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Trade and Investment in Indonesia:

a Note on Competitiveness and Future Challenge

2009

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a Note on Competitiveness and Future Challenge

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Preface

Globalization, in any sense, has increased competition among countries. On the other side, globalization has also been beneficial to increase mutual cooperation among countries and individuals in any form, including trade and investment. Therefore, more integrated world trade—which tends to be more borderless -- provides opportunities for competitive domestic products to enter the global market; whereas imported products will also have same opportunities to enter the domestic market. In this situation, a nation needs to improve its competitiveness to win the market.

In the law no. 17/2007 regarding National Long-Term Development Plan (*Rencana Pembangunan Jangka Panjang Nasional/RPJPN*) 2005-2025, it is stated that improvement of competitiveness is one of the 8 (eight) Indonesian development missions. Those missions will always be mainstreaming regional and sectoral development, including trade and investment.

Optimalization and utilization of human and natural resources supported by condusive investment climate, political stability, security, and good governance are very important to improve national competitiveness in the globalization era. In line with this, efforts for simplifying export and import procedures, stabilizing macro economic condition, providing infrastructure facilities, improving labour skills, and providing favourable regulations have become crucial factors determining a nation competitiveness in the global market.

In relation to this, I really appreciate Directorate of Trade, Investment, and International Economic Cooperation, BAPPENAS that has initiated to write a book on *Trade and Investment in Indonesia: a Note on Competitiveness and Future Challenge,* which is very important to portray

the performance of export and investment competitiveness in Indonesia. At this opportunity, I would also like to thank to Partnership and other parties who have supported and fully involved in the book writing process. I am really expecting that this kind of activity can be continued in the future, with wider outputs for anticipating the dynamics of competitiveness development.

May God bless us with wisdom, courage, and strength to do our plans and efforts for improving our nation competitiveness, particularly in trade and investment.

Jakarta, April 2009

Deputy for Economic Affairs
State Ministry of National Development Planning/National Development Planning Agency

Slamet Seno Adji

Foreword

One of the missions stated in National Long-Term Development Plan (*Rencana Pembangunan Jangka Panjang Nasional/RPJPN*) 2005-2025 is achieving a nation's competitiveness. In this sense, an optimal development of trade and investment is necessary to improve the nation's competitiveness. A preliminary pace –which would be needed to build a nation's competitiveness—is to get a current portray of trade and investment performance, on which we can further formulate strategies and actions for developing trade and investment competitiveness in the future.

An important activity that has been conducted by Directorate of Trade, Investment, and International Economic Cooperation – BAPPENAS is a survey on trade and investment competitiveness. This survey has involved 200 respondents of exporting and importing firms located in six cities, i.e. Batam, Medan, Jakarta, Semarang, Surabaya, and Makasar, and was undertaken in August to October 2008. This survey has revealed the main factors contributing to trade and investment performances in Indonesia and business perceptions on some important economic variables. The survey findings and some other analysis on trade and investment competitiveness have been written by Bappenas into a book titled *Trade and Investment in Indonesia: a Note on Competitiveness and Future Challenge*. This activity was funded by *Partnership* and supported by a team of experts from *Universitas Indonesia* (LPEM-UI) and *Institut Pertanian Bogor* (IPB), as well as other stake holders from Ministry of Trade and Investment Coordinating Board (BKPM).

This book is expected to be easy to read and is organized as follows. The first part of this book explains about current conditions of trade and investment competitiveness of Indonesia and its neighboring countries. The second part is about business perceptions on government policies and facilitation, as well as factors affecting trade and investment performances. Additionally, this book also indicates some environment issues related to trade and investment; where these issues are important to be further considered in the process of trade and investment policy formulation.

Lastly speaking, we understand that this book is not yet perfect; hence we are expecting further development and improvement of this book (*Trade and Investment in Indonesia: a Note on Competitiveness and Future Challenge)* for the benefits of all trade and investment stakeholders.

Jakarta, April 2009

Director for Trade, Investment, and International Economic Cooperation
State Ministry of National Development Planning/National Development Planning Agency

Adhi Putra Alfian

Prologue

We are pleased to welcome the publication of *"Trade and Investment in Indonesia: A Note on Competitiveness and Future Challenge"*. Good governance is one of the key ingredients of economic growth, poverty alleviation and sustainable development. Partnership for Governance Reform recognizes the importance of economic governance to achieve those noble goals. Therefore through the initial project called "*Support the Government on Trade's Policy and Program Planning to Advocate Integrated Government Response to Trade and Development Issues"* Partnership in collaboration with the Ministry of Trade, the National Planning Agency (*Bappenas*), highly recognized research institutions and national economic experts work collaboratively to contributed to the improvement of competitiveness of the Indonesian economic climate trough better access and control over economic resources and market.

We highly hope that this analysis is useful to wider stakeholders' especially public policy makers to develop economic policy measures that will help fostering the economic growth and addressing poverty issues in the future.

Jakarta, April 2009
Respectfully Yours,

Mohamad Sobary
Executive Director of Partnership for Governance Reform

Acknowledgment

This book is the ultimate outcome of Trade and Investment Outlook Project that was funded by Partnership and organized by Directorate of Trade, Investment, and International Economic Cooperation, BAPPENAS. We herewith would like to thank to Partnership who has fully supported this activity. We also would like to extend our gratitutes to Iman Sugema who has given a great support in coordinating the project implementation, to Economics and Management Faculty – IPB (Rina Oktaviani and Firdaus) who have given an excellent support in providing quantitative indicators, to LPEM-UI (Arijanto Patunru and Vid Adrison) who has conducted a precious survey, and to Dionisious A. Nardjoko who has helped compile the report. In addition, our thanks also go to Cecep Winata, Tulus Tambunan, Emmy Hafild, and Mila Nuh for their support in this project.

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Abreviations and Acronyms

Bappenas	: Badan Perencanaan Pembangunan Nasional
BPS	: Badan Pusat Statistik
Chn	: China
CMSA	: Constant Market Share Analysis
CPO	: Crude Palm Oil
ECA	: Export Credit Agency
Egy	: Egypt
EPD	: Export Product Dynamics
Eu25	: 25 European Union Member Countries
FDI	: Foreign Direct Investment
GATT	: General Agreement on Tariffs and Trade
HS	: Harmonized System
ISO	: International Organization for Standardization
Jpn	: Japan
NGO	: Non Governmental Organization
OECD	: Organisation for Economic Cooperation and Development
PDB	: Produk Domestik Bruto
RCA	: Revealed Comparative Advantage
Sau	: Saudi Arabia
SPM	: Sanitary and Phytosanitary Measures
SPS	: Sanitary and Phytosanitary
TBT	: Technical Barriers to Trade
TED	: Turtle Excluder Devices
UNCTAD	: United Nations Conference on Trade and Development
UN-Comtrade	: United Nations Commodity Trade Statistics Database
USA	: United States of America
VAT	: Value Added Tax
WTO	: World Trade Organization
Zaf	: South Africa

Chapter 1
Introduction

Trade and investment play an increasingly important role in the economic growth of developing countries, such as Indonesia. By promoting trade and investment, developing countries can expand income and employment; and through transfers of technology and management know-how they can strengthen domestic private sector enterprises, thereby helping provide the funds needed for development. However, a rapidly growing world economy, stimulated by the openness and links produced by globalization, has given rise to tight competition among nations. One of the benchmarks that help us assess a nation's capacity to face these challenging circumstances is competitiveness. A nation's competitiveness identically defines as a survival capability in order to gain the competitive advantage in the global economy.

A proper understanding of trade and investment competitiveness is essential to identifying the strategic position and advantages of Indonesia in the global market. For example, the factors that affect a nation's export performance and competitiveness consist of both internal and external factors, which are of different significance to different sectors, and which also vary over time and with the country's stage of development. External factors are related to market access and factors affecting demand for imports. Meanwhile, internal factors relate mainly to supply-side conditions, which are affected by natural and human resources, access to capital, and the role of government through supportive trade policies. In addition, foreign direct investment may be important in providing access to technology so as to produce productivity gains, as well as providing a link to international value chains. The right type of investment policies can also lead to the creation of forward and backward linkages. Foreign direct investment (FDI), for example, plays a critical role in improving competitiveness. By boosting investment, multinational cooperation can play crucial

contribution in transfer of technology for improving productivity and value added. It should also be noted that a two-way relationship exists between FDI and competitiveness. On the one hand, FDI has the capacity to improve the competitiveness of the host country, while on the other hand the competitiveness of the host country's economy is important to attracting substantial amounts of FDI in the first place.

Furthermore, one of practical tools to improve the formulation process of a sound trade and investment policy is utilizing competitiveness indicators that can periodically be used to monitor the progress and change in trade and investment climate. These indicators first and foremost should be simple, easy to use and be updated, and accurate.

This book is mainly aimed at providing a number of indicators that can be used to measure the competitiveness of Indonesian trade and investment. Some of the quantitative indicators have been calculated and obtained from secondary data, while others have been obtained from a survey. In addition, a qualititative indicator in the form of a business perceptions survey is also presented.

The quantitative indicators for Indonesian trade contained herein are as follows: (i) export growth for each category, such as agriculture, mining, and manufacturing, arranged by the level of technology employed; (ii) the structure of exports by product category and export destination; (iii) revealed comparative advantage; (iv) openness; (v) constant market share analysis; and (vi) export product dynamic. As regards assessing investment competitiveness, the variables used are as follows (i) GDP per capita as a measure of economic potential; (ii) energy consumption, (iii) level of infra structural development, such as the length of paved roads, electricity consumption, and number of telephone subscribers; and (iv) other macro economic indicators.

Other than the quantitative variables, trade and investment competitiveness is also assessed using survey findings. The survey consists of two main components; (1) trade, including domestic and international trade, and (2) investment climate. **The trade survey** was aimed at measuring stakeholder perceptions on the policies and market perceptions of Indonesia's trade performance, impediments, and competitiveness, and the level of satisfaction of stakeholders on procedures and service quality on export-import activities as regards policies and bureaucracy in the export-import sector. The indicators developed from this survey are as follows: Level of satisfaction and confidence of stakeholders in the bureaucracy, infrastructure, logistics, trade facilities, licensing procedures and governance, and environment-related trade issues and opportunities. **The investment survey** was aimed at conducting perception survey and the degree of satisfaction of the stakeholders on factors affecting investment climate and competitiveness. The indicators developed from this survey are macroeconomic indicators, infrastructure adequacy, incentive system on taxation, labour regulation, export-import procedures, and local regulations, as well as

and environmental related investment issues and opportunities.

This book is arranged in the following manner: Chapter 1 consists of an introduction, chapter 2 discusses Indonesian trade competitiveness measured by quantitative indicators based on secondary data, chapter 3 assesses Indonesian investment competitiveness using a number of quantitative variables. Chapter 4 provides some indicators and description developed from business perception surveys on trade and investment competitiveness in Indonesia. Chapter 5 discusses some environment issues related to trade and investment. All the findings and results are concluded in Chapter 6.

Chapter 2
Indonesian Trade Competitiveness

Maintaining and improving trade competitiveness are crucial for Indonesia. The extent of competition from other countries in terms of trade continuously increasing over the last ten years or so since the 1997/98 economic crisis, with most of it coming from the new emerging economies and rapidly growing China and India.

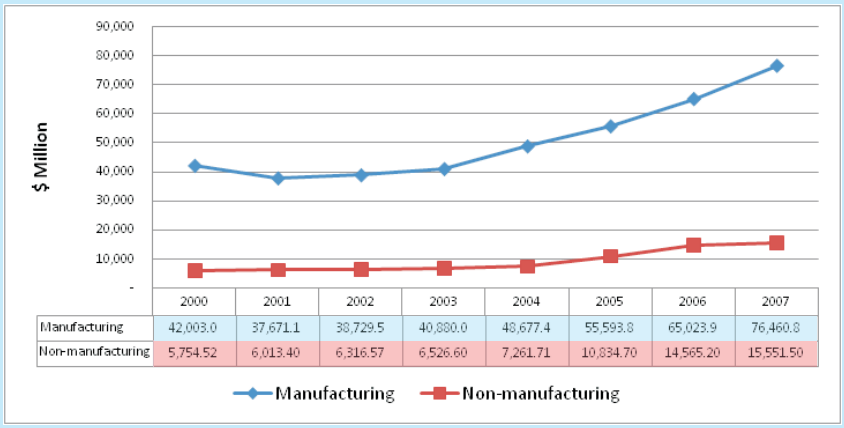
All of this means that we need to conduct a review so as to gain an understanding of the current state of Indonesian trade competitiveness. This is important if Indonesia wants to be able to compete in increasingly tight international markets in the future. This chapter deals with some important trade competitiveness indicators that are very useful to assess the current Indonesian competitiveness in trade. The description given in these two chapters is based on the results attained from the application of a number competitiveness indicators, the details of which are presented in the appendix to this study.

1.1. Export Growth

Indonesian export growth steadily increased over the period 2000-2007. In line with the Indonesian and global economic recovery, exports of Indonesia grew rapidly between 2004 and 2007 (Figure 2.1). As regards non-oil and gas exports, manufacturing export grew at a slower pace than non-manufacturing exports. The average growth rate for manufacturing exports was 9.4 percent between 2000 and 2007, while that of non-manufacturing exports was 16.4 percent.

However, this was still below the growth rate for the pre-crisis period. Starting in 2005, export value of non-manufacturing sector increased significantly as much as 49.2 percent, which was pushed by the high increase in exports of mining commodities that grew at 66.9 percent. The high value of non-manufacturing export was likely due to the high level of global commodity price, as well as the high volume of the Indonesian exports.

Figure 2.1
Indonesian exports, 1990-2007



Source : BPS-Statistics Indonesia

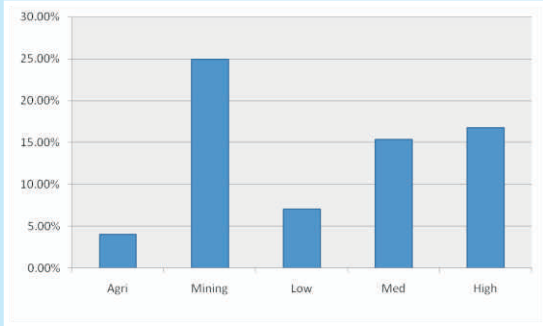
Table 2.1
Average value of Indonesian exports

	Average Export Value ($ Million)		Average Export Growth (%)
	2000-2003	2004-2007	2000-2007
Export total	59,165.50	93,036.00	9.5%
Manufacturing	39,820.00	61,439.00	9.4%
Non-manufacturing	6,152.77	12,053.28	16.4%
Oil and gas	13,191.80	19,543.70	6.9%

Source : BPS-Statistics Indonesia

Indonesia's total exports have been growing rapidly at an average pace of 9.5 percent per annum in the period of 2000-2007. Much of the growth is accounted for by mining and medium- and high-technology manufacturing exports, as suggested by Figure 2.2. The rapid growth in mining exports has been the result of the commodities and energy boom over the past couple of years, while the growth in medium- and high-technology manufactured goods is likely due to the growth of international production networks in the East Asian region. As noted earlier, much of these manufacturing goods are exported to Japan, which is the major production-networking centre in the region.

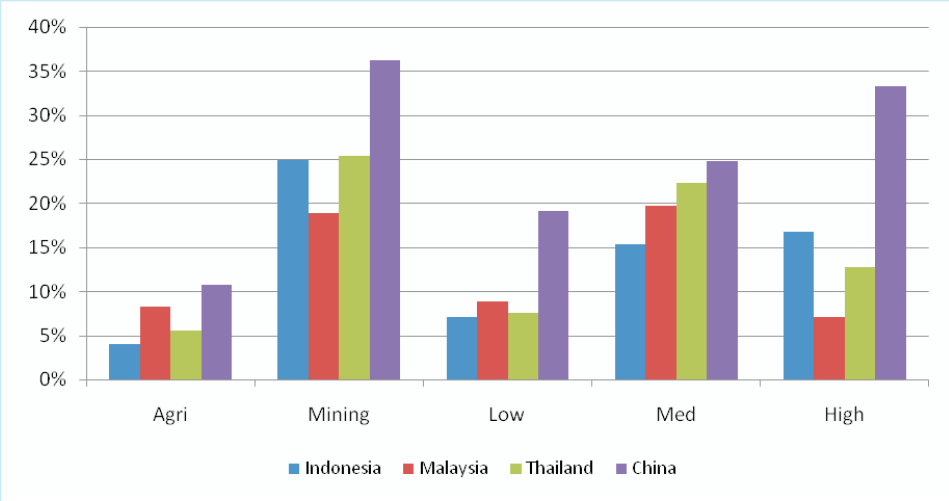
Figure 2 .2
Growth rate of Indonesian exports by product group, 2000-2007



Source: UNComtrade Database (Calculated by Bappenas)

The contribution of ***agriculture*** to overall ***Indonesian exports remains small***, despite the commodities boom. Agricultural production naturally responds sluggishly to changes in prices. It may take years for estate crops like palm oil and rubber to expand export capacity. Thus it is not surprising that Indonesia has been unable to fully take advantage of the recent high commodity prices. Moreover, the low agriculture export growth, moreover, could also be attributed to rejections by importing countries, for the reason that Indonesian products do not comply with the international or health, safety, and environment standard.

Figure 2.3
Comparison of export growth rate, Indonesia, and selected other countries in Asia, 2000-07



Source: UNComtrade Database (Calculated by Bappenas)

Figure 2.3 compares Indonesia's export growth with that of selected other countries. A number of key points will be immediately apparent. First, the overall Indonesian export growth rate in the 2000-2007 period was about the same as Malaysia's, with the latter growing on average by 10.0 percent per annum, but much below the export growth of Thailand and, of course, China, which have been growing on average by 13.2 and 26.0 percent per annum, respectively. Second, other countries, like Indonesia, have benefited significantly from the commodities and energy boom, as illustrated by the high growth in the mining-products group for all of the selected countries. Third, China has been outperforming the other selected countries in terms of growth in manufacturing exports. Thus, China has been clearly outperforming all of the countries in the region in all sectors, particularly mining and high-tech manufacturing. Thus, China is clearly the leader and also a competitor for all the countries in the region, not just Indonesia. The very high rate of growth of Chinese manufacturing exports is the result of strenuous efforts by the Chinese government to attract foreign direct investment over the past decade or so. Fourth, export growth for agricultural products has been highest in China, reflecting the strong comparative advantages that China possesses in this sector.

2.2 Structure of Exports by Product Group

The structure of Indonesian exports has been changing gradually (the first panel of Table 2.2). Low- and medium-technology[1] products continue to dominate overall Indonesian exports. The share of manufacturing products with low-and medium-technology characteristic still dominates the overall Indonesian exports to date. At the same time, mining exports have overtaken agriculture in importance.

Table 2.2
Export composition by product group, Indonesia and selected other countries in Asia, 1995-2007

Product Clasification	1995	2000	2006	2007
Indonesia				
Agriculture	6.32%	4.33%	3.23%	3.18%
Mining	3.78%	3.56%	7.04%	8.13%
Low Technology	43.01%	37.72%	30.97%	32.34%
Medium Technology	38.71%	37.02%	45.90%	44.26%
High Tecnology	8.18%	17.37%	12.87%	12.10%
Malaysia				
Agriculture	1.12%	0,86%	0.76%	0.87%
Mining	2.65%	2.24%	3.77%	4.28%
Low Technology	24.32%	16.42%	16.09%	17.88%
Medium Technology	15.69%	16.59%	24.45%	25.83%
High Tecnology	56.22%	63.89%	54.93%	51.14%
Thailand				
Agriculture	11.67%	7.84%	5.19%	5.37%
Mining	2.22%	3.26%	4.55%	5.77%
Low Technology	36.69%	28.69%	21.88%	21.32%
Medium Technology	15.57%	18.59%	29.29%	28.97%
High Tecnology	33.84%	41.62%	39.09%	38.57%
China				
Agriculture	5.79%	3.83%	1.65%	1.53%
Mining	6.69%	5.25%	7.50%	8.22%
Low Technology	50.23%	42.71%	30.59%	29.21%
Medium Technology	15.88%	15.12%	12.94%	13.21%
High Tecnology	21.41%	33.10%	47.31%	47.82%

Source: UNComtrade Database (Calculated by Bappenas)

[1] The classification of low technology, medium-technology, and high-technology manufacturing products reffers to the OECD sector's classification (please see the appendix for further details)..

This suggests an upgrade in the level of technological adoption by manufacturers in Indonesia. It would appear, however, that Indonesia is not alone in experiencing this in Asia, with the same pattern being found over time in the export structures of Thailand and Malaysia, which are close competitors of Indonesia. In both countries, the share of medium technology exports is increasing, while that of low-tech exports is decreasing. The pattern over time in China is somewhat different, reflecting rather different production and export strategies. Table 2.2 shows that the importance of high-technology manufacturing products has experienced a significant increase in China's export structure. This reflects booming Chinese exports, not only to the US and European countries, but also to other Asian countries.

2.3. Structure of Exports by Market Destination

Tables 2.3a – 2.3e show the distribution of Indonesian exports by destination market for each product group. The tables cover both traditional markets -- the US, Japan, and the European countries (EU) -- and new (emerging) export markets. Included in the latter group are countries in the Middle East and Africa.

Most of Indonesia's agricultural and mining products are exported to Japan (see Table 2.3a and b). The second largest markets for these two product groups are the US and the EU countries. China, meanwhile, is still relatively a small buyer of Indonesian agricultural and mining products.

Looking at the pattern over time, Indonesia seems to have lost share in the Japanese market for its agricultural products. This decline in market share has been quite dramatic, having dropped by about half between 1995 and 2007. This indicates that market switching is taking place, because while Indonesia's share of the Japanese market is declining, its share of the US market has increased substantially. Indonesia's share of the EU market has also increased, although only marginally.

This shift may entail two different meanings and implications. The first is negative in that Indonesia's agricultural competitiveness in Japan is declining, while the second is positive in the sense that Indonesia's agricultural exports are no longer so heavily skewed towards Japan but are rather becoming more diversified. It is worth mentioning that Indonesia's agricultural exports face a strong threat from the issue of contamination. This is particularly so in the case of fish products, particularly those in the crustacean product group. Therefore, the bringing about of improvements to minimize the possibility of contamination needs to be adopted as an important policy agenda for boosting exports from this product group.

Table 2.3
Indonesian exports by product group and market destination, 1995-2007

a. Agricultural

Agriculture		Market Destination (%)						
No	Year	chn	Usa	jpn	eu25	egy	zaf	sau
1	1995	0.17%	0.57%	2.68%	0.93%	0.01%	0.02%	0.01%
2	2000	0.08%	0.72%	1.39%	0.63%	0.01%	0.02%	0.00%
3	2006	0.09%	0.73%	0.71%	0.51%	0.02%	0.01%	0.01%
4	2007	0.08%	0.74%	0.59%	0.45%	0.02%	0.02%	0.01%
Average		0.10%	0.69%	1.34%	0.63%	0.01%	0.02%	0.01%

Source: UNComtrade Database (Calculated by Bappenas)

b. Mining

Mining		Market Destination (%)						
No	Year	chn	Usa	jpn	eu25	egy	zaf	sau
1	1995	0.09%	0.24%	1.60%	0.21%	0.00%	0.00%	0.01%
2	2000	0.04%	0.40%	1.10%	0.28%	0.00%	0.00%	0.00%
3	2006	0.48%	0.27%	2.09%	0.27%	0.01%	0.00%	0.04%
4	2007	0.35%	0.23%	2.97%	0.29%	0.01%	0.00%	0.03%
Average		0.24%	0.28%	1.94%	0.26%	0.01%	0.00%	0.02%

Source: UNComtrade Database (Calculated by Bappenas)

c. Low Technology

Low Tech		Market Destination (%)						
No	Year	chn	usa	jpn	eu25	egy	zaf	sau
1	1995	1.49%	7.19%	6.62%	10.80%	0.39%	0.10%	0.85%
2	2000	1.91%	7.69%	4.14%	8.49%	0.25%	0.17%	0.67%
3	2006	2.32%	6.33%	2.55%	6.04%	0.35%	0.19%	0.41%
4	2007	2.42%	5.85%	2.07%	6.20%	0.40%	0.23%	0.45%
Average		2.03%	6.76%	3.85%	7.88%	0.35%	0.17%	0.60%

Source: UNComtrade Database (Calculated by Bappenas)

d. Medium Technology

Medium Tech		Market Destination (%)						
No	Year	chn	usa	jpn	eu25	egy	zaf	sau
1	1995	2.01%	3.92%	15.44%	2.24%	0.01%	0.05%	0.07%
2	2000	2.31%	2.17%	13.86%	2.40%	0.04%	0.05%	0.06%
3	2006	4.99%	2.60%	14.65%	3.44%	0.06%	0.14%	0.16%
4	2007	5.18%	2.31%	13.54%	3.14%	0.06%	0.22%	0.26%
Average		3.62%	2.75%	14.37%	2.80%	0.05%	0.11%	0.14%

Source: UNComtrade Database (Calculated by Bappenas)

e.High Technology

High Tech		Market Destination (%)						
No	Year	chn	usa	jpn	eu25	egy	zaf	sau
1	1995	0.06%	2.01%	0.71%	1.06%	0.01%	0.02%	0.05%
2	2000	0.12%	2.69%	2.71%	2.51%	0.02%	0.04%	0.07%
3	2006	0.40%	1.24%	1.55%	1.64%	0.02%	0.04%	0.05%
4	2007	0.45%	1.08%	1.55%	1.56%	0.02%	0.02%	0.08%
Average		0.26%	1.75%	1.63%	1.69%	0.02%	0.03%	0.06%

Source: UNComtrade Database (Calculated by Bappenas)

Note:

- Chn= China, USA= United States of America, jpn= Japan, eu25=European Union, egy = Egypt, zaf=South Africa, sau= Saudi Arabia
- Traditional markets are USA, Japan, and European Union

Tables 2.3c – 2.3e show export patterns by market destination for low-, medium- and high-technology manufactured products. Let us first consider low-technology products. Indonesia's exports markets for these products seem to equally distribute between the US, Japan, and the EU countries. Meanwhile, over time, Indonesia's share of the Japanese and EU markets has declined.

The situation is completely different in the case of medium-technology manufacturing products (Table 2.3d). In particular, Japan takes the lion's share of Indonesian exports, with the rest being divided more or less equally among other markets, such as the EU countries, the US, and China.

As for high-technology manufacturing products, Indonesia's exports once again are fairly evenly distributed in terms of destination as between the US, Japan, and the EU countries (Table 2.3e). Indonesia seems to be increasing its exports of high-tech products to the EU market. Again, it is

worth highlighting the fact that Indonesia's exports to China grew significantly higher in the period from 1995 to 2007.

The last two tables indicate that Indonesia has a special connection with Japan as regards the export of sophisticated manufacturing products. This might be due to the involvement of Indonesia in regional production networks. In this production method, which is unique to East Asia, many parts and components are exported to countries such as Japan or Korea for assembly and transformation into finished goods. In addition, the fact that Indonesia's share of high-technology manufacturing exports which has increased indicates that Indonesia possesses competitiveness in the parts and components sector – something that merits further attention from the government with a view to making improvements.

If we compare Indonesia's export structure by market destination with a number of other countries, the following key points are worth mentioning (see the Appendix for tables showing exports by product group and market destination for selected other Asian countries).

1. Malaysia has experienced rising demand from China and the US markets for its agricultural exports, while its mining exports are seeing a declining share of Japanese and EU markets. A similar situation applies in the case of Thailand and China as regards their agricultural products, while Thailand and China have also managed to increase their exports of mining products to the EU.

2. Malaysia has been able to increase its low-technology manufacturing exports to the growing Chinese market, as well as the EU countries, but this has not happened in the case of Thailand, whose low-technology manufacturing exports have declined to both the EU countries and Japan. China, in the meantime, is rapidly expanding its exports to the US and EU countries. As regards medium-technology manufacturing, Malaysia's exports are focused on the Japanese market. This differs from its high-technology manufacturing exports, which are focused more on the US market.

3. Thai exports of high-technology manufacturing products to the US have increased substantially. On the other hand, rather surprisingly, Thailand's exports of medium-technology manufactured goods to Japan have been declining, but this is probably because Thailand can now be considered a regional production center, supplying regional production networks.

4. As for China, its exports of medium- and high-technology manufactured products to the US and EU countries have increased substantially, following a similar trend in the case of its low-technology manufacturing exports.

5. In the case of the other countries that we examined, most of them have been able to progress more than Indonesia in terms of penetrating alternative markets. This is indicated by the fact that the share of their exports sent to alternative markets is generally higher than that of Indonesia – something that applies more or less across all product groups. This suggests that Indonesia is lagging behind these countries in the search for alternative markets.

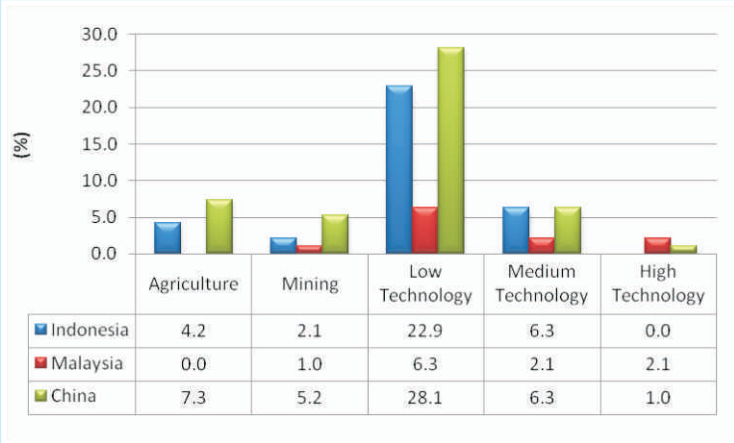
2.4 Revealed Comparative Advantage

One of the most commonly used methods to examine a country's competitiveness is to examine the value of Revealed Comparative Advantage (RCA), as a measure of the international trade specialization of a country. This concept compares the national export product's performance to the world total export, an RCA value of greater than one means that a country has a comparative advantage in that product, or in other words, the country specializes in the trade of that product.

Figures 2.4a and 2.4b show the distribution of products that have RCA values of greater than one – or, in other words, the products in respect of which comparative advantages exist – for Indonesia, Malaysia and China in the years 2000 and 2006, based on HS 1996 (2 digit level). Therefore, in this case, the total number of products exported by a country refers to the total number of products exported by the country which are categorized in HS 1996 (2 digit level).

Figure 2.4
Distribution of products that have RCA greater than one, Indonesia, Malaysia, and China (HS-96 2 Digit level)

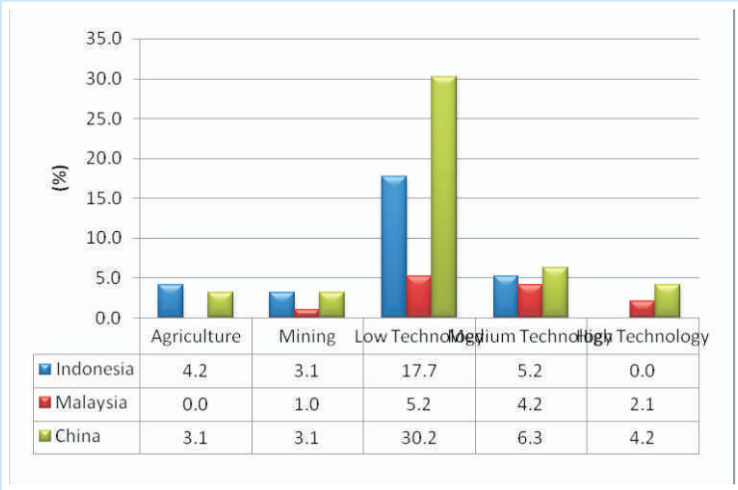
a. Year 2000



	Agriculture	Mining	Low Technology	Medium Technology	High Technology
Indonesia	4.2	2.1	22.9	6.3	0.0
Malaysia	0.0	1.0	6.3	2.1	2.1
China	7.3	5.2	28.1	6.3	1.0

Source: UNComtrade Database (Calculated by Bappenas)

a. Year 2006



	Agriculture	Mining	Low Technology	Medium Technology	High Technology
Indonesia	4.2	3.1	17.7	5.2	0.0
Malaysia	0.0	1.0	5.2	4.2	2.1
China	3.1	3.1	30.2	6.3	4.2

Source: UNComtrade Database (Calculated by Bappenas)

Focusing, firstly, on Indonesia, the figures show that over the period 2000-06, the number of Indonesian products that had RCA>1 remained steady in the case of agriculture, increased in the case of mining, and decreased in the case of manufacturing. Particularly, Malaysia is focusing its comparative advantages on manufacturing products, and the number of its medium-technology manufacturing products increased during the period from 2000 to 2006.

Again, the picture of competitiveness that we gain from RCA shows that China is the main competitor for countries in the region. This is shown by the very high share of its products that have RCA values of more than one, far exceeding the equivalent figures for Indonesia and Malaysia. In fact, more than 45 percent of Chinese products have RCA values of greater than one, most of which are in the low-technology category. The situation in Thailand, meanwhile, is similar to that prevailing in Indonesia.

Table 2.4
Composition of Indonesia's Export Value with RCA>1 (2000 and 2006)

	Value of Exports with RCA>1 (USD Million)		Share of Exports with RCA>1 (% of Export Total)	
	2000	**2006**	**2000**	**2006**
Agriculture	2,282.3	2,641.6	3.7%	2.6%
Mining	501.0	4,097.3	0.8%	4.1%
Low Technology	21,200.7	27,724.3	34.1%	27.5%
Medium Technology	19,356.4	38,844.8	31.2%	38.5%
High Technology	-	-	0.0%	0.0%
Total Exports	62,124.0	100,798.4	100.0%	100.0%

Source: UNComtrade Database (Calculated by Bappenas)

As will be seen from Table 2.4, more than 50 percent of Indonesia's export value during the 2000 to 2006 period came from products that have comparative advantages on the global market, with the biggest share coming from low and medium technology manufacturing products. It is important to highlight the increase in the share of medium technology manufacturing products from 31.2 percent in 2000 to 38.5 percent in 2006, indicating that the technology content of Indonesia manufacturing exports has been shifting from low to medium. In addition, many export products performed well because of high global prices. As a result, the contribution of mining products with RCA>1 increased in 2006. However, Indonesia should not rely excessively on exports of these products as they lack substantial competitiveness in the world market. There is a significant risk than when the global commodities boom ends, many of these products could experience a major decline in their export performance.

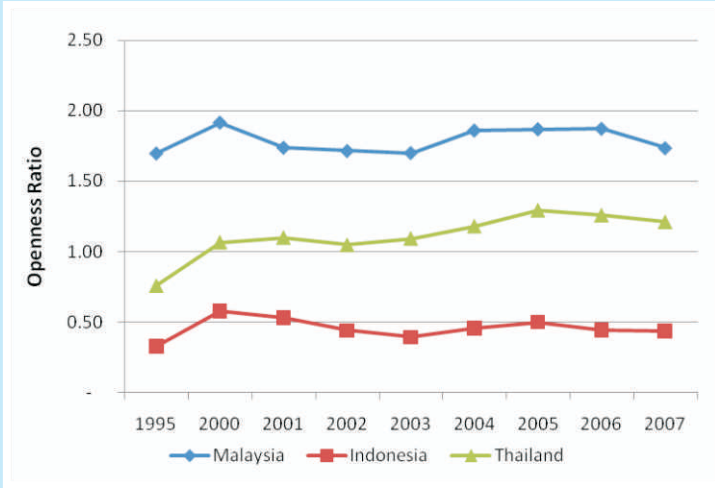
2.5 Indonesia Tends To Be Less Open Than Its Neighbours

Openness[2] is one of the crucial trade competitiveness indicators, suggesting that outward-oriented economies consistently have higher growth rates than inward-oriented countries. According to the literature, the measurement of trade openness may be classified into two broad categories: measurement of trade flows and measurement of trade restrictions. Hypothetically, a higher degree of openness reflects a country's involvement in trade as a growth booster. Moreover, an appropriate interpretation of “degree of openness” may be related to the level of

[2] Openness shows the share of the sum of total merchandise exports (ΣX) and imports (ΣM) in the gross domestic product of country *j*

economic growth. According to the figure, the degree of Indonesian openness does not change substantially since 1995, and it is lower compared to Malaysia's and Thailand's. Some factors that could contribute to this are: (i) the increase of Indonesian GDP is mainly caused by components other than exports or imports; (ii) Indonesia's total exports and imports grew at similar rate as its GDP; (iii) Some non-tariff barriers (NTBs) experienced by Indonesian export products in major export destinations seem to increase. On the other hand, the growth of Indonesian imports during that period is not dramatically increasing, because imports of Indonesia are intended for supplying capital goods and raw materials for the industries.

Figure 2.5
Degree of openness of Indonesia, Malaysia, and Thailand, 1995-2007



Source: UNComtrade Database (Calculated by Bappenas)

The actual increase in Indonesia's openness between 1995 and 2007 would appear to not be significant, despite the trade reforms. Moreover, the trend seems to be flat with some downward pressure. All this is consistent with the ”creeping protectionism” argument, which postulates that Indonesia has been pulling back from the relatively open economy that prevailed just after the crisis. While tariff barriers were very low at the start of the decade, a number of non-tariff barriers (NTBs) were re-introduced by the government in the early 2000s. These NTBs mainly consisted of special import licensing arrangements applied to a number of agricultural products, and the introduction of special licensing and/or exclusive importation arrangements/rights for domestic producers.

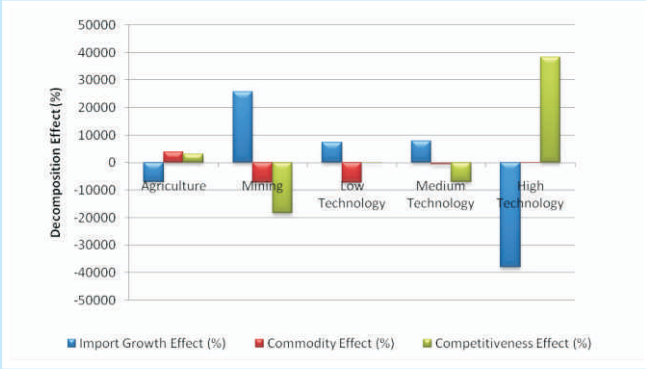
2.6 Constant Market Share Analysis (CMSA)

In essence, CMSA[3] deconstructs the sources of a country's export growth into: (i) the market effect, which measures whether Indonesia's export specialization in terms of destination markets is directed at increases in global demand; (ii) the commodity effect, which measures whether relative specialization of Indonesian exports is directed at increases in global demand for particular commodities; and (iii) the competitiveness effect.

Constant Market Share Analysis (CMSA) compares the nation's export growth rate with the standard growth rate (global average), and also reflects the composition of import growth (market effect), growth of commodity imports, and competitiveness. The demand side of the measured variable is divided into the macro share effect (import growth in the market) and micro share effect (composition effect of commodity), while the supply side describes the effects of competitiveness. While all of these are important, we are primarily concerned here with the competitiveness effect (see appendix for descriptions of all these effects).

Figure 2.6 shows the results of a CMSA for Indonesia for 2006. Comparing all the CMSA effects across product groups, it becomes clear that, at least in 2006, much of Indonesia's export growth is due not so much to the fact that Indonesian products are competitive on the world market (i.e., the competitiveness effect), but rather the fact that they are being supplied to the growing markets (i.e., the import growth effect). Across all product groups, the competitiveness effect does not appear to be the push-factor for mining, and low and medium technology products.

Figure 2.6
Constant Market Share Analysis (CMSA), Indonesia, 2005-06



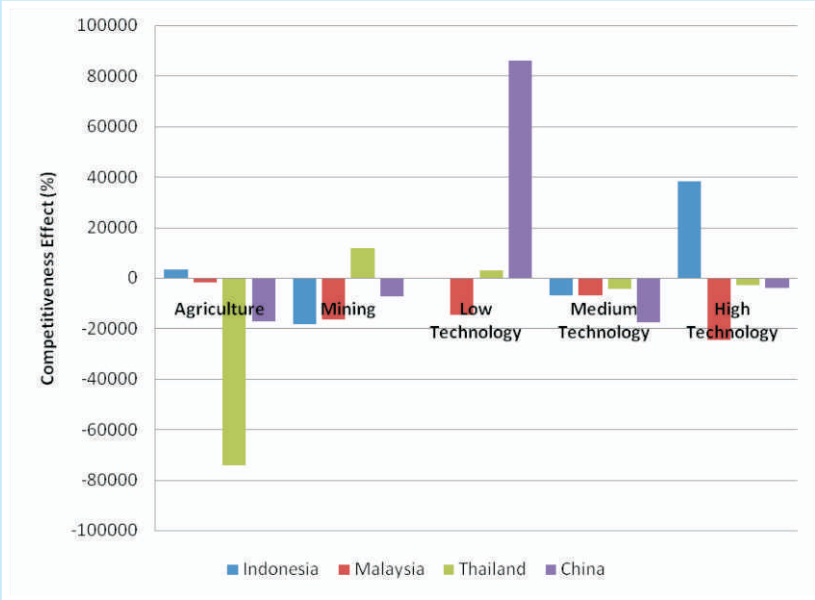
Source: UNComtrade Database (Calculated by Bappenas)

[3] CMSA is another common tool used to analyze product competitiveness. A full description of this method is given in the Appendix.

An important, and encouraging, observation is that the commodity effect of Indonesian agricultural products contributed substantially to the growth of exports in 2006. This indicates that exports from this product category supplied markets characterized by burgeoning demand.

A disappointing picture, however, is apparent in the case of mining and medium-technology manufacturing exports, where the commodity effect was negative during the period. This implies that many medium-technology manufacturing products were being exported to declining world markets. Therefore, it is very important for Indonesia to start shifting to other products where market demand is rising.

Figure 2.7
CMSA competitiveness effect by product group: Indonesia and selected countries in Asia, 2005-06



Source: UNComtrade Database (Calculated by Bappenas)

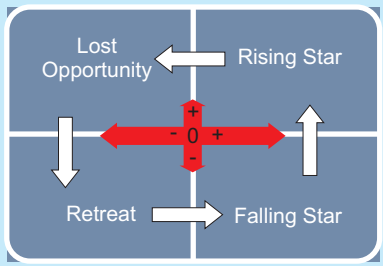
Figure 2.7 describes the contribution of product competitiveness (i.e., the competitiveness effect) in the case of Indonesia and a number of selected countries. Comparatively speaking, the figures show that Indonesia is quite competitive in the case of agricultural and high-technology manufacturing products. In fact, the value or contribution of the Indonesian competitiveness effect is the highest of all the selected countries. It is rather disappointing, however, to see that low-technology manufacturing products, which make up the bulk of Indonesian exports, are less

competitive than those of China. China, therefore, is Indonesia's main competitor in the low-technology manufacturing product group.

2.7 Composition of Exports by Export Product Dynamics

One of the most expressive indicators of competitiveness is Export Product Dynamics (EPD). This measures the market positioning of a country's product in a certain destination. Thus, it is capable of comparing export performance among countries. An EPD matrix consists of market attractiveness and business-strength information. The former is calculated based on growth in demand for a product in a certain market destination, while the later is measured based on growth in the country's market share of a particular market destination. The combination of market attractiveness and business strength attributes position the product in question into one of four categories. These are “Rising Star” (RS), “Falling Star” (FS), “Lost Opportunity” (LO) and “Retreat” (R). In this analysis, growth is calculated based on mean annual growth in the period 2002 to 2006. Thus, the dynamics at play can be seen from the latest two year information. Of course, more countries and markets can be analyzed as additional data becomes available.

Figure 2.8
Market Attractiveness and Strength of Business in EPD Matrix



Note:
x-axis: the growth of share of country's export in the world trade
y-axis: the growth of share of product in the world trade

The Export Product Dynamics (EPD) analysis for Indonesia in the world market at the time observation in 2006 shows that the nation's generic product composition consists of five major product groups. These are agricultural and mining products (corresponding to resourced-based products), and three other groups - low, medium-, and high-technology industrial products. a total of 899 products are categorized as resource based products, while 4031 products are classified as low-, medium- and high-technology products. Of the total number of 4930 products, 4.77 percent are categorized as "rising stars", 13.89 percent as "falling stars", 21.42 percent as "Lost Opportunities", and the remaining 59.92 percent as "Retreat" products. The categorical partial approach discloses that of 441 agricultural products, most are classified as "Retreat products" (69.61 percent). Meanwhile, the mining product group comprises 458 products, of which 44.98 percent are categorized as "Lost Opportunities." In the case of industrial products, 1,800 products (44.65 percent) are included in the low-technology category, 1,162 (28.82 percent) in the medium-technology manufacturing category, and, finally, 1,069 products (26.51 percent) in the high-technology category.

In 2006, the majority of products categorized as "Rising Stars" were low-technology manufacturing products, while almost half of the "Falling Stars" consisted of low-technology products (43.94 percent). Similarly, the majority of "Lost Opportunities" referred to low-technology products, as did the majority of "Retreat" products.

Table 2.5
Indonesia's Export Product Dynamics Categorization

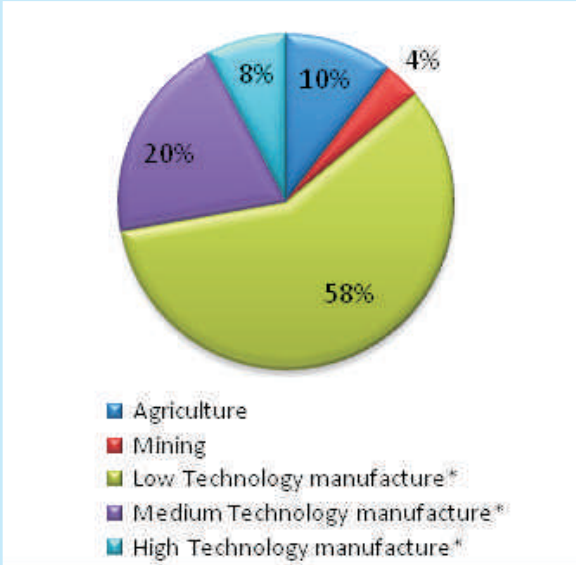
Product Group	Structure of Each Product-Group Category (%)				Total Percentage	Total Numbers of Products
	Rising Star	Falling Star	Lost Opportunity	Retreat		
Agriculture	2.0	14.5	13.8	69.6	100.0	441
Mining	10.9	6.1	45.0	38.0	100.0	458
Low Technology	2.9	16.7	14.7	65.7	100.0	1800
Medium Technology	5.5	13.4	24.2	56.9	100.0	1162
High Technology	5.6	12.7	22.7	58.9	100.0	1069
Product Group	Category Distribution across Product Group (%)					
	Rising Star	Falling Star	Lost Opportunity	Retreat		
Agriculture	3.8	9.3	5.8	10.4		
Mining	21.3	4.1	19.5	5.9		
Low Technology	22.1	43.9	25.1	40.0		
Medium Technology	27.2	22.8	26.6	22.4		
High Technology	25.5	19.9	23.0	21.3		
Total Percentage	100.0	100.0	100.0	100.0		
Total Numbers of Products	235	685	1056	2954		

Source: UNComtrade Database (Calculated by Bappenas)

2.8 The Leading Products

Leading' products are selected from among the products that satisfy the criteria of 'competitiveness' (as indicated by an RCA of greater than one for both 2000 and 2006)[4]. In 2000, of a total of 4,361 products (HS 6 digits), 998 had RCAs of more than one, meaning that they had comparative advantages on the world market. Less than 30 percent of these products (281) still had RCAs of more than one in 2006. These 281 products were then further filtered by growth in export value. Hence, the selected products must display positive growth between 2000 and 2006. It was found that 194 of the 281 commodities satisfied this criterion. The distribution of these products by sector is as shown in Figure 2.9[5].

Figure 2.9
Composition of leading Indonesian export commodities in 2007 by product group



Source: UNComtrade Database (Calculated by Bappenas)

[4] Data for 2007 cannot be used as the trade data reported by most of the countries in the world is not yet complete

[5] Here, the 'leading' products are determined by examining the results of two indicators, namely, Revealed Comparative Advantage (RCA) and Export Product Dynamics (EPD). Full descriptions of these indicators are presented in the appendix.

The leading products are then reselected using the EPD matrix. This tells us that 12 products may be categorized as Rising Stars (Top products), as explained in Figure 2.9. This means hat these products possess comparative advantages and have also been benefitting from increasing demand on the world market. The list of these products is given in Table 2.5, arranged by export growth. It turns out that the Indonesian products that are Rising Stars on the global market are dominated by agricultural commodities. If a product is categorized as a Rising-Star, those means that Indonesia has a comparative advantage in this products, and that there is growing demand for the product on the world market.

Table 2.6
The Indonesian rising export commodities in 2006

HS Code	Commodity
120710	Palm nuts and kernels
151110	Crude palm oil
151321	Palm kernel or babassu oil
401110	Parts used on motor cars
441222	Plywood, at least one outer ply
550951	Other yarn of staple fibre
120710	Derived products of cotton
151110	Derived products of other textile
151321	Trousers, bib and brace overalls
401110	Products of refined copper
441222	Nickel mattes
550951	Tin, not alloyed

Source: UNComtrade Database (Calculated by Bappenas)

Chapter 3

Indonesian Investment Competitiveness

Indonesian investment competitiveness is analyzed using a number of indicators that reflect the principal determinant factors for direct investment at the country level. The indicators that are discussed in this book will cover economic potentials, energy cost and availability, situation related to infrastructure, country risk, and the extent of investment climate.[6].

3.1 Economic potential

Figure 3.1 presents a broad picture of Indonesia's investment competitiveness based on economic potential in terms of Gross Domestic Product per capita and net investment growth, as compared with selected Asian countries. It shows that Indonesia lags far behind the Philippines, which has a similar GDP per capita as Indonesia, and, even more discouragingly, Vietnam, which has a lower GDP per capita than Indonesia. Indonesia also languishes far below the global benchmark. Net investment, which is defined as investment minus depreciation, contracted at a rate of 88.3% on average annually over the period 2000-06. However, this was not the case in other countries in the region, all of which experienced positive net investment growth.

[6] See Appendix for full descriptions of indicators used in this chapter.

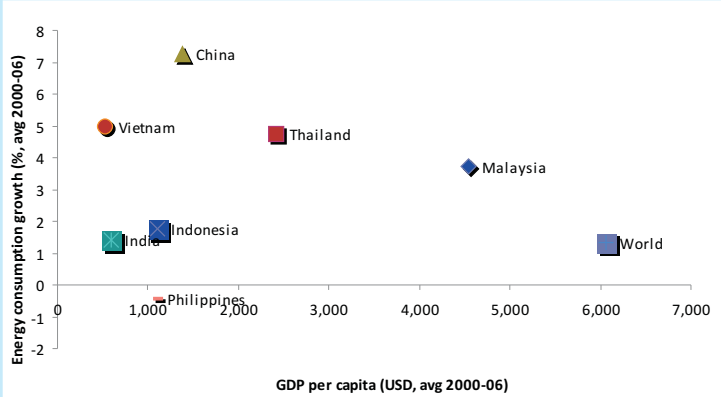
Figure 3.1
GDP per capita vs. net investment growth: Indonesia and selected countries in the region, average 2000-06

Source: World Bank Data

3.2 Energy consumption

Energy is one of the inputs in industrial production. High growth in per capita energy consumption refers to higher energy utilization from year to year. This there is often a result of industrial expantion in growing economies. Energy consumption growth of Indonesia is low compared to Thailand, China, Malaysia, and Vietnam, reflecting lower GDP per capita in Indonesia compared with Malaysia and Thailand,,with the industrial sector in Malaysia and Thailand consuming much more energy than the household sector, while at the same time pushing GDP per capita higher.

Figure 3.2
GDP per capita vs. energy consumption growth: Indonesia and selected other countries in the region, average 2000-05



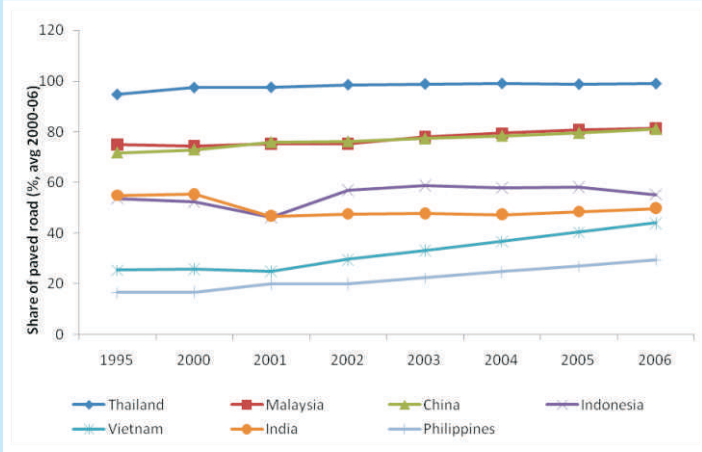
Source: World Bank Data

3.3. Infrastructure development

Availability and quality of infrastructure is a crucial factor for promoting investment. The growth in the length of paved roads as a percentage of total road length is a useful indicator that reflects market accessibility.

Let us consider first modern road infrastructure. Figure 3.3 draws the share of paved road in Indonesia and other countries in the region. While there was a slight increase in the total percentage of paved roads in 2003, the improvement could not be maintained. Minors' changes that have been happening in the years that there has been some lack of attention for infrastructures especially for paved road. Better transportation infrastructure is essential to attracting investors to Indonesia.

Figure 3.3
Percentage of paved roads in Indonesia and selected other countries in the region, average 2000-2006



Source: Calculated from the World Bank Data

A similar disappointing picture of Indonesia's infrastructure is revealed by the figures on electricity consumption. Table 3.1 shows that annual growth in electricity consumption in Indonesia is below that of China, Thailand, and, most importantly, Vietnam. Again, the rate of growth in electricity consumption in China and Vietnam is substantially higher than the growth in Indonesia, and even in Thailand – something that reflects the rapid economic growth of China and Vietnam, particularly in the manufacturing sector.

Table 3.1
Electricity consumption growth (kWh per capita) (%) in Indonesia and selected other countries in the region, average 2000-2006

Country	1995	2000	2003	2005	Average 2000-05
Vietnam	18.3	14.2	14.1	14.0	14.2
China	5.9	8.8	16.4	12.	11.8
Thailand	12.6	6.7	6.0	4.7	5.9
Indonesia	**13.4**	**9.3**	**2.7**	**4.6**	**5.7**
Philippines	5.8	8.4	6.2	0.0	3.8
Malaysia	12.3	4.9	3.1	4.3	3.8
India	5.2	0.8	4.4	5.1	3.2
World	1.9	3.0	2.9	3.2	2.4

Source: World Bank Data

Table 3.2
Growth in number of fixed-line and mobile phone subscribers, 2000-2006

Country	2000	2003	2006	Average 2000-06
Vietnam	36.6	20.7	-	48.9
Indonesia	**22.8**	**34.7**	**30.3**	**36.4**
Philippines	62.3	35.4	19.5	33.6
India	24.7	37.0	45.4	31.1
Thailand	13.4	68.9	24.6	30.7
China	50.3	26.0	10.8	27.2
Malaysia	28.5	12.2	-2.2	16.2
Singapore	31.5	4.1	3.3	8.0
World	21.2	12.8	9.7	14.4

Source: Calculated from the World Bank Data

Finally, availability and quality of infrastructure can also be assessed in terms of telecommunications development. Table 3.2 shows that Indonesia has performed very well on this front. The number of fixed-line and mobile telephone customers in Indonesia has been growing very rapidly, at about 36 percent annually on average over the 2000-06 period, However, this lags far behind the customer growth rate in Vietnam. Looking at the pattern over time, most of the growth in Indonesia occurred between 2000 and 2003. One of the reasons for the high growth in telecommunications customer numbers in Indonesia is the rapid reform that has taken place in the Indonesian telecommunications sector. This, therefore, suggests that an open investment regime for the infrastructure sector could help boost infrastructure development. However, it is important to note that credible government regulation is still needed given the 'public' nature of most infrastructure projects.

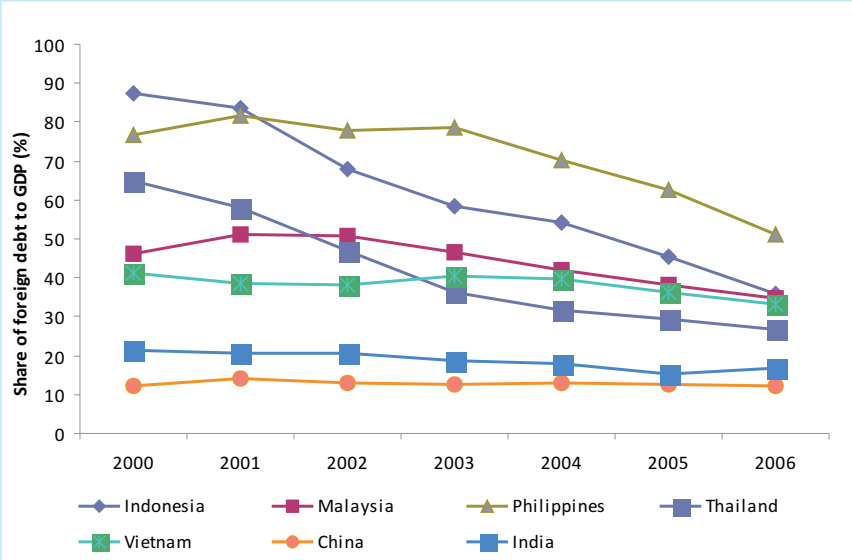
3.4 Macroeconomic Stability, Inflation, and Country Risk

Country risk for Indonesia, in terms of the burden of foreign debt, sharply declined over the period 2000-2006 (Figure 3.4).The rapid decline implies that Indonesia has the ability to maintain economic growth without being excessively dependent on foreign debt. In spite of the improvements that have taken place, however, foreign borrowing is still needed to finance the development process.

Figure 3.5, meanwhile, shows inflation in Indonesia and other selected countries during the 2000-06 period. Inflation affects investment competitiveness from the perspective of price stability; uncertainty in price-level movements adversely affects investment.

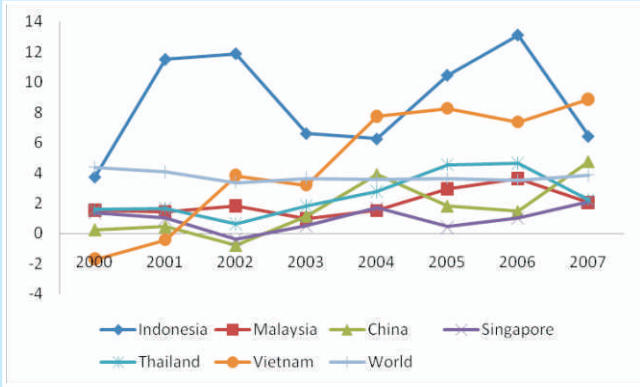
Indonesia's inflation rate is still relatively high compared to other countries in the region. This obviously does not help the country's investment competitiveness from lowered real effective exchange rate.

Figure 3.4
Share of foreign debt to GDP (%), Indonesia and selected other countries in the region, average 2000-06



Source: World Bank Data

Figure 3.5
Inflation: Indonesia and Selected Other Countries in the Region



Source: World Bank Data

Investment competitiveness can also be measured by the ratio of FDI flows to Gross Fixed Capital Formation. The higher the ratio, the higher the level of investment competitiveness that the country enjoys.

Table 3.3
FDI Flows into and out of Iindonesia (Overview For Selected Countries And Years)

	1990-2000	2004	2005	2006	2007	*as a percentage of gross fixed capital formation* 1990-2000	2005	2006	2007
	($ million, annual average)					(%, annual average)			
INDONESIA									
Inward	1,584	1,896	8,337	4,914	6,928	2.3	12.3	5.6	6.4
Outward	622	3,408	3,065	2,703	4,790	1.6	4.5	3.1	4.5
CHINA									
Inward	30,104	60,630	72,406	72,715	83,521	11.0	7.7	6.4	5.9
Outward	2,195	5,498	12,261	21,160	22,469	1.0	1.3	1.9	1.6
MALAYSIA									
Inward	4,722	4,624	3,967	6,048	8,467	18.3	14.0	18.5	20.6
Outward	1,550	2,061	2,971	6,041	10,989	5.2	10.5	18.5	27.0
SOUTH EAST ASIA									
Inward	22,198	35,245	39,091	51,243	60,514	13.7	18.7	20.2	19.6
Outward	7,497	16,978	13,790	22,232	33,466	4.5	6.7	8.9	11
Asia and Oceania									
Inward	76,754	171,178	210,572	274,291	320,498	7.9	10	11	10.6
Outward	37,528	89,931	79,531	141,147	194,754	3.9	3.8	5.7	6.5
Developing economies									
Inward	130,755	283,641	316,444	412,990	499,747	9.2	11.4	12.5	12.6
Outward	52,928	120,008	117,579	212,258	253,145	3.8	4.3	6.5	6.4
World									
Inward	492,605	717,695	958,697	1,411,018	1,833,324	7.7	9.7	12.9	14.8
Outward	492,535	920,151	880,808	1,323,150	1,996,514	7.9	9	12.2	16.2

Indonesia's capacity to attract FDI is less than that of China and Malaysia. This is measured by comparing FDI inflows to a country's GDP. The higher the GDP of a country, in theory, the greater its capacity should be to attract FDI inflows. According to Table , Indonesia, however, is ranked 104th, much lower than Thailand, Malaysia, and Vietnam.

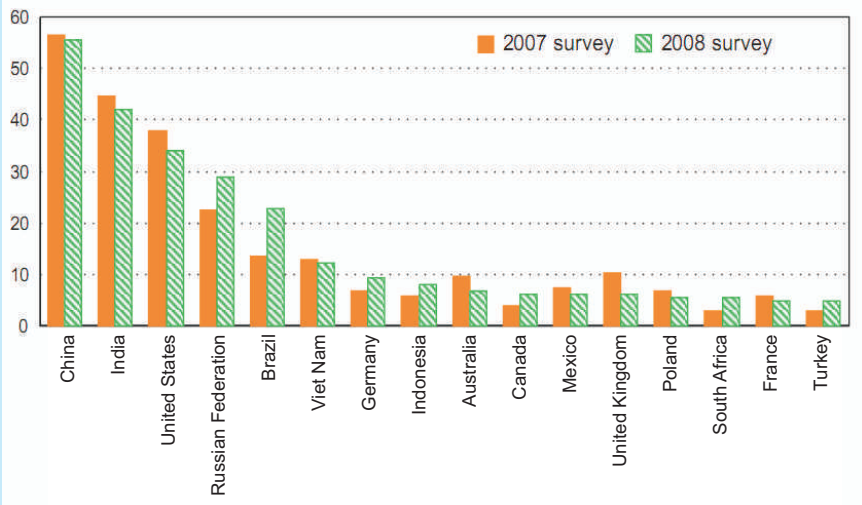
Table 3.4
Rank and index of countries in terms of capacity to attract FDI

Rank	Country	Index
7	Singapore	5.394
43	Viet Nam	2.152
64	Thailand	1.520
71	Malaysia	1.377
88	China	0.986
89	Brunei Darussalam	0.973
96	Philippines	0.767
99	Myanmar	0.741
104	Indonesia	0.668
106	India	0.629

Source: World Investment Report (2008)

Future prospects remain mild for Indonesia, as Indonesia is ranked in 8th position among the countries of South, East, and Southeast Asia. Five very big countries clearly emerge as favorite investment destinations -- China, India, USA, Russian Federation and Brazil -- and their rankings are unchanged from last year's survey. Among the factors that attract FDI flows to South, East and Southeast Asia, market growth appears to be the most important, followed by availability of cheap labour. Buoyant economic growth prospect, further regional integration, the opening up of countries to FDI (such as Vietnam), and noticeable improvements in the business environment for foreign companies in countries such as Indonesia have contributed to the positive image of the region as a prime business location (World Investment Prospects Survey 2008-2010). However, investment attractiveness indicators should be interpreted rather cautiously. Based of a survey conducted by UNCTAD, India is considered to be far more attractive for FDI than Indonesia (Figure 3.6). India also fares better in terms of macroeconomic stability. However, in attracting FDI in recent years Indonesia has done slightly better than India, as indicated by a higher FDI to GDP ratio.

Figure 3.6
The 15th most attractive economies for the location of FDI
(% of Responses to the UNCTAD Survey)



Source: World Investment Prospects Survey 2008-2010 (UNCTAD)

Chapter 4

Business Perceptions of Indonesia's Trade and Investment Competitiveness

4.1 Introduction

This chapter presents the views of the business community on the competitiveness of Indonesian trade and investment. It complements the previous two chapters, which describe Indonesia's competitiveness based on secondary data. The data presented in this chapter is based on the findings of a survey involving 200 medium and large enterprises across Indonesia, representing enterprises operating in the regions, importers and exporters, and 9 manufacturing sub-sectors (automotive, electronics, food and beverages, footwear, furniture, metal industries, paper products, plastics, and textiles).[7].

The subjects covered in the survey are closely related to trade and investment competitiveness, namely:

- **Bureaucracy:** Focuses on port handling and customs clearance, the time required for port handling and customs clearance, and the payments (both official and unofficial) that have to be made during the export-import process.
- **Infrastructure, logistics, and trade facilitation:** Assesses infrastructure that is of relevance to trade and investment, including, for example, logistics services, port infrastructure, road infrastructure, storage infrastructure, electricity and water supplies, internet and telecommunications access, etc.

[7] These sectors were selected base on their high export values. Please see the appendix for distribution of respondents

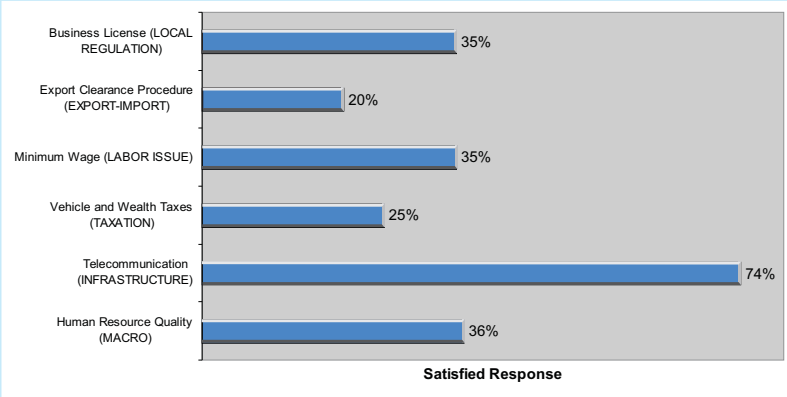
- **Licensing and governance:** Focuses on issues related to licenses, permits, and governance issues. The survey is aimed at determining whether the procedures or costs involved in securing licenses/permits discourage trade and investment in Indonesia.
- **Incentives system:** Addresses the incentives system put in place by the government so as to attract investment, including, for example, tax issues, including tax rates, tax incentive mechanisms (e.g., tax treaties), and the procedures and time involved in securing tax rebates, etc.
- **Environmental-related issues:** Focuses on the question of whether or not environmental certification will benefit Indonesian firms in terms of trade and/or investment.

4.2 Findings from the Perception Survey

In terms of macroeconomic variables, many firms are not satisfied with the situation regarding inflation. Here, presumably, the firms are unhappy about the country's high inflation rate. This suggests that price instability and expensive input costs may worsen Indonesian competitiveness. From the macroeconomic perspective, some firms are satisfied with the human resource quality, although not very many (see Figure 4.1). The survey findings paint a mixed picture as regards business perceptions of the quantity and quality of infrastructure. Many firms are satisfied with the development of the telecommunication sector, but many also complain about deficiencies in the electricity sector. About fifty percent of respondents said they were dissatisfied with the current electricity-supply situation (see Figure 4.2).

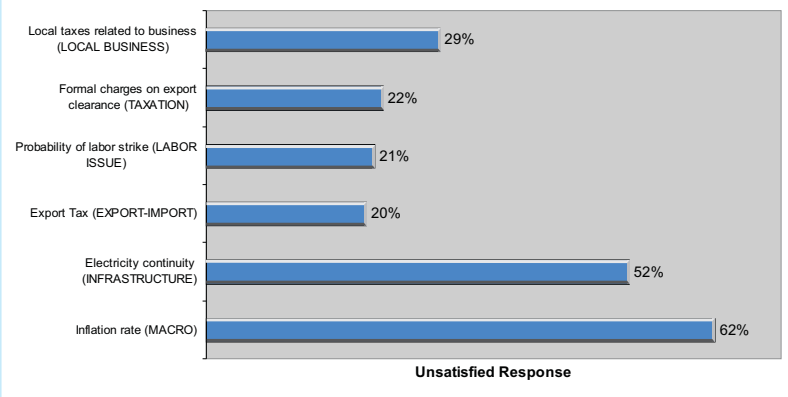
The picture was also mixed as regards local-government regulations and import-export procedures. Although many firms were satisfied with the business licensing situation, few expressed satisfaction with the situation regarding taxation at the local-government level. Meanwhile, while some firms said that export clearance was not a problem, many others criticized the costs involved in export clearance, characterizing them as being quite expensive. Export duties were identified as one of the factors that constrained Indonesian exports. The portion of respondents who expressed dissatisfaction with the export duty situation was quite large at about 22 percent.It comes as something of a surprise to find that many enterprises had few problems with the current labour regulations and practice, particularly the minimum wage. This runs contrary to the generally prevailing view that the current labour regulations pose a significant constraint for the expansion of enterprises.

Figure 4.1
Business perceptions on trade and investment competitiveness: Satisfactory Outcomes



Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

Figure 4.2
Business perceptions on trade and investment competitiveness: Unsatisfactory outcomes.

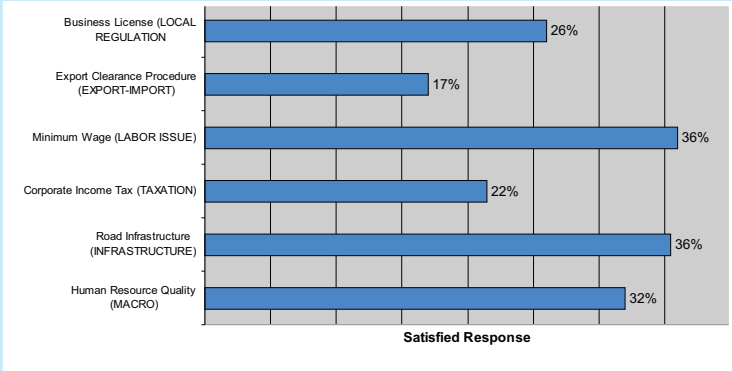


Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

Figure 4.3 shows that perceptions as regards road infrastructure, the minimum wage, quality of human resources, business licensing, and taxation have all substantially improved in recent years. The improvements in the corporate taxation area (i.e., improvements in taxation) is most likely the result of improvements in administrative procedures as there have been no changes in the rate of corporation tax or value added tax over the past couple of years.

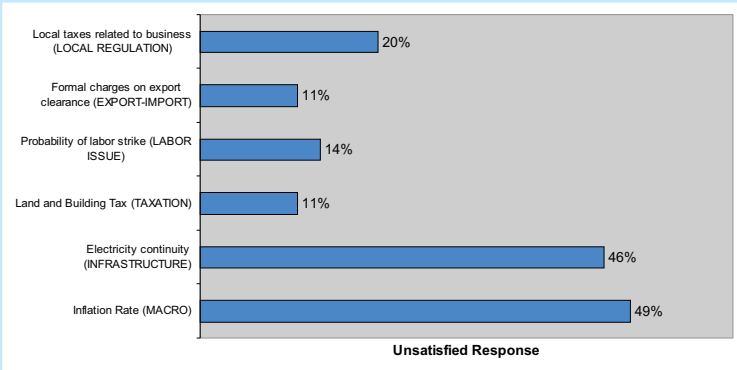
Many firms say there have been quite significant improvements in terms of the minimum wage regime. This is most probably connected with the minimum wage levels adopted. After being in effect for some years now, many local governments have come to understand that they have to set a competitive minimum wage in order to attract investment to their regions. The regions, therefore, seem to be competing in terms of the minimum wage, and this provides a more favorable environment for firms to operate in, particularly those that are labour-intensive.

Figure 4.3
Business perceptions on trade and investment competitiveness: Improvement Outcome



Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

Figure 4.4
Business perception on trade and investment competitiveness: Worsening outcome



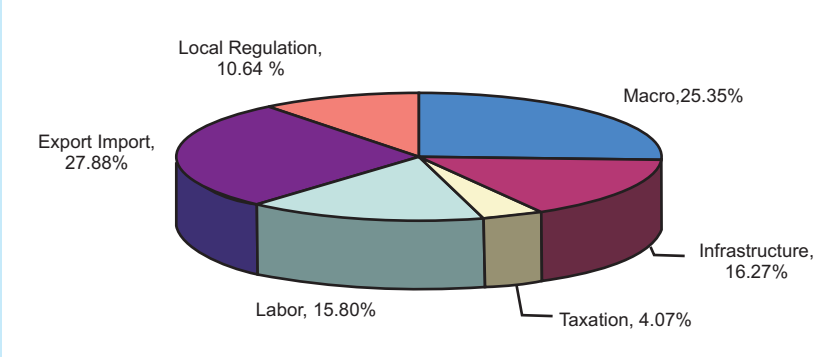
Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

Meanwhile, many firms said the electricity-supply situation, high inflation rate, and the proliferation of local taxes were variables that have worsened in recent years. Other variables that had worsened, according to some firms, were the cost of import clearance and the number of labour stoppages.

4.3 Business climate and trade and investment

This survey was conducted for the purpose of identifying the factors, according to the perspectives of businesses that are most important in determining the conduciveness of the investment climate, and the extent of international and domestic trade in Indonesia. This may be achieved through the application of the Analytic Hierarchy Process (AHP) method. The results of this are presented in this subsection. Figures 4.5 to 4.7 present the most important factors for determining the extent of investment, international trade, and domestic trade in Indonesia. First, Figure 4.5 shows the factors that affect investment. The survey reveals that firms consider import-export procedures, macroeconomic variables and infrastructure development to be the three most important factors affecting investment, accounting for about 27.9; 25.4; and 16.3 percent, respectively, of the total factors.

Figure 4.5
Most significant factors affecting investment



Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

Table 4.1
Components of variables that determine investment

Category	Degree of Importance
Macro	25.35%
Exchange Rate Level	0.96%
Exchange Rate Stability	1.96%
Interest Rate Level	1.90%
Interest Rate Stability	2.44%
Inflation Level	0.44%
Inflation Stability	1.12%
GDP Level	1.46%
GDP growth	2.16%
Income Distribution	3.83%
Human Resource Quality	8.38%
Political Stability	0.71%
Infrastructure	16.27%
Quality of Road Infrastructure	0.75%
Quality of Port Infrastructure	0.40%
Quality of Airport Infrastructure	0.26%
Port/Airport Storage Facility	0.37%
Loading/Unloading Facilities	0.46%
Electricity Continuity	3.24%
Sufficient Electricity Availability	3.21%
Internet Access	1.41%
Telecommunication (Fax/Phone)	2.00%
Clean Water Availability	1.32%
Clean Water Access	1.03%
Gas Supply Availability	0.99%
Gas Access	0.83%
Taxation	4.07%
Corporate Income Tax	0.91%
VAT	1.31%
Export Tax	0.51%
Import Taxes	0.43%
Land and Building Tax	0.36%
Vehicle and Other Wealth Taxes	0.27%
Tax Treaty	0.29%
Labor	15.80%
Minimum Wage	8.30%
Regulation on Hiring/Firing Workers	2.94%
Labor Dispute Mediation	3.62%
Probability of Labor Strike	0.94%
Export Import	27.88%
Export Procedure	7.97%
Export Clearance Time	5.22%
Informal Costs on Export	1.04%
Import Procedure	5.55%
Import Clearance Time	7.25%
Informal Costs on Import	0.84%
Local Regulation	10.64%
Building Permit	0.53%
Business Permit	1.63%
Land Acquirement	0.35%
Local Taxes	1.65%
Local Charges	3.23%
Environmental Requirement	3.24%

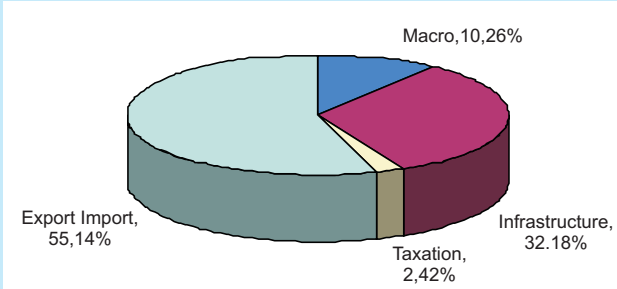
Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

Table 4.1 further breaks down the important factors affecting investment. Among the macroeconomic factors, the level of development seems to matter a lot, represented by the very high contribution of income distribution, GDP growth, and the quality of human resources in the overall importance of macroeconomic factors. The other important variables are exchange rate stability and inflation, which presumably relate to the stability of imported input prices and export revenue – for firms which export. Surprisingly, and contrary to popular belief, interest rate level does not matter as much as the other variables, while interest rate stability is more important than interest rate level. This certainly has significant policy implications in that it would appear that a high interest rate environment does not always mean an unfavorable situation for business in Indonesia.

Local charges and environmental regulations contribute significantly to the local regulations factor in the making of investment decisions. However, infrastructure, energy and utilities are the factors that principally affect investment decisions and competitiveness in Indonesia at the present time.

Figure 4.6 shows that the three most important factors affecting international trade are import-export procedures, level of infrastructure development, and macroeconomic variables. Infrastructure, however, is predominant , contributing about 55 percent to international trade performance.

Figure 4.6 .
Most significant factors affecting international trade



Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

Tabel 4.2 gives a detailed description on important factors affecting Indonesia's International Trade Competitiveness. Infrastructure, overall, plays a significant role in determining the extent of international trade, that is, about 30 percent. Electricity supply deficiencies seem to be the major issue constraining trade. Besides electricity supply, issues concerning telecommunications infrastructure, and access to and availability of clean water also play a role in limiting the expansion of international trade. Surprisingly, the quality of port infrastructure does not seem to really affect international trade performance. Again, this is in marked contrast to the general or popular perception. However, this may have something to do with the fact that many of the firms surveyed are accustomed to the low quality of port infrastructure and services in Indonesia so that they no longer consider these issues to be significant factors in international trade.

Import-export procedures play a very important role in determining the extent of international trade. Overall, they contribute about 50 percent in determining the extent of international trade. Specifically, turnaround time and import-export procedures are the key components of this group of variable. Surprisingly, and in marked contrast to the generally held view, unofficial costs related to the import-export trade are not considered as contributing significantly to the extent of the trade.

In terms of macroeconomic variables, it is clear that factors related to exchange rates and exchange rate determination (i.e. inflation and price stability) have a significant effect on the extent of international trade. Exchange rates are particularly important as they help increase the competitiveness of exporters, which suggests that many Indonesian exporters continue to rely on a weak exchange rate to improve their competitiveness in global markets.

Table 4.2
Components of factors determining international trade

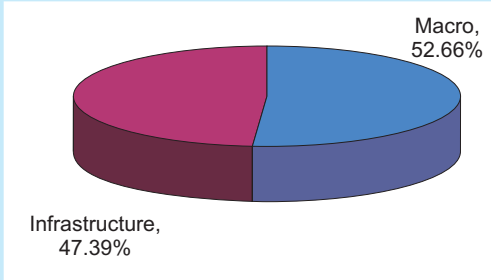
Category	Degree of Importance
Macro	10.26%
Exchange Rate Level	1.90%
Exchange Rate Stability	3.87%
Inflation Level	0.87%
Inflation Stability	2.21%
Political Stability	1.41%
Infrastructure	32.18%
Quality of Road Infrastructure	1.49%
Quality of Port Infrastructure	0.78%
Quality of Airport Infrastructure	0.52%
Port/Airport Storage Facility	0.74%
Loading/Unloading Facilities	0.92%
Electricity Continuity	6.41%
Sufficient Electricity Availability	6.34%
Internet Access	2.78%
Telecommunication (Fax/Phone)	3.95%
Clean Water Availability	2.61%
Clean Water Access	2.04%
Gas Supply Availability	1.96%
Gas Access	1.65%
Taxation	2.42%
Export Tax	1.00%
Import Taxes	0.85%
Tax Treaty	0.57%
Export Import	55.14%
Export Procedure	15.77%
Export Clearance Time	10.33%
Informal Costs on Export	2.06%
Import Procedure	10.99%
Import Clearance Time	14.34%
Informal Costs on Import	1.66%

Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

As for domestic trade, Figure 4.7 reveals that macroeconomic variables and infrastructure are the two most important factors. Important components of the macroeconomic variables are economic potential, which represents consumer purchasing power, and the quality of human resources (see Table 4.3). This obviously makes sense as the extent of domestic trade depends significantly on the capacity of the domestic economy to absorb the goods that are being traded.

Meanwhile, as for the components of infrastructure, access to, availability of, and the quality of energy infrastructure, (the availability of electricity, in particular), contribute significantly to the performance of domestic trade. Telecommunications infrastructure is also important for domestic trade. Again, this is eminently reasonable given that good telecommunications infrastructure allows firms to significantly reduce costs.

Figure 4.7
Most signficant factors for domestic trade



Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

Table 4.3
Components of factors determining domestic trade

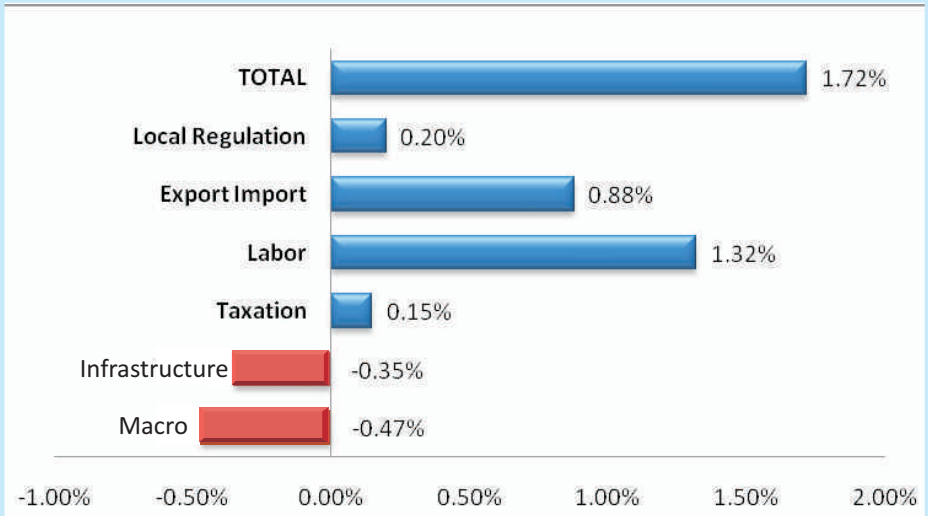
Category	Degree of Importance
Macro	52.66%
Inflation Level	1.28%
Inflation Stability	3.25%
GDP Level	4.25%
GDP growth	6.28%
Income Distribution	11.14%
Human Resource Quality	24.40%
Political Stability	2.07%
Infrastructure	47.34%
Quality of Road Infrastructure	2.19%
Quality of Port Infrastructure	1.15%
Quality of Airport Infrastructure	0.77%
Port/Airport Storage Facility	1.08%
Loading/Unloading Facilities	1.35%
Electricity Continuity	9.43%
Sufficient Electricity Availability	9.33%
Internet Access	4.09%
Telecommunication (Fax/Phone)	5.81%
Clean Water Availability	3.83%
Clean Water Access	3.00%
Gas Supply Availability	2.88%
Gas Access	2.42%

Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

Figures 4.8 to 4.10 describe the changes in the competitiveness indexes for investment, international trade, and domestic trade over the past one year or so, and indicate to what extent competitiveness has improved over the very short term.

Investment competitiveness improved quite significantly relative to the improvement that occurred on the trade side (both for international and domestic trade), as shown in Figure 4.8. The investment competitiveness index overall increased by 1.72 percent over the period, with much of this improvement being due to improvements in infrastructure – most likely road and telecommunications infrastructure. Other important improvements took place in the local regulation and labour fields. It is rather disappointing to note, however, that the macroeconomic and infrastructure components declined by about 0.5 and 0.35 percent, respectively, over the period.

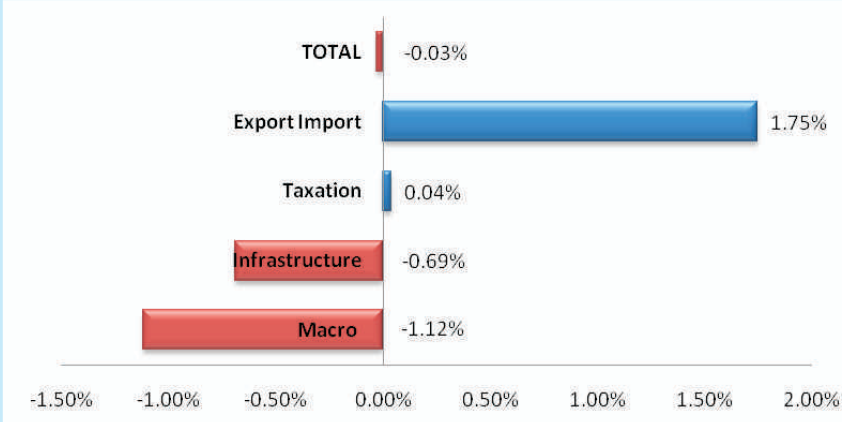
Figure 4.8
Change in investment competitiveness index, 2007-08



Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

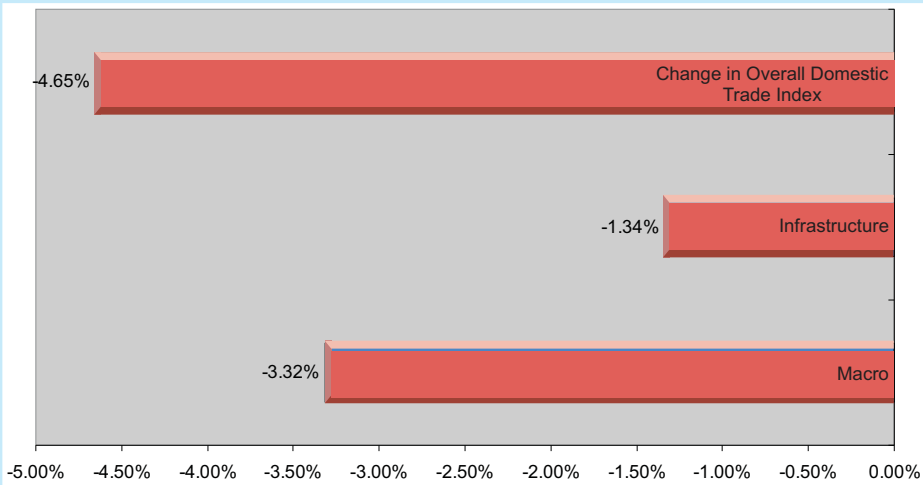
Surprisingly, a similar situation prevails in the case of both international and domestic trade (see Figures 4.9 and 4.10). Again, the macroeconomic and infrastructure components seem to have weakened Indonesia's trade competitiveness. In terms of overall change in the competitiveness index, both international and domestic trade perform poorly, with the international trade competitiveness index having remained the same over the past one year. The situation is much worse, however, in the case of domestic trade competitiveness, with the index having declined by about 4.5 percent over the past year.

Figure 4.9
Change in international trade competitiveness index, 2007-08



Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

Figure 4.10
Change in domestic trade competitiveness index, 2007-08



Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

Chapter 5

Environment Issues on Trade and Investment Competitiveness

5.1 Trade and environment in WTO

Trade is an important issue in World Trade Organization (WTO). WTO acknowledges this and has put its support for creating sustainable development in its rules and regulations. These rules and regulations, conceptually helps to set the framework for WTO members in designing and implementing measures to address environmental issues. The rules and regulations, of course, still apply the standard WTO principles of non-discriminatory, transparency, and predictability. There are two WTO agreements that provide the scope for environmental objectives, and these are, the Agreement on Technical Barriers to Trade (TBT) and the Agreement on Sanitary and Phytosanitary Measures (SPM). Meanwhile, in terms of institutional set-up, the WTO created Committee on Trade and Environment (CTE) which provides a forum dialogue on trade and environment.

Given the TBT and SPS, more generally, WTO ruling allow members to adopt trade-related measures to protect environment as long as it comply with the other WTO ruling. This is formalized under Article XX (b) and (g) of GATT on General Exceptions which allow WTO members to invoke or implement GATT-inconsistent measures of these are necessary to protect environment.

As much as aimed at giving environmental protection, experience suggests some loopholes in the WTO ruling that in fact allows WTO members to raise some trade barriers in the name of environmental protection. The WTO Dispute Settlement body has long been recognized to deal with such issues, and an example of this is provided in Box 5.1 for the trade protection measures raised by US for exports of shrimp and shrimp related products from some Asian countries.

Box 5.1
Import prohibition of certain shrimp and shrimp products (WTO case Nos. 58 (and 61))

Seven species of sea turtles have to date been identified. They are distributed around the world in subtropical and tropical areas. They spend their lives at sea, where they migrate between their foraging and nesting grounds.

Sea turtles have been adversely affected by human activity, either directly (their meat, shells and eggs have been exploited), or indirectly (incidental capture in fisheries, destruction of their habitats, pollution of the oceans).

In early 1997, India, Malaysia, Pakistan and Thailand brought a joint complaint against a ban imposed by the US on the importation of certain shrimp and shrimp products. The protection of sea turtles was at the heart of the ban.

The US Endangered Species Act of 1973 listed as endangered or threatened the five species of sea turtles that occur in US waters, and prohibited their "take" within the US, in its territorial sea and the high seas. ("Take" means harassment, hunting, capture, killing or attempting to do any of these.)

Under the act, the US required that US shrimp trawlers use "turtle excluder devices" (TEDs) in their nets when fishing in areas where there is a significant likelihood of encountering sea turtles.

Section 609 of US Public Law 101–102, enacted in 1989, dealt with imports. It said, among other things, that shrimp harvested with technology that may adversely affect certain sea turtles may not be imported into the US — unless the harvesting nation was certified to have a regulatory program and an incidental take-rate comparable to that of the US, or that the particular fishing environment of the harvesting nation did not pose a threat to sea turtles.

In practice, countries that had any of the five species of sea turtles within their jurisdiction, and harvested shrimp with mechanical means, had to impose on their fishermen requirements comparable to those borne by US shrimpers if they wanted to be certified to export shrimp products to the US. Essentially this meant the use of TEDs at all time.

Many have missed the importance of the Appellate Body's ruling on this case.
In its report, the Appellate Body made clear that under WTO rules, countries have the right to take trade action to protect the environment (in particular, human, animal or plant life and health) and endangered species and exhaustible resources). The WTO does not have to "allow" them this right.

It also said measures to protect sea turtles would be legitimate under GATT Article 20 (i.e. XX) which deals with various exceptions to the WTO's trade rules, provided certain criteria such as non-discrimination were met.

The US lost the case, not because it sought to protect the environment but because it discriminated between WTO members. It provided countries in the western hemisphere — mainly in the Caribbean — technical and financial assistance and longer transition periods for their fishermen to start using turtle-excluder devices.

Source: WTO website on the trade dispute cases.

More specifically, the fact that WTO provides a venue for a constant reduction in tariff protection over time in practice has made some countries to resort to some 'non-tariff' form of protection. In particular, it was observed that there has been an increasing prevalence of 'implicit' non-tariff measure. Measures such as licensing, technical and labeling requirements are commonly applied for manufacturing goods, while environment standard or sanitary requirements, as based on the Agreement on SPM, are commonly applied for import of agricultural products. Most of these measures come into effect in the name of various economic-related reasons, such as providing protection to consumers, environment and labour. While reasonable and have some basis, these NTMs in practice provide a kind of protection to domestic producers. The impact to import is magnified by the fact that these measures are mostly implemented discriminately against imports, or even worse, to imports from some specific countries.

In short, the use of environmental standards that are applied by some WTO member countries could be inappropriate. They could create negative development consequences for other countries, particularly the developing ones, by hindering exports. In this case, it is worth noting that usually small and medium firms are particularly vulnerable for this kind of actions.

What would be, then, the resolution of this issue? While it is certainly debatable, one approach is actually not to weaken the importance of environmental aspects in WTO agreements. Instead, actions need to be promoted to enhance the capacity of exporters to meet all the required and necessary environmental standards. For this, a lot or resource need to be put in place, and while tend to be expensive from development perspective, it certainly a beneficial actions for ensuring a sustainable stream of export value in the future.

5.2 Environment and trade competitiveness

5.2.1 The competitiveness based on trade indicators

This subsection provides an overview of competitiveness of some Indonesian products which are sensitive to environment issues. Defining at six-digit level of HS code, some of these products are the following: plywood consisting solely of sheets (HS 441213), coniferous (HS 440710), and palm kernel or babassu oil and its fraction (HS 151321).

Indonesian exports of plywood consisting solely of sheets (HS 441213) are competitive in world market. The RCA of this commodity has been constantly above 1 over the period 2000-06, which indicate that Indonesia has comparative advantage in supplying world market for this product. Moreover, the CMSA indicate that the global demand for this product has also constantly increasing over the period.

However, export has not performed well. The growth rate of this product continuously negative over the period and the analysis suggests that it is a 'retreat' product for Indonesia. Given the high competitiveness that Indonesia has on this product, the weak export performance suggests that Indonesia has not been able to exploit opportunity that the world offers for this product, and this provides some room for actions to improve the export performance.

Coniferous is article of wood products. It is certainly sensitive products in the sense that it has high environmental value. Indonesian exports of this product is relatively large, about 8 million USD on average per annum for the period 1995-2003, but the exports seems to have declined significantly since 2004. Indonesian coniferous exports do not seem to well justified from competitiveness side. The Indonesian coniferous RCA value is way below 1, indicating almost no comparative advantage that Indonesia has for this commodity; yet the CMSA indicate a strong or increasing global demand factor. Thus, much of the high Indonesian exports seem to have only been because of the high global demand for the commodity. All of these suggest that some policy action might be needed for regulating coniferous export, for the reason of its high environmental value.

Palm kernel or babassu oil is one of the most popular Indonesian export products. Indonesian export growth of this product has been strong in the past five years or so, and growing rapidly since 2004. The export doubled in only two years time period, indicating a rapid rate of extraction of this product. The reason for rapid export has been a (perfect) combination of a strong comparative advantage that Indonesia has for this commodity (i.e., RCA constantly well above 1) and strong demand from global markets, due to commodity boom in the past few years.

A relevant issue here, in terms of environment, is the conflict between forest and plantation in regard to the use of land for planting and producing the commodity. Thus, it is a deforestation issue. While providing revenue for Indonesian export and welfare for people planting and producing the commodity, continuing high export of the product is clearly not favorable decision from the environmental end, for the reason of the conflict it creates with the global climate change agenda of reducing emission from deforestation. Considering Indonesian commitment in the global climate change agenda, as well as the abundant stock of forest that Indonesia has, it might be useful if there should some policy actions to follow the development of Indonesian exports of palm kernel or babassu oil.

5.2.2 The competitiveness based on Computable General Equilibrium (CGE) Analysis

Another way to get some insights on the importance of environment in trade is by conducting some economic simulation to derive some potential impact of the change in some trade- and environment-related variables on Indonesian economy. This subsection addresses this, presenting

insights from CGE-based model simulations. The exercise provides two simulations, presenting two exogenous shocks, which are, first, the world price increase in agricultural commodities, defined here as sugar, wheat, rice, maize, palm-oil, soybeans, meat, animal and vegetable oil, rubber, and cocoa (i.e., simulation 1), and second, the decline in Indonesian crude palm-oil export demand for the reason of banning the Indonesian CPO product in European Union (EU) (i.e., simulation 2). We consider the ban in the second simulation as an example of some environmental concern in trade, which in this case can be related to the issue of deforestation from the CPO plantation.

The impact of simulation 1 suggests that the increase in world price of some agricultural products decreases the Indonesian GDP, albeit only by small extent. Simulation provides the decrease of 0.1 percent, and this occur for the reasons that many of the products that are simulated to have price increase are the commodity that Indonesia imports and consumes at quite significant amount. The increase of the price also increase price indexes, and hence, inflation.

Simulation 2, however, predicts a large decline in Indonesian CPO exports for the reason of the import ban by the UE – in the scenario. Thus, although the ban does not significantly overall macro economy situation, it affects the development in the CPO sector, and this has policy implication because of large export value and employment generated from this sector. Therefore, it is important that a more proactive actions are needed to promote higher environmental awareness. This can be done by all element of society, including governments, NGOs, academician, and even private citizens. Equally important, is a management of CPO production that take into consideration of environmental aspect, and this regard, production management that in favour to preserve forest could be the win-win solution. Exports perhaps will somehow decline because of not so many forest are transform to be CPO plantation, but for sure, it would sustain the overtime Indonesian CPO export because global market should no longer have reason to ban Indonesian exports. This strategy could also be applied to other products or commodities that are environmentally sensitive as in the CPO case.

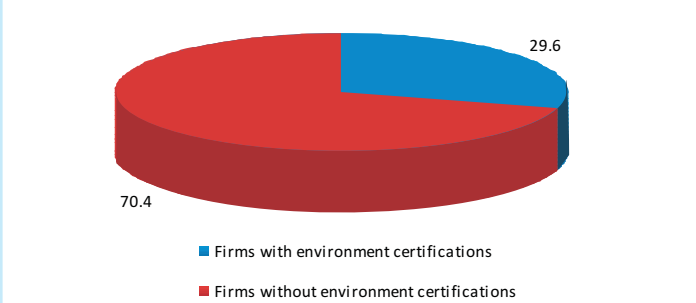
5.3 Environment issues from business perception

The perception of business on environmental issues does not seem so encouraging. The perception survey of investment and trade competitiveness suggests that not so many firms in Indonesia are aware of the importance of environmental aspects in trade and investment. Figure 5.1. Shows that about 70 percent of the survey's respondents operate without having some environment certificates (e.g. ISO 14000, eco labeling certificates, PROPER, etc.).

Elaborating this finding, the survey further suggests that the main reason for the lack of environmental certification is because buyers of the firms' products do not require the firms to have such certification. Figure 5.2. shows that almost half of respondents indicate this. The other important source for the lack of certification seems to come from the fact that the certification – according to the firms interviewed/surveyed – does not bring any significant positive impact on sales, as well as the very high cost that firms have to pay to acquire the environmental certifications.

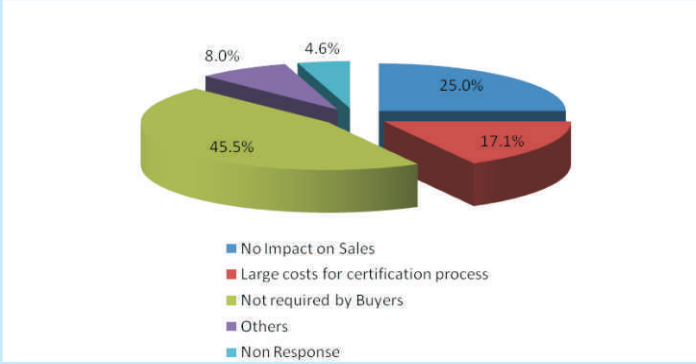
All these facts do not seem to increase Indonesia's competitiveness globally, owing to the fact of increased global awareness of environmental aspect in production and trade.

Figure 5.1
Number of respondents with and without environmental certifications



Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

Figure 5.2
Reasons for not having environmental certifications

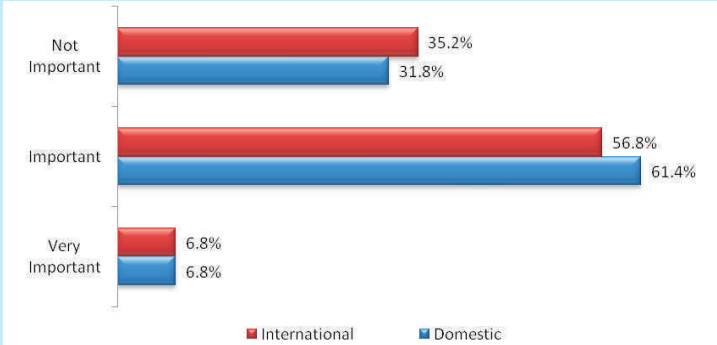


Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

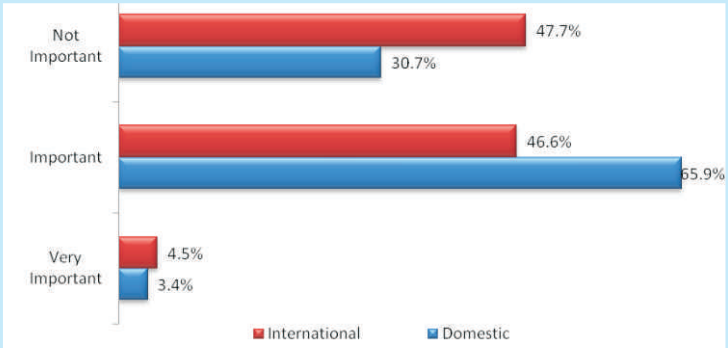
Having mentioned all of these, however, there seems to be a common understanding among firms of the importance of having environmental certification. Figure 5.3 a to c provides some support for this. The respondents who are currently do not hold any environmental certificates in fact stated that having such certificates is important for their sales performance, and this applies for firms that trade domestically or internationally. The extent of the importance, however, only applies to certifications that mostly recognized internationally. The figure indicates that the degree of importance is so large for ISO 14000, not so for PROPER, and only moderately for eco-labelling certificates.

Figure 5.3
Perceptions of the impact of environmental certifications on firms' sales, by firms not having the certificates

a. ISO 14000

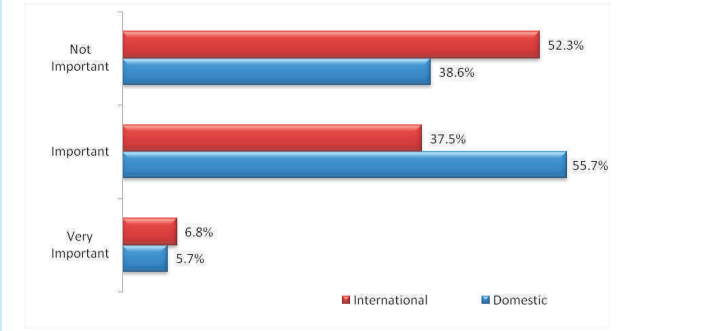


b. Eco labelling



Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

c. Proper



Source: Survey of Trade and Investment Competitiveness (Bappenas, 2008)

Chapter 6
Concluding Remark

6.1 Summary of current situation

The performance of Indonesian export is in a very good shape during the period of 2000-2007, with the average growth rate at about 9.5 percent in terms of export value. However this is relative low compared to China. There are 194 leading commodities, those who had RCA more than one and positive growth in 2006. Most of them are low and medium manufacture, which are resource-based industries. Then there are 12 top of leading commodities which are rising star. Most of them are medium and low technology products. The result also suggests that the pattern of Indonesian export is characterized by a gradual shift from low to medium and high technology manufacture products from 1995 to 2007, similar with Thailand. However China jumps from the domination by low technology manufacture products at 1995 into high technology manufacture products at 2007. The competitiveness of Indonesian product is better than Malaysia, indicated by the higher of percentage of products those have RCA > 1 before and after economic crisis. But the level is still far under of China products.

In general, export growth for Indonesia, Thailand, Malaysia and China is determined by different effect for each sector. Indonesia export is primarily driven by import growth and commodity composition effects, while Thailand is affected the most by commodity composition. In the mean time, Malaysia and China are determined by import growth effect.

Medium technology products of Indonesia showed the best performance at world market indicated by the proportion of Rising Star products which is the highest position compared the

other products for Indonesia, Thailand, and Malaysia with high industry follows in the runner up position. However, China took over such position at world market case. The other highlighted substance reveals that China is holding the most advantageous position of the rising products in the world market compared to Thailand, Malaysia, with Indonesia considered as the weakest performer in this field. Furthermore, deepened products analysis reveals that the major proportion of rising products of the three ASEAN countries are medium technology manufacture products. On the other hand, high technology manufacture products are the dominant contributor for China's raising star products in the world market.

From the indicators of investment competitiveness across countries, many developing countries are trying to enhance the growth of investment. Energy consumption of developing countries and new industries countries have relatively higher growth per capita compared to other advanced countries, as well as electricity consumption, fixed line and mobile phone subscriber, and the use of internet connection. For Indonesia's case, energy consumption development per capita from 2000 to 2005 is relatively lower than in 1995. From both indicators of approval and percentage of investment on GDP, Indonesia seems to have less investment competitiveness compared to the other countries, especially compared to other developing countries. However, future prospects remain mild for Indonesia, because Indonesia remains in 8th place among other countries in South, East, and South-east Asia. Five very large countries clearly emerge as favorite investment destination: China, India, The USA, The Russian Federation an Brazil. Their rankings are unchanged from last year's survey. Among the factors that attract FDI to South, East and South East Asia, market growth appears to be the most important, followed by availability of cheap labour.

Business perceptions on government services and infrastructure that facilitate investment and trade activities are developed from the survey results. Based on our collected samples of 200 firms, we can summarize the results of the perceptions as the following;

- **Satisfied and Unsatisfied Responses**. According to the survey, most of the firms mentioned that they are not satisfied with inflation rate and electricity continuity, as they have noticed worsening outcome of those factors. Few firms also unsatisfied with other factors, such as: local taxes related to business, formal charges on export clearance, probability of labour strike, and export tax. On the other side, most of the firms are satisfied with telecommunication infrastructure, and some firms are satisfied with business licence, minimum wage, and human resource quality. Only few firms are satisfied with export clearance procedure
- **Factors Determining Trade and Investment Climate.** The results from the survey showed that export import process, macro and infrastructure variables are top three factors affecting investment climate. For international trade, export and import process plays the

most significant role in determining international trade climate, followed by infrastructure and macro variables. For domestic trade, infrastructure and macro variables are dominant .

- **Change in Trade and Investment Competitiveness Index.** We found that the investment climate index from 2007 to 2008 increase as much as 1.72 percent. . The majority of respondents feel there has been moderate improvement in the taxation, labor, export import process and local regulations variables. However, these improvements are off-set by the decline in the macro and infrastructure variables. In other words, many respondents feel that macro and infrastructure variables have been favorable to their business. Apart from this, we found that international trade competitiveness index decreases by -0.03 % from 2007 - 2008. because a decline in macro economic conditions and infrastructure variables is higher than an increase of export import procedure and taxation variable. In addition, domestic trade competitiveness index 2007-2008 decreases as much as -465 percent, due to a decline in infrastructure and macro economic condition.
- **On the macro variables, the majority of respondent expressed their dissatisfaction for all but one variable.** Among 11 sub variables in the macro category, only human resource quality are considered have been improved by most respondents. Three macro variables; exchange rate, inflation and GDP contribute to 0.78% decline in the investment climate index.
- **The overall performance of infrastructure variables is quite good.** The majority of respondents feel that there have been moderate improvements in the infrastructure categories. However, electricity problem (both in term of continuity and supply) is the most significant obstacle for the business. Consequently, the improvement in other infrastructure variable is off set by respondent satisfaction on electricity.

On the environmental issues, there are five highly sensitive commodities that potentially destructive to the environment, such as Plywood consisting solely of sheets, Semi-bleached or bleached Non-c, Coniferous, Crude oil, and Palm kernel or babassu oil and its fraction. Two out of three commodities are needed to be concerned about, because of their highly profitable potential position in world market (Crude Oil and Palm kernel or babassu oil and its fraction). All of the products have relatively increasing growth of export in recent years, but the increase is not tagged along with the increment of competitiveness. In this study, CGE model is used to analyze the implication of the high international price increase of some agricultural product on Indonesian macro economy by 0.1 percent. The simulations suggests that the increase in world price of some agricultural products decreases the Indonesian GDP, albeit only by small extent, and this occur for the reasons that many of the products that are simulated to have price increase are the commodity that Indonesia imports and costumes at quite significant amount. The increase of the price also increase price indexes, and hence inflation.

In addition, the environmental concern of the EU with reducing the export demand of Palm Oil will not give a significant influence in Indonesian macro economy, which shows that total export value decrease slightly even though there is a big change on Palm Oil export. Other macroeconomic variables only change slightly than before. It shows that the multiplier effect of the product is not big enough to influence the Indonesian economy. Reducing the export demand of Palm Oil considering of the environmental concern influences the output, price and export of Palm Oil and Animal and Vegetable Oil. A decrease of Palm Oil is almost zero percentage change, while there is a negative percentage change on Animal and Vegetable Oil output. Meanwhile, the domestic price of those products increases as not as high as in simulation 1. There is a significant decrease on export volume as the combined effect of high palm oil price and decreased export demand because of the environmental issue compare to those in simulation 1. Other sectors do not change significantly on output, price and export with and without the environmental concern of reducing Palm Oil export demand, which implies the weak backward and forward linkage of Palm Oil sector to other sectors. From macro and sectoral economy perspective, it is not such a big deal for Indonesia to be more concern to the environmental issue. Instead of losing the market, the threat from EU can be the opportunity for Indonesia to increase its Palm Oil and Animal and Vegetable Oil export with the environmentally friendly products. In addition, the survey has found a gap between business perception and the reality. The majority of our respondents view that environmental certifications and labels are important, yet most of them do not have the certifications/labels. The two main reasons for why most of them do not have environmental certification/label are because (1) it is not required by the buyers, and (2) do not affect sales performance.

6.2. Implication of Global shocks

Should there were no global financial crisis and economic recession, export and investment performance would follow the current trend which is highly promising. The engine of export growth would be those categorized as the rising stars, and Indonesia is very competitive in medium technology category. The investment climate is gradually improving, though it could be done with an accelerated phase. However, the current global woes can have adverse correction on this promising trajectory.

Current global financial turmoil was ignited by the US supreme mortgage crisis in mid 2007. The financial turbulence, has spread over the world. After the US stock prices plummeted, the Europe stock markets began to follow. Iceland, was the first worst-hit country due to high exposure of major banks in the country to the US financial market. In the UK, the UK government did a similar

bail-out program. Yet different from the US proposal, the UK government bail-out troubled banks with return of shares, the case which was similar to Indonesia in 1998. In addition, the European central banks took a coordinated-policy by lowering together interest rates. This action was intended to avoid credit crunch in the European banking system.

Recent prediction by the International Monetary Fund (IMF) on the global output growth, it is expected that the global economy would experience a dramatic downturn, signaled by rapid decelerating in economic growth (3.4% in 2008 and 0.5% in 2009). The most striking evidence is that Asian economies, are not decoupling from the financial crisis happening in the US and Europe. The tide of financial tsunami has affected Asian economies through slowing down of exports. Some countries, like Korea, suffered deteriorated trade-balance and this led to a sudden reverse shock in its capital inflow and 40% depreciation in their currency.

Although there are some estimates about the possible impacts of the crisis on individual countries – provided by international agencies such as IMF and the World Bank – it is still very difficult to justify whether those estimates would be accurate. In fact, due to the dynamics of the crisis, the estimates have been revised almost every months which shows that the future situation hardly predictable. There are two reasons for this. First, the crisis is an unprecedented phenomenon in the sense that there is no crisis like this before. Now, the world is facing three serial crises namely (1) mortgage crisis in US, UK, and some other countries in Europe, (2) a global financial crisis that hit almost every single country especially stock market and banking sector, and (3) global commodity market malaise. Consequently, it would be very hard to know before hand what is likely to happen. The length and depth of the crisis is not known yet. Second, from methodological point of view, crisis is typical a structural brake which changes the parameter and interrelationship between economic variables. On the other hand, econometric and CGE modeling relies on a set of past behavior of the economy. But still, we can relies on the estimated behavior to do simulation about the impact of the crisis, bearing in mind that the estimate is no longer accurate. The point is that, modeling can be helpful in detecting the implications of the crisis qualitatively, but not quantitatively. Therefore, this study only highlight the future directions qualitatively, although the inferences are drawn from quantitative simulation. The highlight is important in providing the basis for policy design that can mitigate the impact of the crisis. The highlights are as follow. Possibility for a global recession in the near future surely has some effects for Indonesia. In short, the effects can be organized into two groups, which is the impact on flow of capital and domestic financial market and on exports of Indonesia. The former includes, for example, the change in the capital composition in the domestic economy, lack of (cash-money) liquidity, both in US dollar and Indonesian Rupiah, the occurrence of cross-subsidy across companies – which triggered because of the shortage of liquidity in some companies, and the depleting of credit for working capital (or commonly known as credit crunch phenomenon).

Meanwhile for the latter, it includes, for example reduction or even cancellation of export orders, delay of payment for export goods, problem with export financing – which contributed by banking sector, and possibility of an increase in trade protection practice and dumping.

The most immediate impact of the global crisis on Indonesia would be in the form of capital flight which actually is happening right now. As Indonesia experienced a wave of portfolio inflow of about USD 24.6 billion in the past five years, sudden reversal of this hot money would be the greatest risk. Hedge fund and fund manager suffer substantial losses in the developed countries and thereby their capital fall short. In order to fill this short, they have to withdraw their money from developing countries, including Indonesia.

Liquidity shortage is also faced by multinational corporation resulting from credit tightening by the banking sector and falling demand. A lower supply of credit by the banking sector is an immediate implication of liquidity squeeze in developed countries. Moreover, corporation in the real sectors is making losses because of falling demand which eventually disturb their cashflow. In order to solve liquidity and cashflow problem, one of the option is liquidation of assets in developing countries. Therefore, both short and long term capital will fly out of developing countries from Indonesia.

The effects of capital flight would be very clear that is capital shortage. FDI and short term investment cannot be relied on as the source of foreign investment. Domestic firms can no longer access off shore fund. Domestic banks will be temporarily short in liquidity, which then reduce their ability to expand credits. Because of these, domestic investment can be adversely affected.

The impact of global crisis on Indonesia's export would also very clear in the near future. More export oriented countries like South Korea and Singapore succumb into the crisis earlier than Indonesia. Falling export demand is already effecting their economies. Soon Indonesia would follow, which off course with lesser degree. The reason is simply because Indonesia has a lower export to GDP ratio which means that the country is less export dependant.

Economic recession is now faced by Japan and some European countries, with the US is now just joining the league. These three region is the 'traditional market' for Indonesian export. Recession in these regions would be accompanied with falling aggregate demand. Consequently the demand for tradable goods would also fall. Export from other countries including Indonesia would also demise. This particularly will be more pronounced for the case of demand driven commodities; those with high score of import effect and commodity composition effect in the CMSA.

Export would also be adversely affected by international liquidity shortage and credit crunch. Trade financing is heavily dependent on international banking system. Lesser availability of

financing would also mean lower demand for export. There will be also late payment from the counter-part parties in the developed countries which can make the exporters have to acquire more borrowing from domestic banks. The solution for this is very clear, domestic banks has to be kept liquid and the most consistent policy for this is a loose monetary policy.

In sum, current global turmoil can have adverse effect on Indonesia's trade and investment performance. The possible impact has been analyzed throughout this section, qualitatively. Quantification of the impacts is highly speculative as the length and depth of global crisis is very complex to ascertain. At least, it is clear that there would be a correction on the currently promising trend of trade and investment performance. This is happening to all countries, not just Indonesia. What is next should be done is formulating the right strategy to mitigate this unfortunate situation.

6.3. Strategy for reducing the risks and optimizing opportunities

The previous section noted the possibility of the world entering global recession in the next few years. Because of this, it is perhaps necessary to put forward some policy idea to deal with such situation. Based on some economical aspects that Indonesia has at the moment, for example the situation on competitiveness, economic characteristics, and some other aspects, there are some strategy options that could be put forward for implementation, in response to the possibility of the global recession.

First, Indonesia could implement what so-called the 'safeguarding' strategy that fits into the framework of WTO agreement. This strategy is aimed at the important sectors, particularly small and medium enterprises that absorb large employment. This policy, can be implemented, for example, by temporarily reduce the flow of imported goods. To anticipate the effect of global economic crisis and the slowdown of world demand, Indonesia has just recently implemented the policy to protect domestic economy, particularly from illegal imports and re-direction of export products that were originally designated to the major export markets. In addition, Indonesia puts its special attention on some sectors namely garments, food and beverages, electronics, footwear, and toys, to minimize the risk of injuries of those industries from the global recession.

This policy could be useful for giving support for domestic industries on the possibility of

large decline in the Indonesian export demand and it is necessary to redirect exports to domestic markets and other export markets, at the same time. This policy is also important to reduce unemployment that comes from labour dismissing. It is realized that providing supports for some sectors in principle will not be beneficial to the economy in the long-run, as for the reason that this policy is implemented just to mitigate the risk of global crisis to the Indonesian economy.

The second option, as also noted, is to keep elaborating new export market, and this could be done simultaneously with export diversification. Although both of these take some time, they are reasonable and strategic actions for being considered to be focused on. This is in the framework of thinking that the experience of the upcoming global recession should be seen as a worthy experience, and that is to strengthen the future of Indonesian economy – so that it can be strong in response to the other global recession that could occur. Therefore, although it could not give some impact immediately, this policy, if implemented correctly, could be beneficial for Indonesia, especially in medium- and long-term.

One policy option to create a successful export market diversification program is to improve the effectiveness of trade diplomacy and promotion. As a fact, activities of export promotion should be more intensified, in terms of quality and quantity. For example, the effectiveness of trade fair overseas, including pre-and-post trade fair, should be improved in order to create stronger business-relations between buyers and exporters—particularly small and medium exporters.

The third policy option is to accelerate manufacturing revitalization. Unlike the other industries, manufacturing industries are not really recovered from the 1997/98 economic crisis. This policy option becomes important, at least, for two reasons. First, after ten years from the crisis in 1997/98, it is the time that Indonesia takes some necessary actions to revitalize the manufacturing sector. The other reason is that to avoid an increase in unemployment rate. As noted, this sector contributes significant to labour absorption, and with the possibility of global recession, the revitalization program is also expected to be able to minimize the negative impact of the recession on unemployment. In practice, this policy could be implemented in various forms. One of the actions that can

implemented is to accelaterate the removal, revision, and harmonization policy and regulations in central and local government that are considered constraining investment, particularly in manufacturing sectors.

The positive implication of this action is to improve competitiveness of manufacturing sectors to compete in the global market, as this will give a room for producers to reduce their production and transaction costs. One of important factors to support export activities is accessability of exporters to trade financing. Therefore, the establishment of an export financing institution, or often known as export credit agency (ECA), will be needed. As global recession anticipation, Indonesia has just enacted a legal framework to establish an export financing institution, which is called Lembaga Pembiayaan Ekspor Indonesia, LPEI. The expected functions of LPEI are to provide export credits that match the exporters' characteristics, as well as to guarantee export risks by providing export insurance. These facilities cannot be provided by the commercial banks.

Increasing the commodity value-added could also be another important strategy option to reduce the impact of global recession. In the future, the growth of Indonesian exports should be led by manufacturing sectors, not by agricultural or mining products that have lower valued-added. Therefore, in manufacturing, Indonesia should gradually shift from producing lower-technology manufacturing products to producing medium or higher-technology manufacturing products that have more value-added. To support this strategy option, a stronger backward-and-forward linkage in manufacturing sector should further be improved. Like in palm-oil sector, for example, exports should be expanded to down-stream products that have higher-value added, not only up-stream products that are currently focusing on crude-palm oil. Another important sector that should be further developed is petrochemical industries, as supporting industries to improve backward-and-forward linkage. This industry will support which can strengthen the backbone of industrial structure.

Appendix

A. Indicators used by the Competitiveness

A.1 Description about trade competitiveness indicators

Revealed Comparative Advantage (RCA)

Revealed Comparative Advantage (RCA) is one of the applied methods to measure excellence of comparability in a region. This concept is introduced by Ballasa (1965) and compared the national export product's performance to the world total export. RCA is formulated as follows:

$$RCA = \frac{X_{ij} / X_{it}}{W_j / W_t}$$

Where : X_{ij} = Export value commodity i from country j

X_{it} = Total export value from country j

W_j = World export value commodity I

W_t = Total world export value

Constant Market Share Analysis (CMS)

Constant Market Share (CMS) is an applied approach for measured the dynamics level of competitiveness an industry from a state. CMS could compared the nation exports growth relative to the standard growth rate (world's average) and also reflect the composition of export commodity, growth of import, and competitiveness. The demand side of the measured variable is divided into macro share effect (import growth) and micro share (composition effect of commodity), while the supply side describe the effect of competitiveness). The CMS formula is written as follows:

$$X_{ij}^{2} - X_{ij}^{1} = mX_{ij}^{1} + \{(m_i - m)X_{ij}^{1}\} + \{X_{ij}^{2} - X_{ij}^{1} - m_i X_{ij}^{1}\}$$

(1) (2) (3)

Where : X_{ij}^{1} = export of commodity i to country j at t-1 period

X_{ij}^{2} = export of commodity i to country j at t period

m = percentage change of all imported commodities in country j

m_i = percentage change of imported commodity i in country j

(1) = Growth import effect, (2) = Composition effect, (3) = Competitiveness effect

Constant Market Share Analysis (CMSA) measures export performance of country j for product i by its growth differential from a benchmark or standard growth rate, such as the world consumption of that commodity. It also explicitly decomposes the differential into three proximate sources: (1) the choice of commodities (i.e., specialization in commodities for which world consumption is increasing); and (2) the choice of markets (i.e., targeting countries whose consumption is growing faster than the average). By extracting these two demand factors from the export growth differential, CMSA analysis can be called the residual or the competitiveness effect.

The commodity effect shows how much of an export differential is due to the fast growth in the world import of particular commodities compared to the import of other commodities. A positive value implies that the country's export of the particular commodity increased because the demand for that commodity is increasing.

The country effect shows how much of an export differential is due to demand factors of the targeted country. Positive country effects show that the export growth of a particular country is partly due to choosing the right market. Conversely, a negative value suggests that the country's exports were destined to countries whose demand is not growing as fast as world growth.

The competitiveness effect is the difference between the actual growth rate of country *j* for product *i* to country *k* and the growth rate of *k*'s total import of that particular commodity. Country

j's export of a certain commodity is said to be gaining competitiveness in country *k* if it is growing faster than country *k*'s import of the particular commodity from all sources. If the export by country *j* of product *i* to country *k* grows faster than the exports of other countries to the particular country, *j*'s market share in country *k* is increasing. If this happens in most countries to which *j* exports, then the particular industry of country *j* is gaining in competitiveness.

Openness (O)

As the popularity of inflation targeting has spread, inflation forecasting has come to play a central element in many nations' economic policy making. Changes in openness to trade can disrupt the inflation forecasting on which many nations' monetary policies depend. Openness shows a share of the sum of total merchandise exports (ΣX) and imports (ΣM) in the country *j* gross domestic products (GDP), both expressed in current values:

$$O_j = \frac{\sum M + \sum X}{GDP}$$

Export Product Dynamics (EPD)

Although some products may not constitute a large share of exports in a country, there are several reasons to identify dynamic (fast-growing) products in exports. If above-average growth in these products continues for an extended period, these items may eventually become an important source of a country's export earnings. In addition, if the dynamic products have specific production characteristics, this could also convey important information on export opportunities in relation to other similar goods. Finally, there is an obvious interest in identifying dynamic products to focus future multilateral or bilateral negotiations on removal of trade barriers on such products in export markets. The most straightforward method of identifying dynamic products is to sort products on the basis of their growth rate over a given period.

As already mentioned above, competitiveness is a relative measure. Thus, indicators based on absolute production and market share give slight information on the competitive position of a product, sector, or supply chain in an economy. Indicators that compare one sector relative to others should be considered instead. Success in export markets, measured by rising market shares, is an indicator of an economy's level of global integration. However the loss of some market shares

in trade may not signify loss of overall competitiveness if there is a rising share of other products, signaling an upward movement in the value chain.

A functional addition of market share indicator is market share positioning (Estherhuizen, 2006). A country's firms and industries are considered as “competitive” in products in which their market shares are on the increase. An export product is considered “dynamic” in world trade if its market share is growing faster than the world average.

The ideal market position is to have the highest share of exports as “rising stars”, signifies that the country is gaining market share in fast-growing products. “Lost opportunity”, correlated to the decrease market share in dynamic products, is the least desirable. “Falling stars” are also undesirable, although less so than last opportunity, since market shares are rising, even if not in dynamic products. Meanwhile, “retreat” may be undesirable, or it may be desirable if the movement is away from stagnant products and towards growth in dynamic products.

Table L.1 describes the four general decomposition of export performance (referring to the market share positioning). These four decomposed trade competitiveness indicators are applicable to the numerous constructed quantitative indicators.

Matrix of Market Positioning

	Share of Product in World Trade	
Share of country's export in world trade	Rising (Dynamic)	Falling (Stagnant)
Rising (Competitiveness)	**Rising Star**	**Falling Stars**
Falling (non competitiveness)	**Lost Opportunity**	**Retreat**

Source : Estherhuizen, 2006

OECD Clasification on Technology

Base on classification developed by OECD, the HS 2 digit code on commodities and goods can be categorizes under Three main category, which is Agricultural commodity, Mining commodity, and Manufacture goods. The classification on Manufacture goods can be furthermore divided into Three category base on their Technologically complexity (Low, Medium, and High Technology goods).

Classification	HS Code 2 Digit
Agriculture	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12 13, 14
Mining	72, 73, 74, 75, 76, 77, 78, 79. 80, 81
Low Technology	15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 41, 42 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66 67, 70, 71, 82, 83, 91, 92, 94, 95, 96, 97, 98 99
Medium Technology	25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, 38 39, 40, 68, 69, 86, 87
High Technology	30, 37, 84, 85, 88, 89, 90, 93

Source: OECD

A.2. Description of investment competitiveness indicators

PDB Per Capita

The GDP per capita is a macroeconomic measurement to reveal the country's economic development achievement in sequence to improve the stage of welfare.

$$gdpcap_t = \frac{GDP_t}{pop_t}$$

Where : GDP_t = Gross Domestic Product at year t

pop_t = population at year t

Energy Consumption per Capita (Energy)

This is a proxy for the availability and cost of energy, which is an important input for many production activities (industry) and also household. It can be expected to be a factor that influencing FDI.

$$Energy = \frac{ConsEnergy}{pop}$$

Where: $ConsEnergy$ = Total Energy Consumption

pop = Population

Growth of Paved Road (*road*)

Infrastructure is important sufficient criteria to promote investment. The infrastructural availability is one of the crucial considerations for investor in decision making process. The growth of road length/capita (*road*) is a useful indicator to reflect the accessibility to the market access, in particular on transportation.

$$road = \frac{\sum_{t=1}^{T}(Road_t - Road_{t-1})}{\sum_{t=1}^{T} Road_{t-1}} x100\%$$

Where:

$Road_t$ = paved road at current year (t)

$Road_{t-1}$ = paved road at (t-1) period

Growth of Household Access to Electricity (*elec*)

The better infrastructure facilities are hypothesized positively related to foreign investment inflows. Consequently, it has also improving the investment competitiveness. Another imperative infrastructure is the growth of the households that accessed to electric power.

$$elec = \frac{\sum_{t=1}^{T}(Elec_t - Elec_{t-1})}{\sum_{t=1}^{T} Elec_{t-1}} x100\%$$

Where:

$Elec_t$ = household access to electricity in current year (t)

$Elec_{t-1}$ = household access to electricity (t-1) period

Growth of Household Access to Clean Water (CWA)

The provision of appropriate clean water access is a significant indicator which has a strong relation to sustain development.

$$CWA = \frac{\sum_{t=1}^{T}(CWA_t - CWA_{t-1})}{\sum_{t=1}^{T} CWA_{t-1}} x100\%$$

Where:

CWA_{t-1} = clean water access in current year (t)

CWA_t = clean water access (t-1) period

Growth in Phone Line (*Phone*)

Telecommunication was considered as an information infrastructure. Globalization and Information, Communication, and Telecommunication (ICT) have been well developed to facilitate the necessity. Growth in the phone line can be a measurement of communication intensity in order to enlarge the investment competitiveness.

$$phone = \frac{\sum_{t=1}^{T}(Phone_t - Phone_{t-1})}{\sum_{t=1}^{T} Phone_{t-1}} x100\%$$

Where:

$Phone_t$ = Total of the phone line in current year (t)

$Phone_{t-1}$ = Total of the phone line at (t-1) period

Growth of Internet Users (*Internet*)

Internet is the popular networking equipment related to the developing trend of Information and Technology (IT). Computerized mechanism on business is conducting the conducive circumstances, considering the efficiency effects.

$$\text{int}\,ernet = \frac{\sum_{t=1}^{T}(Internet_t - Internet_{t-1})}{\sum_{t=1}^{T} Internet_{t-1}} x100\%$$

Where:

$Internet_t$ = Total of the internet users in current year (t)

$Internet_{t-1}$ = Total of the internet users at (t-1) period

Financial Risk (Foreign Debt / *debt*)

To measure the composition of foreign debt to gross domestic products as the external source of funding.

$$foreigndebt = \frac{Totalfd}{GDP} x100\%$$

Where : $DEBT_t$ = Total foreign debt in current year (t)

GDP_t = Gross Domestic Product (t)

Economic Risk (Rate of Inflation/*infrate*)

Inflation rate is strongly identical with the price stability. The uncertainty on price level may decrease the investment's incentives. Therefore, it is integrated as the one of the critical consideration to construct investment competitiveness.

$$\inf rate = \frac{\sum_{t=1}^{T}(INF_t - INF_{t-1})}{\sum_{t=1}^{T} INF_{t-1}} x100\%$$

Where: INF_t = inflation rate in current year (t)

INF_{t-1} = inflation rate at (t-1) period

Share of Investment Approval / Realization to GDP

The higher share on investment approval/realization to GDP implies the increasing on investment competitiveness.

$$i = \frac{I}{GDP} x100\%$$

Where: *I* = Investment Approval/ Realization

GDP = Gross Domestic Product

Growth on Net Investment (*ni*)

Higher growth on net investment (*ni*) can be beneficial to the capital formation as the activator of the economic development.

$$ni = \frac{\sum_{t=1}^{T}(NI_t - NI_{t-1})}{\sum_{t=1}^{T} NI_{t-1}} x100\%$$

Where:

NI_t = net investment (investment-depreciation) in current year (t)

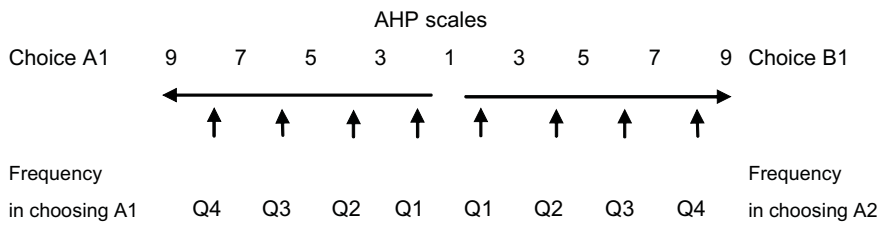
NI_{t-1} = net investment (investment-depreciation) at (t-1) period

1.3 Analytical Hierarchical Process

AHP ensures 'procedural rationality', a concept closely related to bounded rationality. Procedural rationality can be explained simply as 'a simple rule in making decision', such as evaluating certain limited attributes or following a routine path. Moreover, bounded rationality theory claims that, although human behavior is aimed to be rational, it will only true in a restrictive sense because it depends on the decision-maker's capacity to collect and process information. Usually, most of the decision-making time is spent to search other alternatives and assessing their outcome. Also, there is a limitation on the size of information that can be processed by an individual. Often, intuition plays a central role in the decision process.

In AHP, the goal is not to maximize (expected) utility but finding the most satisfied alternatives. Another typical procedural rationality is to 'follow social standard'. In this way, a large group of people or respondents can be gathered to find the dominant standard that will be useful for determining optimal collective choice. In this study, we count the frequency in a group of respondent in choosing between two attributes and converted into a pairwise matrix table to determine the weight of each attribute.

For example if between two attributes, respondents has an equal preference (e.g. half of the group choose one alternative and the rest choose another, making them equivalence), thus it can be inferred that there is indifference between the two alternatives. If almost all respondents chose one alternative over another, that it will be translated into high favorable index in the pairwise table. In order to devise correct translation of the preference degree of pairwise table in AHP, we used the concept of quartile.



Note: Q1, Q2, Q3 and Q4 are quartiles. The quartiles divided the ascending possible frequency into four parts.

In the questionnaires that we collected, we use simple pairwise table and assign 1 if the attributes in the row side is more preferable and assign 0 if the attributes in the column side is better. Consequently, if for example choice A1 is in the row side and choice B1 is in the column side, we can calculate the frequency of each of the respondent in choosing A1 or B1 by simply calculating the frequency occurrence of the result of 1 or 0.

In pairwise comparisons the rating scale should be consistent in two ways: First, it should be transitive. That is, if choice A is better than B and choice B is better than C, then it must be that choice A is better then C. Second, it has to be numerically consistent. That is if I like choice A three times better then B, then it must be that I am less likely to choose B since the satisfaction only one-third of A. If these conditions hold then we can make simple weight from each of the alternatives. We can normalize any column, since the matrix will have rank equal to 1.

But in reality, people often make inconsistent choice that violated the two restrictions above. In AHP, this inconsistency cannot be more than 10 percent of all the choices. Eigenvalue and eigenvector method is used to make weight from a pairwise table that has inconsistency in it. We define as follow:

For square matrix A and vector x,

λ = Eigenvalue of A when $Ax = \lambda x$ and x nonzero

x is then the eigenvector associated with λ

Then we compute the values by solving the characteristic equation:

$$\det(\lambda I - A) = |\lambda I - A| = 0$$

Properties of the solution will have the number of nonzero eigenvalues for a matrix is equal to its rank (e.g. a consistent matrix has rank 1) and the sum of the Eigenvalues equals the sum of the diagonal elements of the matrix (all 1's for consistent matrix). Therefore, an n x n consistent matrix has one eigenvalue with value n. These properties serve as a basis to determine the consistency. Since inconsistent matrices typically have more than 1 eigenvalue, we will use the largest $?^{max}$ for the computation.

For consistent n x n comparison matrix, we need to have ? = n. By comparing $?^{max}$ from the inconsistent matrix, we can use the test statistic of consistency index, CI:

$$CI = \frac{\lambda^{\max} - n}{n - 1}$$

Then we can use another measure of consistency ratio (CR) by comparing CI with randomly generated ones, RI (Random Index):

$$CR = \frac{CI}{RI}$$

The rule of thumbs usually use for the consistency ratio (CR) is that it has to be equal or less than 0.1 (10 percent). In analyzing consistency detailed care should be taken. If for example, the consistency ratio exceeded 10 percent, the weight need to be showed to the decision maker for feedback. If necessary, due to time and cost constraint, we can make our own professional judgment by assigning slightly less or more value into the pairwise table to reduce the inconsistency.

B. Distribution of Respondents in the Survey of Trade and Investment Competitiveness

Table B.1
Distribution of Sample by Location

Area	Frequency	Precent
Batam	38	19.00
Jabodetabek	39	19.50
Makassar	4	2.00
Medan	74	37.00
Semarang	12	6.00
Surabaya	33	16.50
	200	100.00

Table B.2:
Distribution of Firms by Sector and Location

Sector	Area						Total
	Batam	Jabodetabek	Makassar	Medan	Semarang	Surabaya	
Automotive	0	1	0	2	0	2	5
Electronics	17	10	0	1	1	2	31
Food and Beverage	1	1	2	22	7	5	38
Footwear	2	3	0	8	0	0	13
Furniture	1	6	0	11	1	6	25
Metal	0	4	0	1	0	1	6
Paper	3	2	0	5	0	5	15
Plastics	10	6	1	20	1	5	43
Textile	4	6	1	4	2	7	24
Total	**38**	**39**	**4**	**74**	**12**	**33**	**200**

Table B.3:
Distribution of Firms by Sales and Location

Sales	Area						Total
	Batam	Jabodetabek	Makassar	Medan	Semarang	Surabaya	
<Rp 500 Million	4	3	0	16	3	4	30
Rp 1 -5 Billion	1	3	0	8	2	8	22
Rp 5 – 10 Billion	2	1	0	11	0	2	16
> Rp 10 Billion	30	25	4	20	2	12	93
Non Response	1	7	0	19	5	7	39
Total	**38**	**39**	**4**	**74**	**12**	**33**	**200**

Table B.4:
Distribution of Firms by Export Import Activities

	Import	No Import	Total
Export	77	25	**102**
No Export	25	73	**98**
Total	**102**	**98**	**200**

Table B.5:
Distribution of Firms by Location and Export Import Activities

Area	Export		Import		Total
	Export	No Export	Import	No Import	
Batam	31	7	32	6	**38**
Jabodetabek	28	11	32	7	**39**
Makassar	0	4	0	4	**4**
Medan	23	51	25	49	**74**
Semarang	5	7	4	8	**12**
Surabaya	15	18	9	24	**33**
Total	**102**	**98**	**102**	**98**	**200**

Table B.6:
Distribution of Firms by Sector and Export Import Activities

Sector	Export		Import		Total
	Export	No Export	Import	No Import	
Automotive	1	4	4	1	**5**
Electronics	23	8	28	3	**31**
Food and Beverage	8	30	5	33	**38**
Footwear	8	5	8	5	**13**
Furniture	16	9	9	16	**25**
Metal	4	2	4	2	**6**
Paper	4	11	5	10	**15**
Plastics	22	21	24	19	**43**
Textile	16	8	15	9	**24**
Total	**102**	**98**	**102**	**98**	**200**

Table B.7:
Sample Size of Enterprises by Sector and Capital Status
in Selected Region

		CPO	Electronics	Furniture	Vehicle Components	Paper & Paper Products	Textile, Skin & Footwear	Food & Bev	Plastics
Medan	PMA	3	0	4	0	0	2	3	2
	PMDN	5	0	2	0	0	0	0	0
	Non Facility	3	1	3	1	1	5	6	3
Semarang	PMA	0	1	2	1	1	3	8	4
	PMDN	0	0	1	0	0	1	1	1
	Non Facility	0	0	3	1	0	4	7	3
Surabaya	PMA	0	2	3	2	1	6	4	2
	PMDN	0	0	0	1	1	1	1	1
	Non Fasilitas	1	1	2	4	3	1	6	2
Makassar	PMA	0	0	1	0	1	0	6	1
	PMDN	0	0	1	0	1	0	3	1
	Non Facility	0	0	4	1	0	4	14	2
Jabodetabek	PMA	1	1	1	1	1	2	3	3
	PMDN	0	2	0	1	0	2	1	1
	Non Facility	0	1	2	2	3	3	5	5
Batam	PMA	0	3	0	0	1	1	1	1
	PMDN	0	10	1	1	3	3	0	8
	Non Facility	0	2	0	0	1	1	0	1

C. Export based on product group and market destination, 1995-2006, for Malaysia, Thailand dan China.

Tabel L.1 Malaysian export based on product group and market destination, 1995-2006

No	Year	Market Destination (%)						
		Chn	USA	JAPAN	EU25	EGY	ZAF	SAU
a. Agriculture								
1	1995	0.00%	0.02%	0.12%	0.12%	0.00%	0.01%	0.02%
2	2000	0.02%	0.03%	0.10%	0.13%	0.00%	0.00%	0.00%
3	2006	0.02%	0.09%	0.07%	0.10%	0.00%	0.00%	0.01%
Average		0.01%	0.05%	0.10%	0.12%	0.00%	0.00%	0.01%
b. Mining								
1	1995	0.06%	0.16%	0.25%	0.28%	0.00%	0.01%	0.02%
2	2000	0.11%	0.17%	0.19%	0.22%	0.00%	0.01%	0.02%
3	2006	0.16%	0.12%	0.19%	0.30%	0.02%	0.03%	0.04%
Average		0.11%	0.15%	0.21%	0.27%	0.01%	0.02%	0.03%
c. Low Technology								
1	1995	1.89%	2.46%	3.36%	3.15%	0.28%	0.21%	0.33%
2	2000	0.81%	2.13%	1.94%	2.03%	0.17%	0.11%	0.18%
3	2006	1.45%	16.60%	1.57%	2.00%	0.12%	0.13%	0.11%
Average		1.38%	7.06%	2.29%	2.39%	0.19%	0.15%	0.21%
d. Medium Technology								
1	1995	0.32%	1.47%	3.40%	1.94%	0.04%	0.07%	0.02%
2	2000	0.75%	1.53%	3.70%	1.42%	0.02%	0.05%	0.03%
3	2006	1.82%	1.78%	3.59%	1.66%	0.03%	0.12%	0.05%
Average		0.96%	1.59%	3.56%	1.67%	0.03%	0.08%	0.03%
e. High Technology								
1	1995	0.37%	16.45%	5.48%	8.74%	0.05%	0.08%	0.09%
2	2000	1.36%	16.63%	7.09%	10.08%	0.03%	0.08%	0.09%
3	2006	3.74%	0.10%	3.37%	8.45%	0.04%	0.13%	0.10%
Average		1.82%	11.06%	5.31%	9.09%	0.04%	0.10%	0.09%

Source L Uncomtrade (Calculated by Bappenas)

Tabel L.2 Thai export based on product group and market destination, 1995-2006

No	Year	Market Destination (%)						
		Chn	USA	JAPAN	EU25	EGY	ZAF	SAU
a. Agriculture								
1	1995	1.00%	1.50%	3.14%	1.49%	0.00%	0.15%	0.06%
2	2000	0.38%	1.41%	1.64%	0.93%	0.00%	0.12%	0.03%
3	2006	0.71%	0.78%	0.63%	0.46%	0.00%	0.11%	0.03%
Average		0.70%	1.23%	1.80%	0.96%	0.00%	0.13%	0.04%
b. Mining								
1	1995	0.05%	0.35%	0.51%	0.21%	0.00%	0.01%	0.03%
2	2000	0.13%	0.68%	0.56%	0.34%	0.02%	0.01%	0.02%
3	2006	0.20%	0.61%	0.74%	0.45%	0.02%	0.03%	0.08%
Average		0.13%	0.55%	0.60%	0.33%	0.01%	0.02%	0.04%
c. Low Technology								
1	1995	1.00%	7.31%	5.20%	7.58%	0.15%	0.14%	0.76%
2	2000	0.51%	7.85%	3.74%	4.96%	0.10%	0.10%	0.20%
3	2006	2.81%	4.81%	2.60%	4.00%	0.09%	0.12%	0.16%
Average		1.44%	6.66%	3.85%	5.51%	0.11%	0.12%	0.37%
d. Medium Technology								
1	1995	0.63%	1.46%	2.37%	1.81%	0.01%	0.03%	0.06%
2	2000	1.60%	1.78%	2.09%	2.34%	0.03%	0.16%	0.06%
3	2006	3.84%	2.13%	2.67%	2.76%	0.13%	0.37%	0.53%
Average		2.02%	1.79%	2.38%	2.30%	0.06%	0.19%	0.22%
e. High Technology								
1	1995	0.22%	7.13%	5.45%	5.13%	0.01%	0.05%	0.10%
2	2000	1.46%	9.13%	6.44%	7.39%	0.04%	0.14%	0.11%
3	2006	1.43%	6.51%	5.87%	5.97%	0.04%	0.21%	0.17%
Average		1.04%	7.59%	5.92%	6.16%	0.03%	0.13%	0.13%

Source L Uncomtrade (Calculated by Bappenas)

Tabel L.3 ChineseThai export based on product group and market destination, 1995-2006

No	Year	Market Destination (%)					
		USA	JAPAN	EU25	EGY	ZAF	SAU
a. Agriculture							
1	1995	0.34%	1.97%	0.70%	0.03%	0.03%	0.01%
2	2000	0.29%	1.22%	0.46%	0.01%	0.01%	0.01%
3	2006	0.19%	0.35%	0.27%	0.00%	0.01%	0.01%
Average		0.27%	1.18%	0.48%	0.01%	0.02%	0.01%
b. Mining							
1	1995	0.52%	1.27%	0.80%	0.02%	0.01%	0.02%
2	2000	0.89%	0.64%	0.74%	0.01%	0.02%	0.02%
3	2006	1.27%	0.51%	1.20%	0.02%	0.04%	0.08%
Average		0.89%	0.81%	0.91%	0.02%	0.02%	0.04%
c. Low Technology							
1	1995	9.07%	9.83%	6.53%	0.11%	0.22%	0.33%
2	2000	9.51%	8.44%	6.15%	0.17%	0.20%	0.30%
3	2006	6.93%	3.51%	5.55%	0.12%	0.28%	0.23%
Average		8.50%	7.26%	6.08%	0.13%	0.23%	0.29%
d. Medium Technology							
1	1995	2.50%	3.01%	2.47%	0.07%	0.08%	0.05%
2	2000	2.87%	2.20%	2.45%	0.06%	0.09%	0.06%
3	2006	2.47%	1.35%	2.12%	0.07%	0.09%	0.07%
Average		2.61%	2.19%	2.35%	0.07%	0.09%	0.06%
e. High Technology							
1	1995	4.18%	3.06%	3.05%	0.07%	0.09%	0.08%
2	2000	7.38%	4.21%	6.56%	0.07%	0.09%	0.06%
3	2006	10.16%	3.68%	9.66%	0.10%	0.18%	0.14%
Average		7.24%	3.65%	6.42%	0.08%	0.12%	0.09%

Source L Uncomtrade (Calculated by Bappenas)