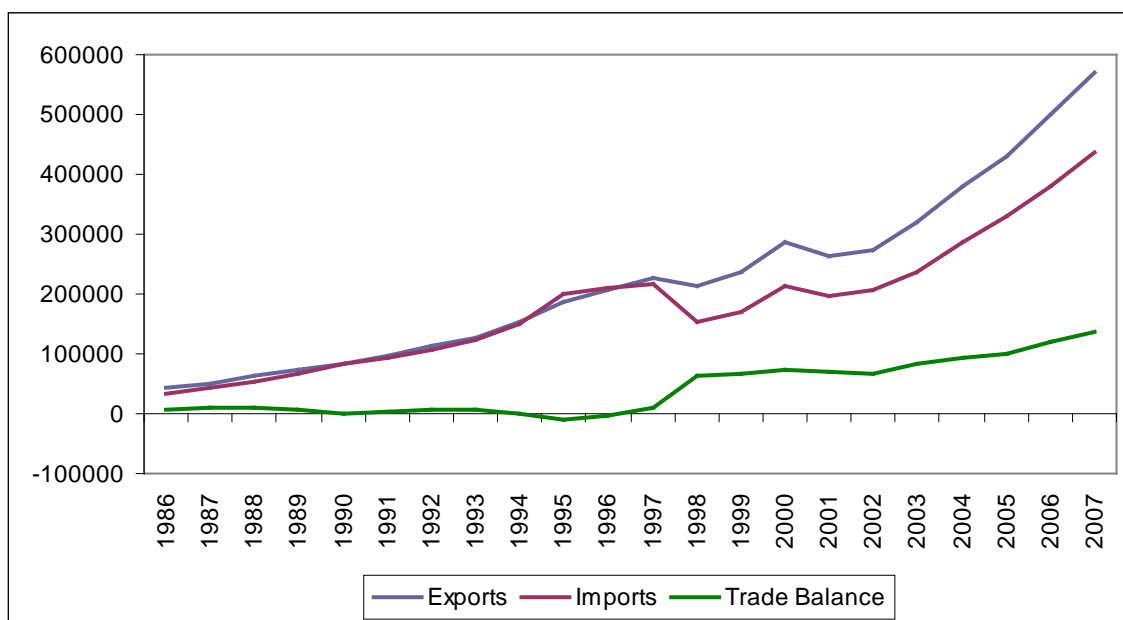
Shortly before the crisis, the equity and real estate bubbles burst (see Table 1). This reduced bank capital, restricted growth, and left economies with excess capacity. In addition, the downturn of the semiconductor industry in 1996 and increased competition following the devaluation in PRC caused exports to contract and the business cycle to turn down.

These factors reduced capital flows into the region. The slowdown of capital inflows combined with the already growing current account deficit created deficits in the overall balance of payments and decreased foreign reserves. As foreign reserves shrank, speculators attacked currencies in the region. Central banks were forced to abandon their pegs, and Asian currencies depreciated. Given the double mismatch, currency depreciations expanded liabilities on domestic balance sheets and shook investor confidence. This in turn led to further massive capital outflows. Asian currencies collapsed, declining 50% or more over several months.

The swing of capital movements from inflows to outflows equaled 15–20% of GDP. This massive reversal in the flow of capital produced domestic banking crises. As banks curtailed lending, domestic absorption fell by 20–30% in 1997–1998.

This collapse in domestic demand in turn reduced imports, moving the current account from deficit to large surplus in just one year. The current account improved because imports collapsed due to depressed domestic absorption. Extraordinarily large current account surpluses were thus achieved because import spending collapsed (see Figure 1).

**Figure 1: Exports, Imports, and trade Balance of ASEAN Countries**



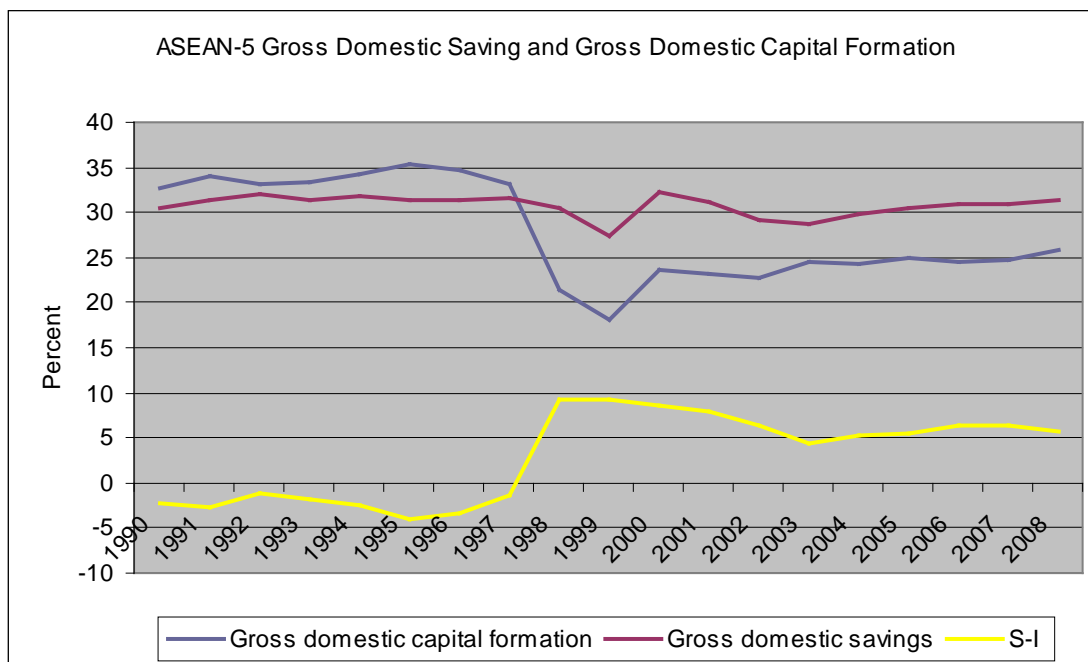
Notes: ASEAN includes Indonesia, Malaysia, the Philippines, Thailand, and Viet Nam.

Source: CEPII-CHELEM Database.

Investment spending, which had been excessive because of the artificially low cost of capital during the bubble period, plummeted during the crisis. This occurred not just because the intermediation system had become dysfunctional but also because exploding debts (measured in local currency terms) left private firms with little breathing room to focus on production.

Figure 2 shows that, while saving as a share of GDP has more or less remained stable in Asia, investment relative to GDP fell and remained low. This set the stage for large current account surpluses, standing in sharp contrast to current account deficits in crisis-hit economies before 1997.

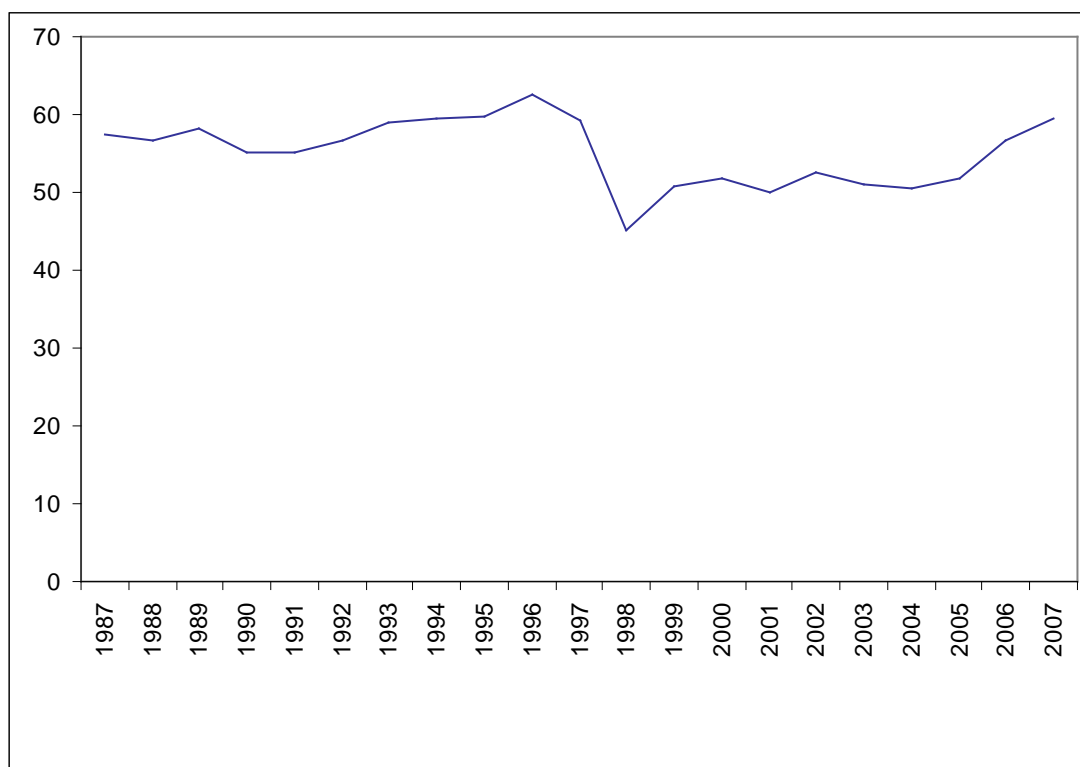
**Figure 2: Gross Capital Formation and Gross Saving as a Percent of GDP for ASEAN Countries**



Notes: ASEAN includes Indonesia, Malaysia, the Philippines, Thailand, and Viet Nam. S-I equals gross domestic saving minus gross domestic capital formation.

Source: ADB, Key Indicators for Asia and the Pacific 2009

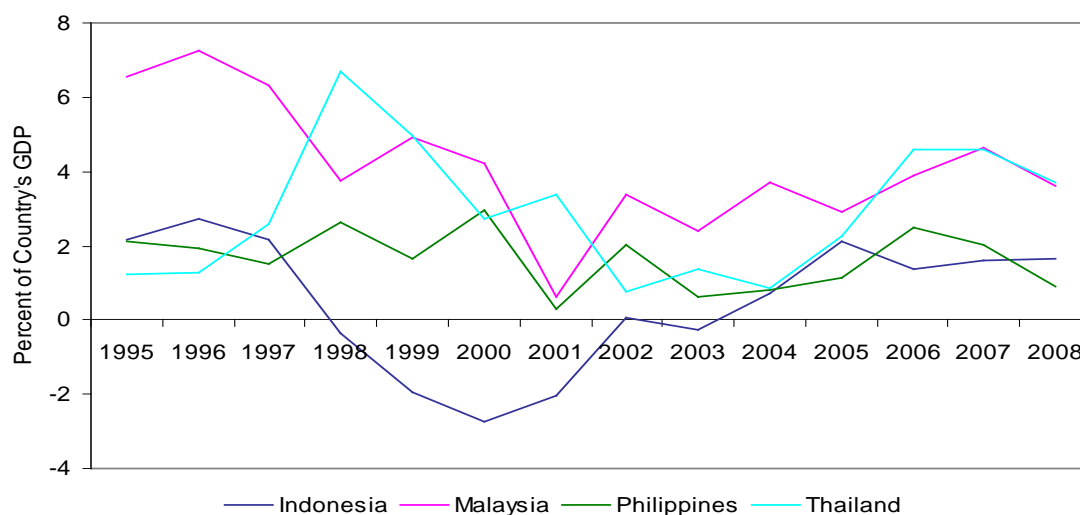
Figure 3 shows exchange rates among ASEAN countries after the crisis. Exchange rates initially collapsed by about 40% due to the massive reversals of private capital flows associated with the capital account crisis. Afterwards they remained about 20% on average below their precrisis levels until 2006. Low exchange rates helped to keep Asian current accounts in surplus after the crisis subsided.

**Figure 3: Real Exchange Rate of Indonesia, Malaysia, the Philippines, and Thailand.**

Note: The CEPII real exchange rate between countries *i* and *j* is calculated by first dividing GDP in dollars for country *i* by GDP in PPP for country *i* and doing the same for country *j*. The resulting ratio for country *i* is then divided by the ratio for country *j*. This variable measures the units of consumer goods in country *i* needed to buy a unit of consumer goods in country *j*. It can be compared across countries as well as across time. The figure plots the average real exchange rate across the four countries.

Source: CEPII-CHELEM Database.

FDI flows into ASEAN countries held up well, with the exception of Indonesia (see Figure 4). For Indonesia, FDI inflows collapsed in 1998 and did not recover until 2004. Reasons for the collapse include the protracted crisis, the poor investment climate, the restrictions of trade between provinces, the emergence of a less flexible labor market, and corruption among government officials (see Thee 2006).

**Figure 4: FDI as a Percent of GDP for ASEAN Countries.**

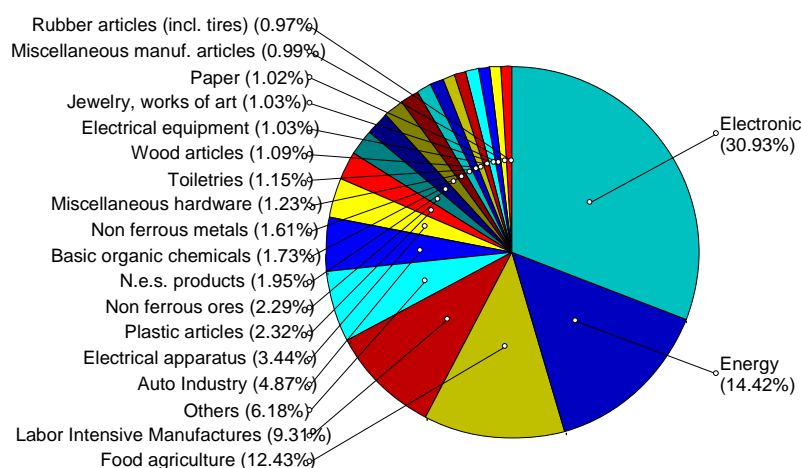
Source: ASEAN Secretariat FDI Statistics (<http://www.aseansec.org/22122.htm>)

As the crisis subsided and FDI flows continued, several East Asian countries again faced pressure for their currencies to appreciate. Central banks in the region kept exchange rates low by intervening in foreign exchange markets and purchasing United States (US) securities. Official holdings of US assets by foreign central banks increased by more than US\$2 trillion between 2002 and 2008.

Emerging East Asian central banks in both the crisis-hit countries (Indonesia, the Republic of Korea (hereafter Korea), Malaysia, the Philippines, and Thailand) and other economies (PRC, Singapore, and Taipei,China) accumulated foreign exchange reserves for the following reasons: 1) To be prepared for another capital account crisis characterized by massive reversals of short-term capital that can trigger both a currency collapse due to the drain on foreign reserves and a banking crisis due to the sharp increase in external liabilities on the balance sheets of banks and firms; and 2) To maintain competitive exchange rates in order to sustain the export-oriented thrusts of their economies.

Competitive exchange rates, decreases in domestic investment relative to saving, and rapid growth in the US set the stage for a surge in exports from Asia (see Figure 1). Whereas before the crisis too many resources were devoted to residential and non-residential investment, after the crisis the focus shifted to exports within East Asian production networks.

Figure 5 shows the structure of exports for ASEAN countries in 2007 (just before the Global Financial Crisis). The figure indicates that countries in the region are firmly joined to regional production networks centered around the electronics industry. Thailand is also part of a global value chain centered around the automobile industry.

**Figure 5: ASEAN's Exports by Product Category, 2007**

Note: Labor-intensive Manufactures includes carpets, clothing, fabrics, furniture, knitwear, leather goods, and yarns. Electronics includes consumer electronics, telecommunication equipment, computer equipment electronic components, optics, clockmaking, and precision instruments. N.e.s. refers to product categories that are not specified elsewhere.

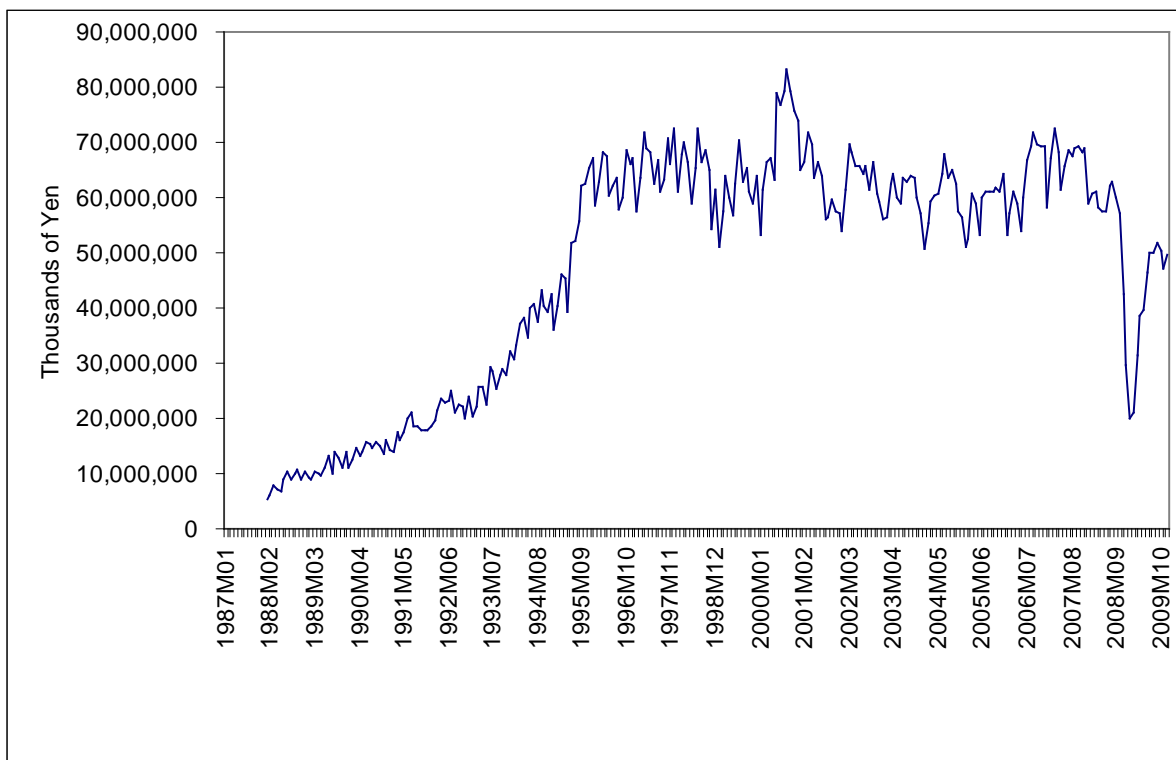
Source: CEPII-CHELEM Database.

Within these networks, Japan, Korea, Taipei, China and MNCs located in ASEAN countries produce sophisticated technology-intensive intermediate goods and capital goods and ship them to PRC and ASEAN for assembly by relatively low skilled workers. The finished products are then exported throughout the world. The lion's share, though, has gone to the United States, Europe, and Japan.

With the start of the global financial crisis, demand in the US and the rest of the world for sophisticated manufactured goods produced within East Asian supply chains immediately plummeted. To see how these exports are faring in the aftermath of the crisis it is helpful to look at Japan's electronic parts and components exports to ASEAN and ASEAN's machinery and transport equipment exports to the US. Japan is a leading exporter of parts and components to ASEAN, and the US is a leading importer of sophisticated assembled goods from ASEAN. In addition, both Japan and the US provide timely, high quality export and import data. Thus these data should act as leading indicators of trade within regional production networks.

Figure 6 shows Japan's exports of electronic parts and components to ASEAN. The figure focuses on exports to Malaysia, the Philippines, and Thailand, since the lion's share of processing trade to ASEAN goes through these countries. Figure 7 shows machinery and transport exports from Malaysia, the Philippines, and Thailand to the US. It is clear in Figure 6 that, as of December 2009, parts and components exports from Japan to ASEAN had substantially recovered. While still below the levels of recent years, they rebounded more than 70% from their lows in early 2009. It is clear in Figure 7 that, as of December 2009, machinery and transport exports from ASEAN to the US had also recovered. While below the levels of recent years, they have rebounded more than 50% from their lows in early 2009. In addition, the increase in parts and components exports from Japan to ASEAN in the second half of 2009 probably presages a further increase in final goods exports from ASEAN countries in future months. Thus it is hoped that exports produced within East Asian production networks can continue to support demand in ASEAN, although they may not be able to play as large a role as they did before the crisis.

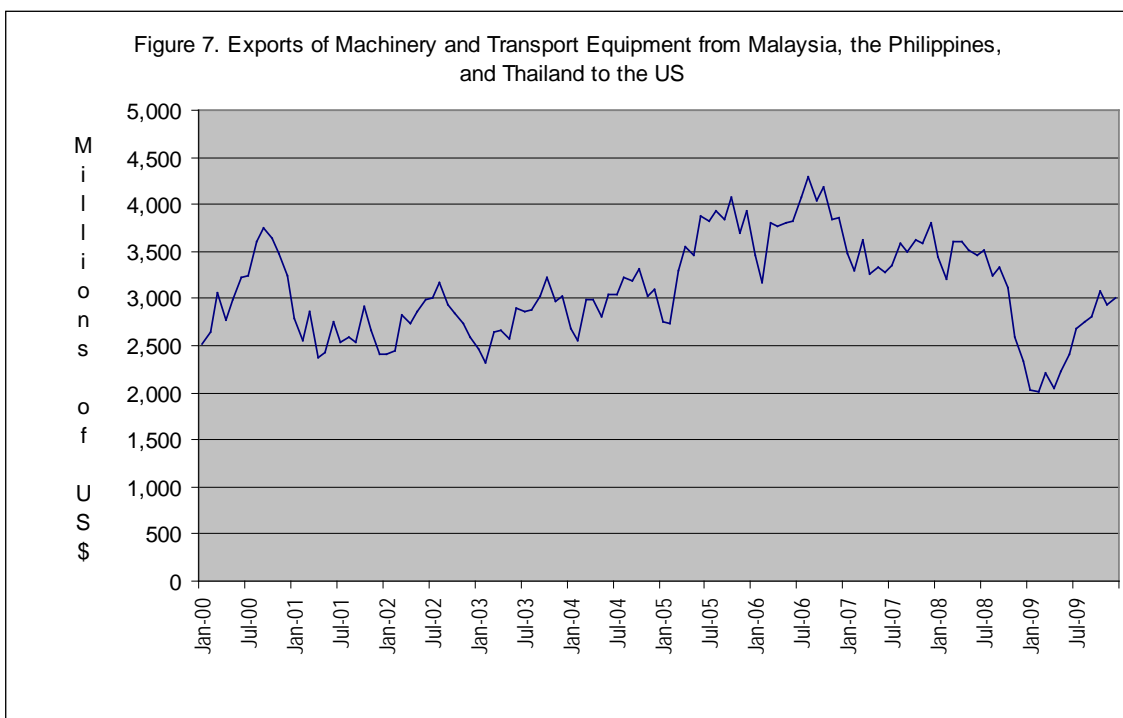
**Figure 6: Electronic Parts and Components Exports from Japan to Malaysia, the Philippines and Thailand**



Note: Electronic components correspond to Harmonized Schedule (H.S.) classification numbers 8540-8542.

Source: Trade Statistics of Japan.

**Figure 7: Exports of Machinery and Transport Equipment from Malaysia, the Philippines, and Thailand to the United States**



Note: Machinery and transport equipment corresponds to SITC section 7.

Source: US Census Bureau (Available: <http://www.census.gov>).

On a more general level, many have argued that export-led growth in Asia has outlived its usefulness (see ADB 2009). However, as Park (2009) argued, it is helpful to distinguish between an export-led growth strategy (ELGS) and export-led growth (ELG). Under ELGS the incentive structure is biased in favor of exports while under ELG it is not. If ASEAN countries can over time eliminate the bias in favor of exports (e.g., Export Processing Zones in the Philippines), then depending on comparative advantage exports can continue to be a driver of growth in the region.

One benefit that processing trade provides for ASEAN countries is that multinational corporations (MNCs) play a large role in the production and distribution processes. MNCs are skilled at finding new sources of demand and at tailoring production to the needs of the marketplace. Even if demand in the US and Europe has fallen, MNCs should be able to find new markets to exploit. Thus processed exports should continue to play a role in ASEAN economies. Assuming that they do, they offer the potential to effectuate technological transfer and to promote industrial upgrading in the region.

### 3. EAST ASIAN PRODUCTION NETWORKS<sup>7</sup>

Regional production networks have allowed firms to exploit comparative advantage by slicing up long production processes and allocating the production blocks created in this way throughout Asia. As Fukao *et al.* (2002) note, the production processes of an industry (e.g., the electronics industry) has been split into fragmented production blocks that can be located in different countries and vertical intra-industry trade is essentially based on differences in factor endowments in the fragmented production blocks between developing, emerging, and developed economies in the region.

Within these networks Japan, Korea, and Taipei,China primarily produce high-tech parts and components and PRC, Malaysia, the Philippines, and Thailand primarily perform lower-skilled assembly operations. Rasiah (2009) reports that skill and research and development intensity levels in the electronics industry are often orders of magnitude higher in Korea and Taipei,China than in ASEAN. Austria (2008) finds that PRC and ASEAN focus on the labor-intensive assembly of electronics goods, and that original equipment manufacturing (OEM) and original brand manufacturing (OBM) activities take place in more advanced Asian economies.

Since the PRC and ASEAN perform primarily low-skilled assembly operations, little of the value-added in the electronics industry comes from these countries. Koopman, Wang, and Wei (2008) report that the PRC's value-added in the computer industry is small. Using mathematical programming techniques and detailed data from trade statistics and input-output tables they find that PRC value-added in electronic computers is less than 5%. Agarwalla (2005) reported that the Philippines' value-added in the electronics industry is also small. In a comprehensive study, he found that the local value-added is less than 15%. Austria (2008) similarly concluded, based on a detailed analysis of import and export data, that ASEAN's electronics exports are highly import-dependent and that domestic value-added is minimal.

Jitsuchon and Sussangkarn (2009) noted that the high dependence on imports is a structural weakness for ASEAN members of regional production networks. ASEAN countries would benefit if more of the value-added could be produced domestically.

How can ASEAN countries increase the domestic content of exports? To do this they need to advance from simple to complex production activities, from assembling imported parts and components to participating in the engineering and design aspects of production?

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<sup>7</sup> This section draws on Thorbecke and Yoshitomi (2006).



As Lim and Kimura (2009) discussed, a crucial step is for local firms and entrepreneurs to obtain technology transfers and positive spillovers from the operation on multinational corporations in their countries. For this to happen, they argued, the absorptive capacity of the country must develop. They state that:

Policymakers in LDCs must be patient until they are hosting a critical mass of FDI, rather than hastily introducing performance requirements for technology transfers. Once the seed of industrial agglomeration has been planted, local firms and entrepreneurs will have ample opportunities for penetrating into production networks, which will eventually accelerate technology transfers and spillovers.<sup>8</sup>

Because of these benefits arising from foreign direct investment it is important to know the factors that affect FDI flows. Instead of exploiting external markets directly by exporting, why do firms choose to use foreign direct investment to transfer factories to other countries? When firms are deciding on the optimal degree of fragmentation they need to weigh benefits and costs along several dimensions (Kimura and Ando, 2005). One such dimension is location. Another is ownership. A third is internalization. Locational considerations and advantages include wage levels, factor endowments, technology transferability, physical and human infrastructure, and market-supportive institutions and political regimes. Ownership advantage is based upon technological and managerial superiority of home country firms relative to host country firms. Such superiority should be sufficient to overcome the extra costs incurred due to differences in business customs, formal and informal norms, languages, etc. Thus ownership is linked with control, and control becomes weaker as ownership becomes more diluted. Of course firms that outsource or subcontract may retain some control if they are involved in long-term relations. There may also be benefits to relinquishing ownership if the business partner has better managerial or technological ability in a particular product. Internalization advantage refers to the net benefits obtained by FDI firms through more captive and more integrated business activities conducted by parent firms. The optimal degree of internalization revolves around how to balance the costs of asymmetric information, incomplete contracts, and ineffective dispute settlement mechanisms with the efficiency gains of complete outsourcing and deverticalization.

One key step that ASEAN countries can take is to lower the service link costs between geographically separated production blocks. These costs can be lowered along two axes, “distance” and “controllability” (Kimura and Ando 2005).

Costs along the distance axis include transport costs, telecommunication costs, and intra-firm coordination costs. Costs along the controllability axis include the costs of imperfect information, lack of credibility, and loss of stable contracts. To lower service link costs ASEAN policymakers should focus on strengthening physical infrastructure such as 1) the network of highways, ports, and airports, 2) the ICT infrastructure, 3) container yards, and also market-supportive institutional infrastructure such as 1) enforcement of the legal system, 2) information on vendors, 3) enforcement of the stability of private contracts, 4) corporate governance, and 5) legal remedies when firms violate intellectual property rights agreements.

An ADB (2007a) study examined the effects of the East-West Corridor connecting Viet Nam and the Lao PDR and found that vehicle operating costs (VOC) decreased between 2% and 32% with a median of 16%. In Lao PDR, transit times were reduced by around 75%, while in Viet Nam, travel times were reduced by 25%. ADB (2007b) presented a study on the effects of the Phnom Penh to Ho Chi Minh City Highway project and estimated that VOC decreased by 10% and 15% for passenger cars, and trucks and buses, respectively. Transit times between Cambodia and Viet Nam were reduced by 30% and the value of trade along the

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<sup>8</sup> Lim and Kimura (2009: 12).

border rose by more than 40% annually between 2003 and 2006. Passenger and freight traffic along the border increased at an average annual rate of 53% and 38% respectively between 2003 and 2006.

Lowering service link costs can lead to many firms locating in one area. There are then economies of scale attached to the resulting agglomeration. Service link costs are lowered because the large number of firms in close proximity makes it easier for firms to procure parts and components and to handle frequent specification changes. In addition, the many business partners and different skills and technologies in close proximity help reduce costs associated with uncontrollability.

When seeking to promote trade-FDI-technology linkages through agglomeration, ASEAN governments can learn from the model of Shenzhen and the Pearl River Delta and more recently the Yangtze River Delta. It is hard to implement the necessary policy and infrastructural changes for a whole country but probably easier to do for a city or province.<sup>9</sup> In these deltas there are superb networks of modern highways, ports, and airports. Many firms have located there, leading to economies of scale and profitable interactions between upstream and downstream industries. If such infrastructure has to be built across countries, regional coordination and cooperation will become indispensable.

For instance, 80% of the international production of notebook PCs is now produced in the Yangtze River Delta by a dozen Original Design Manufacturers (ODMs) with owners in Taipei, China. They form part of a network consisting of the makers of operating systems (Microsoft) and microprocessors (Intel), branded makers (Hewlett Packard, Apple, Toshiba, etc.), suppliers of key parts and components, and producers of basic industrial materials. Both digital and human networks enable these producers to react efficiently in real time to changes in consumer preferences and technology (see Yoshitomi 2006).

For ASEAN countries to reap the full benefits of these trade-FDI-technology networks, it is necessary for their economies to move up the value chain and not remain

engaged only in labor-intensive assembling activities. Technology transfer and upgrading is an essential element of this process. The intra-firm transfer

of managerial technology from foreign affiliates to indigenous workers can be expedited if workers in the host country are highly educated.<sup>10</sup> Thus human capital formation is a prerequisite for technology transfer.

Similarly, a strong local knowledge base is essential for supplier firms to become involved in the engineering and even design aspects of production.<sup>11</sup> To build the knowledge base, it is not enough to simply provide more education. It is desirable to provide a high quality education in science and math at the secondary school level and scientific and engineering training at the university level (see Yusuf et al. 2003). The educational system should be careful to provide students with marketable skills that businesses need. ASEAN governments can perhaps play a coordinating role in this process.

Research and development policy can also play an important role. To do this it needs to take into account each country's level of technological innovation.<sup>12</sup> Countries at early stages of development typically imitate imported technology. R&D at this stage largely takes the form of learning, doing, using, failing (LDUF).

Since imported technology is expensive, a careful selection is warranted. In this case, domestic R&D supported by public research institutes can help in assessing and indicating the best technologies to import. The focus should not only be on the types of technologies to

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9 Kimura and Ando (2005).

10 Urata (2006).

11 Yusuf et al. 2003.

12 See Yoshitomi, Azis, and Thorbecke (2003).

employ, but also on identifying appropriate partners. This linking up with other institutions or firms from abroad is critical, and it can be done formally or informally. Government support is needed to coordinate firms' R&D with public research institutions to produce concrete results.

Countries then advance from the imitation to the assimilation stage to begin innovating and leveraging new technological capabilities. Public-private cooperation, such as happened with Taipei, China's industrial technology research, can help at this stage.

ASEAN countries can also receive technology spillovers when foreign affiliates increase local procurement in the host countries. Local procurement increases with the length of time the affiliate has operated in the host country. To facilitate their long tenure it is necessary to sustain FDI-friendly environments including consistent and

coherent enforcement of laws and regulations at all governmental levels as well as stable macroeconomic fundamentals. FTAs for trade and FDI liberalization and facilitation are thus important.

FTAs represent one step towards global free trade. There are losers in particular sectors from liberalization, however. It is thus necessary to facilitate labor mobility and the movement of firms from losing to gaining sectors by providing retraining and upgrading for workers displaced through trade liberalization and by reducing entry barriers to new firms and facilitating exit through structural reform. Sector-specific protectionist policies should be abandoned as much as possible, while competition policy should be strengthened.

FTAs between developing and developed economies benefit different sectors depending on the level of development. Hertel (2000)<sup>13</sup> examined the impacts of liberalization of agriculture, manufacturing and services on global trade volumes and welfare. He found that full liberalization across these sectors would increase world trade by 20%. Three-fourths of these gains are due to the liberalization in the manufacturing sector, a little less than one-fourth is contributed by the agricultural sector liberalization, and the remainder from the services liberalization. Welfare gains would be largest for agricultural liberalization, followed by the manufacturing liberalization, then by the services liberalization. The developing countries mainly benefit from manufacturing tariff cuts; while the developed countries gain more from agriculture and service liberalization. In addition, Hertel, Ivanic, and Winters (2008) simulated the impact of agricultural liberalization and found that it would hurt the poor people working in agriculture due to reduced real after-tax factor earnings; however, the revenue replacement effects could be largely offset by poverty-reducing impacts of lower prices of agricultural products if all developing and developed countries were to reduce their agricultural tariffs.<sup>14</sup> Thus, to enhance the benefits and quality of agreements, it is important to reduce the scope of these sensitive items in both economies and to enlarge the coverage of countries.

The broader the coverage and the lower the tariffs on both external and internal trade, the more the "noodle bowl" effects of FTAs can be mitigated. The noodle bowl effect refers to the possibility that multiple trade agreements can cause the trading system to become chaotic. Baldwin and Kawai (2008) argued that the noodle bowl can cause problems when:

Agreements are overlapping, complex, and different—with different liberalization standards, exclusion lists, rules of origin, standards, etc. This carries the risk of becoming unwieldy and makes doing business cumbersome.<sup>15</sup>

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<sup>13</sup> He simulated the across-the-board abolition of estimated 2005 protection tariffs in agriculture, business and finance and construction services, extractive industries and manufacturing. He also considered liberalization of all sectors simultaneously. His model contained 22 sectors in 19 regions around the world.

<sup>14</sup> Nineteen regions, including the ASEAN-5 countries, were used in the analysis.

<sup>15</sup> Baldwin and Kawai (2008: 1).

Chia (2009) argued that the noodle bowl effect can be overcome through an FTA between many countries in the region. Such an agreement would also generate economies of scale and scope and promote trade creation. According to Chia, a region-wide FTA could establish compatible rules of origin (ROO) and product and technical standards. This would enable procedures for issuing Certificates of Origin and for self certification to be harmonized and to achieve full cumulation of ROOs. Further, it would cause transactions costs to fall, if electronic customs clearance were employed.

Chia (2009) cited favorably the 2009 Joint Export Group Study Report on an East Asia Free Trade Agreement. This report advocates an agreement between the ASEAN+3 countries that would include:<sup>16</sup>

- 1) A high quality agreement in the region for market access for both goods and services;
- 2) A global standards investment agreement;
- 3) Satisfactory trade and investment facilitation measures;
- 4) Full cumulation of ROOs;
- 5) Special attention to the needs of less developed countries;
- 6) A dispute settlement mechanism.

For poorer Asian nations, a region-wide FTA would offer both possibilities and dangers. The possibilities include greater market access and greater participation in regional production networks. The dangers include increased competition from more

efficient firms in other countries. Chia (2009) advocated providing safeguards for poorer countries and also capacity building assistance to improve supply side competitiveness in less developed ASEAN countries.

The Joint Experts Group Study Report advocates consolidating existing FTAs in the region rather than beginning negotiations again from scratch. Since there are currently no bilateral or plurilateral FTAs between the PRC, Korea, and Japan, these countries would have to negotiate among themselves. They would also have to exercise leadership to help the region achieve a comprehensive FTA.

On the investment side, high quality bilateral investment treaties (BITs) help to attract and retain foreign investors. Minimum standard BITs provide only for investment protection and dispute settlement while high standard BITs also include an investment liberalization clause. According to legal scholars, high quality investment treaties provide three substantive clauses and one procedural component.<sup>15</sup> The three substantive clauses are investment protection, investment facilitation, and investment liberalization and the procedural component is dispute settlement. Investment protection provides compensation in the case of expropriation and mandates fair and equitable treatment of foreign investment to avoid wrongful termination of government contracts. Investment facilitation requires transparency (i.e., that all relevant laws be publicly proclaimed). Investment liberalization emphasizes freer access to markets for investment (i.e., no restrictions on ownership). Consistent with this, national treatment should be mandated, that is, foreign firms should receive the same treatment as domestic firms. Dispute settlement involves state parties providing a "standing" offer to arbitrate with individuals or states in the case of a disagreement. Investment agreements incorporating these measures would promote the flow of FDI in the region and thus contribute to technological upgrading in developing Asia.

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<sup>16</sup> ASEAN+3 includes ASEAN countries plus Japan, the PRC, and Republic of Korea.

## 4. ENHANCING PRODUCTIVITY GROWTH AND COMPETITIVENESS IN ASEAN

Raising productivity through capital deepening and improving the quality of workers is one of the important potential policy levers to achieve faster and sustainable economic growth. This paper advocates adopting the model of the East Asian countries, deepening capital through technology transfer, and improving the quality of the labor force by promoting learning to boost both growth rates and living standards in the ASEAN region.

Table 2 shows average annual labor productivity growth by industry for the ASEAN countries. Columns 1 and 2 show labor productivity growth in the agricultural sector, columns 3 and 4 show labor productivity growth in the manufacturing sector, and columns 5 and 6 show labor productivity growth in the service sector. The data indicate that relative to labor productivity in agriculture and manufacturing, labor productivity in the service sector has increased slowly among the ASEAN countries. Thus, increasing service sector productivity should be an important priority for these countries. ASEAN countries have achieved little change in their labor productivity as they continue to make labor-intensive goods. We argue that it is important that they graduate to higher-skilled work to get more value-added.

**Table 2: Average Annual Labor Productivity Growth by Industry (in %)**

	Agriculture		Manufacturing		Services	
	1971– 1999 (2)	2000– 2006 (3)	1971–1999 (5)	2000– 2006 (6)	1971– 1999 (8)	2000– 2006 (9)
Cambodia	2.2	3.1	1.2	0.9	1.8	-1.2
Indonesia	2.1	2.5	6.3	4.7	0.9	5.1
Malaysia	2.0	4.5	4.5	6.3	5.3	2.4
Philippines	0.5	2.9	1.2	3.4	-0.6	3.1
Singapore	4.7	2.5	4.6	3.5	4.0	2.5
Thailand	4.3	3.3	3.7	1.9	0.9	1.3
Viet Nam	2.7	4.0	7.1	2.5	2.4	1.4

Note: The initial observation period is 1971 except for the following countries (with the initial observation period listed in parentheses): Cambodia (1994); Indonesia (1977); Malaysia (1988); PRC (1979); Taipei, China (1979); Thailand (1981); and Viet Nam (1991).

Source: APO (2009).

We can gain specific information about how to make ASEAN countries more attractive to foreign and domestic investors from the surveys conducted by the World Economic Forum (WEF). WEF surveyed 13,000 business executives from 133 countries between January and May 2009 to obtain their expert opinions on a wide range of aspects of the business environment in which they operate. The qualitative data gathered provided insights into microeconomic and macroeconomic aspects of national competitiveness. These data, along with hard data and survey indicators from other reputable data sources, were then utilized to construct the Global Competitiveness Index from which WEF has based its competitiveness analysis (WEF 2009).

WEF defines competitiveness as “the set of institutions, policies, and factors that determine the level of productivity of a country”, which sets a country’s “sustainable level of prosperity” (WEF [2009: 4]). Below we summarize the main obstacles that each ASEAN-5 country faces in achieving greater global competitiveness.

Of the 133 countries, Indonesia ranks 54th. The country lags behind in terms education and training, with low secondary and tertiary enrollment (ranked 93rd and 90th respectively) and very low primary education expenditure (ranked 127th). The country also falls short in the area of technological readiness, ranked 103rd for personal computers, 101st for Internet users, and 94th for mobile telephone subscribers. The country’s overall quality of

infrastructure--with electricity supply, ports, and roads ranked 96th, 95th, and 94th, respectively--require upgrading. The banking system, ranked 96th, also needs to be improved. The business environment is impaired by excessive red tape required to start a business (121st), burdensome bureaucratic procedures (99th), high costs associated with exits by workers (119th), and unethical behavior of firms (102nd). Worker health is another concern, with a high incidence of tuberculosis and malaria (ranked 108th and 105th, respectively).

Malaysia, in 24th place, fares well in general. It faces weaknesses in macroeconomic stability with government deficits ranked 110th, threats of terrorism (ranked 97th) and crime and violence (ranked 95th), secondary and tertiary education (with rankings of 98th and 71st, respectively), and worker health (with high prevalence of tuberculosis, malaria, and HIV/AIDS, ranked 89th, 84th and 81st, respectively). Female participation in the labor force is also low, ranking 107th.

The Philippines, in 87th place, ranks the lowest overall among the ASEAN-5 countries. Its low ranking is due to problems with the public institutional environment. These problems include escalating corruption (ranked 130th), favoritism in decisions of government officials (ranked 128th), inefficient legal framework in settling disputes (ranked 123rd), diversion of public funds (ranked 122nd), wasteful government spending (ranked 119th), unethical behavior by firms (ranked 116th), and burdensome government regulations (ranked 113th). In addition, the threat of terrorism (ranked 124th) cripples businesses in the country and deters investment. In the labor market, job creation is hindered by a lack of labor mobility (110th) and costly exit of workers (ranked 109th). Goods market inefficiencies, such as bureaucratic procedures and time required to start a business (120th and 113th, respectively) and burdensome customs procedures (117th), backward technologies (119th), poor health of workers (with tuberculosis incidence ranked 113th), and poor infrastructure (with ports, roads, and telephone lines ranked 112th, 104th, and 102nd, respectively) keep the country from achieving greater global competitiveness.

Thailand, ranked 36th, has higher productivity levels than most of its ASEAN neighbors. Its global competitiveness is weakened by the threat of terrorism (ranked 107th), unreliable police services (ranked 88th), restrictions on capital flows (ranked 87th), and time required to start business (ranked 89th). The country also lags behind in the area of health of labor force with HIV, tuberculosis, and malaria with rankings 107th, 97th and 95th, respectively and labor force inefficiencies such as uncertainty of wage determination (89th) and costly exits of workers (84th). Intellectual property protection and property rights, with rankings 77th and 73rd, respectively) need attention.

Viet Nam, in 75th place, faces obstacles in the areas of macroeconomic stability, financial and goods markets, infrastructure, institutions, and higher education and training. Instability of macroeconomic conditions (with inflation and burgeoning government deficits ranked 126th and 110th, respectively), tariff barriers (126th), weak investor protection (126th), underdeveloped banks (111th), and excessive red tape required to start a business (111th) turn off investors. The country also suffers from poor quality of overall infrastructure (111th), weak auditing and reporting standards (ranked 108th), burdensome government regulation (ranked 106th), and a lack of business sophistication (ranked 105th). The educational system, ranked 111th, is also an outlier.

Thus, to facilitate foreign and domestic investment in ASEAN countries, the weaknesses highlighted above need to be addressed. These issues are particularly salient in the lower income ASEAN countries. The Philippines ranks low (105th) in terms of the quality of the country's public institutions because of misallocations of government spending, dubious dealings between the government and the private sector, and pervasive corruption.<sup>17</sup> Viet

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<sup>17</sup> The Philippines dropped almost 20 places in the ratings between 2008 and 2009, largely because of worsening corruption. Confronting corruption in the Philippines is thus of particular moment.

Nam discourages investors with burdensome government regulations and weak auditing and reporting standards and with low rankings for the transparency of government policy making. Indonesia also faces a deficit in its public institutions. Corruption in these countries needs to be confronted to restore the public trust, strengthen the economy, and attract investors.

The Philippines, Indonesia, and Viet Nam—ranked 93rd, 82nd, 76th respectively in terms of health and primary education and 68th, 69th, 92nd, respectively in terms of higher education and training—need to respond to the demands for a more innovative and flexible workforce (WEF 2009). The goal should be to improve human capital in order to climb the value chain.

Concerning health and primary education, more investments in this area could foster the development of the “creative industries” later. ASEAN countries other than Viet Nam will find it hard to compete with low wage countries such as the PRC. It is thus

important to climb the value chain and engage in knowledge-intensive activities. Ensuring that children have adequate nutrition, healthcare, and primary education is essential to developing workers who can flourish in these higher value-added activities.

Concerning higher education, it is desirable to provide a high quality education in science and math at the secondary school level and scientific and engineering training at the university level. Governments and the private sector could invest in schools and research institutions, teacher training, restructuring the curricula for science and technology subjects, and subsidizing research and development. Scholarships for science and engineering students could also be helpful, as the ability of countries in the region to assimilate new technologies depends on the quantity and technical capabilities of local engineers. As local workers become more skilled, firms can proceed from low-skilled activities to the higher value-added aspects of production.

For instance, garment makers in the Philippines could become more involved in

the design aspects of production. Similarly, in Indonesia palm oil producers could process palm oil domestically and lumber companies could ship timber to domestic furniture makers instead of to firms abroad. As workers become better educated, they should become better informed about production technologies and consumer tastes. This in turn would allow them to participate in more profitable production activities.

A more educated workforce would also be better informed about conditions in world markets. For instance, seaweed growers in Indonesia were unaware that world prices of seaweed had soared in recent years. So they continued to receive low prices for their products. If workers were more technologically prepared, then they could easily check world prices daily on the internet.

To help finance expenditures on human capital formation, funds that the government currently spends on promoting exports and attracting FDI could be redirected towards education, nutrition, and healthcare (Nambiar 2009). As Park (2009) argued, it is probably desirable for ASEAN countries to eliminate biases that favor

exports. In some ASEAN countries export processing zones and subsidies require substantial government expenditures. These funds would be better spent improving health, education, and nutrition.

## **5. THE ASEAN ECONOMIC COMMUNITY AND ASEAN FINANCIAL INTERMEDIATION**

The ASEAN Economic Community (AEC) is the embodiment of ASEAN's commitment to promote “a stable, prosperous and highly competitive ASEAN economic region in which there is a free flow of goods, services, and investment and freer flow of capital, equitable

economic development and reduced poverty and socioeconomic disparities” (ASEAN Vision 2020, 1997: 1) by the year 2020. In line with these objectives, the AEC adopted a blueprint that sets out several action points to improve individual ASEAN member country’s position in the regional production network and international trade.

The blueprint outlines a number of measures to expedite the free flow of goods and promote the AEC as a single market and production base. These are: harmonization of standard trade and customs processes, procedures and related information flows; integration of customs structures, modernization of tariff classification, and establishment of ASEAN e-customs; integration of national single windows of individual ASEAN member countries into an ASEAN single window<sup>18</sup>; and adoption of ASEAN Policy Guideline on Standards and Conformance.<sup>19</sup> To create a competitive economic region, the AEC blueprint focuses on specific investment areas to enhance logistics services across the region such as a multi-modal transport infrastructure linkages and connectivity through an ASEAN Highway Network; an ASEAN Single Aviation Market; and different forms of soft infrastructure. To achieve equitable economic development across the region, the blueprint identifies actions to develop small- and medium-sized enterprises (SMEs); provide technical assistance to Cambodia, Lao PDR, Myanmar, and Viet Nam (CLMV countries) to enable them to upgrade their products and join the production network; and establish an ASEAN Development Fund. Finally, to integrate the region into the global economy, the blueprint emphasizes the importance of strengthening the ASEAN’s role as a “hub” and developing “open regionalism” cooperation schemes with the rest of the world (AEC Blueprint 1997; Soesastro 2007; Layton 2007; Aldaba and Yap 2009).

One of the major initiatives of the AEC is to liberalize investments in the region. The *United Nations Conference on Trade and Development* (UNCTAD (2006) indicates that through investment liberalization, efficiency-seeking FDI can assist host countries in restructuring their industries. FDI boosts the growth of regional production networks, thus increasing the opportunities for domestic firms to participate in vertical specialization (Aldaba and Yap 2007). Figures 8 and 9 show the FDI flows to the ASEAN countries in 2008 by source country and economic sector, respectively. The European Union (EU) continued to dominate as the largest source of FDI (21%), followed by ASEAN (18%) and Japan (13%). In 2008, the total FDI flows to the ASEAN countries amounted to US\$ 60.2 billion. Half of this was invested in the services sector and almost a third went to the manufacturing sector. The remainder went to the mining and quarrying sector (7%), agriculture, fishery and forestry sectors (1%), and other sectors (13%). Figure 10 shows that from 2003–2008, Singapore received the largest share of investments (45%), followed by Thailand (18%), Malaysia (12%), Indonesia (10%), Viet Nam (8%), the Philippines (4%), and the remainder was shared by Cambodia, Myanmar and Lao PDR.

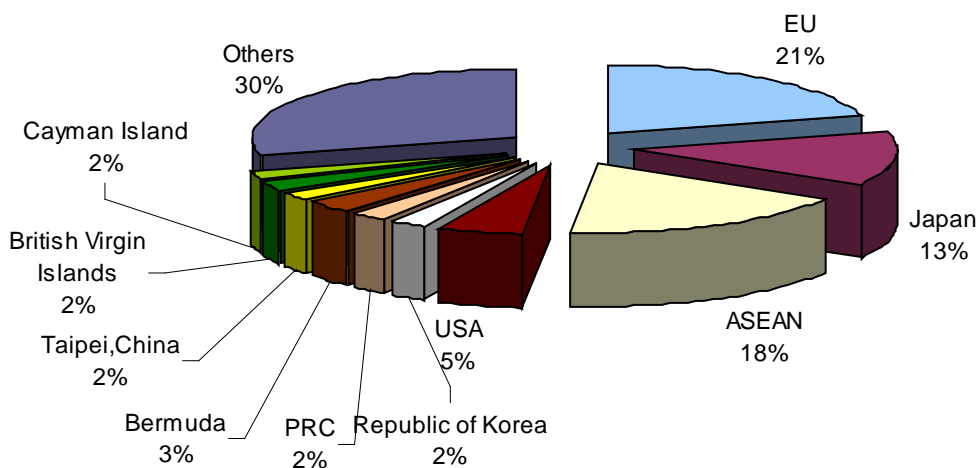
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<sup>18</sup> As defined in the Agreement to Establish and Implement the ASEAN Single Window (ASEAN Economic Ministers 2005), the ASEAN Single Window is the environment where National Single Windows of Member Countries operate and integrate. The national Single Window is a system which enables: (a) a single submission of data and information; (b) a single and synchronous processing of data and information; and (c) a single decision-making for customs release and clearance. A single decision-making shall be uniformly interpreted as a single point of decision for the release of cargoes by the Customs on the basis of decisions, if required, taken by line ministries and agencies and communicated in a timely manner to the Customs.

<sup>19</sup> This document was prepared by the ASEAN Consultative Committee on Standards and Quality (2005) to guide all ASEAN Bodies working in the areas of standards and conformance in implementing measures on standards, technical regulations and conformity assessment procedures.

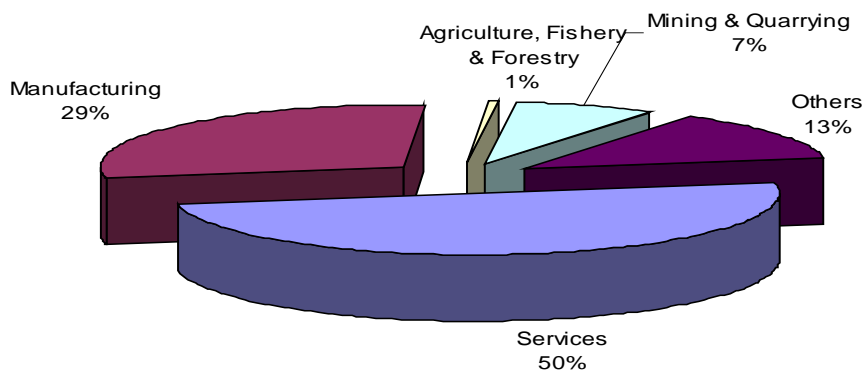


**Figure 8: Share of Major Sources of FDI Inflows to ASEAN, 2008**

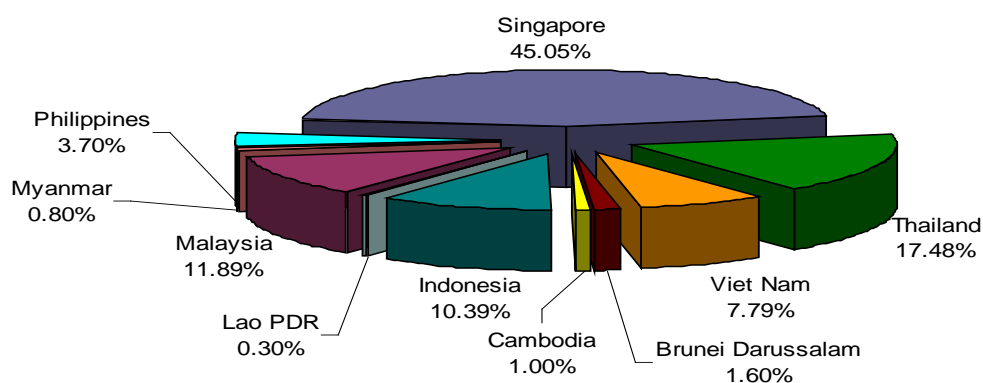


Source: ASEAN—Your Gateway to Economic Community, 2009.

**Figure 9: FDI Inflows to ASEAN by Sector, 2008**



Source: ASEAN—Your Gateway to Economic Community (2009).

**Figure 10: FDI Inflows to ASEAN Member Countries**

Source: ASEAN Economic Community Chartbook, 2009.

The other major initiative of the AEC is regional financial integration. Financial integration among the ASEAN member countries is relatively weak and the ASEAN as a region is among the least financially integrated with the global market (Eichengreen and Park 2004; ADB 2008a; Aldaba and Yap 2007). There is also evidence of financial integration in East Asia, but the East Asian countries are more integrated with the rest of the world than with one another (Lee, Shin, and Park 2007; Aldaba and Yap 2007). In general, financial integration is viewed helpful in the process of economic development, thus the AEC is committed to link the ASEAN with the rest of Asia with a greater goal of integrating itself with the rest of the world.

ASEAN financial integration can facilitate intra-ASEAN trade and investment and promote greater financial stability. Takagi (2008) notes that—although it has risks—intra-regional financial integration is generally beneficial to the ASEAN region because in the long run a local-currency funded bond market is necessary to stimulate investment and finance industries. Integration could also be an effective mechanism of channeling Asia's savings to key regional investments such as infrastructure projects. Aldaba and Yap (2009) added that it allows for wider portfolio diversification in the region. As of 2008, only 7.3% of ASEAN's foreign portfolio investment assets were invested in ASEAN, suggesting that ASEAN still has much room for improvement in this area. However this will require a certain degree of capital account liberalization among ASEAN member countries to ensure that capital can move smoothly from surplus countries to deficit countries. Finally, given the importance of local information and common time zones in Asia, lower cross-border transaction costs add to the benefits of regional financial integration (Takagi 2008, Garcia-Herrero and Wooldridge 2007).

Aside from promoting financial integration in the region, we argue that ASEAN countries need to develop their financial systems and attract private investment. As mentioned earlier, investment ratios in ASEAN countries fell after the Asian financial crisis and have remained low. Industrial upgrading requires more private investment, which in turn requires a vibrant, stable and efficient financial system that can mobilize domestic resources and FDI and allocate them to the industries that can best utilize them.

Currently, ASEAN countries are heavily bank-dependent (Table 3). Since the Asian financial crisis, the ASEAN countries have made substantial progress in strengthening their banking systems. In particular, the ratio of nonperforming loans to total loans of commercial banks has dropped significantly by 2008 (Figure 11). However, despite this positive development,

bank spreads have widened in ASEAN countries, suggesting that inefficiencies in the banking system may have increased (Figure 12). This is an area that ASEAN countries need to address so that industries can have access to bank loans, especially long-term loans, at reasonable rates.

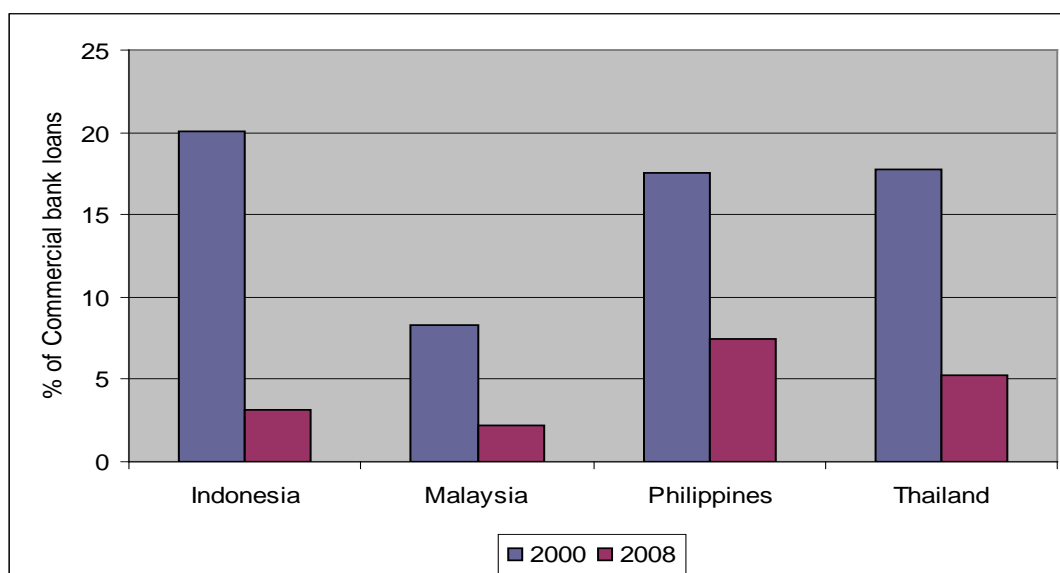
**Table 3: Size and Composition of Financial System, 2008 (% of GDP)**

Countries	Financial Sector Assets <sup>a</sup>			
	Deposit-taking Financial Institutions	Nonbank Financial Institutions	Market Capitalization <sup>b</sup>	Total Bonds Outstanding
Indonesia	48.6	13.7	21.7	13.6
Malaysia	180.8	90.7	89.6	89.6
Philippines	78.8	18.5	54.3	30.9
Thailand	137.7	33	39.2	53.5

Notes: <sup>a</sup> Financial asset data for Indonesia for 2001 and 2007. <sup>b</sup> Market capitalization as % of GDP in local currency unit.

Sources: OREI consultant calculations using data from national sources (accessed through CEIC and websites), AsianBondsOnline, Datastream, IMF World Economic Outlook Database (April 2009), Bank of International Settlements BIS), Economist Intelligence Unit (EIU), International Financial Statistics, and World Federation of Exchanges.

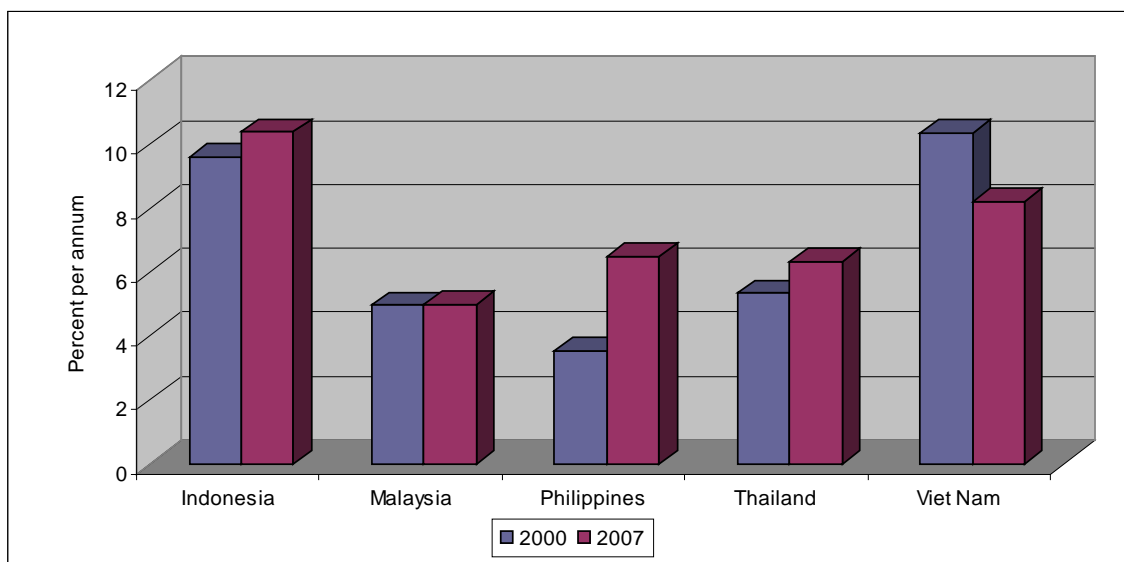
**Figure 11: Ratio of Nonperforming Loans to Total Loans of Commercial Banks, 2000 and 2008 (in %)**



Notes: Percent of commercial bank loans are reported for Indonesia, Philippines and Thailand. For Malaysia, reported nonperforming loans are classified as loans of retail banks. The graphs shows end of year observation, except for the following countries: 2008 data for Malaysia are as of May 2008 and 2008 data for Thailand as of March 2008.

Source: Asian Regional Integration Center (ARIC) website (Available: [http://aric.adb.org/macro\\_indicators.php?category=16&country=14&frequency=5](http://aric.adb.org/macro_indicators.php?category=16&country=14&frequency=5)).

**Figure 12: Differences between Lending and Deposit Rates, 2000 and 2007 (in %)**

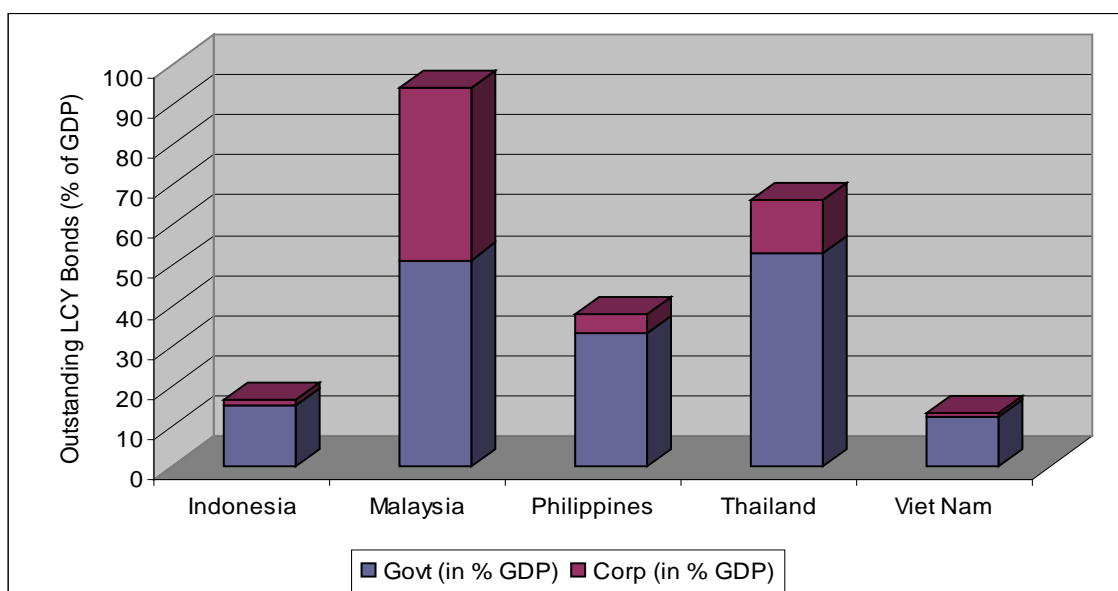


Note: 2007 data are used for all countries except for Viet Nam. 2006 data are used for Viet Nam because 2007 data are unavailable.

Sources: IMF International Financial Statistics Banking Statistics Database; ADB 2008b.

There have been efforts to accelerate development of the equity and bond markets to provide the private sector with alternative sources of funding. More specifically, ASEAN countries have improved the supervisory and regulatory framework for the equity and bond markets, modernized financial infrastructure including trading/auction platforms and accounting systems, and introduced a framework for enhancing corporate governance. These measures have yielded positive results especially in the case of the equity market wherein significant increases in market capitalization took place during the period 2004-2007 (Mitra 2010). In the bond market, the total value of bonds outstanding has increased since the Asian financial crisis, but the development of the private corporate bond market has been slow. As shown in Figure 13, the size of the private corporate bond market remains small relative to the government bond market except in the case of Malaysia.

**Figure 13: The Size of the Local Currency Bond Market, Dec 2009 (% of GDP)**



Source: Asian Bonds Online database. (Available: [http://asianbondsonline.adb.org/spreadsheets/RG-LCY\\_in\\_GDP\\_Local.xls](http://asianbondsonline.adb.org/spreadsheets/RG-LCY_in_GDP_Local.xls)).

Credit rating agencies play an important role in fostering bond market development; however, global rating agencies rate only a few bond issues from ASEAN countries. Usually, they only rate issues by very large corporations in ASEAN countries; thus, many businesses in ASEAN do not have access to the bond market since many investors limit themselves to rated issues. Although there are national credit rating agencies in ASEAN countries, much more needs to be done to boost investor confidence in ASEAN's national rating agencies such as the adoption of international best practices in rating, particularly those aim to address conflict of interest in rating complex products in line with recent IOSCO recommendations (ADB 2008c). This is one area that ASEAN countries must address in order to accelerate the development of local currency bond markets. Establishing a regional rating agency comparable with the existing global rating agencies would be one solution.

## 6. CONCLUSION

This paper has traced the effects of the “East Asian Miracle,” the 1997–1998 Asian Crisis, the Recovery, and the 2008–2009 Global Financial Crisis on ASEAN countries. It then considered how ASEAN countries can sustain growth going forward.

During the “East Asian Miracle” phase, learning and technology assimilation played important roles. ASEAN countries relied on FDI to produce and export labor-intensive goods. In the process, local engineers learned how to use technologically-sophisticated capital goods.

More recently, trade-FDI-technology linkages have led to the potential for agglomeration and technology transfer in ASEAN countries. To facilitate these spillover effects ASEAN countries should sustain FDI-friendly environments. As Lim and Kimura (2009) discussed, once the seeds of industrial agglomeration takes root, local firms receive abundant opportunities to join production networks. To attract FDI, ASEAN countries need to eradicate corruption, provide consistent and coherent enforcement of laws and regulations at all governmental levels, and maintain stable macroeconomic fundamentals.

ASEAN countries should also continue to focus on learning and fostering the development of “creative industries.” To climb the value chain in this way they need to invest in human capital. This includes providing children with adequate nutrition, healthcare, and primary education, providing high school students with a high quality education in science and math, and providing university students with scientific and engineering training. The educational system should also be careful to provide students with marketable skills that businesses need.

To help finance these expenditures, funds that the government currently spends to promote exports and attract FDI could be redirected towards developing human capital. This would help the region advance from performing simple production activities to complex ones, and from assembling imported parts and components to participating in the engineering and design aspects of production. This in turn would provide ASEAN countries with a robust foundation for growth and development going forward.

Industrial upgrading also requires more private investment. This can be facilitated by building a vibrant, stable, and efficient financial system. Although significant progress has been made in this regard since the Asian financial crisis, more needs to be done to improve the efficiency of the banking system and to develop the equity and bond markets. Finally, ASEAN should promote regional financial integration so that more of the region's savings can be channeled to high-yielding investments in the region such as infrastructure projects and entrepreneurial activities.

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