School of Business,
Economics and Law
GÖTEBORG UNIVERSITY

ASEAN Oil Trading
-A study on clean petroleum product flows in Southeast Asia

Ioannis Basinos, Christos Divanis, Michiel Franzen
and Kornnarong Tungfung

Graduate Business School

Logistics and Transport Management
Master Thesis No. 2006:66
Supervisor: Ove Krafft

Table of Contents

Abstract

In the world there are three main refining and trading hubs: Houston, Rotterdam and Singapore. In this research a historical perspective and outlook is given of clean petroleum product (CPP) trading in Southeast Asia, choosing the quickly developing region area around Singapore. The current circumstances and future outlook are based on the country situation of eight ASEAN countries: Brunei Darussalam, Indonesia, Cambodia, Malaysia, Philippines, Singapore, Thailand and Vietnam. The country situation describes politics, economics and business environment, amongst others, together with production and consumption of CPPs which influences international sea trading. The main question is what the developments are of international sea trading in ASEAN. Based on statistical data gathered from international and local sources, the trend of production and consumption is identified for six CPPs (motor gasoline, aviation gasoline, kerosene, jet fuel, diesel and naphtha) and what that entails for the countries' imports and exports.

The political situation is variable, with Singapore, Malaysia and Brunei being stable, with Singapore being under control of a strict but well organized political party, striving for big economic growth, Malaysia turning its country into a regional economic powerhouse and Brunei's Sultan profiting from its abundance of natural resources. Indonesia, Philippines and Vietnam are developing, with Vietnam cutting down its long lasting corruption and all countries trying to peacefully end disputes with ethnic minorities. Thailand and Cambodia are considered unstable, due to respectively a military coup and big problems with its 'democracy'. Looking at economic growth in the analyzed period, Vietnam is by far growing fastest whereas Brunei shows little progression. Singapore, Thailand, Indonesia and Malaysia were hit quite significantly in their economies with the Asian Financial Crisis in 1997-1998. Singapore is the least corrupted country in the region, followed by Malaysia by a long short. The most corrupted country according to the same source is Indonesia. High regulations, extensive red tape as well as inefficient legal and judiciary system is a common situation in most of the countries in the region

that worsen the business environment, except for Singapore. Most ASEAN countries have a developed downstream oil industry, except for Vietnam and Cambodia. This is mostly aimed for national consumption. Singapore has a big surplus in refining capacity and has the best developed industry in the region. Looking at CPP production and consumption, Indonesia is the biggest producer and consumer. The production levels have remained rather stable, whereas the consumption has increased significantly. The biggest products are Diesel and MoGas. Looking at the trade flows, between 1996 and 2004, Singapore has been dominating the flows in the developing region, especially as exporter to the other ASEAN countries, even if its production output has been reduced.

In the future, the political situation is not expected to show significant shifts. The economic growth will remain biggest in Vietnam and lowest in Brunei over the forecasted period. The business attractiveness in Vietnam is expected to increase significantly, in Singapore it will remain as attractive or even better, and countries like Indonesia and Thailand are trying to work on better procedures. The Philippines are working on privatization projects. The total CPP production is expected to remain rather stable in the projected period and the consumption is expected to increase in ASEAN. Due to regional deficit in production, Singapore is expected to remain a major refining and trading hub, but trading will become more important, because of tight refining margins and big expansions of the storage facilities. Big refining projects are undertaken in Vietnam, which will have influence on the inbound trade flows in this country. The trade flows are expected to come from or go to Singapore most of the time in the near future.

Acknowledgement

Before you lay the thesis of the graduation project, which we have done for our studies in MSc Logistics and Transport Management. We hereby want to thank a couple of people that helped us during the project. First of all, Broström Tankers AB, Göteborg and its affiliate in Singapore for trusting us in our ability to do the project and for supporting us. Next, we want to thank our supervisor, assistant Professor Ove Krafft for helping and guiding. Also, the input from assistant Professor Mark Goh and Wong Tack Wai at NUS Singapore has been very valuable during our first steps on Asian soil, thanks for that.

Special thanks to Pee Da Pibun and Mami, who have taken good care of our hunger during our whole stay in Bangkok and always managed to get a smile on our face in the breaks of our hard work.

Finally, we want to thank our families and friends for the fact that they were always there for us, even if they were far away, they were close to us. A special mention for the Tungfung family for arranging many things before our arrival in Bangkok.

Ioannis Basinos,
Christos Divanis,
Michiel Franzen and
Kornnarong Tungfung
Göteborg, December 2006

Abbreviations

AAGR	Average Annual Growth Rate
ADO	Automotive Diesel Oil
AFTA	ASEAN Free Trade Area
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
ATF	Aviation Turbine Fuel
AvGa:	Aviation Gasoline
BKPMD	Badan Koordinasi Penanaman Modal Daerah (Indonesia's Investments Co-ordinating Board)
CALM	Catenary Anchor Leg Mooring
CDU	Crude Distillation Unit
CPI	Corruption Perception Index
CPV	Clean Petroleum Products
CPV	Communist Party Vietnam
DWT	Deadweight Tonne
EU	European Union
FDI	Foreign Direct Investment
FEC	Final Energy Consumption
GDP	Gross Domestic Product
HCMC	Ho Chi Minh City
IDO	Industrial Diesel Oil
IEA	International Energy Agency
IEEJ	Institute of Energy Economics Japan
IGT	Inter Global Technologies
IMF	International Monetary Fund
JRC	Jurong Rock Caverns
LNG	Liquid Natural Gas
LPG	Liquid Petroleum Gas
MIDA	Malaysian Industrial Development Authority
MILF	Moro Islamic Liberation Front
MM	Minister Mentor

MoGas	Motor Gasoline
MOU	Memorandum of Understanding
OECD	Organization for Economic Co-operation and Development
OPEC	Organization Petroleum Exporting Countries
PAP	People's Action Party
PM	Prime Minister
PSA	Production Sharing Agreement
REPSF	Regional Economic Policy Support Facility
SALM	Single Anchor Leg Moor
SARS	Severe Acute Respiratory Syndrome
SBM	Single Buoy Mooring
SOE	State Owned Enterprises
SPC	Singapore Petroleum Company
UMNO	United Malays National Organization
UN	United Nations
WTC	World Trade Centre

List of Figures

List of Tables

Part I. Project Introduction and Outline

"The way to achieve success is first to have a definite, clear, practical ideal - a goal, an objective. Second, have the necessary means to achieve your ends - wisdom, money, materials, and methods. Third, adjust all your means to that end."

Aristotle (384BC - 322BC); Greek philosopher

In a few lines, Aristotle knows to nail down how to run a project successfully. In this part, an extended version will be given on what the objective is and how it will be reached. In the first chapter, a background description of the project will be given, together with the main objective and main question, followed by the sub-questions. Also the main delimitations shall be identified. In Chapter 2 a more thorough description will be given of the industry to enlarge the understanding of the project's environment. In Chapter 3, the means of research and data gathering will be introduced, followed by the theoretic background on which the thesis is based in Chapter 4.

1. Introduction

1.1 Background

Oil is an interesting liquid; it has a huge impact on people's everyday life, more than people think about on a daily basis, from the fuel in cars to many plastic products. This natural resource is also responsible for a great deal of the world economy.[1] Even quite a few countries have based their whole economy around it, because the oil industry can boost the economic development[2]. This black gold is currently flowing like water, but the discussion has opened widely over its limited availability. That the bucket is running more and more empty puts the world economy in an even tighter wring. The usage, both production and consumption, in many countries, especially developed countries, are therefore already quite discouraged via the usage of high taxes on fuels[3] and by promoting forms of renewable energy for heating, electricity generation and transportation.

Developing countries are not there yet. In order to build up their countries the focus has been put first on a proper infrastructure and generation of the essential electricity by the best means possible. In many countries the consumption of petroleum products are even encouraged via price subsidies[4], especially for clean petroleum products (e.g. gasoline, diesel).

Oil production, refining and trading happens all around the planet with increasing rates, but only three places on this planet are considered oil

---

[1] George Koopman, Klaus Matthies, Beate Reszat: *Oil and the International Economy: Lessons from Two Price Shocks*, Hamburg :Verlag Weltrachiv,1984, p.194

[2] Philip K. Verleger, *Adjusting to Volatile Energy Prices*, Institute for International Economics, USA 1994, p.19

[3] OPEC, *'Who gets what from imported oil?'* 2005, available from: http://www.opec.org/library/Special%20Publications/pdf/2005.pdf, viewed on November 23, 2006

[4] World Bank website, 'Energy and Development Report 200', available on http://www.worldbank.org/html/fpd/esmap/energy_report2000/, viewed on 17 October 2006.

refining and trading hubs: Houston (USA), Rotterdam (the Netherlands) and Singapore.[5] Singapore is interesting in this line as it is surrounded by developing countries in its region, with which the small island state is trying to integrate its trading relations through a 'Southeast Asian version of the EU': ASEAN (Association of Southeast Asian Nations).

This mix of a major oil refining and trading hub in a developing 'free-trade' region gives huge dynamics, especially if it is considered that all countries separately have their own refinery and trading 'agenda's'.

1.2 Purpose

This project has been undertaken as part of MSc Logistics and Transport Management at the Graduate Business School on the School of Business, Economics and Law at Gothenburg University, Sweden. For this project collaboration has been established with oil tanker company Brostrom Tankers AB, Gothenburg, Sweden and Brostrom Tankers Asia Pte Ltd, Singapore.

In this research an investigation will be conducted on the Southeast Asian region and its international trade flows for clean petroleum products, together with the political and economical profiles, outlooks and energy production and consumption figures of the different countries to see where the flows go and why to show the dynamics of the trade flows around Singapore in its volatile environment.

This research will help Brostrom Tankers work further with its expansion plans in the Southeast Asian region. The description of macro-economic factors

---

[5] EDB Singapore, '*Singapore Is Dynamic Because Of Strong Manufacturing Ties',* available from:
http://www.sedb.com/edb/sg/en_uk/index/news_room/reports/singapore_is_dynamic.html, viewed on November 23, 2006

affecting the international trade flows will be used to show the link between factors such as politics and economics and the amount of transported Clean Petroleum Products.

1.3 Problem Definition

In order for the company to have a good idea what the future will bring in this region, the developments needs to be forecasted. This leads to the main objective of this project:

'Identifying the developments in the international seaborne trade flows of clean petroleum products in the ASEAN countries around the South China Sea, based on production and consumption trends.'

1.3.1 Main Question

Looking at the future and trying to forecast the developments of the region this project will answer to the follow main question:

'What are the future developments in the international seaborne trade flows of clean petroleum products in the ASEAN countries around the South China Sea?'

1.3.2 Sub Questions

Sub questions to answer the main question are:

1. What does the oil supply chain look like?
   In order to understand the total process and which parts are of influence on the CPP flows, the whole supply chain needs to be discussed.

2. What are Clean Petroleum Products (CPP) and where are these products used for?
   This question will give a good insight in the different products that the project is discussing, in order to understand what triggers the future developments.

3. What is the current political, economic and business environment in the ASEAN countries around the South China Sea?
   As macro economic factors influence the development of the trade flow, a description of the current situation gives good understanding on the background of the countries responsible for the trade flows.

4. What are the historic trends of CPP production and consumption over the last nine years in the ASEAN countries around the South China Sea?
   Imbalances in production and consumption are a main reason for a country to import or export. Discussing the historic trend gives a direction for future development.

5. How does the current international seaborne trade flows of the CPPs look like between the ASEAN countries around the South China Sea, considering both import and export?
   In order to 'predict' the future trade flows, the historic situation should be drawn.

6. How is the political, economic and business environment projected to be in the ASEAN countries around the South China Sea in the next 10 years?

   As the macro economic factors shift over the forecasted period, the trade flows will be influenced likewise.

7. How is the CPP production and consumption projected to look like in the ASEAN countries around the South China Sea in the next 10 years?

   Due to growth or decline of production and consumption, different imbalances will influence the future trade flows.

8. How are the international seaborne trade flows projected to be between the ASEAN countries around the South China Sea in the next 10 years?

   Based on all above discussed topics a projection can be made on the future trade flows.

1.4 Scope definition

In this project the downstream oil industry will be analyzed, starting from the refinery until the end customer. The influence of the broker and trader on the physical flow of goods is very limited and because of that in the analysis the brokers will be kept out of scope.

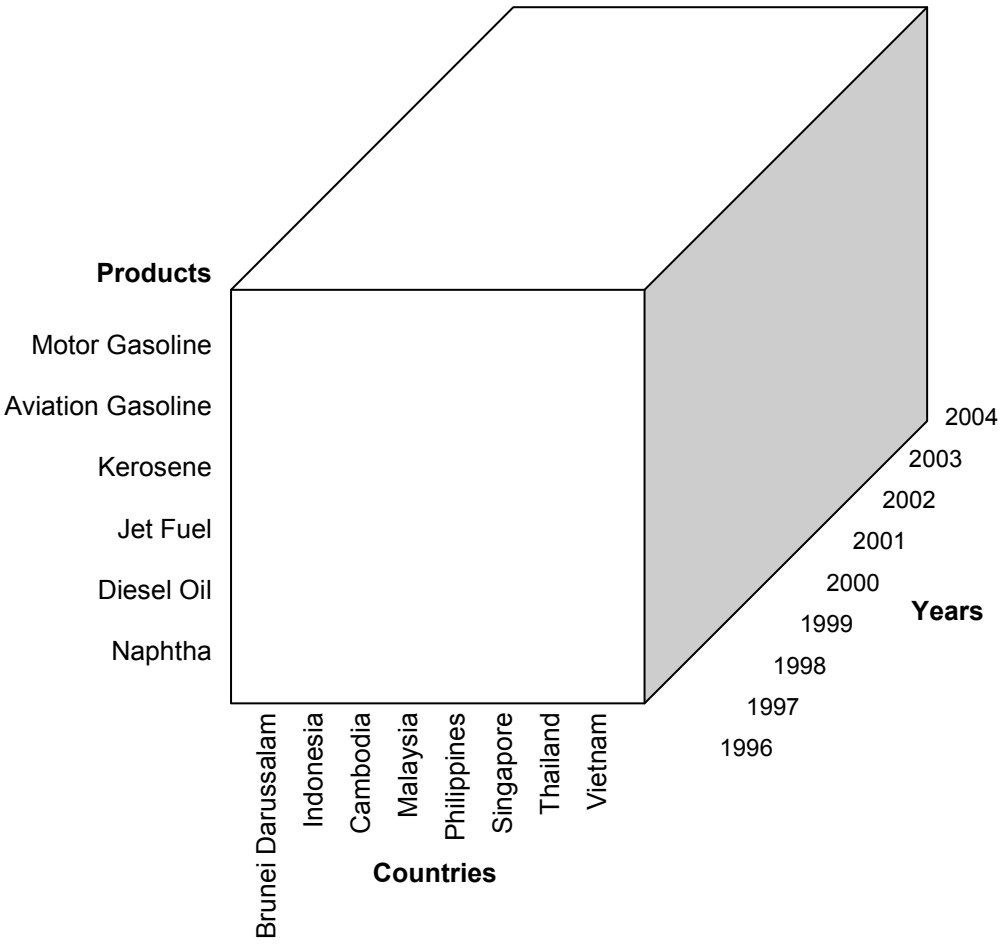


Figure 1.1 Scope definition

The research will comprise of six different clean petroleum products, as shown in figure 1.1. The only CPP that is not considered is LPG (Liquefied Petroleum Gas), as this involves a total different set of equipment to transport than the other clean products.

The investigation will go into the short sea shipping routes in the South China Sea, focusing on eight ASEAN countries: Brunei Darussalam, Indonesia,

Cambodia, Malaysia, Philippines, Singapore, Thailand and Vietnam. Laos is not considered as it is not connected to sea and Myanmar's access to the South China Sea is only possible via the crowded Straits of Malacca, making it a medium length route for shipping.

The data gathering will take place for a period of nine years, 1996-2004, as this historical perspective will give a good picture of the past trend to be able to give a good view of the future situation. 1996-2005 or 1995-2004 was a preferred option, but accessibility of resources limited the data set to nine years, which we consider still to be a good representation of the current situation in order to project the future situation.

2. Description of the Oil Industry

In this chapter a thorough introduction will be given in the oil industry, which is considered a major advantage in order to understand the research project to the fullest. In paragraph 2.1 the oil supply chain will be described and all different parties will be discussed. In the next paragraph, the refining process is defined, with its different processes. Finally the different Clean Petroleum Products (CPPs) will be described.

2.1 Definition of the Oil Supply Chain

Transportation takes place as a result of derived demand of one party for the products of another party[6]. Therefore there are multiple parties involved in a chain of transportation, also for clean oil products. In this case the parties involved in the oil supply chain are identified as shown simplified in figure 2.1, which are in total seven different actors. In the figure it shows the physical movement of oil through the chain. In this representation information and monetary flows are disregarded. In the rectangular box the focus of the project is shown. The process starts at the **oil wells**, where crude oil is pumped out of the ground. This product needs to be altered or 'refined', which is done at the refineries. In order to get there the products are transported by pipeline or by tanker ships. In this part of the supply chain economies of scale are essential. Therefore huge vessels, e.g. VLCC (Very Large Crude Carriers), are often used, having a dead weight tonnage of 160,000 - 320,000[7].

The second actor is a **refinery**; this is where the petroleum products are created, cleaned and refined. Every refinery has its own selection of products

---

[6] Lumsden, K..R. L (2003) Fundamentals of logistics, Compendium, Department of transportation and logistics

[7] Platts Website, available from: http://www.emis.platts.com/thezone/guides/platts/oil/crudeoilspecs3.html, viewed on November 6, 2006

that can be refined, depending on its installation. Also different refineries accept different crude oil types, based on the crude's sulfur levels or structure. Refineries are either strategically built or built for the national consumption. It takes huge investments to build a refinery and the margins in the branch are fluctuating based on many factors that depend on the world economy[8].

The third actor is a **depot**. A depot is also known as an oil storage tank. There are two types of depots: dependent and independent. The *dependent* depots are owned by either refineries or trading houses. At *independent* storage depots companies can rent out storage capacity for their liquid petroleum products, just like in a warehouse. Almost all depots are equipped with blending equipment, which the owner of the goods can use to bring two different spec products together to make a product that has more interest for the market.[9]

The fourth party is the **end consumer**, meaning regular citizens. What is of interest for this project are the structure of the market of distribution and how this is accessible for the end consumers. The consumption patterns based on the economic wealth and prosperity in a country affects its availability and demand for the products. So in order to see how the derived demand of transportation has to 'flow', an understanding is necessary how the demand for the products works.

The fifth party is a **broker**. A broker is involved with making the connection between the owner of the liquid petroleum products and the carrier (or even 3PL). The broker never has ownership of the goods. Therefore the influence of the broker on the physical flow of goods is very limited.

The sixth party involved in the supply chain of clean oil products is a **trader**. Traders are a bit special. They are involved with both paper-based

---

[8] Tan Joo Jin, Meeting with Charterer Brostrom Singapore, September 15, 2006

[9] Olaf Griffioen Meeting with Vice-President Business Development OilTanking Singapore, August 14, 2006

transactions and the physical products. They buy the product for a good price for a certain project or as they foresee a certain opportunity in the future by storing the product and they will, if that is necessary, order for transportation of their product to their desired destination (e.g. depot or end customer). Their influence on the physical flow of products is limited.

Then finally the **ports** play a major role in this chain. They are the connecting link of all parties with regard to the transportation.

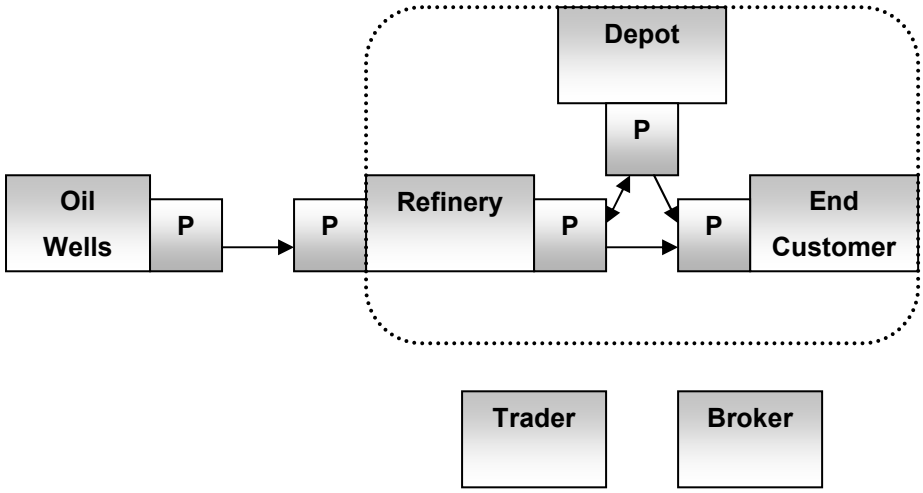


Figure 2.1 Involved actors in the Oil Supply Chain and the physical flows

2.2 Definition of the refining process

Petroleum is of major importance to the world economy.[10] The question here is, though, what exactly is the petroleum that we are talking about. Petroleum is from origin a Greek word, meaning oil ('elaion') from a rock ('petra'). This 'fluid' is a natural product that is a mixture of hydrocarbons that can be found in certain rock strata[11], which can be extracted and refined to produce fuels like gasoline, kerosene and diesel oil. This extracted liquid had not much use

[10] George Koopman, Klaus Matthies, Beate Reszat, *Oil and the International Economy: Lessons from Two Price Shocks*, Hamburg: Verlag Weltrachiv,1984, p.194

[11] Oxford American Dictionaries

of itself when it comes out of the ground; therefore it needs to be refined in order to have any use.

In essence, the refining process is quite simple: the crude oil that comes from the oil wells can be separated in different lighter and heavier oil products. The basic refining process can be broken down in four processes, which are developed historically due to the demand of the consumer. The four processes are:

- Distillation processes,
- Thermal and catalytic cracking processes,
- Reforming processes,
- Treatment processes.

As in the 1860s the demand for lighting oil made out of whale oil skyrocketed, the easy and cheap refining of kerosene by distillation came as a savior. The distillation by vaporizing (atmospheric distillation) made kerosene become gas and gave by-products of tar and naphtha. This same method is used for natural gasoline. Another distillation process, for lubrication oils, is doing this process in a vacuum (vacuum distillation). But due to the invention of electrical light and internal combustion engines, which are used in cars and machines, kerosene demand plummeted and gasoline demand rose.

In order to produce enough gasoline, the current processes were not sufficient, so it was discovered that by cracking heavy fuels under high pressure and intense temperatures, it lead to the breaking of the molecules into smaller ones. Thermal and catalytic cracking is one of the most significant procedures for the production of gasoline, breaking down higher-boiling hydrocarbons into lower boiling ones and producing high-octane gasoline[12]. As the combustion engines developed, so did the fuels. In order to use the higher-compression gasoline engines high-octane gasoline was necessary. The first mentioned distilled gasoline turned into gasoline that is used as part

[12] Encyclopædia Britannica 2006, *"Cracking",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-64163, viewed on 2 Nov. 2006

of a blend, as it did not meet the required specifications for current engines[13], especially due to the low octane rate. Octane rate is a measure of evaluating a gasoline's ability to resist pinging or knock noise from a combustion engine[14]. Hydrocracking, which is the procedure of cracking while adding hydrogen, produces low octane gasoline and is mainly used to process hard-to-crack stocks[15].

Reforming is the process of changing the molecular structure of a hydrocarbon. There are two types of reforming, thermal reforming and catalytic reforming, and is used in order to turn low-quality gasoline into high octane ones[16].

The last process is treatment processes, which consist of extra handlings that are done to improve the products, like sweetening, acid treating, clay contacting, drying, etc. However alkylation, a chemical process of producing high-octane gasoline out of gaseous and light hydrocarbons, is costly and is not widely used[17]. All these processes are used to make a specific demanded

---

[13] Agency for Toxic Substances & Disease Registery, U.S. Department of Health and Human Services, available from Internet http://www.atsdr.cdc.gov/toxprofiles/tp72-c4.pdf, viewed on 5 November 2006

[14] Chevron Website, Available from Internet, http://www.chevron.com/products/prodserv/fuels/gas_qanda/api_octane.shtml, viewed on 5 November 2006

[15] Encyclopædia Britannica 2006, *"Petroleum Refining",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-64163, viewed on 2 Nov. 2006

[16] Encyclopædia Britannica 2006, *"Reforming",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-64163, viewed on 2 Nov. 2006

[17] Agency for Toxic Substances & Disease Registery, U.S. Department of Health and Human Services, available from Internet http://www.atsdr.cdc.gov/toxprofiles/tp72-c4.pdf, viewed on 5 November 2006

product.[18] In figure 2.2 there is an overview of the complexity of these processes.

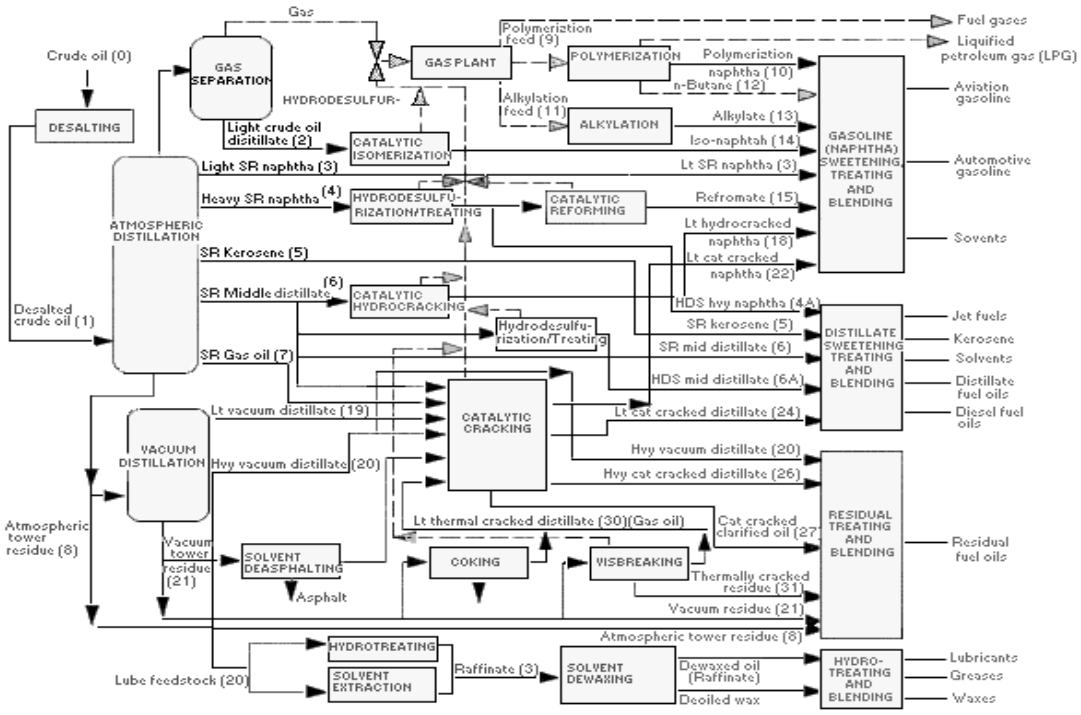


Figure 2.2 The complexity of the petroleum refining process (Source: US Dept. of Labor19)

[18] US Department of Labor, Occupational Safety and Health Administration website, available from: http://www.osha.gov/dts/osta/otm/otm_iv/otm_iv_2.html#2, viewed on November 8, 2006

[19] US Department of Labor, Occupational Safety and Health Administration website, available from: http://www.osha.gov/dts/osta/otm/otm_iv/otm_iv_2.html#2, viewed on November 8, 2006

2.3 Clean Petroleum Products (CPP)

As shown in figure 2.3[20], there are many different types of products that are refined from crude oil. The products are classified from clean to dirty, to make the link to clean petroleum products more obvious. Clean products are considered the upper half of the petroleum products until Naphtha.

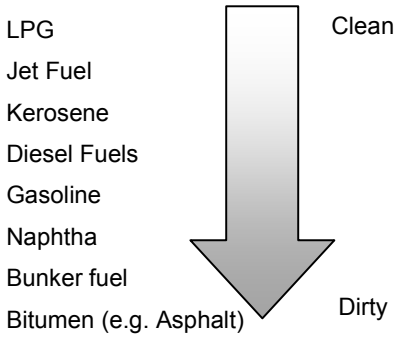


Figure 2.3 Refined Petroleum Products

Below the different clean petroleum products will be discussed on what they actually are and where they are used for, in order to understand the consumption patterns and developments. For this project six products have been identified, but in this chapter four product types will be discussed, as two sets of products are similar in production characteristics. These product sets will be discussed together: the gasoline products (MoGas and AvGas) and Kerosene and Kerosene type Jet Fuel.

2.3.1 Gasoline (Motor and Aviation)

Gasoline also called Gas or Petrol, is a petroleum-derived liquid mixture of volatile, flammable liquid hydrocarbons and is being used mainly as a fuel for spark-ignition internal combustion engines and partly as solvent for oils and fats. Gasoline blending is much more complicated than a simple mixing of components while gasoline is a mixture of paraffin, naphthalene, olefins and

[20] Patrick Tan, Meeting with Sales Manager, OilTanking Singapore, August 14, 2006

aromatics and gasoline may be blended to meet simultaneously 10 to 15 different quality specifications[21].

Generally various refinery streams are being used to create gasoline; the most important being the following: direct distillation of crude oil, catalytic and thermal cracking, hydrocracking, reforming and alkylation[22], as discussed in chapter 1.

Gasoline can be distinguished in two main product categories, motor gasoline (MoGas) and aviation gasoline (AvGas). MoGas both leaded and unleaded in general, is for cars and motorbikes using gasoline engines. However leaded MoGas has been proved that causes health and environmental damage and for this reason in some countries like in US, use of leaded MoGas is prohibited. Unleaded gasoline can be distinguished in regular unleaded gasoline of 87 octane grade mainly used by cars and premium unleaded gasoline of 93 octane grade used mainly by many late car models equipped with knock sensors[23].

On the other hand, AvGas is a high-octane volatile and extremely flammable fuel used in aircrafts that use small piston engines. There are two main AvGas grades, AvGas 100 that contains lead and is dyed green and AvGas 100LL that is the low lead version of AvGas 100 and is dyed blue. Recently AvGas

---

[21] Encyclopædia Britannica 2006, *"Petroleum Refining",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-64163, viewed on 2 Nov. 2006

[22] Encyclopædia Britannica 2006, *"Petroleum Refining",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-64163, viewed on 2 Nov. 2006

[23] Chevron Website, Available from Internet, http://www.chevron.com/products/prodserv/fuels/gas_qanda/api_octane.shtml, viewed on 5 November 2006.

82 UL has also been introduced that is an unleaded but lower octane fuel and is dyed blue[24].

2.3.2 Kerosene and Kerosene type Jet Fuel

Kerosene is a light flammable, pale yellow or colourless oily liquid[25] obtained by distilling petroleum. The product is especially used in jet engines, domestic heaters, lamps and as cleaning solvent.[26] It accounts for 10-25% of the total volume of crude petroleum. There are two ways to produce kerosene: atmospheric distillation[27] and cracking[28]. Kerosene is less volatile than gasoline; it boils between about 180 and 300°C[29]. Kerosene started to be produced in 1850s, not from petroleum but from coal tar and shale oils. When in 1859 E.L. Drake hit oil in Pennsylvania, petroleum became the major source. In the beginning the usage in lamps was popular and made it a big refinery product, up until automobiles made gasoline bypass it.[30]

---

[24] Shell Aviation Website, available from Internet, http://www.shell.com/home/Framework?siteId=aviation-en&FC2=&FC3=/aviation-en/html/iwgen/productservice/aviationfuels/detail/AvGasgradesspecs_10081006.html, viewed on 5 November 2006

[25] Encyclopædia Britannica 2006, *"Kerosene",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-9045165, viewed on 2 Nov. 2006

[26] Oxford American Dictionary

[27] Encyclopædia Britannica 2006, *"Petroleum Refining",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-9081788, viewed on 2 Nov. 2006

[28] Encyclopædia Britannica 2006, *"Cracking",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-9026722, viewed on 2 Nov. 2006

[29] National Library of Medicine: ChemIDplus Advanced Record, '*Kerosene RD: 8008-20-6',* available from http://chem.sis.nlm.nih.gov/chemidplus/jsp/common/ChemInfo.jsp?type=notes, viewed on November 2, 2006

[30] Encyclopædia Britannica 2006, *"Kerosene",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-9045165, viewed on 2 Nov. 2006

Kerosene can be categorized in two major product types:

- Kerosene “Heating”
- Jet Fuel

Kerosene are the products used for heating, lamps and cleaning solvent, whereas jet fuel, also known as aviation turbine fuel (ATF) is the collection of products used in various jet engines, using high speed combustion which are used in e.g. almost all airlines in the world. Jet engines, ranging from Turboprops to Turbojets have almost totally replaced the older reciprocating engines.[31] In our further investigation we will look into kerosene and ATF separately in production and consumption statistics and import and export data.

2.3.3 Diesel Oil

Diesel is one of the most common fuels used in the global economy. The historical background of this specific product is related with the invention of diesel engines by the German engineer Rudolf Diesel. The product is a complex mixture of hydrocarbons and is produced through the partial distillation of crude oil between 250 °C and 300 °C at atmospheric pressure. Diesel is mainly produced from the distillation of crude oil but is also possible to have production of diesel in different forms such as bio diesel. The scope of the research limits the discussion only in petrodiesel. Basically Diesel oil is separated in two main categories ADO (Automotive Diesel Oil) and IDO(Industrial Diesel Oil)[32]. Diesel fuels are mainly consumed by heavy road vehicles, construction equipment, locomotives and stationary and vessel

[31] Encyclopædia Britannica 2006, *“Airplane",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-64163, viewed on 2 Nov. 2006

[32] Pertamina website, available from Internet,http://www.pertamina.com, viewed on 13 December 2006

engines[33]. The existence of high quantities of sulphur in diesel fuel makes the use of the product less environmental friendly compare to gasoline.

2.3.4 Naphtha

Naphtha is a light product of crude oil refining mostly used as either feedstock for petrochemical cracking or gasoline reforming and blending. Naphtha is a by-product in the atmospheric distillation process. With the development in technologies, naphtha can also be produced from condensate splitting and gas-to-liquid processing.

In general, there are two main classes of naphtha – paraffinic naphtha and heavy naphtha. Paraffinic naphtha is rich in olefins and is suitable for olefin/polyolefin production, which can be used to make plastics out of. Heavy naphtha is mainly used for aromatic production and gasoline reforming. Therefore, Naphtha is normally not sold as end product, but more likely as the input into chemical complex, where Naphtha is “cracked” into other products.[34]

[33]NGV website, available from Internet,http://www.ngv.org/ngv/ngvorg01.nsf/bytitle/Glossary.htm, viewed on 27 October 2006

[34] http://www.icispricing.com/il_shared/Chemicals/naphtha.pdf

3. Methodology

3.1 Research design and strategy

It is common knowledge that conducting a good thesis requires exceptional planning. A methodology instituted in one thesis will definitely determine its outcome. Therefore, it is an utmost importance for the researchers to start their thesis with well-clarified methodology as much as possible.

First and foremost, researchers must be able to realize “how” the thesis will be conducted. This “how” is normally classified into two main categories:

1. Should the theory come before research (deduction), or on the contrary, research before theory (induction)?
2. Is the thesis theoretical, or exploratory?

For deduction strategy, present understanding regarding the topic of the researchers enables them to draw up some pictures of the theories they might come across. Consequently, they know precisely what kind of information they need to gather and which theories might represent the thesis.

Induction strategy occurs in the opposite direction to deduction. Researchers, in this case, collect relevant information and try to reach explanation of such phenomena through one of the theories in their knowledge. The concept largely involves gathering data, which may occurs in several methods—personal interview, questionnaire, and etc.

In this research, the thesis topic perfectly fits with induction strategy, where the researchers need to gather information, analyze the outcome, before conclusion is conducted to explain the market behaviour and structure. Since the region in this thesis is an emerging market and there is not much information on theories describing the whole region, it is very likely that the research will provide the result without any verified theory. This leads to the

second question mentioned above, whether this research will be theoretical or exploratory.

Theoretical research aims to constitute a new theory upon the existing one or from the new discovery. This type of research will have theories as its main structure. On the contrary, exploratory research will observe the population, sample, or group study, then use analytical process to reach the conclusion of finding. Exploratory research is, most of the time, conducted to test marketing concept or given hypothesis before the detailed research will be conducted. As the nature of this research is to “find out” what is the current situation of CPP market in Southeast Asia, and what should be the development, the thesis contains main question and sub-questions that will be tested.

3.2 Research method

The research method is the tools researchers use to solve problems within their research. Generally, the methods are classified into qualitative and quantitative.

Qualitative research is a combination of opinions, knowledge, attitudes, personal preferences, and personal perceptions. This type of method earns its value from its sources. Details of interviewees normally indicate reliability of information. Nevertheless, researchers must be very careful with this method because details of interviewee can be just illusion to the value of information.

Quantitative research is simply a research purely bases on quantifiable information. These quantifiable information normally are existing statistics data or data processed by statistical formulations. Since quantitative research merely deals with facts, and figures, results obtained are more preferable and widely accepted.

It is not necessary that one research employ only one type of method. Not only these two methods are not mutually exclusive, but also they are

complementary to each other. Numerical data may be quantitative side, but analyzing and interpretation of those data are surely qualitative, even not from interviewees. Therefore, both methods commonly exist in many researches.

This research employs both methods in order to reach the final outcome. In chapter 5, the current situation of politics, economics, business, and etc will be discussed qualitatively. Chapter 6 and 7 will introduce historical figures and analysis of such figures will be discussed, hence these two chapters combine both qualitative and quantitative. Chapter 8 is the summary of chapter 5, 6, and 7. The chapter will be elaborated in qualitative discussion. Chapter 9, 10, 11, and 12 will follow the same structure respectively. Thus, this research comprises of both qualitative and quantitative method.

3.3 Data collection

There are two forms of data—primary and secondary.

Primary data, as the name suggests, is derived from primary sources of information in specific field. Primary source of information has one meaning but can vary from personal interview to mass population questionnaire. Primary data can be obtained by experiment, observation, and communication. Communication will be mainly emphasised in this research.

Through interviews with experts in the industry, valuable data and direct experiences would be gathered during the process. The lists of organization interviewed are as follow:

Sweden: Broström Tankers AB, Ph. D. Student in Handels, Professor Martin Oberg (Handels)

Singapore: Broström Singapore Pte Ltd, Vopak, OilTanking, National University of Singapore (NUS), The Logistics Institute Asia-Pacific, Economic

Development Board (EDB), ISEAS, Titan Ocean Pte, Island Shipbroker Pte, Marine and Port Authority (MPA), International Enterprise (IE), Clarkson Asia

Malaysia: Maritime Institute of Malaysia (MIMA), PFC Energy, PTM, MISC, Serene Quest Marine, National Statistics Malaysia, Matrade

Indonesia: National Agency For Export Development (NAFED), Ministry of Energy of Indonesia, ASEAN Energy,

Thailand: EPPO, PTT, PTIT, Kanchana Marine, ThaiMarine Tanker, Department of Energy for Business (DOEB), ASEAN Energy

Vietnam: British Petroleum (BP), Ministry of Foreign Investment, PetroVietnam, PetroLimex, and Trade Information Center

Secondary data is basically the most reliable and important source of information. Data is already existed and verified. Secondary data can come from database, library, statistical bureau, and etc. Through the research period, secondary data are obtained from the following sources:

Country profile: WorldBank, UN, Economist Intelligence Unit (EIU), Energy Information Association (EIA), and Business Monitoring International (BMI)

Production and consumption: International Energy Agency (IEA)

Imports and exports: NAFED (Indonesia), Matrade and National Statistics (Malaysia), National Statistics (Philippines), International Enterprise (Singapore), EPPO and Department of Energy and Business (Thailand)

Database: Business Source Premier and Global Insight

3.4 Delimitations

Good researchers must know the limits within their works, in order to limit expectations and provide accuracy of information to readers. Since, this research involves eight countries, six products, and the time span of nineteen years, the research itself ran into several limitations that can influence the result. This section will categorize all limitations in the report into three groups, in which explanations will be given accordingly. Three groups of limitations are:

1. Data set
2. Forecast
3. Others

3.4.1 Data set

Limitations in data set can also be expanded into 6 small categories:

- Data discrepancy

  Since data comes from different sources, it frequently happened that two sets of data discussing the same topic provide discrepancy. Even though some discrepancies are small, they are worth mentioned. Details of data discrepancy will be further illustrated in the following categories. E.g. GDP sources (UN stats and EIU), Import/Export data

- Missing links between Brunei, Cambodia, and Vietnam

  Since these three countries did not keep track of trading information. Trade flows of these countries in both imports and exports disappear

from this research. The missing flows will be treated as “not available” (n/a) when mentioned instead of zero.

- Missing links between Indonesia and Singapore

  IE Singapore provided the trading information of Singapore to all the countries in ASEAN. Unfortunately, this trading information does not show the link between Singapore and Indonesia. The missing gaps are filled by using exports data of Indonesia to Singapore as imports of Singapore from Indonesia, and vice versa.

- No complete trading data from Singapore 1996

  IE Singapore started to keep track of trading information in digital format from April 1996 onward. Therefore, no complete information prior to April 1996 is not available. This research used the available nine months and ‘blew up’ the numbers to fit with he complete year, under the assumption that the first three months is in line with the rest of the year. This assumption can hold as 1996 is to give an idea and therefore it is better to have a good estimation than nothing at all.

- Imports in every countries are derived from exports of the others

  The countries that provide both imports and exports information are Singapore, Malaysia, Thailand, Philippines, and Indonesia. To avoid discrepancy which will happen when combine two sets of data together, this research chose to manipulate exports data on one country as an imports data of the others. For example, “exports” from Singapore to Thailand will be treated as “imports” of Thailand from Singapore. Details of this data manipulation will be discussed thoroughly in the next section “Data set definition”.

- Missing information of Naphtha for Malaysia and Thailand

Both countries did not provide information of Naphtha, and therefore, production and consumption of Naphtha regarding these two countries will be omitted.

- Conversion of litres to tonnes in Thai and Filipino import / export data set

  Trading information of Thailand was recorded in million litres unit. To standardize the whole report, conversion from litres to tonnes is required. The conversion table will be included in the appendix. Some parts of Filipino's data were recorded under litre unit, and they were converted under the same process.

Conclusion

Despite the fact that the data set ran into several limitations, the data set still maintains its value. Firstly, the data set is obtained from reliable sources, which are national statistics office in each country, or trade center. Secondly, the discrepancy and some missing links are considered very small compared by proportion to the rest of the data set. The information retrieved from using this data set is sufficient to provide a "picture" of CPPs transported in the region rather than a precise flow. Therefore, we believe that this data set is valid in our research.

3.4.2 Forecast

Limitations in forecast can also be expanded into 5 small categories:

- GDP and production are forecasted by using AAGR

  Since a forecast in this research is meant to give only brief idea of what should happen in the future according to historical data, there the simple method like AAGR is chosen as a tool to illustrate this idea.

AAGR proves to be very useful tool due to its simplicity and easiness to use.

- Data in 1998 is excluded from GDP forecast

  In 1998, most of the countries in ASEAN had affected from the Asian Financial crisis, which was the consequence from 1997. In the data set, information in 1998 showed high fluctuation, while it was not seen in the other years. To calculate AAGR, information in 1998 is treated as “outliers” and it is excluded from the calculation of the AAGR for Thailand, Indonesia and Malaysia.

- Productions in Singapore and Philippines are calculated using different methods

  Production forecast in Singapore and Philippines are different compared to other countries. In calculation, the forecast is done by using a calculation program to generate an equation that fits with historical data movement. Then value of years in the future will be substituted in the equation in order to get the result.

- Consumptions are calculated using “average increase”, not AAGR

  If AAGR is chosen in calculation, it is very difficult to keep the proportion of products. Therefore, average increase is chosen instead. The drawback of this method is that average increase will give a declining AAGR over time.

Conclusion

Forecast has never been an easy part in any research. Even so, good research still includes forecast in its content. The biggest problem of all forecast is that how can one rely on the result of such forecast. To make the result convincing, more and more complicated method are implemented to

reach the conclusion, yet it can never reveal the whole truth. To make the matter simple, this research has chosen the simplest method of all—AAGR to give the brief idea of how the future should look like “according” to historical trend. The method contains drawback mentioned in the previous part, still the result is comprehensive to all readers due to its easiness.

3.4.3 Others

- No interviews from Brunei, Cambodia, and Philippines

  Due to their small size, production, consumption, imports, and exports, the research regarded Brunei and Cambodia as insignificant countries in the region. Thus, the researchers did not arrange any interviews within both countries. For Philippines, the consumption and imports are quite sizable and interesting. However, since the principle, Broström AB, did not include Philippines in the scope from the beginning, the researchers had not planned to visit Philippines for interviews.

Conclusion

Information regarding these three countries come from secondary sources, which of course, they are reliable. However, since we did not have the chance to interview with experts in these countries, the written parts of these countries will tell on facts from secondary data without any additional information from the locals.

3.5 Import / Export Data set definition

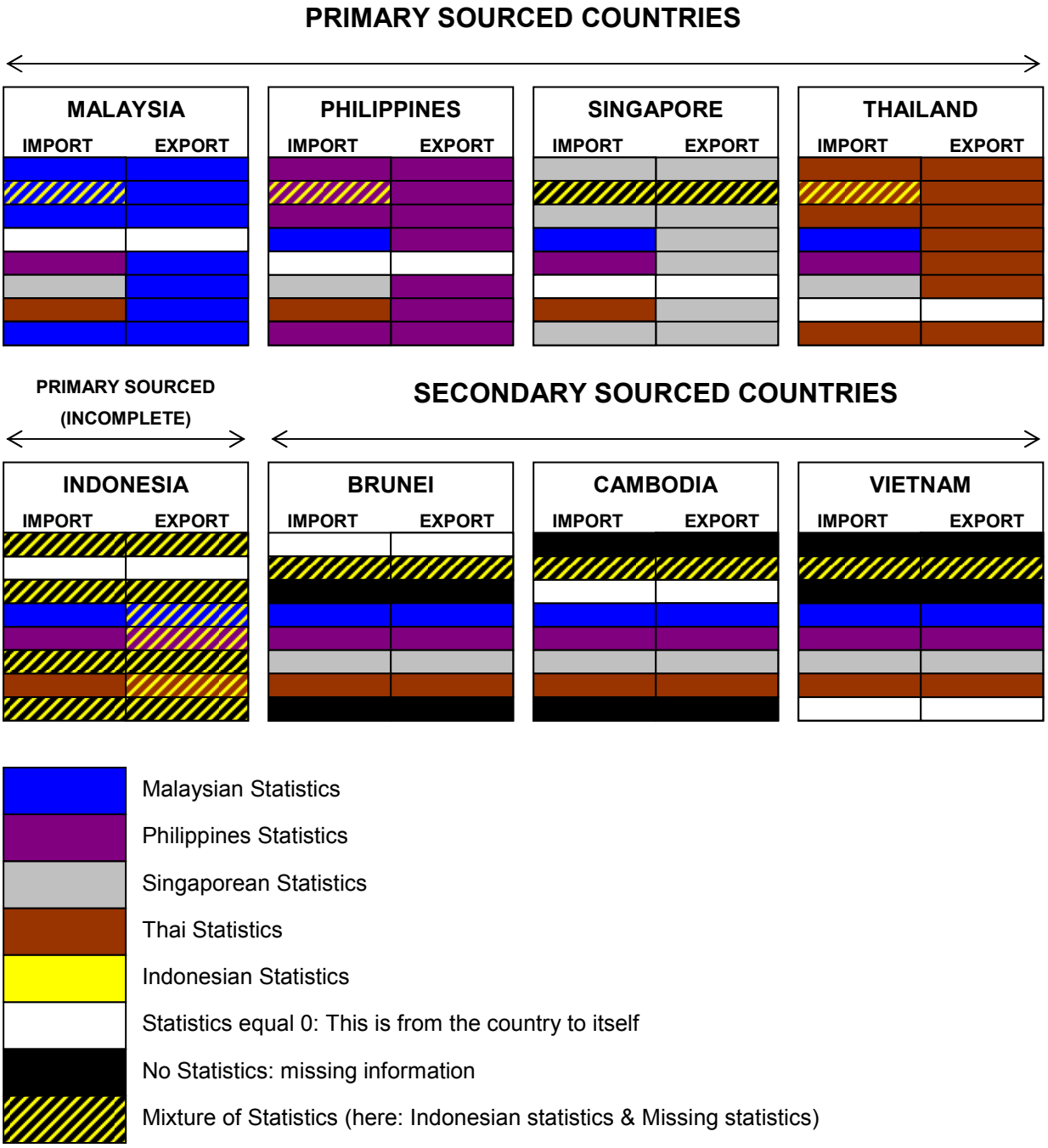


Figure 3. 1 Data set definition overview for Import/ Export data

The import / export data set needs a thorough explanation, before continuing to looking into these international trade flows. As information has been gathered from different countries in the region, which resulted in the fact that the numbers for imports into country A from country B unfortunately not exactly match with the exports from country B to country A, a decision has been made to come to a complete data set using different sources. The main idea is that the exports from countries are used as the basis, interlinking the other countries' imports with the first country's exports. This means that the exports of country A will also show in the sheets of country B to H's imports.

As the option exist to do it this way or the reverse way (using all imports and interlinking this), both options were considered and as exports are considered to be more important to a country's image than imports[35]. Therefore, exports were chosen as the primary data in this research.

In figure 3.1, it shows a full picture of the source of the data set. Every country is separated in the columns 'imports' and 'exports' and each column has eight rows. Each row represents a country in fixed order as before: Brunei, Indonesia, Cambodia, Malaysia, Philippines, Singapore, Thailand and Vietnam. The countries are in principle built up like this; the country's exports statistics are used and the different countries' exports are used to fill its imports.

Therefore the situation of this export-based approach has altered slightly in order to complete the data set as far as possible. This resulted in the separation in 'primary sourced countries', (Indonesia, Malaysia, Philippines, Singapore and Thailand) and 'secondary sourced countries' (Brunei, Cambodia and Vietnam), noting that Indonesia will be considered separately for its 'incomplete' nature, due the missing three products.

The imports of the primary sourced countries have reversed the export / import link for the secondary sourced countries due to the missing data and fill

[35] Louise Heslop: Countries as Brands, *Ivey Business Journal Nov. 2000*

the gap of the missing products of the Indonesian statistics, leading to give imports from Indonesia in the primary countries a mixed statistics base. As the Singaporean statistics regarding Indonesia are missing, these three products are unfortunately also missing in the analysis between Singapore and Indonesia. For Indonesia, the missing three products form an overall gap in its information set. Where it is possible, the other primary countries (Malaysia, Philippines and Thailand) fill these products even for Indonesians export. For Singapore and the secondary sourced countries this information is regarded as *missing*.

The secondary sourced countries are for its statistics fully dependent on the other countries, due to the unavailability of the data. Both imports and exports from the primary sourced countries are used to complete the data set as far as possible. Therefore it can be seen that all three countries have a similar data set consistency. The main problem with these countries is that its inter-links do not have any information due to unavailability. This gives a big gap in the data set. Fortunately, these three countries are not the most important set of countries in the region with regard to production, consumption or trading, due to its size or underdeveloped nature in the past nine years. This means that the missing data would have probably not been significant for the research. Because of that fact, this research will proceed to use this incomplete picture for the secondary sourced countries in order to look at its major links and analyzing its developments with the primary sourced countries over the last nine years.

4. Theoretical Framework

To make it clear which way to go in order to identify the developments in CPP trade flows around the South China Sea, a model has been developed as shown in figure 4.1. The basis of the model is describing the current situation based on which a move will be made towards the future situation. In this project, the principle of bounded rationality is considered, as it accepts that there are cognitive limits to an individual's knowledge and capacity to act rationally[36], meaning that it is realized that there aspects that have not been considered due to well-made decision, but more because of limited ability to oversee every small aspect that could influence the projects objective.

The **current situation** comprises of a description of the political, economic and business environment situation, the production, consumption, imports and exports per country over the nine-year period. Also, trade flow maps over this set of years in the region are drawn. ***Chapter 5*** will describe different aspects of the selected countries over the analyzed period of time (1996-2004). The **political environment** influences the international trade flows indirectly as it proposes two distinct objects: (1) to provide a plentiful revenue or subsistence for the people and (2) to supply the state or commonwealth with revenue sufficient for the public services[37]. According to Mill, political economy teaches nations to become rich. Both thinkers agreed that 'politics' is as important as 'economics'[38]. In this part the developments in the political scene will be discussed, with focus on security risk in the country, being defined as "the possibility of losses (…) because of political uncertainty with that nation"[39] and international relations. The **economic environment** describes the GDP development over the last nine years per sector and in total, together with the

---

[36] H.A. Simon, *Models of Bounded Rationality* (1982)

[37] Adam Smith, *Wealth of Nations* (1776)

[38] Robert Gilpin, *Global Political Economy: Understanding the International Economic Order (2001) p.25*

[39] Joseph P. Daniels and David D. VanHoose, *International Monetary and Financial Economics (Third Edition) p120*

annual growth rates. There are two types of GDP: the GDP by current price or GDP by the price level at a selected point in time. In this project GDP at 1990 prices is selected as this represents the growth of the countries GDP without considering inflation[40]. The **business environment** situation will draw a clear picture of the market attractiveness that can be limited by corruption, red tape and the amount of tax that needs to be paid to do business in the country. *Corruption* is almost common practice in developing countries in "attempts to circumvent government control, taxes and regulations'. According to Transparency International there is a high correlation between GDP and the reversed corruption index (CPI): high GDP shows high scores on CPI (meaning no corruption) and vice versa[41]. *Red tape* looks into the cumbersome procedures that countries might have in order to get through the bureaucracy. These procedures are sometimes easily built up, when a government does not want to restrict e.g. imports formally, but instead makes custom procedures for a certain product very difficult or impractical[42], leading to an automatic decline of activity of the interested parties. Also lowering or rising *corporate taxes* make the business environment change its character of attractiveness. The **downstream oil industry** in the country is important to draw a good picture of the current refining and trading situation in the country. Also developments in CPP subsidies are discussed here, as this can influence the consumption in the countries. Cabotage regulations are important to draw due to their business limitation in the downstream oil transportation industry. A general **energy demand overview** will also be discussed in this chapter as this shows the development of the energy demand and therefore the growth of CPP trade flows.

In ***Chapter 6***, the CPP are analyzed per country on production, consumption, imports and exports. The **production** of CPP products in the selected

[40] Joseph P. Daniels and David D. VanHoose, *International Monetary and Financial Economics (Third Edition) p333*

[41] Paul R. Krugman and Maurice Obstfeld, *International Economics: Theory and Policy (Sixth Edition) p.670-1*

[42] Paul R. Krugman and Maurice Obstfeld, *International Economics: Theory and Policy (Sixth Edition) p.205*

countries give a good idea of what is produced for the countries needs. It will be broken down by product and the trend over the analyzed period will be looked at. This is also the case for CPP **consumption**. Consumption changes when consumer behavior and rationale changes, which occur due to variable factors such as price, income, substitute goods.[43] The trade flows are of big importance to many countries, specifically developing, as countries rely for a big part of their national income on **import** and **export** trade flows.[44] The discussed nine-year trend will give the direction in which the future situation will be prone to go. In ***Chapter 7***, the **trade flow maps** will show a picture per product of which flows go where. By combining these yearly pictures a trend can be spotted on the direction of the products' flows. The current situation will conclude with a **regional overview** of all countries and products in ***Chapter 8***.

After this, a begin will be made to look at the **future situation**. As the world economy and therefore also the oil industry are hard to predict due to the many influencing factors, the forecast period has been chosen not to be too far in the future. Therefore the period is until 2014, meaning 10 years ahead of the dataset. In ***Chapter 9***, the future political, economic and business environment situation will be qualitatively discussed followed by ***Chapter 10***, where the trend of the current situation for production and consumption over the next ten years will be calculated, together with how the political, economic and business factors will influence the calculated trend. From those calculated trends, the influence on the trade flows will be discussed in ***Chapter 11***. In ***Chapter 12*** the **future regional overview** will be given.

---

[43] P. Newman, *The Theory of Exchange* (1965)

[44] Paul R. Krugman and Maurice Obstfeld, *International Economics: Theory and Policy (Sixth Edition) p.1-2*

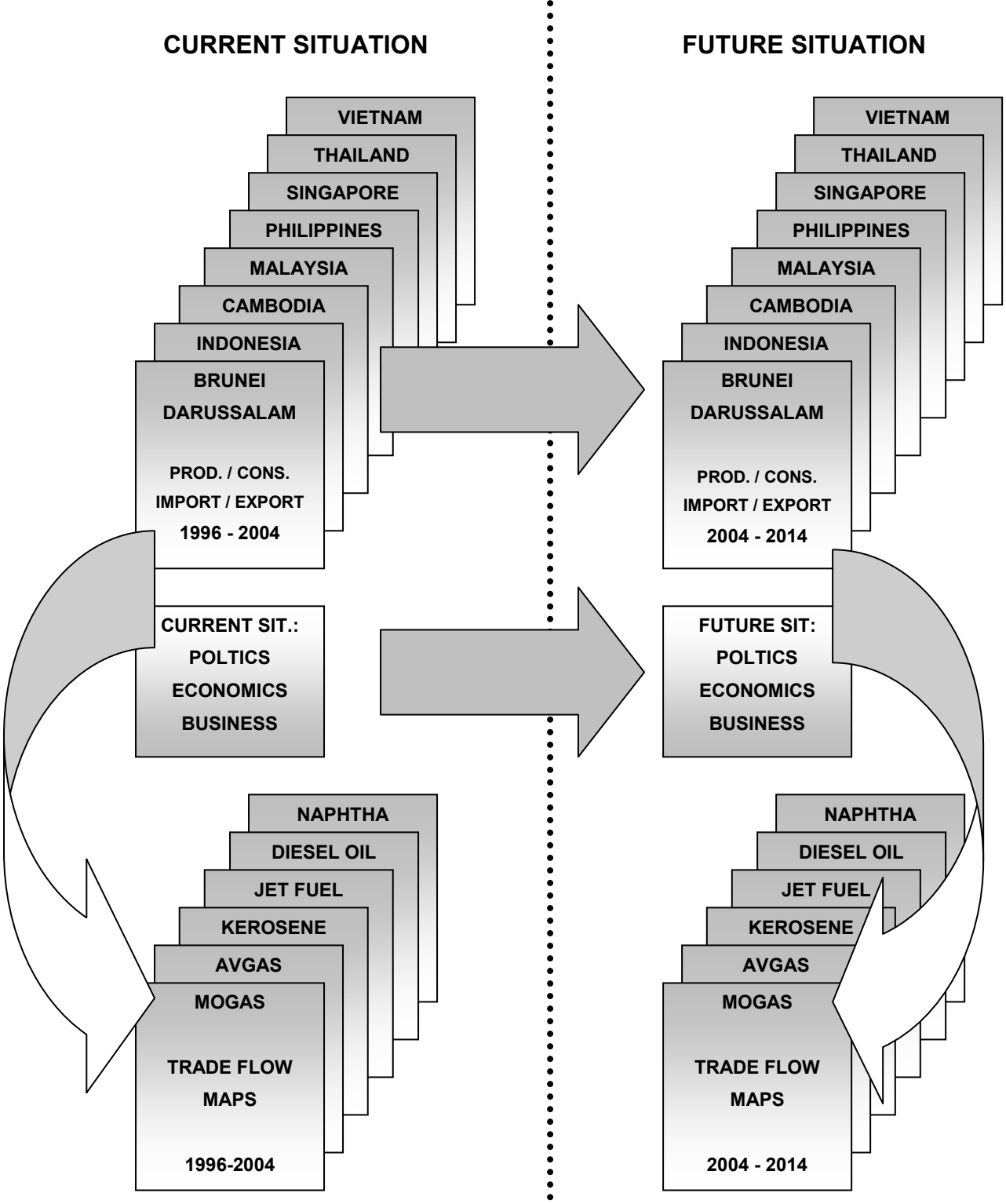


Figure 4.1 CPP Forecast Model

Part II. Current Situation in Southeast Asia

"Thinking is more interesting than knowing, but less interesting than looking."

Johann Wolfgang von Goethe (1749 - 1832); German poet

In order to get a clear picture of the current situation in the region, looking or observing the given facts is more important than given knowledge. In this part these 'observations' lead to the analyzing of the facts, giving a map of the current situation. In Chapter 5, the countries are analyzed on political, economical and business aspects, together with a picture of the downstream oil industry and energy demand in the country. Chapter 6 follows by showing the developments in CPP production, consumption and trading within the region (imports and exports). In Chapter 7, the product viewpoint gives insight of the trading partners for the six products in the analyzed period. The part finalizes by giving a full overview with a regional perspective in Chapter 8.

5. Current Country Situation in Southeast Asia

In order to understand the region, each country must be studied individually. Aspects like politics, economics, business, downstream oil industry, and energy will be discussed to provide the current picture of each country, which will result in the picture of ASEAN in total.

5.1 Brunei Darussalam

5.1.1 Politics

Political Situation and Recent Developments

Brunei is the smallest state within the South-East Asia region with land size of 5,765sq km and total population of 357,800. The main spoken languages of the state are Malay and Chinese[45]. The discovery of oil within the country's borders in 1929 gave the chance to Brunei to become one of the richest countries in the world[46].

Looking into the political background of this small state is clear that Brunei has changed hands many times before becoming a fully independent country in 1984. Starting as a part of the empire of China and then as a protectorate of United Kingdom Brunei has to be involved in a series of rebellion wars until the present Sultan Hassanal Bolkiah signed with the British the independence of the country[47].

The political situation has been steady during the recent years with the Sultan dominating practically everything. The absence of elections and the control of the media by the government illustrate the strict environment of Brunei. Movements towards to a more democratic regime are discussed among the members of the royal government but with no visible results so far. Brunei

---

[45] Cia World Factbook , https://www.cia.gov/cia/publications/factbook/print/bx.html, viewed on 25 October 2006

[46] Country Watch, Brunei Review 2006, available from Business Source Premier Database, viewed on 19 August, p.7.

[47] The Economist Intelligence Unit, *Brunei Country Profile 2006*, available from Economist Intelligence Unit Database, viewed on 18 August 2006, p.4.

bases its political and economical power on the crude oil and gas sector which are the main sources of the national income.

Security Risk

The political risk within the state of Brunei is kept in low levels due to the high satisfactory of the inhabitants from the providing government services. The high revenue from the crude oil exports has given the possibility to the royal government to establish a "social system" helping the citizens to enjoy one of the highest per capita incomes among the developing countries[48].

International Relations

The improvement of the international relations with the neighbour's countries is of main importance for the state of Brunei. The continuing territorial conflict with Malaysia is the main problem that Brunei has to solve in the upcoming future. Agreements with China and Australia have been also signed improving more the diplomatic and political power of the state in the region[49].

5.1.2 Economics

Economic Structure and Performance

As it is mentioned above the whole economy of the state is based on the exploitation and exports of the national resources. Mainly crude oil and natural gas contribute to the growth of the national economy. These two main sectors

[48] Country Watch, Brunei Review 2006, available from Business Source Premier Database, viewed on 19 August, p.24.

[49] The Economist Intelligence Unit, *Brunei Country Profile*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.8.

consist almost the 40% of the national GDP. Other sectors as financial, banking, electronics and small companies are represented in the figure with a share of almost 40%. The plan to develop new economic sectors will be useful for the decrease of the national unemployment which in 2004 reached the level of 4.8%[50] . Another point that should be mentioned for the economy of Brunei is the absence of the manufacturing sector which is found in zero level, although the intensive effort of the government to attract new investments. The representation of each economic sector for the period (1996-2003) is shown in the below figure 5.1.

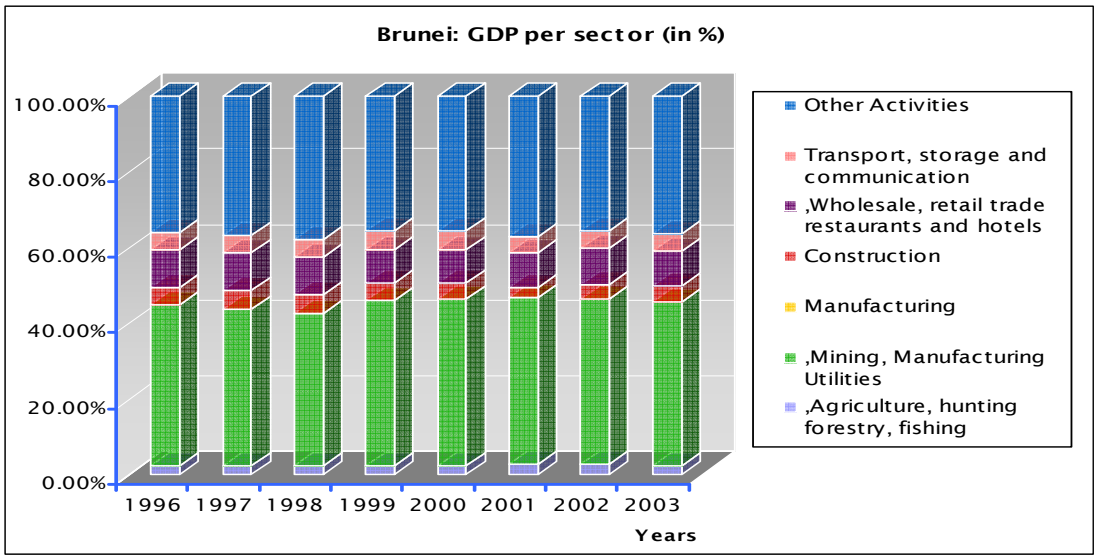


Figure 5.1 GDP per sector (in %) *(Data from UN Statistics: www.unstats.un.org)*

In figure 5.2 the GDP of Brunei is displayed for 1996 – 2004.The figure also shows the growth rate each year, compared to the previous year. The small size of the domestic market and the concentration of the economy on the mining sector keep Brunei vulnerable to external economic developments like financial crises and fluctuations in the crude oil prices.

Analysing the GDP growth for the period (1996-2004) it is well-seen that the economy in the beginning was following a steady upward trend with highest

[50]"CIA World Factbook" available on:
https://www.cia.gov/cia/publications/factbook/geos/bx.html, viewed on 25 October 2006

rate of 3.48% in 1997. As a part of South-East Asia region Brunei faced the consequences of the financial crisis in 1998 which had as a result the GDP growth to decrease dramatically reaching the level of -4.16%. After that period the national economy shows a rather stable trend with average growth rate around 3% which mainly based on the high oil prices.

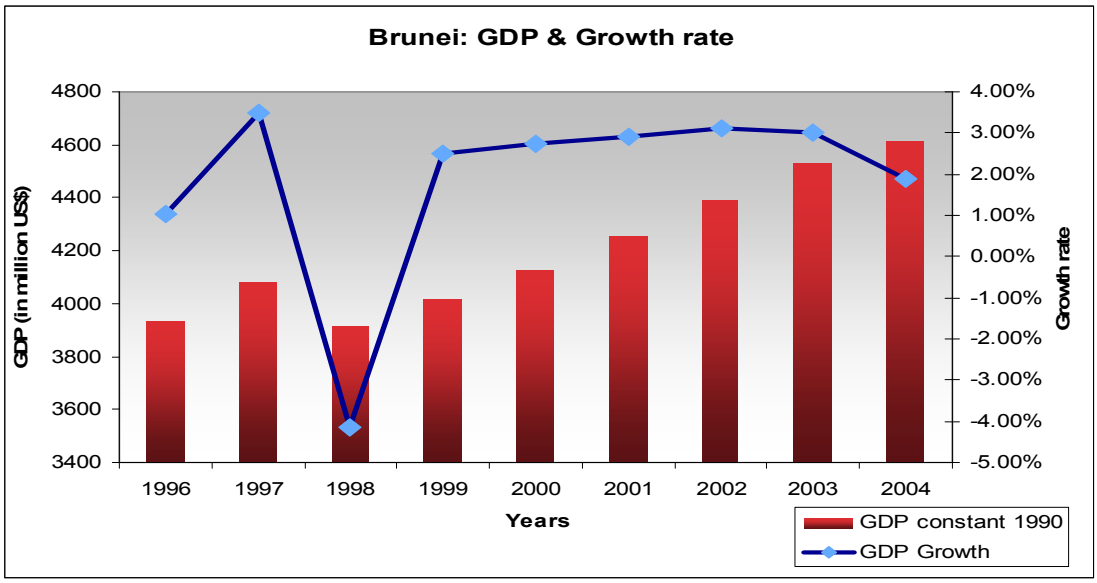


Figure 5.2 GDP (in million US$) and growth rate (in %)*(Data from UNStatistics: www.unstats.un.org)*

5.1.3 Business Environment

Market Attractiveness

Oil and gas have been the main attraction of investments during the last decades contributing to the development of an unattractive environment for the other sectors. Opportunities for foreign investments in the present exist almost in all the economic activities apart from the exploitation of the natural resources where foreign investors have to establish joint-ventures with the state companies[51].

[51] Brunei Government website, http://www.brunei.gov.bn, viewed on 25 October

Member of International Organizations

In economic terms Brunei is member in a numerous international organizations. One of them is the WTO which was established on 1st of January in 1995 with main aim to eliminate trade disagreements between its members and to lower the trade barriers. Brunei is member since the establishment of the organisation[52]. Another international organisation where Brunei is member is the ASEAN which was established on 8 August 1967 in Bangkok originally by five countries, namely Malaysia, Indonesia, Philippines, Singapore and Thailand[53]. The main aims of ASEAN is to speed up the economic growth and social development in the region, to promote the regional stability and finally to enforce the relationships among countries in the region. Moreover in 1991 the members of ASEAN agreed to create the AFTA with main aim to reduce import tariffs among the members to a maximum of 5% by 2003 and to 0% by 2015.The state of Brunei Darussalam joined the organization on 8 January 1984[54]. Finally Brunei is also member of APEC which was established in 1989 with main purpose to accelerate the economic growth of the region and to strengthen the relations among the countries of the Asia-Pacific community[55].

5.1.4 Downstream Oil Industry

Refineries

Brunei Shell Petroleum Sdn. Bhd. (BSP) owns and operates the only refinery in the country with current capacity of approximately 8.600bbl/d (2003) [56]. Seria Refinery runs two major processing units: a crude distillation unit (CDU)

[52]World Trade Organisation (WTO), *Understanding WTO: Member list* http://www.wto.org/English/thewto_e/countries_e/brunei_darussalam_e.htm, , viewed on 26 September

[53] ASEAN website, http://www.aseansec.org, viewed on 24 October 2006

[54] ASEAN website, http://www.aseansec.org, viewed on 24 October 2006

[55] Apec Forum website, http://www.apec.org ,viewed on 24 September

[56] Worldwide Refineries-Capacities as January 1 2006',available from *Oil & Gas Journal,* 19 December 2005, viewed 5 September 2006

designed to process bbl/d of crude oil into Kerosene, Mogas, AvGas, Paraffin Waxes and Petroleum Coke and a reformer unit that produces reformat for the production of Mogas. Although a development in upgrading capacity was achieved in 1993, increasing the refinery's utilization ratio to 99% in 1994, the refinery capacity has decreased from 10,000 B/D in 1984 to 8,600 B/D in 2003.

Ports

The imports and exports of Brunei are mainly accomplished by two deep-water sea ports. The first one is called Muara and located at Brunei Bay. Muara is used for oil and non-oil cargoes such as cement, containers, refrigerated foods and other general cargo. Within the territory of the port one tanker berth is operated by the BSP Company with berth length up to 198m. The depth of the water for the oil tanker operations is 7.6 m. Muara port offering a safe operational environment with advanced facilities[57].

Seria is the second deep-water port of the country located 8nm[58] ENE of Kuala Belait. The main operation of the port is the export of the national crude oil. The maximum allowed ship size is 320,000 DWT while the max drafts of the two buoys are 17,4m at SBM[59] 1 and 15.85m SBM 2[60].

Retail Industry and Distribution

The retail sector is dominated by the Brunei Shell Marketing the retailing branch of BSP Company which is the main provider of the domestic market with products as gasoline, diesel, lubricants, LPG and jet fuel.[61]The subsidized fuel prices are among the economic benefits that are provided to

---

[57] Lloyd's register, *FairPlay*, CD-ROM, 2003, database

[58] Nm(Nautical mile), 1nm=1852m

[59] SBM is a mooring system on a floating platform where tankers can dock. A submarine pipeline is attached to the platform where tankers load and unload their cargo.

[60] Lloyd's register, *FairPlay*, CD-ROM, 2003, database

[61] Brunei Shell Marketing Company website, http://www.bsm.com.bn

the Bruneian inhabitants with result the price of petroleum products to remain quite stable during the recent years although the world wide changes in the oil prices.

5.1.5 Energy Demand Overview

The total final energy consumption (FEC) in 2003 was 703 ktoe[62] with the transportation sector consuming 52% of the total amount followed by the residential and commercial sector (others) at 34% and the industry sector at 14% respectively.

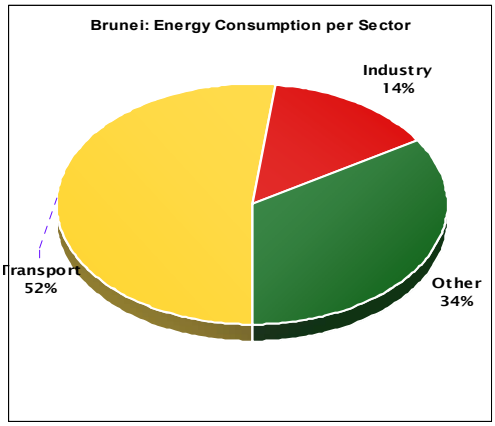


Figure 5.4 Energy Consumption per Sector in Brunei (Source: APEC)

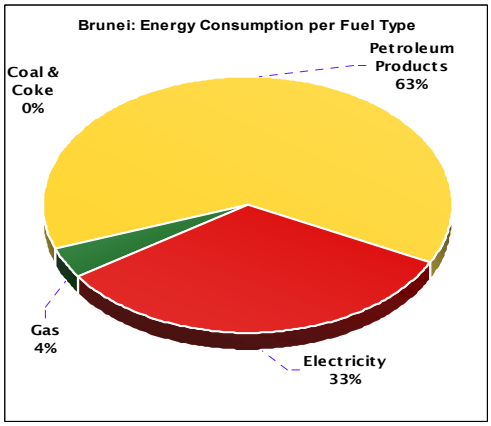


Figure 5.3 Energy Consumption per Fuel Type in Brunei (Source: APEC)

Oil products remain the source of energy used by all sectors (63%) followed by electricity (33%) and gas (4%). Gasoline is being used for passenger vehicles, while demand for gas/diesel and jet kerosene is high due to the constant growth in the freight and maritime transportation as well as international passenger travel[63].

---

[62] Asia Pacific energy research centre (APERC), *APEC energy demand and supply outlook 2006* ,

pp.7-9, Available from Internet, http://www.ieej.or.jp/aperc/ viewed 28 August

[63] Asia Pacific energy research centre (APERC), *APEC energy demand and supply outlook 2006* ,

pp.7-9, Available from Internet, http://www.ieej.or.jp/aperc/ viewed 28 August

5.1.6 Brunei's Current Country Situation Summary

Brunei is one of the richest states in the world basing its political and economic power on the production of crude oil and natural gas. The political environment is dominated by the Sultan who is the main political voice in the country.

The national economy follows the global trends and is extremely vulnerable to the world oil prices. Mining sector consist almost 40% of GDP although the efforts of the government to reduce the dependence of the country on the oil. The business environment is mostly turn around the mining sector.

The downstream oil industry is limited due to the small size of the domestic demand. BSP Company is the only player of the industry. Fuel subsidies are another social offered service from the royal government.

As far as the energy is concerned this is mostly consumed by the transport sector, especially in oil form.

5.2 Indonesia

5.2.1 Politics

Political Situation and Recent Developments

The Republic of Indonesia is the largest archipelagic state in the world, consisting of 17,508 islands (6,000 inhabited) forming an arc between Asia and Australia[64]. The total size of the country is 5 millions sq km (2 millions sq km land area and 3 millions sq km sea area) with an estimated population of 222 million inhabitants in 2006[65]. Jakarta is the capital and largest city of Indonesia located on the island of Java. Indonesian is the national official language (Bahasa Indonesia) although there are almost 740 different languages and dialects spoken by the approximately 300 different native ethnicities throughout the country[66].

Since the 17th century and for almost 300 years Indonesia was under the control of The Netherlands and finally gained its independence on 17th of August in 1945 when Indonesian leader Sukarno established the Republic of Indonesia. Indonesian's founding fathers established a unitary state with a presidential system with the aim of unifying its numerous ethnic, religious and linguistic groups[67]. In March 1967 the head of the armed forces, General Suharto came to power becoming the second President of the country and

---

[64] CIA World Fact Book website, available on https://www.cia.gov/cia/publications/factbook/geos/id.html, viewed on 25 October 2006.

[65] Indonesian Central Statistics Bureau, *Tingkat Kemiskinan di Indonesia Tahun 2005-2006*, Press release. viewed on 26 September 2006.

[66] Merdekawaty, E., *"Bahasa Indonesia" and languages of Indonesia*. UNIBZ - Introduction to Linguistics, Free University of Bozen, 2006, viewed on 17 September 2006.

[67] Library of Congress – Federal Research Division, *Country Profile Indonesia, July 2006*, available on: http://lcweb2.loc.gov/frd/cs/profiles/, viewed on October 30, 2006.

holding the office for almost three decades (1967-1998) after being re-elected for six consecutive presidential terms. This period under Suharto's administration is commonly called the New Order era[68]. In 1998 protests under the "reform movement" as well as general public unrest due to economic problems forced President Suharto to resign on 21st of May of the same year. His downfall led to a period of political insecurity, as Indonesia attempted a swift transition to democracy through important constitutional amendments characterized by the clear separation between executive, legislature and judiciary power[69]. These efforts resulted in establishing Indonesia's multi-party presidential democratic system and led to the first ever direct presidential elections in July 2004, followed by the victory of Mr Susilo Bambang Yudhoyono as the new president of the country. Mr Yudhoyono's main objective is to strive against corruption, ensure national security and proceed to economic reforms in order to attract new investments and reduce the unemployment rate[70].

Security Risk

Indonesia's President Mr. Yudhoyono has introduced a far-reaching democratic reform process over the last years in order to deaden political and regional differences countrywide; however due to the country's enormous size and diversity there are still significant issues that trigger internal tensions and political instability in the country. Traditional political elites have retained their power and the military reforms which aim at securing army's non interference

---

[68] Country Watch, *'Country Review 2006: Indonesia',* available from Business Source Premier, viewed on 25 August 2006 p.7-9.

[69] The Economist Intelligence Unit, *Indonesia Country Profile 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.4-6.

[70] Aries Ananta, Evi Nurvidya Arifin, Leo Suryadinata, *Emerging Democracy in Indonesia,* ISEAS Publications, Singapore, 2005, p. 9-34.

with the politics advance slowly[71]. Separatist rebellions and accusation for human rights violations as for example in the provinces of Aceh and Papua have been ongoing in the country for nearly 30 years[72]. Moreover ethnic violence and the rising religious fanaticism that has been reported lately in many parts of the country as well as the presence of terrorist groups such as Jemaah Islamiah, that remains the main domestic terrorism threat in the country, can cause increased insecurity and harm Indonesia's secular and tolerant traditions[73].

International Relations

Indonesia's relations with its direct neighbours, Australia and Malaysia are always under scrutiny. Recently following Australia's decision to grand asylum to 42 Papuans in early 2006, Indonesia protested by recalling its ambassador and cooling the relations between the two countries[74]. Next to these two countries Singapore is another state that Indonesia try to improve its relation. The fall of Suharto some years ago put the relation of the countries under tension since Singapore was closely related with the President Suharto. Relations with Malaysia have also been in tense in recent years due to arguments regarding disputed territories in the Sulawesi Sea that hold oil reserves. On the other hand Indonesia has significantly improved its relations with the US and EU based on the co-operation in the war against terrorism

---

[71] Edward Aspinall, 'Politics: Indonesia's year of elections and the end of the political transition' in Budy P. Resosudarmo (ed), *The politics and economics of Indonesia's natural resources,* ISEAS Publications, Singapore, 2005, pp.13-18

[72] Muhamand Chatib Basri, Pierre Van der Eng, *Business in Indonesia,* ISEAS Publications, Singapore, 2004, p. 23-39.

[73] The Economist Intelligence Unit*, Indonesia Country Forecast 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.8.

[74]Asian Focus Group website, available on http://www.aseanfocus.com/asiananalysis/article.cfm?articleID=967, viewed on 28 October 2006.

and is currently undertaking significant steps in order to restore its international reputation[75].

5.2.2 Economics

Economic Structure and Performance

Indonesia has a well diversified economy where all major economic sectors play a significant role. In figure 5.5 it is shown the contribution of its sector of the economy to the country's GDP according to UN Statistics[76]. The agricultural sector remains an important part of the economy, accounting for 11.9% of the total GDP. The mining sector is of vital importance for Indonesia's economy as it accounts for 30.4% of the total GDP since the country is rich in mineral resources. There is production of both metals (copper, tin, gold, iron and steel) and mineral fuels including coal, oil and gas. Manufacturing represent a 20.9% following a low-level but steady growth in the last ten years as there is heavy industry developed in the country in the field of iron, steel and paper.

The construction sector's share of GDP has stabilized in around 4.8% the last years reflecting a steady demand for infrastructure, commercial and residential construction. Wholesaling, retailing and tourist sector count for an important 13.4% of total GDP. The domestic trade is following a steady growth while the tourist sector has encountered a significant draw back due to terrorist attacks, SARS outbreak and the tsunami in 2004. The transportation sector represents a 6.4% of the economy that can be explained by the country's morphology while the rest 12.3% is generated by other sectors

[75] The Economist Intelligence Unit*, Indonesia Country Profile 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.12-15.

[76] UN statistics website: available on: http://www.unstats.un.org/, viewed on October 28, 2006.

including financial and banking sector. Conclusively, each sector's share in the total GDP of the country over the last ten years remains almost steady with slight fluctuations, while the mining and manufacturing sector represent almost 50% of the country's GDP.

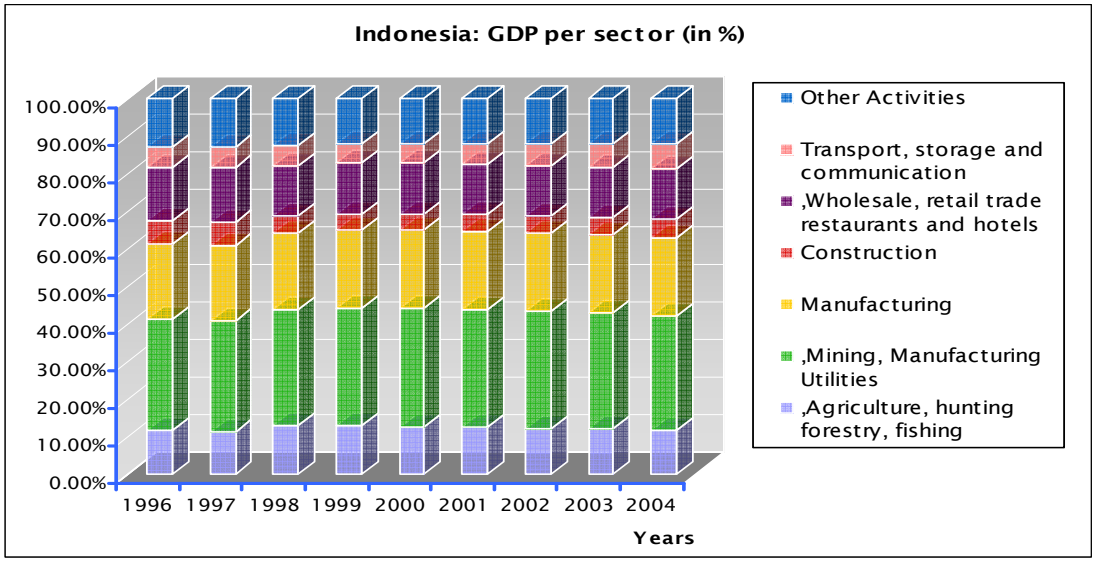


Figure 5.5 GDP per sector (in %) *(Data from UN Statistics: www.unstats.un.org)*

The figure 3.6 illustrates the GDP and GDP growth rate over the last ten years. Indonesia's economy, before the Asian crisis, was one of South-East Asia's faster growing economies[77]. The Asian financial crisis of 1997-1998 had a major effect in the country's economy as Indonesia faced the more serious problems compared to all the other countries in the region[78]. The total GDP shrank by 15% in 1998 and remained at the same level in 1999. During this period the banking sector collapsed, the country faced strong inflationary pressures that resulted in a two years economic and social despair[79].

---

[77] Asian Development Bank, *"Country Strategy and Program Indonesia 2006-2009"* , available from Internet, http://www.adb.org/Countries/, viewed on 29 October 2006

[78] Muhamand Chatib Basri, 'Indonesia's economic transformation: Before and during the Economic crisis' in Aris Anta (ed), *The Indonesian crisis: a human development perspective,* ISEAS Publications, Singapore, 2003, p. 53-76.

[79] Muhamand Chatib Basri, 'Indonesia's economic transformation: Before and during the Economic crisis' in Aris Anta (ed), *The Indonesian crisis: a human development perspective,* ISEAS Publications, Singapore, 2003, p. 53-76.

Since 2000 Indonesia entered a period of economic and political reforms with the intention of recovering from the financial crisis. The first signs became already visible in 2000 when the economy accelerated by approximately 5% although the next year the GDP growth rate faced a slight slow down, growing by 3.4% due to the world's economy deceleration following the consequences of the terrorist attacks on 11th of September in WTC.

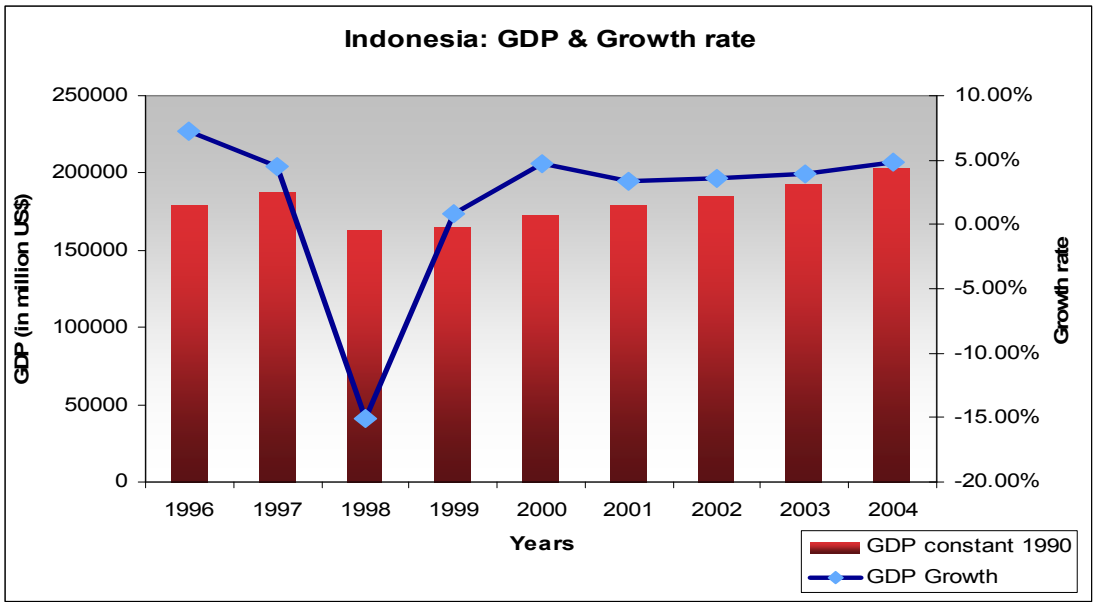


Figure 5.6 GDP (in million US$) and growth rate (in %) *(Data from UN Statistics: www.unstats.un.org, viewed on October 25, 2006)*

In the following years Indonesia's economy maintained a steady GDP growth rate of 3.6% in 2002, 4% in 2003 and reaching its peak in 2004 performing a 5% GDP growth. This steady economic growth was driven mainly by the increased government expenditure and private consumption while the investment spending remained in relatively low levels[80]. During the last ten years the unemployment rate has significantly increased from 7.2% in 1995 to 10.3% in 2004 as a result of the economic crisis and the growing population of the country[81].

---

[80] Aries Ananta, Evi Nurvidya Arifin, Leo Suryadinata, *Emerging Democracy in Indonesia,* ISEAS Publications, Singapore, 2005, p. 40-60.

[81] Asian Development Bank, *Asian Development Outlook 2006 update*, Indonesia, publication 2006, p.78-79

5.2.3 Business Environment

Market Attractiveness

Although Indonesia is located amid major trade routes and provides a large domestic market for investors to cover, its business environment remains unstable and unattractive for foreign investments. Rampant corruption that involves illegal transactions with local officials as well as the complexity of the regulatory environment and the defective legal system[82], are some of the main concerns for any firm that plans to start doing business in Indonesia. According to the Transparency International's Corruption Perceptions Index in 2005 (CPI 2005) Indonesia is ranked 137th (out of 158) with a score of 2.2 (out of 10) that bears out the country's meager transparency performance[83].

Corporate taxes are still high and the arbitrary tax authority gives even more concerns to investors. World Bank has reported that an entrepreneur in Indonesia has to make 52 tax payments; the administrative burden of paying taxes is 576 hours and the total tax rate runs into 37.2% of the profits[84].

Moreover high regulations in starting a new business and red tape, aggravates Indonesia's business environment. The Red Tape is considered to be the bureaucratic procedures and time it takes to do business and is the third term regarded as important for market attractiveness. According to the World Bank it takes 12 procedures and an average of 97 days to start a

---

[82] Business Monitor International, *Oil and Gas Report Indonesia Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.19-20

[83] Transparency International, 'Corruption Perception Index 2005', available on: http://ww1.transparency.org/cpi/2005/cpi2005.sources.en.html#cpi, viewed on 31 October 2006

[84] Doing Business, "*Doing Business 2007 - How to Reform", Available from Internet, http://www.doingbusiness.org/main/country-data-summaries.aspx* viewed on 31 October 2006

business in Indonesia while the procedure of enforcing commercial contracts involves 34 procedures and 570 days in order to complete[85].

Indonesia continues to keep high regulations for foreign companies that are planning to enter in a number of business sectors, like the electricity production, shipping and telecommunications[86]. In the shipping sector for instance, Indonesia is applying cabotage rules in order to secure coastal trades for vessels under the Indonesian flag. In this case foreign companies can be involved in the domestic trade only if they are in joint ventures with Indonesian partners[87].

Due to the above mentioned condition in the country's business environment, the government plans to introduce a new investment law in 2006 in order to raise its attractiveness to foreign investments and boost its economic growth. The imminent goals of the proposed law is to create transparency, lessen the amount of time and cost needed to start a new business to 30 days and modernize the legal system on corporate issues making sure that domestic and foreign investments are being treated in the same way by the judiciary system[88]. In addition the government has also proposed corporate tax reductions whilst rationalizing procedures for tax disputes in an attempt to support corporate investment.

Indonesia has also agreed on a deregulation and privatization process for a number of state owned companies under an IMF economic program, also for business sectors that have been of strategic importance for the country such as the telecommunications sector and the oil industry. Under this process

---

[85] Doing Business, "*Doing Business 2007 - How to Reform", Available from Internet, http://www.doingbusiness.org/main/country-data-summaries.aspx* viewed on 31 October 2006

[86] The Economist Intelligence Unit*, Indonesia Country Commerce 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.12-15.

[87] PDP Australia Pty Ltd/Meyrick and Associates, '*Promoting Efficient and Competitive Intra-ASEAN Shipping Services' – Indonesia Country Report,* p.2 (REPSF Project No. 04/001)

[88] The Economist Intelligence Unit*, Indonesia Country Commerce 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.11-13.

Indonesia ended the monopoly of Pertamina in the oil industry allowing other international oil companies to enter the domestic market. The privatization process is likely to go on for more state monopolies including the national electricity company and the national postal service[89].

The anticipation for a more attractive business environment resulted in positive levels of FDI in 2005 for the first time since 1998. According to the Investment Co-ordination Board (BKPMD) the FDI in to 2005 increased significantly counting for USD$8.7bn (November 2005) compared to USD$4.6bn in 2004. The main investors in the country for 2005 were Singapore, the UK and Japan while the most attractive industries were transportation sector, oil and gas, communications and chemicals[90].

Member of International Organizations

Indonesia is a member of several international organizations. Most important affiliations in economic and trading terms include membership in organizations as WTO since 1st of January in 1995[91] as well as APEC forum since 1989[92]. Indonesia was the chairman of the forum in 1994 and hosted a momentous meeting where all members agreed on eliminating the trade barriers and creating the world's largest free trade area by 2020[93]. Indonesia is also one of the five founding members of ASEAN and AFTA trade agreement[94].

---

[89] The Economist Intelligence Unit*, Indonesia Country Forecast 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.21-22.

[90] Business Monitor International, *Oil and Gas Report Indonesia Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.19-21

[91] WTO Website, http://www.wto.org/, viewed on 31 October 2006.

[92] APEC Forum Website, http://www.apec.org/, viewed on 31 October 2006.

[93] The Economist Intelligence Unit*, Indonesia Country Profile 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.55-57.

[94] ASEAN Secretariat Website, http://www.aseansec.org/, viewed on October 31, 2006

Indonesia is the only Asian country member of the Organization of the Petroleum Exporting Countries (OPEC). OPEC is an intergovernmental organization that has been founded by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela at the Baghdad Conference on September 10-14, 1960. OPEC's main goal is to unify petroleum policies, secure fair and stable prices for member countries and provide a steady supply of petroleum to consuming countries[95]. OPEC has currently 11 members while Indonesia joined the Organization in 1962 although there is reported that the country is reconsidering its membership due to a dramatic decrease in the total oil output over the past decade[96].

5.2.4 Downstream Oil Industry

Refineries

Pertamina is Indonesia's state-owned company, responsible for both the upstream and downstream oil industry in the country. Although the downstream oil sector was deregulated in 1997, making it possible for private companies to build and operate private refineries, still this is only possible under a joint venture with Pertamina, while the refined products can either be sold to the international markets or to Pertamina for distribution in the domestic market[97]. There are eight refineries operating in Indonesia, all of them owned and run by Pertamina, providing a processing capacity of around

---

[95] OPEC website, http://www.opec.org/aboutus/history/history.htm, viewed on 31 October 2006.

[96] "Indonesia considers leaving Opec", *Aljazeera.net*, Available from Internet, http://english.aljazeera.net/NR/exeres/6DA91AFC-F571-49E7-B459-5DB55AF0F285.htm, viewed on 2 November 2006.

[97] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC downstream oil market study* 2005, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, pp.60-61

993.000 bbl/d (2006). The processing capacity of each refinery is shown in table 3.a[98]

The total refining capacity has increased from 528.000 bbl/d in 1980 to 933.000 bbl/d in 2003 performing a 2,8% AAGR (Average Annual Growth Rate). The refinery utilization ratio was in high levels, more than 100%, due to the deficiency of upgrading capacity and high demand for oil products, however due to capacity upgrades managed to stabilize to 93% after 1987[99].

Refinery	**Location**	**Capacity**
Pertamina	Balikpapan, Kalimantan	240,920
Pertamina	Balongan, Java	125,000
Pertamina	Cepu	3,420
Pertamina	Cilacap, Central Java	348,000
Pertamina	Dumai, Central Sumatra	114,000
Pertamina	Musi, South Sumatra	109,155
Pertamina	Pangakalan Braden, North Sumatra	4,750
Pertamina	Sungai Pakning, Central Sumatra	47,500
Total		**992,745**

Table 5.1 Refinery Capacity for Indonesia (2005) (in bbl/day)

(Source: Worldwide Refining Capacity, *Oil and Gas Journal*, December 19, 2005)

Ports

Indonesia as an archipelagic state is made up of six main islands and there are numerous of ports all around the country. The major oil terminal ports in the country are described below.

---

[98] 'Worldwide Refineries - Capacities as January 1, 2006', available from *Oil & Gas Journal, December 19, 2005*, viewed 5 September 2006

[99] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC downstream oil market study* 2005, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, pp.60-61

The port of Balikpapan is located in the province of East Kalimantan on the island of Borneo. The marine facilities consist of nine berths that are owned and operated by Pertamina and serve as crude oil and petroleum products terminal. The port can handle ships with a maximum of 35.000 DWT and a draft of 11m.

The port of Dumai is situated NE on the coast of Sumatra and mainly serves as a crude oil shipment harbor as well as for refined petroleum products. Dumai has twelve berths; two of them are owned an operated by the government, six are owned and operated by Pertamina exclusively for its refining mainly for the loading of the refined products. The rest four berths are owned and operated by Caltex Pacific Indonesia, serving mainly as crude oil loading terminal. The port can handle vessels of up to 265.000 DWT.

Tanjung Perak is situated in the island of Java and is equipped to handle tankers as well as container vessels. Pertamina owns and operates five jetties in the port for the loading and discharging of refined products. The port can handle vessels of maximum 35.000 DWT with draft of 9m.

Tanjung Priok is located in North Jakarta, on the island of Java. The port has the appropriate equipment in order to handle as oil and chemicals terminal. Pertamina owns four jetties for the transhipment of refined petroleum products and can serve vessels with approximately 70.000 DWT with a maximum 10.5 m loaded draft.

Pulau Sambu port is situated at Sambu Island, 3nm from international waterways and is used exclusively for import and export of oil cargoes. The port has six jetties dedicated for loading and discharging oil cargoes and can handle vessels up to 40.000 DWT and ship-to-ship transfers up to 225.000 DWT.

Retail Industry and Distribution

Pertamina had its retail and distribution monopoly until July 2004 and has been changed to a limited liability company in 2003, optimistically projected to be fully privatized in 2006. In February 2004, Indonesia opened its retail oil products sector, issuing licenses to Shell amongst others. Recently Shell opened its first Indonesian service station. Pertamina operates around 2000 outlets around the archipelago.[100] In October 2005 the government proceeded to a massive cut in fuel subsidies, raising fuel prices by 126%. Subsidies in industrial fuels and high-octanes transportation fuels have been completely removed while the government plans full subsidies removal for the rest of fuels[101].

5.2.5 Energy Demand Overview

The total final energy consumption (FEC) in 2003 was 247 Mtoe[102] with the industrial sector consuming 35% of the total amount followed by the residential and commercial sector at 34% and the transportation sector at 31%. Oil products remained the most important end use fuels accounting for 60.6%[103] of the total finally energy consumption followed by gas (16%) electricity (15.7%) and coal (7.7%). Increased prices in energy sector and governmental subsidies removal mostly for the oil fuels have significantly affected the energy consumption in all three sectors, leading to a continuous decrease since 2001.

---

[100] Business Monitor International, *Oil and Gas Report Singapore Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.47-49

[101] Embassy of the United States of America Jakarta, *Petroleum Report Indonesia 2005 – 2006*, available from Internet, http://www.usembassyjakarta.org, viewed on 12 September 2006.

[102] Asia Pacific Energy Research Centre (APERC) , *APEC Energy Overview,* 2005, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, p.34

[103] Asia Pacific Energy Research Centre (APERC) , *APEC Energy Overview,* 2005, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, p.34

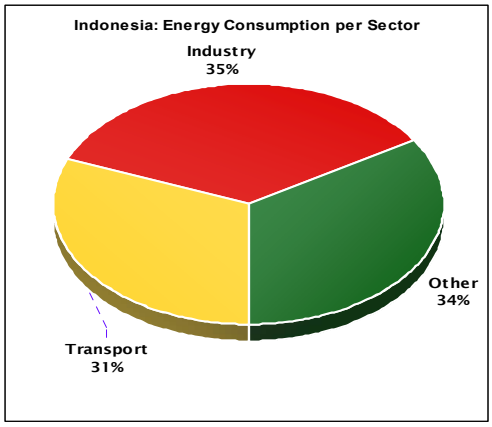


Figure 5.7 Energy Consumption per Sector in Indonesia (Source: APEC)

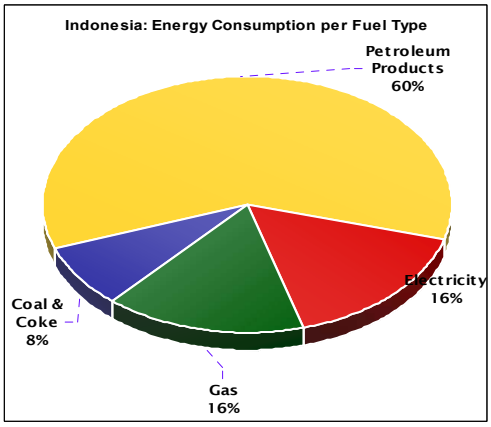


Figure 5.8 Energy Consumption per Fuel Source in Indonesia (Source: APEC)

5.2.6 Indonesia's Current Country Situation Summary

The Republic of Indonesia is world's largest archipelagic consisting of 17,508 islands with a population of 222 million inhabitants. Following Suharto's resignation from the office in 1998 the country proceeded to a major politic and economic reform procedure. Ethnic and religious differences as well as separatist rebellions in some parts of the country create internal tensions and worsen the already unstable political environment. Indonesia's relations with its neighbour countries have been in tense during the last years mainly due to territorial disagreements.

Indonesia has a well diversified economy where all major economic sectors play a significant role. The country faced serious problems during the Asian financial crisis as the economy collapsed. After this period Indonesia entered a period of economic reforms with the intention of recovering from the crisis and managed to report a steady GDP growth rate during the last 3 years.

Indonesia's business environment is unattractive for foreign investments due to widespread corruption, high corporate taxes, strict regulations and red tape. The government is planning to introduce a new Investment Law and proceed

to significant deregulations and privatizations in order to improve the business environment and attract more foreign investments that will boost the economy. Indonesia is a member in WTO, APEC, ASEAN, AFTA and the only Asian country member of OPEC.

Although Indonesia opened up its retail and distribution oil sector the formerly state-owned Pertamina dominates the downstream oil industry, although the upstream part has been deregulated, still joint venture refining undertakings are necessary. There are eight refineries operating in Indonesia providing a processing capacity of 993.000 bbl/d.

5.3 Cambodia

5.3.1 Politics

Political Situation and Recent Developments

The Kingdom of Cambodia is located in the tropical part of Southeast Asia in the Lower Mekong region. Administratively, Cambodia is divided into 24 provinces, including 4 municipalities. Of the country area 181 thousands sq km, approximately 49% remains covered by forest. The country hosts approximately 13.8 million people, which the majority (around 90%) of the population is Khmer ethnic group. Other ethnic groups are Vietnamese and Chinese[104].

After the war against Vietnam and the civil war during 1960-1990, the first Constitution arrived in 1993. Even though the constitution states that Cambodia is a constitutional monarchy, the influence of the monarchy has declined, especially after the accession of the new king, Narodom Sihamoni. Many believe that the new King will struggle to stand up to the powerful politicians[105]. In Cambodia's politics, Cambodian's People Party dominates the majority of the politics. This domination weakens the legislative and judiciary systems. Hun Sen, the leader of the party, has long dominated the country, even with democracy.

---

[104] CIA World Fact Book website, available on https://www.cia.gov/cia/publications/factbook/geos/id.html, viewed on 25 October 2006

[105] The Economist Intelligence Unit, *'Country Profile Cambodia 2006'*, available from Economist Intelligence Unit Database, viewed on 18 August 2006 p.12

Security Risk

Current Prime Minister, Hun Sen and his party Cambodian's People Party (CPP), will maintain their dominant power in politics without any interfere from the state leader, King Naradom Sihamoni. Opposition parties in Cambodia's politics are not influential enough and subdue to Hun Sen's influence[106].

International relations

United Nations (UN) mentions direct concern over human rights matter in Cambodia. This concern, however, seems to be more diplomatic interaction between Cambodia and UN. Cambodia still receives generous pledges of aid from UN and European Union (EU)[107]. In terms of country, Cambodia enjoys rapidly improving relationship with China, due to its affirmation of the plan "One China", which rejects Taiwan as independent country. Investment from China pours in Cambodia. On the other hand, relationship with Vietnam is a sensitive issue due to the problem of demarcation the country borders[108].

---

[106] Human Rights Watch website, available on http://www.hrw.org/worldreport99/asia/cambodia.html, viewed on 2 September 2006.

[107] European Commission website, available on http://ec.europa.eu/comm/external_relations/cambodia/intro/index.htm, viewed on 17 August 2006.

[108] Herald Tribune website, The Associated Press, *'Cambodia, Vietnam begin formal border demarcation'*, 27 September 2006, available from Internet, http://www.iht.com/articles/ap/2006/09/27/asia/AS_GEN_Cambodia_Vietnam_Border.php, viewed on 2 October 2006.

5.3.2 Economics

Economic Structure and Performance

Cambodia has long been an agricultural-oriented country, where the majority of agricultural activity is fishing and rice production[109]. However, agriculture has lost its share constantly from 43% in 1995 to 32% in 2003. Rapid expansion of industrial sector has forced the decline of agricultural sector contribution to GDP. In contrast mining sector has shown a significant increase doubling its share in the total GDP from 9% in 1995 to 23% in 2003. The development of the mining sector is mainly due to the exploration of new oil reserves within the territory of the country. There is a recent discovery of oil reserves in Cambodian soil and sea[110]. As far as the manufacturing sector is concerned this follows also the development of the country increasing its shares to the domestic economy. Currently manufacturing sector consists around 19% of the national GDP compare to 7% in 1996. This is normal trend for developing countries where they will put less emphasis on agricultural sector and put more effort in industrial and mining sectors. Cambodia bases its rapid expansion on the cheap labour cost, which attract many investors especially in the garment sector.

---

[109] Verghese Mathews, 'Positioning for 2008' in Daljit Singh & Lorraine C. Salazar (eds), *Southeast Asian Affairs 2006*, ISEAS Publications ,Singapore, 2006, pp 73-86

[110] Available on the internet, http://www.newsfeeds.com/archive/soc-culture-cambodia/msg03253.html, viewed 8 june 2006

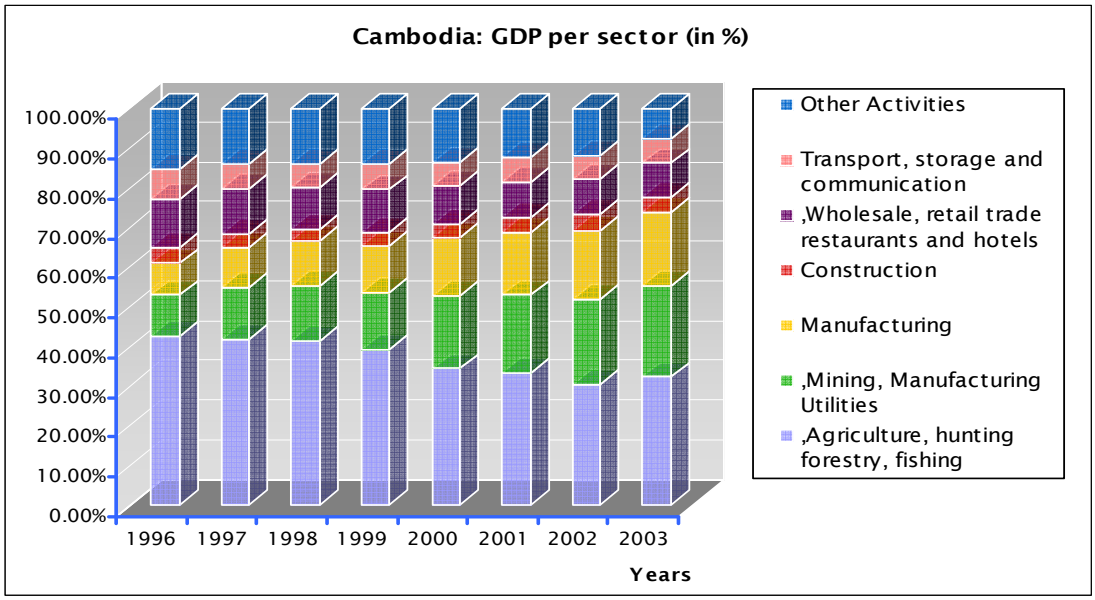


Figure 5.9 GDP per sector (in %) *(Data from UN Statistics: www.unstats.un.org)*

From the figure 5.10, growth rate of GDP in year 1998 and 2000 shows an abnormal trend. In general the GDP still increases, but at the slower paces. In 1998, Cambodia, consequently affected from the Asian financial crisis that had impact on all the countries of the region contributing to the collapse of the some national economies. Recovery in 1999 was very fast because Cambodia did not have sophisticated economic structure that was destroyed overnight like many emerging countries in Asia for example, Thailand, Indonesia and South Korea. The year of 2000 was the best in terms of growth with the national economy to grow by 7%.

Despite the fact that Cambodia had less impact from Asian financial crisis and was an investment pool in Asia, growth in GDP was not sustained for longer period. Decline in growth rate of GDP was mainly due to from the undeveloped infrastructure[111]. Streets are poorly developed, or mostly not at all. The country has only one deep-water port, where it suffocates from poor cargo handling system. Telecommunication is also considered very inadequate, and not yet developed to fulfil business' needs. Consequently,

[111] The Economist Intelligence Unit, *'Country Profile Thailand 2006'*, available from Economist Intelligence Unit Database, viewed on 26 October 2006, p.20

from 2000 onwards, GDP growth declines reaching in 2004 the level of 4% which is the lowest the last nine years.

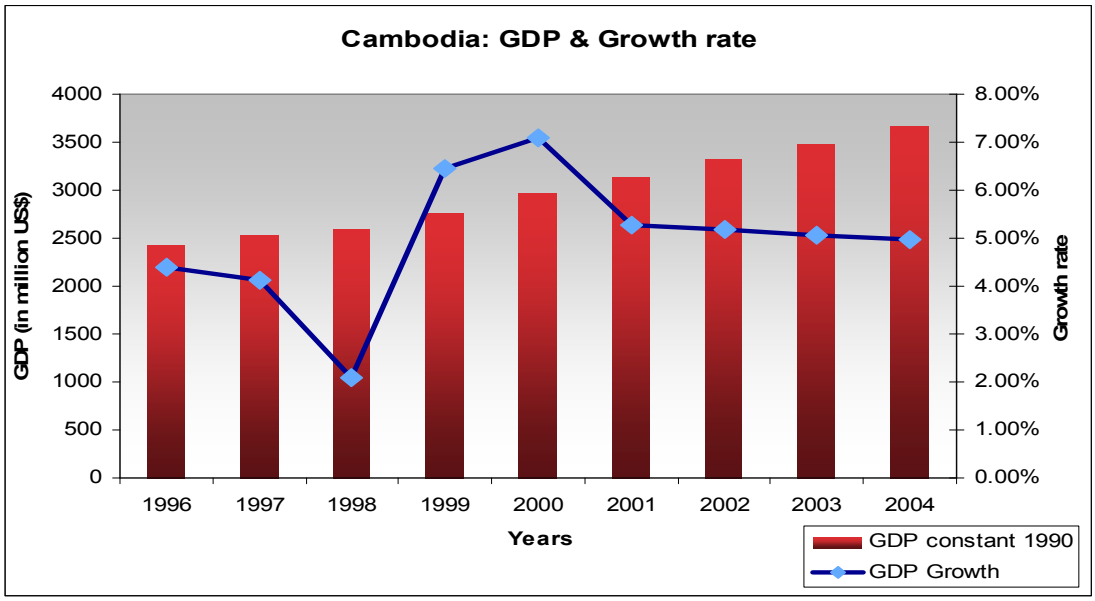


Figure 5.10 GDP (in million US$) and growth rate (in %) *(Data from UN Statistics: www.unstats.un.org, viewed on October 25, 2006)*

The unemployment rates for the literate and illiterate persons are 7.3% and 5% respectively at the country level[112]. These number shows one interesting fact that Cambodia's economic structure is labour-intensive. Agriculture employs the most labour force around 75%.

5.3.3 Business environment

Market Attractiveness

After joining WTO, Cambodia has better image to foreign investors. Being a membership of WTO guarantees that regulations in Cambodia will comply with WTO's requirement and any disputes will be solved with standardised rules of WTO. Besides, Cambodia attracts investors by abundant of natural

[112] Cambodia Inter-Censal Population Survey (CIPS), *2004 Labour Force and Employment*, http://nis.gov.kh/SURVEYS/depth-cips04/lfe-cips/summary_lfe.htm, viewed, 26 October 2006

resources. Timber, gold, and recently oil have not yet been exploited by business usage. Labour cost is lower compared to its neighbors—Thailand and Vietnam.

Despite these attractive factors, investment in Cambodia can be more difficlut than it seems. Corruption in Cambodia is ranked 130th (out of 158) in 2005 among Congo and Papua New Guinea[113]. Cambodia earns 2.3 points (out of 10) for transparency performance, which is among the lowest in the region[114]. From this survey, high corruption can impede an investment or make the cost higher than usual.

However, tax charged in doing business is rather low compared to other countries in ASEAN. With 12 payments, 121 hours of tax administration, and 22.3 percent for total burden on tax[115], investors should be beneficial from such taxation.

Setting up new business in Cambodia is relatively difficult. The whole process involves 10 procedures and normally takes 86 days to complete all the process. Enforcing contract process in the country can take 31 procedures and demand enforcing period of 401 days[116].

Furthermore, basic infrastructure in business like roads, ports and communication system are severely inadequate. The Economist even stated "Cambodia's transport infrastructure is in a serious state of disrepair"[117].

---

[113] Transparency International, 'Corruption Perception Index 2005', available on: http://ww1.transparency.org/cpi/2005/cpi2005.sources.en.html#cpi, viewed on 31 October 2006

[114] ibid.

[115] Doing Business, "*Doing Business 2007 - How to Reform", Available from Internet, http://www.doingbusiness.org/main/country-data-summaries.aspx* viewed on 31 October 2006

[116] ibid.

[117] The Economist Intelligence Unit, *'Country Profile Thailand 2006'*, available from Economist Intelligence Unit Database, viewed on 26 October 2006, p.17

Telecommunication system is scarce, and internet is used minimally in Phnom Penh only, not all the country.

Labour cost in Cambodia is low but the cost of development labour into proper human resources is not going to be low and not easy[118]. Without good basic education system, investors will find a lot of unskilled workers which will add hidden cost to investments.

Membership in International Organisations

Surprisingly, Cambodia is accepted as WTO member in 2004[119], while its fast-growing neighbour, Vietnam, is struggling with the process. However, Cambodia might not truly benefit from WTO as it might expect. Foreign investors will be drawn into Cambodia and leave no room for Cambodian businessmen to grow up. To fully benefit from WTO, Cambodia also has to invest heavily in infrastructure and reform its regulations to comply with WTO's requirement[120]. This process will take some time for Cambodia. Within the region, Cambodia is a member of ASEAN since 1999. However, Cambodia does not involve in AFTA.

---

[118] S. Puri, 'Cambodia's WTO Accession: Risks and Benefits', World Bank Institute The World Bank, available on the internet, http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/CAMBODIAEXTN/0,,contentMDK:20251732~pagePK:141137~piPK:217854~theSitePK:293856,00.html, viewed 27 October 2006

[119] World Trade Organisation (WTO), *Understanding WTO: Member list*, http://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm, viewed 26 October 2006

[120] S. Puri, 'Cambodia's WTO Accession: Risks and Benefits', World Bank Institute The World Bank, available on the internet, http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/CAMBODIAEXTN/0,,contentMDK:20251732~pagePK:141137~piPK:217854~theSitePK:293856,00.html, viewed 27 October 2006

5.3.4 Downstream Oil Industry

Refineries

Cambodia does not have its own refinery. All the products consumed in the domestic market are imported from other countries in the region.

Ports

Cambodia is not surrounded by the sea, and therefore, access to the sea is limited. Cambodia has only one deep-water sea port. The port is called Kampongsom or Sihanoukville interchangeably. Sihanoukville was founded as the only "sea exit" of the country. Sihanoukville is capable to handle both oil tankers and container vessels. For oil jetty, it can only handle small ships due to its small size. The berth length is 53 meters. Maximum draft allowance for vessels is 4.2 meters. Maximum DWT allowed is 2,500 DWT. Discharging equipment is rather old. Thus, operation time at port consumes a lot of time. Port is one aspect of under developed infrastructure[121].

Retail Industry and Distribution

Total, Shell, and the Thai PTT are the only foreign companies in downstream oil industry in Cambodia. There is no restriction in investment, but the problem is the high import taxes, which drive the prices so highly in the central Cambodia where the smuggling is limited. Consequently, smuggling pours in from cheaper locations like Thailand and Vietnam, and central government has no direct intention to interfere these flows. This problem is actually very serious that Total and Shell are now considering divest their investments. PTT, as the Thai company, benefits from these smuggling activities because PTT can sell directly from Thai border into Cambodia. This paradox of "high

[121] Lloyd's register, *FairPlay*, CD-ROM, 2003, database

import taxes" and "smuggling" will surely prevent development in downstream industry[122].

5.3.5 Energy Demand Overview

Cambodia's electricity generation capacity is severely inadequate from the civil war, and government has not invested to reform this capacity. Therefore, energy consumed mostly comes from the use of diesel to generate electricity or other sources of energy like kerosene and woods to create lights in households. Statistically, less than 15 percent of Cambodian household has access to electricity[123]. Cost of electricity is the highest in the region due to the fact that electricity is generated from high and volatile price diesel. As a consequence, Cambodia consumes a lot of fuel wood energy.

5.3.6 Cambodia's Current Country Situation Summary

Cambodia's politics shows strong dilemma. On one hand, administration under Hun Sen and CPP is very firm. On the other hand, Hun Sen dominated the country and politics for the past 10 years, and this trend seems to continue. This kind of democracy must be handle with care. Joining WTO improves image of Cambodia to the world. Foreign investors can be sure that regulations are regulated by WTO. Infrastructure will prohibit huge investments in Cambodia. Downstream oil industry is on the verge of declining because of high import taxes and smuggling. Foreign oil companies cannot make profit from their investments and looking to move their capitals out of the country.

---

[122] Mr. Seri Viriyasakultorn, Director of Horizon Petroleum Limited, Thailand, Personal interview, 12 October 2006

[123] United Nations (UN), *Economic and Social Development: Cambodia*, available on the internet, http://www.un.org/esa/agenda21/natlinfo/countr/cambodia/energy.pdf, viewed 10 June 2006

5.4 Malaysia

5.4.1 Politics

Political Situation and Recent Developments

Malaysia is a federation of thirteen states in Southeast Asia. The country is composed of two noncontiguous geographical regions separated by the South China Sea, which are West Malaysia or Peninsular on the Malay Peninsula and the East Malaysia on the island of Borneo[124]. The total size of the country is 330 thousands sq km with a total estimated population of 26.64 million inhabitants[125]. Putrajaya is the newly established administrative centre while Kuala Lumpur is still referred as the capital city[126]. Malaysia's population consists of different ethnicities with the major being Malays, followed by Chinese and Indians. The official language of the country is Malay (Bahasa Melayu) whereas there 139 living languages and dialects in total throughout the country[127].

Since the end of 18th century and for next 170 years Malaysia was under the control of the British which turned to be an important colony settlement. On 31st of August in 1957, the Federation of Malaya gained its independence and in 1963 with the addition of Sarawak, Sabah and Singapore the new Federation of Malaysia was established. Two years later Singapore withdrew

---

[124] CIA World Fact Book website, available on https://www.cia.gov/cia/publications/factbook/geos/id.html, viewed on 25 October 2006.

[125] Department of Statistics Malaysia, http://www.statistics.gov.my, viewed on 25 October 2006

[126] CIA World Fact Book website, available on https://www.cia.gov/cia/publications/factbook.html, viewed on 25 October 2006.

[127] The Economist Intelligence Unit, *Malaysia Country Profile 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.3-6.

from the Federation and since then the structure of Malaysia hasn't changed[128].

Malaysia is a federal parliamentary democracy with a constitutional monarch within the Commonwealth nations. The head of the state is the King who is being elected every five years amongst the nine Sultans of Peninsular Malaysian states. The federal government is responsible for the foreign policy, defence, internal security, the administration of justice and citizenship and is headed by the prime minister whilst the different political parties are based mainly on the ethnicity or different religion. All thirteen Malaysia's states have an Executive Council that deals mostly with non-federal issues whereas the states of Sabah and Sarawak enjoy a higher level of self-governing[129].

Regarding the recent political scene it is worth mentioning the retirement of Dr Mahathir in 2003 who had served as prime minister and president of the United Malays National Organization (UMNO) the largest political party of the country that has ruled the country since its independence. His successor Mr Abdullah led UMNO to a new elections victory in 2004 grounding his political agenda on a moderate Islam and anti-corruption measures[130].

Security Risk

Malaysia's main issue that causes internal tensions is driven by the ethnic diversity. The Malay majority, almost half of the population, holds a constitutionally protected important role in society and also has more rights than the Chinese and Indian minorities. This situation creates tension and instability within the country between the different ethnicities as there are

---

[128] CountryWatch, *'Country Review 2006: Malaysia',* available from Business Source Premier, viewed on 25 August 2006 p.7-10.

[129] CountryWatch, *'Country Review 2006: Malaysia',* available from Business Source Premier, viewed on 25 August 2006 p.8-15.

[130] CountryWatch, *'Country Review 2006: Malaysia',* available from Business Source Premier, viewed on 25 August 2006 p.8-15.

significant discriminations in everyday's aspects. The major challenge for the country is to treat all their citizens equally and produce enough wealth sufficient for all ethnic groups in order to avoid an outbreak of racial violence and social unrest[131].

International Relations

Under Mr Abdullah's head in the office, Malaysia has changed its foreign policy, slightly improving its international relations. Relations with Indonesia are fairly good although there has been lately a tension due to illegal immigration issues, Indonesia's failure to deal with domestic terrorism and Malaysia's decision to grand an oil concession to Royal Dutch Shell in disputed waters of Sabah.

Malaysia had always tense relations with Singapore regarding issues like pricing Singapore's water supply and airspace restrictions. However Mr Abdullah has disclosed his intentions to work closer with Singapore in order to solve at least minor issues that have agonize their relations, although Malaysia's decision to stop the construction of a bridge connecting the two countries marked a serious setback[132]. Furthermore Malaysia has lately improved its relations with US on the basis of co-operation in the war against terrorism[133].

---

[131] The Economist Intelligence Unit, *Malaysia Country Profile 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.8-14.

[132] The Economist Intelligence Unit, *Malaysia Country Profile 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.12.

[133] The Economist Intelligence Unit, *Malaysia Country Profile 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.12.

5.4.2 Economics

Economic Structure and Performance

Malaysia has, over the past decades, industrialised swiftly transforming its economy from agricultural based to manufacturing and service oriented[134]. As it is shown in figure 5.11 the agricultural sector accounts for 5.8% of the total GDP having a downward trend over the last 10 years. The main agricultural products include cultivation of food commodities and products like palm oil and rubber meant for export. The mining sector plays a crucial part in Malaysia's economy as it accounts for 31.6% of the GDP given that there is abundance of mineral resources in the country. Malaysia has considerable reserves of tin and extensive deposits of mineral fuels especially natural gas but less of crude oil and a small exploitable quantity of coal concurrently tin reserves are also extensive[135]. Manufacturing represents an important 21.8% of the GDP whilst almost 75% of manufacturing is generated by export-oriented industries specialized in electronics and electrical equipment.

The construction's sector share of GDP remains weak, only 2.5% in 2003, having a declining trend due to cancelled infrastructure projects following the Asian financial crisis. Transportation, storage and communication sector generates also a small percentage of GDP, 5.5% in 2003 but following a small scaled steady growth as a result of increased port activities and higher demand for mobile phones and Internet services.

On the other hand the domestic trade (wholesaling, retailing) and tourist industry registered a significant 10.6% share of GDP in 2003 as a result of

---

[134] K.S Nathan, 'The challenge of money politics and religious activism' in Daljit Singh & Lorraine C. Salazar (eds), Southeast Asian Affairs 2006, ISEAS Publications ,Singapore, 2006, pp. 161-166.

[135] John C. Wu, *'The mineral industry of Malaysia'*, available on http://minerals.usgs.gov/minerals/pubs/country/1995/9318095.pdf, viewed on 17 August 2006.

increased consumption and the continuing increase of tourist arrivals in the country that is turning tourism as one important source of economic growth. Additionally other activities including part of intermediate services sector has experienced a positive growth over the years providing a remarkable 22.4% of GDP in 2003, led mainly by the strengthening of the financial and banking sector.

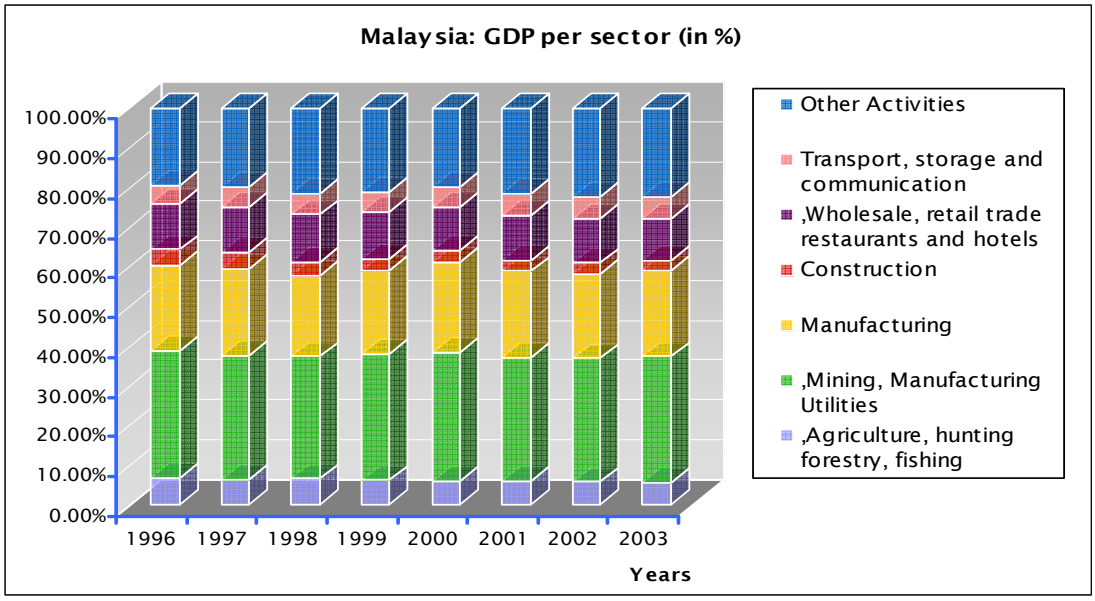


Figure 5.11 GDP per sector (in %) *(Data from UN Statistics: www.unstats.un.org)*

The figure 5.12 illustrates the GDP and GDP growth rate of Malaysian's economy over the last ten years. Malaysia had developed a strong economy prior to the Asian financial crisis, achieving high GDP growth rates mainly driven by its manufacturing and external trade sector. However like most of the countries in the region, Malaysia was severely affected by the regional crisis resulting in an almost 8% shrinkage of the economy in 1998. In contradiction with other affected countries Malaysia followed an unconventional policy with the purpose of recovering from the crisis. Malaysia's prime minister snubbed IMF assistance and shaped his own

reformation policies known as the "Sinatra policy"[136]. The results were imminent and the economy bounced back immediately in the next two years achieving a GDP growth rate of around 6% and 8% respectively. The fact that Malaysia's economy was defenceless against international crisis due to lack of diversification, was reflected in 2001's GDP growth slow down as a result of the international economic uncertainty. Notwithstanding the unfavourable global economy, Malaysia managed to recover quickly performing a 4% GDP growth rate in 2002. Since then the country has achieved a vigorous economic growth resulting in a constant low unemployment rate trend of an averaged 3.5% per year[137].

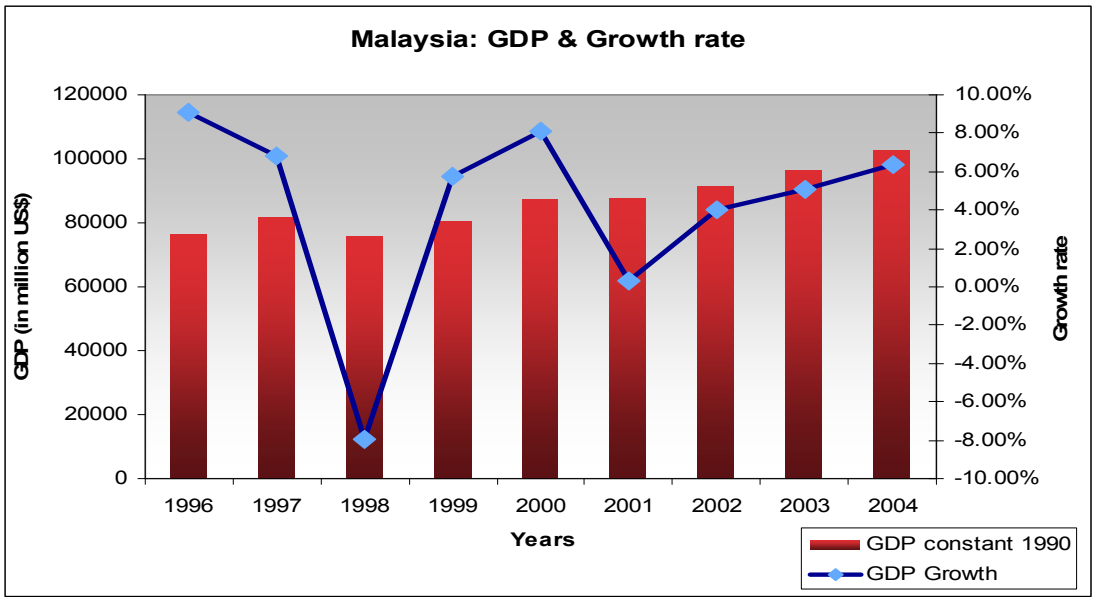


Figure 5.12 GDP (in million US$) and growth rate (in %) *(Data from UN Statistics: www.unstats.un.org, viewed on October 25, 2006)*

[136] Data monitor, *'Malaysia Country Profile 2005',* available from Business Source Premier, viewed on 25 September 2006 p.8-15.

[137] Asian Development Bank, *"Country Strategy and Program Malaysia 2006-2009"* , available from Internet, http://www.adb.org/Countries/, viewed on 29 October 2006

5.4.3 Business Environment

Market Attractiveness

Malaysian development over the past decades has transformed the country to a favorable place in Asia in which to do business providing an attractive and competitive business environment for domestic and foreign investments. Corruption remains a problem in the country even though Anti-Corruption Agency has commenced a number of investigations in order to cope with it. The legal system has been significantly improved during the last decade although it is common for foreign companies doing business in Malaysia to make clear in the contracts that any lawsuit will be judged in foreign courts[138]. According to the CPI 2005 Malaysia is ranked 39th least corrupted nation (out of 158) scoring 5.1 points (out of 10) evidencing the county's reasonable transparency performance[139].

Malaysia is keeping a relatively favorable tax structure with the corporate taxes being competitive compared to the other countries in the region. World Bank has reported that an entrepreneur in Malaysia has to make 35 tax payments; the administrative burden of paying taxes is 190 hours and the total tax rate runs into 35.2 % of the profits[140].

Starting a new business in Malaysia is simple and quick whereas regulations and red tape remain a considerable issue[141]. According to the World Bank it

---

[138] The Economist Intelligence Unit, *Malaysia Country Commerce 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.8.

[139] Transparency International, 'Corruption Perception Index 2005', available on: http://ww1.transparency.org/cpi/2005/cpi2005.sources.en.html#cpi, viewed on 31 October 2006

[140] Doing Business, "*Doing Business 2007 - How to Reform", Available from Internet, http://www.doingbusiness.org/main/country-data-summaries.aspx* viewed on 31 October 2006

[141] Business Monitor International, *Oil and Gas Report Indonesia Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.20-22

takes 9 procedures and an average of 30 days to start a business in Malaysia while the procedure of commercial contracts enforcement involves 31 procedures and 450 days in order to complete[142].

Although the Malaysian government can be characterized as interventionist in the economy has also achieved to support the growth of private industry. The country had undertaken major deregulation and privatization programs since 1980's although there are still state owned enterprises dominating important economic sectors like the petroleum, electricity and telecommunications industry[143]. Furthermore in the shipping sector, Malaysia is applying cabotage rules in order to secure coastal trades for vessels under the Malaysian flag. During the last years the government in an attempt to promote the country as a shipping hub has significantly relaxed cabotage rules to allow foreign shipping companies to carry transhipment cargo between selected ports within the country[144].

Malaysia is generally open to FDI, although in many sectors foreign companies can hold a restricted amount of shares and joint ventures with domestic enterprises are normally used. Sectors where FDI restrictions are relaxed include financial services, agriculture and construction while in the oil and gas industry that the regulations are strict FDI is achieved mostly through production sharing agreements (PSA) with the state owned company[145]. According to the Malaysian Industrial Development Authority (MIDA) the FDI increased by M$1.5bn in 2005 counting for M$25bn[146]. The main investors in

---

[142] Doing Business, "*Doing Business 2007 - How to Reform", Available from Internet, http://www.doingbusiness.org/main/country-data-summaries.aspx* viewed on 31 October 2006

[143] The Economist Intelligence Unit, *Malaysia Country Commerce 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.13-14.

[144] PDP Australia Pty Ltd/Meyrick and Associates, '*Promoting Efficient and Competitive Intra-ASEAN Shipping Services' – Indonesia Country Report,* p.2 (REPSF Project No. 04/001)

[145] Business Monitor International, *Oil and Gas Report Indonesia Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.22-23

[146] The Economist Intelligence Unit, *Malaysia Country Commerce 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.20-22

the country for 2005 were US, the UK, Japan and Germany while the most attractive industries were oil and gas, manufacturing and the financial sector[147].

Membership in International Organizations

Malaysia is a member of various international organizations in the economic and trading sector. Malaysia became a member of WTO on 1st of January in 1995[148]. The country is also a founding member of the ASEAN and APEC forum since 1967 and 1989 respectively as well as a member of the AFTA trade agreement.

Most important affiliations in economic and trading terms include membership in organizations as WTO since 1st of January in 1995[149] as well as APEC forum[150]. Malaysia is also one of the five founding members of ASEAN and AFTA trade agreement[151].

5.4.4 Downstream Oil Industry

Refineries

The downstream oil industry in Malaysia is liberalized which makes it possible for private companies to run their own refineries. There are six refineries operating in Malaysia with a total crude processing capacity of 545.000 b/d

[147] Business Monitor International, *Oil and Gas Report Indonesia Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.23

[148] WTO Website, http://www.wto.org/, viewed on 31 October 2006.

[149] WTO Website, http://www.wto.org/, viewed on 31 October 2006.

[150] APEC Forum Website, http://www.apec.org/, viewed on 31 October 2006.

[151] ASEAN Secretariat Website, http://www.aseansec.org/, viewed on October 31, 2006

(2005)[152]. Petronas, the state owned company, runs three refineries with a total combined capacity of 259.000 bbl/d, Royal Dutch Shell operates two refineries with a combined capacity 200.000 bbl/d and Esso Malaysia (ExxonMobil) operates one refinery with a capacity of 96.000 bbl/d. The processing capacity and the location of its refinery are presented in table 3.b[153].Malaysia's total refining capacity has been increased from 263.000 bbl/d in 1992 to 545.000 bbl/d in 2004 whereas the average refining utilization rate reached 81% in the same period[154].

	Location	**Capacity**
Esso Malaysia Berhad	Port Dickson	86.000
Petronas	Kertih	40.000
Petronas Melaka I	Melaka	92.832
Petronas Melaka II[155]	Melaka	126.000
Sarawak Shell Berhad(LPG)	Lutong	45.000
Shell Refining Co. Berhad	Port Dickson	155.000
Total		**544.832**

Table 5.2 Refinery Capacity for Indonesia (2005) (in bbl/day)

(Source: Worldwide Refining Capacity, *Oil and Gas Journal*, December 19, 2005)

[152] 'Worldwide Refineries-Capacities as January 1 2006',available from *Oil & Gas Journal,* 19 December 2005, viewed 5 September 2006

[153] Worldwide Refineries-Capacities as January 1 2006',available from *Oil & Gas Journal,* 19 December 2005, viewed 5 September 2006

[154] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC downstream oil market study* 2005, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, pp.60-61

[155] Petronas Melaka II is a joint venture among Petronas (45%), Conoco (40%) and Statoil (15%)

Ports

Malaysia has a number of ports around the country due to its geographical location that favours trading and the extensive shoreline. The main ports of the country that serve as oil terminals and can handle petroleum products are described as follows:

Kerteh Marine Terminal is located on the East coast of the Malaysian Penninsular. The marine facilities consists of three single buoy mooring systems (SBM), two of them are owned by Esso and serve as crude oil terminals while the third one is owned by Petronas and is used for loading refined petroleum products. Kerteh Terminal can handle SALM (Single Anchor Leg Moor) vessels range from 15.000dwt to 85.000dwt (partially loaded) with loaded draft from 8.8m to 11.1m that can be loaded with a maximum loading rate of 20.000 bbls/hr as well as CALM oil tankers between 60.000dwt and 250.000dwt that an be loaded with a maximum loading rate of 40.000bbl/h[156].

Sundgai Udang port is situated on the West coast of the Malaysian Peninsula in the Malacca Straits. The port serves the Melaka refinery of Petronas for handling crude oil and petroleum products and is operated by Sungai Udang Port Sdn Bhd, a subsidiary of Petronas. The port has nine berths in total that can handle different type of ships. Specifically the port has: 2 coastal berths for vessels of 2,000-10,000dwt, 2 coastal berths for vessels of 2,000-7,000dwt, 1 LPG berth for vessels of 1,000-6,000dwt, 2 ocean berths for vessels of 20,000-120,000dwt, 1 bulk cargo berth for vessel of 5,000dwt and 1 SBM for vessels of 100,000-300,000dwt. The port can handle ships of maximum 17.3m loaded berth except for the SMB that can handle ships up to 22m loaded draft[157].

Johor port is located on the East shoreline of the Johor Straits and is an important gateway of Malaysia. Johor port is located in a Free Zone and is

[156] Lloyd's register, *FairPlay*, CD-ROM, 2003, database

[157] Lloyd's register, *FairPlay*, CD-ROM, 2003, database

surrounded by a huge industrial complex. The port is the biggest palm oil port of the country but it can also handle loading and discharging of petroleum products. Johor port can handle vessels up to 60.000dwt with a maximum draft restriction of 11.6m.

Port Dickson is located on the West coast of Malaysia Peninsular on the Malacca Straits. Port Dickson is mainly an oil port where Esso and Shell are operating owning their's jetties. Esso operates two jetties one for gas and the other for petroleum products while Shell operates three jetties for loading and discharging petroleum products and one SBM berth for discharging crude oil. Esso jetties can handle vessels of maximum 21000dwt with a draft of 9.7 m while Shell's jetties can handle vessels ranges from 6000 DWT to 14000 DWT with a maximum loaded draft of 10.5 m and the SBM berth vessels of up to 150.000 DWT with a draft of 15m[158].

Retail Industry and Distribution

The retail price of motor gasoline, diesel and liquefied natural gas in Malaysia is subject to price subsidies although the government is trying to gradually reduce them[159].Petronas Dagangan Bhd, one of Petronas subsidiaries, is responsible for the marketing of petroleum products and the operation of the almost 600 service stations. Its main competitors in the retail sector are Shell (850 franchises), Caltex (300 franchises), and BP (270 franchises)[160].

[158] Lloyd's register, *FairPlay*, CD-ROM, 2003, database

[159] Bill Guerin, "Tigers count the cost of easing fuel subsidies", *Asia Times Online*, 10 March 2005

[160] Global Insight, 'Global Insight Report: Malaysia (Energy)', available from Business Source Premier, viewed on 22 September 2006 p.11

5.4.5 Energy Demand Overview

In 2003, total final energy consumption (FEC) in Malaysia was about 35 Mtoe. As it is shown in figure 3.13 the transport sector consumed 41% of this total, followed by the industrial sector at 39% and other sectors (agriculture, residential / commercial and non-energy) at 20%. In figure 3.14 it is illustrated the by fuel source consumption of the country in 2003. Petroleum products contributed the largest share with 61% of consumption followed by electricity (18%), gas (17%) and coal and coke (4%)[161].

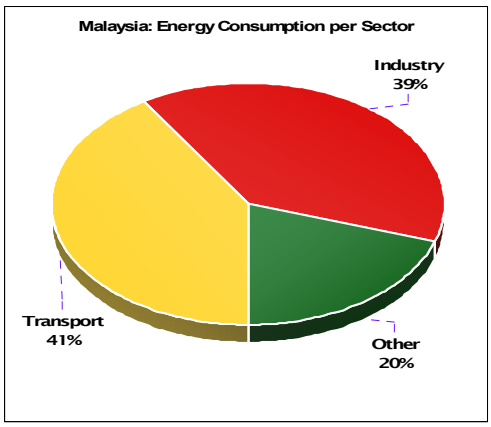


Figure 5.14 Energy Consumption per in Malaysia by Sector (source: APEC)

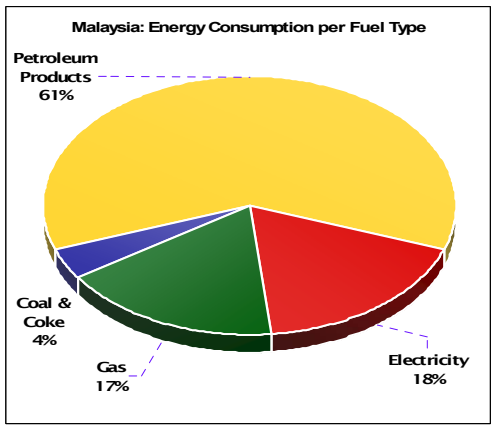


Figure 5.13 Energy Consumption per Fuel Source in Malaysia (source: APEC)

5.4.6 Malaysia's Current Country Situation Summary

Malaysia is multi-ethnic and multi-cultural federation of thirteen states in Southeast Asia governed by a federal parliamentary democracy with a constitutional monarch within the Commonwealth. Malaysia is separated into two main districts, West and East Malaysia, by the South China Sea and its population consists of many different ethnicities, mainly Malays, Chinese and Indians. Internal tensions are driven by the ethnic diversity and the inequality between the different ethnicities. Malaysia's international relations with its direct neighbours have been in tense although they have been slightly improved during the last years.

---

[161] Asia Pacific Energy Research Centre (APERC) , *APEC Energy Overview,* 2005, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, p.91

Malaysia experienced, during the last decade, a broad diversification of its economy, rapidly transforming its agricultural economy to a highly industrialised and service oriented economy. Malaysia had developed a strong economy prior to the Asian financial crisis achieved partly through privatization of ineffective public companies and then followed an alternative policy in order to recover from the crisis, managing finally to achieve a steady economic growth since 2002.

Malaysia has been transformed to an open economy as well as an attractive place in Asia in which to do business providing a competitive business environment for both domestic and foreign firms. Malaysia is generally open to FDI and provides significant incentives for foreign companies to invest in the country. The most attractive industries for foreign firms are the oil and gas, manufacturing and the financial sector. Malaysia is a member of WTO, APEC, ASEAN and AFTA.

The downstream oil industry in Malaysia is liberalized and there are six refineries operating in the country three of them owned by the state owned company Petronas, the next two by Royal Dutch Shell and the last one by Esso Malaysia. The refined products are partly used for the domestic market and the rest for exports. The retail market is open to foreign companies although oil prices are being subsidized.

5.5 Philippines

5.5.1 Politics

Political Situation and Recent Developments

As the archipelago struggled through 300-years colonization under Spanish rule, the USA took control of the more than 7,000 islands in 1898. In 1946, the 76,5 million Filipino's gained independence over the USA, after being occupied by the Japanese during World War II. In the period that followed, a turbulent political situation characterized the political situation. One person has dominated recent politics from 1965 until 1981: Ferdinand Marcos.[162] He tried to reform public works to enhance the quality of life, partially successful, but in his second term, growth slowed and communism was on the up rise, leading to declaring martial law from 1972 until 1981 and a period of high corruption. As Benigno Aquino, Marcos main rival, had been assassinated in 1983 after 8 years of imprisonment, his widow Corazon Aquino managed to follow-up Marcos. After her, Ramos, not allowed to run for second term and Estrada, had to leave office before end of term, won elections based on popularity but did not manage to set a footprint. Gloria Macaparal-Arroyo[163] is the current President now in her second term, again heavily disputed for the fact that she nurtures the current corruptive legislation.[164]

In this current situation there are two things especially noticeable politically as a weakness. The first one is, in order to get things done, citizens need to get

---

[162] CountryWatch, *Philippines Country Review 2006*, p.9-10, available from Business Source Premier, viewed on November 1, 2006

[163] The Economist Intelligence Unit, *'Country Report Philippines July 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.12

[164] Library of Congress – Federal Research Division, *Country Profile Philippines, July 2006* p.16-17, available on: http://lcweb2.loc.gov/frd/cs/profiles/, viewed on October 30, 2006

passed a legislature led by Philippines' old landed families and new 'showbiz' celebrities and business tycoons. Secondly, the military is above politics, which leads to awkward situations and internal tensions and mutinies.[165]

Security Risk

There are three groups that can threaten the political security in Philippines. The Moro Islamic Liberation Front that is active on southern islands, which want peace as much as the government and the communist New People's Army could collapse leading to an escalation in armed conflict. Abu Sayyaf[166], said to have ties with Al-Qaida, and other smaller groups are expected to have kidnappings and bombings in the near future, as the only things they want to settle for in an independent Muslim entity.[167]

International Relations

Philippines have close ties with the Middle East, where the biggest part of its 7 million overseas workers are stationed. To expand its relationship, the Philippines are applying to be an observer in the Organization of the Islamic Conference. The close ties with the USA remain and the USA considers the Philippines an important ally in the war on terrorism.

Indonesia and Malaysia have joined forces with the archipelago to fight threats of the Islamic terrorist group Jemaah Islamiyah. Malaysian ties are still a bit impaired as disputes over the Malaysian state Sabah still raise arguments between the countries. The relations with China are improving but

---

[165] Business Monitor International, *Oil and Gas Report Philippines Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.7

[166] Business Monitor International, *Oil and Gas Report Philippines Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.7

[167] The Economist Intelligence Unit, *'Country Report Philippines July 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.16

still fragile. Problems with possibility of improvement are the USA as an ally and disputes over the natural resource rich Spratly Islands in the South China Sea.[168]

Singapore and Philippines shares a close relation with the USA, politically and economically and has joint military training exercises. Australia is an important security and economic partner. Japan is like the USA the main trading partner of the country and helps with the development.

Summary

After a long period of political instability Philippines under the leadership of the president Arroyo put huge efforts on the creation of a steady environment free of political tensions. The most important threat that prevents this effort is the violent demonstrations of three ethnic groups. Realizing the importance of the international relations in economic and political terms, Philippines have strengthened the relations with many countries including USA and Middle East region.

5.5.2 Economics

Economic Structure and Performance

The national economy of Philippines is mainly based upon mining, agriculture, manufacturing and supporting services[169]. It is well presented in the below graph that these four main sectors have remained in the same levels for the last nine years with only minor changes. Looking into each sector individually agriculture contribution to the total GDP is almost 16% without fluctuations within the analysed period. Mining is the main sector of the economy with rate

[168] Library of Congress – Federal Research Division, *Country Profile Philippines, July 2006* p.21-22, available on: http://lcweb2.loc.gov/frd/cs/profiles/, viewed on October 30, 2006

[169] Datamonitor, The Philippines Country Profile, available from Business Source Premier Database, viewed on 25 August, p.20.

of 22% and mainly to the discovery of new oil reserves within the sea area of the country. Manufacturing represents around 20% whereas the supporting services consist around 18% of the total GDP. During the last years the call-centres have been the main attraction for foreign investments[170].

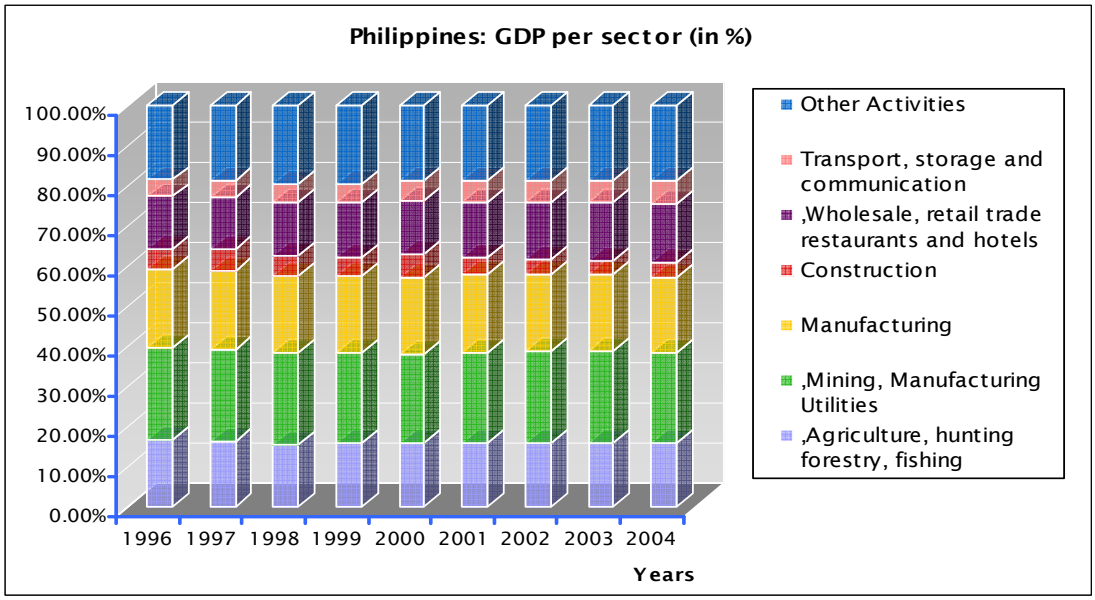


Figure 5.15 GDP per sector (in %) *(Data from UN Statistics: www.unstats.un.org)*

Analysing the GDP growth during the last nine years seems that the economy of Philippines has an upward trend, with two downfalls in 1998 and in 2001 due to crucial world events. Especially in 1998 the national economy was hit by the Asian financial crisis which resulted to the reduction of GDP growth by 9%. This decrease was low compare to the other Asian countries because of the low national dependence on foreign portfolio at that time[171]. The economy recovered immediately after the crisis showing significant growth in 1999 with almost 6,5% and 8,5% in 2000.

In 2001, Philippines had to face another global crisis which stopped again the growth of the economy. The economic consequences in the global community

---

[170] Business Monitor International, *Oil and Gas Report Philippines Q2 2006*, available from Business Monitor International Database,viewed on 27August 2006, p.8

[171] CountryWatch, *Philippines Country Review 2006*, p.39-41, available from Business Source Premier, viewed on November 1, 2006

after the attacks in New York affected heavily the growth of the national economy. In that year the growth rate shows a downfall of 10%.

The years after these two crises shows to be a period of economic boom for the country mainly based on the development of local call-centres. The GDP growth in 2004 reached the level of 8% one of the highest in the region.

Figure 5.16 GDP (in million US$) and growth rate (in %) *(Data from UNStatistics :www.unstats.un.org)*

5.5.3 Business Environment

Market Attractiveness

As far as the business environment of Philippines is concerned, this cannot be included among the top destinations for foreign investment within the Southeast Asia region. The political instability, corruption, high taxes, and insufficient infrastructure are the main concerns that discourage the foreign

investors to risk their capital into the national market[172]. According to the CPI (2005) Philippines is ranked 117th (out of 158) with score of 2.5 (out of 10). The low score illustrate the weaknesses of the country to face the corruption among the officials[173].

The high corporate taxes have been a negative factor for the attractiveness of new foreign investment. According to the latest statistics of World Bank in order for a new company to start doing business in Philippines needs to spend 94 hours for 54 tax payments which in total reach the level of 53% of the final profit[174].

The simplifications of registration procedures by the Investment Board have contributed to the significant reduction of the needed time for the approval of a straight forward project. The current time to receive an approval is within ten days compare to two or three months that used to be in the past years[175].

In order to create a more attractive business environment the government of Philippines have legislated a series of laws. Especially with the Foreign Investments Act of 1991, full foreign ownership is allowed to any business activity except some few sectors that are still protected by the state sector[176]. The main sources of foreign investment in the country are, USA Japan, China, UK, the Netherlands and Switzerland.

---

[172] Business Monitor International, *Oil and Gas Report Philippines Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.7

[173] Transparency International: Corruption Perception Index 2005, available on, http://ww1.transparency.org/cpi/2005/cpi2005.sources.en.html#cpi,viewed on October 28

[174] Doing Business, "Doing Business 2007 - How to Reform", Available from Internet, http://www.doingbusiness.org/main/country-data-summaries.aspx viewed on 31 October 2006

[175] The Economist Intelligence Unit, *'Country Commerce Philippines 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.3

[176] The Economist Intelligence Unit, *'Country Commerce Philippines 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.12

Membership in International Organizations

Philippines is member in several international organisations including WTO since 1st of January in 1995[177]. Next to this the country is an official member of APEC forum aiming to the development of the economic relations with the countries of Asia-Pacific region[178]. Finally the Philippines is also one of the founding members of the ASEAN organizations, with a major role in the structure of this.

5.5.4 Downstream Oil Industry

The "Downstream Oil Industry Deregulation Act" in 1998 had as a result the total transformation of the downstream oil sector. The limitation of the requirements for licences encouraged many new domestic and foreign investors to invest in the industry contributing to the development of a free competitive market. At that time new gas stations, storage facilities and depots started to operate within the country resulting to the better coverage of the domestic demand in terms of product quality and providing services[179].

Refineries

The refining industry is not sufficient to cover the domestic demand for petroleum. Currently two refineries are operating in the country with combined capacity of 390.000 bbl/d. The biggest refinery is the one of Petron in Limay,

---

[177]World Trade Organisation (WTO), *Understanding WTO: Member list* http://www.wto.org/English/thewto_e/countries_e/philippines_e.htm, viewed on 26 September

[178] Apec Forum website, www.apec.org ,viewed on 24 September

[179] Philippines government website,http://www.doe.gov.ph/down_petro/default.htm,viewed on 14 October

Bataan with a rated capacity of 180,000 barrels a day[180]. The second refinery is owned by Shell Company and is situated in Tabangao area. The current capacity of Shell refinery is 110,000 barrels a day. The company started its refining operations in the country in 1962 with 30,000bbl/d while 7 years later its capacity became double. In 1995 due to the fact that the domestic demand was growing rapidly Shell started to operate its new refinery with the present capacity[181]. A third refinery owned by Chevron with capacity of 72.000bbl/d was in use until 2002 when the company decided to replace it with an advanced oil terminal.

Ports

The fact that the country of Philippines is a group of 7,000 islands make the port sector one of the most important for the development of the economy. A numerous of ports are located within the territory of the state. For the purpose of this research in this part will be discussed three main ports with liquid terminals.

Close to the capital of the country is located the port Manila with oil and non-oil handling operations. The oil terminal can handle tankers with 120m length while the maximum draft is 8,48m[182].

The biggest port in terms of maximum draft is Limay which is situated opposite of the capital. Limay is a grouping of three private ports and one government pier. Petron Bataan Refinery is the main operator of the oil

[180]Petron website, www1.petron.com, viewed on 27 October 2006

[181] Shell Philippines website, http://www.shell.com/home/Framework?siteId=ph-en, viewed on 23 October 2006

[182] Lloyd's register, *FairPlay*, CD-ROM, 2003, database

terminal which has berth length of 450m while the depth of the water is 15m. The maximum DWT allowed is 300,000 DWT[183].

Close to the region of Manila Bay the port of Mariveles is located with main operation the handling of petroleum products. The highly developed facilities of the oil terminal are able to receive special petroleum products such as jet fuel. The oil terminal is able to store 180,000 barrels of oil[184].

Retail Industry and Distribution

As it is mentioned above the deregulation of the industry has caused significant changes in the market. New companies started to operate contributing to the expansion of the retail network. The main player of the sector remains Petron with almost 1,200 stations within the country[185]. After the deregulation of the downstream oil industry the fuel prices are only interrelated to the fluctuations of the global oil prices.

5.5.5 Energy Demand Overview

As far as the final energy demand is concerned in 2003 was 17.707 ktoe. Transport is the sector, which consumes the highest percentage of the national energy with 49%. Industry sector is consuming almost 23% of the total energy while the rest 28% is mostly for residual and commercial needs[186].

---

[183] Lloyd's register, *FairPlay*, CD-ROM, 2003, database

[184] Lloyd's register, *FairPlay*, CD-ROM, 2003, database

[185] Petron website, www1.petron.com, viewed on 27 October 2006

[186] Asia Pacific energy research centre (APERC), *APEC energy overview 2005*, pp.129-131, Available from Internet, http://www.ieej.or.jp/aperc/ viewed 28 August

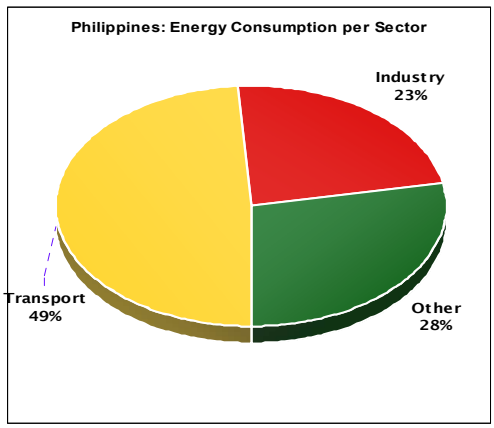


Figure 5.17 Energy Consumption per Sector in Philippines (Source: APEC)

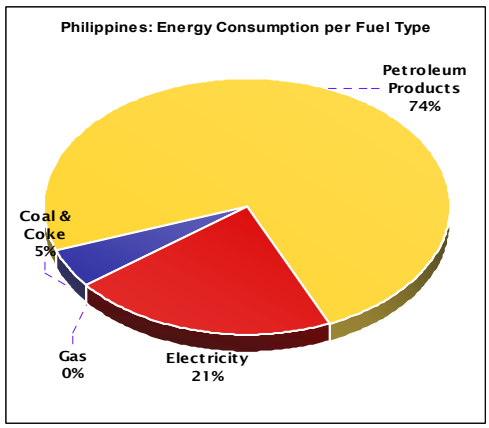


Figure 5.18 Energy Consumption per Fuel Source in Philippines (Source: APEC)

Looking into the final energy consumption by fuel type is easy to understand that Philippines is mainly based on the consumption of petroleum products with 74% of the total. Electricity is the second most important type of fuel that is consumed by the country consisting 21% of the total energy consumption. As far as the coal is concerned this is of low importance with only 5%[187].

5.5.6 Philippines Current Country Situation Summary

The unstable political environment remains a major problem for Philippines. Efforts by the government side to reduce the threat of violent demonstrations are not efficient so far. Ethnic groups are still a national threat for the country. Improvement of international relations has been a high priority for President Arroyo who has signed a series of agreements worldwide.

During the last years the national economy is following a steady upward trend with two fall-downs in 1998 due to Asian financial crisis and in 2001 due to the global consequences of the terrorist attack in New York. The establishment of several local call-centres have been one of the main reasons of growth.

[187] Asia Pacific energy research centre (APERC), *APEC energy overview 2005* , pp.129-131, Available from Internet, http://www.ieej.or.jp/aperc/ viewed 28 August

The business environment of Philippines is described as one of the most unattractive in the region. The efforts of the government to solve the problems of corruption and lack of infrastructure have not been efficient so far. The corporate taxes are among the highest within the region discouraging new companies to invest money in the country.

The Deregulation Act in 1999 has created a heavy competitive market with many companies. The main players of the industry are Petron and Shell Philippines. These players own the two present refineries with combined refining capacity of 390.000 bbl/d.

The energy demand of Philippines is growing parallel with the rapid development of the economy. The main sector of energy consumption in the country is transport with 49% of the total. Oil is the main type of fuel that is consumed within the country with 74% among all the used types

5.6 Singapore

5.6.1 Politics

Political Situation and Recent Developments

Singapore's independent political scene is rather brief, considering its gained independence from the British in 1959, after which a combined Malaysia was ruling the area for some years. Singapore and Sabah, on Borneo formed a merger after a referendum in 1962, ruling out the rest of Malaysia, but tensions lead to a full independent city-state in 1965[188]. Currently, the 4 million Singaporeans enjoy the most secure and stable political environment in the region[189].

The small 7,000 km^2 city-state on the Straits, once built up by the visionary Stamford Raffles, has become a leader on the political and economical scene due to one main person: Mr. Lee Kuan Yew. From independence until 1981, the 'regime' of the country has been a parliament democracy, although fully led by the People s Action Party (PAP), under the power of Mr. Lee. In 1981 two new members of parliament (MPs) have been allowed to be appointed, meaning that from this time onwards around two of the eighty-four seats were not filled by PAP. In 1990 Mr. Lee Kuan Yew stepped down as prime minister (PM), although his influence under Mr. Goh as PM was still visible in every part of the economy, as senior minister. In August 2004 Mr. Lee Hsien Loong, the eldest son of Mr Lee Kuan Yew, took the PM's seat over from Mr Goh, leading to appoint Mr Goh as senior minister and Mr Lee Kuan Yew as Minister Mentor (MM). Every election since 1981 was won by PAP, but the

---

[188] The Economist Intelligence Unit, *'Country Profile Singapore 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.4

[189] Business Monitor International, *Oil and Gas Report Singapore Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.7

last elections PAP won with around 60 – 70% of the votes, which is not reflected in the amount of seats in parliament. Due to this limitation in parliamentary freedom, CountryWatch[190] ranks Singapore as 'Partly Free', with bad scores on political rights and civil liberty for its citizens. This draws a clear picture that the Singaporean parliament is not a fully combative multiparty legislature. The President of the country, currently S. R. Nathan, has limited power and his power is even diminishing in the last terms, e.g. limiting the right to veto on bills that will limit his power even more. There is also a strong tie between PAP and the military forces.[191]

The main aim of the government is to maintain the attractiveness of the country as an economic hub and the same time to eradicate the reputation of being an over protective state[192]. Realizing the lack of natural resources, Singapore has focused on transforming the country into an international hub for services and products, of which a major part is the oil industry and trade, by stimulating companies to develop their production and trade facilities on Singaporean soil and offering locations on the scarce land to do this, e.g. by developing Jurong Island for the petroleum and petrochemical industry[193].

Security Risk

With regard to issues that will spark political instability, looking at the history of the island state, there are two issues worth mentioning; racial civil unrest and terrorist threat

---

[190] CountryWatch, *'Country Review 2006: Singapore',* available from Business Source Premier, viewed on 14 August 2006 p.12-14

[191] The Economist Intelligence Unit, *'Country Profile Singapore 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.4-14

[192] Business Monitor International, *Oil and Gas Report Singapore Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.7

[193] Mr. Lee Wei Sheng, Interview with Senior Officer of Economic Development Board Singapore, 6 September 2006

The first issue is racial civil unrest. In the past, Singapore has not been the stage of civil unrest for a long time, the last one being in the 1960s, which triggered the independence. Still, it is assumed if one thing would cause instability it would be racial difference in the small state. With a population majority of Chinese heritage and growing minorities of Malay (13,6%) and Indian (8.8%) background, the country tries to keep the stability by promoting the Singaporean identity as being one country one person and slowly allowing the minorities to have their vote, while prevailing the Chinese majority to 'rule' politics and economics.[194]

The second issue is related to this, terrorist threat. Within Singapore, the Muslims are a minority (Malay), whereas its neighbouring countries Muslims are a majority. This is not a problem as such, but Singapore's foreign policy alignment with the USA has let the fear grow that it will become a target of terrorist attack of Muslim extremists. To cope with this threat, Singapore has deployed MRT Police for the subway system and the National Security Coordination Secretariat, which will be scanning new threats for national security.[195] Having a closer look at Singapore's close relationship with the USA, with military ties expanding significantly, this may rile other Asian countries, making it harder to establish closer regional security ties.[196]

International Relations

Looking at the international relations of the city-state three connections will be pointed out, these with Malaysia, Indonesia and the focus of the country on the West and Japan.

Singapore has long had a difficult relationship with Malaysia, its closest

---

[194] The Economist Intelligence Unit, *'Country Profile Singapore 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.11,15

[195] Terence Chong, 'Singapore: Globalizing on its own terms' *Southeast Asian Affairs 2006* p.270

[196] Business Monitor International, *Oil and Gas Report Singapore Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.7

neighbour, with disputes centred on the earlier mentioned crucial water supply, the position of the Malaysian passport control in the Tanjong Pagar railway station and the extent to which the Singaporean air force can over-fly Malaysia, among other things. Leaders on both sides have sometimes, intentionally or unintentionally, exacerbated the situation with remarks seen as derogatory to the other country. But the last years this relationship seems to be improving under Malaysia's new PM.[197]

Another neighbour that has not been Singapore's closest friend is Indonesia. As shown before, the close ties Singapore grew with Soeharto, put Singapore in an awkward position after the fall of the regime. Soeharto's successor, Habibie, as well as the next president Wahid in late 2000, was openly dismissive of Singapore and its government. The relationship is slowly rebuilding but it can be better considered businesslike rather than warm.[198]

Finally, Singaporean prosperity still depends on investments from Western and Japanese companies. Because of that, Singapore still has more political focus on relations with these countries, rather than a country like China, although the Chinese economy is expanding fast.[199]

5.6.2 Economics

Economic Structure and Performance

Singapore has a well-developed diversified economy, built around its trading background. In figure 5.19, a representation of the different sectors is shown,

---

[197] The Economist Intelligence Unit, *'Country Profile Singapore 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.13

[198] The Economist Intelligence Unit, *'Country Profile Singapore 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.13

[199] The Economist Intelligence Unit, *'Country Profile Singapore 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.14

according to UN Statistics.[200] Due to the scarcity of land, agriculture is not developed in Singapore. The major part of the economy turns around the refining of chemical and petroleum products, and the trade in these products. This can be well seen in the graph below, represented in the 'mining (...)' and 'manufacturing' section with shares 20% respectively. The tourism and wholesale represent a good 13%. Singapore is struggling with its position in the regional tourism market, with all the competition in the region. By naming itself the tourist capital and hub of Asia-Pacific, Singapore successfully brings in around 7% of its GDP by stopovers of regional travellers[201]. Still, a big part in this sector is business travellers and trade in wholesale goods. Transport and warehousing represents around 10%, which is easily explained by the fact that Singapore has one of the biggest ports in the world.

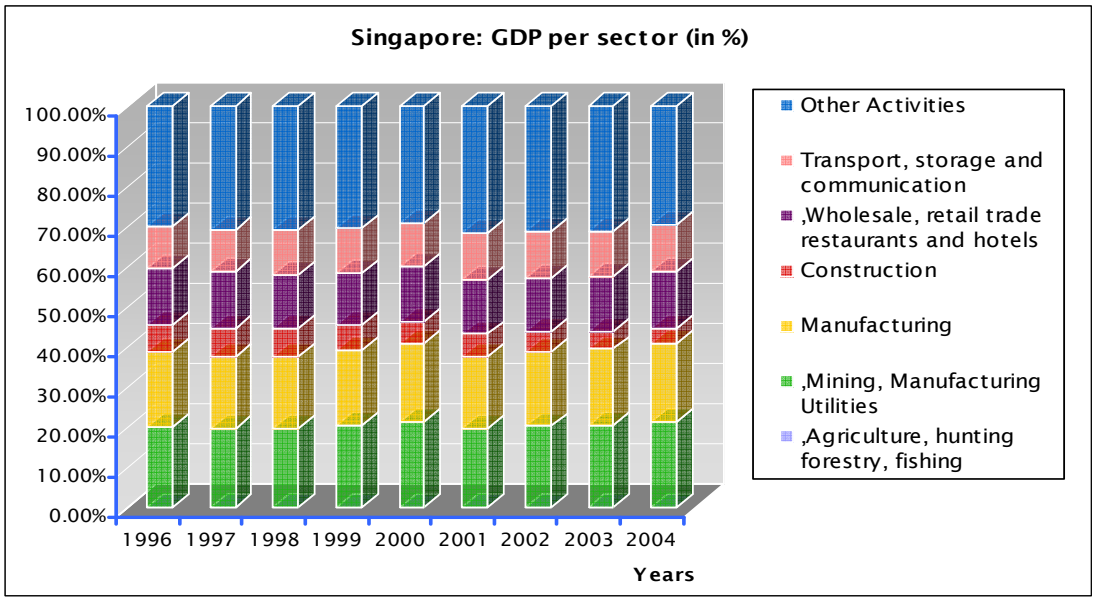


Figure 5.19 GDP per sector (in %) *(Data from UN Statistics: www.unstats.un.org)*

As Singapore has a well-developed and diversified economy, the GDP is developed likewise. In figure 5.20 the GDP of Singapore is displayed for 1996 – 2004. The GDP shows a steady upward trend, with two downfalls in growth, in 1998 and in 2001. As a small open economy, Singapore is extremely

[200] UN statistics website: available on: http://www.unstats.un.org/, viewed on October 28, 2006

[201] Nigel Morgan, Annette Pritchard, Roger Pride: *Destination Branding: creating the unique destination proposition*, p.243

vulnerable to external economic developments. In 1998, Singapore has been affected by the Asian financial crisis. The large and adverse economic shocks triggered by the Asian financial crisis could potentially have had a devastating effect on the Singapore economy. Amidst the extensive distress in the region, however, Singapore has emerged relatively unscathed[202] and showed growth again in 1999.

In 2001, Singapore faced another downfall in GDP growth. This has been triggered by the USA that experienced a major setback in its economy by corrections in the IT sector and of course the terrorist attacks in New York. Next to that, the Asian market faced unprecedented downturn in the demand for electronics and Japanese poor customer and business sentiments, resulting in a -2,00% growth for the Singaporean economy.[203] During this period the unemployment raised from 1.8% in 1995 to 4.0% in 2003, after which it dropped again to 3.4% in 2004, according to the Asian Development Bank.[204]

---

[202] Ngiam Kee Jin, *Coping with the Asian Financial crisis: The Singapore Experience*, p39, available on http://www.iseas.edu.sg/, viewed on October 29, 2006

[203] Ministry of Trade and Industry of Singapore: *Economic Survey of Singapore 2001*, p5, available on http://www.mti.gov.sg/ , viewed October 29, 2006

[204] Asian Development Bank, *'Asian Development Outlook 2006',* pp.220-3, available on: http://www.adb.org/Documents/Books/ADO/2006/documents/sin.pdf, viewed on October 31, 2006

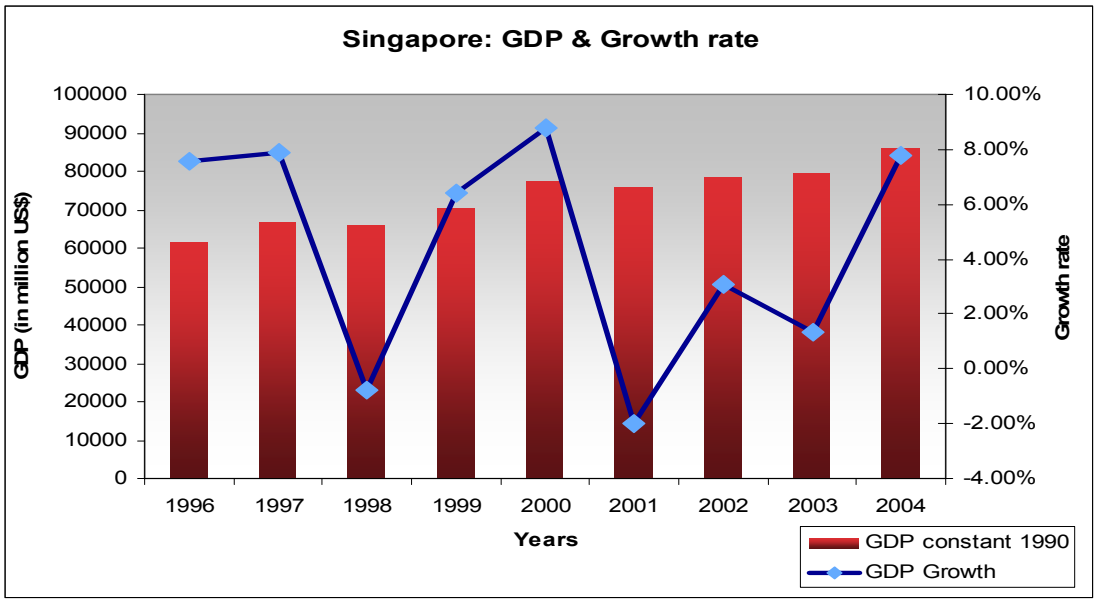


Figure 5.20 GDP (in million US$) and growth rate (in %) *(Data from UN Statistics: www.unstats.un.org, viewed on October 25, 2006)*

5.6.3 Business Environment

Market Attractiveness

Singaporean business environment is the most secure and stable in the whole region. According to international organizations the corruption of the country is the lowest in Asia, ranking 5th in the world according to CPI with score 9.4 out of 10[205]. Moreover, the geopolitical location of the state and the bilateral free-trade agreements with many countries has established the country as a main break-bulk hub[206]. In addition, the refining and storage facilities on the island have given the reputation to the country as the gateway for oil products to Southeast Asia region.[207] The main weaknesses of the Singaporean business

[205] Transparency International: Corruption Perception Index 2005, available on: http://ww1.transparency.org/cpi/2005/cpi2005.sources.en.html#cpi, viewed on October 31, 2006

[206] Ong Eng Tong, Singapore Oil Industry, April 2006, available from Internet, www.iseas.edu.sg viewed 5 September 2006

[207] Mr. Lee Wei Sheng, Interview with Senior Officer of Economic Development Board Singapore, 6 September 2006

environment are the expensive labour force and the tax system, which force the foreign manufacturing companies to invest in other countries.[208]

For staying a well-developed economy and growing even further, Singapore FDI is important in its business environment. In 2004, EIU estimated the FDI in Singapore on US$ 16.2bn, of which the biggest part, USD$ 8.5bn[209], was tied up in manufacturing. FDI represents around 14% of the GDP, most of which come from UK, Japan and the USA, the latter especially after signing free trade agreements in 2004.[210]

There are almost no restrictions on FDI in Singapore. In addition to that there is no exchange control restrictions and free repatriation of profit and capital. Also, no requirements for local equity participation is necessary when a foreign business is setup in the city-state and it is not necessary foreign investment to enter in a joint venture, neither needs a Singaporean to be granted management control.[211]

Five factors will be discussed that the government undertook to influence the attractiveness of the market to stimulate FDI into Singapore. Namely these factors are protection of intellectual property, corporate taxes, Red Tape, Privatization and cabotage regulation.

In order to attract foreign investments, the Singaporean government has implemented strict regulations for the protection of the intellectual property,

---

[208] Business Monitor International, *Oil and Gas Report Singapore Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.8

[209] The Economist Intelligence Unit, *'Country Commerce Singapore 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.13

[210] Business Monitor International, *Oil and Gas Report Singapore Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.21

[211] Business Monitor International, *Oil and Gas Report Singapore Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.20-21

this specifically in comparison to neighbouring countries.[212]

Corporate taxes are also important for market attractiveness. As a result of the 1997-98 crisis, the Singaporean government stopped promising to lower corporate taxes in that period to keep the development of the economy in track. But from 2001 onwards the cuts were considered to be good again to stimulate further growth. In 2005, corporate taxes were 28.8% of the total profit. In order for a company to complete the corporate taxes needs to make 16 payments spending 30 hours[213].

According to the World Bank in order to start a new business in Singapore, it takes 7 procedures and 8 days while enforcing a contract takes 23 procedures and around 69 days[214].

Privatization in Singapore is a hot issue. Where is it believed in other countries that state-ownership equals inefficiencies and mismanagement, Singapore seems a positive exception on this rule. State-owned enterprises (SOEs) were created in the 1960s to create jobs and stimulate the economy. Now, there are many SOEs ranging from Singapore Airlines to Keppel Shipyards. It is in some manners also not very clear what the whole spectrum of SOEs is, as Temasek, the largest government holding company, and defence-related companies are not required to publish insight information. Many SOEs are inviting market investment in their equity, like Keppel Shipyards and Neptune Orient Lines[215], but not exceeding the 50% barrier most of the time.

---

[212] Ong Eng Tong, Singapore Oil Industry, April 2006, available from Internet, www.iseas.edu.sg viewed 5 September 2006

[213] Doing Business, "Doing Business 2007 - How to Reform", Available from Internet, http://www.doingbusiness.org/main/country-data-summaries.aspx viewed on 31 October 2006

[214] Doing Business, "Doing Business 2007 - How to Reform", Available from Internet, http://www.doingbusiness.org/main/country-data-summaries.aspx viewed on 31 October 2006

[215] Douglas Sikorski, *'The perspective for privatization in Singapore',* Asian Journal of Public Administration, p.78 ev., available on: http//sunzi1.lib.hku.hk/hkjo/view/50/5000300.pdf, viewed on October 30, 2006

Finally, for the shipping industry, cabotage regulations are important for investment decisions. According to REPSF (Regional Economic Policy Support Facility)[216], the geographical characteristics of Singapore make the reservation of coastal trade for a domestic flag shipping a non-issue.

Membership in International Organizations

Singapore is member of (ASEAN)[217], as co-founder in 1967. The city-state also partakes in AFTA.[218] Singapore is also active in APEC, which was founded on its soil in 1993.[219] Singapore has been member of the WTO since 1995.[220]

5.6.4 Downstream Oil Industry

Refineries

The downstream oil industry in Singapore is well developed, making it one of the top oil hubs in the world with regard to trading and refining. There are three refineries: Shell, ExxonMobil and SRC.

Refineries	Location	Capacity
ExxonMobil	Jurong	605
Shell	Bukom	458
SRC	Merlimau	273
Total		1336

Table 5.3 Singapore Refineries (in kbbl/d)
(Source: Worldwide refining capacity - Oil & Gas Journal, Dec 19, 2005 p22)

---

[216] PDP Australia Pty Ltd/Meyrick and Associates, '*Promoting Efficient and Competitive Intra-ASEAN Shipping Services' – Singapore Country Report,* p.2 (REPSF Project No. 04/001)

[217] Library of Congress – Federal Research Division, *Country Profile Singapore, July 2006* p.16-17, available on: http://lcweb2.loc.gov/frd/cs/profiles/, viewed on October 30, 2006

[218] ASEAN Secretariat Website, http://www.aseansec.org/, viewed on October 31, 2006

[219] APEC Forum Website, http://www.apec.org/, viewed on October 31, 2006

[220] WTO Website, http://www.wto.org/, viewed October 31, 2006

The development of its hub characteristics is because of the political stability, free market spirit but also the strategic location, which lead to Asia's most competitive refining industry[221]. There was a decrease in capacity from 1982 (almost 1000000 bbl/d) until 1992 (830.000 bbl/d), after which it increased again until 1336 kb/d, used for domestic demand, but mainly for export purpose.[222]

According to IEA (International Energy Agency)[223], Singapore produces mainly Diesel, ATF and Residual Fuel oils, accounting for over 50% of the production, but also Naphta, LPG, MoGas and Kerosene. More details will be discussed in Chapter 6. Also Storage depots and its blending facilities are of importance in this market situation.

The refineries have the biggest part of this capacity (68 mbbl), while the rest is managed by three independent storage operator; Vopak, OilTanking and Tankstore (19 mbbl).[224]

---

[221] Ong Eng Tong, Singapore Oil Industry, April 2006, available from Internet, www.iseas.edu.sg, viewed on 5 September 2006

[222] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC downstream oil market study* 2005, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, p.106

[223] International energy agency (IEA), *Non-OECD Country Energy Statistics,* http://www.iea.org/, viewed on 28 August 2006

[224] Mr. Lee Wei Sheng, Interview with Senior Officer of Economic Development Board Singapore, 6 September 2006

Company	Existing
Oil Majors (Shell, ExxonMobil, SRC)	68
Vopak	6.6
OilTanking	5.7
Tankstore	6.7
Total	**87**

Table 5. 4 Capacity of Depots in Singapore in mbbl

Source: EDB Singapore; presentation Chemical Logistics in Singapore

Ports

The port of Singapore is one of the biggest and busiest in the world. The combination of strategic location and the deep harbour has contributed to the reputation of the Singaporean port as the gateway of products to South-East Asia region. As far as the petroleum products are concerned Singapore is among the three biggest oil hubs in the world with Rotterdam and Houston to be ranked in the first two places. Special safety regulations and the high storage capacity for petroleum products are among the factors that encourage foreign oil companies to use the port of the country for break-hub operations. The Jurong oil Terminal on the homonymous island is the main area of the national port for the handling of petroleum products.

Retail Industry and Distribution

The retail and distribution of petroleum products is highly competitive in Singapore. Chevron, Shell, SPC (Singapore Petroleum Company) and ExxonMobil operate with respectively 58, 48, 10+, 80 service stations and outlets around Singapore. Chevron's subsidiary also supplies a big part of the aviation fuel to Changi Airport since 1975.[225] There are no government subsidies on the retail prices of petroleum products in Singapore, in

[225] Business Monitor International, *Oil and Gas Report Singapore Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.19-20

comparison to its only 'land-connected' neighbour.[226] Private companies establish the prices of petroleum products, in accordance to the international market price.[227]

5.6.5 Energy Demand Overview

The transport and industry sectors are responsible for 86% of the energy consumption, whereas residential and commercial sectors take 14% together. Around 75% of this final consumption is in the form of oil products, which can be traced back mainly to transport and industry. 24% is a demand of electricity. The total energy consumption in 2002 was 11,270 ktoe and rose 2% to 11,500 ktoe in 2003[228]. This growth shows a recovery after a slow-down due to SARS.

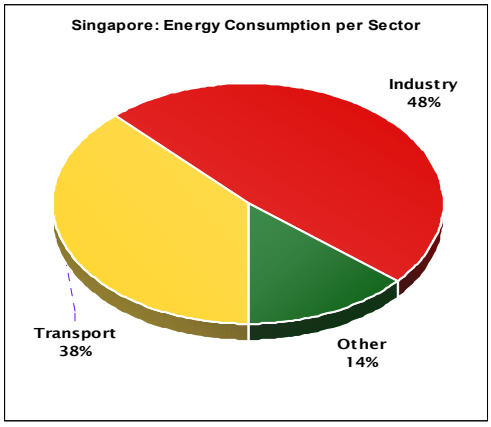


Figure 5.22 Energy Consumption per Sector in Singapore (Source: APEC)

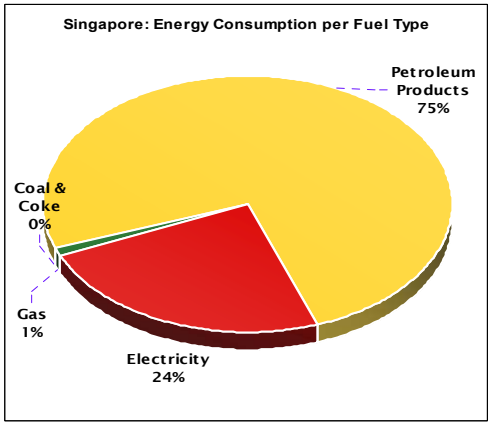


Figure 5.21 Energy Consumption per Fuel Source in Singapore (Source: APEC)

[226] The Economist Intelligence Unit, *'Country Report Singapore June 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.31

[227] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC downstream oil market study* 2005, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, p.108

[228] Asia Pacific Energy Research Centre (APERC) , *APEC Energy Overview,* 2005, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, p.153

5.6.6 Singapore's Current Country Situation Summary

Singapore is politically stable since 1965 under PAP's rule. The state grew fast, also due to ties with USA. These same ties burden local connections with other Asian countries and heighten terrorist threat. Racial differences are another security risk.

Singapore's economy grows steadily, with transport, manufacturing and trade being the most important sectors. Changes in the world economy influence Singapore's economy due to its international character.

As with the politics, the business environment is the most stable in the region, having low corruption, good location, but having relative high costs on the other side of the coin. FDI is a big part of Singapore's GDP and the government stimulates FDI by protection of intellectual property, levering corporate taxes, cutting red tape, stimulating privatization and cutting cabotage regulations. Looking at international organizations, Singapore is member of ASEAN, AFTA, APEC and WTO.

With regard to the downstream oil industry, this industry is big in Singapore, being one of the world's oil hubs. Most products are refined here, covering the domestic market, but most of it is meant for export. The port of Singapore is one of the biggest oil hubs in the world contributing to the supply of the whole Southeast Asia region with refined petroleum products. The retail market is competitive with most major oil companies showing activity in the market. There are no petrol subsidies in Singapore.

Looking at energy demand, the transport and industry sectors are responsible for most of the energy consumption, the majority which is in the form of oil products.

5.7 Thailand

5.7.1 Politics

Politics Situation and Recent Developments

The Kingdom of Thailand has the size of 514,000 sq km[229]. It is the third largest country in Southeast Asia after Indonesia and Burma. Even though majority of population is Thai, the country shows diversity in ethnic groups. Despite its harmonious environment between ethnics, Thailand is on the surge of finding the right proportion in politics. With 17 military coups in the last 15 years and the recent one on 19th October 2006[230], Thailand will continue this surge to find the right "democracy" that will suit the country. Even though politics fluctuate and tend to be solved bluntly with military actions, Thai's loyal lies on the royal family, especially The King Rama IX.

Before the latest military coup in 2006, Thailand was governed by the PM Thaksin Shinnawatra and his Thai Rak Thai (TRT) party for the past 5 years. Before Thaksin's reign, Thai politics was fairly unstable because of coalition administration, which consists of more than one political party to form up government. Thaksin used his charisma and radical policies to gain the majority vote in the parliament[231]. Thaksin Shinnawatra became the most famous prime minister, who could control the majority of parliament at his will, of modern Thai politics history. This approach to power seems to be in-line

---

[229] The Economist Intelligence Unit, *'Country Profile Thailand 2006'*, available from Economist Intelligence Unit Database, viewed on 17 August 2006 p.3

[230] The Economist Intelligence Unit, *'Country Profile Thailand 2006'*, available from Economist Intelligence Unit Database, viewed on 17 August 2006 p.3

[231] Alex M.Mutebi, 'Thailand's independent agencies under Thaksin relentless gridlock and uncertainty' in Daljit Singh & Lorraine C. Salazar (eds), *Southeast Asian Affairs 2006*, ISEAS Publications ,Singapore, 2006, pp 303-317

with other democratic countries in Southeast Asia like Singapore, where one party dominates the parliament[232]. However, things were different in Thailand.

After successful election, Thaksin Shinnawatr abused his power in the parliament[233]. Many laws and regulations that would create advantage to his private businesses were launched unstoppably because the opposition parties had total vote less than 25%. Worth mentioning is that accused ministers of wrong-doing cannot be called for censuring in the parliament by opposition parties to investigate the accusations, since the constitution would not allow opposition parties with votes less than 25% in the parliament to question prime minister and ministers[234]. This means verification system in the parliament was, one way or another, abolished. Then the military coup who called themselves "the reformer of constitution governing which has the King as the state leader" rose up in the coup.

Security Risk

After a reform to democracy from absolute monarchy in 1932, 74 years later, Thailand has witnessed 18 military coups including the recent one in 2006. According to the constitution, government will govern the country on 4 years term period. So far, only Thaksin's administration can manage to stand 4 years period from 2001-2005. This shows that democracy in Thailand is still way under developed compared to other developed countries. The problem of changing administration frequently is the inconsistent of policy. Trade agreement with one country can be revoked when the country change its government.

---

[232] The Economist Intelligence Unit, *'Country Profile Singapore 2006'*, available from Economist Intelligence Unit Database, viewed on 17 August 2006 p.17

[233] The Economist, 'A Blow To Thai Democracy', *Economist*, 00130613, 4/8/2006, Vol. 378, Issue 8472, available from Business Source Premier, viewed 27 October 2006

[234] The Economist Intelligence Unit, *'Country Profile Thailand 2006'*, available from Economist Intelligence Unit Database, viewed on 17 August 2006 p.6

Another problem worth mentioning is the conflicts in the southern part of Thailand. Causes of these conflicts are speculated from religious matters. The problem persists for several years without absolute solution[235]. Until now, the situation in the south has not been solved yet, but provisional government after the military coup has put high priority on this matter.

International Relations

As a member of ASEAN, Thailand has always played an important role in Southeast Asia region. Relationship with the west (EU and USA) was good but that was before the political change recently. After the military coup, EU and USA show direct intention of disapproval and indirectly push the provisional government to set up election for the new government. China and Russia, on the contrary, maintain their reactions and leave the matter to "domestic affairs".

5.7.2 Economics

Economics Structure and Performance

The biggest economic sector in Thailand is manufacturing, which mainly comes from textile, garment, electronic chips, and car production. For electronic and car, Thailand is used as a production base from foreign investors like Japan, South Korea, Taiwan, and western countries[236]. The mining sector is mainly dominated by the refining industry in the country, but has a considerable amount of natural resources e.g. tin and different rock

---

[235] The Economist Intelligence Unit, *'Country Profile Thailand 2006'*, available from Economist Intelligence Unit Database, viewed on 17 August 2006 p.6, p.7

[236] The Economist Intelligence Unit, *'World Investment Prospects: The revival of globalisation'*, 4th edn, available from Economist Intelligence Unit Database, viewed on 17 August 2006 p.151

types. This sector grew from 20% of the GDP in 1996 to 30% over the last nine years. There are no real sizeable crude oil reserves. Another sector is wholesale and retail trading, which has been stimulated after Asian financial crisis, when IMF forced the country to open many businesses to foreign investors in 1998[237], although the contribution to the GDP still shows a small decline in percentage.

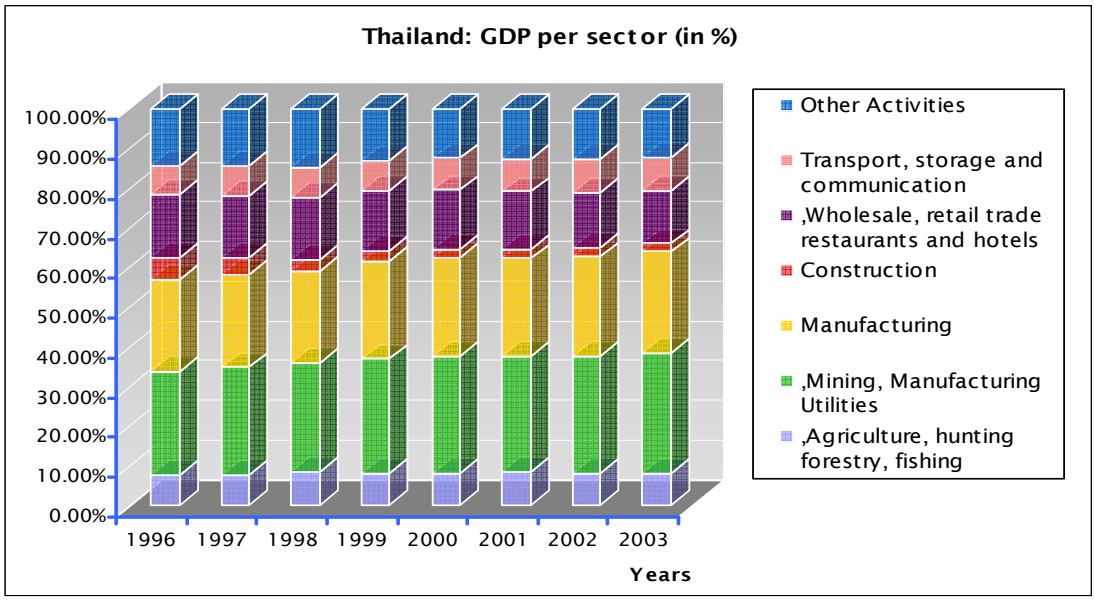


Figure 5.23 GDP per sector (in %) *(Data from UN Statistics: www.unstats.un.org)*

Looking at the figure 5.24 is well seen that the national GDP during the analysed period follows an upward trend with two drops in 1998 and 2001. Especially the period 1997-1998 Thai economy was heavily hit by the financial crisis, pushing the GDP growth to the level of -11.74%. The weak currency after the crisis helped the country to recover very fast mainly focusing on exports. In 2001, GDP growth was hampered because one of Thailand's biggest trading partners, USA, had the incident of the terrorist attacks to WTC

[237] Pyun & Chong Soo, 'Roles of the IMF in the Asian Financial Turmoil', *Multinational Business Review*, 1525383X, Fall99, Vol. 7, Issue 2, available from Business Source Premier, viewed 21 October 2006

on September 11[238]. At that time the GDP growth slowed down to 2.09%. From this aspect, Thailand economy largely depends on global economic environment that will dictate exports from Thailand to the world. After these two negative periods for the national economy Thailand shows a continuing growth with rates around 6%.

Figure 5.24 GDP growth rate (in %) *(Data from UN Statistics: www.unstats.un.org, viewed on October 25, 2006)*

5.7.3 Business Environment

Market Attractiveness

Investors view Thailand as a sizable market that infrastructure has partially developed, thus it is not too difficult to invest. EIU ranks Thailand the fourth out of sixty countries in terms of macro economic environment during 1999-

[238] United Nations Commodity Trade Statistics Database, 'Comtrade Explorer-Snapshot: Thailand', 2005, http://unstats.un.org/unsd/comtrade/ce/ceSnapshot.aspx?r=764, viewed 23 October 2006

2003 and moves to the second in 2003[239]. This shows that Thailand attracts investors because of its natural character. However, Thailand's attractiveness does not reach its maximum because the lack of infrastructure. In order to maintain its FDI, Thailand must improve its business environment. With the emerging of China, cheap labour cost in Thailand becomes comparatively expensive and should not be considered as the strength of the country anymore[240]. If Thailand cannot find its specialties to add competitive advantage, declining in FDI is inevitable.

Market attractiveness will be further discussed in the following factors, transparency, corporate taxes, Red Tape, privatization and cabotage regulation.

According to the CPI (2005) Thailand is ranked 59th (out of 158) with score of 3.8 (out of 10). The relatively low score illustrate the slow process of the country to eliminate the corruption[241].

Corporate taxes are still high discouraging more foreign investors to invest in the domestic economy. World Bank has reported that a new company in Thailand has to make 46 tax payments; the administrative burden of paying taxes is104 hours and the total tax rate runs into 40,2 % of the profits[242].

---

[239] The Economist Intelligence Unit, *'World Investment Prospects: The revival of globalisation'*, 4th edn, available from Economist Intelligence Unit Database, viewed on 17 August 2006 p.150

[240] Asia Monitor: South East Asia Monitor Volume 1, 'FDI inflows continue to disappoint', 14707810, Feb2005, Vol. 16, Issue 2, available from Business Source Premier, viewed on 25 October 2006

[241] Transparency International: Corruption Perception Index 2005, available on, http://ww1.transparency.org/cpi/2005/cpi2005.sources.en.html#cpi,viewed on October 28

[242] Doing Business, "*Doing Business 2007 - How to Reform", Available from Internet, http://www.doingbusiness.org/ExploreEconomies/?economyid=186* viewed on 31 October 2006

Although the high corporate taxes, Thailand has managed to reduce the bureaucracy contributing to simpler and faster procedures for starting a new business. According to the World Bank it takes 8 procedures and an average of 33 days to start a business in Thailand while the enforcement of a commercial contract involves 26 procedures and 425 days to be completed[243].

Privatization in Thailand is among the lowest in the region. Government still holds firm control of many state enterprises. There were many discussions of privatize the state-own companies, but no attempt is made. Thais are not familiar with the concept of privatization and are afraid that privatized organisations will be purchased by foreigners.

Cabotage regulation in Thailand is moderately high. Foreign investors can partially own a shipping company but no more than 49%. If Thai vessels are not available, shipper can ask special permission to use foreign flagged vessel[244].

Membership in International Organisations

Thailand is accepted in major organisations for example WTO, APEC, and ASEAN. Regarding membership with ASEAN, Thailand has joined one of the most ambitious plans to reduce all trade tariffs among ASEAN members, AFTA and has been major force that pushes AFTA to be effective within 2015[245]. Thailand was once honoured by WTO to select Dr. Supachai Panitchapakdi to be director-general during 2002-2005 periods. In 2003, Thailand under Thaksin's administration held an APEC summit in Bangkok.

---

[243] Doing Business, "*Doing Business 2007 - How to Reform", Available from Internet, http://www.doingbusiness.org/main/country-data-summaries.aspx* viewed on 31 October 2006

[244] PDP Australia Pty Ltd, Meyrick & Associates, 'Promoting Efficient and Competitive Intra-ASEAN Shipping Services', *The Regional Economic Policy Support Facility (REPSF)*, REPSF Project No. 04/001, Final report, March 2005, Viewed 20 September 2006

[245] ASEAN website, available on http://www.aseansec.org/12045.htm, viewed 27 October 2006

These events show that Thailand has outstanding relationship with international organisations all over the world.

5.7.4 Downstream Oil Industry

Refineries

Due to the size of population, Thailand is equipped with refineries to fulfill its 65 million people's consumption. Currently, six refineries are operating in the country. The total capacity of the refineries in 2005 was 703,100 bbl/day[246]. Out of four refineries, ARC is the biggest refinery in Thailand. It is a joint venture between Caltex, Shell, and Petroleum Authority of Thailand[247]. Exxon Mobil is the only foreign investor who owns a refinery in Thailand. Thai refineries are capable to produce basic products like motor gasoline, kerosene, and diesel.

Refineries	Location	Capacity
ARC	Rayong	275
Esso	Sri Racha	174
PTT	Bangkok	62
Thai Oil	Sri Racha	193
Total		703

Table 5.5 Refining capacity of Thai refineries

Ports

Thailand has fairly long coastline. Therefore, access to the sea is possible on both South China Sea and Indian Ocean. This part will mention only main

[246] 'Worldwide Refineries - Capacities as January 1, 2006', available from *Oil & Gas Journal, December 19, 2005*, viewed 5 September 2006

[247] Starlims, 'Legacy LIMS replaced at Thai legacy', available on http://www.starlims.com/ARC.html, April 2004, viewed 26 October 2006

ports of Thailand that can handle liquid products—Chongnonsri Marine Terminal, Rayong TPI Terminal, Koh Sichang TPP, and Sri Racha Oil Terminal.

Chongnonsri Marine Terminal is located on the east bank of Chao Praya River around 30 kilometres from the river mouth. Exxxon Mobil and Shell share the operation of this port. The port can handle maximum draft of 7.9 meters and size around 25,000. DWT. Chongnonsri is built as a distribution hub into Bangkok and metropolis area[248].

Rayong TPI Terminal is located in Rayong province. This province is situated 180 km east of Bangkok. Rayong also has the capability of deep-sea port, and thus larger ships can berth within this port. Rayong TPI can accept vessels range from 20,000 DWT to 250,000 DWT, which are among the biggest carriers in the sea. With this location, this port provides multiple roles for TPI. It can handle crude oil vessels, while it can also accept smaller medium range (MR) vessels for selling the products[249].

Koh Sichang TPP is a terminal comprised with tank farms on a small island located southeast from the mouth of Chaopraya River. This terminal is used as break-bulk and consolidation point. Maximum DWT is 150,000 DWT[250].

Sri Racha Oil Terminal is located closely to Koh Sichang TPP. This terminal is solely owned by Exxon Mobil. The terminal is used to handle products from Exxon Mobil's refineries. Sri Racha can handle maximum vessel at 105,000 DWT[251].

---

[248] Lloyd's register, *FairPlay*, CD-ROM, 2003, database

[249] Lloyd's register, *FairPlay*, CD-ROM, 2003, database

[250] Lloyd's register, *FairPlay*, CD-ROM, 2003, database

[251] Lloyd's register, *FairPlay*, CD-ROM, 2003, database

Retail Industry and Distribution

Due to its size, Thailand benefits from competition among oil companies, Exxon Mobil, Caltex, Shell, BP, Jet (ConocoPhilips), Q8 (Kuwait company), Petronas, and Bangchak. There are approximately 17,000 gas stations all over the country with PTT owning 1500 of them[252]. Competition in retail is, therefore, widely open for investments. Fuel subsidies exist only for the Diesel products.

5.7.5 Energy Demand Overview

In 2003 the final energy consumption was 50.364 ktoe. As it can be seen from the figure 5.26 the energy consumption in the country is split among three main sectors. Transport is the sector that consumes the highest proportion of the total energy consumption with 42%[253] followed by the industrial with 31%. Due to the growth of the GDP per capita Thai people have the financial power to buy more vehicles contributing to the increase for oil products and especially for diesel. In order to not be dependent on oil products, the government has developed a long term plan for the decrease of oil consumption by sectors like transport. At this moment the petroleum products is the main consumed energy followed by the electricity, the coal and finally the gas.

[252] PTT Co., Ltd, 'Thailand's Petroleum Balance 2002', Energy Fact, Fact & Figures, http://www.pttplc.com/en/document/energy_stat/45/p15-25.pdf, page 22, viewed 26 October 2006

[253] Asia Pacific Energy Research Centre (APERC) , *APEC Energy Overview,* 2005, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, p.166

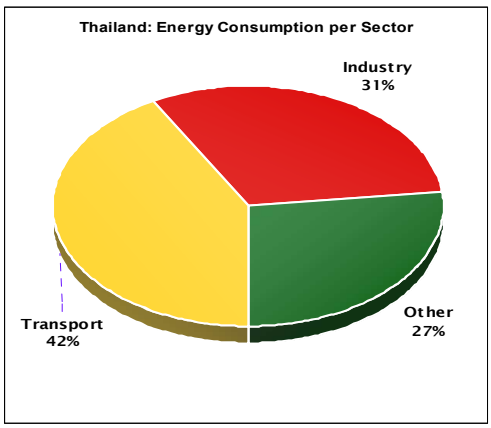


Figure 5.26 Energy Consumption per Sector in Thailand (Source: APEC)

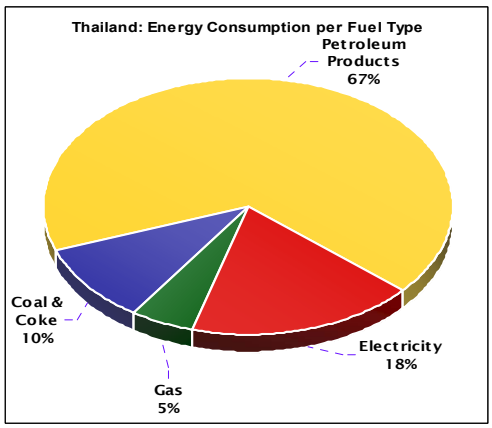


Figure 5.25 Energy Consumption per Fuel Source in Thailand (Source: APEC)

5.7.6 Thailand's Current Country Situation Summary

The recent military coup is an extra sign of the political instability of the country which has faced 18th military coups during its modern history. The corruption among the officials and the involvement of the army in the political scene illustrates the current political environment.

As the base of the Asian financial crisis Thailand has to put a lot of effort in order to recover from the bad consequences of the crisis on its economy. Manufacturing and mining were the sectors that drive the Thai economy in higher levels after the end of the crisis.

Thailand draws investors by many interesting factors—size of population, competitive labour cost, installed basic infrastructure, and good relationship with international organisation. Regulations and openness to investment are fairly broad and encourage foreign investment in Thailand.

The Thai downstream oil industry is rather developed with 6 refineries and an extent retail network. The sector is opened to the competition resulting to the attractiveness of many foreign companies like Exxo and Caltex. The government has removed the subsidies from all the products apart from Diesel.

The energy demand of Thailand in 2003 was 50.364 ktoe with transportation being the main consumed sector. Petroleum products are the most common consumed fuels within the country followed by the gas and the coal.

5.8 Vietnam

5.8.1 Politics

Political Situation and Recent developments

Vietnam is one of the most developing countries in the region of Southeast Asia. The total area of the country covers 329 thousands sq km and the population is estimated to be almost 83 millions which mainly are located around the big cities. The official language of the country is the Vietnamese whereas English and French are spoken mainly in the business centres as Hanoi and Ho Chi Minh City[254].

The political background of the country is divided in three main periods. The first one is related with the Chinese influence on the country which lasted until the French colonisation in 1885. The French kept the total control of the country until the middle of the second war when the communists led by Ho Chi Minh proclaimed the national independence in 1945. After this period Vietnam was involved in a series of wars including a civil war with the involvement of USA and one against Cambodia which finished on 1978. The year of 1978 has been pointed as the start for the political stability within the country[255].In 1986 the government made its commitment to the economic reformation which is well known as *doi-moi*[256].

---

[254] CountryWatch, Vietnam Review 2006, available from Business Source Premier Database, viewed on 25 August, p.1

[255] The Economist Intelligence Unit, *Country Commerce Vietnam*, available from Economist Intelligence Unit Database,viewed on 21 August 2006 p.5

[256] Encyclopædia Britannica 2006, *"Vietnam",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-9112888, viewed on 2 Nov. 2006

Vietnam is one of the last existing communist countries in the global community. The Communist Party of Vietnam (CPV) is the main political party in the country[257]. The discovery of oil and gas reserves in the south part of the country increased the political power of the Communist government within the Southeast Asia region.

Security Risk

Although CPV is visible in all the aspects of the daily life of the Vietnamese, there is no demand of change as the economic development and the attempt of reform has improved the image of the government. The only threat that can affect the political stability is the continuing violent protests by the Montagnard ethnic minority group in the North part of the country[258].

International Relations

Taking into consideration the global changes and the influence of them on the national development, Vietnam has put all its forces on the strength of the international relations. The main concern of the government is to improve the relations with the neighbour countries as well as with the main global forces as China, Russia, USA and Japan. Especially with USA, Vietnam has signed a series of political and trade agreements which have convinced USA to vote positively for the acceptance of the country from WTO[259].

---

[257] The Economist Intelligence Unit, *Country Commerce Vietnam*, available from Economist Intelligence Unit Database,viewed on 21 August 2006 p.5

[258] Business Monitor International, *Oil and Gas Report Vietnam Q2 2006*, available from Business Monitor International Database,viewed on 10 August 2006, p.8

[259] Do Van Ha, Interview with the general manager of International Cooperation Division of Petrovietnam, 27 September 2006

5.8.2 Economics

Economic Structure and Performance

Among all the countries of the region Vietnam seems to be the country with one of the highest rates of economical development in the region during the recent years with averaging growth over 6-7% a year. The growth of the national economy is mainly based on four sectors namely, agriculture, mining, manufacturing and trade. Due to the tropic climate Vietnam is the leading exporter in the region of a number of agriculture products such as rice, coffee and pepper[260]. Despite the high performance of the sector, its contribution to the national GDP during the recent years has started to decrease because of the transformation of the economy. Presently this share is 21% compare to 28% that used to be in 1996, as it is shown in the figure 5.27. Next to the agriculture, mining is the sector which has shown high development during the last decade. The discovery and exploitation of the natural resources in the South part mainly from the national oil company Petrovietnam had as a result the significant growth of the sector as this can be seen in the graph. Currently the contribution of the mining sector to the national GDP is 27% compare to 21% in 1996. The industrialization of the economy during the past years has contributed to the expansion of the manufacturing and trade sectors. Especially the manufacturing sector has shown high performance mainly based on the final assembly of cars and motorbikes.

[260] The Economist Intelligence Unit, *Vietnam Country Profile 2005*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.33.

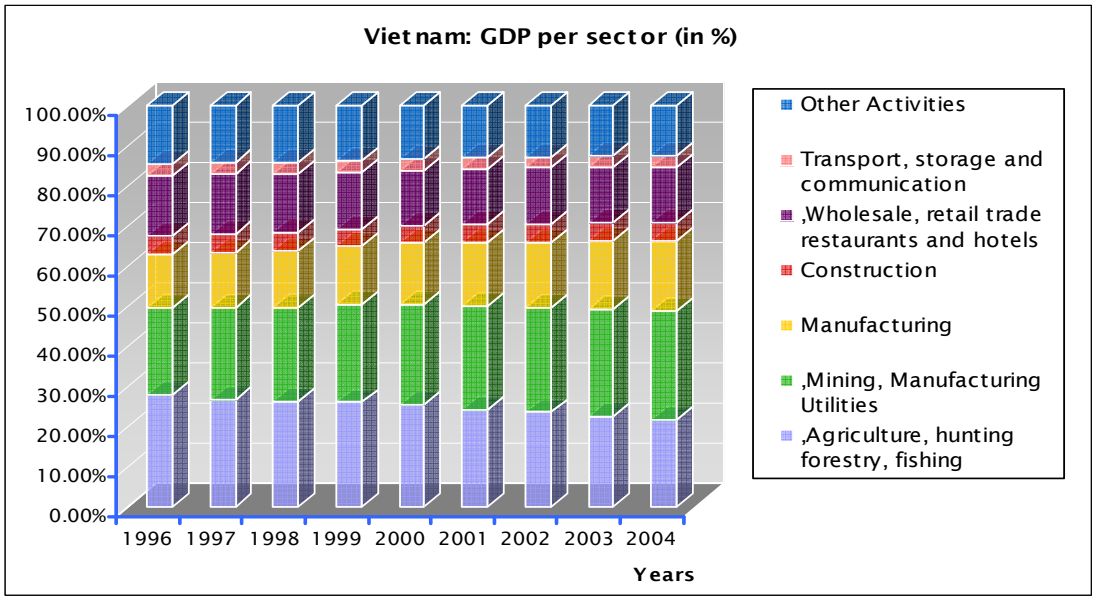


Figure 5.27 GDP per sector (in %) *(Data from UN Statistics: www.unstats.un.org)*

The transformation of the economy from state controlled into market oriented has contributed to the boom of the Vietnamese economy. During the analysed period Vietnam GDP does not present many fluctuations. In the first period the GDP follow a downward trend reaching the level of 4.56% due to the financial crisis that hit the region. Compare to all the other countries Vietnam was least affected from the financial crisis because the loose relation with international investment portfolios[261]. The Vietnamese economy swiftly recovered after the crisis coming back to high growth rates. The further transformation of the economy and the privatization of many state companies encouraged more foreign investors to inject money in the national economy contributing to a higher growth[262]. During the recent years the economy is growing with average rate around 7%.

[261] DataMonitor, Vietnam Country Profile 2005, available from Business Source Premier Database, viewed on 25 August, p.10.

[262] Nguyen Thuy Huong, Interview with Director General Issues &Policy Department, Ministry of Planning & Investment Foreign Investment Agency, 25 September 2006

Figure 5.28 GDP (in million US$) and growth rate (in %) *(Data from UNStatistics:www.unstats.un.org)*

5.8.3 Business Environment

Market Attractiveness

The transformation of the national market into a socialist-oriented market has developed a more attractive business environment compared to the past years. Despite this progress investors are still facing some problems when they are trying to make business within the country. The main problem that discourages the foreign investors is the high corruption among the officials of the country[263]. According to the CPI(2005) Vietnam is ranked 107th (out of 158) with a score of 2.6 (out of 10) which illustrates the country's transparency low performance[264].

[263] Business Monitor International, *Oil and Gas Report Vietnam Q2 2006*, available from Business Monitor International Database, viewed on 10 August 2006, p.8

[264] Transparency International: Corruption Perception Index 2005, available on, http://ww1.transparency.org/cpi/2005/cpi2005.sources.en.html#cpi,viewed on October 28

Despite the limitation of bureaucracy and the modernization of the public sector the establishment of new business always is tricky way for new investors. World Bank has estimated that a new entrepreneur in order to start doing business in Vietnam needs to follow a series of procedures (12 in number) which takes almost 50 days. Next to this due to the judiciary system the enforcing of a commercial contract requires 37 procedures and 295 days[265].

The tax system of Vietnam is one of the most complicated within the region. According to the Word Bank statistics a company in Vietnam needs to spend 1,050 hours for 32 tax payments and the total tax rate reaches the level of 41.6% of the profit[266].

Another concern of new investors before entering into the domestic market is the extensive state monopoly. For instance in oil industry (upstream and downstream) the state companies are playing the main role with foreign companies being able to operate only by signing joint-ventures.

In order to improve the attractiveness of the business environment Vietnamese government has taken a series of measures. The fight against the corruption remains the first priority of the National Assembly which has realized that corruption is the main concern of foreign investors. Vietnam has also agreed to privatize a number of state companies including also companies from oil industry which used to be the most protected by the government[267].

---

[265] Doing Business, “Doing Business 2007 - How to Reform”, Available from Internet, http://www.doingbusiness.org/main/country-data-summaries.aspx viewed on 26 October 2006

[266] Doing Business, “Doing Business 2007 - How to Reform”, Available from Internet, http://www.doingbusiness.org/main/country-data-summaries.aspx viewed on 26 October 2006

[267] Do Van Ha, Interview with the general manager of International Cooperation Division of Petrovietnam, 27 September 2006

Membership in International Organizations

During the last years Vietnam became member in numerous international organizations. The most important from them are ASEAN where Vietnam is member since 1995 and APEC since 1998.

5.8.4 Downstream Oil Industry

Refineries

The main problem that Vietnam faces in the downstream oil industry is the lack of refining capacity. The rapidly increase of the domestic consumption and the dependence of the country on imports for petroleum products put the development of the refining industry on the top of the list of political decisions[268]. The reasons that Vietnamese government has delayed so far to operate a refinery are mainly political. Many foreign companies had tried in the past to invest money in the sector but the strict communist state at that time was highly opposite to foreign investments. Currently the situation is totally different with the officials to welcome every foreign interest for investment in new refineries. The operation of new refineries will decrease the national imports of petroleum products which are a high percentage of the country's expenditure[269].

[268] Mr Nguyen Xuan Thang, Intreview with the communication manager of BP Vietnam, 28 of September

[269] Do Van Ha, Interview with the general manager of International Cooperation Division of Petrovietnam, 27 September 2006

Ports

Similar to Thailand, Vietnamese coastline is the main gate of imports and exports for the country. Numerous ports with different specifications are located along the length of the country. Four of them are the main for liquid handling and especially for petroleum products.

Haiphong port is located North-West if Hon Dau with imports of petroleum products, machinery and preserved goods to be of chief importance. The average depth of the water is 7,5m while the total length of the berths is 2,705m.
Close to Haiphong, there is another port named Hon Gay which is also operating partly as a liquid terminal. The maximum DWT allowed for this specific port is 30,000DWT while the maximum draft is 10m.

On the extreme East cost of Vietnam Nha Trang port is playing a significant role to the imports of petroleum products. Within the area of the port two tanker terminals are operating. The first is Nha Trang Oil with berth length of 140m and maximum draft of 5m. The second one is named Qui Nhon with berth length of 175m and maximum draft of 8m.

Close to the delta made up of the Sai Gon, Thi Vai and Dinh rivers one of the biggest ports is situated named Vung Tau. The port is used by many oil companies as an import gate of petroleum products or export gate of crude oil. Companies that are operating there are namely, PTSC, VIETXO and Petrolimex. Maximum permitted length of vessels is 200m.

Retail Industry and Distribution

As far as the retailing sector is concerned this has shown slow progress with the state retail companies to operate all the distribution stations. Currently the domestic retail market is operated by eight state owned companies. The main

player of the market is Petrolimex which has the most extensive national retail network with 1500 stations within the country. The Vietnamese government has signed a series of agreements for the liberalization of the sector but without visible results so far mainly due to the resistance of the state companies[270]. The Vietnamese government keep on subsidising the fuel prices in the domestic market although the opposite directions from WTO. This has as a result the market prices to remain stable despite the global changes in oil rates.

5.8.5 Energy Demand Overview

As far as the final energy demand is concerned in 2003 was 16.989 ktoe and mainly split among three key economic sectors. Industry is the sector, which consumes the highest percentage of the national energy with 39%. Transport sector is on the second place consuming 33% of the total final energy consumption while the rest is used by the commercial and residential sectors.

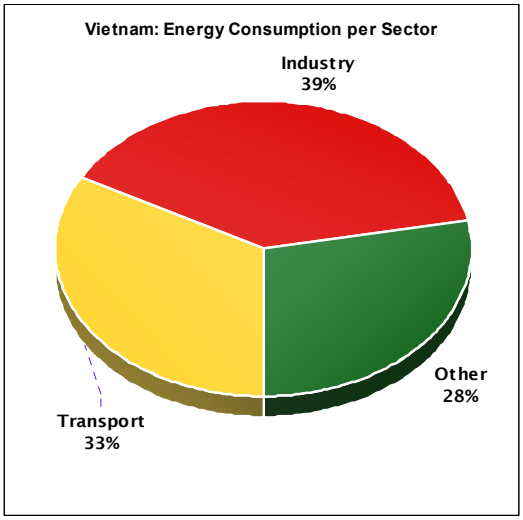


Figure 5.30 Energy Consumption per Sector in Vietnam (Source: APEC)

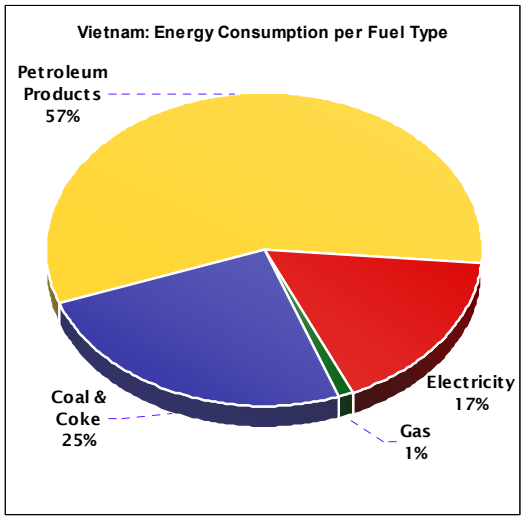


Figure 5. 29 Energy Consumption per Fuel Source in Vietnam (Source: APEC)

[270] Mr Nguyen Xuan Thang, Intreview with the communication manager of BP Vietnam, 28 of September

Oil products are mainly consumed by the transport (57.7%) and industry sector (32.8%)[271]. As it is mentioned above, Vietnam has reached high rates of growth during the recent years. This has resulted in an increase of the GDP per capita offering to the inhabitants the possibility to consume more every year. The development of the economy is also visible in the consumption of energy and especially of oil products, as higher living standards give the possibility to buy e.g. motor vehicles. Transport is the main sector of petroleum products consumption.

5.8.6 Vietnam's Current Country Situation Summary

Vietnam after many years of political instability has achieved to develop a stable internal political environment free of tensions with the neighbour countries. The limitation of bureaucracy and the elimination of corruption are the main concerns among the members of the Vietnamese government.

The industrialization of the economy and the exploration of the natural resources have been the drivers of the economic growth of the country. The transformation of the economy into a more market oriented and the continuing steps towards the privatization have improved the attractiveness of the business environment. The membership of Vietnam in a numerous international organizations has restored the reputation of the country among the global community.

The lack of refining industry and the state monopoly in the retail sector are the main characteristics of the downstream oil industry. Plans for new refineries and privatization of the retail sector are in the top of the agenda of the government but without visible results so far. The energy consumption in the country follows the growth of the economy. Petroleum products are the main form of consumed energy.

---

[271] Asia Pacific energy research centre (APERC), *APEC energy demand and supply outlook 2006* , pp.105-107, Available from Internet, http://www.ieej.or.jp/aperc/ viewed 28 August

5.9 Total Summary

With regard to the political situation in all the countries, Brunei has a stable political situation under the reign of the Sultan. Indonesia is rebuilding itself after the dictatorship of Suharto, while Cambodia is still struggling under the control of Prime Minister Hun Sen. Malaysia balances itself well under its ethnic diversity, having a stable political system. The Philippines are working hard under President Arroyo to improve the system and Singapore, lead by the PAP, is among the most stable in the region. Thailand is seen as currently unstable due to another military coup. Vietnam is also improving steadily by fighting corruption.

Looking at the different economies, Brunei's economy is heavily reliant on oil. This mining sector consist almost 40% of GDP even though the government tries to reduce this dependency. Indonesia's economy is diverse with all major economic sectors playing a significant role. The economy collapsed during the Asian financial crisis, but due to economic reforms a steady GDP growth rate has been realized during the last 3 years. The economy of Cambodia is not yet rising, but with the abundance of natural resources this would be able to change. Malaysia has changed and diversified its economy during the last decade from an agricultural economy to a highly industrialised and service oriented economy. Philippines economy has been growing steadily upward, e.g. due to location of overseas call-centers. Singapore's economy grows steadily, with transport, manufacturing and trade being the most important sectors, but Singapore's growth is reliant on the world economy. Thailand's GDP is based on manufacturing sectors, and prospers because of that. In Vietnam, the industrialization of the economy and the exploration of the natural resources have been the drivers of the economic growth of the country.

With regard to the Business Environment, Brunei's market is small and oil dependent, making it unattractive. Developments have shown no result so far. Indonesia's business environment is unattractive for foreign investments due

to widespread corruption, high corporate taxes, strict regulations and red tape, which the government tries to reduce. Indonesia is a member in WTO, APEC, ASEAN, AFTA and the only Asian country member of OPEC. Cambodian's business environment has been given an impulse by joining WTO, which improved the image of Cambodia to the world. Malaysia has been transformed to an open economy and attractive place in Asia to do business. The business environment of Philippines is described as one of the most unattractive in the region, due to corruption, lack of infrastructure and high corporate taxes. Singapore has the most stable one in the region, having low corruption, good location, but having relative high costs on the other side of the coin. Thailand has drawn attention to itself in the past, based its macro economic environment, regulations and infrastructure, making its business prosper. In Vietnam, the transformation of the economy into a more market oriented and the continuing steps towards the privatization have improved the attractiveness of the business environment.

Looking at the downstream oil industry, this is in Brunei is mainly focused on covering the domestic demand for petroleum products, run by BSP. The downstream industry is opened up in Indonesia formally, but Pertamina is dominating still. The refineries have a processing capacity of almost 1 million bbl/d. In Cambodia, downstream industry is on the verge of declining because high import tax and smuggling. The downstream oil industry in Malaysia is liberalized and there are six refineries operating in the country three of them owned by the state owned company Petronas. The retail market is open to foreign companies although oil prices are being subsidized. In the Philippines the market is deregulated in 1999, where the main players, Petron and Shell, are running the two refineries in the country. In Singapore this industry is big being one of the world's oil hubs. Most products are refined here, covering the domestic market, but most of it is meant for export. In Thailand it is well developed for domestic consumption and open for foreign investors. There are no refineries in Vietnam. As far as the energy is concerned in the region, this is mostly consumed by the transport sector.

6. Current CPP Production, Consumption and Trade

After each country in ASEAN is familiarized in chapter 5, chapter 6 will focus into the production, consumption of CPP industry in the region as well as the imports/exports of CPP in each analysed country. The investigation of production and consumption will show why some countries import more than others, vice versa. Both production and consumption will be discussed in time series analysis, in which changes can be easily distinguish overtime, and explanations of such change will be given.

6.1 Brunei Darussalam

6.1.1 Production and Consumption

Production

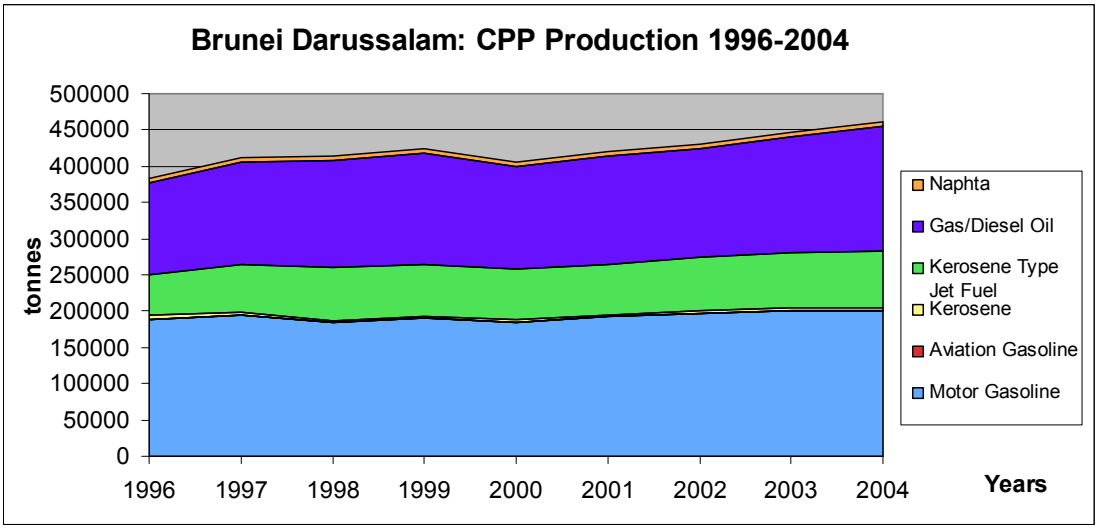


Figure 6.1 Brunei Darussalam: CPP Production 1996-2004 (Based on: IEA non-OECD statistics)

In Brunei, the production of CPPs has been stable over these nine years, with a small drop in 2000 onwards, due to a tight regional refining sector[272], as will

[272] Pui Kwan-Tse, *The mineral industry in Singapore (2001),* available from: http://minerals.usgs.gov/minerals/pubs/country/2001/snmyb01.pdf, viewed on November 10, 2006

be discussed more at Singapore. This minor setback was temporary as in 2001 the level of 1999 was already reached, growing steadily further. The low production of CPPs can be also explained by the focus of the country on the crude oil business.

Looking at the proportions of the produced CPP, it shows a stable situation. The only small fluctuation in production mix over these nine years is a drop in production of MoGas (-4%), which has been filled by Diesel. Even so, MoGas is responsible for the biggest part of production, accounting for around 45%, followed by Diesel (35%) and Jet Fuel (15%). AvGas, Kerosene and Naphtha are of insignificant interest, together accounting for not even 3% of the production. The data tables are shown in Appendix 2.

Consumption

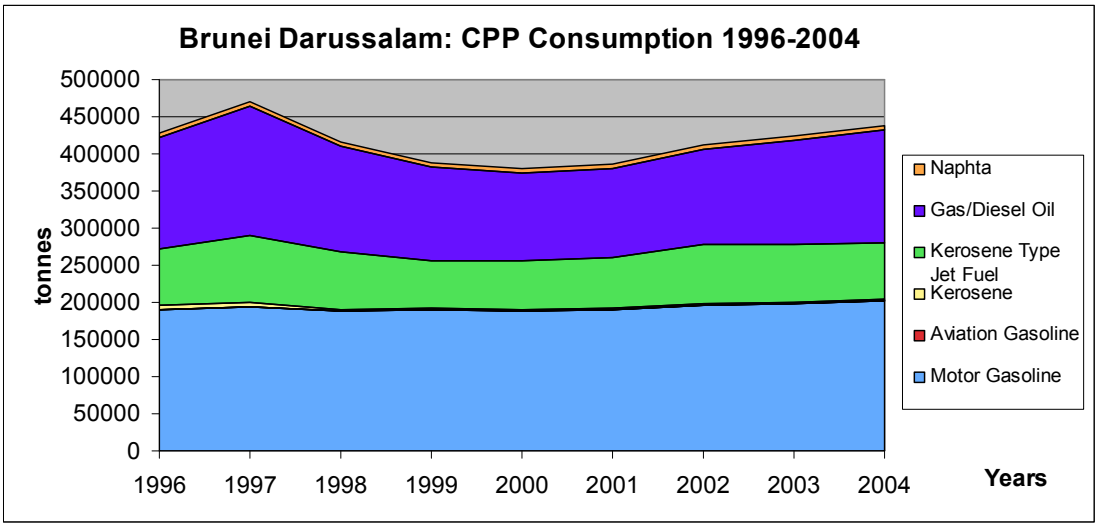


Figure 6.2 Brunei Darussalam: CPP Consumption 1996-2004 (Based on: IEA non-OECD statistics)

The CPP S consumption figures shows a peak in 1997, leading to a downfall until 2000, which can be explained by the Asian financial crisis that affected the region. The consumption level peak of 1997 has up until now not been reached, but the trend is steadily upwards for the last 3 years.

The proportion of CPPs has been stable, Mogas fluctuating around 47%, followed by Diesel (35%) and Jet Fuel (17%).

Comparison

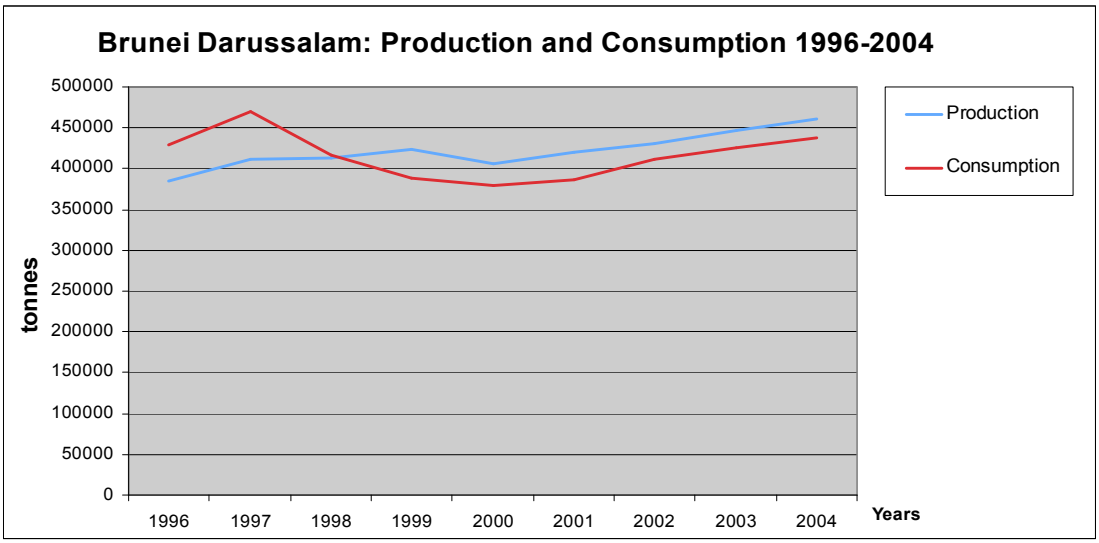


Figure 6.3 Brunei Darussalam: CPP Production and Consumption 1996-2004 (Based on: IEA non-OECD statistics)

Comparing the production and consumption of CPPs in Brunei, displays an interesting turn of events. Until 1998 Brunei has a production deficit of around 50.000 tonnes, but due to the steep drop in CPP consumption this deficit turned into a surplus. Since then the trend of both lines have been in the same direction, with only a slight fluctuation in the surplus. This situation can be explained by the fact that Brunei wants to be self sufficient in its CPP production.[273]

[273] IEA, *Oil Production and Oil Product Stockpiling situation in Brunei Darussalam*, available from: http://www.iea.org/Textbase/work/2004/cambodia/bj_Brunei%20paper.pdf, viewed on November 12, 2006

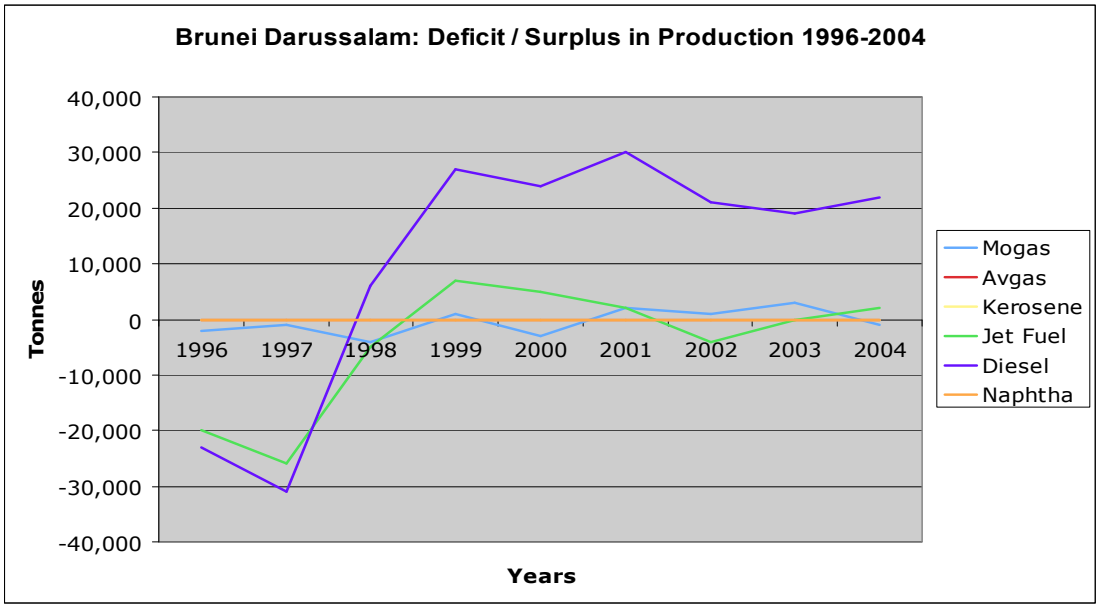


Figure 6.4 Brunei Darussalam: Deficit / Surplus in CPP Production 1996-2004 (Based on: IEA non OECD-statistics)

If this gap between production and consumption is broken down in products, it is interesting to see what happened over the last nine years. It is visible that MoGas for this period has been around the self-sufficient status, meaning that the local production could cover the domestic demand although there were small deficits and surpluses. Major change is shown for Diesel and Jet Fuel that turned into a surplus in 1998 – 1999. Jet Fuel dropped back to deficit in 2002, while Diesel is keeping its status clear.

6.1.2 Imports and Exports

Imports

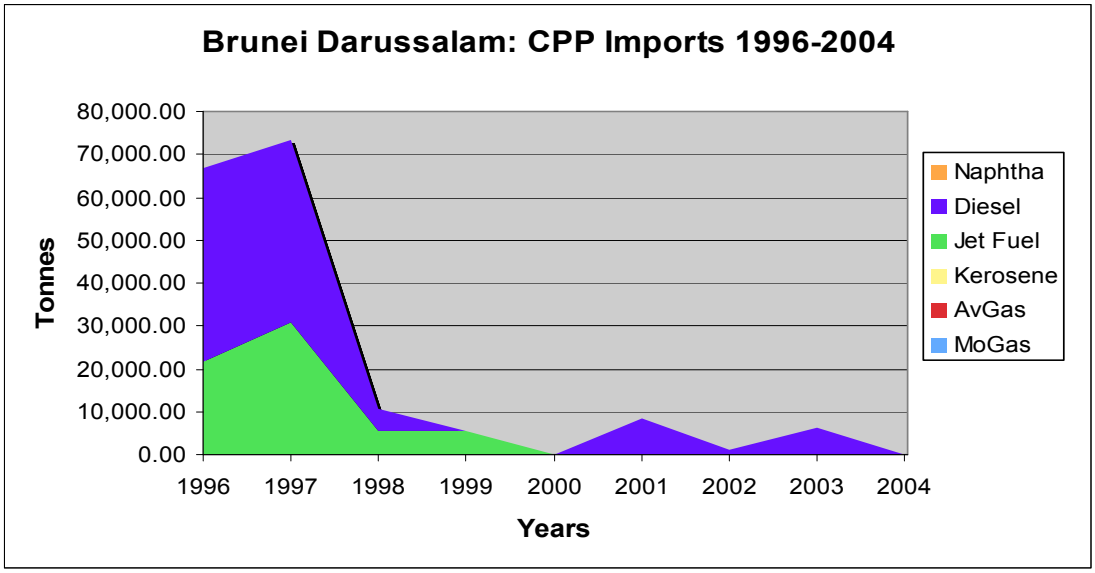


Figure 6.5 Brunei Darussalam: CPP Imports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Looking at the imports from the selected countries with regards to CPPs, the figure shows a dramatic drop in imports, due to decreased imports of Diesel, the main importing products. Therefore it can be said that the import trend shows a stabilizing situation close to zero.

Exports

The exports of Brunei to the primary sourced countries are not significant: Jet Fuel has a one year peak of around 1,200 tonnes and two years of MoGas of even a smaller amount. There is no real trend in the exports.

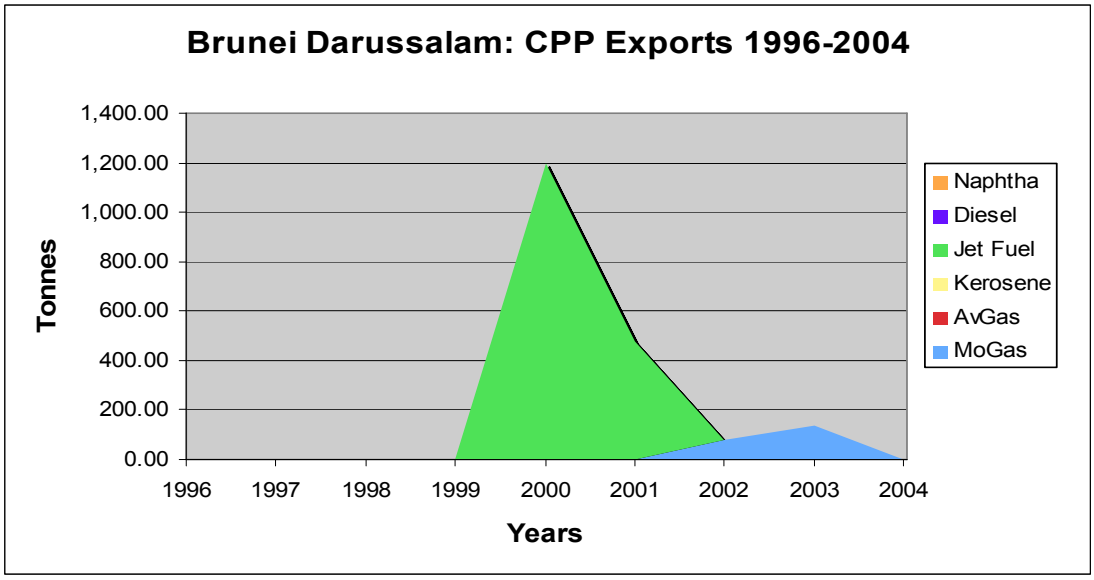


Figure 6.6 Brunei Darussalam: CPP Exports 1996-2004 (Based on: on mixed statistics from the 'primary sourced countries')

Comparison

Comparing the imports and exports shows that the net importing status of Brunei has decreased to a minimum since 1999.

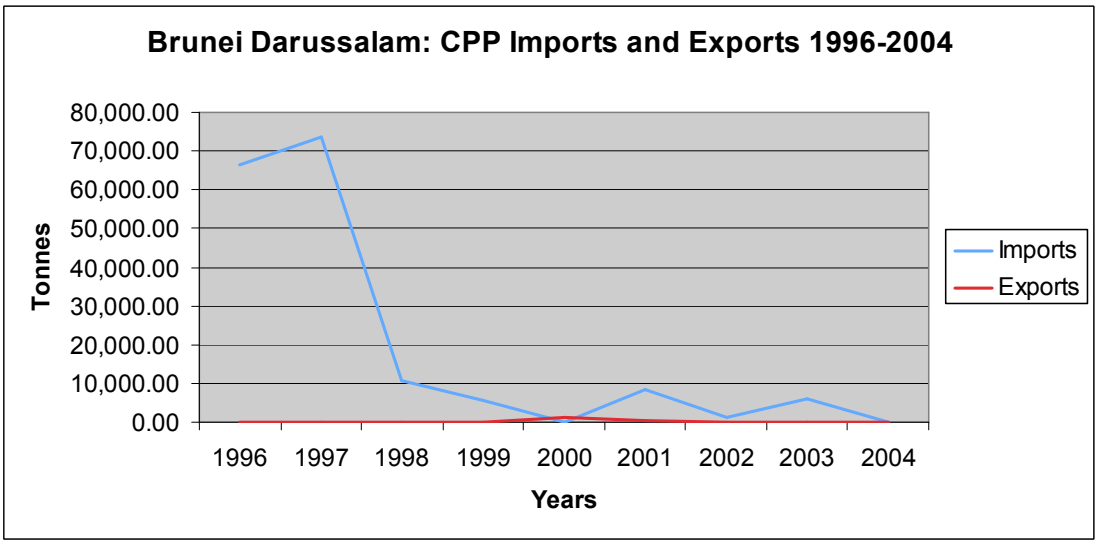


Figure 6.7 Brunei Darussalam: CPP Imports and Exports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Looking at the net importing or exporting situation in Brunei by product, it shows the same trend as in the above figure: Diesel and Jet Fuel grow towards the trade balance point meaning that there is no significant difference between imported and exported volumes.

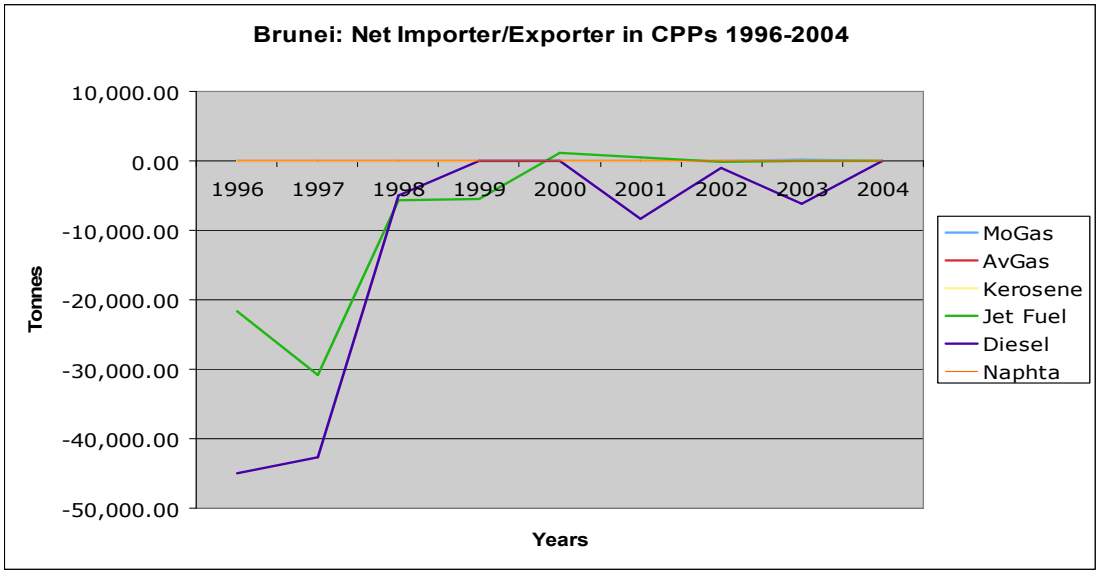


Figure 6.8 Brunei Darussalam: Net importer / Exporter in CPPs 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Summary

The CPP production in Brunei has been stable, with the biggest proportion of products produced being Mogas (45%) and Diesel (35%). The consumption of these products showed a stable line as well with a dip after 1997, and the same product division. The comparison of both trends showed a constant gap, created by government policy to be self-sufficient. Since 1998 almost all products have been in surplus production situation.

The import trend shows a stabilizing situation around the trade flow balance point due to decreased imports of Diesel oil while there is no real trend in the exports. This situation bears out the country's intention to reach the self-sufficient status regarding CPPs.

6.2 Indonesia

6.2.1 Production and Consumption

Production

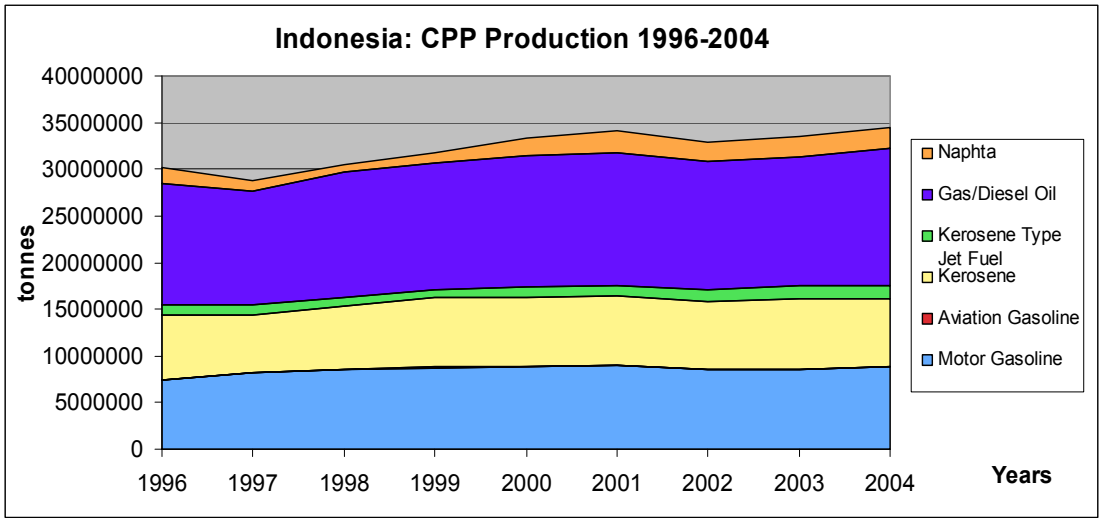


Figure 6.9 Indonesia: CPP Production 1996-2004 (Based on: IEA non-OECD statistics)

The refining sector in Indonesia has confronted a number of problems in recent years caused by unexpected shutdowns of refineries, delays in upgrading and bad maintenance that limited the plants to operate in around 70% of its capacities[274]. Regarding the CPPs that produced in Indonesia, it can be seen from the figure 6.9 that there is a slight upward trend resulting in a production of around 34,5 million tonnes in 2004 compared to around 30 million tonnes in 1996. In 1997 a downfall in production of CPPs took place mainly as a result of the closing down of an 83,000 bbl/d cracker of Balongan's refinery[275]. From 1998 and onwards the production increased due to economic recovery in the region and the completion of the expansion plans

[274] AllBusiness website, Available from Internet, http://www.allbusiness.com/mining/oil-gas-extraction-crude-petroleum-natural/752905-1.html, viewed on 2 November 2006.

[275] AllBusiness website, Available from Internet, http://www.allbusiness.com/mining/oil-gas-extraction-crude-petroleum-natural/752907-1.html, viewed on 2 November 2006.

in four refineries (Cilacap, Balikpapan, Musi, Dumai) in 1998 raising the country's input refining capacity by 126.000 bbl/d[276].

As regards the proportion of the produced CPPs, the percentage of each product has remained almost invariable over the discussed period. Diesel oil has the higher production volume around 43%, followed by MoGas and Kerosene accounting for around 25% and 22% of the total production consecutively. Jet fuel, Naphtha and AvGas are of less importance as they comprise the rest 10% of the overall production.

Consumption

The CPP consumption has a steady upward trend over the last nine years resulting in total 40% increase from 1996 to 2004. A slight decrease in the consumption figures is noted in 1998 as a consequence of the financial crisis that tormented the region. After 1998 the consumption trend is moving upwards as Indonesian economy was recovering from the crisis and developing. The proportion of CPPs in the total consumption has been stable apart from MoGas that has increased from 20% in 1996 to 26% in 2004 and Naphtha that has decreased by almost 6% during the same period. Diesel holds the higher proportion of the consumption accounting for around 47% while Kerosene is around 20% of the total CPP consumption in the country.

[276] AllBusiness website, Available from Internet, http://www.allbusiness.com/mining/oil-gas-extraction-crude-petroleum-natural/159644-1.html, viewed on 2 November 2006.

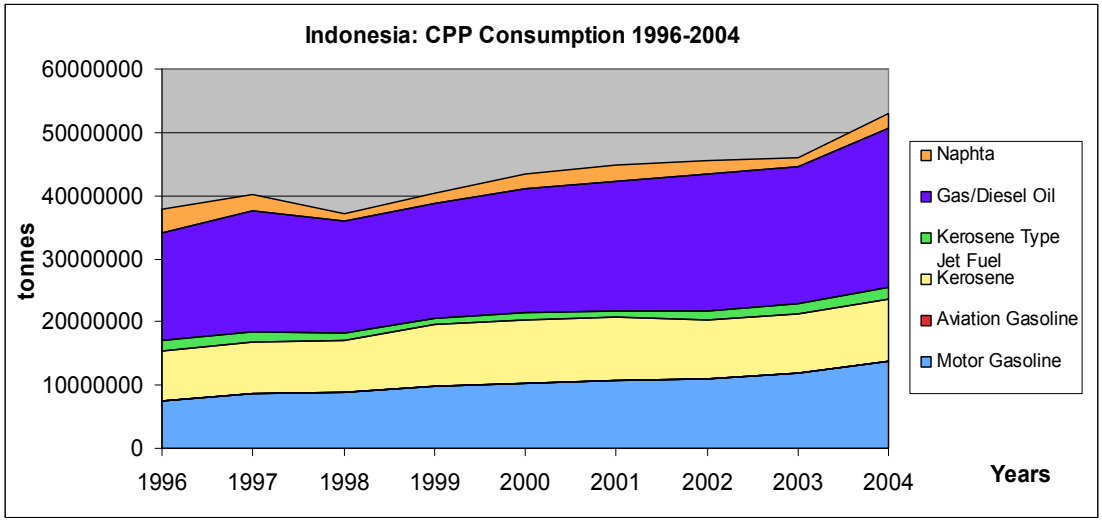


Figure 6.10 Indonesia: CPP Consumption 1996-2004 (Based on: IEA non-OECD statistics)

Comparison

Comparing the production and consumption of CPP over the last nine years in Indonesia, it can be seen from the figure 6.10 that there is a constant production deficit. Since 1999 the consumption increases with a higher growth rate than the production which dramatically increases the gap in the country. The total deficit has increased from around 5.5 million tonnes in 1996 to approximately 11.5 million tonnes in 2004 as the existing refineries can not cover the domestic demand. A significant part of the consumption is imputed to the smuggling of subsidized fuel products especially MoGas and Kerosene to neighbouring countries[277]. It is estimated by industry insiders that more than 100.000 bbl/d illegally escape the country[278].

[277] Embassy of the United States of America Jakarta, *Petroleum Report Indonesia 2005 – 2006*, available from Internet, http://www.usembassyjakarta.org, viewed on 12 September 2006.

[278] BusinessWeek Online website, "*Indonesia: Oil Smugglers Buy Low And Sell High"* available from Internet, http://www.businessweek.com/magazine/content/05_38/b3951078.htm viewed on 12 October 2006.

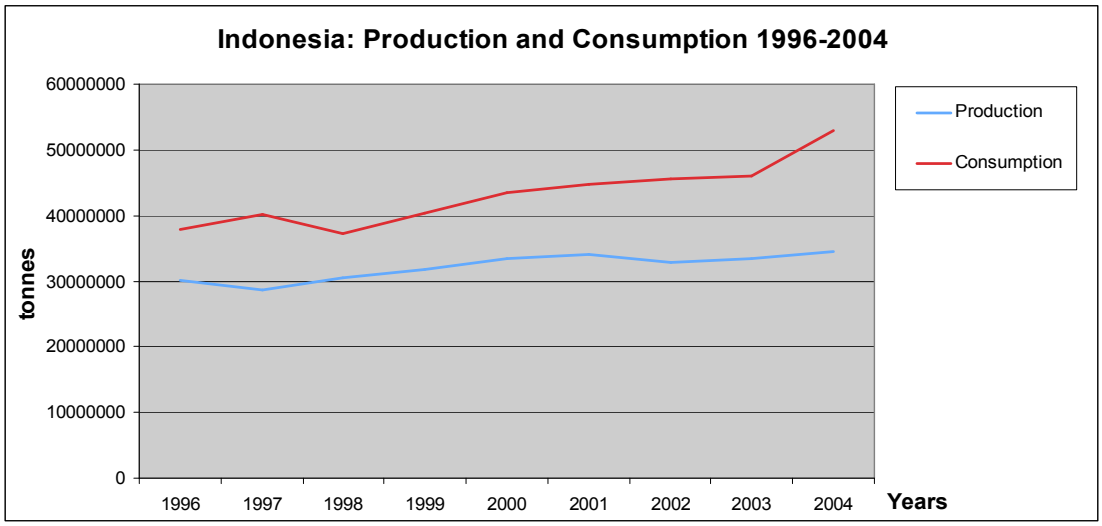


Figure 6.11 Indonesia: CPP Production and Consumption 1996-2004 (Based on: IEA non-OECD statistics)

In Indonesia the status of all products is in a deficit situation, while Naphtha is slowly crawling towards surplus. In 1998 there is a steep climb towards surplus visible for most products, especially Diesel. This can be explained by the expansion of refining capacity in the country by 126,000 bbl/d. After 1998 the consumption grew faster than production, leading to an increase of the shortage. Especially Diesel and MoGas are dropping into deeper shortage stages fast, while Kerosene and Jet Fuel stay rather stable.

Figure 6.12 Indonesia: Deficit / Surplus in CPP Production 1996-2004 (Based on: IEA non OECD-statistics)

6.2.2 Imports and Exports

Imports

As it has been mentioned in the data definition part Indonesia is a primary sourced country with incomplete data set. For this reason the following graphs do not represent the complete picture of imports/exports of the country within the ASEAN region. In this part only three products (MoGas, AvGas and Kerosene) will be discussed.

As it can be seen from figure 6.13 there is an upward trend in the imports of MoGas and Kerosene in Indonesia from the ASEAN region. MoGas has dramatically increased from 158 thousand tonnes in 1996 to 2.3 million tonnes in 2004. Kerosene follows a similar upward trend as it has been raised from almost 175 thousand tonnes in 1996 to 1.4 million tonnes in 2004. AvGas is of minor importance for the country's imports.

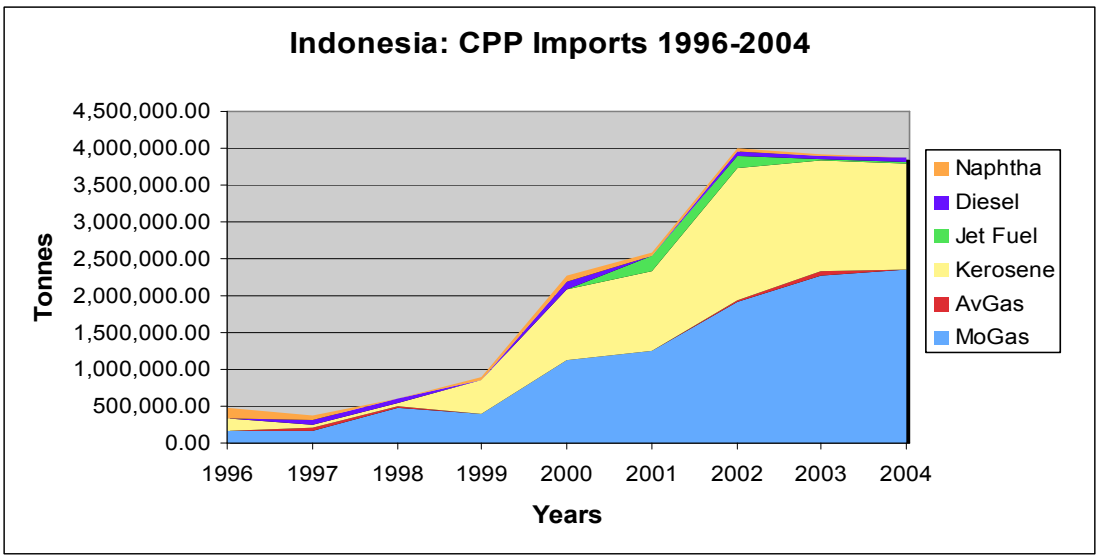


Figure 6.13 Indonesia: CPP Imports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Exports

Regarding the exports of Indonesia to the ASEAN region it can be mentioned that MoGas is the main exporting product although there is a steady

downward trend since 2000 as it is shown in figure 6.14 Indonesia exports also Naphtha although the volume presents significant fluctuations over the last nine years.

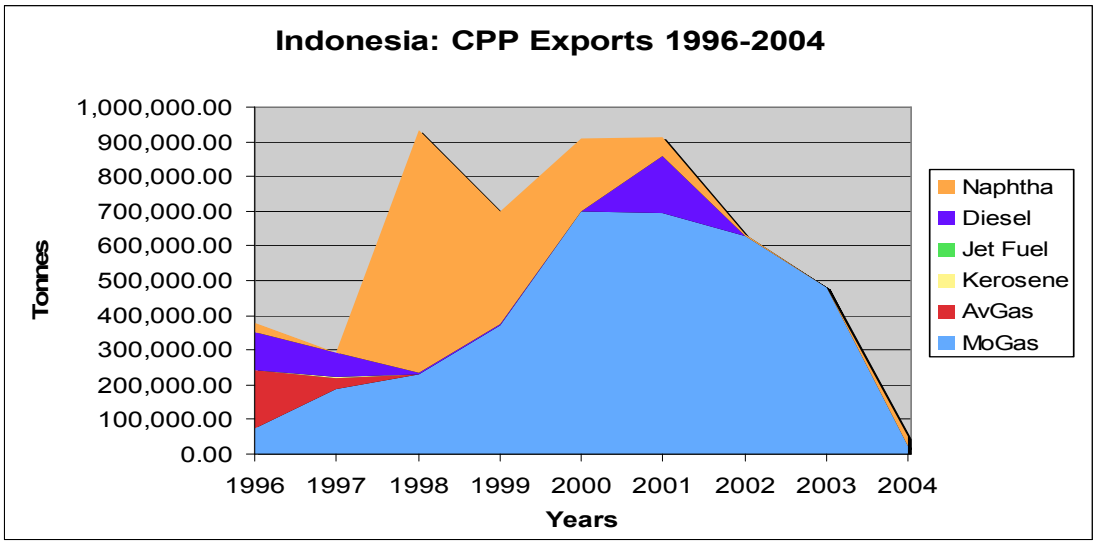


Figure 6.14 Indonesia: CPP Exports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Comparison

Comparing the exports and imports of CPPs over the last nine years in Indonesia as it shown in figure 6.15 there is a constant deficit of exports compared to imports as Indonesia is a net importer of CPPs since 1999. The gap is expanding constantly since 1999 as imports and exports trade lines follow a countertrend.

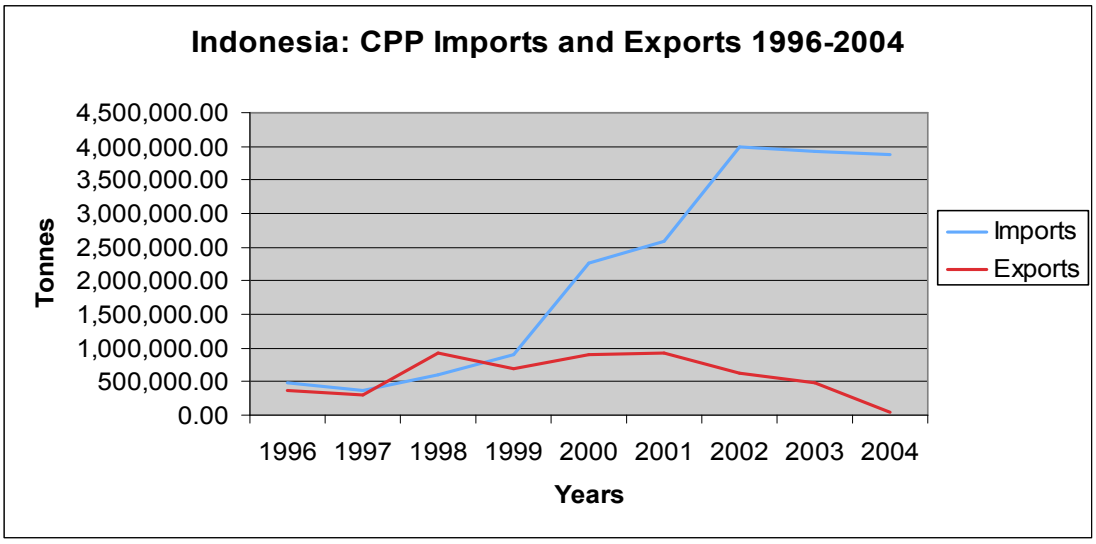


Figure 6.15 Indonesia CPP Imports and Exports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

As regards the status of each product Indonesia is a net importer for both MoGas and Kerosene and this status remains the same over the last nine years as it is shown in figure 6.16. This fact is aligned with the production deficit of these products as it is shown in figure 6.11 (see Cons/Prod).

Figure 6.16 Indonesia: Net importer / Exporter in CPP 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Summary

Due to problems in the refining industry, like unexpected shutdowns, this caused fluctuations in production, together with the Asian financial crisis. The product mix stayed constant, lead by Diesel (43%) and MoGas (25%). The consumption increased 40% over these nine years, with an increased proportion of MoGas (+6%) and decreased proportion of Naphtha (-6%). The deficit gap is steadily increasing due to growth in consumption, which accounts also for all separate products, especially Diesel and MoGas' deficit is increasing fast. Indonesia's imports of MoGas and Kerosene from the ASEAN countries follow an upward trend whereas MoGas is the main exporting product although there is a steady downward trend since 2000. Indonesia is a net importer of CPPs since 1999 a status that is constantly expanding.

6.3 Cambodia

6.3.1 Production and Consumption

Production

Since Cambodia does not have any refineries in its territory, CPP production will no be discussed.

Consumption

Consumption of oil products was around 900 thousand tonnes during 1998-2000[279]. From this total number, Diesel and Kerosene are expected to be consumed the most in the country. Kerosene will be used in house hold for heating and lighting while Diesel is consumed from big trucks and fishery industry, which is a big part of economy[280].

Comparison

As there is no CPP production in Cambodia, the comparison between CPP production and consumption is not applicable.

---

[279] United Nations, 'Cambodia Energy Sector Strategy', available on internet, viewed 10 June 2006

[280] The Economist Intelligence Unit, *'Country Profile Cambodia 2006'*, available from Economist Intelligence Unit Database, viewed on 17 August 2006 p.26

6.3.2 Imports and Exports

Imports

The fact that Cambodia does not have any refinery, forces the country to be totally depended on the imports in order to cover its domestic consumption for CPPs. The below figure 6.17 describes the imports of CPPs from ASEAN in the country for the period 1996-2004. Comparing the level of imports during the analysed period, it can be seen that Cambodia has increased its imports by 20% raising its imported quantities from 570 thousands tonnes in 1996 to 693 thousand tonnes in 2004. Regarding the proportion of its product to the total import volume is clear that Diesel has the highest contribution with shares that have been ranged between 95% and 76%.

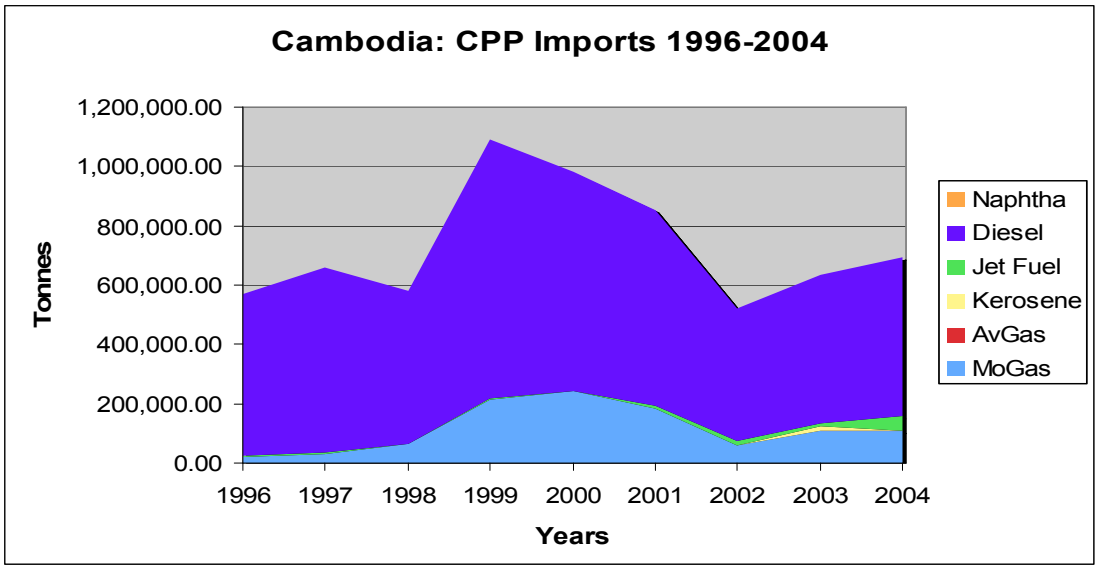


Figure 6.17 Cambodia: Cambodia CPP Imports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Exports

As there is no CPP production in Cambodia, exports of CPPs from Cambodia to the region do not exist.

Comparison

As there are no exports from Cambodia to the ASEAN region, comparison between imports and exports is not applicable.

Summary

Cambodia has increased its imports of CPPs by 20% in the last nine years with Diesel oil being the most important product imported. Cambodia does not have any exports of CPPs.

6.4 Malaysia

6.4.1 Production and Consumption

Production

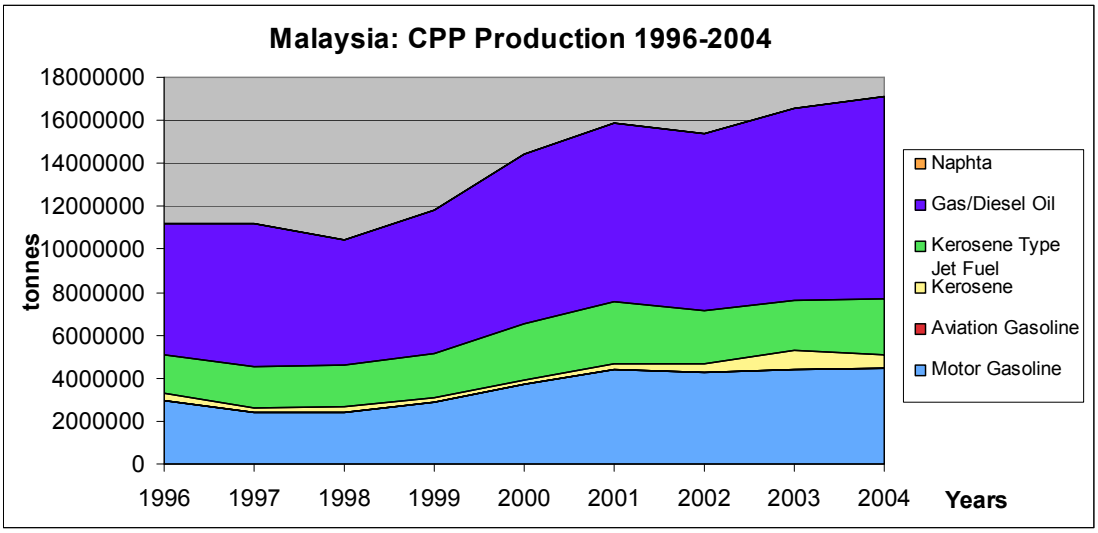


Figure 6.18 Malaysia: CPP Production 1996-2004 (Based on: IEA non-OECD statistics, excl Naphtha)

Looking at the trend of the total produced amount of products, a steep increase is displayed since 1998, which can be explained by the opening of Melaka-II refinery in that year.[281] In 2002 there was a drop of around 1 million tonnes, which could be explained by the tight refining sector in the region.[282]

[281] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC downstream oil market study* 2005, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, p.78

[282] Pui Kwan-Tse, *The mineral industry in Singapore (2001),* available from: http://minerals.usgs.gov/minerals/pubs/country/2001/snmyb01.pdf, viewed on November 10, 2006

Looking at the proportions of the different CPPs products in the Malaysian production, the shares are stable with Diesel being responsible for 55% of the production, followed by MoGas (25%) and Jet Fuel (16%).

Consumption

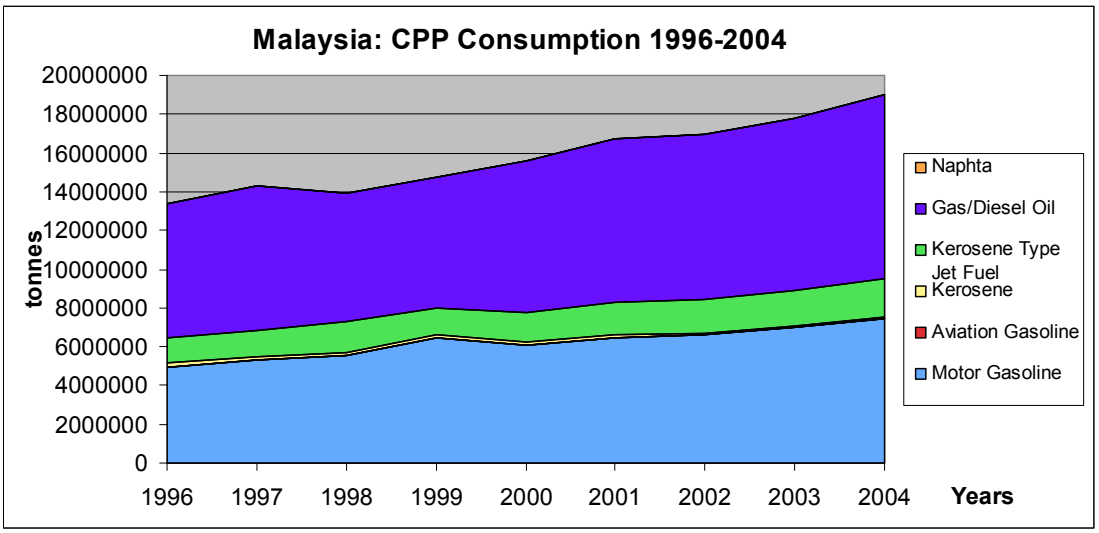


Figure 6.19 Malaysia: CPP Consumption 1996-2004 (Based on: IEA non-OECD statistics, excl Naphtha)

The consumption figures show an seemingly unstoppable upward trend with a glitch in 1998, due to the Asian financial crisis, of which the consumption of CPPs recovered more quickly than it came, raising the consumption in 2004 to 19 million tonnes, which is around 35% increase from 1998. The constant increase consumption is mainly due to the fast growing economy of the country.

The proportion of consumed CPPs has been stable with Diesel fluctuating around 50%, followed by MoGas (38%) and Jet Fuel (10%).

Comparison

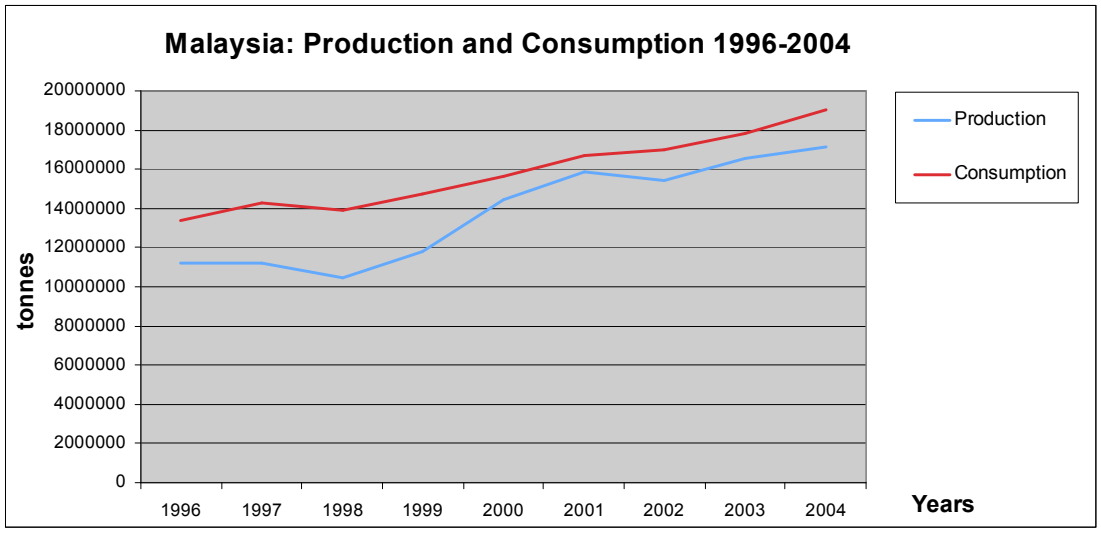


Figure 6.20 Malaysia: CPP Production and Consumption 1996-2004 (Based on: IEA non-OECD statistics)

Looking at figure 6.20, it is apparent that Malaysia has had a deficit in CPP production for the last nine years. This deficit has shrunk significantly since 1998 with the opening of Melaka-II refinery. As Malaysia is content about its production deficit, this trend is in line with the expectations.[283]

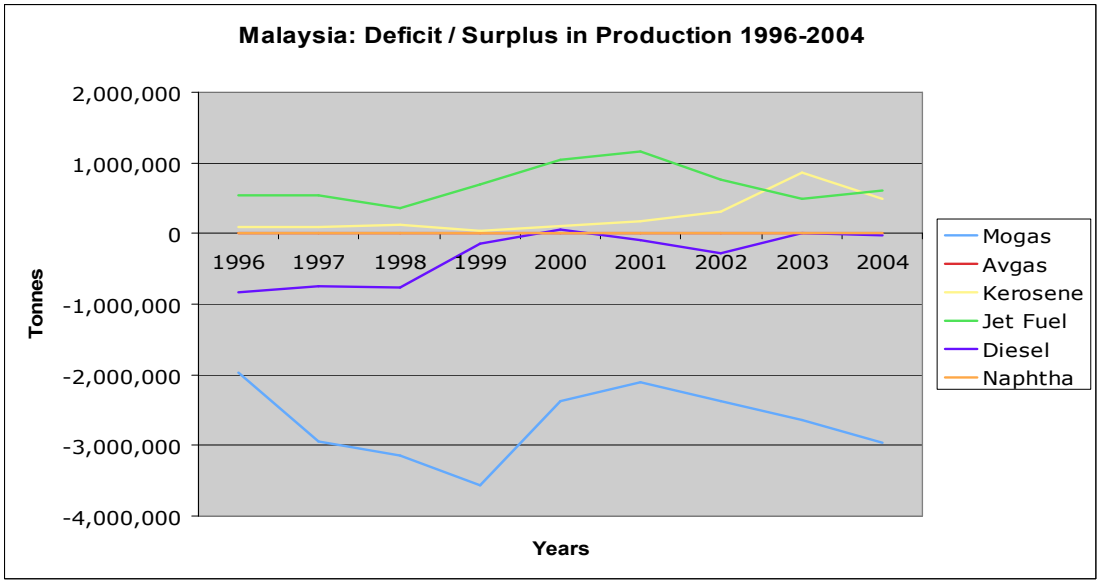


Figure 6.21 Malaysia: Deficit / Surplus in CPP Production 1996-2004 (Based on: IEA non OECD-statistics, excl Naphtha)

[283] Khalid Nazary, Interview with Research Fellow at MIMA, Kuala Lumpur, Malaysia, September 25, 2006

As it can be seen from figure 6.21 CPPs have a different status in the production. MoGas shows a constant deficit over the last nine years although with the operation of the new Melaka-II refinery the country attempted to cut back the gap. Diesel and Kerosene fluctuate around the self-sufficient status while on the other hand Jet Fuel illustrates a constant surplus in the production over the discussed period and according to the above graph follows the same trend line as MoGas.

6.4.2 Imports and Exports

Imports

As it can be seen from figure 6.21 there is an upward trend in the CPP imports of Malaysia from the ASEAN countries. The total volume has increased from around 4.1 million tonnes in 1996 to approximately 6.6 million tonnes in 2004 illustrating a 59% increase. The proportion of imported products has remained almost steady during the discussed period with slight fluctuations. The main products imported are MoGas accounting for around 60% of the total volume in 2004 followed by Diesel oil (34%). Naphtha and Jet fuel are of minor importance.

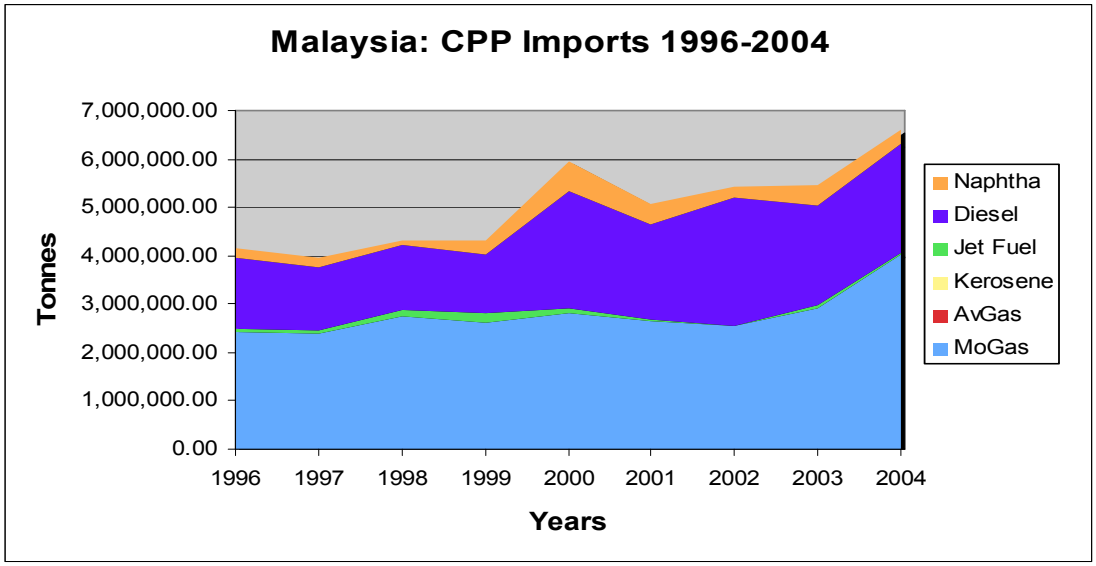


Figure 6.22 Malaysia: CPP Imports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Exports

With regards to the exports of Malaysia to the other ASEAN countries as it can be seen in figure 6.23 there is an upward trend reaching its pick in 2001 accounting for almost 3.1 million tonnes and then follows a constant downward trend until 2004. The proportion of each product shows a significant fluctuation over the past nine years. Diesel oil has the highest share of all exported products following a steady upward trend and accounting for 67% in 2004. Naphtha had the second higher export share over the nine years followed by Jet fuel that presents a significant increase during the same period.

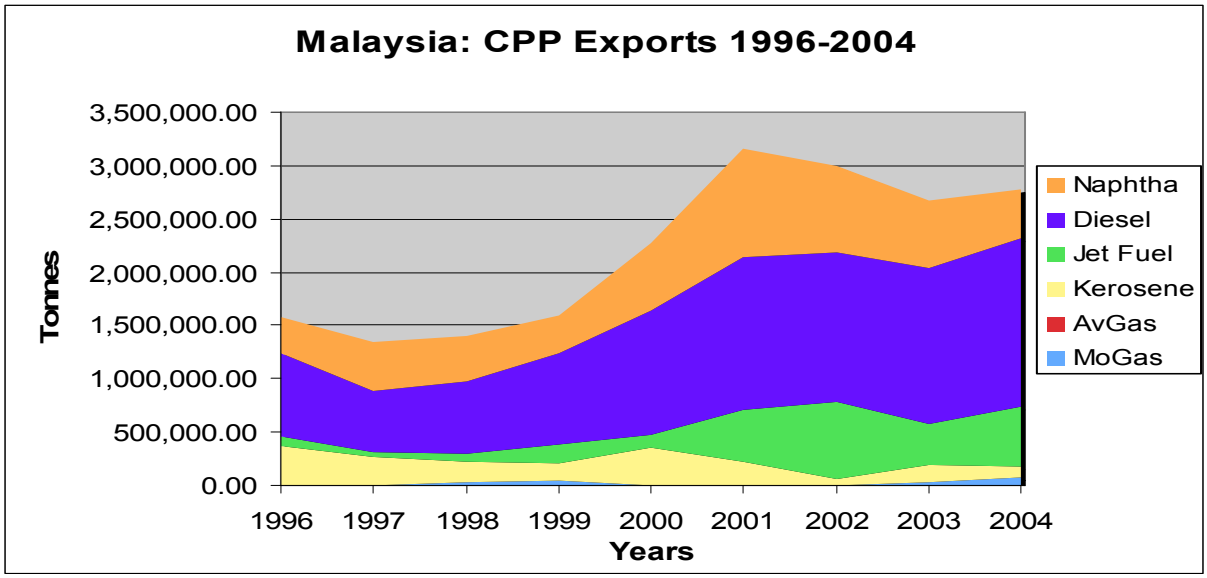


Figure 6.23 Malaysia: CPP Exports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Comparison

Comparing the exports and imports of CPPs over the last nine years in Malaysia, it can be seen from the figure 6.24 that there is a constant increasing CPPs trade flow gap. Although Malaysia has presented a deficit in production, as it has been discussed in chapter 6.4.1, part of its production is

being exported to the region mainly for trading reasons. Malaysia is a net importer of CPPs during the whole analyzed period. Imports and exports trade lines follow the same development until 2001 and since then they have a counter trend resulting in an increased gap.

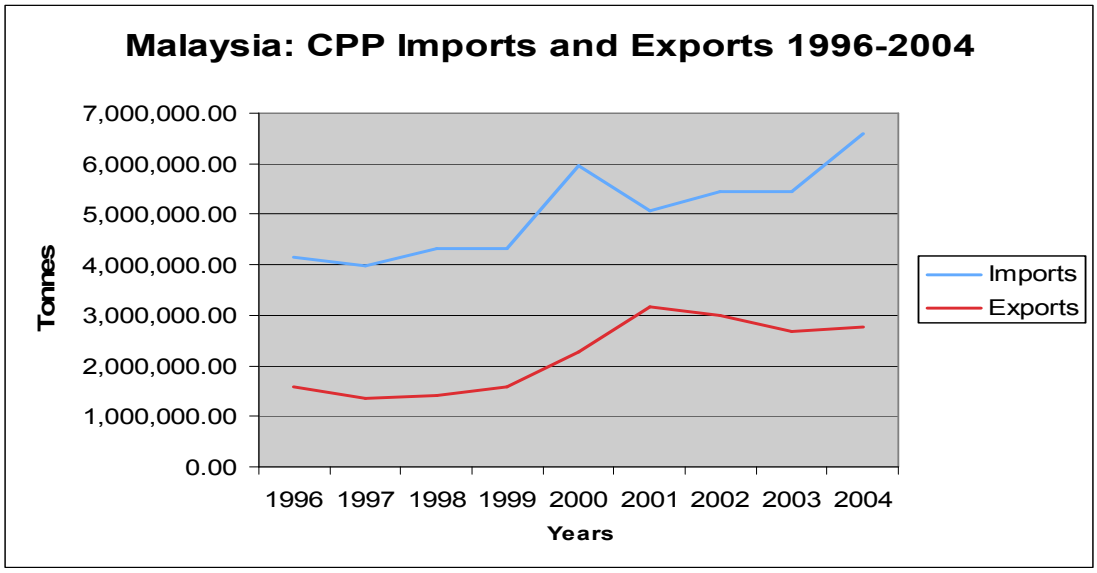


Figure 6.24 Malaysia: CPP Imports and Exports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Regarding the status of each product Malaysia is a net importer of MoGas and Diesel oil as it is shown in figure 6.25 that is in line with the production deficit of these products as it is illustrated in figure 6.20 (see Cons/Prod). The rest of the products have slight fluctuations above the trade balanced point with the country being a net exporter in the region.

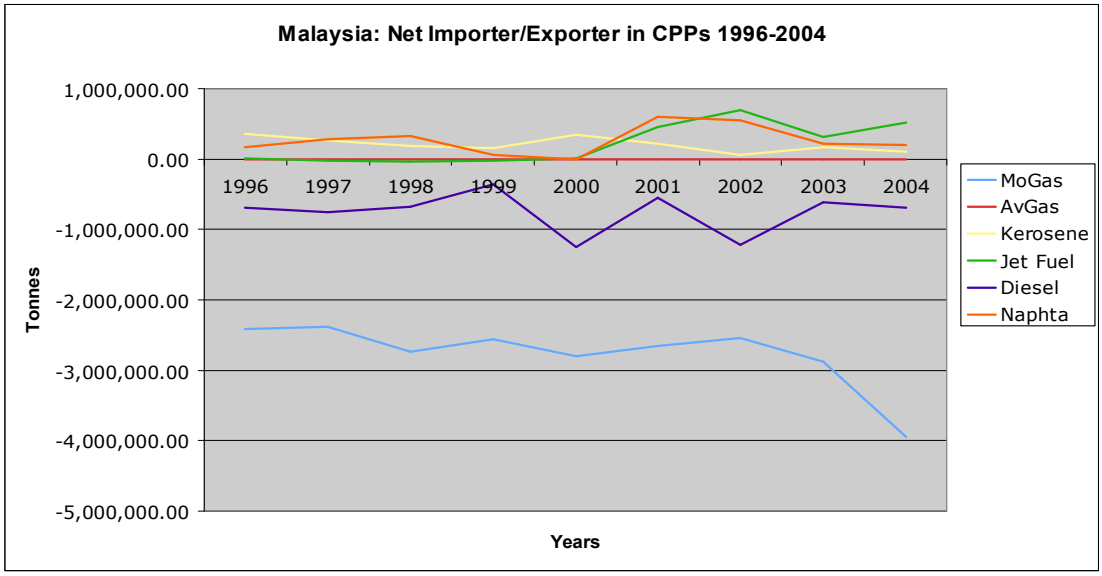


Figure 6. 25 Malaysia: Net importer / Exporter in CPP 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Summary

Malaysia has performed a constant increase in the production of CPPs mainly driven by the opening of the new Melaka-II refinery in 1998 while the proportion of the products remain stable, lead by Diesel (55%) and MoGas (25%). The consumption followed an upward trend and increased by 35% in these nine years while the share of consumed products remained stable. The gap significantly shrunk since 1998 although MoGas shows a constant deficit status while the rest of the products fluctuate around self-sufficient status.

Malaysia shows an upward trend in the CPPs imports from the ASEAN region while the exports follow a constant downward trend since 2001.The main products imported are MoGas and Diesel oil while Diesel oil accounts for the highest share of exports. Malaysia is in total a net importer of CPPs during the last nine years; regarding the status of each product the country is mainly a net importer of MoGas and Diesel oil.

6.5 Philippines

6.5.1 Production and Consumption

Production

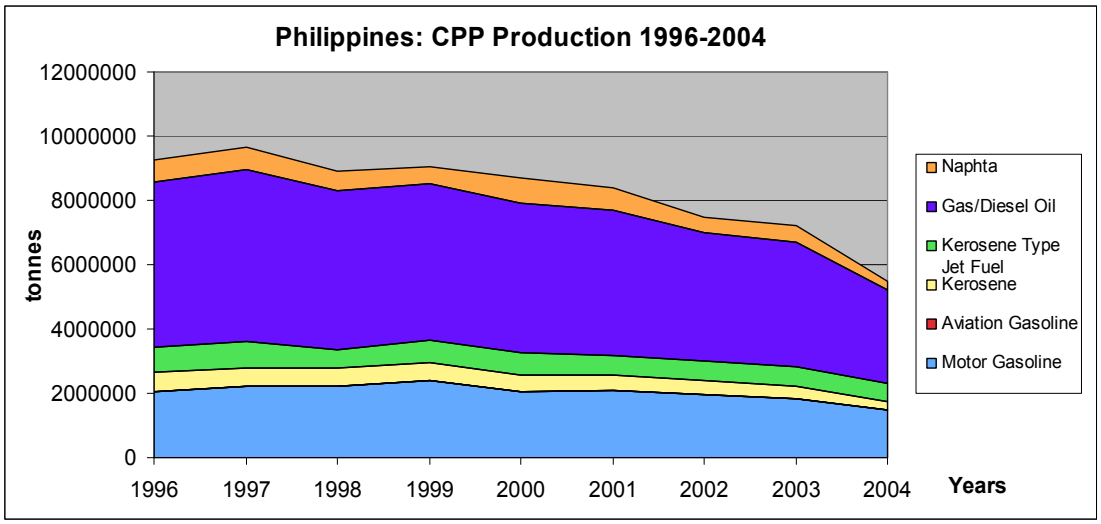


Figure 6.26 Philippines: CPP Production 1996 – 2004 (Based on IEA non-OECD statistics)

The above figure 6.26 illustrates the trend of CPPs production in Philippines during the period (1996-2004). Apart from the first year when the production increased slightly, in the rest of the period the production trend is downward due to international and domestic factors. During the analysed period the CPP production in Philippines has been decreased by 41%. In 1998 there is small drop which can be explained as a result of the decreased demand of CPPs in the same year due to the country's economy slowdown. The period after this crisis production of CPPs followed a continuing downward trend which mainly happened because of domestic reasons. The main reason is the low margin of the refineries at that time which forced the companies to reduce the production in order to keep them profitable. The situation remained the same until 2003 when Caltex realising the end of profitability for its refinery decided to replace it with a new oil terminal. That decision had as a result the

significant decrease of the national production[284]. Comparing the years 2003 and 2004, the shut down of the Caltex refinery resulted to the decrease of the national production by 1.7 millions tonnes or 24%.

Looking at the proportion of produced CPPs, this has remained almost the same during the analysed period of time. Diesel oil is taking the biggest part of the production with share around 53%. MoGas share in the national production is counted almost 27%. Jet Fuel consumes 10% of the CPP production capacity, while the rest is split among Naphtha and Kerosene.

Consumption

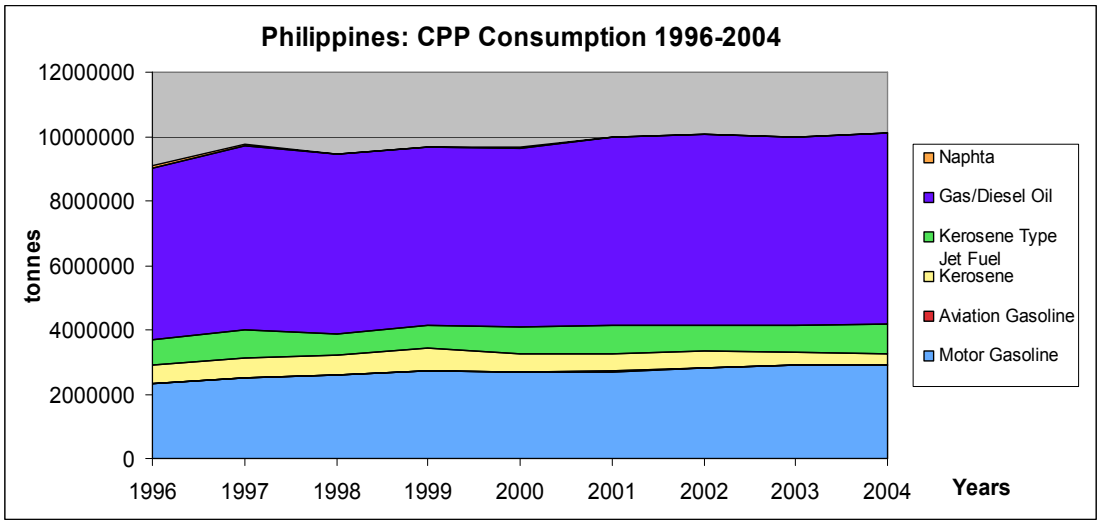


Figure 6.27 Philippines: CPP Consumption 1996 – 2004 (based on IES non-OECD Statistics)

The consumption of CPPs in Philippines does not show any worth-mentioned change apart from a slight drop in 1998 due to the GDP downfall. Especially the last years the demand for CPPs has been steady in the level of 10 million tonnes per yaer. The same stability is also appeared in the proportion of the consumed products with Diesel oil remaining the most common used fuel in the economy with a share of 53%. The second most consumed product in

[284] Chevron Website, http://www.chevron.com/news/press/2003/2003-09-23.asp,viewed on 12 November

Philippines is MoGas with a share that has been ranged between 22% and 27%.

Comparison

Comparing the production and the consumption of CPPs in Philippines is clear-sighted in the below figure 6.28 that after 1997 a deficit in production has been arose. This deficit has increased significantly during the analysed period mainly due to the decrease of the domestic production while the consumption has remained steady although the economy developed.

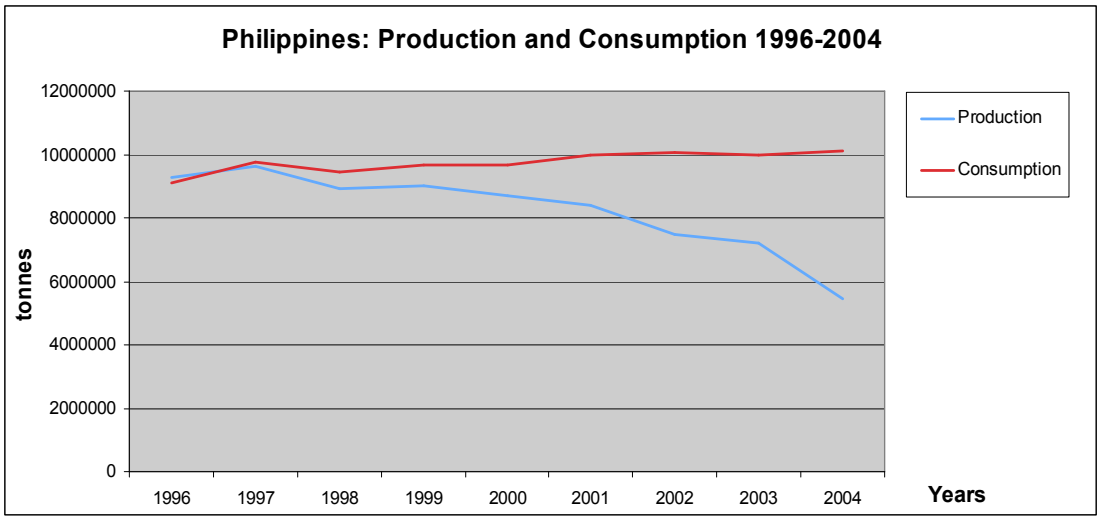


Figure 6.28 Philippines: CPP Production and Consumption 1996-2004 (Based on: IEA Non-OECD Statistics)

The below figure 6.29 presents the changes in the gap between the production and the consumption for each petroleum product for the period 1996-2004. It is obvious that after 1996 the most consumed products are always in a deficit situation. This can be explained by the fact that the refineries at that time decreased their production in order to keep the margin profit in high levels. In 2003 the deficit for Diesel and MoGas which are the key fuels for the national economy increased significantly due to the close up of the Caltex refinery. The rest of the products have been remained in the same situation for the whole period presenting a small deficit. The only

product that production surpluses the consumption for the past nine years is Naphtha.

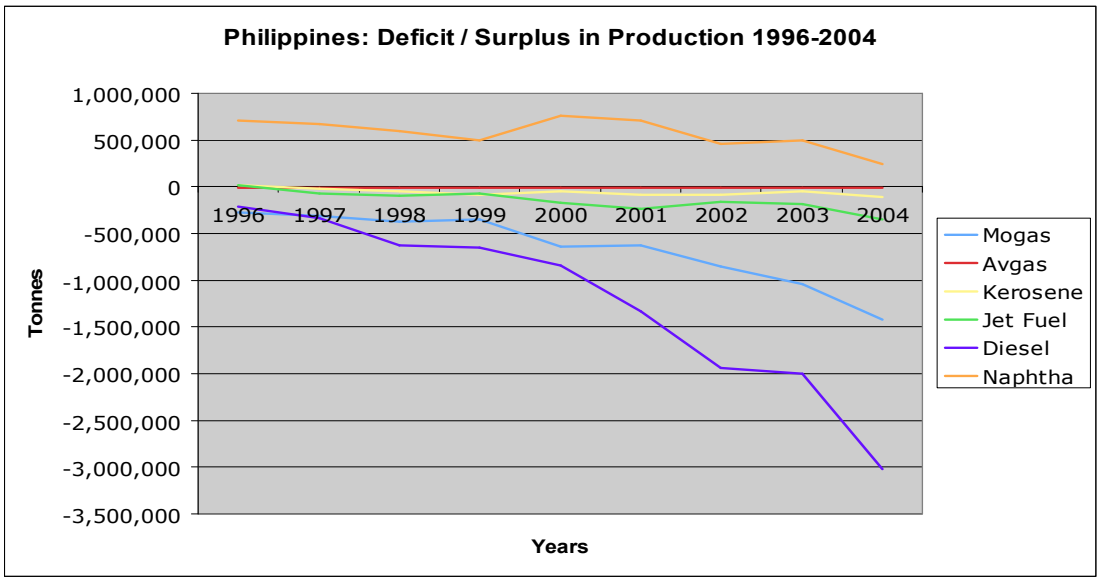


Figure 6.29 Philippines: Deficit / Surplus in CPP Production 1996-2004 (Based on: IEA non OECD-statistics)

6.5.2 Imports and Exports

Imports

Looking at the below figure 6.30 is clear that the imports of CPPs from ASEAN during the period of (1996-2004) follow an upward trend. In 1996 Philippines imported 284 thousands tonnes of CPPs while in 2004 the quantity was 1.43 millions tonnes which means a vast increase of 400% during these nine years. The product mix of the imported products has remained quite steady with Diesel and MoGas presenting the most significant imported volumes. The proportion of these two types of fuels for the period (1996-2004) ranges between 25%-30% for Diesel and 48%-53% for MoGas.

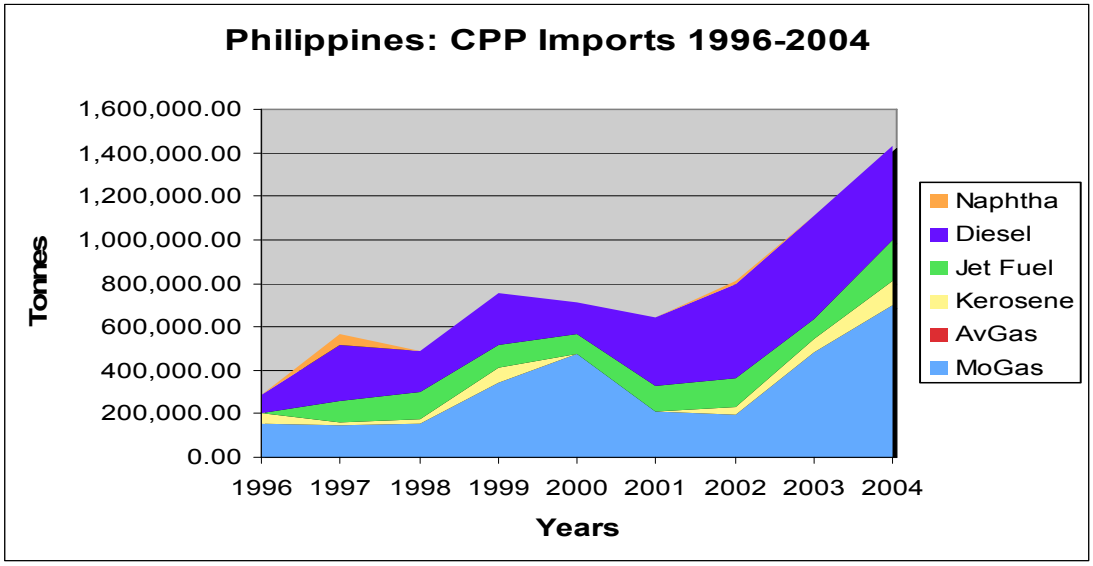


Figure 6.30 Philippines: CPP Imports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Exports

The figure 6.31 represents the exports of CPPs to ASEAN region for the period 1996-2005. From the graph is visible that the exports do not follow any specific trend. What can be mentioned from this figure is the domination of the exports by Naphtha which in the period 1998-2001 shows a significant increase mainly due to the exports to Singapore.

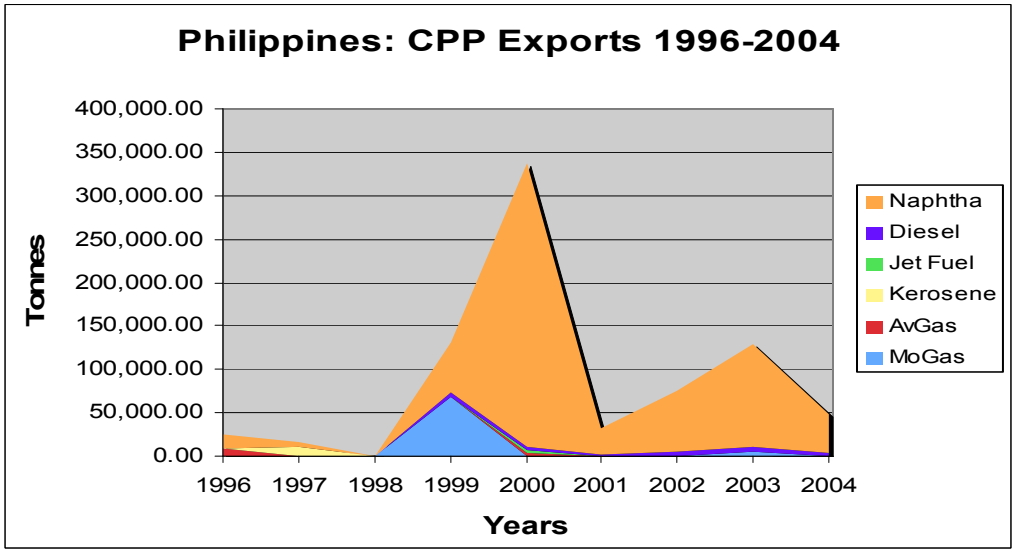


Figure 6.31 Philippines: CPP Exports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Comparison

Comparing the imports and exports for the past nine years, is well seen that Philippines is net importer of CPPs within the ASEAN region. The CPPs trade flow gap over the last nine years presents an increase which is closely related with the enlargement of the deficit in the CPPs production in the same period. After 2001 imports and exports follow totally different directions which resulted to the further widening of the gap.

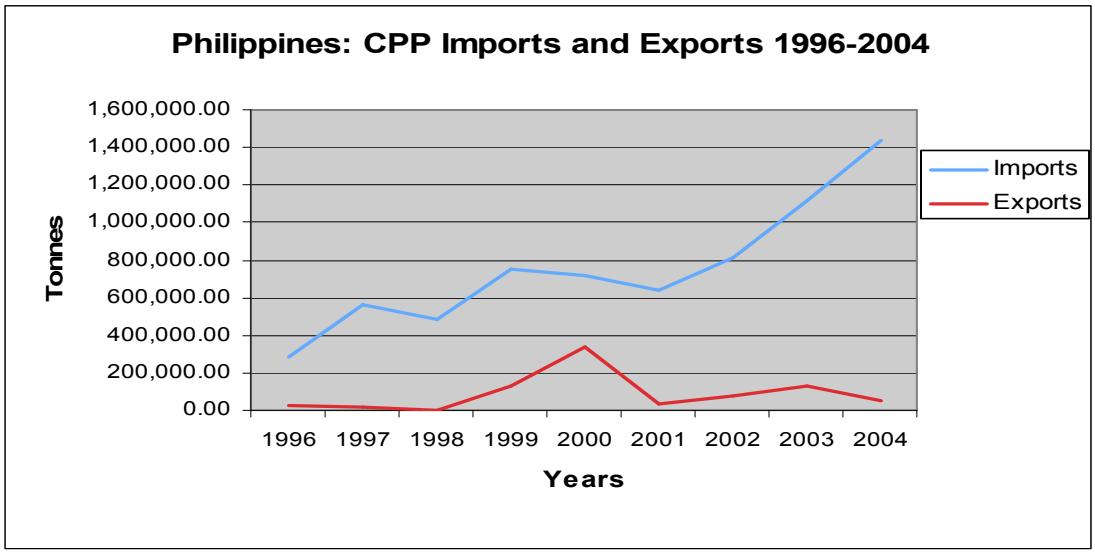


Figure 6.32 Philippines: CPP Imports and Exports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

The below figure 6.33 represents the trade status for each CPP. It is clear that Philippines after 1998 and until the end of 2004 is net exporter of Naphtha whereas for the rest of the products is in the net importer status for the whole discussed period. This situation is mainly driven from the deficit in production.

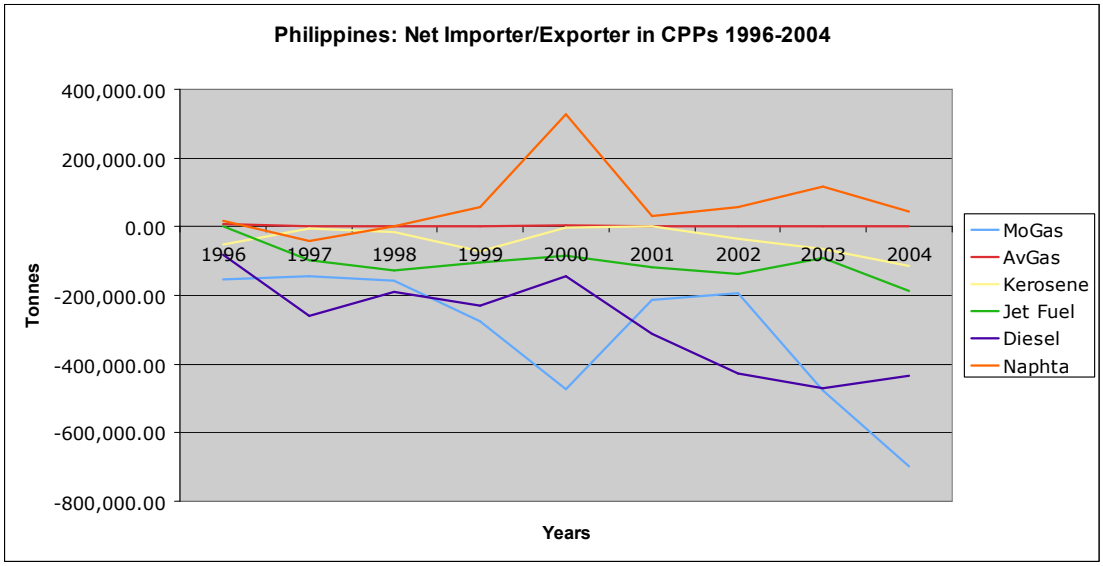


Figure 6.33 Philippines: Net importer / Exporter in CPPs 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Summary

Due to the shut down of Caltex refinery Philippines faced a significant decrease of the domestic production which lead to the creation of a high deficit. Diesel is major produced fuel with share of 53% of the total production. This proportion has remained steady during the last nine years. As far as the consumption is concerned this does not show any significant change although the development of the economy. Philippines imports of CPPs from the ASEAN region follow an upward trend performing a vast increase of 400% over the discussed period while the exports do not follow any specific trend. MoGas and Diesel oil is main imported products. Philippines is a net importer of CPPs in total within the ASEAN region.

6.6 Singapore

6.6.1 Production and Consumption

Production

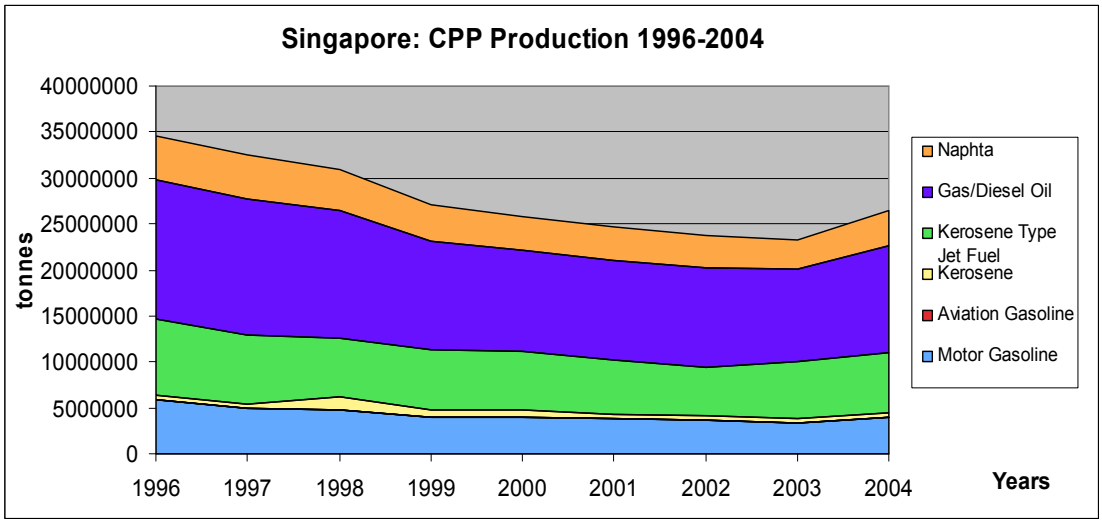


Figure 6.34 Singapore: CPP Production 1996 – 2004 (Based on IEA non-OECD statistics)

With regard to the CPPs that are produced in Singapore, for eight of the nine years a downward trend is shown in figure 6.34, leading to a significant cut in the capacity of CPP refining in Singapore, which illustrates Singapore's difficult time because price competition and economic conditions in the region led to smaller export orders. In 1998 the refineries operated overall around 70%[285] of its capacities, which plummeted in 1999 and 2000 to just over 50%.[286] In 2001, Shell Singapore, which had a total capacity of 59,000 tonnes per day, reduced output at its Bukom refinery by 22%. During the previous

[285] Pui Kwan-Tse, *The mineral industry in Singapore (1998),* available from: http://minerals.usgs.gov/minerals/pubs/country/1998/9327098.pdf, viewed on November 10, 2006

[286] Pui Kwan-Tse, *The mineral industry in Singapore (2000),* available from: http://minerals.usgs.gov/minerals/pubs/country/2000/9327000.pdf, viewed on November 10, 2006

two years, the refinery had even operated below its full capacity because of overcapacity in the Asian refinery sector.[287] From 2003 onwards the market became better[288], leading to an increased CPP production in Singapore.

Looking at the proportion of produced CPPs, the overall division of the capacity is constant for these nine years. Diesel oil is taking the biggest part of around 45%. Jet Fuel consumes 25% of the CPP production capacity, Naphtha and MoGas both around 15%.

Consumption

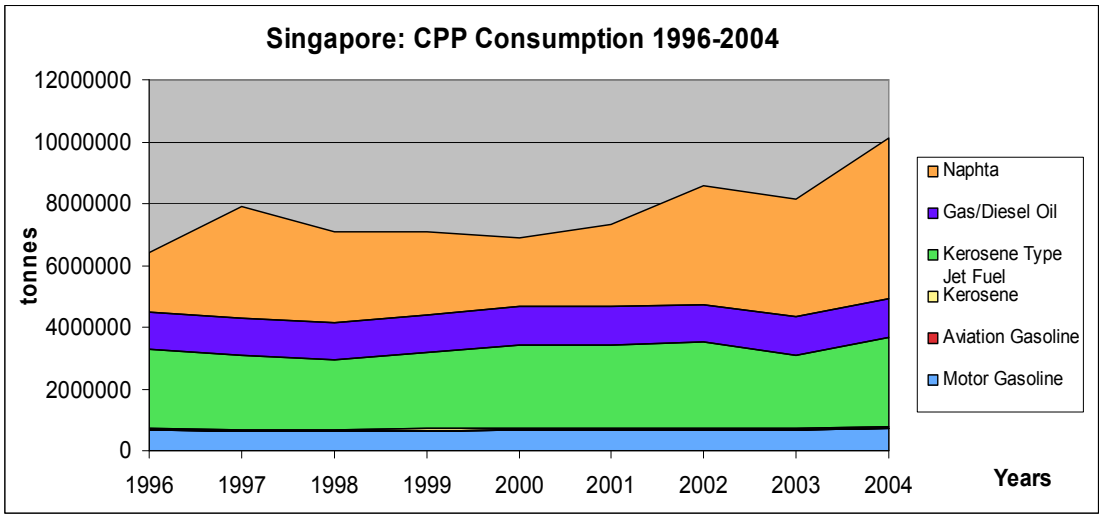


Figure 6.35 Singapore: CPP Consumption 1996 – 2004 (based on IES non-OECD Statistics)

The CPP consumption in Singapore shows a rising line until 1997 after which there was a drop of 1 million tonnes, which is not a surprise as the regional economies were heavily affected by the Asian financial crisis. Around 2000

[287] Pui Kwan-Tse, *The mineral industry in Singapore (2001),* available from: http://minerals.usgs.gov/minerals/pubs/country/2001/snmyb01.pdf, viewed on November 10, 2006

[288] Pui Kwan-Tse, *The mineral industry in Singapore (2005),* available from: http://minerals.usgs.gov/minerals/pubs/country/2005/snmyb05.pdfviewed on November 10, 2006

the trend started to rise again with a small dip in 2003. This can be explained by the SARS outbreak[289] and the start of the Second Gulf war.

The proportion of the consumed products has been changing quite a bit over the last nine years. MoGas, Jet Fuel and Diesel's contribution to the consumption have declined, respectively from 10% in 1996 to 7% in 2004; from 40% to 29%; from 19% to 13%, whereas Naphtha increased from 30% to more than 50%, with the biggest increase from 1996 to 1997, which shows an increase of activities in the petro-chemical industry in Singapore, which can be explained by the focus of Singapore to become a bigger international hub for the chemical industries (e.g. biomedical industries) in the city-state.[290]

Comparison

It is interesting to see in figure 6.36 that as expected the production in Singapore in this nine-year period has exceeded the consumption by far. This easily shows the well-known fact that Singapore is acting as an oil production center. As the consumption of its 4 million citizens has no major developments and the production has been declining due to a tight Asian refining market, the production surplus has become smaller, but still production is around 3-4 times more than the consumption.

[289] World Health Organization website: available from: http://www.who.int/csr/sars/en/, viewed on November 11, 2006

[290] Pui Kwan-Tse, *The mineral industry in Singapore (2005),* available from: http://minerals.usgs.gov/minerals/pubs/country/2005/snmyb05.pdfviewed on November 10, 2006

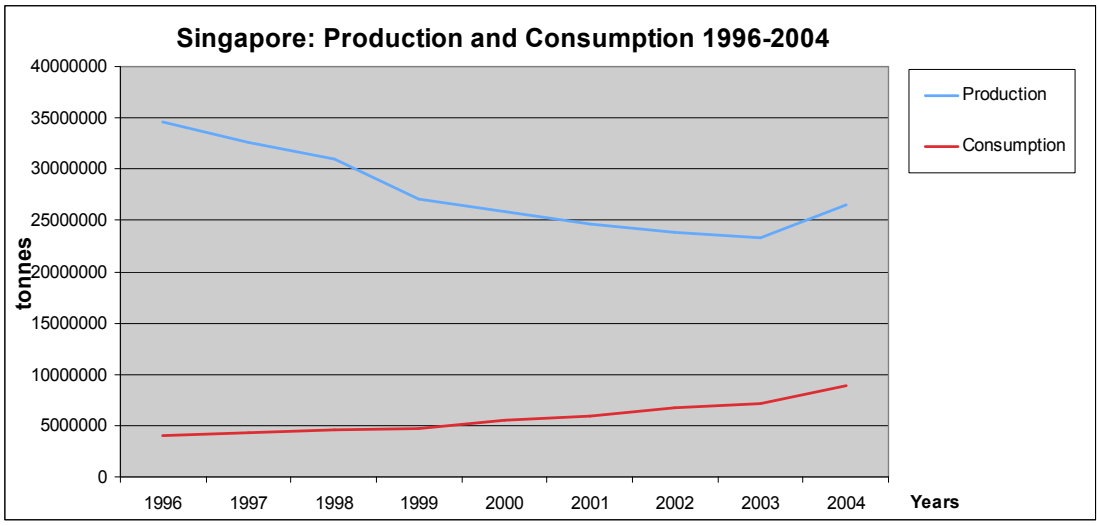


Figure 6.36 Singapore: CPP Production and Consumption 1996-2004 (Based on: IEA Non-OECD Statistics)

In the lion city all products are, as expected, in surplus, except for Naphtha in recent years, due to increased activities in the petrochemical sector. The decline of the surpluses is clearly visible, which can be explained by the tight Asian refining market, that lead to a decrease of refining output. In 2003 Jet Fuel's surplus increased again, followed by Mogas and Diesel in 2004.

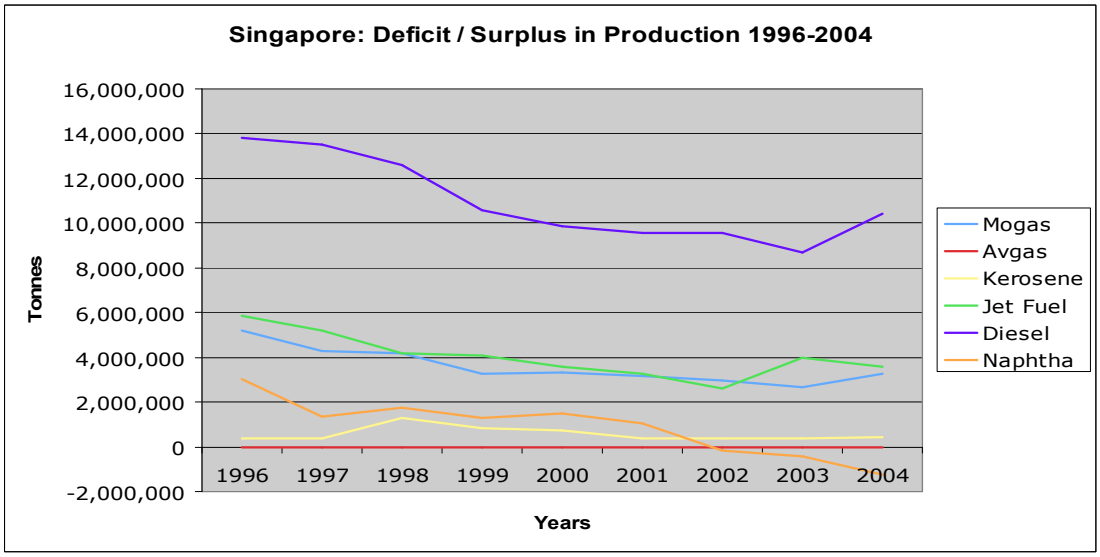


Figure 6.37 Singapore: Deficit / Surplus in CPP Production 1996-2004 (Based on: IEA non OECD-statistics)

6.6.2 Imports and Exports

Imports

Looking at Singapore's imports of CPPs from the selected countries, it is interesting to see that until 2002 the trend was upwards, with a sharp downfall afterwards. The product mix of the imports consists for the biggest part of Diesel and MoGas, accounting for around 75% of the imported tonnes. The mix is fluctuating over the years; Diesel jumps up and down between 40% and 54% in the last years. MoGas rises from 21% in 1996 to 32% in the next year, but falling to 26% until 2004 again. Jet Fuel rose quickly until from 4% to 19% in 2004. AvGas lost all significance as it lost its 6% share and plummeted to zero, in which way Kerosene is also heading with its drop from 9% to 2%. Naphtha has been most unstable changing from 13% to 3% in 1999, again to 15% and to 1% in 2004.

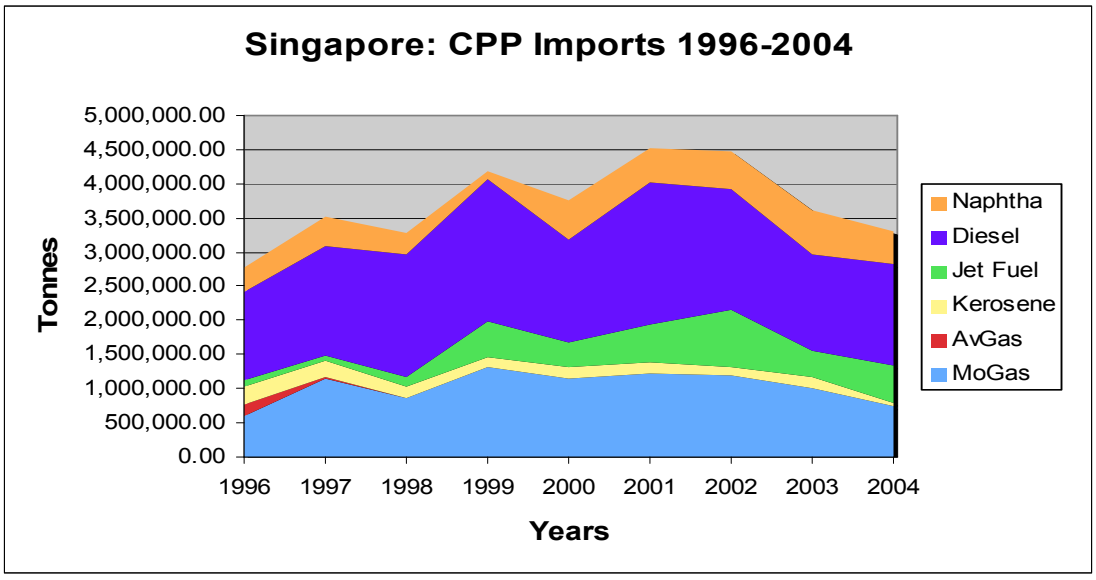


Figure 6.38 Singapore: CPP Imports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Exports

The CPPs exports from Singapore within the focus area show a total different picture: There is a rising trend, with a downfall in 2001. Over this nine year period the exports have increased with 95%, from 8 million tonnes to 15.5

million tonnes. The product mix of exported products shows the biggest proportion for MoGas and Diesel; the first one being responsible for a growing amount (from 43% in 1996 to 52% in 2004). Diesel has declined in importance from 45% in 1996 to 31% in 2004. Kerosene grew from 8% to 10% with a top in 2002 of 15%. Jet Fuel is of minor importance with 4%, peaking in 1997 with 15%. Naphtha accounts for a mere fluctuating 3 – 5%.

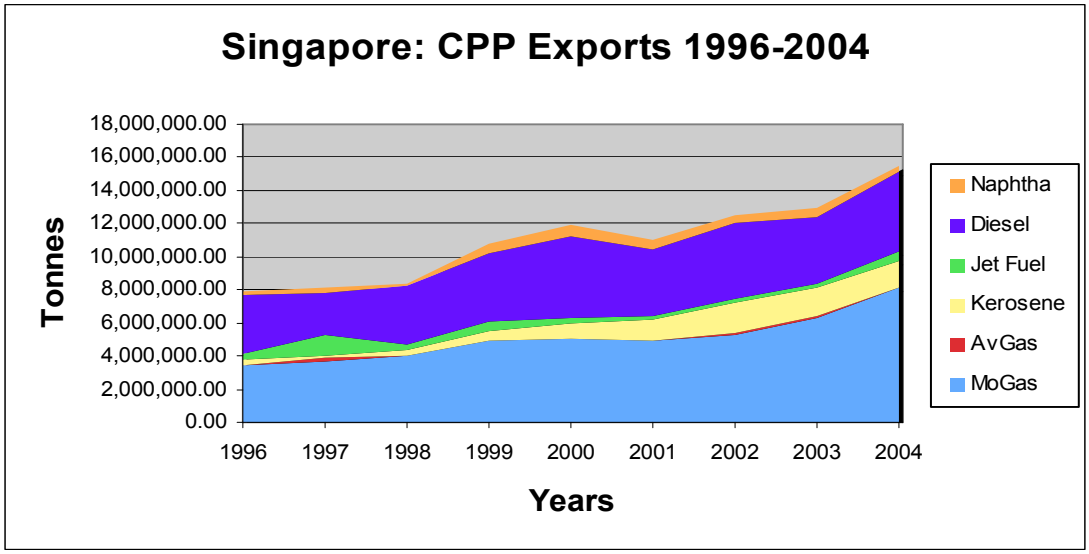


Figure 6.39 Singapore CPP Exports 1996-2004 (Based on: IE Petroleum Statistics, Singapore and BPED Export data, Indonesia)

Comparison

Comparing these two trade flows shows that the exports exceed the imports, making Singapore a net exporter of CPPs to the selected ASEAN countries. This 'gap' is growing steadily over the last nine years, making Singapore a more important player on the CPP export market in the region. Singapore is considered the main refining and trading hub in the region which can also be see from the exported and imported volumes of CPPs within the ASEAN region as it is presented in the below figure 6.40.

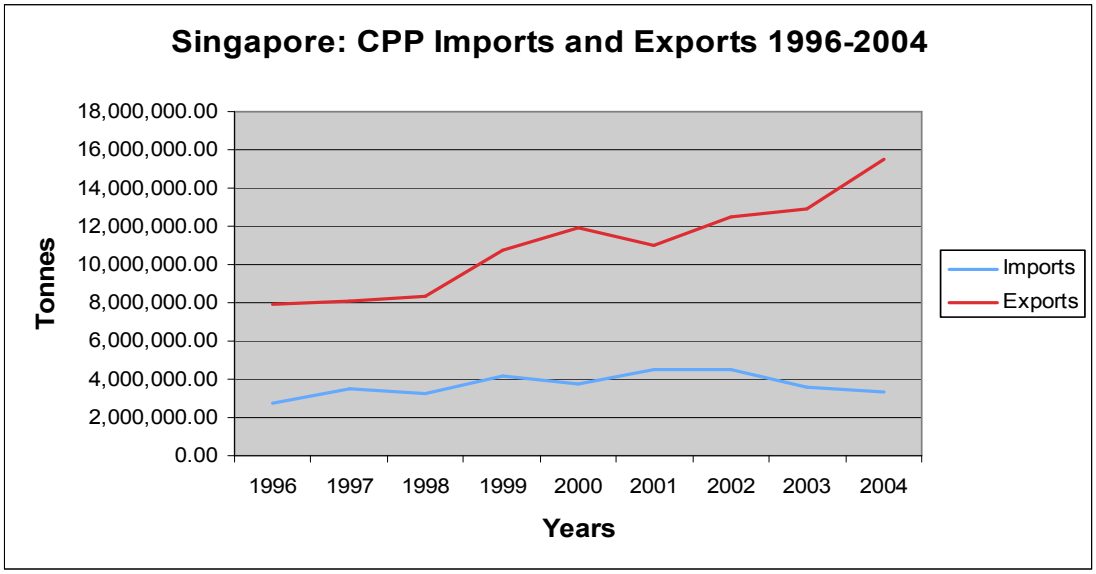


Figure 6.40 Singapore: CPP Imports and Exports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

If this comparison is broken down by product, it is interesting to see in figure 6.41 that the status 'net exporter' accounts for all products except for Jet Fuel. MoGas is even steeply growing away from the balance point while Diesel and Kerosene show a slow climbing trend.

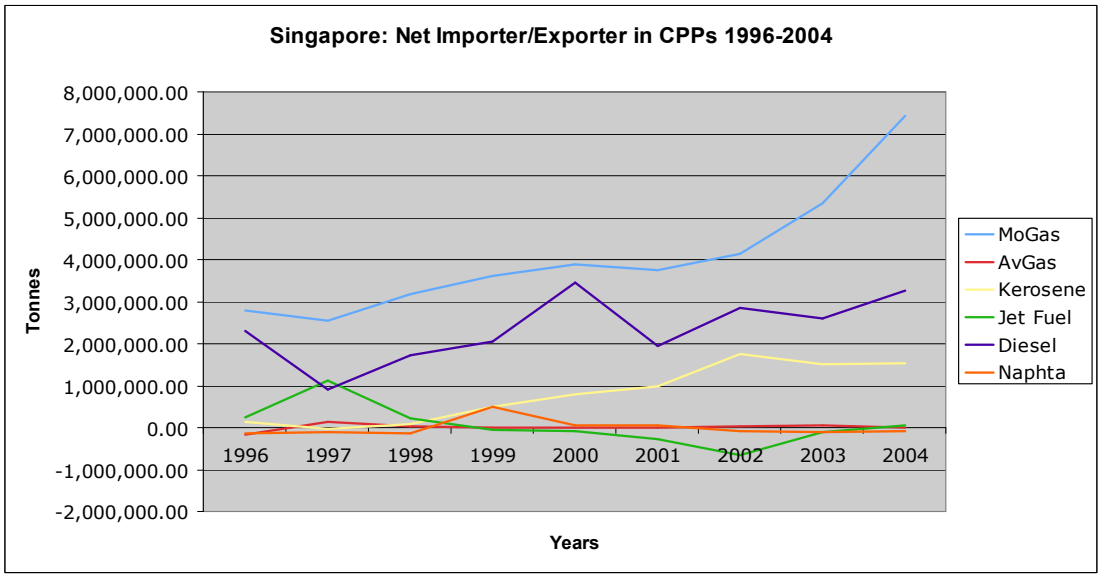


Figure 6.41 Singapore: Net importer / Exporter in CPP 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Summary

In Singapore the production showed a significant downfall until 2003, due to a tight Asian refining market, while keeping a constant product mix, lead by Diesel (45%) and Jet Fuel (25%). The consumption trend, which is generally upward, was halted in 1997 and 2003, due to respectively Asian Financial crisis and SARS / Iraq war, while the proportion of consumed products shifted heavily towards Naphtha. The gap shrunk due to changes in production, while the surplus status of all products remained, except for Naphtha. Singapore's imports of CPPs from the ASEAN countries, shows an upward trend until 2002 followed by a sharp downfall afterwards. Imports are mainly composed of MoGas and Diesel oil. The CPPs exports from Singapore to ASEAN have performed a 95% increase over the analyzed period with MoGas and Diesel oil being the most important export products. Singapore is a net exporter of CPPs to the ASEAN except for Jet Fuel.

6.7 Thailand

6.7.1 Production and Consumption

Production

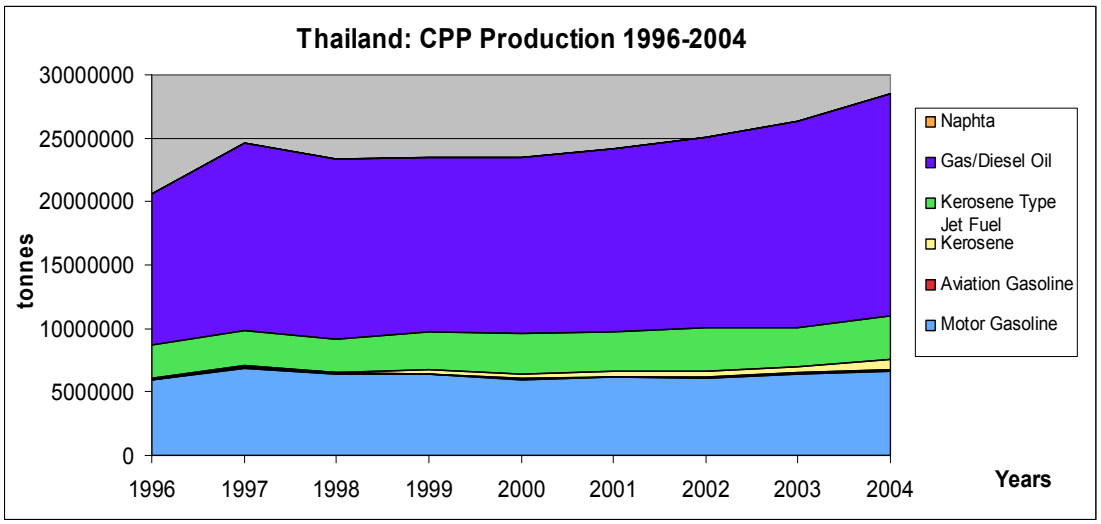


Figure 6.42 Thailand: CPP Production 1996-2004 (Based on: IEA non-OECD statistics, excl Naphtha)

Thailand's production graph shows interesting trend in 1996 and 1997. Before 1997, Thailand enjoyed fast growing economy and production in most sectors was growing fast to cover with economic expansion[291]. In July 1998, when economic crisis hit Thailand, production dropped by 5% and remained stable until 2000 as Thailand was struggling to recover from economic crisis. Production starts to rise again from 2001 onwards.

Diesel takes the biggest proportion of production and is accounted around 60% of domestic production. This number seems to be a stable trend from 1996 to 2004. Kerosene type Jet Fuel also shows stable trend of 12% for all

[291] The Economist Intelligence Unit, *'Country Profile Thailand 2006'*, available from Economist Intelligence Unit Database, viewed on 17 August 2006 p.7

the period. For Kerosene, even though it shows a huge increase in production, compared to total, it has share of only 2%. MoGas shows a fairly stable trend compared to Diesel. It was accounted around 28% in 1996, but declined to 23% in 2004.

Consumption

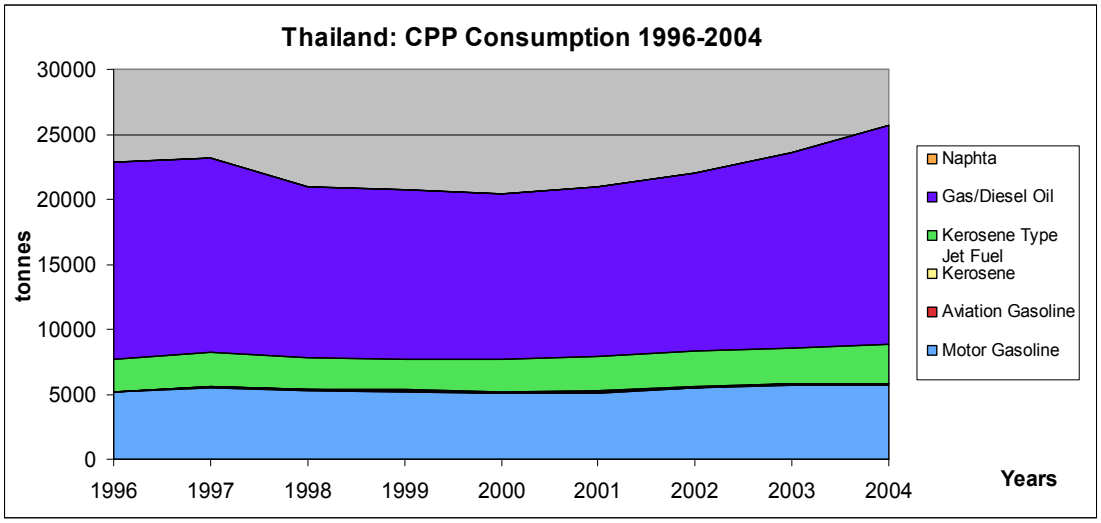


Figure 6.43 Thailand: CPP Production 1996-2004 (Based on: IEA non-OECD statistics, excl Naphtha)

CPP consumption dropped in 1997 almost 10%, where the majority of this decline was from Diesel. Since diesel is consumed by many industrial sectors including agriculture, financial crisis affected consumption in Thailand and Diesel took the greatest hit.

The proportion of each product does not show any significant fluctuation over the analyzed period. Diesel accounts for around 65% of the total consumption followed by MoGas which shows a stable trend in the data set with a proportion of 22%. This implies that Thai economy largely depends on Diesel. Due to this fact, Thai government still subsidises the price of Diesel, while the price of MoGas is floated to market adjustment. Kerosene type Jet Fuel does not change over the period and takes share around 12% of total production.

Comparison

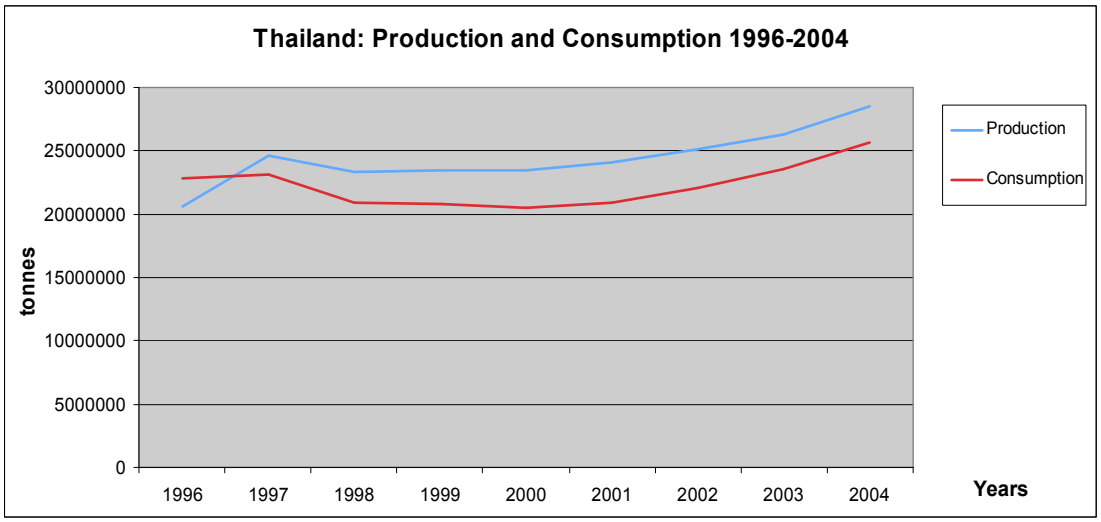


Figure 6.44 Thailand: CPP Production and Consumption 1996-2004 (Based on: IEA non-OECD statistics, excl Naphtha)

Both production and consumption in Thailand were affected by financial crisis in 1997. However, after the crisis, Thailand seemed to maintain the surplus of production and pushed itself towards the self-sufficient status. From figure 6.44 Thailand shows a production surplus from 1997 until 2004, and the amount of surplus is quite stable as the production and consumption follow the same trend line.

From the figure 6.45 is clear that Thailand for the analysed period presents a surplus status for all the petroleum products apart from Diesel which changed status in 1997 from deficit to surplus. The surplus of the production illustrates the effort of the country to remain self-sufficient in terms of CPP consumption.

Figure 6.45 Thailand: Deficit / Surplus in CPP Production 1996-2004 (Based on: IEA non OECD-statistics, excl Naphtha)

6.7.2 Imports and Exports

As it can be seen from figure 6.46 there is a slight downward trend in the CPPs imports of Thailand from the ASEAN region. The total imported volume has decreased from 1.3 million tonnes in 1996 to 864 thousand tonnes in 2004 pointing up a decrease of 36%. Thailand's imports reached their pick in 1999 with a total volume of 2.4 million tonnes. The share of imported products has a continuous fluctuation during the discussed period. The two main products being imported are Diesel oil and Naphtha. These two products average for almost 85% of the total imports while MoGas, Kerosene and Jet Fuel account for the rest.

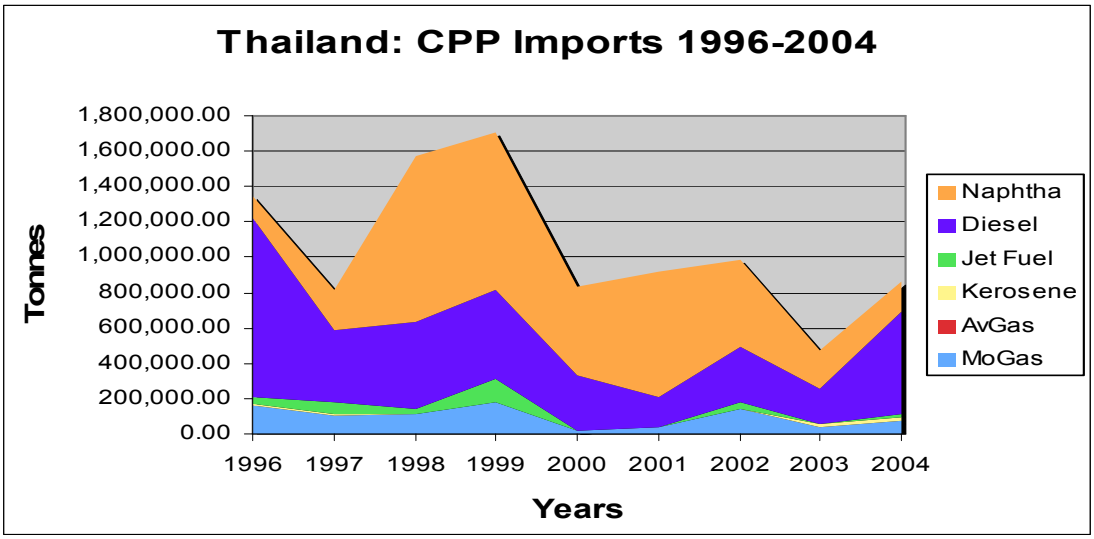


Figure 6. 46 Thailand: CPP Imports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Exports

Regarding the exports of Thailand to the ASEAN region it can be mentioned that there is an unstable export flow line as it is shown in figure 6.47. Exports of CPPs reached their pick in 1999 accounting for almost 3.1 million tonnes. The proportion of each product has also performed slight variations although Diesel oil and MoGas average around 84% throughout the discussed period.

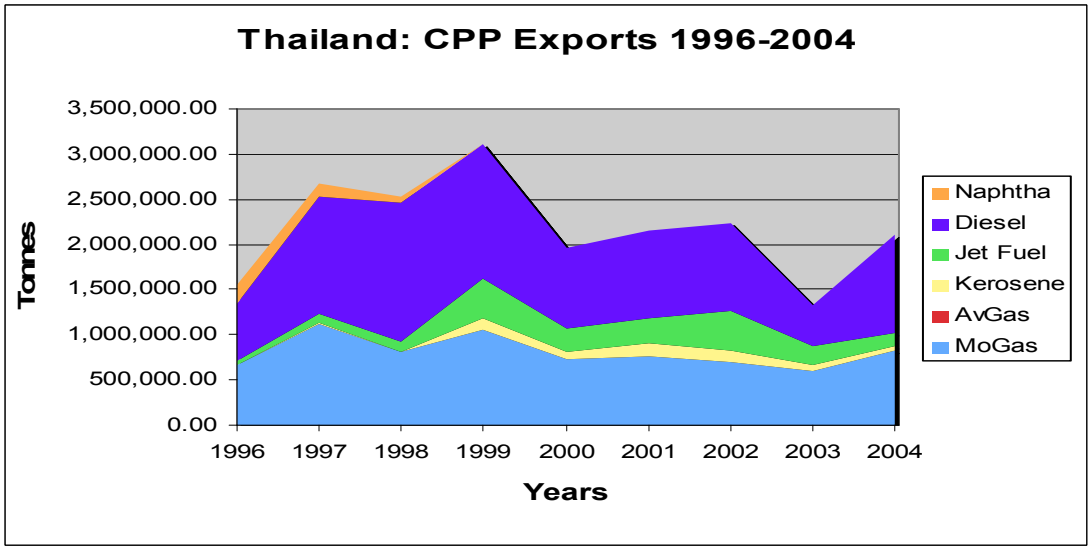


Figure 6.47 Thailand: CPP Exports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Comparing the exports and imports of CPPs over the last nine years in Thailand, it can be seen from the figure 6.48 that there is a constant surplus of exports compared to imports as Thailand is a net exporter of CPPs during the analyzed period. It is worth mentioning that imports and exports trade lines follow the same trend through all nine years.

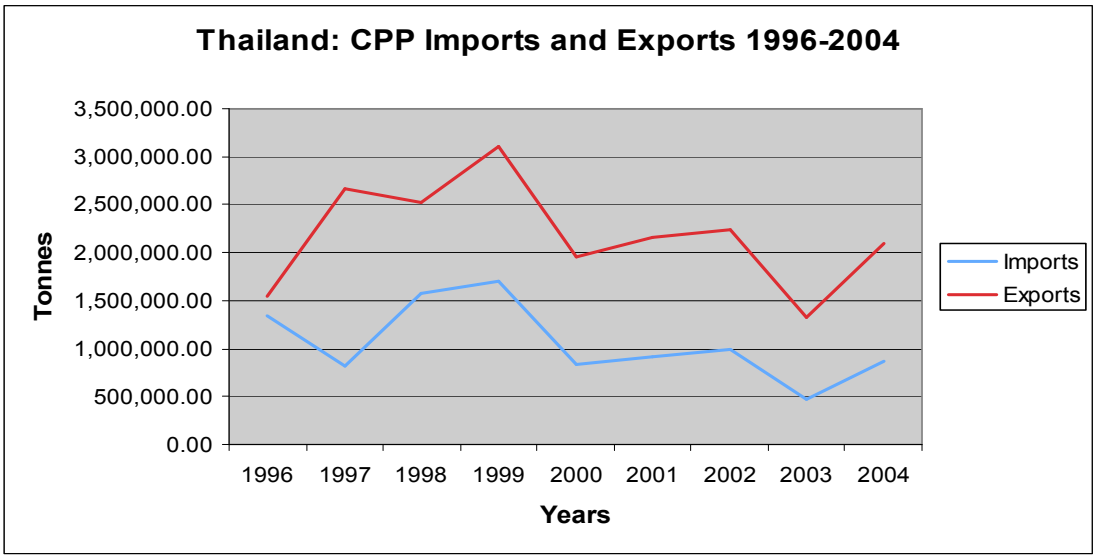


Figure 6.48Thailand: CPP Imports and Exports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

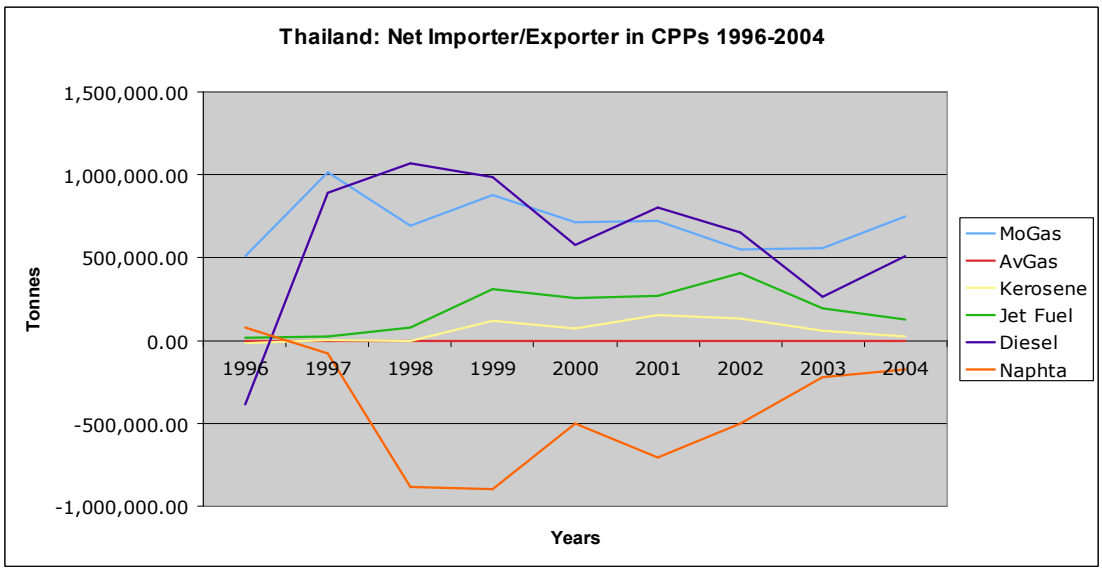


Figure 6.49 Thailand: Net importer / Exporter in CPP 1996-2004 (Based on mixed statistics from the 'primary sourced countries'

Regarding the status of each product Thailand is a net importer only of Naphtha while is net exporter for the rest of the products as it is shown in figure 6.49. This status remains unchanged for all the products during the last nine years being in line with the production surplus of these products as it is shown in figure 6.45 (see Cons/Prod).

Summary

Summarizing the situation in the country is clear that after the financial crisis, Thailand reached the self sufficient status regarding the production and consumption of CPPs. As far as the production is concerned, the product mix stayed constant for the past nine years, lead by Diesel (60%) and MoGas with shares that are ranging between 28% and 23%. The consumption of CPPs during the period 1996-2004 is following a steady upward trend with only exception the year of Asian crisis. The increase of the consumption is mainly driven from Diesel which consisted around 65% of the domestic demand. A slight downward trend in the CPPs imports of Thailand from the ASEAN region is noted as well as an unstable export flow line. The two main products being imported are Diesel and Naphtha while the most important products exported are Diesel and MoGas. Thailand is in total a net exporter of CPPs although is a net importer only of Naphtha.

6.8 Vietnam

6.8.1 Production and Consumption

Production

As there are currently no refineries in Vietnam, CPP production does not exist.

Consumption

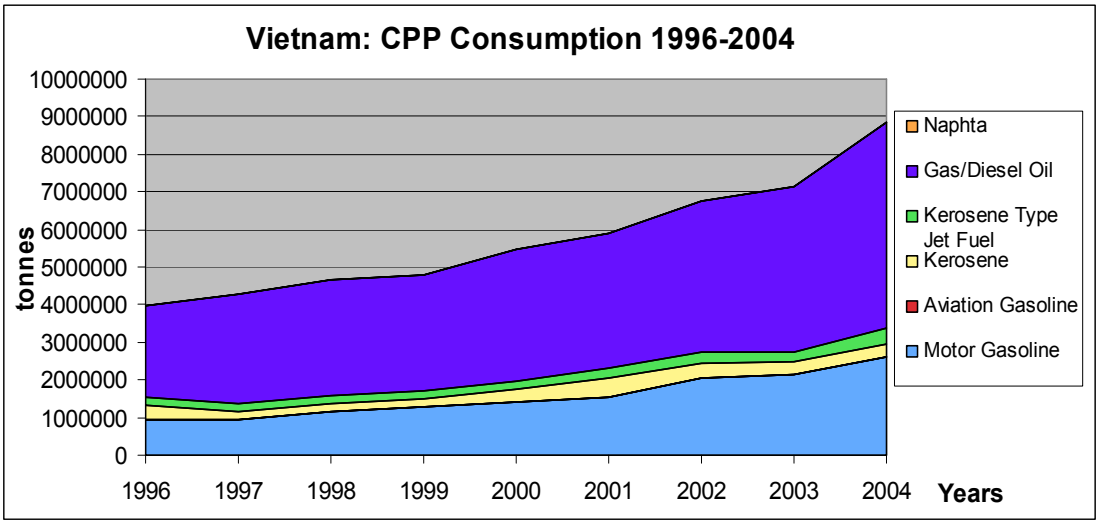


Figure 6.50 Vietnam: CPP Consumption 1996 – 2004 (based on IEA non-OECD Statistics)

The CPP consumption has shown an unbeatable upward trend with no real stagnation in growth over the last nine years. This is in line with the rapid GDP growth as shown in chapter 5. The growth rate is also increasing, looking at the jump between 2003 and 2004.

The proportion of CPPs that are consumed in the country have been rather stable with leading product being Diesel, hanging around 62% of all consumption, followed by MoGas that increased from 22% in 1996 to 29% in 2004. This can be easily explained by the fact that the consumption of the

industrial and transport sector has performed a vast increase over the analyzed period[292]. Kerosene dropped from 9% in 1996 to a mere 4% in 2004 and Jet Fuel is responsible for around 4%. .

Comparison

As there is no CPP production in Vietnam, the comparison between CPP production and consumption is not applicable.

6.8.2 Imports and Exports

Imports

From the figure 6.51 can be seen that imports of CPPs from ASEAN follows an upward trend with a significant drop in the period 2001-2003. Generally the imports have been increased by almost 100% during the discussed period. In 1996 Vietnam imported 1.8 millions tonnes of CPPs while in 2004 the imported amount reached the level of 3.7 million tonnes. As far as the proportion of each product is concerned Diesel is the main imported product with shares that are ranging between 36% and 55% followed by MoGas with shares around 27 % for the past nine years.

[292] Asia Pacific energy research centre (APERC), *APEC energy demand and supply outlook 2006* , pp.104-107, Available from Internet, http://www.ieej.or.jp/aperc/ viewed 28 August

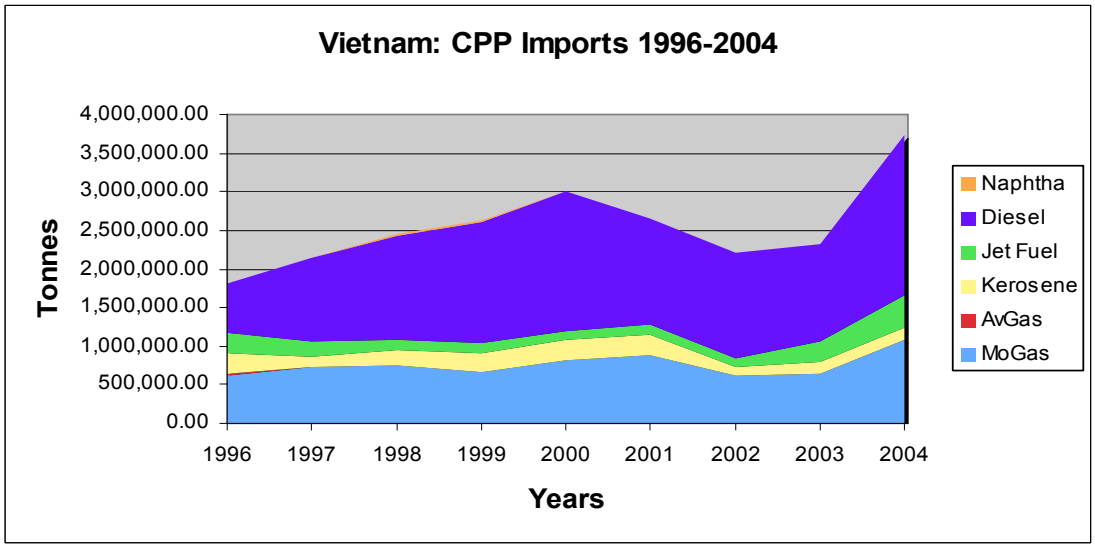


Figure 6.51 Vietnam: CPP Imports 1996-2004 (Based on mixed statistics from the 'primary sourced countries')

Exports

As there is no CPP production in Vietnam, exports of CPPs from Vietnam to the region do not exist.

Comparison

As there are no exports from Vietnam to the ASEAN region, comparison between imports and exports is not applicable

Summary

Due to the lack of refining capacity Vietnam has to import all the needed petroleum products for the domestic consumption which has shown vast increase during the last nine years. Diesel and MoGas are the main consumed products within the country. Vietnam's imports of CPPs from ASEAN follows an upward trend and has been increased by 100% over the last nine years. Diesel is the main imported product followed by MoGas. Vietnam does not have any exports of CPPs.

6.9 Total Summary

Summarizing the CPP production trend in all the countries of the region, Brunei's production has been stable with main produced products being MoGas and Diesel. The lack of any refinery within the country kept Cambodia in the status of CPPs net importer. The Asian financial crisis and the un-expected problems in the refining industry had as a result the production of CPPs in Indonesia to follow an unstable trend. The opening of the Melaka-II refinery resulted to a constant increase of CPPs production in Malaysia while Diesel and MoGas had the highest proportion of the total production. The shut-down of the Caltex refinery in 2003 resulted to the further decrease of Philippines' CPPs production. The production of Singapore is characterized by a significant drop until 2003 due to the tight Asian refining market. Thailand has reached the self sufficient status after 1999 when the production increased significantly.

With regard to the consumption of the analysed countries, Brunei shows a stable consumption trend with a drop in 1997 mainly due to the Asian financial crisis. The CPPs consumption in Indonesia presents an increase of 40% whereas for the same period the increase of Malaysian consumption was increased by 35%. The consumption of Philippines for the analysed period has remained stable although the significant development of the economy. As far as the CPP consumption of Singapore is concerned this has been affected from two global events the Asian financial crisis in 1997 and SARS/Iraq war in 2003. The steady upward trend of Thai CPPs consumption was also interrupted by the Asian financial crisis in 1997. The rapid development of the country had as a result a vast increase of CPP consumption for the past nine years.

Since 1998 Brunei has been in a surplus status which contributed to the elimination of imports. Exports from the country are insignificant due to the short surplus. As it is mentioned above Cambodia is totally dependent on the imports of CPPs. The limited production of Indonesia in comparison with the

increase of the consumption has forced the country to import petroleum products from other countries in order to fill its gap. For the last nine years Malaysia has been a net importer of CPPs although the significant increase of the production. Singapore is a net exporter of CPPs to the ASEAN region performing a 95% increase of its exports over the analyzed period. Thailand is a net exporter of CPPs mainly exporting Diesel and MoGas to the ASEAN. Vietnam is a net importer of CPPs from the region with Diesel and MoGas being the most important imported products.

7. CPPs Trade Flows

The report, so far, has shown the relationship of CPP movements from country's perspective. In this chapter, the CPP movements in ASEAN will be more scrutinized in terms of products. In this chapter it will be discussed who are the main importers and exporters within the region, and if there were any changes of role/quantity over time. Trading relationship of each country for specific products will also be identified.

7.1 MoGas flows in ASEAN

7.1.1 MoGas Importers

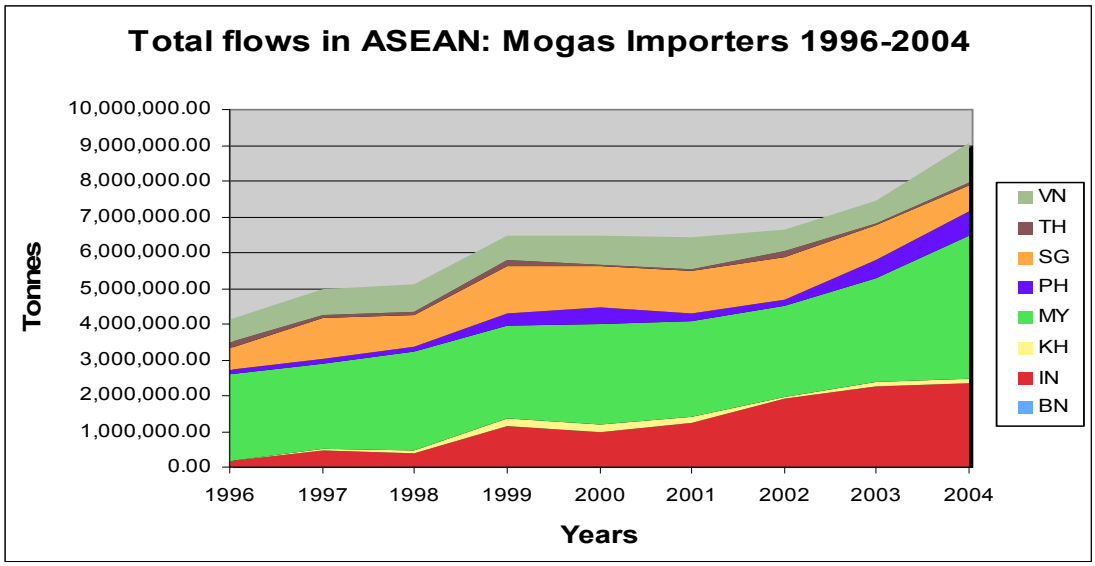


Figure 7.1 Total flows in ASEAN: MoGas Importers 1996-2004 (Based on mixed statistics from 'primary sourced countries')

The trend of the trade flows show an upward tendency, growing from around 4 million tonnes in 1996 to around 9 million tonnes in 2004. So far, Malaysia has constantly maintained its share of MoGas import in the region of 2-3 million tonnes per year. However, in 2004, this constant trend seemed to shift. Malaysia increased its import from 2.9 million tonnes instantly to 4 millions within one year, or around 40% change from 2003. On average, Malaysia import grows at the rate around 7% per year.

Indonesia has taken one of the major roles in import MoGas recently. Noteworthy changes started in 1999, where import was trebled. In 2002, import of MoGas increased by 50%.

Singapore and Vietnam show fairly stable trend through all the periods. However, Singapore import seems to decline recently. Thailand does not show any impact in this graph.

7.1.2 MoGas Exporters

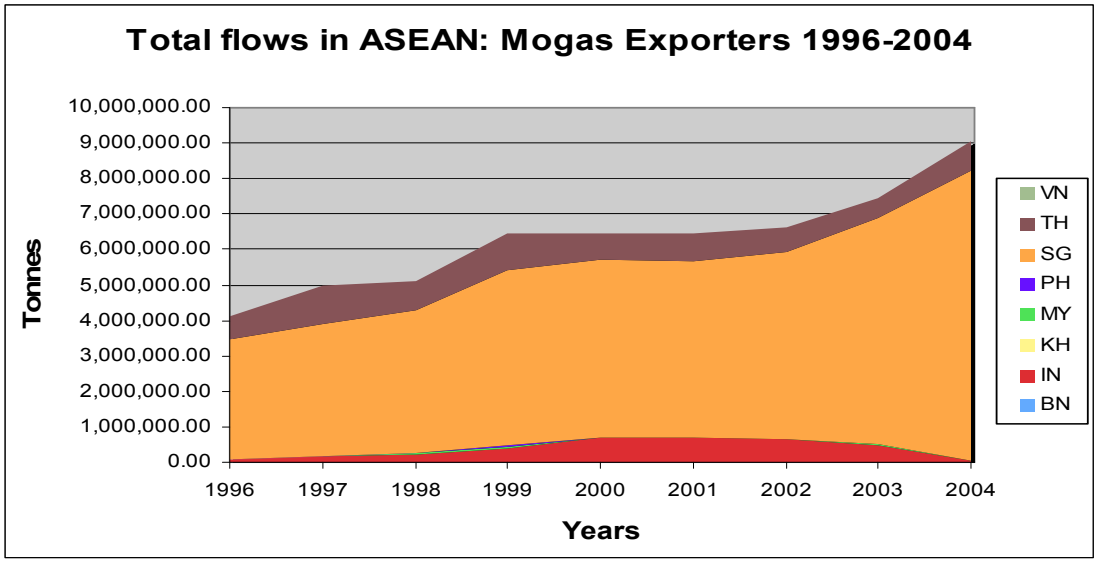


Figure 7.2 Total flows in ASEAN: MoGas exporters 1996-2004 (Based on mixed statistics from 'primary sourced countries')

From the above figure 7.2, Singapore has dominated the market. Singapore doubled its exports from 1996 to 2004 and the graph also shows upward trends, which look favourable to Singapore exports capability. Singapore's exports share in the region is almost 90 percent in 2004. Thailand took some part in this market but the exports have not shown any sign of increasing for all the periods. Indonesia showed some exports to the region but did not

cause any important effects in the region. Indonesia's exports also disappeared in 2004.

7.1.3 Trade Flows in ASEAN for MoGas

1996-2004	BN	IN	KH	MY	PH	SG	TH	VN	*Total Exports*
BN	X	0	n/a	212	0	0	0	n/a	***212***
IN	0	X	0	124,601	0	3,075,804	194,926	0	***3,395,331***
KH	n/a	0	X	0	0	0	0	n/a	***0***
MY	32	134	0	X	0	119,637	11,721	10,925	***142,450***
PH	0	4,778	0	0	X	67,636	0	0	***72,415***
SG	0	10,801,450	565,382	24,941,566	2,786,286	X	662,786	6,110,929	***45,868,401***
TH	0	79,699	460,724	16,067	36,439	5,957,295	X	706,223	***7,256,448***
VN	n/a	0	n/a	0	0	0	0	x	***0***
Total Imports	***32***	***10,886,062***	***1,026,106***	***25,082,447***	***2,822,725***	***9,220,372***	***869,434***	***6,828,078***	***56,735,257***

Table 7.1 Overview of trading relations and its size over 1996-2004 for MoGas (in tonnes)

From the above trade flows table of MoGas in ASEAN for the period 1996-2004, the main trade partners can be identified.

Singapore is the main exporter in the region having established trade relations with all the importing countries. Exports to Malaysia, which is Singapore's main trade partner, are stable over the last eight years fluctuating between 2.3-2.9 million tonnes and increased to 4 million tonnes in 2004.Singapore's exports to Indonesia have performed a significant increase over the analyzed period from 159 thousand tonnes in 1996 to around 2.3 million tonnes in 2004. Vietnam is the third in order major importer of MoGas from Singapore representing a stable trade flow with an average of around 650 thousand tonnes whereas the export amount drastically increased to around 1.1 million tonnes in 2004. Exports to Philippines were also stable since 2002 but they have performed a notable increase in 2003 and 2004 due to the Caltex refinery shut down in 2003. Finally exports to Thailand and Cambodia are quite unsteady and account for a small percentage (3% and 1.2% respectively) of the total exports of Singapore to the ASEAN.

Thailand is the second main exporter of MoGas in the region although its exporting quantity accounts for approximately 10% of the total amount in the region over the last nine years. The main importer of MoGas from Thailand is Singapore, mostly for trading reasons, representing a constant flow varying between 500-900 thousand tonnes per year during the analyzed period. During 2001-2003 the exported amount stabilized to just above 500 thousand tonnes while in 2004 increased 716 thousand tonnes. Thailand's exports to Vietnam has been constant since 2002 around 75 thousand tonnes although during the last two years this amount has dramatically decreased to nearly zero. Exports to Cambodia have continual since 1997 performing a gradual growth and finally reaching the level of 84 thousand tonnes in 2004. It is also interesting to note that Thailand started to export MoGas to Indonesia in 2000 although the amount is still minor.

Indonesia is exporting MoGas too, with Singapore being its main trade partner. The trade flow has followed an upward trend reaching its peak in 2000 with 640 thousand tonnes and than stabilized around this amount in the next two years. In 2003 the exported amount decreased to 468 thousand tonnes and in even more in the next year reaching only 23 thousand tonnes.

7.2 AvGas flows in ASEAN

7.2.1 AvGas Importers

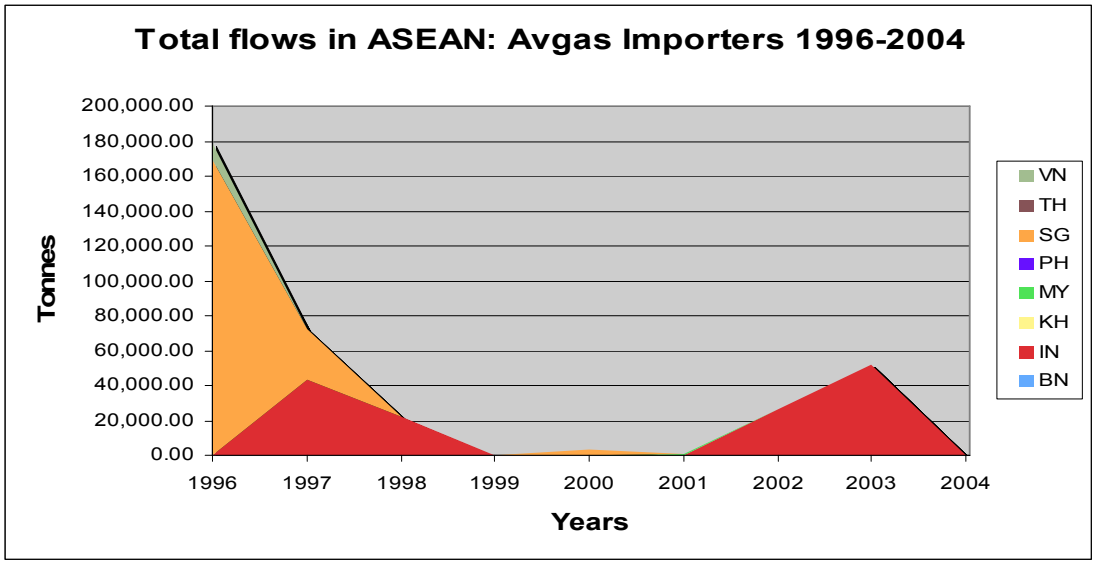


Figure 7.3 Total flows in ASEAN: AvGas Importers 1996-2004 (Based on mixed statistics from 'primary sourced countries')

The trend of AvGas is highly disarray through all the period. Singapore had the highest import in 1996. The amount dropped to half in 1997 and the trend was hardly seen from 1998. Indonesia still imports AvGas. In 1997 and 2003, the imports of AvGas were equal. However, the import dropped significantly in 2004. Other countries in ASEAN did not affect the flows.

7.2.2 AvGas Exporters

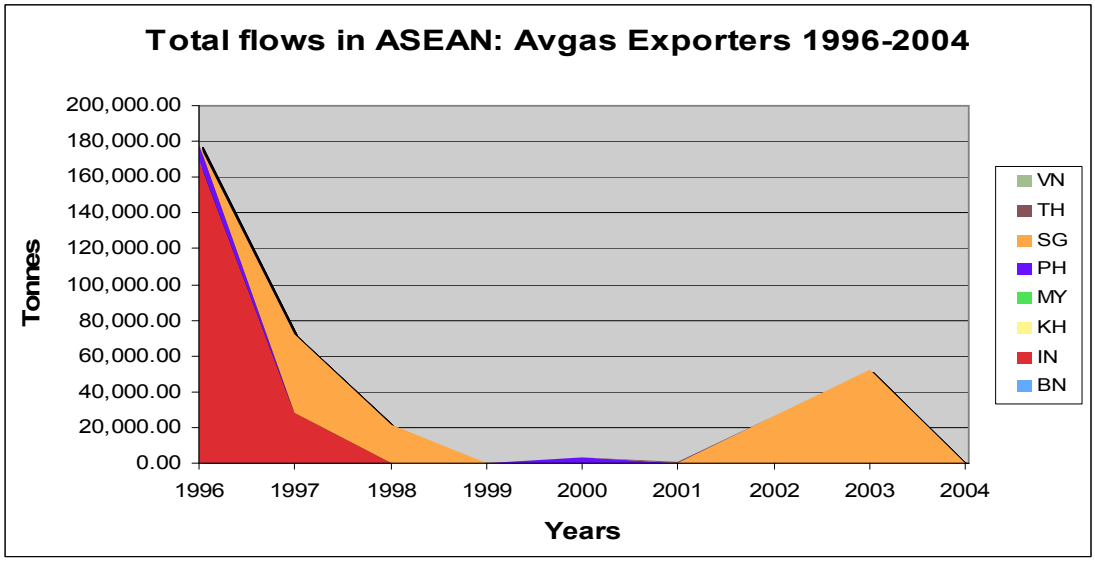


Figure 7.4 Total flows in ASEAN: AvGas Exporters 1996-2004 (Based on mixed statistics from 'primary sourced countries')

Indonesia was once a big exporter in the region during 1996. In 1997, its export shares dropped and gradually disappeared from exports flow. Singapore, on the contrary, seems to maintain its export role. Philippines showed some miniature sign of exports, especially during 1999-2001. This trade flows from Philippines faded away in 2001.

7.2.3 Trade Flows in ASEAN for AvGas

1996-2003	**BN**	**IN**	**KH**	**MY**	**PH**	**SG**	**TH**	**VN**	***Total Exports***
BN	X	0	n/a	0	0	0	0	n/a	***0***
IN	0	X	0	0	0	198,126	0	0	***198,126***
KH	n/a	0	X	0	0	0	0	n/a	***0***
MY	20	98	0	X	0	362	12	0	***492***
PH	0	0	0	0	X	3,271	0	9,132	***12,402***
SG	0	143,885	0	1	0	X	2	0	***143,887***
TH	0	0	22	412	0	0	X	0	***434***
VN	n/a	0	n/a	0	0	0	0	X	***0***
Total Imports	***20***	***143,983***	***22***	***413***	***0***	***201,759***	***14***	***9,132***	***355,341***

Table 7.2 Overview of trading relations and its size over 1996-2004 for AvGas (in tonnes)

As it shown in the above table 7.2 AvGas represents a small amount of CPPs that are being transported within the ASEAN region while Singapore and Indonesia can be identified as the main trade partners. Exports from Singapore to Indonesia have been unstable over the last nine years presenting frequent fluctuations and small transported amounts. On the other hand Indonesia's exports to Singapore have been eliminated since 1997.

7.3 Kerosene flows in ASEAN

7.3.1 Kerosene Importers

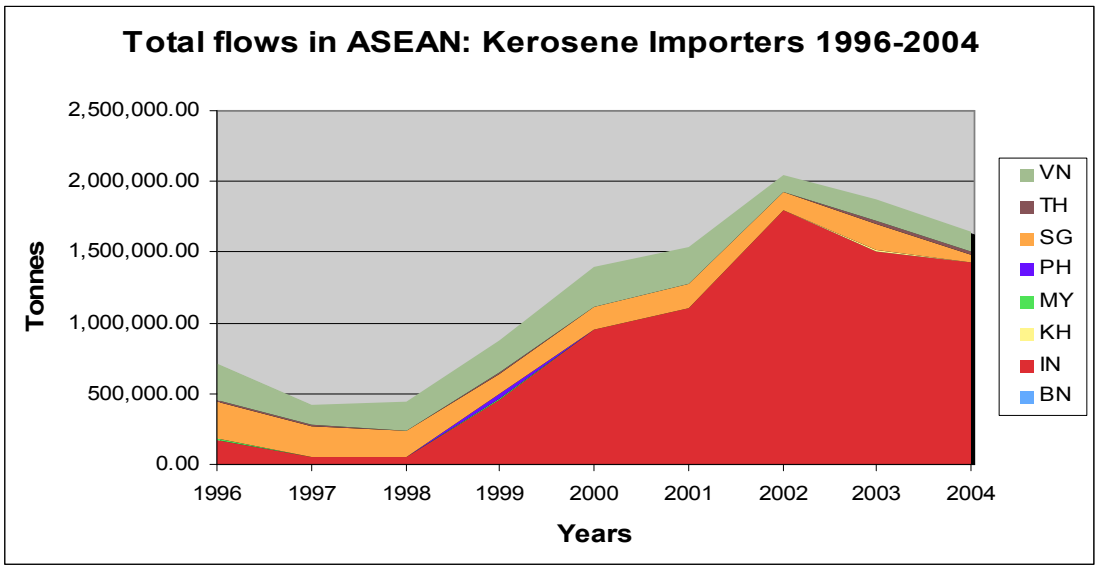


Figure 7.5 Total flows in ASEAN: Kerosene Importers 1996-2004 (Based on mixed statistics from 'primary sourced countries')

Imports trend of Kerosene in ASEAN shows an upward trend in general, where a sharp increase kicked in from 1998. Prior to 1998, Vietnam, Singapore and Indonesia imports' were maintained, even with some fluctuation. In 1999, Indonesia imported 9 times more, compared to its imports

in 1998 and this increasing trend was growing very fast in 2000 to 2002. After 2002, the imports dropped and turned into a more stabilised trend in 2003 to 2004. Vietnam and Singapore played rather conservative role in imports of Kerosene. There were no significant changes in their imports. Basically, Indonesia is the driven force of imports of Kerosene in ASEAN.

7.3.2 Kerosene Exporters

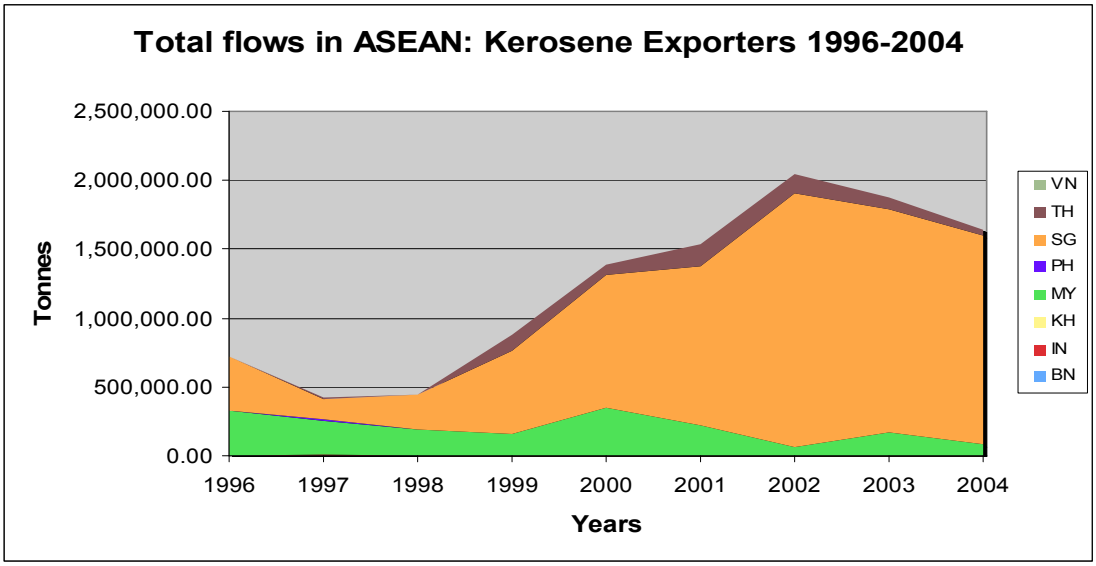


Figure 7.6 Total flows in ASEAN: Kerosene Exporters 1996-2004 (Based on mixed statistics from 'primary sourced countries')

Only three exporters are identified in this graph—Singapore, Malaysia, and Thailand. Singapore has maintained its exports role through the period. The exports trend increased remarkably from 1998, and in 2004 Singapore was the main exporter of Kerosene in the region. After 2002, exports from Singapore showed a downward trend. This trend seems to continue until 2004. Malaysia's exports seemed to fluctuate over the whole period, and were declining in general. Thailand also shows some exports to the region. However, even though exports from Thailand are stable, the amount is very small and does not heavily affect the region.

7.3.3 Trade Flows in ASEAN for Kerosene

1996-2004	BN	IN	KH	MY	PH	SG	TH	VN	*Total Exports*
BN	X	0	n/a	0	0	0	0	n/a	***0***
IN	0	X	0	3	0	975	6,102	0	***7,080***
KH	n/a	0	X	0	0	0	0	n/a	***0***
MY	0	645,813	0	X	0	1,133,748	15,681	12,217	***1,807,459***
PH	0	0	0	0	X	0	0	10,486	***10,486***
SG	0	6,882,865	1,679	15,486	0	X	46,488	1,565,536	***8,512,053***
TH	0	0	13,253	0	39,666	367,746	X	198,126	***618,791***
VN	n/a	0	n/a	0	0	0	0	X	***0***
Total Imports	***0***	***7,528,678***	***14,932***	***15,489***	***39,666***	***1,502,469***	***68,271***	***1,786,365***	***10,955,870***

Table 7.3 Overview of trading relations and its size over 1996-2004 for Kerosene (in tonnes)

With the market share of more than 50 percent through all the period, Singapore has proven itself to be the biggest export for Kerosene. Malaysia, who was a close competitor to Singapore, could not stand the competition and lost the position. Major trading partners for Singapore are Indonesia and Vietnam, who contributed in total more than 90 percent of Singapore's Kerosene exports. However, exports to both Indonesia and Vietnam show fluctuation in the trading pattern. Indonesia imports vary from 23,000 tonnes (the minimum) in 1997 to 1.4 million tonnes (the maximum) in 2004. However, in general, Indonesia imported more from Singapore over time, but the flow is not considered stable.

Vietnam's importing pattern from Singapore is different compared to Indonesia. The country shows a quite constant trading pattern from 1996 to 2001. The flow was in the region of 150,000-250,000 tonnes through that period. However, the trend dropped from 2002, and might take some time to see the recovery of trading pattern.

Malaysia and Thailand are other exporters of Kerosene in ASEAN. Malaysia's exports did not show a strong trend and continue to decline over time. Thailand's trend is more stable thought the period, but the amount is small. Malaysia has trading relationship with Indonesia and Singapore. Indonesia

normally imports more than 90% of Malaysia's exports, Singapore would take the rest. Thailand's major trading partners are Singapore and Vietnam. The proportion between these two countries was not stable. But from 2000, the trend toward Vietnam seems far more stable.

7.4 Jet Fuel flows in ASEAN

7.4.1 Jet Fuel Importers

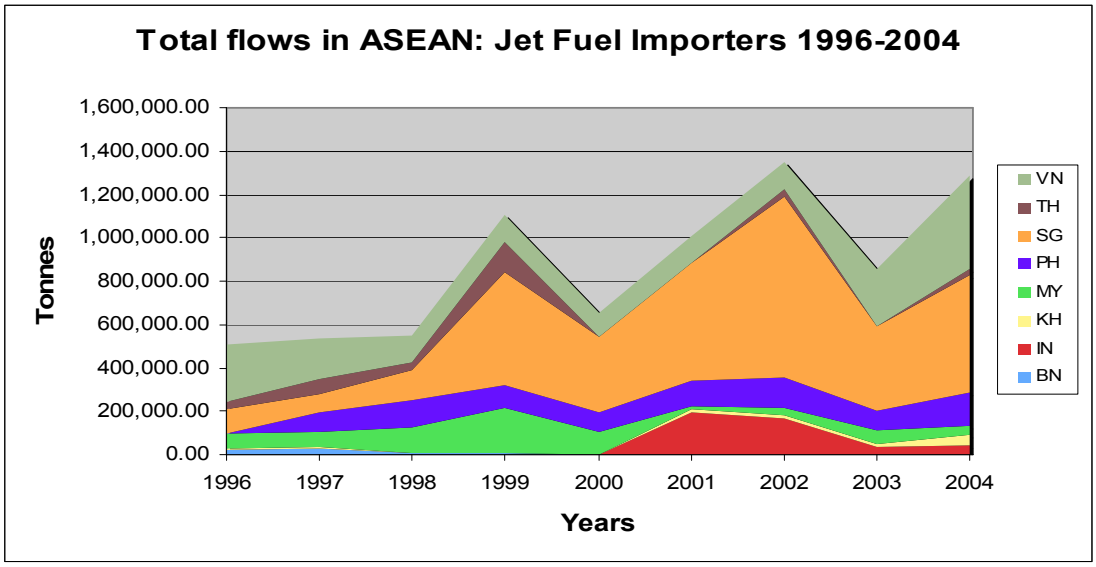


Figure 7.7 Total flows in ASEAN: Jet Fuel Importers 1996-2004 (Based on mixed statistics from 'primary sourced countries')

The total imports were twice the size in 2004 compared to 1996. This proves the increasing trend of the products. However, this graph also shows high fluctuation through the whole period. In 2000 and 2003, the imports dropped by 40% from previous years. Most of the countries in ASEAN import Jet Fuel products. Singapore is the biggest importer in this region. According to the graph, Singapore's trend is highly fluctuating. Since Singapore is responsible for the majority of imports in ASEAN, fluctuation from Singapore affects the region.

Vietnam is one of the major importers in the region. In general, the trend was fairly stable but it started to change from 2000. The imports doubled in 2004, and average growth rate was around 47 percent during the period. Philippines showed stable imports trend through all the period. Malaysia was one of the

major importers but after 2000, the imports dropped significantly and Malaysia does not represent itself as a major importer in this graph.

Indonesia showed some leap of exports during 2000-2003, but this trend was not maintained in 2004. Therefore, according to this graph, Indonesia is not a major exporter. Thailand also showed some sign of exports, but it was both fluctuate and later on disappear from the region. Cambodia also imported Jet Fuel. The amount is smaller compared to the other, but it is growing rapidly in 2004 compared to its imports in 2003.

7.4.2 Jet Fuel Exporters

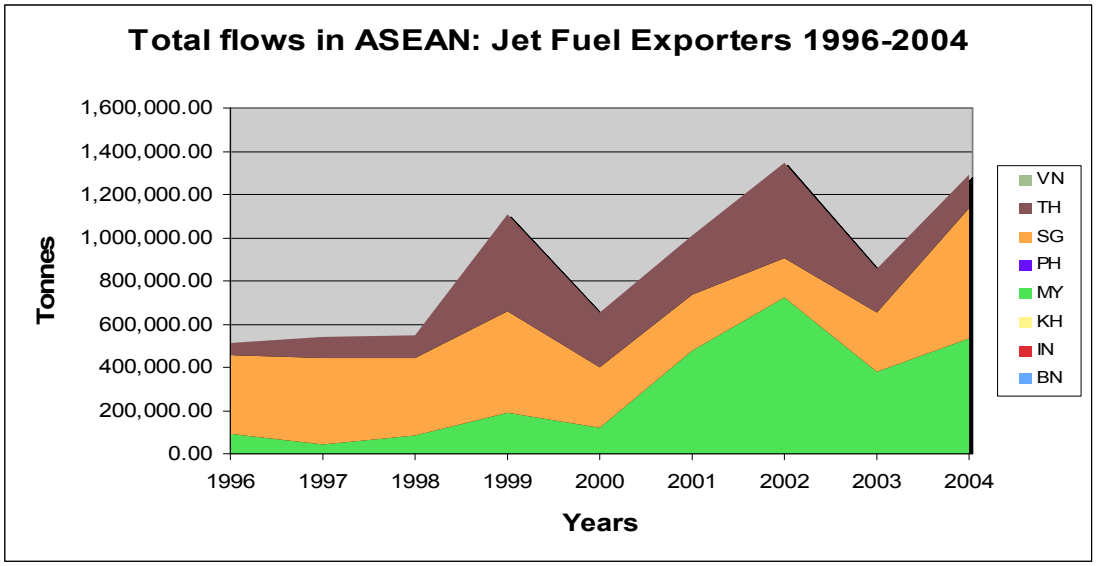


Figure 7.8 Total flows in ASEAN: Jet Fuel Exporters 1996-2004 (Based on mixed statistics from 'primary sourced countries')

As it can be seen from the figure 7.8 there are three major exporters in this graph—Singapore, Malaysia, and Thailand. Singapore exports fluctuated over the period. During 1996-1999, Singapore was the biggest exporter in this region. From 2000-2003, exports from Singapore were stable but low. Export trend jumped by 100% in 2004. Malaysia sped up it exports from 2000, when Singapore's exports were on the decline. Thailand's exports also fluctuated

during the whole period. Thailand's share of exports might compete with Singapore and Malaysia equally in some years, but in general, Thailand takes the smallest share of exports in the region.

7.4.3 Trade Flows in ASEAN for Jet Fuel

1996-2003	BN	IN	KH	MY	PH	SG	TH	VN	*Total Exports*
BN	X	n/a	n/a	1,674	0	0	0	n/a	***1,674***
IN	n/a	X	n/a	6	0	n/a	0	n/a	***6***
KH	n/a	n/a	X	0	0	0	0	n/a	***0***
MY	275	382,344	0	X	0	2,113,192	107,563	22,482	***2,625,855***
PH	0	0	0	0	X	0	0	3,591	***3,591***
SG	63,436	n/a	17,728	709,650	686,511	X	221,484	1,507,783	***3,206,593***
TH	0	60,619	88,317	0	226,117	1,410,295	X	235,626	***2,020,974***
VN	n/a	n/a	n/a	0	0	0	0	X	***0***
Total Imports	**63,711**	**442,963**	**106,045**	**711,330**	**912,628**	**3,523,487**	**329,047**	**1,769,482**	***7,858,693***

Table 7.4 Overview of trading relations and its size over 1996-2004 for Jet Fuel (in tonnes)

As it shown in the above table 7.4 there are three countries that can be identified as the main exporters of Jet Fuel in the region over the last nine years—Singapore, Malaysia, and Thailand. From these countries, Singapore and Malaysia played the biggest role in exporting Jet Fuel. This role, however, changes from time to time. From 1996-2000, Singapore dominated the market with more than 70% of exports to the region. Singapore's major trading partners are Malaysia, Vietnam, and later on Indonesia. After 2000, Malaysia has improved its role as Jet Fuel exporter by increasing exports share into the region. From approximately 17% of exports share in 1996-2000, Exports of Malaysia jumped to 40% in 2001, and become the main exports in the region. Main customers of Malaysia are Singapore and Vietnam. Thailand's exports are rather modest at around 10% to maximum 30% of the region. Thai exports were rather fluctuating and it is accounted for a small fraction of the region.

Trading flows between Malaysia and Singapore are special during the observed period. Before 2000, Singapore's main customer is Malaysia, but the relationship converted in 2001, when Malaysia took the lead in exports. Therefore, there are strong trading relationships between these two countries.

Singapore also increases its imports of Jet Fuel quite rapidly. From 20% in 1996, now the country imported around 40% of Jet Fuel in the region.

7.5 Diesel flows in ASEAN

7.5.1 Diesel Importers

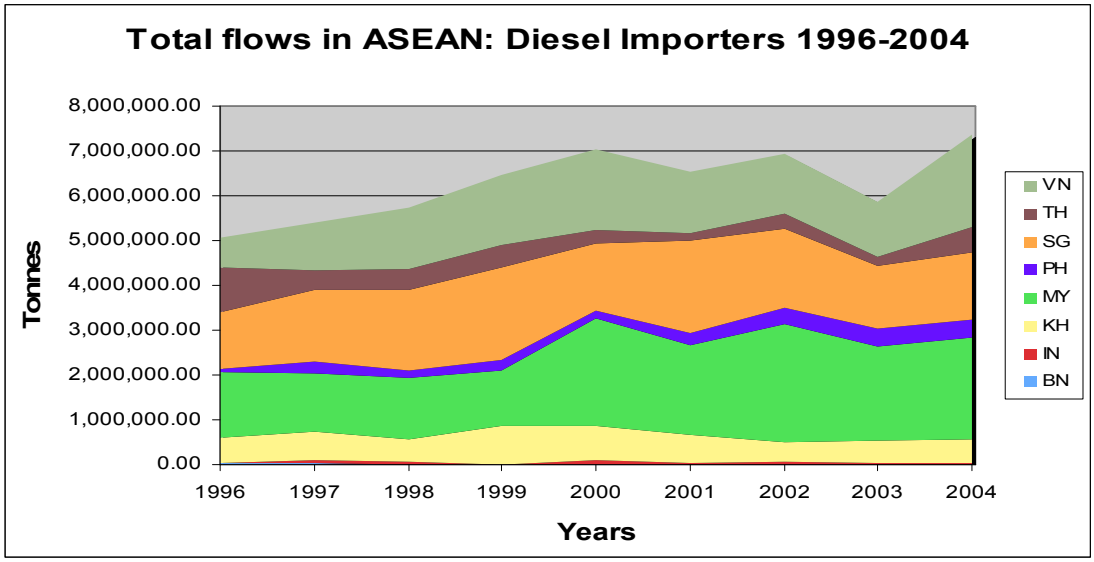


Figure 7.9 Total flows in ASEAN: Diesel Importers 1996-2004 (Based on mixed statistics from 'primary sourced countries')

Diesel is the fifth product of which the transported tonnes are analyzed. In figure 7.9 it shows a climbing trend of amount of Diesel tonnes transported in the region, with a drop in 2003. The total amount grew from just over 5 million tonnes to almost 7.5 million tonnes. On the importers side, the biggest importers of Diesel can be identified as Malaysia, Singapore and Vietnam. Malaysia has grown from 29% in 1996 to 34% in 2000, since which it has been responsible for the biggest share. Singapore grew from 25% in 1996 to 32% in 1999, but after that there was a declining line, dropping to 20% in 2004. Vietnam grew steadily from 12% in 1996 to 28% in 2004, with fluctuating proportions in between.

7.5.2 Diesel Exporters

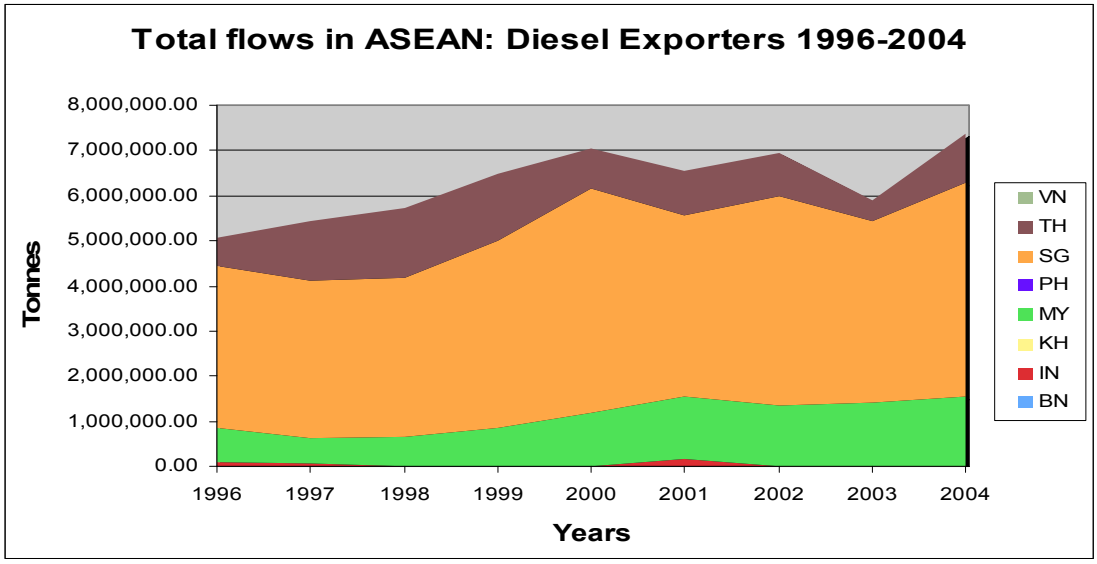


Figure 7.10 Total flows in ASEAN: Diesel Exporters 1996-2004 (Based on mixed statistics from 'primary sourced countries')

Primary exporters of Diesel in the region are Singapore and to a minor extend Malaysia and Thailand. Singapore has led the exporting with a majority share of 71% since 1996, dropping to 61% (1998), but staying constantly high. Malaysia and Thailand switch sides with their fluctuating percentages to share the remaining 30% to 40%.

7.5.3 Trade Flows in ASEAN of Diesel

1996-2004	**BN**	**IN**	**KH**	**MY**	**PH**	**SG**	**TH**	**VN**	***Total Exports***
BN	X	n/a	n/a	0	0	0	0	n/a	***0***
IN	n/a	X	n/a	6,940	161,334	n/a	179,543	n/a	***347,816***
KH	n/a	n/a	X	0	0	0	0	n/a	***0***
MY	3,019	325,607	4,181	X	0	7,833,197	975,797	531,956	***9,673,756***
PH	0	1,087	0	4	X	18,255	0	7,277	***26,623***
SG	105,117	n/a	4,813,153	16,595,409	1,782,838	X	2,803,171	11,012,425	***37,112,115***
TH	0	77,056	619,089	120,474	361,478	7,169,240	X	976,580	***9,323,917***
VN	n/a	n/a	n/a	0	0	0	0	X	***0***
Total Imports	***108,136***	***403,750***	***5,436,423***	***16,722,827***	***2,305,650***	***15,020,692***	***3,958,511***	***12,528,238***	***56,484,227***

Table 7.5 Overview of trading relations and its size over 1996-2004 for Diesel (in tonnes)

As it shown in the above table 7.5 there are three countries that can be identified as the main exporters of Diesel – Singapore, Malaysia and Thailand. Looking at the strongest trading partners for Diesel, the figure shows that Singapore and Malaysia are each other's biggest partners.

The trade flows between Singapore and Malaysia have been decreasing from 1.5 million tonnes in 1996 to 1.2 million tonnes in 1999. In 2000 there has been an increase in activity to 2.4 million tonnes of Diesel, which remained this high for the rest of the period. Malaysia also traded actively the other way around, with a growing flow (from 650 ktonnes in 1996 to 1.2 million tonnes in 2004).

Singapore's export flow towards Vietnam has more than doubled over this period from 635 ktonnes in 1996 to 1.5 million tonnes in 2004. From Singapore to Cambodia the flow peaked from 550 ktonnes in 1996 to 770 ktonnes in 99, dropping to 430 ktonnes in 2004.

Tradings from Singapore to Thailand have been dropping too, from 800 ktonnes in 1996 to 250 ktonnes in 2004. The other way around, the trend went up from 600 ktonnes in 1996 to 1.3 million tonnes in 1999, but dropping back to 350 ktonnes in 2004.

7.6 Naphtha flows in ASEAN

7.6.1 Naphtha Importers

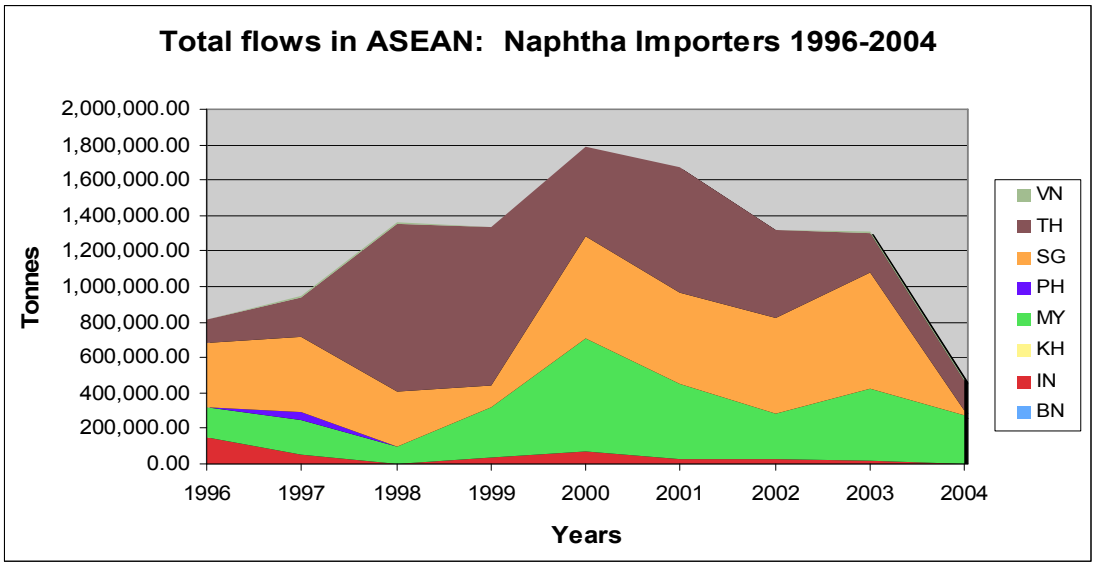


Figure 7.11 Total flows in ASEAN: Naphtha Importers 1996-2004 (Based on mixed statistics from 'primary sourced countries')

Looking at the activity level of Naphtha trading in the region, it looks like a big mountain climb that has been finished: until 2000, the growth of the traded Naphtha was steep with a growth of over 100% between 1996 and 2000, but since then it went down hill, dropping even below its 1996 level.

If this is broken down by the countries that import this product, Thailand, Singapore and Malaysia can be seen as the big players. Thailand has been the leading importer of Naphtha between 1998 and 2002, where it grew fast from a share of 15% in 1996 to 67% in 1999. This dropped back to 17% in 2003. For Singapore the share has been fluctuating between 30% and 50%, with two unfortunate drops in 1999 (9%). Malaysia has grown sharply from 21% in 1996 to 56% in 2004 of all imported Naphtha in the region, with one drop in 1998 to 7%.

7.6.2 Naphtha Exporters

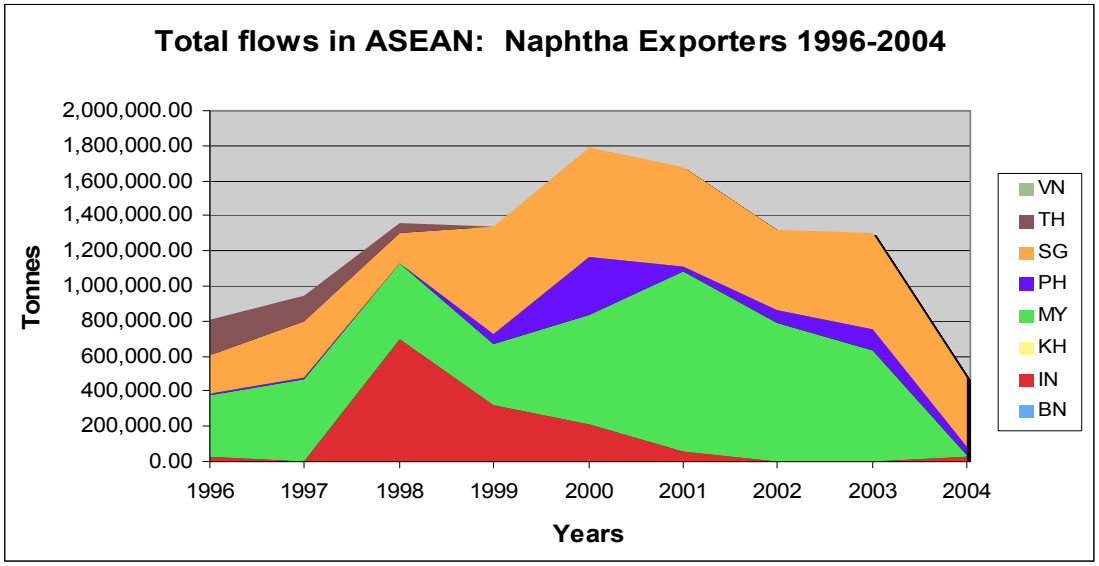


Figure 7.12 Total flows in ASEAN: Naphtha Exporters 1996-2004 (Based on mixed statistics from 'primary sourced countries')

The exporting equivalent shows a mixture of different players; Singapore, Malaysia and Indonesia. Singapore grew of importance over this period with regard to being Naphtha exporter in the region, just like Malaysia. Malaysia's share has been dominant over the whole period; from 42% in 1996 to an all time high of 60% in 2001 and 2002. The city-state's share grew from 26% in 1996 to 42% in 2004. Indonesia gained importance for two years in 1998 and 1999, rising to 50% in 1998, which dropped again to 24% in 1999.

7.6.3 Trade Flows in ASEAN for Naphthta

1996-2003	BN	IN	KH	MY	PH	SG	TH	VN	*Total Exports*
BN	X	n/a	n/a	0	0	0	0	n/a	***0***
IN	n/a	X	n/a	119,509	0	n/a	1,226,113	n/a	***1,345,622***
KH	n/a	n/a	X	0	0	0	0	n/a	***0***
MY	0	335,188	0	X	0	2,692,149	1,648,073	0	***4,675,410***
PH	0	36,481	0	83,988	X	486,510	51,336	8,914	***667,229***
SG	0	n/a	0	2,543,202	2,094	X	1,365,779	25,523	***3,936,599***
TH	0	0	0	0	45,842	352,986	X	6,016	***404,844***
VN	n/a	n/a	n/a	0	0	0	0	X	***0***
Total Imports	***0***	***371,669***	***0***	***2,746,699***	***47,936***	***3,531,645***	***4,291,301***	***40,454***	***11,029,704***

Table 7.6 Overview of trading relations and its size over 1996-2004 for Naphtha (in tonnes)

Looking at the figure 7.6 from 1996 until 2004, it shows that Malaysia and Singapore are each other's major trading partners. In 1996 170 ktonnes was transported from the city-state to Malaysia, growing to 562 ktonnes in 2000, after which it declined again to 225 ktonnes in 2004. In the reverse direction, Malaysia exported 149 ktonnes to Singapore in 1996, growing to 570 ktonnes in 2003, after which it dropped again to 453 ktonnes in 2004.

Another steady relation is between Thailand and Singapore, as Thailand imports vast amounts of Naphtha, from 46 ktonnes in 1996 to 330 ktonnes in 1999. This line declined to 161 ktonnes in 2004. The opposite direction, the flow halted in 1999, declining from 240 ktonnes in 1996.

Exports from Indonesia to Thailand showed uplift in 1998 with a heavy increase to 700 ktonnes, which in a few years declined back to zero again.

7.7 Total Summary

MoGas is on a steady increasing for the whole period. Importers and exporters in the region have not changed their roles. For imports, Malaysia firmly maintains its share, while Indonesia is increasing its imports very fast. For exports, Singapore has dominated the market with more than 90% of the flows. Thailand shares a tiny part of the flows. Major players for this product are Singapore, Indonesia, Malaysia, and Thailand.

AvGas has no strong pattern in the flow for the last ten years, but it is declining. Indonesia is the biggest importer in the region, while Singapore is the biggest exporter. Singapore and Indonesia usually dominate the flows of this product.

Kerosene has a sharp increase from 1998 onward. This increase is driven mainly by Indonesia. Singapore and Vietnam partly import the product. For export, Singapore has the majority of the flow. Malaysia has some parts but is declining. Thailand exports only a small fraction of product. Major trading partners are Singapore and Indonesia.

Jet Fuel grows with unstable trend. Mainly instability comes from fluctuation in Singapore's imports. Vietnam also imports a lot from the region. Malaysia has managed to increase its exports triple times and established itself as one of the big exporters. Thailand shows some improvement in exports, but not comparable to Malaysia and Singapore. Singapore, Malaysia, Thailand, and Vietnam are major trading partners in the region.

Diesel's import / export trend has been growing over these nine years. The main players in these trades are Singapore and Malaysia and to a minor extend Vietnam and Thailand.

With regard to Naphtha, the import / export trend has been growing until 2000, after which it has declined. The main trading partners for this product are Singapore, Malaysia and Thailand.

8. Regional Overview

In this chapter, all previously discussed topics for each country, will be discussed as the whole region—ASEAN. It will be easier to compare one aspect of one country to another, and seeing the picture of the whole region.

8.1 Politics

In terms of politics ASEAN region presents significant differences among the different member countries. The region is consisted of states with steady political situation, some that still face problems to establish a stable political system but are in transformation process and finally others where the political instability is main characteristic of the country profile.

Singapore, Brunei and Malaysia are among the countries of the region that during the recent years have reduced the uncertainty within their territory. Singapore stability mainly is based on the fact that the political scene is heavily dominated by the government party (PAP). The situation in Brunei is different where the loyalty of the people to the present Sultan and the strict rules, have kept the country out of political tensions. Malaysia has managed in a good level to put all the inhabitants under the same umbrella even if it is a state with ethnic diversity, aiming to the elimination of the discriminations.

Next to these countries there are four others that are in process to improve the political conditions within their territories. These are namely, Vietnam, Philippines and Indonesia. Starting with Vietnam, the only communist country of the region where the CPV party makes a significant effort to decrease the internal security risk which is mainly result of the corruption among the officials and the violent protests by the Montagnard ethic minority group. Philippines under the leadership of President Arroyo have put the improvement of the political system among the highest priorities of the government plan. The violent demonstrations by the minority ethnic groups are the main problem that the country has to surpass in the upcoming future. Indonesia has proceeded to a drastic politic reform process after the

resignation of Dictator Suharto. The political stability is among the high concerns of the present Prime Minister who aims to reduce the security risk within his country.

Finally there are two others countries where the political situation is unstable during the last years without clear signs of future improvement. Cambodia's political system is mainly dominated by the Prime Minister Hun Sen and his party. The extent corruption among the officials is visible in all the aspects of the daily life. The recent-reign King Naradom Sihamoni does not seem to have the power to take the situation on his hands. The last country of the region with no steady political environment is Thailand. The historical background of the country involves 18 military coups with the last one taking place few months ago. An effort to improve the reputation of the country to the global community is the priority of the present military coup which plans to return the power to the politicians in the upcoming future. The presence of the King and the loyalty of the people on Him could contribute to future stability.

8.2 Economics

The economies of different countries in the ASEAN region appear to have important dissimilarities. As it is shown in figure 8.1 the agricultural sector represents a high contribution to GDP only in Vietnam's and Cambodia's economies although this trend seems to change due to the expansion of the industrial sector. ASEAN region is abundant in mineral recourses for both metals and mineral fuels and for these reason the mining sector plays a significant role in the economy of all the countries in the region. The mining sector possesses the highest contribution rate among all the other economic sectors for Brunei, Indonesia, Malaysia, Philippines and Thailand. The manufacturing sector contributes to the GDP in average around 20% for all the countries except Brunei while Cambodia, Vietnam and Thailand have perform the most considerable growth rate over the last ten years. The construction sector is of minor importance in the region as it does not exceed 5% of GDP as an average. The domestic trade (wholesaling, retailing) has a noteworthy contribution in the GDP of all the counties as well as the tourist

sector although it has recorded a slight decrease the last years due to SARS outbreak in the region. The transportation sector plays an important role in the economy of Thailand and especially Singapore as the country is one of the most important ports and oil hubs of the world. The service sector in the region has performed a worth mentioning growth rate over the last ten years and is one of the most important economic sectors for Brunei, Singapore and Malaysia presenting a remarkable proportion in the GDP of these countries.

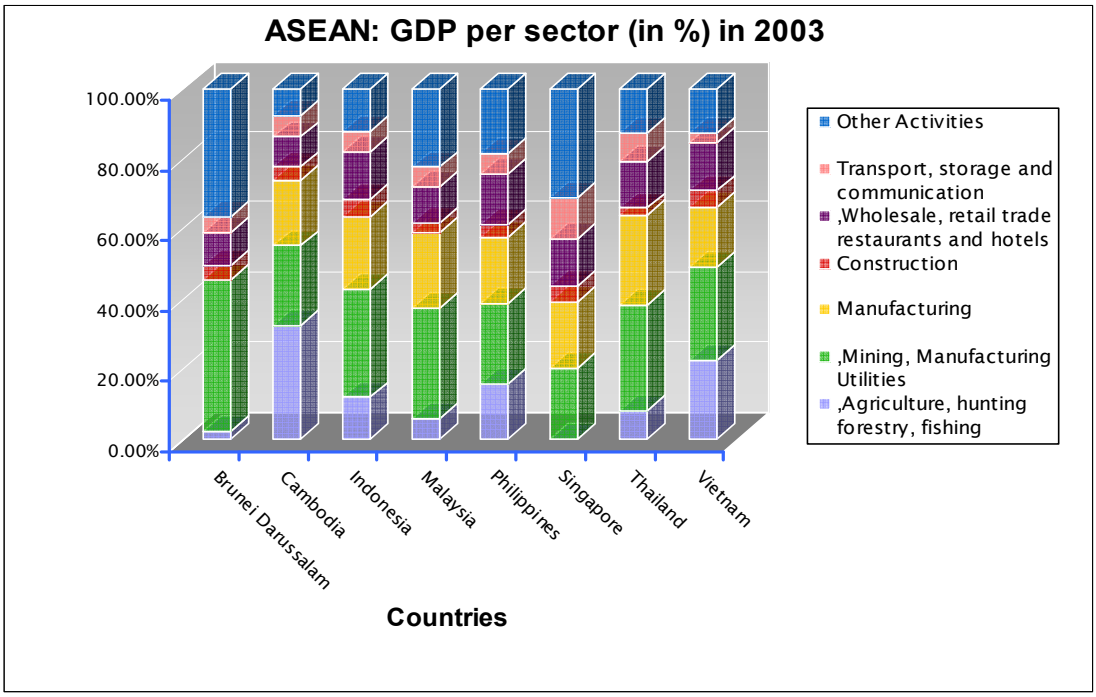
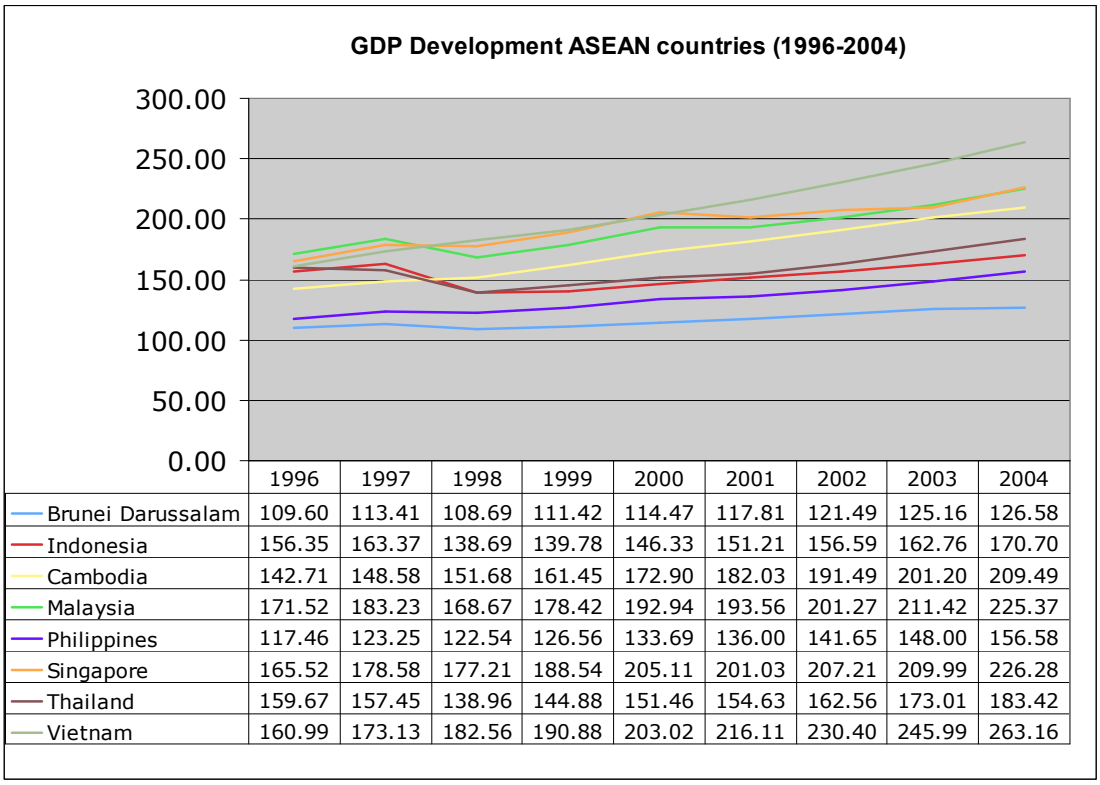


Figure 8.1 GDP per sector per country (in %) *(Data from UN Statistics: www.unstats.un.org)*

The figure 8.2 represents the indexed GDP from 1990 in constant prices in US$ for all the ASEAN countries which are of interest. The GDP shows an increased trend in the ASEAN region over the last ten years although there two major downfalls that affected all the countries more or less. In 1998 the Asian Financial Crisis affected the economic performance of all the countries in the region. Thailand, Indonesia and Malaysia faced the most significant setbacks during this period resulting in a considerable shrinkage of their economy and strong inflationary pressures. Singapore and Brunei and Philippines had also been dramatically affected as a repercussion of the

region's financial condition and recorded negative GDP growth rate figures in the same period. On the other hand Cambodia and Vietnam are the countries that had been affected less by the crisis performing just a slowdown in their GDP growth rate.

The second downfall of the GDP growth rate in the ASEAN region occurred in 2001. The terrorist attacks in the WTC in New York and the consequences in the global economy, considerably affected the economic performance of the ASEAN countries. Contrary to the 1998's financial crisis, during this period ,Singapore and Malaysia were the countries that had been severely affected due to their high dependency on foreign investments and lack of diversification in their's economy, performing a high GDP reduction rate by 10% and 8% respectively. Following this period the region has shown significant signs of recovery and has achieved a steady economic growth. It is also worth mentioning that over the last ten years Vietnam's economy has performed the highest GDP growth in the region.



	1996	1997	1998	1999	2000	2001	2002	2003	2004
Brunei Darussalam	109.60	113.41	108.69	111.42	114.47	117.81	121.49	125.16	126.58
Indonesia	156.35	163.37	138.69	139.78	146.33	151.21	156.59	162.76	170.70
Cambodia	142.71	148.58	151.68	161.45	172.90	182.03	191.49	201.20	209.49
Malaysia	171.52	183.23	168.67	178.42	192.94	193.56	201.27	211.42	225.37
Philippines	117.46	123.25	122.54	126.56	133.69	136.00	141.65	148.00	156.58
Singapore	165.52	178.58	177.21	188.54	205.11	201.03	207.21	209.99	226.28
Thailand	159.67	157.45	138.96	144.88	151.46	154.63	162.56	173.01	183.42
Vietnam	160.99	173.13	182.56	190.88	203.02	216.11	230.40	245.99	263.16

Table 3.29: GDP growth rate (in %) *(Data from UN Statistics: www.unstats.un.org, viewed on October 25, 2006)*

8.3 Business Environment

The business environment in the ASEAN region ranges significantly from country to country as it is shown in the table 3.g Corruption is a major issue in all the countries which have scored low grades in 2006 according to CPI. Singapore is the less corrupted country in the region having performed an impressive 9.4/10 anticorruption grade, followed by Malaysia that has scored 5.1/10, while the most corrupted country according to the same source is Indonesia.

High regulations, extensive red tape as well as inefficient legal and judiciary system is a common situation in most of the countries in the region that worsen the business environment. Singapore is the country with the best rating in starting a business as it needs only 6 procedures and 6 days compared to 12 procedures and 97 days that is needed in Indonesia. Additional enforcement of a commercial contract takes just 29 procedures and 120 days in Singapore while in Philippines it takes 25 procedures and 600 days. Corporate taxes are also varying from country to country in the region. Cambodia has the lower tax rate in the region that runs into 22.3% of the profits while the highest appears to be in Philippines counting for 53%. Singapore has the lower administrative burden of paying taxes as it is needed only 30 hours and 16 tax payments whereas in Vietnam it takes 1050 hours for 32 tax payments. According to the above mentioned conditions, Singapore appears to have the most attractive and secure business environment in the region justifying its reputation as the main trade hub in the region.

Procedure	*Brunei Darussalam*	*Indonesia*	*Cambodia*	*Malaysia*	*Philippines*	*Singapore*	*Thailand*	*Vietnam*
Starting a business								
Procedures (number)	n.a	12	10	9	11	6	8	11
Time (days)	n.a	97	86	30	48	6	33	50
Paying Taxes								
Payments (number)	n.a	52	27	35	59	16	46	32
Time (hours)	n.a	576	121	190	94	30	104	1050
Total tax rate (% profit)	n.a	37.2	22.3	35.2	53	28.8	40.2	41.6
Enforcing Contracts								
Procedures (number)	n.a	34	31	31	25	29	26	37
Time (days)	n.a	570	401	450	600	120	425	295
Transparency Performance (CPI score)	n.a	2.2/10	2.3/10	5.1/10	2.5/10	9.4/10	3.8/10	2.6/10

Table 8.1 Ease of doing business in the ASEAN region / Country comparison (Data from Doing Business, "*Doing Business 2006 - How to Reform"), Available from Internet, http://www.doingbusiness.org*

8.4 Downstream Oil Industry

Analysing the downstream oil industry in the ASEAN region is obvious that the member countries present different levels of development in this specific sector.

The country that is generally believed that has the most advanced industry is Singapore. The current refining capacity is enough to cover the limited domestic demand while the surplus of the production is exported to the rest of the world including the ASEAN region. The retail sector is open to the competition and free of subsidies. The exports and imports of petroleum products mainly are accomplished by the port of Singapore, one of the biggest in the world.

The Thai downstream oil industry is among the most developed in the region with high refining capacity and extent retail network. The industry is opened to foreign investors who are able to own refineries and establish their distribution network. The lack of subsidies is one of the advantage characteristics of the industry. Thailand due to the fairly long coast line uses a number of ports for the transportation of petroleum products.

The Deregulation Act in 1998 contributed to the development of the national downstream oil industry. Currently two refineries are operating in the country, one by the state company Petron and the second by the Shell Company. After 1998 subsidies do not exist in the retail market. The distribution of petroleum products in a country of 7000 islands such as Philippines makes the development of the port sector vital for the national economy.

The downstream oil industry in Malaysia is liberalized with six refineries within the country. The production is splited into the domestic demand and to the exports. The existence of subsidies in the fuel prices is opposite to the openness of the retail market. The geographical location of the country

favours the trading via the sea. A number of ports are used for the handling of clean petroleum products.

The small size of the domestic market and the concentration of the country on the upstream oil industry keep the downstream one in limited extent. The unique refinery is operated by the Shell Brunei Company which dominates also the retail sector. The subsidising of fuel prices is a social benefit of the Sultan to the inhabitants. The ports of Seria and Muara are of main importance for the external trade of the country.

The lack of refining capacity and the extent role in the retail sector are the main problems of the Vietnamese downstream oil industry. The existence of subsidies discourages the foreign investors to invest in this specific industry. Numerous ports with different specifications are located along the length of the country facilitate the trade of petroleum products.

The Indonesian downstream oil industry is still dominated by the state-owned company Pertamina. Foreign companies have to establish a joint venture in order to entry into the refining sector. Currently the retail sector opened up, but with no high attractiveness. Numerous ports are located on the main islands of the country contributing to the distribution of the petroleum products.

As far as the Cambodian downstream oil industry is concerned, this is under-developed with signs of collapse in the future. The lack of refining capacity, the high import taxes and the smuggling of fuels from Vietnam and Thailand push the foreign companies out of the country. Almost all the official imports of petroleum products are done via the port of Sihanoukville.

8.5 Energy Demand Overview

Looking into the energy consumption of the analysed countries is clear that petroleum products are the major energy source that is consumed within the

national economies. The country that is the most depended on the consumption of petroleum products is Singapore with 75% of the total energy consumption while Vietnam is the less depended with 57%. The economic sectors that are the main consumers of the produced energy in the region are the transportation sector and the industrial sector.

8.6 Regional Production

The Southeast Asian region CPP production has shown to be stable the last years, with an upward trend since 2002. The total regional production increased from around 106 million tonnes in 1996 to almost 113 million tonnes in 2004 indicating a 6% increase. The majority of the products produced in the region are Diesel, accounting for 50% of the total. MoGas is a good second with a stable 23%, followed by Jet Fuel (13%), leaving Kerosene (8%) and Naphtha (6%) far behind. The trend of the proportions is stable with small fluctuation of one or two percent per product per year.

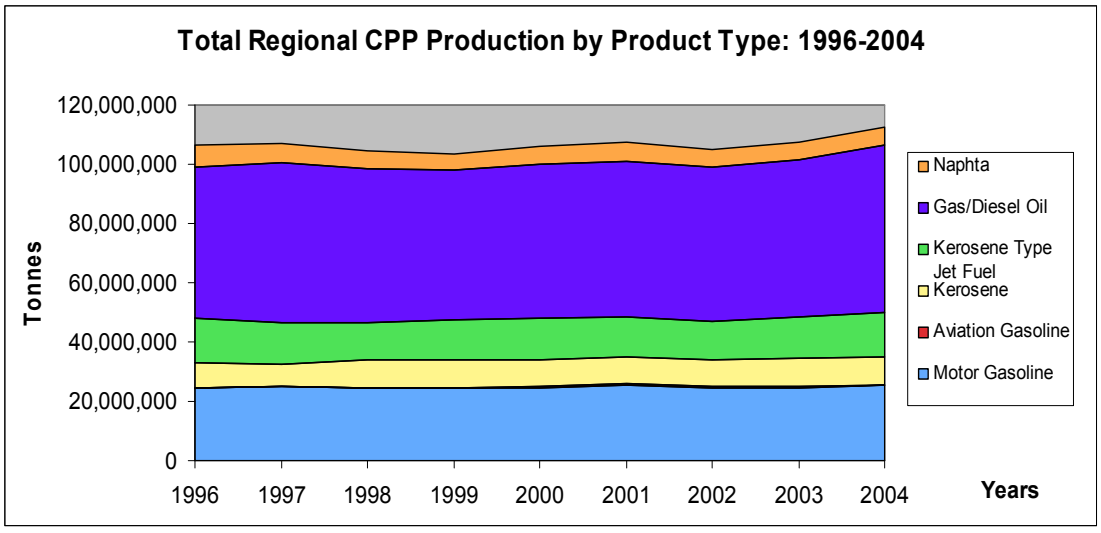


Figure 8.2 Total Regional CPP Production by Product Type (Based on: IEA non-OECD statistics)

Breaking down the total CPP production by country of origin, it is interesting to see how this is divided. Indonesia is the biggest producer, responsible for around 30% of the volume. Singapore was the biggest in 1996 (33%) but this declined to 22% in 2002, climbing again a bit in 2004 (24%), making Thailand

surpass Singapore, as Thailand grew from 19% in 1996 to 25% in 2004. Malaysia grew also stronger as producer in the region from 11% in 1996 to 15% in 2004. Philippines share declined from 9% to 5%. Brunei's share is a mere 0.40%.

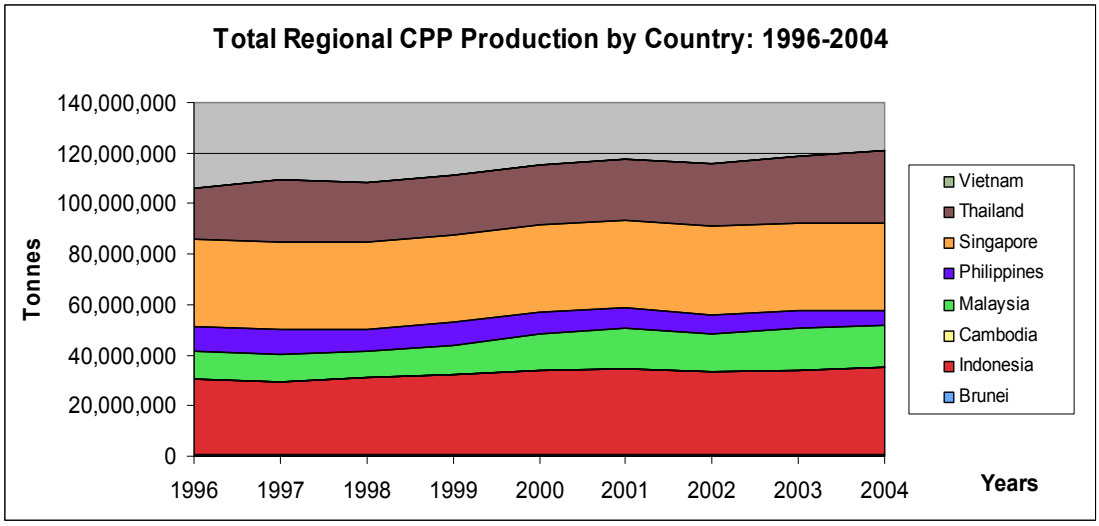


Figure 8.3 Total Regional CPP Production by Country (Based on: IEA non-OECD statistics)

8.7 Regional Consumption

As it is illustrated in figure 8.4 the total CPP consumption in the region is following a continuous upward trend. During the last nine years the consumption has increased from 94 million tonnes in 1994 to 127 million tonnes in 2004 that indicates an almost 35% increase.

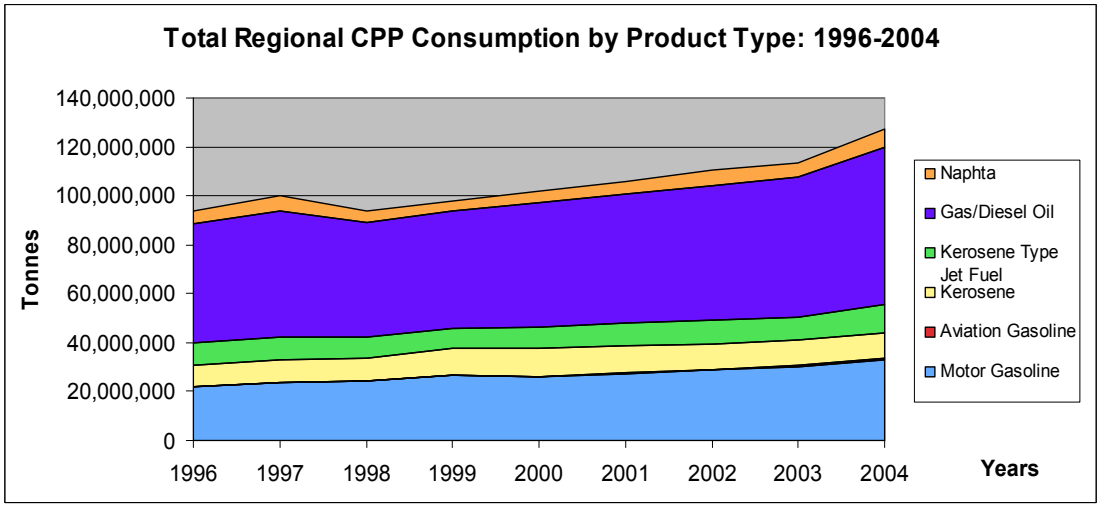


Figure 8. 4Figure 8.5 Total Regional CPP Consumption by Product Type (Based on: IEA non OECD-statistics)

Regarding the proportion of each product in the total consumption, the percentages have remained almost invariable with slight fluctuations of 1% - 2% and only MoGas has increased 3% during the same period. Diesel oil holds the higher proportion of the consumption accounting for around 50% followed by MoGas (26%), Kerosene (9%), Jet Fuel (9%) and Naphtha (6%).

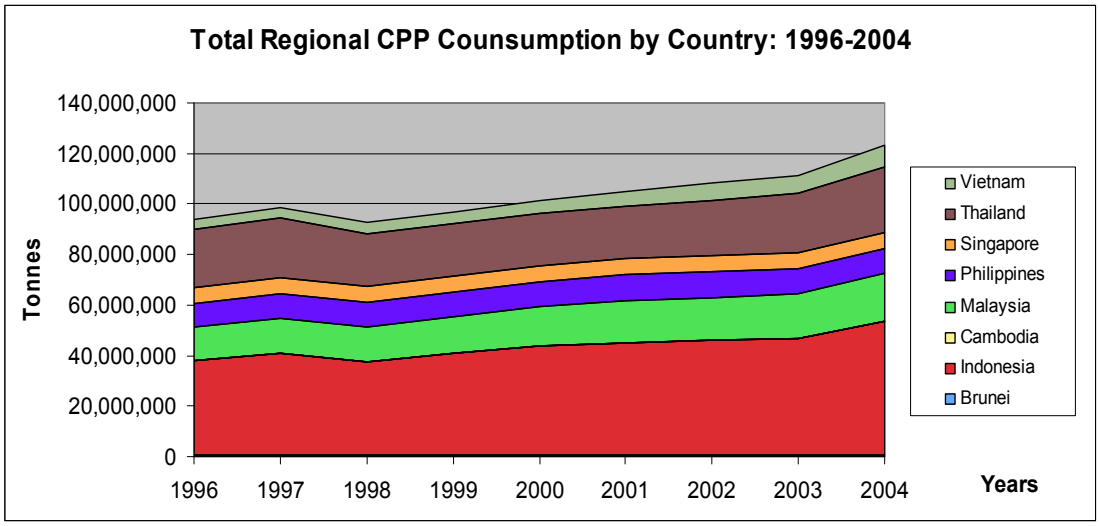


Figure 8.6 Total Regional CPP Consumption by Country, excluding Cambodia (Based on: IEA non OECD-statistics)

Dividing the total CPP consumption by country it is interesting to notice that Indonesia's consumption accounts for around 43% of the total number having slightly increased by 2.5% over the last nine years. Thailand comes second with a 21% share of the total consumption although the county's figures are following a downward trend. Malaysia accounts for 15.5% while Philippines consume 8% and Singapore 5% and their trend has remained almost stable in the discussed period fluctuating around 1% year by year. Vietnam consumes a share of 7% however the country has achieved the highest growth rate (3%) above all the other countries while Brunei consumes only a 0.4%.

8.8 Total amount of CPP transported in the region

The Southeast Asian region is dynamic group of countries that have gone through many developments and downfalls in the analyzed period. This is reflected in the trade flows in the region. First a breakdown per product will give a good picture of the importance of the different products to the total trade flows in the region, after which a breakdown per country will be done. This latter one gives the idea of the importance of the specific country to the international trade flows. This paragraph will conclude with a comparison of the imports and exports in the region per country, leading to a representation of the status of the country with regard to imports and exports over the last nine years.

Imports and Exports by Product

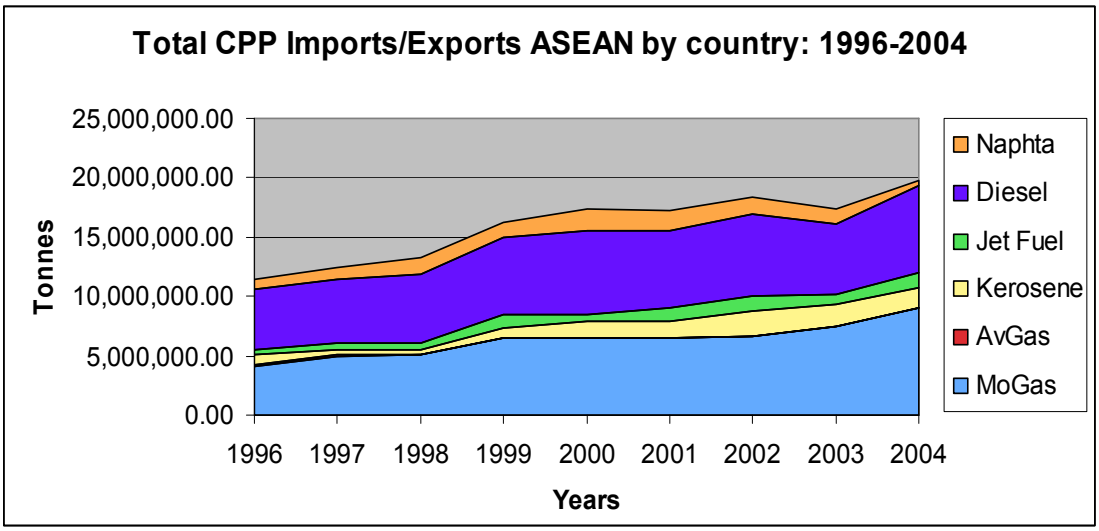


Figure 8.7 Total Imports / Exports ASEAN by Product: CPP 1996-2004 (Based on statistics of 'primary sourced countries')

As it is shown in figure 8.6 the traded tonnes within the ASEAN region have significantly increased during the analysed period. In 1996 the total traded volume was almost 11.5 million tonnes while in 2004 increased to approximately 20 million tonnes indicating 75% growth. MoGas is the most important product in the region with regards to trading, having performed a

constant upward trend in terms of total traded volume accounting for around 45% in 2004 in comparison to 36% in 1996. AvGas is of minor importance for the region with minor traded quantities. Kerosene's and Jet Fuel's share has slightly increased by approximately 2% during the last nine years from 6.3% and 4.5% in 1996 to 8.6% and 6.5% in 2004 respectively. Diesel's share on the other hand has decreased by almost 7% during the same period from 44% in 1996 to 37% in 2004. Naphtha's share was quite stable since 2003 fluctuating around 7%-10% however it has been significantly decreased to 2.5% in 2004.

Imports and Exports by Country

Imports by Country

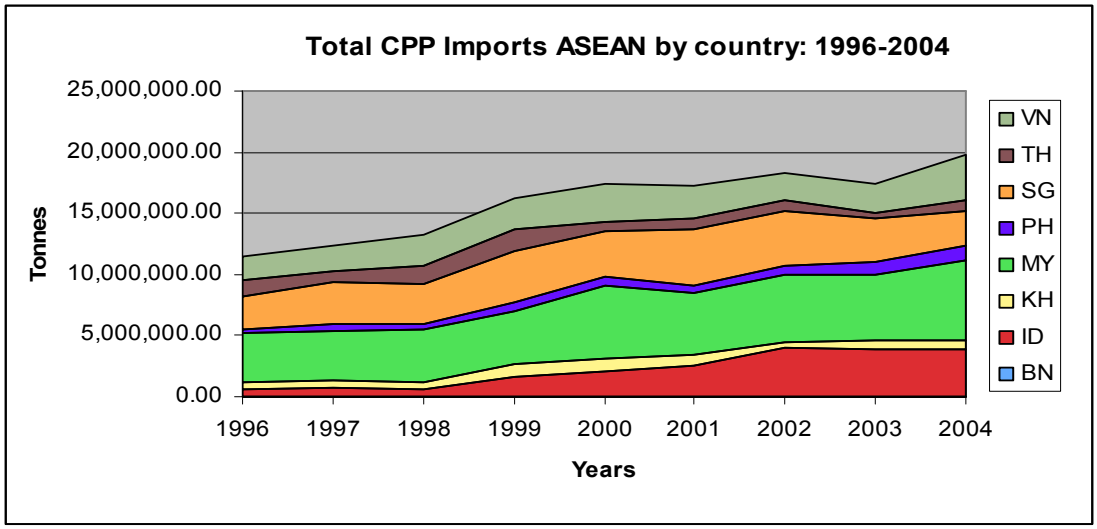


Figure 8.8 Total Imports ASEAN by Country: CPP 1996-2004 (Based on statistics of 'primary sourced countries')

Import flows within ASEAN increase significantly during the analyzed period. Brunei's imports from the ASEAN region is almost zero as the country's production can almost cover the domestic demand. Indonesia is one of the important forces behind the increase in imported volumes in the region. Indonesia's imports escalated from 0.5 million tonnes in 1996 to 3.8 million tonnes in 2004 performing an outstanding 700% increase. In 2004 Indonesia's share of the total regional imports accounted for 19.5% while in 1996 its share

was only 4%. Cambodia's imports from the region represent in 2004 a 3.5% share of the total amount having slightly decreased from 5% in 1996. The imported volume has been increased from 580 thousand tonnes in 1996 to 690 thousand tonnes in 2004 representing a 20% increase. Malaysia has showed the highest imported volumes of CPPs from the region through the whole analyzed period. Malaysian imports have been increased from 4.1 million tonnes in 1996 to 6.6 million tonnes in 2004 indicating a 59% growth and accounts for 33% of the total imported volume within the region in 2004. This proportion has performed slight fluctuations over the analyzed period. Philippines have also increased its imports from the region by a remarkable 600% during the analysed period. In 1996 Philippines imports accounted for 205 thousand tonnes compared to 1.2 million tonnes in 2004. Proportionally it represents a 6% of the total imported amounts in 2004 performing a notable growth compared to 1.8% in 1996. Singapore's proportion fluctuated between 22%-28% over the last nine years although in 2004 its share dropped to 14% of the total imports in the region; while the imported volume was increasing from 2.8 million tonnes in 1996 to 4.5 million tonnes in 2002. Since then the imports followed a downward trend reaching 2.8 million tonnes in 2004. Thailand's imports from the region have performed a worth mentioning decline from 1.3 million tonnes in 1996 to 864 thousand tonnes in 2004 showing a 36% decrease. Thailand's proportion has significantly decreased from 12% in 1996 to 4% in 2004. Vietnam imported 3.7 million tonnes in 2004, almost 2 million tonnes more in comparison with 1996. Vietnam's share of total imports in the region has increased from 16% in 1996 to 19% in 2004.

Exports by Country

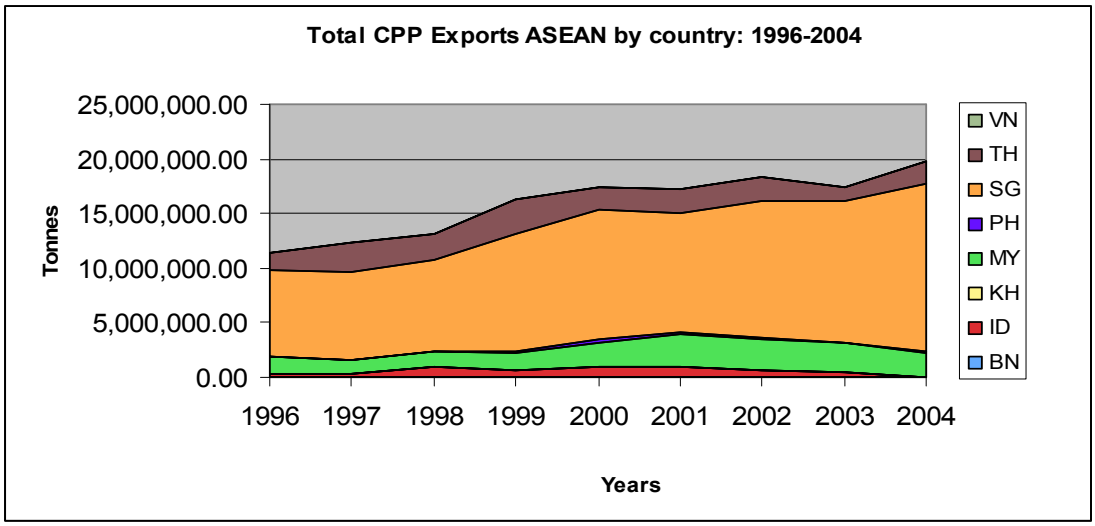


Figure 8.9 Total Exports ASEAN by Country: CPP 1996-2004 (Based on statistics of 'primary sourced countries')

As it is shown in figure 8.8 Singapore rules exports of ASEAN. The country managed to sustain its exports capability between 65%-70% of the region while in 2003-2004 Singapore's share of the regional exports increased to 73% and 77% respectively. In terms of exported volumes Singapore increased its exports from around 8 million tonnes in 1996 to almost 15.5 million tonnes in 2004 representing a 95% increase. Malaysia's proportion fluctuated between 10%-16% over the last nine years reaching in 2004 the level of 11% of the total exports in the region; while the exported volume increased from 1.6 million tonnes in 1996 to 2.3 million tonnes in 2004 indicating an approximately 46% increase. Thailand's exports share performed higher variations compared to Malaysia as it was representing an almost 20% of the total exports but since then it followed a downward trend reaching in 2004 the level of 10.5%. Although Thailand's share decreased over the last nine years, its exported volumes increased by approximately 35% from 1.6 million in 1996 to 2.1 million in 2004. The rest amount is being exported from Indonesia accounting for 3%-5% of the total volume although in 2004 its share dropped to only 0.3%. The exported volume significantly decreased to the minor 52 thousand tonnes in 2004 while during the previous years it was rather stable fluctuating around 900 thousand tonnes. Philippines'

export share remained stable over the analyzed period; however it represents an insignificant 0.25%.

Comparison

After looking into the major importers and exporters in this region, it is interesting to draw the picture of the major net importers and net exporters. As it is shown in figure 8.9, Singapore is the major net exporter for CPPs in the region with its net export quantity reaching 12.5 million tonnes in 2004. Thailand is also a net exporter of CPPs in the region but to a smaller extent, with its net exports accounting for 1.2 million tonnes in 2004. The rest of the countries are net importers of CPPs in the region. Malaysia shows the highest net import volume of almost 4.4 million tonnes in 2004 followed by Indonesia and Vietnam by 3.8 and 3.7 million tonnes respectively. In less extend Philippines presented a net import volume of 1.2 million tonnes and Cambodia of 700 thousand tonnes, while both are showing an increasing "net import status" over the last nine years.

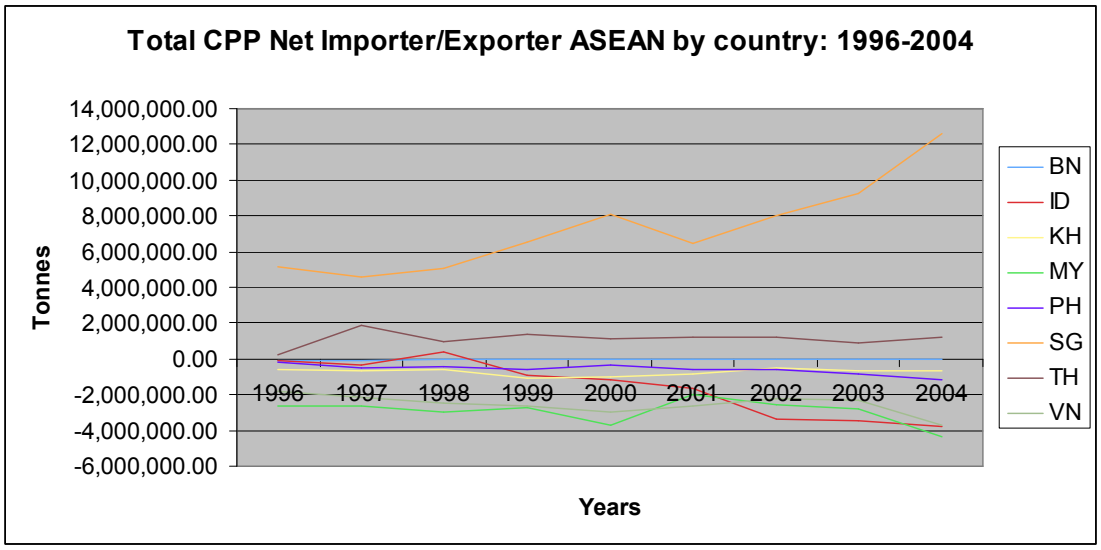


Figure 8. 10 Total Net Importer / Exporter ASEAN by Country: CPP 1996-2004 (Based on statistics of 'primary sourced countries')

8.9 Summary

The political situation in the region remains blurred. Singapore, Brunei and Malaysia are political stable countries whilst Vietnam, Philippines and Indonesia have lately initiated a process of political reforms in order to improve the political conditions within theirs territories. On the other hand Cambodia's and Thailand's political situation remains unstable.

Within the ASEAN region economies appear to have important dissimilarities. The contribution of agricultural sector has a downward trend over the last years due the expansion of the industrial sector. The region is abundant in mineral recourses and has proceeded in a significant industrialization process marking out mining and manufacturing sector as of high importance for economic development. The construction sector is of minor importance within ASEAN whilst domestic trade and the tourist sector have a notable contribution in the GDP of all the counties. The service sector in the region has performed a worth mentioning growth rate over the last nine years. The GDP growth shows an increased trend in the ASEAN region over the last nine years although there are two main downfalls; one in 1998 as due to the Asian Financial Crisis and the second in 2001 due to the terrorist attacks in the WTC in New York and the slowdown of the global economy growth in that year.

The business environment in the ASEAN region varies considerably from country to country as corruption, high regulations and extensive red tape is a common situation in most of the countries in the region. Singapore seems to have the most attractive and secure business environment in the region that is aligned with its reputation as the main trade hub in the region.

The downstream oil industry in the ASEAN region presents different levels of development with Singapore being the country with the most advanced industry. There are refineries in all the ASEAN countries except from Cambodia and Vietnam. Petroleum products are the major energy source that is consumed within the region.

CPPs production was stable the last nine years, with a steady upward trend since 2002. Indonesia is the biggest producer in ASEAN, as it took the lead from Singapore in 1999, accounting for around 30% of the total production in 2004. Diesel oil is the major product being produced in the region as it accounts for around 50% of the regional CPP production followed by MoGas (23%).

The total CPPs consumption in the region is following a constant upward trend reaching an almost 35% increase over the last nine years. Indonesia is the bigger consumer in the region accounting for around 43% of the total consumption while Vietnam has achieved the highest growth rate over the discussed period. The proportion of each product has remained stable with Diesel oil being the mostly used product accounting for an around 50% of the total consumption.

The traded volume of CPPs has increased with 75% over the last nine years with Diesel and MoGas being of most importance in the region. Malaysia, Indonesia and Vietnam are the three main importers in the region while exports are dominated by Singapore accounting for more than 70% of the total exported volume followed by Malaysia and Thailand in a smaller extent. Regarding the trade status of each country, Brunei, Indonesia, Cambodia, Malaysia, Philippines and Vietnam are net importers of CPPs in the region while Singapore and Thailand are the only net exporters.

Part III. Future Situation in Southeast Asia

"The best way to predict the future is to create it."

Peter F. Drucker (1909 -); Appraised Management Guru

Creating the future beats any tool that is available. But in order to create the future wisely, ideas about the future, based on historic data and straightforward calculation methods, can give a direction in which the future can be expected to go. In Chapter 9, the future perspective is given on politics, economics and all other factors discussed in Chapter 5. Chapter 10 shows forecasted production and consumption figures for the projected period. In Chapter 11, a qualitative discussion will be given on how the developments in Chapter 9 and 10 will influence the future CPP trade flows. The part will be concluded by the regional perspective of the forecasted period on the previously mentioned points in Chapter 12.

9. Future Country Situation in Southeast Asia

Chapter 9 will introduce the future of each country in the region for politics, economics, business, downstream oil industry, and energy. The forecast is based on news, interviews, research, and personal experiences in the region.

9.1 Brunei Darussalam

9.1.1 Politics

In Brunei, the government tries to prepare the country for a period of lesser wealth due to a decline in oil and gas incomes, creating a system that free healthcare and education will have influence on the income tax. But this progress is slow. The sultan will remain to have absolute power and will introduce his heir in government affairs, expected in both short- and long-term.[293]

With regard to International Relations, Malaysia and Brunei are slowly coming towards each other after long disputes over oil rich deep-sea territories, although no agreements have been signed. Brunei also tries to claim other deep-sea areas from e.g. China, but no disputes have arisen from that. Brunei will keep on playing a role in peace-monitoring in the region for e.g. the Philippines and MILF in the southern province of Mindanao, but also in Aceh, Indonesia.[294]

---

[293] The Economist Intelligence Unit, *'Country Report Singapore June 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.2

[294] The Economist Intelligence Unit, *'Country Report Singapore June 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.7

9.1.2 Economics

The main problem that Brunei faces is that its economy is and, in this forecast period, will be reliant on the oil industry for its GDP. In the separation of sectors this is very apparent: Mining (…) accounts for 42%, with a stable percentage in the GDP over this period. The Wholesaling sector is the second biggest (8%), followed by Transport (5%), Agriculture (3%) and Construction (4%), all of which are remaining stable in the development. Even though the government is trying to diversify its economy away from the oil industry, e.g. developing Brunei as international offshore financial center, specialized in Islamic Banking, stimulating the IT sector and tourism,[295] but in the recent years this has not been successful and in the forecast period it is not projected that it will be, as shown in figure 9.1. Other more tangible projects are the opening of a methanol plant in 2010 producing 2,500 tonnes per day.[296]

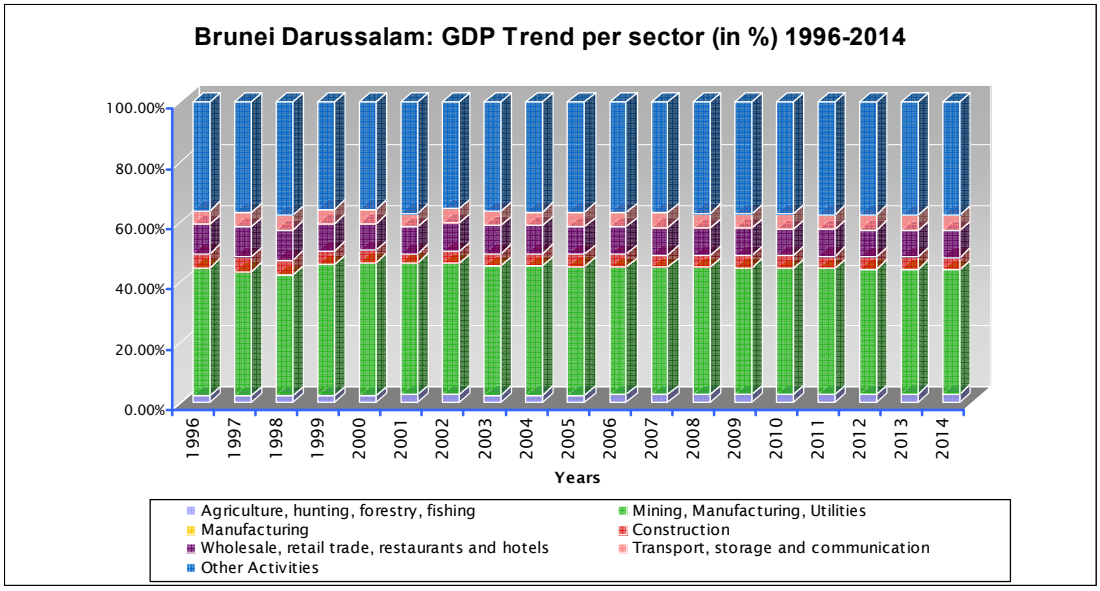


Figure 9.1 Brunei Darussalam: GDP Trend per Sector (in %) 1996-2014 (Based on: UN Statistics) (N.B. Manufacturing statistics are missing from this source)

---

[295] CountryWatch, *'Country Review 2006: Brunei',* available from Business Source Premier, viewed on 14 August 2006 p.30

[296] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC Energy Demand and Supply Outlook Brunei Darussalam* 2006, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, p.8

The GDP of Brunei is projected to grow steadily with an AAGR of 1.93% over the forecast period. In total the GDP will be increased from US$4.5bn in 2004 to US$5bn in 2009, which is an increase of 12% over this period. In 2014 the GDP is projected to reach US$5.5bn, an increase of 23% compared to 2004.

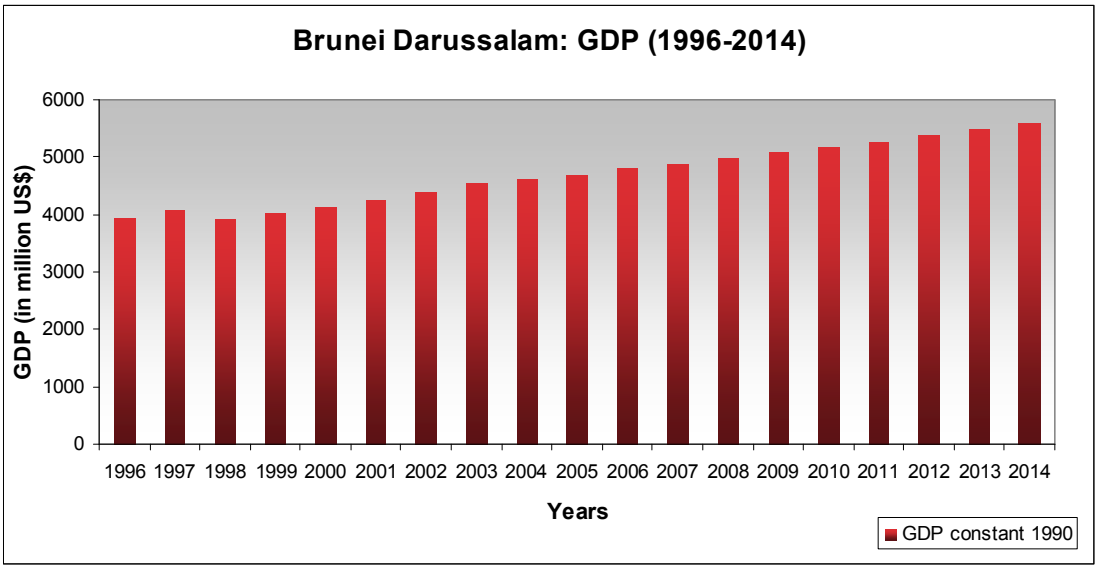


Figure 9.2 Brunei Darussalam: GDP Trend 1996-2014 (Based on: UN Statistics)

9.1.3 Business Environment

The business situation in Brunei is prospected to develop in the same way as in recent years; the government stimulates investment in all different parts of the economy, except for where natural resources are involved.[297] This diversification will be the main aim of the countries business environment in the near and further future.

[297] Brunei Government website, http://www.brunei.gov.bn, viewed on 25 October

9.1.4 Downstream Oil Industry

The short-term perspective for the industry in Brunei seems to have not much change; no refining projects are in progress, neither upgrade of the existing one nor construction of new refinery, and the retail sector is projected to be dominated by its sole player. The subsidies are likely to stay during this forecast period, as no signs show that it will not.

In long term, the country wants to diversify its economy from exporting crude, and a Master plan has discussed to build a new refinery that consumes Middle East crude, while Brunei's high-valued low sulphur crude will be exported. This refinery would be focused on exports.[298] No real time line has been published so far.

9.1.5 Energy Demand Overview

The final energy demand in Brunei is projected to grow with an AAGR of 2% over the forecast period, according to IEEJ[299]. The transportation accounts for the biggest part of this consumption; main responsible consumers in this sector are mainly road transport followed by air transport. The road transport consumption will reach towards saturation over this period due to high passenger vehicle ownership while fuel demand for the air transportation sector will also increase due to integration of regional markets, triggering

---

[298] APEC 2000 Brunei Darussalam, *'Brunei studies prospects for big investments' available from:* http://www.apec2000.gov.bn/stories/downstream.htm, viewed November 21, 2006

[299] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC Energy Demand and Supply Outlook Brunei Darussalam* 2006, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, p.8

more passenger and freight transport. The industrial sector energy demand is projected to grow with AAGR 1,6%.[300]

9.1.6 Summary

The sultan will remain in rule and will try to stimulate the country away from oil, which will go slowly. The economy is heavily reliant on crude exports and this will remain the same in the forecast period, although a methanol plant is planning to be opened in short-term and Brunei is trying to position itself as (Islamic) International Overseas financial center. To realize the diversification in the economy Brunei has opened almost every sector for investment except natural resources. This situation will prevail. In short-term no projects for refining are planned, neither opening up the retail sector nor cutting of subsidies. In long term plans exist to create an export-focused refinery. The energy demand will grow with an AAGR of 2%, with transportation remaining the biggest sector in terms of energy consumption. In this sector road transportation has the majority and that will prevail.

[300] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC Energy Demand and Supply Outlook Brunei Darussalam* 2006, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, p.8

9.2 Indonesia

9.2.1 Politics

Indonesia will continue to face several governance challenges in the foreseeable future. Progress towards the democratization and decentralization concept is expected to be made during Mr. Yudhoyono term in the office although juridical reforms will continue on a slow pace[301]. The military reform process is likely to continue aiming at the army's non-interference with politics. Mr. Yudhoyono administration has shown signs of being able to handle the separatist movements especially in Aceh and Papua be applying autonomy arrangements in order to sooth the tension[302].On the other hand religious tensions that have been raised over the last years are more likely to persist[303] and terrorism is anticipated to remain an actual threat within the country in spite of the strict security measures and the considerable police effort of arresting key terrorists[304]. Indonesia's relations with Malaysia will remain in tension due to disputes over highly natural resourced regions in the Sulawesi Sea while relations with East Timor will continue to improve over the forecasted period[305].

The next presidential elections are scheduled to be held in 2009 and the results will significantly influence the country's long term development. If Mr. Yudhoyono will be re-elected formulating a strong government it is projected

---

[301]The Economist Intelligence Unit, *'Country Forecast Indonesia May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.9-11.

[302] PRS Group Inc., *Political Risk Yearbook Indonesia 2005*, available from Business Source Premier, viewed on 15 November 2006, p.10-14.

[303] The Economist Intelligence Unit, *'Country Forecast Indonesia May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.7-9.

[304] Business Monitor International, *'Indonesia Business Forecast',* available from Business Source Premier, viewed on 14 November 2006 p.9-10.

[305] PRS Group Inc., *Political Risk Yearbook Indonesia 2005*, available from Business Source Premier, viewed on 15 November 2006, p.10-14.

that he will continue with the reform agenda that has announced. On the other hand if the Vice-president Mr. Kalla decides to challenge today's President, the country might enter a new period of political instability resulting in increased tensions and violence continuation throughout the country as the divided government will not be able to take temerariously action to deal with them[306].

9.2.2 Economics

Indonesia is likely to remain a well diversified economy in the following years as the contribution of each sector to the total GDP will remain almost stable with minor fluctuations. As it is shown in figure 9.3 the contribution of the agricultural sector will remain almost steady during the forecasted period reaching the point of around 11% in 2014. Mining and manufacturing sectors will maintain their status as the major sectors in the economy accounting for around 32% and 22% of the total GDP respectively, in 2014, as they will follow a slightly upward trend. The construction sector is expected to follow a minor downward trend. The same trend will apply also for the wholesaling sector (..) which is projected to constitute around 12% in 2014 compared to 13.5% in 2004 as well as for the service sector which is expected to contribute around 10.5% of GDP in 2012. The transportation's sector contribution to GDP will remain stable.

[306] PRS Group Inc., *Political Risk Yearbook Indonesia 2005*, available from Business Source Premier, viewed on 15 November 2006, p.12-14

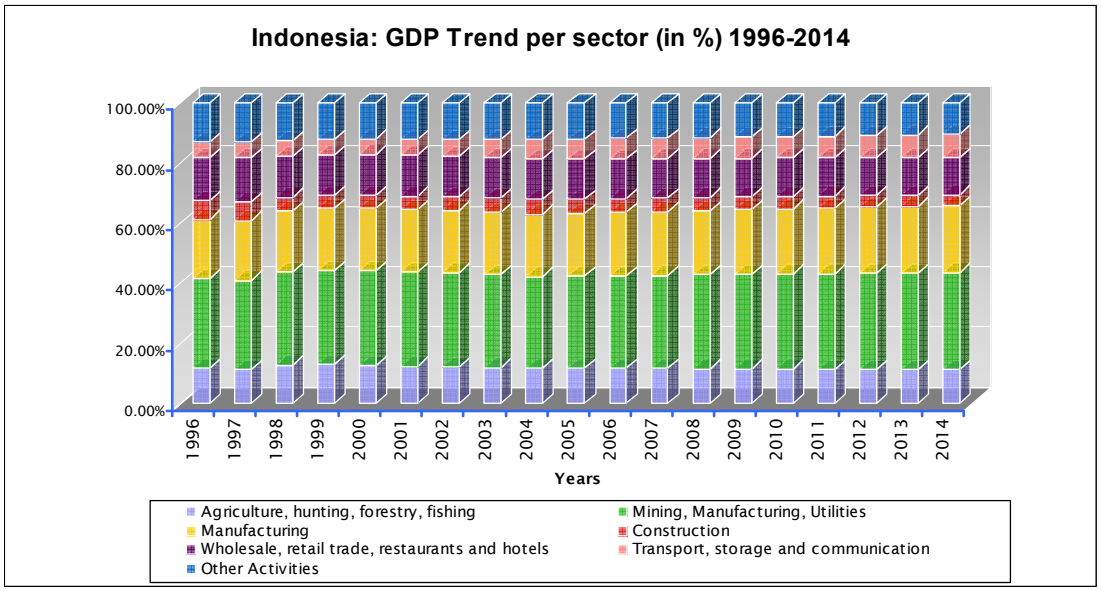


Figure 9.3 Indonesia: GDP trend per Sector (in %) 1996-2014 (Based on: UN Statistics)

The Indonesian economy is expected to grow in the forecasted period even in a slow rate as the country is in the process of economic recovery. As it is shown in figure 9.4 the total GDP in 2009 is projected to be 27% increased compared to 2004 while in 2014 this will expected to be 62% higher than 2004 meaning an average 4.97% annual growth rate.

Figure 9.4 Indonesia: GDP trend 1996-2014 (Based on: UN Statistics)

9.2.3 Business Environment

Indonesia's problematic business environment is likely to improve in the short term as President Mr. Yudhoyono has announced an extended plan of encouraging investments. The new investment law, introduced in 2006[307], is likely to improve Indonesia's market attractiveness as the bureaucratic procedures will be simplified and deregulations will take place creating a more attractive business environment. The government has also proposed the restructure of the tax system in an attempt to lower corporate tax rates and develop the tax collection system. On the other hand, corruption and the weak legal system are expected to remain the most important impediments of attracting investments in the country due to the inefficient anti-corruption authority and the slow moving legal reform[308].

In the long run, it is worth mentioning that the business environment will be significantly influenced by the next presidential elections in 2009 and the political stability or instability that will cause in the country. A strong government is expected to proceed further with the reform process that has initiated in order to attract higher levels of investments. On the other hand, if the country enters into a new era of political instability it will negatively affect the future national business competitiveness as it is anticipated limited progress in the reformation procedure[309].

---

[307] The Economist Intelligence Unit*, Indonesia Country Commerce 2006*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.12-14.

[308] PRS Group Inc., *Political Risk Yearbook Indonesia 2005*, available from Business Source Premier, viewed on 15 November 2006, p.12-14.

[309] PRS Group Inc., *Political Risk Yearbook Indonesia 2005*, available from Business Source Premier, viewed on 15 November 2006, p.12-14

9.2.4 Downstream oil industry

Pertamina is determined to carry out expansions and upgrades in some of its refineries as well as in order to increase its processing capacity and to be able to process sour oil so as to lessen country's dependency on refined products imports. The program is expected to begin in 2007 and will result in a 20% increase of the total processing capacity by 2012. Pertamina's President-Director Ari Soemarno has stated that "Pertamina decided to focus on revamping and modifying its existing refineries rather than building new ones because of the current shortage of material and manpower in the industry"[310].

Furthermore the Local firm PT Intanjaya Agromegah Abadi with its joint venture partner Inter Global Technologies (IGT) are pressed to start building the first privately-owned refinery of the country. The proposed refinery has been approved since 1996 but due to the financial crisis the construction has been significantly delayed[311]. The proposed refinery is now projected to start operating in 2010 having a processing capacity of 300.000b/d while it will process crude oil from the Middle East[312].

The government has initiated a process of subsidy removal in most oil fuels and it expected to fully remove subsidies for Diesel oil in 2006 and for

---

[310] Platts website, Anita Nugraha, Pertamina to boost capacity at existing refineries 20% by 2012, 23 August 2006, available from Internet, http://www.platts.com/, viewed on 21 August 2006.

[311] Embassy of the United States of America Jakarta, *Petroleum Report Indonesia 2005 – 2006*, available from Internet, http://www.usembassyjakarta.org, viewed on 12 September 2006.

[312] AsiaPulse website, available from Internet, http://www.asiapulse.com, viewed on 14 November 2006.

Kerosene in 2007[313]. The country will continue the liberalization of retail oil product sector that will attract foreign companies to invest in the country.

In 2005, the state owned company Pertamina signed a memorandum of understanding (MOU) with Sinopec to build a new refinery in Tuban, East Java. The refinery will process oil from Cepu block and will have a processing capacity of 150.000b/d - 200.000b/d[314]. According to the initial plan the building procedure would have been started in December 2005, but Pertamina postponed it and is reported that is looking for a new partner as Sinopec was responsible for considerable delays. The date that the refinery will start to operate is not known yet[315].

9.2.5 Energy Demand

The total final energy consumption is expected to grow to almost 140Mtoe[316] in 2009 due to urban population growth and economic recovery. The industrial sector will continue to consume almost one third of the total demand although there is a trend of changing the industry structure from energy-intensive to non-energy intensive industries. The transportation energy consumption is expected to increase with the higher growth rate among the rest sectors mainly driven by the increased number of passenger vehicles. The energy consumption of the residential and commercial sector is also expected to

---

[313] Embassy of the United States of America Jakarta, *Petroleum Report Indonesia 2005 – 2006*, available from Internet, http://www.usembassyjakarta.org, viewed on 12 September 2006

[314] Indonesia's Investment Coordination Board website, available from Internet, http://www.bkpm.go.id viewed on 14 November 2006.

[315] Embassy of the United States of America Jakarta, *Petroleum Report Indonesia 2005 – 2006*, available from Internet, http://www.usembassyjakarta.org, viewed on 12 September 2006.

[316] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC Energy Demand and Supply Outlook* 2006, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed on 25 August 2006, p.34.

grow mostly driven by the increased number of households and living standards. During the forecasted period oil is likely to remain the main energy source of the economy followed by an increased share of gas. Coal and electricity is projected to slightly increase.

In the long term Indonesia's energy demand will grow even more. The deputy head of the Agency for Technology Assessment and Application (BPPT), Marzan Aziz Iskandar has stated that "every 1.0 percent economic growth needs a 2.0 percent increase in energy consumption"[317]. For this reason and due to the country's high dependency on oil, the Indonesian government has introduced an energy plan with the intention to fulfil the increasing energy demand and diversify the national energy product mix by developing alternative energy sources[318]. According to this plan Indonesia has already announced its intension to build a nuclear plant[319] and is expected to develop other power sources such as geothermal energy, bio-fuel and others as well as promote the consumption of natural gas in order to reach a "balanced energy mix" by 2025[320].

[317] Indonesia's Investment Coordination Board website, available from Internet, http://www.bkpm.go.id/en/news.php?mode=baca&info_id=5006 viewed on 14 November 2006.

[318] Indonesia's Investment Coordination Board website, available from Internet, http://www.bkpm.go.id/en/know.php?catinfo_id=1&info_id=132 viewed on 14 November 2006.

[319] Indonesia's Investment Coordination Board website, available from Internet, http://www.bkpm.go.id/bkpm/news.php?mode=baca&info_id=4848 viewed on 14 November 2006.

[320] Indonesia's Investment Coordination Board website, available from Internet, http://www.bkpm.go.id/bkpm/board.php?mode=baca&message_id=493 viewed on 14 November 2006.

9.2.6 Summary

Indonesia is expected to promote the democratization and decentralization concept in the future although the next presidential elections scheduled for 2009 will influence the country's long term development. Indonesia is projected to remain a well diversified economy with the contribution of each sector to the total GDP remaining almost stable. The economy is expected to grow in a slow rate as the country is in the procedure of economic recovery. Indonesia's business environment is projected to improve as an extended plan of encouraging investments has been announced. Regarding the downstream oil sector, Pertamina is expected to perform expansions and upgrades in some of its refineries while the government has initiated a process of subsidy removal in most oil fuels. The total final energy consumption it is expected to grow in the forecasted period. The country is highly dependent on oil and has introduced an energy plan in order to diversify the national energy product mix

9.3 Cambodia

9.3.1 Politics

Politics in Cambodia will maintain its status since the Prime Minister, Hun Sen, and Cambodian People's Party will continue to be the driven forces in Cambodia[321]. No causes are foreseen to change this structure. Regarding security risk, stress in the border between Cambodia and Vietnam will sustain. Since the problem of demarcation is big, this could worsen the relationship of the two countries. Human rights and corruptions will further destroy international relationship. World Bank has started to cut some investments due to the corruptions.

Since Cambodian People's Party is consisted of factions, which are submitted to Hun Sen. a problem would arise when Hun Sen will be out of power or even pass away, and factions' leaders fight to lead Cambodian People's Party[322]. This could lead to extremely instable politics situation in Cambodia. Corruption will persist if Cambodian People's Party still leads the country and this will further dampen international relationship.

---

[321] The Economist Intelligence Unit, *Cambodia Country Report July 2006*, available from Economist Intelligence Unit Database, viewed on 20 November 2006 p.1-2

[322] Asia Monitor: South East Asia Monitor Volume 1, *CPP: Unity Not Guaranteed.*, Nov 2005, Vol. 16 Issue 11, p6-6, 2/3p, available from Business Source Premier AN 18611644, viewed 20 November 2006

9.3.2 Economics

The government understands that corruption is the main concern to foreign investors, and due to that fact, it is trying to issue new anti-corruption laws[323]. The success of this law does not affect only to investors. A failure in new anti-corruption legislation will also affect donations from international donors, which contribute to the largest part of construction in Cambodia. The country will turn toward industrialized process, and agricultural industry's share in GDP will become smaller. According to the graph agriculture's contribution to GDP is declining very fast. From around 43% in 1996, the share dropped to 30% in 2004, and is expected to decline further in the future. At one point, agriculture will become a small fraction of production, around 11% of the GDP, in Cambodia like other ASEAN countries. The rising sectors would be mining and manufacturing. Both sectors are projected to increase from 25% and 20% respectively in 2004 to 43% and 37% in 2014.

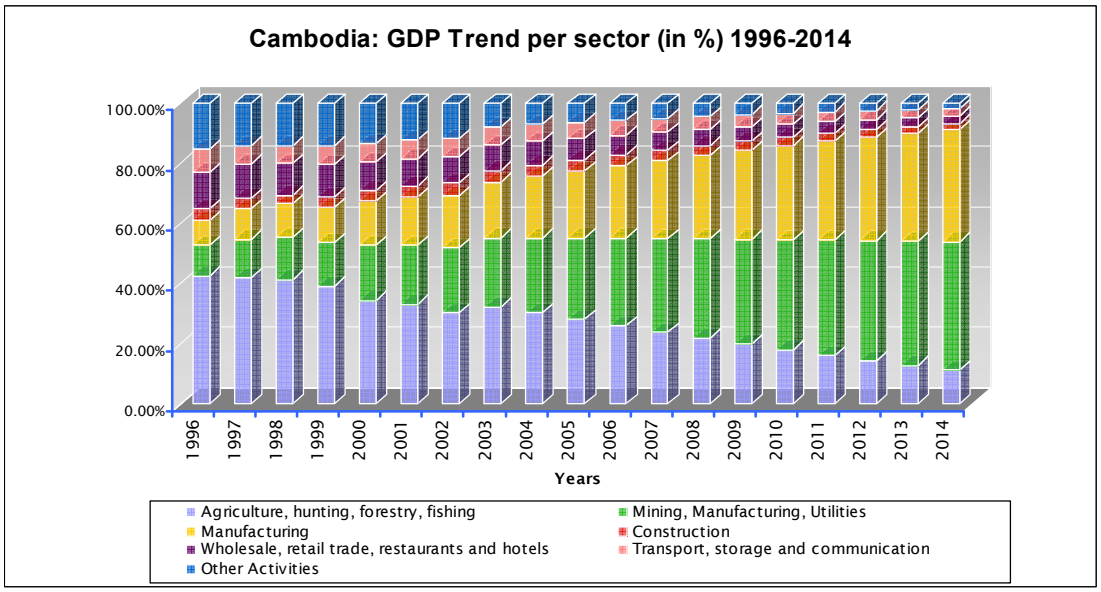


Figure 9.5 Cambodia: GDP trend per Sector (in %) 1996-2014 (Based on: UN Statistics)

[323] The Economist Intelligence Unit, *Cambodia Country Report June 2006*, available from Economist Intelligence Unit Database, viewed on 20 November 2006 p.8-9

Oil industry will play a major role to Cambodia's economic in the long future, once the industry is developed, the market is ready, and the government can distribute the benefits of this industry equally. Relationship with China will stimulate more trading and investment in the future[324]. The GDP of Cambodia is projected to grow with an AAGR of around 5.24% over the forecast period. In total the GDP will be increased from US$3.7bn in 2004 to US$ 4.7bn in 2009, which is an increase of 30% over this period. In 2014 the GDP is projected to reach US$ 6.12bn, an increase of 66% compared to 2004.

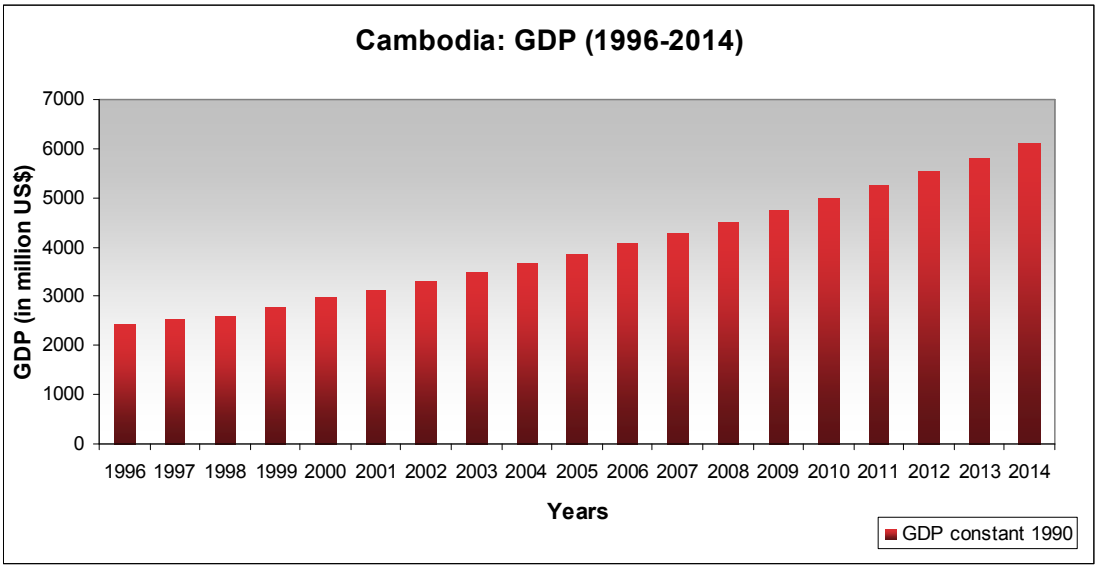


Figure 9.6 Cambodia: GDP trend 1996-2014 (Based on: UN Statistics)

[324] Asia Monitor: South East Asia Monitor Volume 1, *China Relation Reinforced.*, Jun 2006, Vol. 17 Issue 6, p6-6, 2/3p, available from Business Source Premier AN 20948986, viewed 21 November 2006

9.3.3 Business

Cambodia can attract investors with special regulations that allow foreign investors to hold 100 percent of shares in a company. In terms of business law, Ministry of Justice is trying to establish specialised courts like commercial court, labour court, and administrative court in order to handle increasing business activities[325]. This improvement will increase efficiency in doing business in Cambodia. Legal forms would be further developed. However, infrastructure can prevent huge investments in Cambodia[326], if the government does not take care of it seriously. Roads, ports, telecommunications are way underdeveloped. Other attractive investment factors may not cover this significant drawback.

9.3.4 Downstream Oil Industry

Usage of clean petroleum products will increase mainly for Diesel because it is used in transportation and electricity generation. There is a recent discovery of oil deposits in Cambodia, and this news will draw investors into oil industry[327]. Investment in this sector will create jobs and will become the main driving force of the economic. However, downstream oil industry may not yet benefit from this recent discovery. The lack of infrastructure will delay the investments in refineries and related industries. Regard to the long future, Cambodia has potential to build its own refinery after the discovery of oil deposits. However, developing the downstream industry can be more difficult

---

[325] S. Siphana, 'Legal and Judicial Reform Strategy for Cambodia', Secretary of State for Commerce Member, Phnom Penh, 2001, available from internet, http://www.moc.gov.kh/laws_regulation/legal_reform_strategy-fnal_draft.htm, viewed 21 November 2006

[326] Available from internet, '*Report shows Cambodia lags behind Laos in infrastructure'*, http://www.khmer.org/us/doc/doc1149.htm, viewed 21 November 2006

[327] Asia Monitor: South East Asia Monitor Volume 1, *Oil Boom or Bust?*, Nov 2006, Vol. 17 Issue 11, p6-6, 1/3p, available from Business Source Premier AN 22758012, viewed 20 November 2006

than it seems. With small population size and limited market capabilities is likely to lead to hesitation in investment and development in this industry[328].

9.3.5 Energy Demand

Cambodian will have better access to electricity due to a generous aid from China, which provided US$600 million to Cambodia's government to build new generation plant and lengthen the wires[329]. This will create an increase in demand for Diesel for electricity generation. In the long term Cambodia has planned to develop other alternative sources of energy. Hydropower and wind are among the top lists. Thus, dependence on Diesel will decline as well as imports of Diesel.

9.3.6 Summary

Even with corruption ranked among the highest in the world, Cambodia's administration under Prime Minister Hun Sen will rule the country without opposing forces in his way. Losing Hun Sen would drag the country into challenges between political parties, and could drag the whole country. Cambodia will turn toward industrialized country. Investment climate is getting better after entering WTO. Relationship with China will also boost the economy of Cambodia. Setting up business in Cambodia is not too difficult but the lack of infrastructure will distract investors. Downstream industry will grow fast after the discovery of oil deposits in the country. The development, however, can be slow because the country is not ready yet for huge investments[330].

---

[328] A. Hyland, Asia Money, *From Killing Field to Oil Field.*, Sep 2006, Vol. 17 Issue 8, p53-56, available from Business Source Premier AN *22846132, viewed 21 November 2006*

[329] Asia Monitor: South East Asia Monitor Volume 1, *China Relation Reinforced.*, Jun 2006, Vol. 17 Issue 6, p6-6, 2/3p, available from Business Source Premier AN 20948986, viewed 21 November 2006

[330] S. Siphana, 'Legal and Judicial Reform Strategy for Cambodia', Secretary of State for Commerce Member, Phnom Penh, 2001, available from internet, http://www.moc.gov.kh/laws_regulation/legal_reform_strategy-fnal_draft.htm, viewed 21 November 2006

9.4 Malaysia

9.4.1 Politics

Malaysia's political environment is predicted to remain stable in the short term and the next elections are expected to be held in 2009. It is projected that the affirmative-action program, which aims at increasing the wealth and privileges of the ethnic Malay population towards the other ethnicities, and constitutes the country's main issue of internal tensions, will remain unsolved[331]. The government is likely to reduce the negative economic effects of these policies for the other ethnicities and especially for Chinese in favour of the economic growth although the political and social aspects of affirmative action will be maintained for as long as possible[332]. In the international environment it is expected that Malaysia will improve its relations with its neighbouring countries in the near future[333]. In the long run not any major change in the policy towards ethnic minorities is anticipated.

9.4.2 Economics

Malaysia's main objective is to establish a competitive economy in the following years[334]. As it shown in figure 9.7 the economic development per sector may vary. The contribution of the agricultural sector shows a declining

---

[331] The Economist Intelligence Unit, *'Country Forecast Malaysia May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.8-12.

[332] The Economist Intelligence Unit, *'Country Forecast Indonesia May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.9-11.

[333] The Economist Intelligence Unit, *'Country Forecast Indonesia May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.9-11

[334] Office of the Prime Minister of Malaysia website, "Vision 2020", available from Internet http://www.pmo.gov.my/website/webdb.nsf/vfs_utama1?openframeset viewed on 16 November 2006.

trend reaching the point of around 4% in 2014 although it is expected a transformation of the sector towards a more modern production. The mining and manufacturing sectors will continue to play a major role in the economy accounting for 31% and 22% of the total GDP respectively, in 2014. The mining sector is likely to focalize in the development of new oil fields and gas fields around the country. The expansion of the manufacturing sector will be driven mainly by emphasising in higher value added products and further investments in high technology. The construction sector as well as the wholesaling sector (..) are expected to follow a downward trend over the forecasted period resulting in a shrinkage of the contribution to the GDP of the country. On the other hand the service sector is projected to follow a steady upward trend accounting for around 26% of the GDP in 2014 dominating the economic expansion in the forecasted period. The growth will be mainly derived from the finance, insurance, real estate and business services[335].

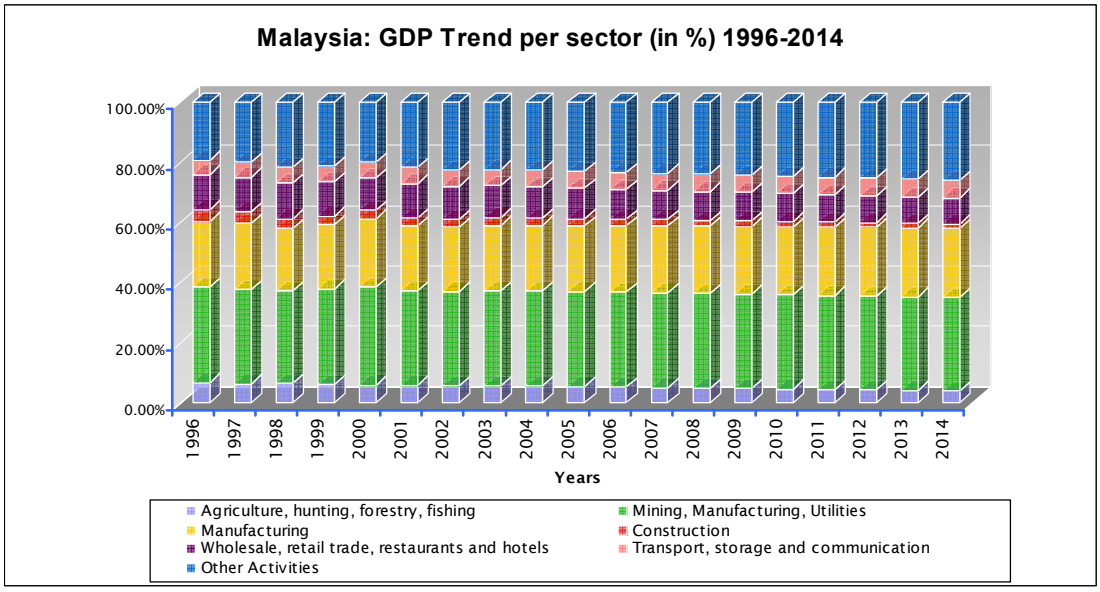


Figure 9.7 Malaysia: GDP trend per Sector (in %) 1995-2014 (Based on: UN Statistics)

[335] Malaysia Economic Unit Prime Minister Department website, Ninth Malaysian Plan 2006-2010, Putrajaya, 2006 , available from Internet www.epu.jpm.my, viewed on 17 November 2006

The Malaysian economy is expected to follow a sustainable growth in the future, as shown in figure 9.8. The total GDP in 2009 is projected to be 39% increased compared to 2003 while in 2014 this will expected to be 93% higher than 2004 meaning an AAGR of 6.81%. The economic growth will be mainly driven by the growing private consumption and the increased investments[336].

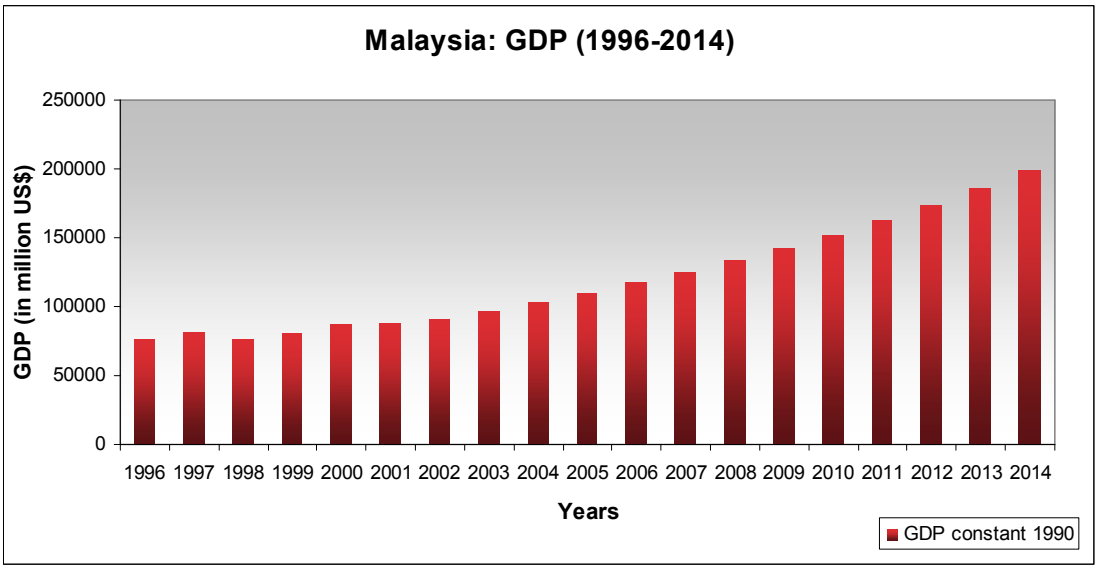


Figure 9.8 Malaysia: GDP trend 1996-2014 (Based on: UN Statistics)

9.4.3 Business Environment

Malaysia's business environment is projected to improve in the forecasted period. Malaysian government is planning to improve the public's sector delivery system meaning to simplify the procedures of starting a business in the country and reform the local authority administrations. Moreover, the government is planning to cut down corporate taxes and in general to reduce the cost of doing business in order to encourage investments[337]. Malaysia is

[336] Malaysia Economic Unit Prime Minister Department website, Ninth Malaysian Plan 2006-2010, Putrajaya, 2006 , available from Internet www.epu.jpm.my, viewed on 17 November 2006

[337] Malaysia Economic Unit Prime Minister Department website, Ninth Malaysian Plan 2006-2010, Putrajaya, 2006 , available from Internet www.epu.jpm.my, viewed on 17 November 2006

generally open to FDI as it is important for the country's economic development and more relaxed FDI regulations are anticipated in the near future in order to increase the low FDI inflows that were recorded in 2003[338]. Although Malaysia will work towards removing investment barriers this is expected to be done with a lower pace in comparison with the other ASEAN countries[339].

9.4.4 Downstream oil industry

There is no projection for major developments in the downstream oil industry, in Malaysia for both short and long term. There are no plans for new refinery construction in the country in the next ten years although de-bottlenecking in the current refining procedure is possible. Furthermore it is reported that the government is expected to gradually reduce subsidies in oil products. Economic Planning Minister Mustapa Mohamed has stated that the government "is not going to eliminate subsidies completely but is reducing them gradually or on a staggered basis"[340].

---

[338]The Economist Intelligence Unit, *'Country Forecast Indonesia May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.14-16.

[339]The Economist Intelligence Unit, *'Country Forecast Indonesia May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.19-20.

[340] Asia Times Online webpage, Bill Guerin, *Tigers count the cost of easing fuel subsidies,* 10 March 2005, available from Internet, http://www.atimes.com/atimes/Southeast_Asia/GC10Ae04.html viewed on 14 November 2006.

9.4.5 Energy Demand

Malaysia represents a competitive growing economy with increased energy needs. The total final energy consumption is projected to grow to almost 45Mtoe in 2009 due to the industrialization process and the economic development[341]. According to the 9th Malaysian Plan (2006-2010) a Five-Fuel strategy will be introduced including renewable energy sources to the energy product mix of the country together with oil, natural gas, coal and hydropower[342]. During the Plan period the transportation and industrial sectors will continue to be the major energy consumers accounting for almost 41% and 38.8% of the total energy demand respectively by 2010. The energy demand in the transportation sector will be partly driven by the increased number of passenger vehicles but mainly by the growing demand for transportation services by the manufacturing sector[343]. The energy consumption of the residential and commercial sector is expected to grow in a slow pace due to implementation of energy conservation measures accounting for 21% in 2010[344]. Regarding the fuel sources by product, oil

---

[341] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC Energy Demand and Supply Outlook* 2006, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed on 25 August 2006, p.50.

[342] Abdul Rahman Mohamed, Keat Teong Lee, Energy for sustainable development in Malaysia: Energy policy and alternative energy, School of Chemical Engineering, Universiti Sains Malaysia,
available from Internet www.elsevier.com/locate/enpol viewed on 21 August 2006.

[343] Malaysia Economic Unit Prime Minister Department website, Ninth Malaysian Plan 2006-2010, Putrajaya, 2006 , available from Internet www.epu.jpm.my, viewed on 17 November 2006.

[344] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC Energy Demand and Supply Outlook* 2006, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed on 25 August 2006, p.50.

consumption is expected to decrease by 2010 followed by an increase in the consumption of natural gas and coal[345].

In the long term Malaysia's energy demand will continue to grow as the economy will develop. The country is expected to continue promoting policies for using of sustainable energy sources under the "Malaysia's 2020 Vision" program and will aim to strengthen the Five-Fuel strategy[346].

9.4.6 Summary

Malaysia's political environment is expected to remain stable although tensions between the different ethnicities will remain unsolved. The country's economy is projected to grow during the forecasted period with the GDP increasing by 48% in 2014 compared to 2004. The mining, manufacturing and service sector are projected to be the main sectors of the economy. Malaysia's business environment is projected to improve in the forecasted period as the government is planning to simplify bureaucratic procedures, cut down corporate taxes and remove investment barriers. In the downstream oil industry there are no plans for new refineries in the next ten years. The total final energy consumption is forecasted to grow to almost 45Mtoe in 2009 due to the increased demand in the transportation and industrial sectors and the country is expected to promote policies for the use of sustainable energy sources.

---

[345] Malaysia Economic Unit Prime Minister Department website, Ninth Malaysian Plan 2006-2010, Putrajaya, 2006 , available from Internet www.epu.jpm.my, viewed on 17 November 2006.

[346] Office of the Prime Minister of Malaysia website, "Vision 2020", available from Internet http://www.pmo.gov.my/website/webdb.nsf/vfs_utama1?openframeset viewed on 16 November 2006.

9.5 Philippines

9.5.1 Politics

It is forecasted that instability and uncertainty will be the main characteristics of the political situation of Philippines in the short future. The massive demonstrations against the President are likely to continue with major request the resignation of Arroyo from the presidency before 2010 when her term ends officially. The recent failed coup shows the key role of the army in domestic politics. It is expected that the close relations of Arroyo with top military officers will prevent a new coup by a team of middle officers who are not loyal to her[347]. Another problem that President has to face in the short future is the constitutional change that has been proposed by the opponent parties which will result to the early removal of Arroyo from the presidential seat[348]. It is forecasted that the improvement of the economy is the only way for President Arroyo to restore her reputation and ensure her residence in the office. As far as the security risk of the country is concerned this will remain in high levels due to the continuing attacks of NDF (National Democratic Front) and the conflicts with the MILF (Moro Islamic Liberation Front) , although the efforts of the government to come up with an peace agreement before the end of 2006. Moreover it is expected that the terrorist group of Abu Sayyaf will keep being a serious threat for the internal security[349]. Improvement of the international relations is among the high priorities of the government. In terms of national security and prestige, Philippines will further develop the relations with USA. Regarding Philippines' relations to the region, the country is projected to continue its efforts to strengthen the ties with the neighbouring

---

[347] PRS Group Inc., *Political Risk Yearbook Philippines 2006*, available from Business Source Premier, viewed on 15 November 2006, pp.16-24

[348] The Economist Intelligence Unit, *'Country Forecast Philippines 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 pp.2-6.

[349] Business Monitor International, *'The Philippines Oil and Gas Report Q2 2006,* available from Business Source Premier, viewed on 14 November 2006 p.7

countries which are under the umbrella of ASEAN and APEC. The long-term situation is unclear and will be heavily affected by the changes in the short future. In case that President Arroyo achieve to postpone the constitutional change for the end of 2010 then the country will have to elect the new government with the new system which will give more power to the parliament. The result of the next elections is unpredictable although there is general dissatisfaction for the government party.

9.5.2 Economics

From the figure 9.9 it is well seen that the development per sector in Philippines, follows a steady trend without significant fluctuations in the shares of these. The most important sectors will preserve their shares for the whole forecasted period with (22%) for mining and (18%) for manufacturing. It is worth to mention that the injected income from the 8 million overseas workers will remain an important help for the domestic economy as it counts for around 10% of the total GDP. Another sector which will continue to play an important role in the development of the economy is the local call-centres.

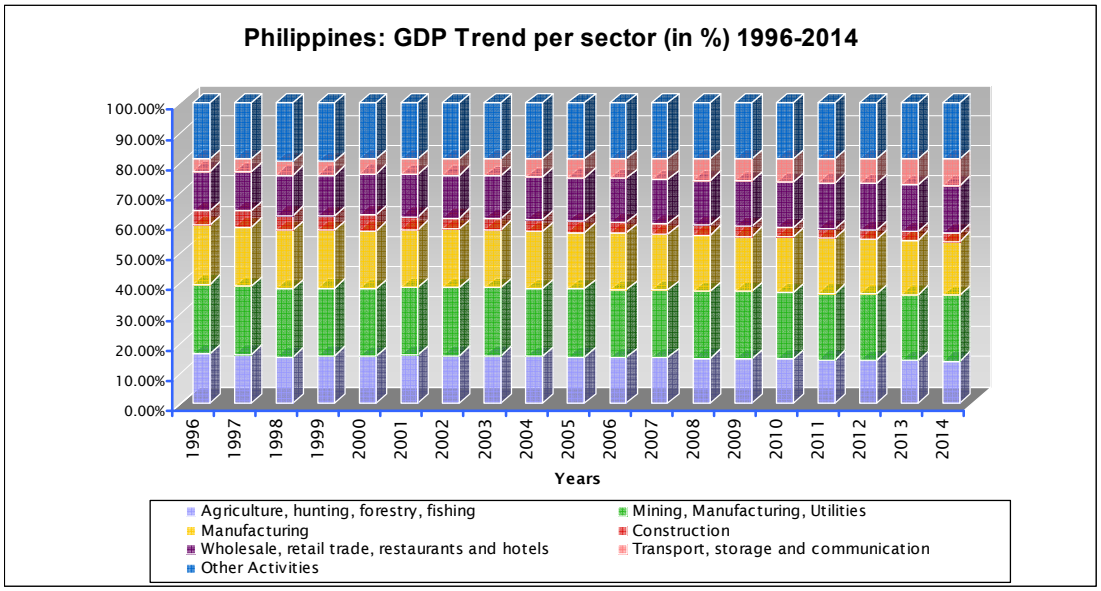


Figure 9.9 Philippines: GDP trend per Sector (in %) 1996-2014 (Based on: UN Statistics)

In the short future the GDP growth will follow a steady upward trend reaching in 2009 the level of US$86bn increased by 22% compare to 2004. In the end of the forecasted period GDP is expected to overpass the level of US$105bn meaning 49% higher than in 2004. During the period 2004-2014 GDP is forecasted that will grow with an average rate of 4%.

Figure 9.10 Philippines: GDP trend 1996-2014 (Based on: UN Statistics)

9.5.3 Business Environment

Among the highest priorities of President Arroyo are the improvement of the national business environment and the restoration of its attractiveness within the global market. One of the problems that the country has to solve is the high corruption which discourages the foreign investors of entering into the domestic market. It is projected that in the short future the Filipino government will accelerate the process of privatization aiming to attract more foreign investments and to decrease the unemployment rate. Especially in energy sector is expected that the government will try to complete the privatization of

Napocor, the state-owner power utility which will contribute to the opening of the energy market into foreign capital[350].

9.5.4 Downstream Oil Industry

The Deregulation Act in 1998 has contributed to the development of a high competitive market which had a as result the increase of the fuel prices and the shut down of one of the refineries in 2003. The decreased production of petroleum products is one of the main concerns of the country which is heavily dependent on the imports. Plans for a new refinery are not among the agenda of the government as foreign companies do not see any opportunity for profitable operations in the refining industry of Philippines[351]. The high demand of citizens for de-regulation of the retail market will not affect the decision of the government to continue its policy for further development of the sector although the high market prices. In the long future the situation will remain stable without significant changes although the increased domestic demand.

9.5.5 Energy demand

It is projected that in 2009 the final energy demand of Philippines will reach the level of 35 Mtoe following the development of the economy and the increase of the population. Transport will remain the sector with the highest rate of energy consumption followed by the industrial. Especially for the industrial sector is forecasted that will continue to be based mainly to the renewable energy while transportation will continue to be dependent on the

---

[350] The Economist Intelligence Unit, *'Country Forecast Philippines 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 pp.2-6.

[351] Philippines Energy, available from Internet: http://www.wn.com/philippinesenergy, viewed on 23 October 2006

petroleum products[352]. In the long-term it is expected that Philippines will accelerate the process of the independence from traditional energy sources investing more in renewable energy and environmental friendly fuels[353].

9.5.6 Summary

The political situation in Philippines will remain unpredictable with President Arroyo to be under the threat of a new military coup and violent demonstrations from her opponents who continuously ask for resignation before the end of the term in 2010. In the long term the change of the regime will affect the political structure of the country. Regard to the economics the total GDP will increase by 43% for the forecasted period with mining and manufacturing to be the most important sectors. The acceleration of the privatization in core sectors and the reduction of corruption will be among the highest priorities of the government in the business. The Deregulation Act in the downstream oil industry will further contribute to the development of the market which lacks of CPP production after the shut-down of the Caltex refinery. Transportation sector it is forecasted that will keep the first place in the energy consumption while the industrial one will remain dependent on the renewable energy.

---

[352] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC Energy Demand and Supply Outlook Philippines* 2006, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, pp.106-107

[353] Renewable Energy Sources, available from, http://www.doe.gov.ph/NRE/default.htm

9.6 Singapore

9.6.1 Politics

The short-term political situation seems stable. If the health of President Nathan, who is now aged 82, will stay well and fulfils his term until 2011, the presidency seat will not switch and policies and authority are expected to remain the same or even diminish.[354] Also, it is according to Mr Lee Sr. not expected that in short-term a two-party system will flourish in the city-state. Partially due to the prosperity that Singapore engaged over the years, the citizens see not too much reason to change this situation on short-term. However, as the government still suppresses opposing political outlets, e.g. internet and media broadcasting, this bounded free-speech is leading to more opposition to PAP.[355] Mr Lee Jr. is trying to connect more to the next generation, but not successful so far.[356] The political risk is considered low on short-term, due to these factors.[357] On long-term, it is sure that Nathan will not run again for presidency, due to his age. The new generation of PAP will fill up his position, which can lead to reformation of the presidency tasks, leading to expansion of its responsibilities[358]. It also is expected that the opposition

---

[354] BBC News, '*Singapore head starts second term',* September 1, 2005, Available from: http://news.bbc.co.uk/2/hi/asia-pacific/4204752.stm, viewed November 20, 2006

[355] The Economist Intelligence Unit, *'Country Forecast Singapore May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.5-10

[356] Li Xueying, '*PAP wants 'hip, happening' image to click with the young*', The Straits Times (July 27, 2006), available from: http://straitstimes.asiaone.com/vgn-ext-templating/v/index.jsp?vgnextoid=06a21008ce599010VgnVCM1000000a35010aRCRD&vgnextfmt=vgnartid:769bc9e61fbac010VgnVCM100000430a0a0aRCRD, viewed on November 20, 2006

[357] Singapore Risk Summary, *Asia Monitor: South East Asia Monitor Vol.2 (June 2006), Vol. 17 Issue 6*, available from Business Source Premier, viewed on November 21, 2006, p.8

[358] Michael Backman: '*Smutocracy is a facade for democracy'*, The Age (May 17, 2006), available from: http://www.theage.com.au/news/business/smutocracy-is-a-facade-for-democracy/2006/05/16/1147545327046.html, viewed November 20, 2006

will have more freedom of speech, leading to something more like a two-party system, as e.g. SPP would like[359], but this is not likely to happen within the next ten years.

With regard to security risk, Singapore is considered a terrorist target due to the good relations with the USA. This has led to heavy security measures and arrests of Singaporean born Muslims that were suspected to plan terrorist bombings, leading to an up-rise in criticism and fear amongst the big minority of mainly Malay and Tamil Muslims in the country as well as civil unrest.[360]

International Relations are developing steadily with Malaysia and Indonesia, the two neighbours with whom there were some disputes. With regard to Malaysia, after the resignation of Dr. Mahathir in 2003, Mr. Abdullah has reached out to Singapore more than before. The relations have become warmer, but due to the issues with the alleged second bridge to connect Singapore with Malaysia and disputes over a rocky island off the coast[361], these warm feelings tempered away. In short-term the relations are expected to improve slightly, although major issues like the bridge and the in chapter 3 discussed railway station in Tanjong Pagar, water price issues etc. will take longer. With regard to Indonesia, seems cordial but prosperous after signing agreements on increased air services, collaborative tourism activity and the development of a free-trade zone on Pulau Bintan and Pulau Riau in Indonesia, close to Singapore.[362]

---

[359] Singapore People's Party website: http://www.spp.org.sg/, viewed on November 20, 2006

[360] The Economist Intelligence Unit, *'Country Forecast Singapore May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.5-10

[361] Reuter, 'World Court hear Malaysia/Singapore over Isle Dispute', *New Zealand Herald, November 17, 2006*, available from: http://subs.nzherald.co.nz/section/story.cfm?c_id=2&objectid=10411240, viewed on November 21, 2006

[362] The Economist Intelligence Unit, *'Country Forecast Singapore May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.11-12

International Relations within the ASEAN region are expected to become tighter, especially with the opening of the single ASEAN market[363], planned to start opening step-by-step from 2012.[364]

9.6.2 Economics

For the economic development per sector on short- and long term, Singapore shows an almost perfectly stable trend. Mining (…) (21%) and Manufacturing (19%) will be the most important sectors, followed by Wholesale (13%) and Transport (13%). There will be a projected growth in the petrochemical and bio-medical industry[365], due to government stimulation and growth in demand for these products.[366] This growth can compensate for stabilizing growth in other sectors like refining industry or electronics manufacturing. Due to the advanced infrastructure Singapore will continue to function as logistics hub for both sea[367] and air transport[368] during the forecast period.

---

[363] H.E. Ong Keng Yong, 'Towards an ASEAN Single Market and Single Investment Destination'*, at Boao Forum for Asia Annual Conference 2003*, available from ASEAN Secretary website: http://www.aseansec.org/15365.htm, viewed on November 21, 2006

[364] The Economist Intelligence Unit, *'Country Forecast Singapore May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.14

[365] Pui Kwan-Tse, *The mineral industry in Singapore (2005),* available from: http://minerals.usgs.gov/minerals/pubs/country/2005/snmyb05.pdfviewed on November 10, 2006

[366] The Economist Intelligence Unit, *'Country Forecast Singapore May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.41

[367] The Economist Intelligence Unit, *'Country Forecast Singapore May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.41

[368] Business Monitor International, *Freight Transport Report Singapore Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.41

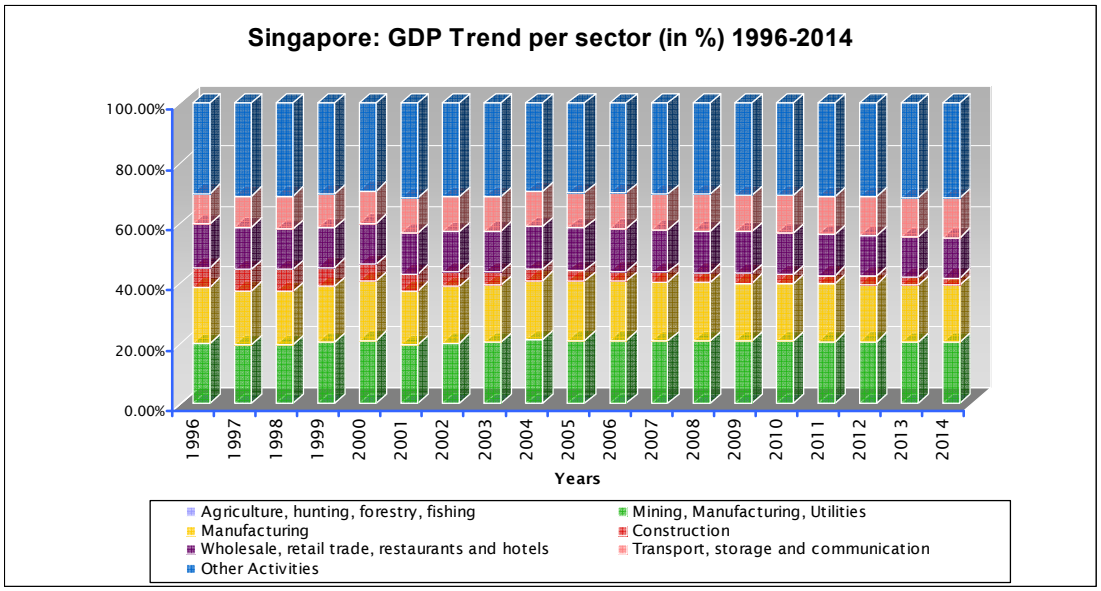


Figure 9.11 Singapore: GDP trend per Sector (in %) 1996-2014 (Based on: UN Statistics)

The Singaporean economy is expected to grow steadily in the future, as shown in figure 9.12. The total GDP in 2009 is projected to be 40% increased compared to 2004. In 2014 this will expected to be 96% higher than 2004, meaning an AAGR of 6.9%.

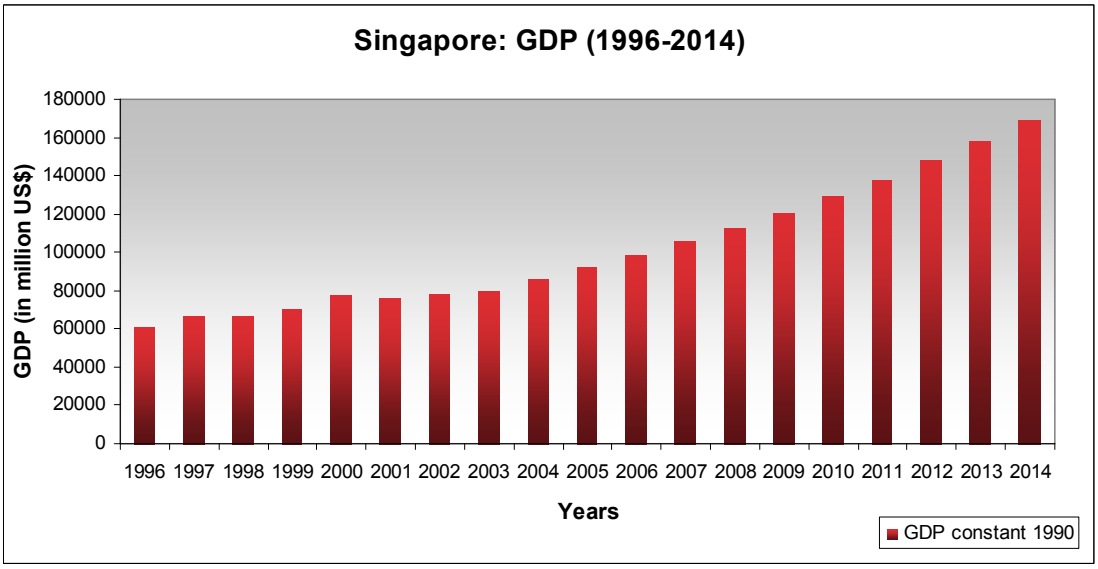


Figure 9.12 Singapore: GDP trend 1996-2014 (Based on: UN Statistics)

9.6.3 Business Environment

As the Singaporean market is already attractive to FDI, with few restrictions, only extra measures need to be undertaken by the government to keep it this way. One of the things undertaken, for the short and longer-term is simplifying the possibilities for foreign banking activities and creating more tax incentives to promote Singapore as a financial regional hub.[369] The business environment and policies are transparent, not cumbersome and efficient. There is almost no corruption and if so, it will be dealt with quickly and openly.[370] This situation is prospected to sustain in the future. The public sector is also continuously improving its services and efficiency, e.g. by cutting the 'red tape', in the form of the in 1995 launched 'PS21' program, entailing Public Service excellence in the twenty-first century.[371]

9.6.4 Downstream Oil Industry

On short-term, there is little likelihood of expansion in Singapore due to oversupply in Southeast Asia in refining capacity.[372] Singapore tries to sustain its position as maritime hub and invest to become a maritime center.[373] Oiltanking have announced their plans of expanding the storage capacity by 1.6 million bbl in 2006[374]. In addition Hin Leong and Horizon have also announced their decision to enter the market by building their terminals in

---

[369] PRS Group Inc., *Political Risk Yearbook Singapore 2005*, available from Business Source Premier, viewed November 20, 2006, p.16

[370] PRS Group Inc., *Political Risk Yearbook Singapore 2005*, available from Business Source Premier, viewed November 20, 2006, p.37

[371] PS21 website: http://www.cutredtape.gov.sg/, viewed November 20, 2006

[372] Business Monitor International, *Oil and Gas Report Singapore Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.31

[373] The Economist Intelligence Unit, *'Country Forecast Singapore May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 p.35

[374] Olaf Griffioen, Interview with Vice-President Business Development OilTanking, August 14, 2006

Banyan with a total planned capacity of 14.3 million bbl (2007) and 5.3 million bbl (3Q 2006) respectively. Due to space insufficiency on Jurong Island, underwater rock cavern storage tanks are also planned to be built by Jurong Rock Caverns (JRC) with a capacity of 9.2 million bbl (2009). Royal Dutch Vopak has also announced their plans of expanding the storage capacity by 5.7 million bbl by 2010.[375] In total it is estimated that the total petroleum storage capacity of Singapore will increase by almost 40% reaching 122 million bbl by 2010[376]. As the retail sector is already competitive, no new developments are expected there. Subsidies are not expected to be implemented on petroleum products. On long-term, the Naphtha demand and resumption of the regional oil consumption growth gives the idea of an increase in refining capacity.[377]

9.6.5 Energy Demand Overview

In the development of the energy demand, the industrial sector will remain the leading consuming sector (55%). The expansions in the petrochemical sector will trigger the biggest change in consumption figures. In the short-term the opening of the new Naphtha cracker of PCS and the expansion of ExxonMobil's ethylene cracker in 2006 will be responsible for that. On long-term Shell is planning to build another Naphtha cracker at its facilities, planned to be ready around 2009. These developments will give Naphtha the lead (85%) within the industrial sector. The transport sector is projected to be responsible for 30%. The growth rates show a declining trend (2%), with diesel (2.4%) still growing a bit faster due to the preference of high value added products, e.g. petrochemical products, to be transported by trucks.[378]

---

[375] Lee Wei Sheng, Interview with Senior Officer EDB Singapore, September 6, 2006

[376] Lee Wei Sheng, Interview with Senior Officer EDB Singapore, September 6, 2006

[377] Business Monitor International, *Oil and Gas Report Singapore Q2 2006*, available from Business Monitor International Database, viewed 10 August 2006, p.31

[378] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC Energy Demand and Supply Outlook Singapore* 2006, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, p.86

Also, due to the projected growth of the hub function at Changi airport the consumption of jet fuel is projected to increase to around 4.5 Mtoe in 2015, based on APEC estimations.[379]

9.6.6 Summary

Singaporean politics is in both short and long term considered staying stable, due no upcoming elections and the remaining big influence of founding father Mr Lee Sr. The security risk is rising due to terrorist threat and racial 'disputes' due to these threats. Relations with Malaysia and Indonesia are improving, but have a long way to go. The development of ASEAN will put the region, including Singapore in a different political environment. The different sectors show a stable trend, where the petrochemical sector is expected to expand faster than the rest. The total economy is expected to grow with an AAGR of 4.4%. To develop the market attractiveness in Singapore even further, the city-state is simplifying activities for foreign banking and giving more tax incentives to promote Singapore as a financial regional hub. The public sector is also continuously improving its services and efficiency. There is no new refinery planned to be build in the short or long term. The storage capacity in Singapore will increase with 40% until 2010 to 122 million bbl. Due to the increase of the petrochemical industry, the consumption of energy in Singapore will be lead by the development of the industrial sector that will be responsible for 85% of the consumption.

[379] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC Energy Demand and Supply Outlook Singapore* 2006, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, p.86

9.7 Thailand

9.7.1 Politics

Thai politics seem to be rather unstable due to the recent military coup[380] although the interim government cabinet indicates strong intention to handling power back to the people as soon as possible. The new constitution is being drafted and it should be ready within one year period. Corruption is low during this period. The interim government has put a lot of efforts to solve the conflicts in the southern part of Thailand. Nevertheless, situation is not resolving as expected and the problem might be deeper than many parties have forecasted[381]. The worst case can lead to the separation of the southern part of Thailand into new country. International conflict is quite minimal. However, recent discovery of oil deposits in Cambodia could lead to conflict with Thailand, since the newly discovered oil reserves are is found in a location where both countries claim their parts.

In the long term politics in Thailand will be fairly unpredictable after the quiet transition period from the interim government cabinet. Constitution will be tested by politicians and corruption will start to erupt again although the new constitution should lead the country into a better democracy.

---

[380] Thailand Business Forecast Report, *Chapter 1: Political Outlook.*, 2007 1st Quarter, p5-9, 5p, available from Business Source Premier AN 22915416, viewed 21 November 2006

[381] Economist, *More Unhappy Muslims*., 28 October 2006, Vol. 381 Issue 8501, p52-52, 2/3p, available from Business Source Premier AN 22953954, viewed 22 November 2006

9.7.2 Economics

Economic activities will be affected by political problems[382]. Private investments are delayed and policy budget has not made clear yet. High oil price also drags the whole economy, since Thailand's energy depends on oil imports[383]. Generally, Thai economy will be supported from exports of goods, even though currency is appreciating recently. Thailand's GDP trend shows that the agricultural sector will continue to decline, while the country will turn to more industrialized economy. GDP by sectors is rather constant through the period. Agriculture accounts for 8% of the economy. Mining is around 33%, and manufacturing is around 28%. Wholesale and transportation are both 9%.

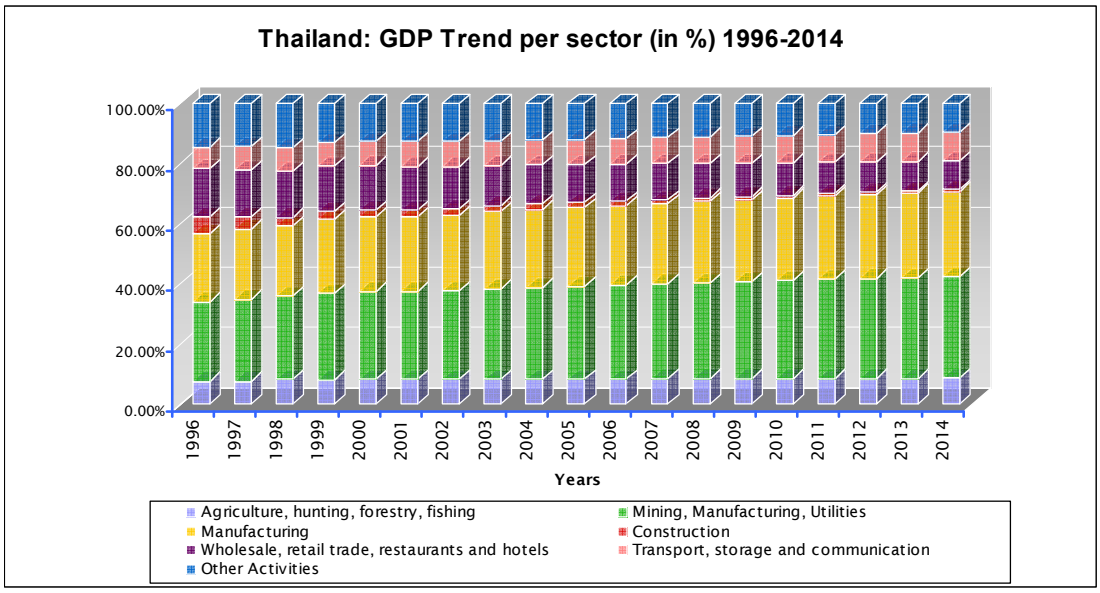


Figure 9.13 Thailand: GDP trend per Sector (in %) 1996-2014 (Based on: UN Statistics)

[382] Thailand Business Forecast Report, *Chapter 2: Economic Outlook.*, 2007 1st Quarter, p10-18, 9p, available from Business Source Premier AN 22915417, viewed 22 November 2006

[383] Energy Forecast Asia & Australia, *Thailand.*, Dec 2005, p111-118, 8p, available from Business Source Premier AN 20389133, viewed 22 November 2006

Economy climates after the interim government cabinet will indicate the future of Thai economy. Basically, Thailand will become more industrialized economy, but the question is to what extent. Without advanced knowledge in technology, Thailand can be only producer but not the owner of technology, which contributes differently in terms of profits. This makes sense to the GDP trend, where it shows lower or constant growth rate in the future. The GDP of Thailand is projected to grow with an AAGR around 5.31% over the forecast period. In total the GDP will be increased from US$15bn in 2004 to US$20bn in 2009, which is an increase of 29% over this period. In 2014 the GDP is projected to reach US$26bn, an increase of 67% compared to 2004.

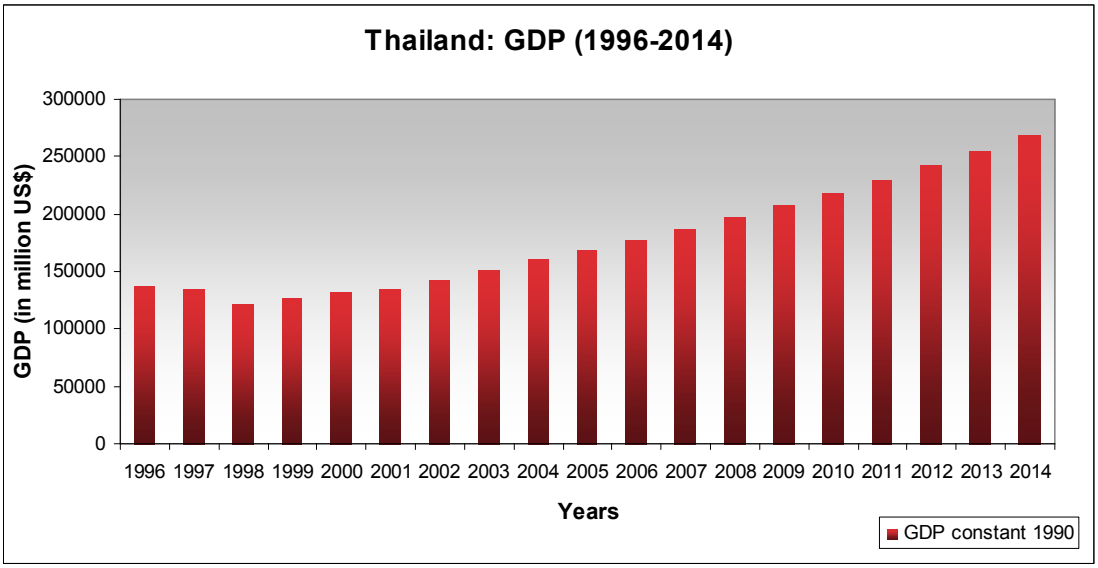


Figure 9.14 Thailand: GDP trend 1996-2014 (Based on: UN Statistics)

9.7.3 Business

The law system in Thailand is now governed by the martial law and this can delay investment from foreign investors[384]. Changes in the near future are not

[384] Thailand Business Forecast Report, *Chapter 4: Business Environment.*, 2007 1st Quarter, p25-33, 9p, available from Business Source Premier AN 22915419, viewed 22 November 2006

clear. Intellectual property rights are highly protected by Thai laws, but practically neglected in reality. The country holds several factors that might trigger investments like size of population, developed infrastructure, and competitive labour forces. One fact remains that corporate tax in Thailand is the highest in ASEAN—30 percent flat rate. With no other supports from the government, Thailand will lose investors from such a harsh tax. FDI Act still dictates that foreign investors cannot hold more than 49% of shares in a company. This is a very strict investment law compared to other countries in ASEAN. On the long term, the constitution will be the basis for the law system after the interim government cabinet handles the power over to the people. Changes are foreseen after the elections.

9.7.4 Downstream Oil Industry

Recently, the country is pursuing the sufficient economy trend and, therefore, all kind of consumption will be growing at the slower rate, if not a reducing rate. Oil industry will fall under the same cause. In 2007, government will ban gasoline with 95 octanes. To substitute the product, Thailand will come up with “gasohol”, which is mixed gasoline with alcohol. This is to reduce the amount of petroleum products used in the country. The government is also trying bio-diesel as a substitute of Diesel[385]. The full implementation is expected within 2009. Thailand already has 17,000 gas stations and this amount is not expected to increase significantly in the future.

In the long term Thailand will turn toward the chemical industry, since petroleum market in the country is saturated. Petroleum chemical industry will be used mostly to fulfil country’s demand. Trading will rely more on chemical

[385] Kovac and Matt, *Biofuels Turn Up The Heat*., ICIS Chemical Business, 31 July 2006, Vol. 1 Issue 30, p12-12, 2/3p, available from Business Source Premier *AN 21958013*, viewed 22 November 2006

products. PTT and Thai oil, the major Thai players in oil industry, have started investment into more chemical complex[386].

9.7.5 Energy Demand Overview

Regarding Thailand's energy demand it is projected that the transportation sector will maintain the majority of energy demand in Thailand accounting for around 80% of total energy demand. Without good public transportation, this trend of consumption will not decline.

Thailand shows inefficiency in energy demand, where consumption to GDP ratio is 1.4 where most developed countries are around 1.1. If the trend of Thailand's energy consumption remains the same as that in the past and given the economic growth rate of 5% per year, it is forecasted that in 15 years, or in the year 2017, the value of energy consumption will increase from 0.78 trillion Baht to 2.1 trillion Baht and that the dependency on imported energy will inevitably increase accordingly[387].

Renewable energy will be the main focus of energy in Thailand. Since Thailand is dependent on imports of energy mainly oil, to be fully self-sufficient, Thailand must continue to reduce its consumption and find other sources of energy.

9.7.6 Summary

Thailand during the interim government cabinet and post period will be totally different. This government's priority in administration is to prepare the country for new election in one year. There is no direct task from the Prime minister about economy. In general, Thailand's economy still relies on exports of

---

[386] Euromoney, *PTT: Confident of Sustained Healthy Growth*., Sep2006, Vol. 37, p6-7, 2p, available from Business Source Premier *AN 22628006*, viewed 22 November 2006

[387] Available from internet, http://www.eppo.go.th/doc/strategy2546/strategy.html, viewed 22 November 2006

products. Downstream industry is stable, and it is quite competitive. New products are being introduced into the market to reduce the usage of Gasoline and Diesel. Therefore, consumption of CPP will grow at slow rate. This change is due to the self-sufficient policy that is being encouraged. However, Thailand's inefficiency in energy consumption can make the country to imports more energy.

9.8 Vietnam

9.8.1 Politics

It is forecasted that the political scene in Vietnam will remain unchanged in the short future with the CPV dominate everything. Changes in the leadership of the party will not affect the main rules of the government which will continue the renovation of the country[388]. The security risk of the country will remain in high levels mainly due to the continuing fights between the Vietnamese forces and the rebellions of Montagnard ethnic minority group[389]. The improvement of the international relations will continue to be among the priorities of the government. Especially with USA the situation is foreseen that will be further improved after the visit of President Bush in Vietnam in November 2006[390]. As far as the relations with the countries of ASEAN region is concerned Vietnam will focus on the further strength mainly with Cambodia due the historical disagreements of the two states[391]. In the long future CPV is projected that will keep the political power but the modernization of the society will increase the demand for a more democratic environment.

---

[388] Economist Website, available on http://www.economist.com/countries/Vietnam/profile.cfm?folder=Profile-Forecast,viewed on 18 November 2006

[389] Business Monitor International, *'Vietnam Oil and Gas Report Q2 2006,* available from Business Source Premier, viewed on 14 November 2006 p.8

[390] Amy Kazmin and Caroline Daniel, "Vietnam rolls out a red carpet for Bush", Financial Times Website: Viewed on 17th November 2006

[391] Ministry of Foreign Affair "Viet Nam-Cambodia relations featured in workshop", available from: http://www.mofa.gov.vn/en/nr040807104143/nr040807105001/ns061004094025

9.8.2 Economics

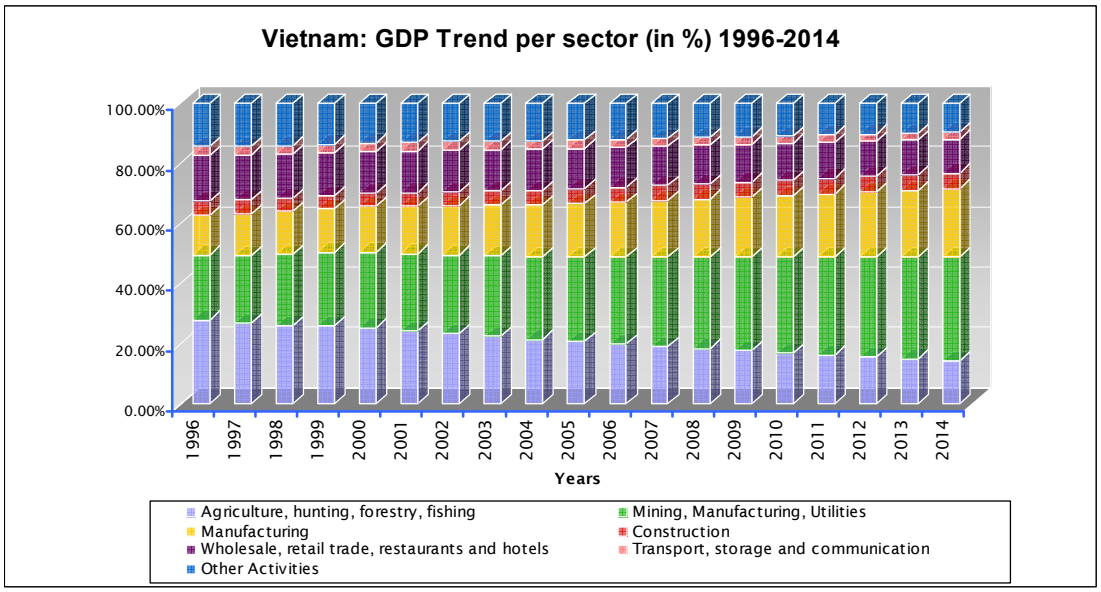


Figure 9.15 Vietnam: GDP trend per Sector (in %) 1996-2014 (Based on: UN Statistics)

It is projected that the domestic economy will continue to grow with the same pattern keeping the country among the fastest growing economies of the region. The further industrialization of the country is expected to be the main key that will drive the domestic economy in higher levels. Mining sector will remain the core of the economy with 34% followed by the manufacturing sector which is projected to be around 22% in 2014[392]. In long term the economy mix will remain the same with the two previously mentioned sectors to dominate the domestic economy.

[392] The Economist Intelligence Unit, *'Country Forecast Philippines 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 pp.2-4.

Figure 9.16 Singapore: GDP trend 1995-2014 (Based on: UN Statistics)

The figure 9.16 shows the trend of Vietnamese GDP which in 2009 is estimated to be 40% increased in comparison to 2004. At the end of the forecasted period is projected that GDP will be further increased reaching the level of US$34.8 million. The AAGR of GDP for the forecasted period is projected to be around 7%.

9.8.3 Business Environment

The likely acceptance of Vietnam from WTO in the end of 2006 is expected that will improve the reputation and the structure of the national business environment[393]. It is expected that Vietnamese government will intensify the efforts to eliminate the corruption which has been the main concern of the foreign investors. The Red Tape is projected to remain the in same levels, significantly delaying the procedures in business. The new Competition Law in 2005 is likely to open the competition in many sectors where SOE have been the only players for the past years[394]. The privatization process will move

[393] Nguyen Thuy Huong, Interview with Director General Issues &Policy Department, Ministry of Planning & Investment Foreign Investment Agency, 25 September 2006

[394] The Economist Intelligence Unit, *'Country Forecast Vietnam 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006 pp.13-20.

slowly and especially in sectors such as energy and mining where the state companies will keep the major role for the short future[395]. It is expected that in the long future Vietnam will continue the renovation of the country aiming to attract more foreign investment. The elimination of the corruption and the modernization of the public sector will remain among the main priorities of the Vietnamese.

9.8.4 Downstream Oil Industry

As it has been mentioned in a different section of the project the downstream oil industry in Vietnam lacks of main infrastructure and open competition. The first refinery of the country is planned to operate in 2009 after many delays due to the disagreements among the interested companies[396]. The Dzung Quat refinery will be situated near to the region of Quang Ngai with an estimated capacity of 6.5 million tonnes/year. The technology that will be used from Dzung Quat is modern deep processing able to give petroleum products such as gasoline, diesel kerosene, jet fuel and propylene as feedstock for propylene manufacture[397]. As far as the port sector is concerned there is a projection that on July 2006 a new port will start to operate close to the region of Quang Ngai. The new port will be the largest in the central region contributing with the refinery to the further development of this zone. The deep-water port will be able to handle vessels of up to 30000DWT[398]. The situation in the retail sector is projected to remain the same with state companies such as Petrolimex to dominate the domestic market. The acceptance of the country from WTO will not force the government to open

---

[395] Mr Nguyen Xuan Thang, Intreview with the communication manager of BP Vietnam, 28 of September 2006

[396] Mr Nguyen Xuan Thang, Intreview with the communication manager of BP Vietnam, 28 of September

[397] Petrovietnam “Vietnam Oil and Gas Corporation 2006”

[398] Van Giang, “Port flags bid for private investment”,Vietnam Investment Review, available on: www.vir.com.vn, viewed on 10 October 2006

the market and remove the subsidies as these are not among the entry requirements of the organization[399].

In the long future two extra refineries are expected to start to operate within the territory of the country. The first one is planned to be located in the North part of Vietnam. The main reason of the location is to cover the demand for CPP of the capital Hanoi[400]. The refinery of Nghi Shon is projected to operate with a capacity of 7-6 million tonnes/year[401]. The used technology will be the same as Dzung Quat, with main difference the ability of Nghi Shon to produce also petrochemicals products. The building of this refinery is under huge discussions mainly due to the limit attractiveness of foreign companies which claim that the location is not suitable for such big project. The estimated starting point of this refinery is in 2015. On the contrary the third refinery which is expected to operate close to HCMC is the most attractive as is near to the crude oil platforms and next to the main consumption centre. The attractiveness of the location and the need of the Vietnamese government to build the refinery as soon as possible result to the estimation that this refinery could even start to operate before the second one in the North part. The operation of the third refinery is expected to start after 2015 due to the delays created by the government. The involvement of foreign oil companies in the building of the new refineries will affect also the structure of the retail sector which is forecasted that progressively will loose the barriers to new competitors[402].

---

[399] "Downstream Monitoring Service, Vietnam Country Profile", PFC Energy, viewed on 26 September p.5.

[400] Do Van Ha, Interview with the general manager of International Cooperation Division of Petrovietnam, 27 September 2006

[401] Petrovietnam "Vietnam Oil and Gas Corporation 2006"

[402] Mr. Seri Viriyasakultorn, Director of Horizon Petroleum Limited, Thailand, Personal interview, 12 October 2006

9.8.5 Energy demand

The continuing growth of the economy in the short future is expected to affect heavily the energy demand. It is forecasted that in 2009 the final energy demand will reach the level of 44 Mtoe. The residential sector will continue to have the highest rate among the consumed energy sectors followed by the industrial while transport will maintain its third place[403]. The consumption of petroleum products will significantly increase mainly from the transport sector due to the increased number of private vehicles.

In the long-term Vietnam's need for energy will increase further enforcing the government to investigate other primary energy sources apart from gas, oil and coal. Among these is the nuclear power for the generation of electricity which has been proposed to the ministry of Industry from Russian companies. It is projected that the close relations of the two countries and the high cost of energy production by traditional sources will lead the country to think about the nuclear energy in the long future[404].

9.8.6 Summary

For the forecasted period it is expected that the politics in Vietnam will remain stable without significant changes with the Communist Party to dominate the political scene of the country. It is projected that the national economy will continue to grow for the forecasted period reaching the level of US$34.12 million in 2014. The expected acceptance of the country from WTO in the end of 2006 and the further effort of the government to eliminate the corruption will improve the business environment of Vietnam attracting more foreign

---

[403] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC Energy Demand and Supply Outlook Vietnam* 2006, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, pp.106-107.

[404] Sergei Blagov, "Russia plays nuke card with Vietnam", Asia Times Online, available on: www.atimes.com, viewed on 10 September 2006

investment. The opening of the first new refinery in 2009 will contribute to the development of the downstream oil industry whereas the situation in the retail sector is likely to remain the unchanged with state-owned companies to dominate the country. The industrialization of the country and the improvement of the economy will result to the rapid increase of the energy demand in the future.

9.9 Total Summary

Summarizing the future political situation in the region, Singapore, Brunei and Malaysia are forecasted to be the most political stable countries while Vietnam and Indonesia are expected to improve their political status in the long run. On the other hand the political situation in Cambodia and Thailand will remain blurred while Philippines are projected to present the most unstable political environment during the forecasted period.

Looking at the future economy of each country, Brunei will stay dependent on the oil sector which is the core sector of the national development. It is expected that the national GDP will increase in the forecasted period with AAGR of 1.8%. A bit lower is projected that will be the AAGR for the Indonesian economy which will continue to be based on all the economic sectors. Cambodia's economic structure is expected to be based more in mining and manufacturing sector which will contribute to the increase of the national GDP by 60% over the forecasted period. The same sectors will be also the core sectors of the economic development of the Malaysia's GDP which is projected to increase with an AAGR of 4.4% until 2014. Philippines and Singapore's GDP is forecasted that will follow the same upward trend for the period 2004-2014 focused on mining and manufacturing sector. The Thai economy is likely to increase by 1.4% for mainly based on the same sectors as the above countries. Vietnam is expected that will remain the fastest growing economy of the region with an AAGR of 6.7%.

Regarding the business environment, Singapore will remain the most attractive country for investments in the region followed by Malaysia and Thailand that will also provide a competitive business environment. Indonesia, Cambodia and Vietnam are projected to improve their business environment mainly by reducing the level of corruption and Brunei by the diversification of its economy while Philippines will remain unattractive for investors.

Regard to the downstream oil industry, Brunei Shell Company will continue to be the main player of Brunei's market. Plans for new refinery are likely to become reality in the long term. Expansions of the present refineries and the removal of subsidies are the priorities of Indonesian government for the domestic downstream oil industry which is projected that will remain under the total control of Pertamina. The future of Cambodia in the same sector is unpredictable with high import taxes and high regulations to discourage new players to entry into the domestic market. The gradual removal of subsidies is the only development that is expected for Malaysia. There in no projection for significant changes in downstream oil industry of Philippines which will remain totally opened to competition. Singapore is foreseen that will expand even more its operations in this specific industry with new depots and petrochemical plants. The Thai downstream oil industry is likely to stay unchanged due to the fact that is already totally opened to the competition. New refineries in the short and long term are the major changes in the Vietnamese downstream oil industry.

In terms of energy demand it is forecasted that transportation sector will be the main consumer of energy consumption in Brunei for the forecasted period. The population growth and the development of industry are the main reasons that will affect the consumption of energy. Cambodia will improve its electricity generation plants while in the long term efforts towards more alternative energy sources will be accelerated. Transportation and industrial sector will be the main sectors that will contribute to the future increase of the energy consumption in Malaysia. The same situation is also projected for Philippines while the focus on more sustainable energy sources is among the plans of the government in the long future. The development of the petrochemical industry is likely to lead the consumption of energy of Singapore in higher levels during the forecasted period. The insufficiency of Thailand in energy consumption is projected that will lead to the increase of energy imports from the neighbour countries. The development of the country will drive the Vietnamese energy consumption in higher levels with industrial and transportation sector to be responsible for the most of this growth.

10. Developments in Production and Consumption

This part will discuss the development of production and consumption of CPPs in the region. Both production and consumption will be projected until year 2014 to see the changing trend into the future. Forecasts are based on AAGR (Average Annual Growth Rate) from 1996 to 2004. This should give a brief idea of how the changes would be in the future.

10.1 Brunei

10.1.1 Production

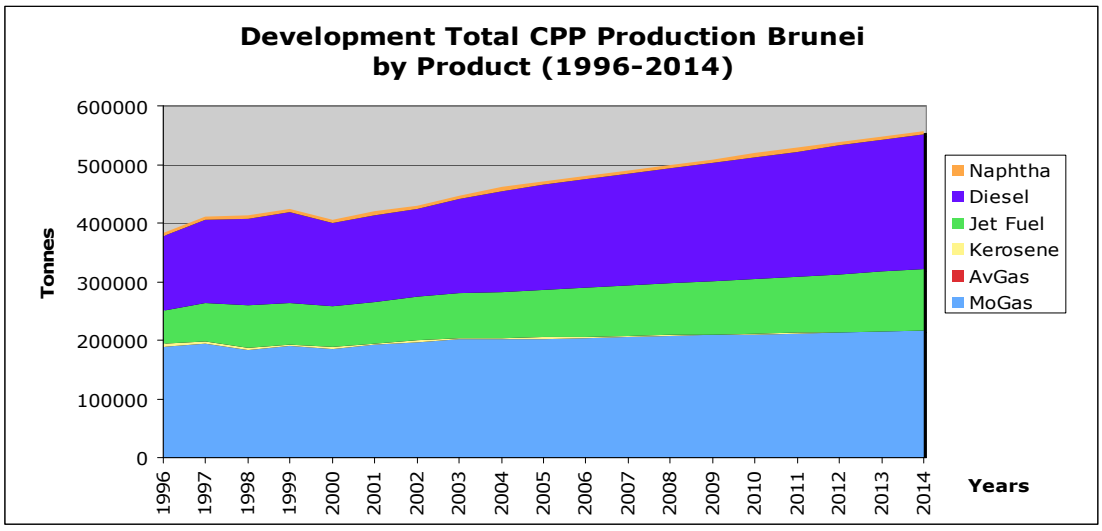


Figure 10.1 Development Total CPP Production Brunei Darussalam by Product (1996-2014) (Based on: IEA non-OECD Statistics)

Based on the future prospects in Chapter 8, in figure 10.1 the development of the production in Brunei is displayed. As no major changes in production are expected, the trend is slowly upward with a projected AAGR of 1.90% over the forecasted period. In 2009 the production capacity will have reached in 509 ktonnes. In 2014 it is projected to grow to 557 ktonnes. In this forecasted period the proportion of the different products is projected to be lead by

MoGas (from 43% in 2005 decreasing to 38% in 2014), followed by Diesel (37% to 41%) and Jet Fuel (18%).

10.1.2 Consumption

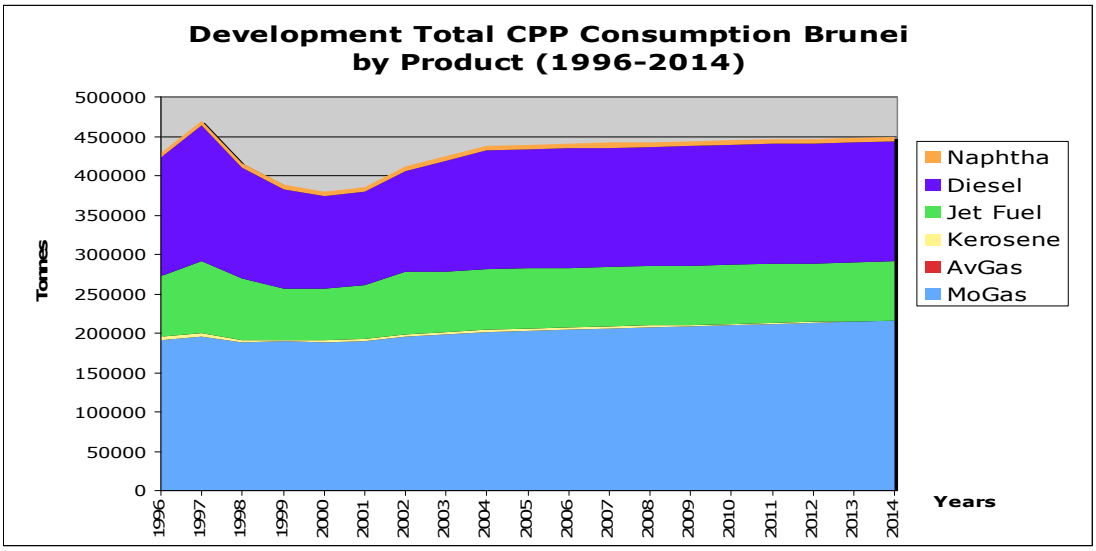


Figure 10.2 Development Total CPP Consumption Brunei Darussalam by Product (1996-2014) (Based on: IEA non-OECD Statistics)

The consumption in Brunei in total shows a slight upward trend with an AAGR of 0.25%, based on the historical data. The total consumption will be projected to increase over this forecast period to around 444 ktonnes in 2009 and to 449 ktonnes in 2014. The main consumed product will be MoGas (46% in 2005; 48% in 2014), followed by Diesel (34%) and Jet Fuel (17%). This is in sync with the projections that Brunei's transport sector is reaching a maturing stage. Jet Fuel is based on historical data probably slightly underrated, as analyst[405] believe that Brunei's regional aviation function will increase, as shown in Chapter 8.

[405] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC Energy Demand and Supply Outlook Brunei Darussalam* 2006, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed 25 August 2006, p.8

10.1.3 Comparison

When the growth of production and consumption are lined up over the forecasted period, it shows that the gap is increasing slightly due to the slower growth in consumption in comparison to the production. This is in line with the policy of Brunei to remain self-sufficient.

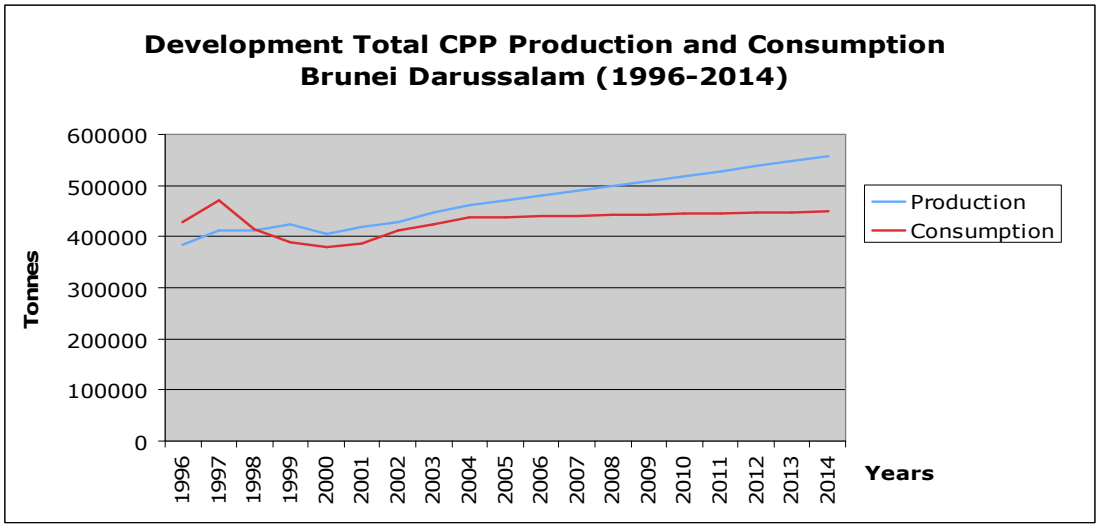


Figure 10.3 Development Total CPP Production and Consumption Brunei Darussalam (1996-2014) (Based on: IEA non-OECD Statistics)

With regard to deficits per product, Jet Fuel and Diesel are expected to remain in a surplus, as shown in figure 10.4. MoGas will remain around self-sufficient status.

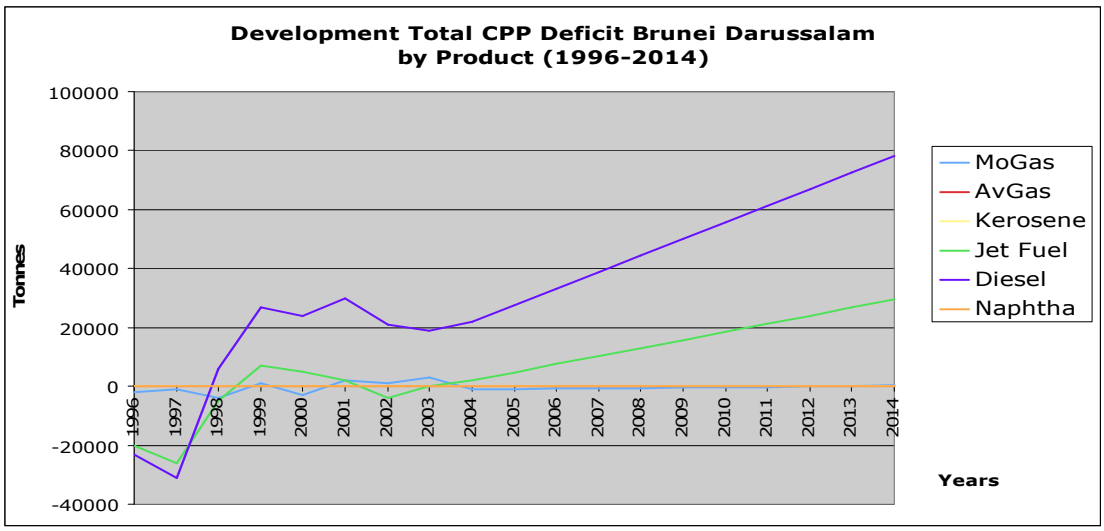


Figure 10.4 Development Total CPP Deficit Brunei Darussalam by Product (1996-2014) (Based on: IEA non-OECD Statistics)

Summary

The production in Brunei is expected to have an increase with an AAGR of 1.90%, compared to the minor increase in consumption with an AAGR of 0.25%. This will give an increase of the surplus, with MoGas remaining around self-sufficiency.

10.2 Indonesia

10.2.1 Production

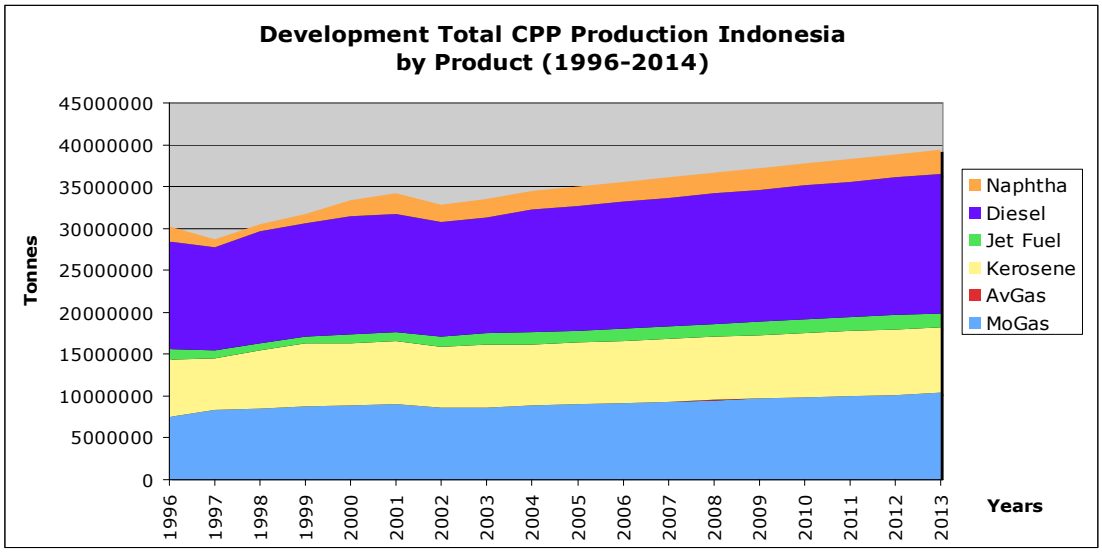


Figure 10.5 Development Total CPP Production Indonesia by Product (1996-2014) (Based on: IEA non-OECD Statistics)

As it is shown in figure 10.5 the total production of CPPs is predicted to increase to around 37 million tonnes in 2009 and to 40 million tonnes in 2014 noting a 15.7% increase compared to 2004. The AAGR in the next ten years according to the trend will be almost 1.4% as the country faces significant failings in its refining industry[406].

The above described situation is possible to change if the state owned company Pertamina implements the released expansion and upgrade program for its refineries increasing the total processing capacity by 20% in 2014[407].

---

[406] AllBusiness website, Available from Internet, http://www.allbusiness.com/mining/oil-gas-extraction-crude-petroleum-natural/752905-1.html, viewed on 2 November 2006.

[407] Platts website, Anita Nugraha, Pertamina to boost capacity at existing refineries 20% by 2012, 23 August 2006, available from Internet, http://www.platts.com/, viewed on 21 August 2006.

Regarding the proportion of the produced CPPs, Diesel oil is expected to comprise 42% of the total production followed by MoGas and Kerosene accounting for around 26% and 19% respectively.

10.2.2 Consumption

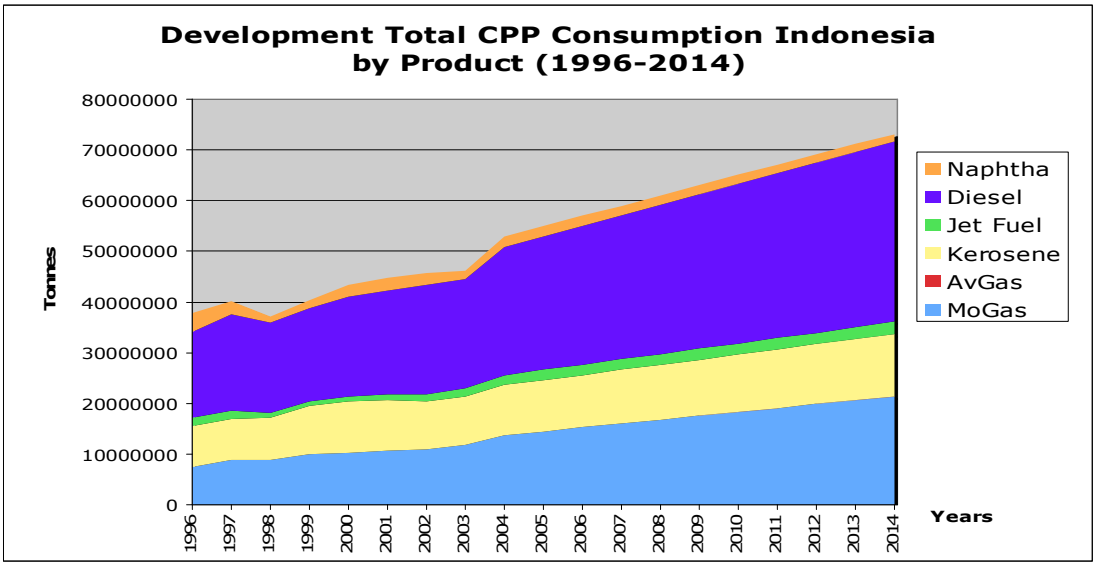


Figure 10.6 Development Total CPP Consumption Indonesia by Product (1996-2014) (Based on: IEA non-OECD Statistics)

The CPP consumption, as it is presented in figure 10.6, is forecasted to follow a steady upward trend in the next ten years. It is expected that the total consumption of CPPs will increase to around 63 million tonnes in 2009 performing a 19% increase compared to 2004 and even more in 2014 reaching 73 million tonnes (38% compared to 2004) with an AAGR of approximately 3%.

The increased consumption will be mainly driven by MoGas which according to the historical data will account for 29% of the total consumed CPP volume, performing an increase of 6% compared to 2004. This growth in consumption of MoGas is in line with the high growth rate of the transportation sector that is

predicted for the same period[408]. Diesel will continue to hold the higher proportion of the consumption accounting for 49% while the share of Kerosene, Jet Fuel and Naphtha will slightly decrease.

10.2.3 Comparison

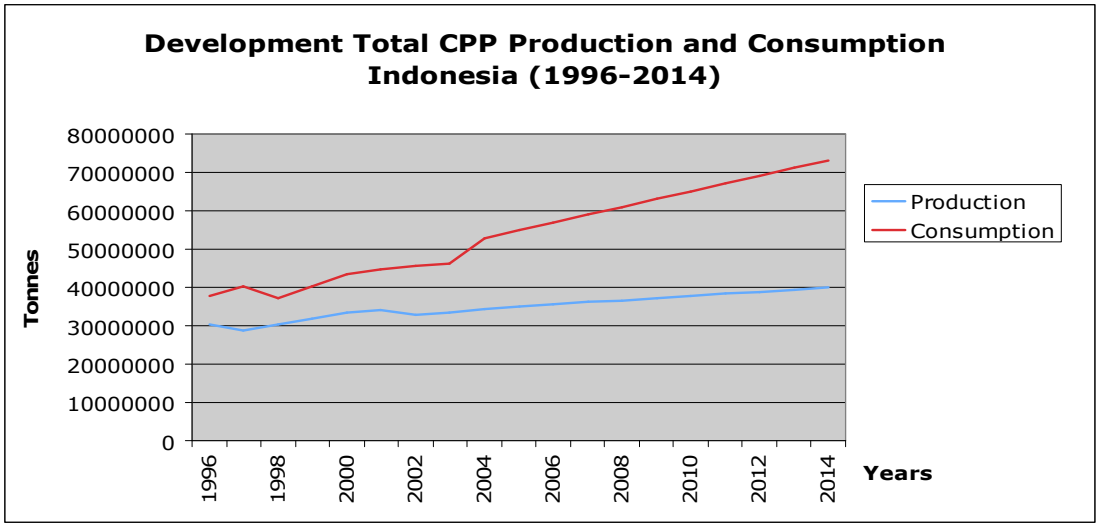


Figure 10.7 Development Total CPP Production and Consumption Indonesia (1996-2014) (Based on: IEA non-OECD Statistics)

Comparing the projected production and consumption of CPPs for the next ten years, it can be seen from the figure 10.7 that the gap in the country will increase dramatically. The total deficit in production is expected to grow to 33 million tonnes in 2014 as the consumption is growing fast in the contrary with the slow growing production.

[408] Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC Energy Demand and Supply Outlook* 2006, Japan, available from Internet, http://www.ieej.or.jp/aperc/ viewed on 25 August 2006, p.34.

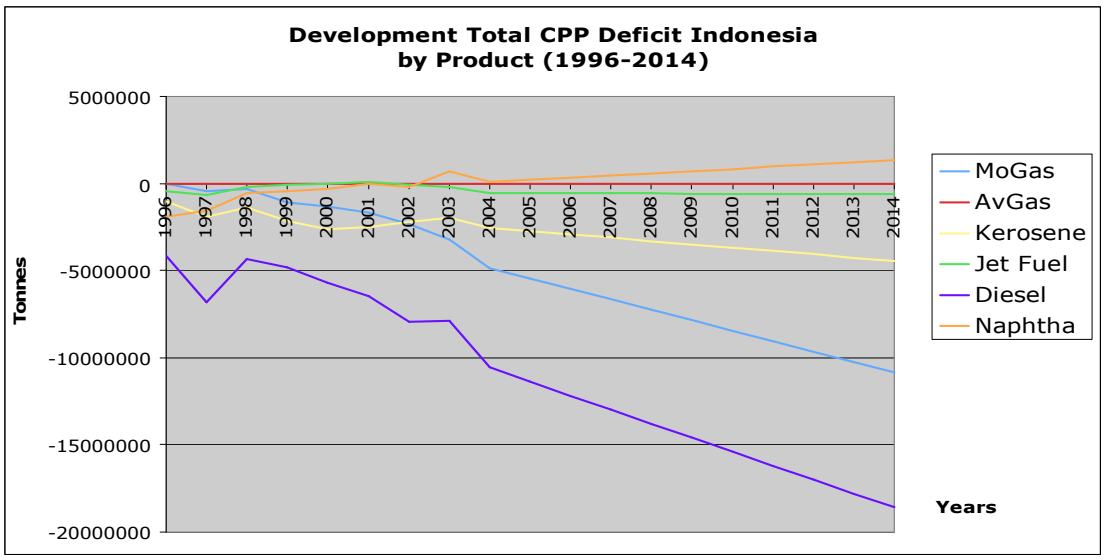


Figure 10.8 Development Total CPP Deficit Indonesia by Product (1996-2014) (Based on: IEA non-OECD Statistics)

By product, it is clearly illustrated in figure 10.8, that Indonesia will experience a fast growing deficit in MoGas and Diesel oil. Kerosene and Jet Fuel will also face a shortage while the country is expected to have a surplus in Naphtha.

Summary

The production of CPP in Indonesia is forecasted to increase with an AAGR of 1.4% while the consumption is expected to increase with a higher AAGR of around 3%. This will result in an increased production deficit with MoGas and Diesel experiencing the higher deficit.

10.3 Cambodia

10.3.1 Production

Since there are no plans for refineries the CPP production will remain in the zero level. The domestic demand will continue to be totally dependent on the imports from other countries.

10.3.2 Consumption

The lack of historical data about the consumption does not give the possibility to the authors of this project to make a numerical forecast. What can be projected is an increase of the CPP consumption due to the further development of the national economy as this has been illustrated in chapter 9.

10.3.3 Comparison

Due to the fact that there is no information for CPP consumption and plans for new refineries it is expected that all the CPPs will continue to be in a deficit status for the forecasted period.

Summary

The CPP consumption of Cambodia is expected to increase due to the development of the economy.

10.4 Malaysia

10.4.1 Production

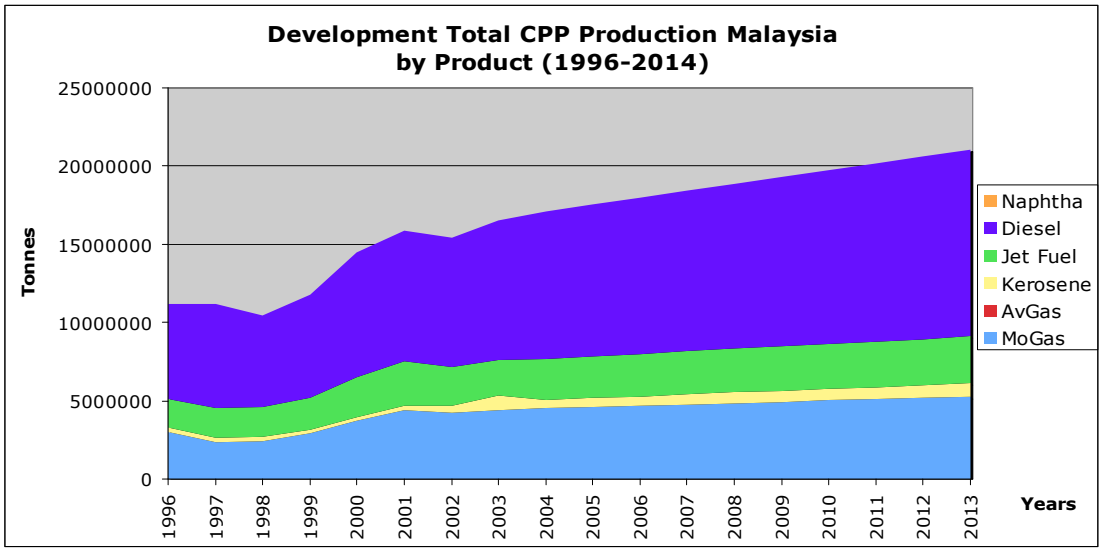


Figure 10.9 Development Total CPP Production Malaysia by Product (1996-2014) (Based on: IEA non-OECD Statistics)

As it is shown in figure 10.9 the total production of CPPs is likely to increase to around 19 million tonnes in 2009 and to 21.5 million tonnes in 2014 indicating a 25% increase compared to 2004. The AAGR in the next ten years according to the forecast will be almost 2.2% as a result of slightly increased refinery utilization and de-bottlenecking of the refining sector.

With regard to the share of the produced CPPs, Diesel oil is projected to account for 57% of the total production followed by MoGas and Kerosene accounting for around 25% and 14% respectively.

10.4.2 Consumption

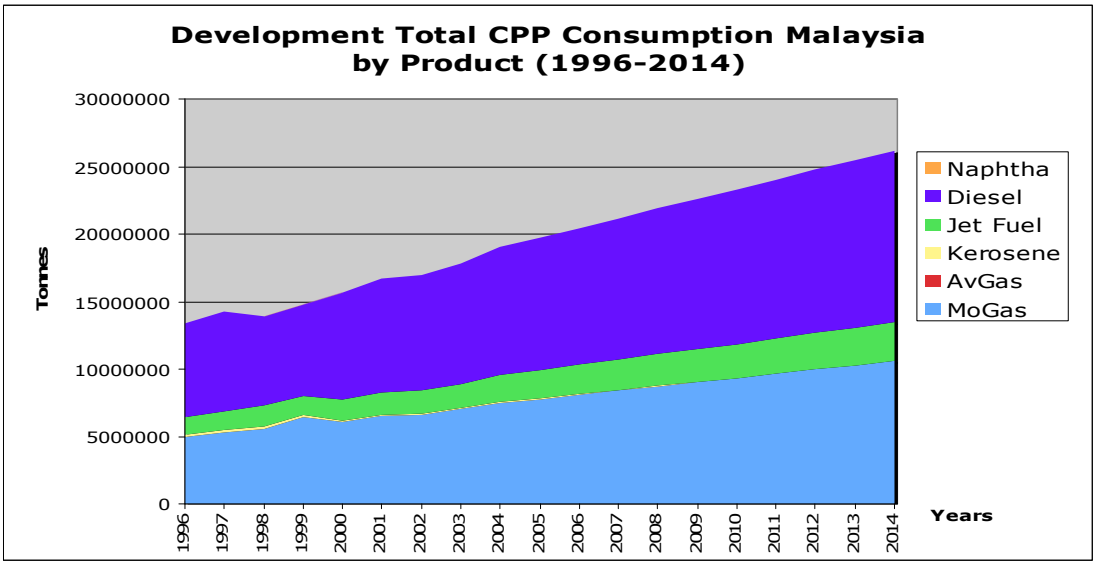


Figure 10.10 Development Total CPP Consumption Malaysia by Product (1996-2014) (Based on: IEA non-OECD Statistics)

The CPP consumption, as it is presented in figure 10.10, is forecasted to follow an upward trend in the forecasted period. It is projected that the total consumption of CPPs will increase to around 22.5 million tonnes in 2009 performing an 18% increase compared to 2004. The total consumption will grow even further reaching 26 million tonnes in 2014, a 37% increase compared to 2004 with an AAGR of 3.2%.

The increased consumption will be mainly driven by Diesel and MoGas which according to the historical trend will account for 49% and 40% of the total consumed CPP volume respectively. This growth in consumption of Diesel and MoGas corresponds to the increased number of passenger vehicles and demand for transportation services as it is mentioned in chapter 8.

10.4.3 Comparison

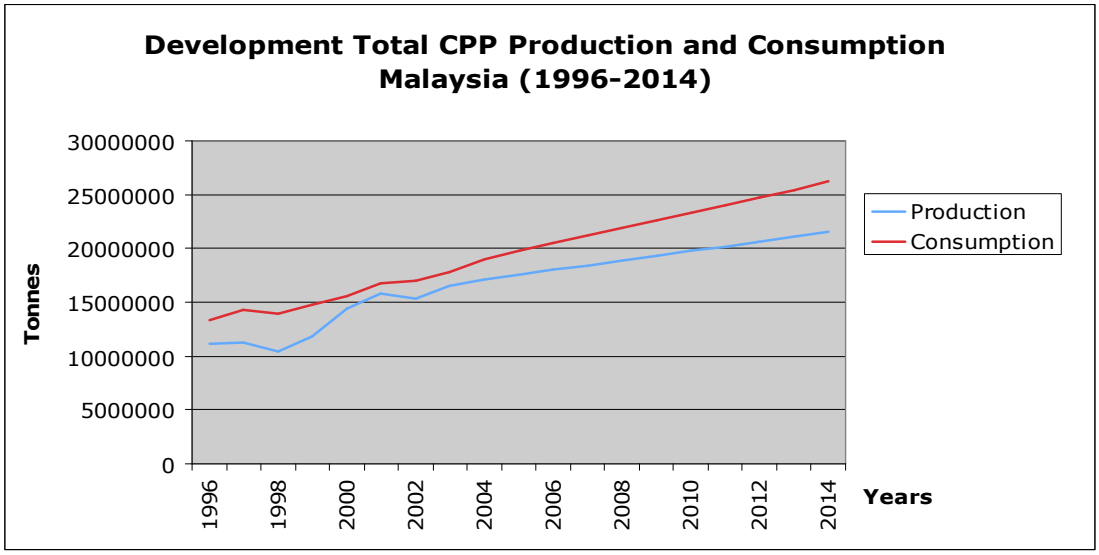


Figure 10.11 Development Total CPP Production and Consumption Malaysia (1996-2014) (Based on: IEA non-OECD Statistics)

Comparing the forecasted production and consumption of CPPs for the next ten years, as it shown in the figure 10.11 the gap in the country will constantly increase. The total deficit in production is expected to grow to 4.6 million tonnes in 2014 as the consumption is growing fast whereas the production will remain more stable.

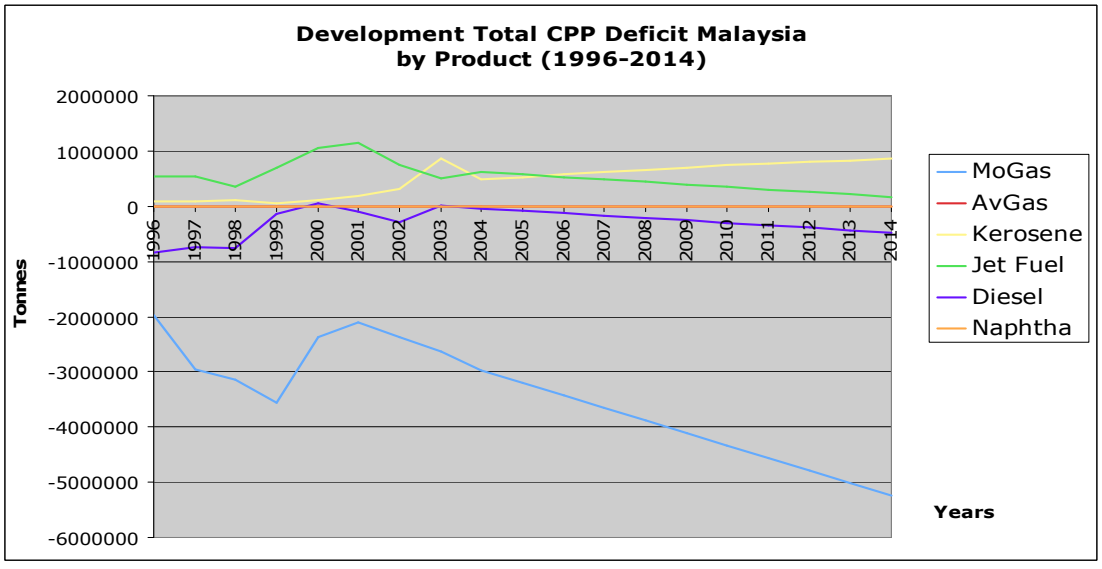


Figure 10.12 Development Total CPP Deficit Malaysia by Product (1996-2014) (Based on: IEA non-OECD Statistics)

By product, it is clearly illustrated in figure 10.12 that Malaysia will face a growing deficit in MoGas and Diesel in the upcoming years. The country is expected to have a surplus in Kerosene and Jet Fuel over the forecasted period.

Summary

The production of CPP in Malaysia is forecasted to increase with an AAGR of 2.2% while the consumption is expected to increase with a higher AAGR of around 3.2%. This will result in an increased production deficit of MoGas .

10.5 Philippines

10.5.1 Production

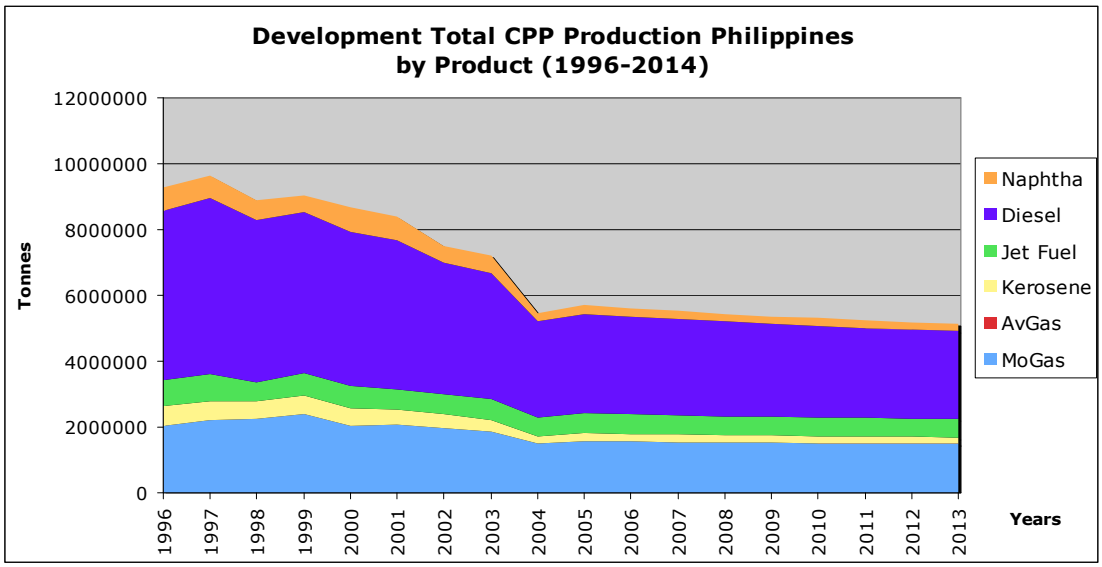


Figure 10.13 Development Total CPP Production Philippines by Product (1996-2014) (Based on: IEA non-OECD Statistics

The above figure 10.13 represents the trend of CPP production that is projected for the period 2004-2014. According to the trend the production will slightly decrease over the forecasted period fluctuating around the production levels of 2004 after the shut down of Caltex refinery. The AAGR of production for the forecasted period is estimated to be around -1.3%. The total CPP production in 2009 is projected to be 5.3 millions tonnes decreased by 1.2% compare to 2004 while in 2014 the production will be almost 7% lower than in 2004. Regarding the product mix in 2014 MoGas will account for 29% of the total production whereas Diesel will keep the first place with share of 52%.

10.5.2 Consumption

The below figure 10.14 represents the consumption trend for the period 1996-2014. According to the trend the consumption of CPPs will present an AAGR of 1.2% for the forecasted period of 2004-2014. The total consumption of CPPs in 2009 will reach the volume of 10.8 million tonnes increased by 6.5% compare to 2004 whereas in 2014 the produced amount is forecasted to be 13% higher than in 2004 reaching the levels of 11.5 million tonnes. The main consumed products will be Diesel with 58%, followed by MoGas 32% and the rest split among Jet Fuel and Kerosene.

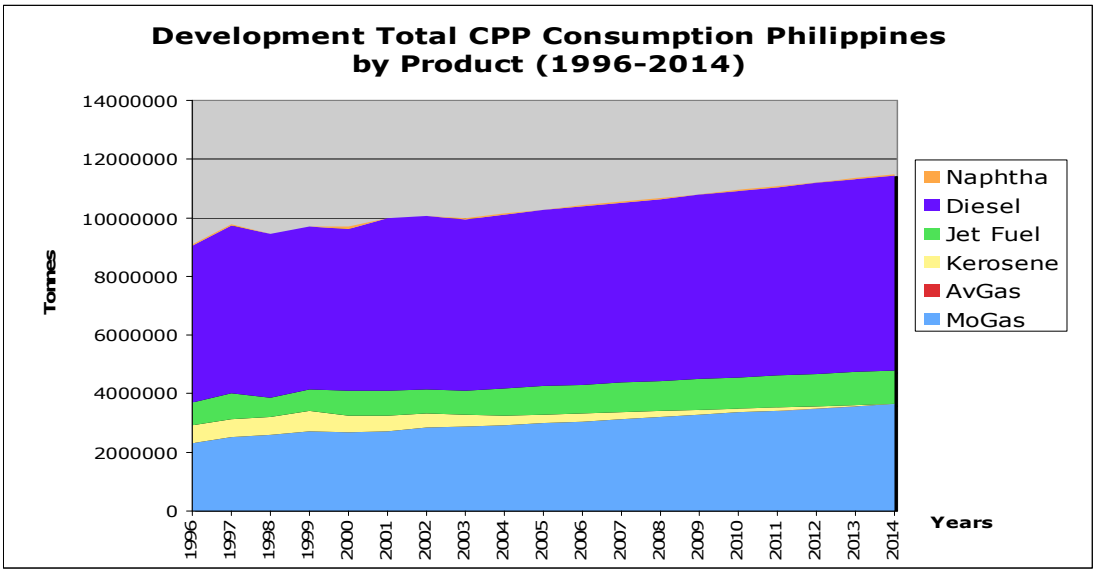


Figure 10.14 Development Total CPP Consumption Philippines by Product (1996-2014) (Based on: IEA non-OECD Statistics)

10.5.3 Comparison

Comparing the trends of production and consumption from the figure 10.15 is clear that the deficit in production for the forecasted period will increase from 4.6 million tonnes in 2004 to 6.4 million tonnes in 2014. This gap will increase due to the fact that there are no plans for new refineries or upgrading of the existing ones while the total consumption of CPPs of the country will increase.

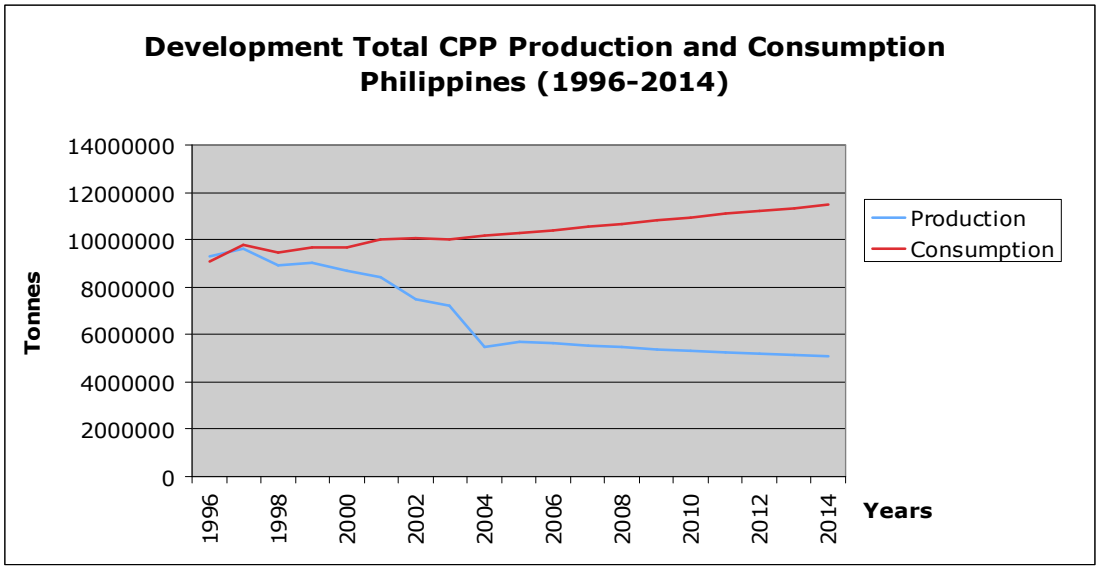


Figure 10.15 Development Total CPP Production and Consumption in Philippines (1996-2014) (Based on: IEA non-OECD Statistics)

Looking at the future status of every specific product, as it is illustrated in figure 10.16, it is clear that the deficit of Diesel and MoGas will continue to increase while Naphtha will remain the only CPP in a surplus status during the whole forecasted period. Kerosene is also expected to change to surplus status later than 2009.

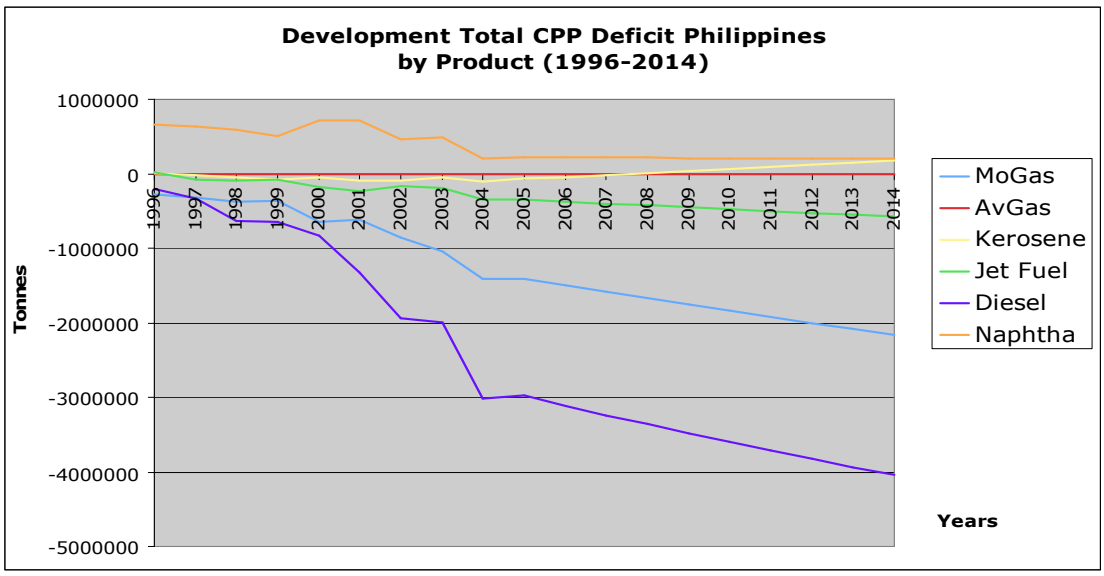


Figure 10.16 Development Total CPP Deficit Philippines by Product (1996-2014) (Based on: IEA non-OECD Statistics)

Summary

The production of CPP in Philippines is forecasted to decrease with an AAGR of -1.1% while the consumption is expected to increase with a higher AAGR of around 1.2%. This will result in an increased production deficit with MoGas and Diesel experiencing the higher deficit.

10.6 Singapore

10.6.1 Production

As the refining market in the region has been tight in the past nine years, the refining utilization in Singapore has been underrated. In the forecasting period, it is not expected to return to its high utilization levels of 1996, mainly as the capacity usage in Singapore depends on the regional production and consumption. The total CPP production is expected to slightly increase with an AAGR of approximately 1% over the forecasted period. In 2009, 27 million tonnes are projected to be produced. In 2014 this will be around 28 million tonnes. The main products that are expected to be produced are Diesel (44%) and Jet Fuel (24%), followed by MoGas (15%) and Naphtha (15%).

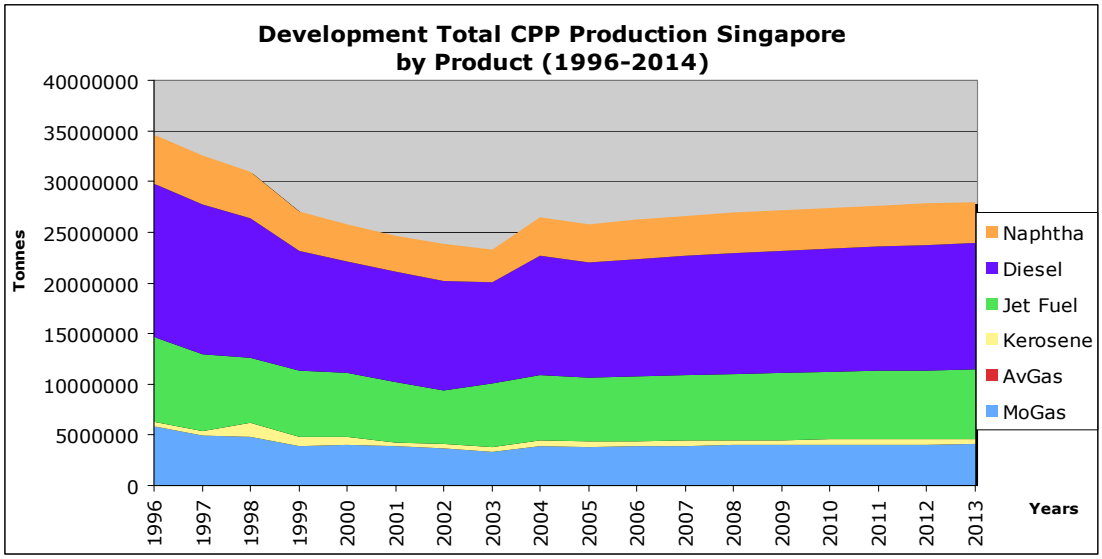


Figure 10.17 Development Total CPP Production Singapore by Product (1996-2014) (Based on: IEA non-OECD Statistics)

10.6.2 Consumption

The consumption figures in Singapore show a total different trend; the total consumption is projected to increase sharply to 12.5 million tonnes in 2009 and even further to 14.8 million tonnes in 2014 with an AAGR of 3.7%. The main reason for this growth is the increase of the consumption of Naphtha, according to the historical trend. The growth can be explained by the big increase of activity of the petrochemical industry in the city-state, by the opening and upgrading of Naphtha crackers. The demand of the other products has reached saturation status, which explains the limited growth in these products. It is expected that over the forecast period Naphtha will be the leading CPP being consumed (63% in 2014), followed by Jet Fuel (28% in 2009 and 22% in 2014) and Diesel with around 9% in 2014.

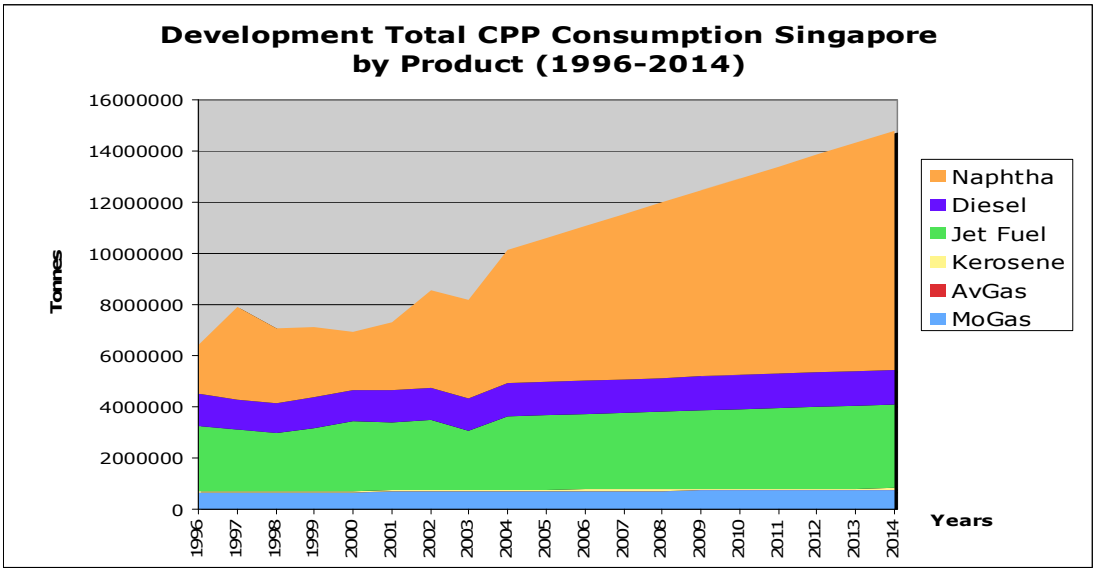


Figure 10.18: Development Total CPP Consumption Singapore by Product (1996-2014) (Based on: IEA non-OECD Statistics)

10.6.3 Comparison

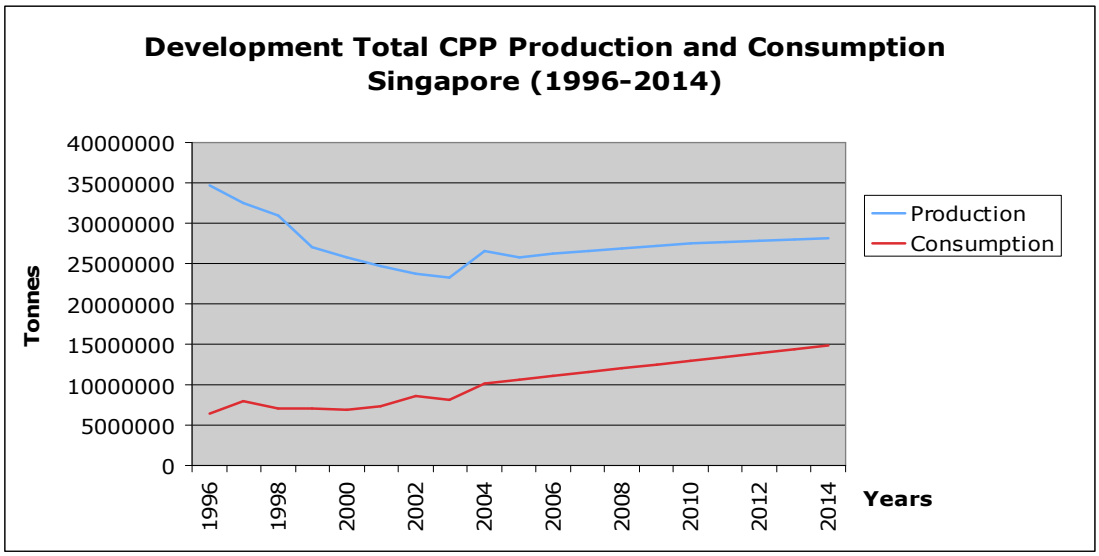


Figure 10.19 Development Total CPP Production and Consumption Singapore (1996-2014) (Based on: IEA non-OECD Statistics)

In figure 10.19 it shows the comparison of the projected production and consumption in Singapore. It can be seen that the gap will become smaller over the forecasted period reaching the level of 13.4 million tonnes in 2014 compared to 16.4 million tonnes in 2014, but still Singapore will continue to have a production surplus.

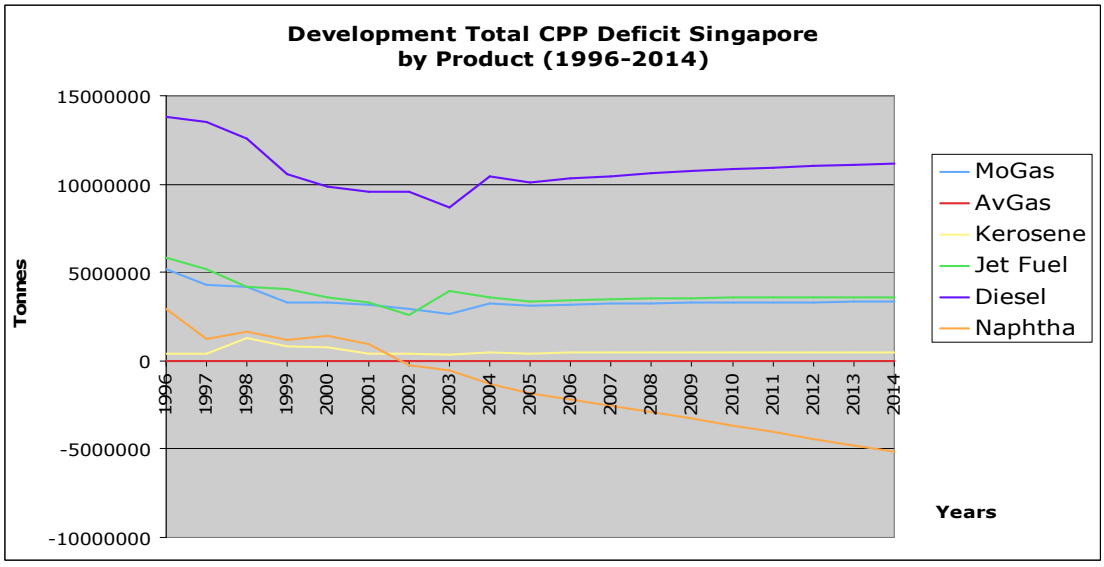


Figure 10.20 Development Total CPP Deficit Singapore by Product (1996-2014) (Based on: IEA non-OECD Statistics)

By product, this surplus is specifically visible in 10.20 for MoGas, Diesel and Jet Fuel, but due to the sharp increase of Naphtha consumption and the projected limited growth in production of this product, it is expected to have a shortage. Although this deficit is growing fast over the forecasted period, it can happen that the refineries will increase their capacity significantly to fill this deficit, as the refinery utilization rate in Singapore is kept in rather low levels.

Summary

The production of CPP in Singapore is forecasted to increase with an AAGR of 1% while the consumption is expected to increase with a higher AAGR of around 3.7%. This will result to the maintenance of the production surplus over the forecasted period.

10.7 Thailand

10.7.1 Production

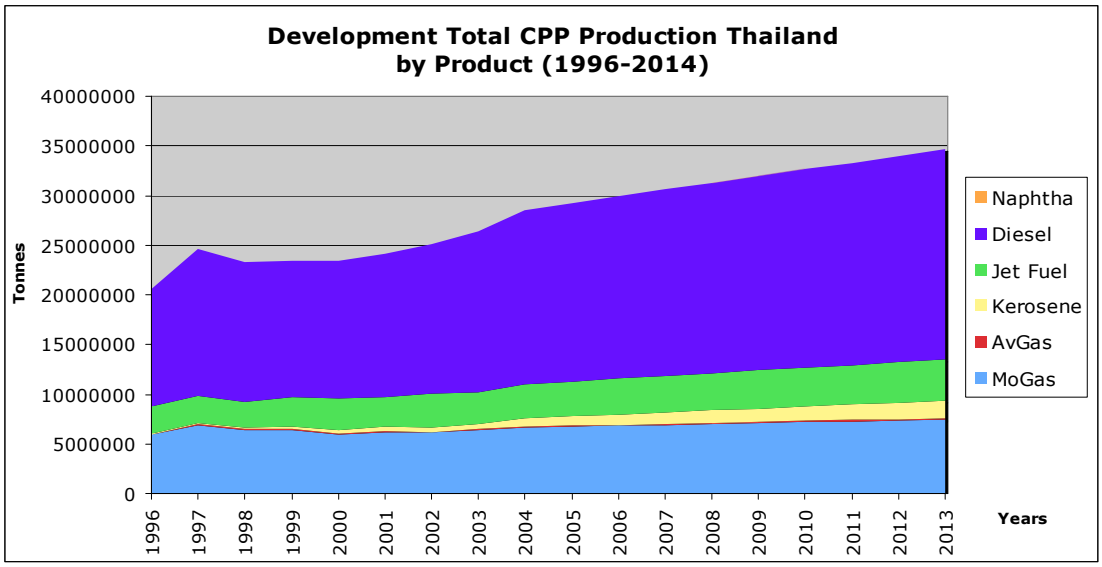


Figure 10.21 Development Total CPP Production Thailand by Product (1996-2014) (Based on: IEA non-OECD Statistics)

Total CPP production in Thailand shows a steady increase during the observed period. As it is shown in figure 10.21 the total production of CPPs is expected to increase to 32 million tonnes in 2009 and even further to 35 million tonnes in 2014 indicating a 23% increase compared to 2004. The AAGR in the next ten years according to the forecast will be almost 2.1% but since there is no future project of new refineries in the observed period, the increase in production are based on optimal utilisation method like de-bottleneck and strip lining, which affect utilisation over time.

With regard to the share of the produced CPPs, Diesel oil is projected to dominate the production accounting for 60%% of the total production followed by MoGas and Jet Fuel accounting for around 21% and 12% respectively.

10.7.2 Consumption

Consumption of CPP products in Thailand will continue to grow but at the slower rate. The CPP consumption is projected to be 27 million tonnes in 2009 and 29 million in 2014 growing with an AAGR of around 1.3%. This growth rate is fairly reasonable considering the fact that Thailand is strongly encouraging substitute CPP products like Gasohol and Bio-Diesel. To this extent, MoGas and Diesel consumption will show a very stable trend through the whole period, which should come from the introduction of Gasohol that will start in 2007 and Bio-Diesel which will be introduced in 2009. Jet Fuel consumption will also grow slightly due to the new Suvarnnabhumi airport which has stared operating in September 2006; however its proportion will remain in the same levels.

.

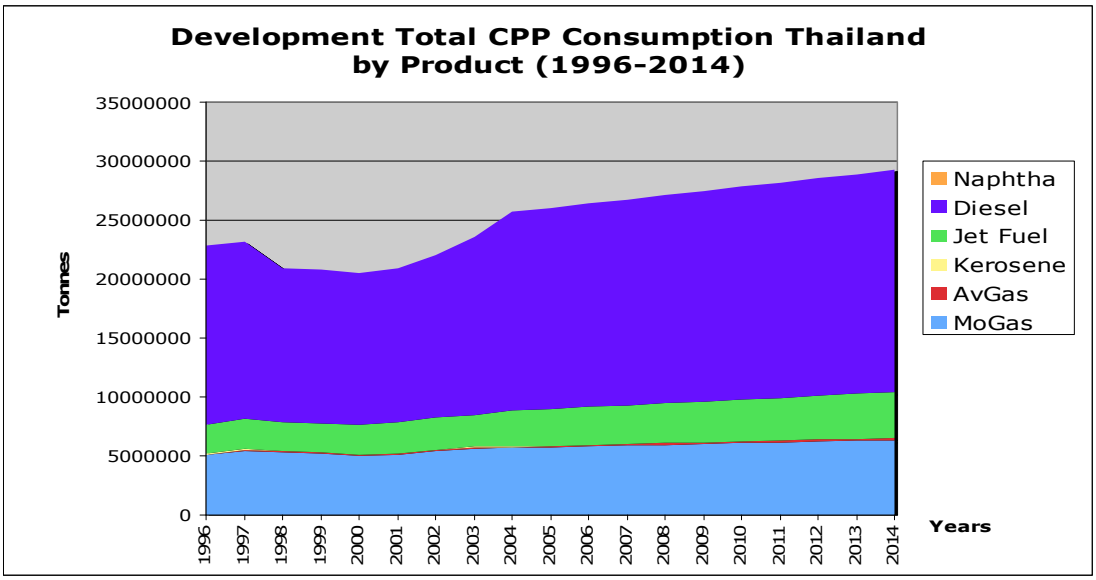


Figure 10.22 Development Total CPP Consumption Thailand by Product (1996-2014) (Based on: IEA non-OECD Statistics)

10.7.3 Comparison

From the figure 10.23 it is clear that CPP production in Thailand will cover domestic consumption through the whole period. This has been a steady trend from 1997 to 2004, and it is expected to continue. Both production and

consumption grow at a small pace, but production's growth rate will continue to exceed the consumption growth rate, which prolongs Thailand surplus status. In 2014 it is projected that the production surplus will be approximately 6 million tonnes.

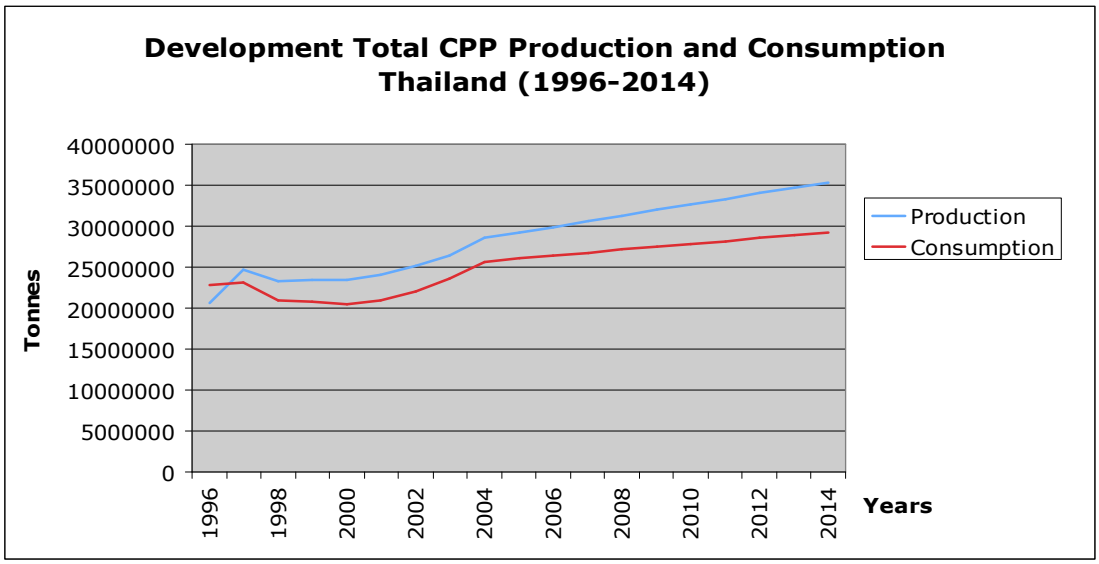


Figure 10.23 Development Total CPP Production and Consumption Thailand (1996-2014) (Based on: IEA non-OECD Statistics)

According to the figure 10.24, Thailand will be able to maintain its surplus status for CPP products. All products will continue to be in the surplus side with Diesel, Kerosene and MoGas being the most important.

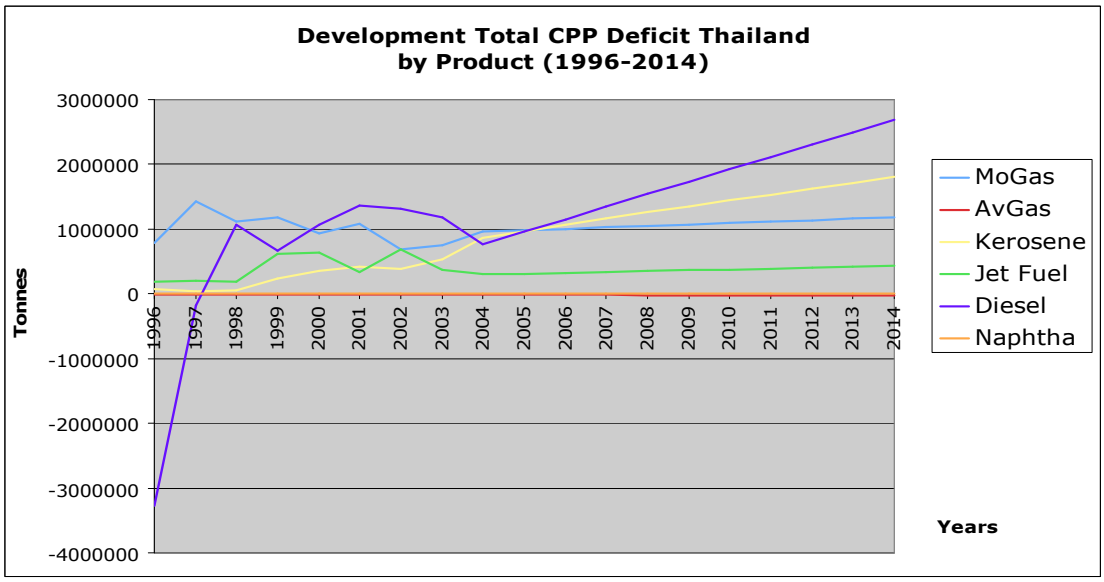


Figure 10.24 Development Total CPP Deficit Thailand by Product (1996-2014) (Based on: IEA non-OECD Statistics)

Summary

The production of CPP in Thailand is forecasted to increase with an AAGR of 2.1% while the consumption is expected to increase with a lower AAGR of around 1.3%. This will result in an increased production surplus with MoGas and Kerosene experiencing the higher surplus.

10.8 Vietnam

10.8.1 Production

According to the historical data Vietnam has been a net importer of CPPs due to the fact that there was no refinery in the country. As it has been mentioned in chapter 8 in the developments of the Vietnamese downstream oil industry it is expected that in 2009 a new refinery will start to operate in the central region of the country decreasing temporarily the imports of CPPs. It is projected that the total CPP production of Vietnam will be around 2.7 million tonnes in 2009. This can be explained by the fact that during the first year of the refinery operation it is not possible to reach its full capacity as plenty of tests need to take place. Later than 2009 the total production will increase reaching the level of 6.3 million tonnes in 2014 as the new refinery will be able to operate in higher utilization rate. Regarding the proportion of each product it is expected that Diesel will be the most important product accounting for approximately 60% of the total production followed by MoGas with 30%[409].

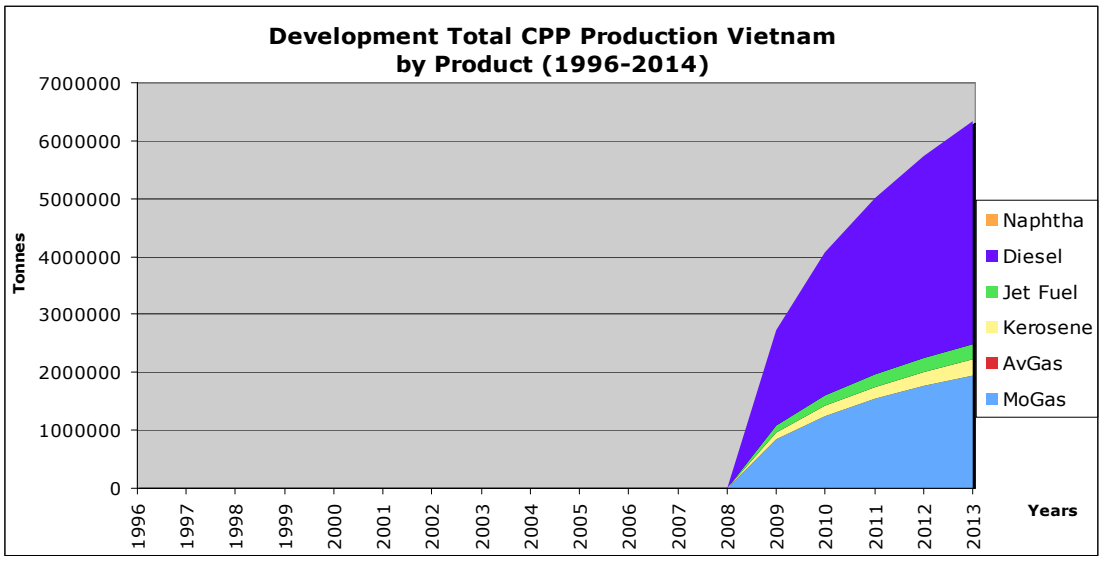


Figure 10.25 Development Total CPP Production Vietnam by Product (1996-2014) (Based on: Interview with Mr. Seri Viriyasakultorn, Director of Horizon Petroleum Limited)

[409] Mr. Seri Viriyasakultorn, Director of Horizon Petroleum Limited, Thailand, Personal interview, 12 October 2006

10.8.2 Consumption

From the figure 10.26 it is clear that Vietnamese CPP consumption will follow a steady upward trend increasing with an AAGR of 5.2% reaching the level of 12 million tonnes in 2009 and 15 million tonnes in 2014 performing a significant increase of 58% compared to 2004. This increase will be mainly driven by the high growth rate of Diesel consumption which is derived from the fact that Vietnam is planning to become an industrialized country until 2020 whilst the increased number of private vehicles will be the main reason of the increased consumption of MoGas. In 2014 Diesel share of the total CPP consumption will be around 61% followed by MoGas with 31% whereas the rest is split among Kerosene and Jet Fuel.

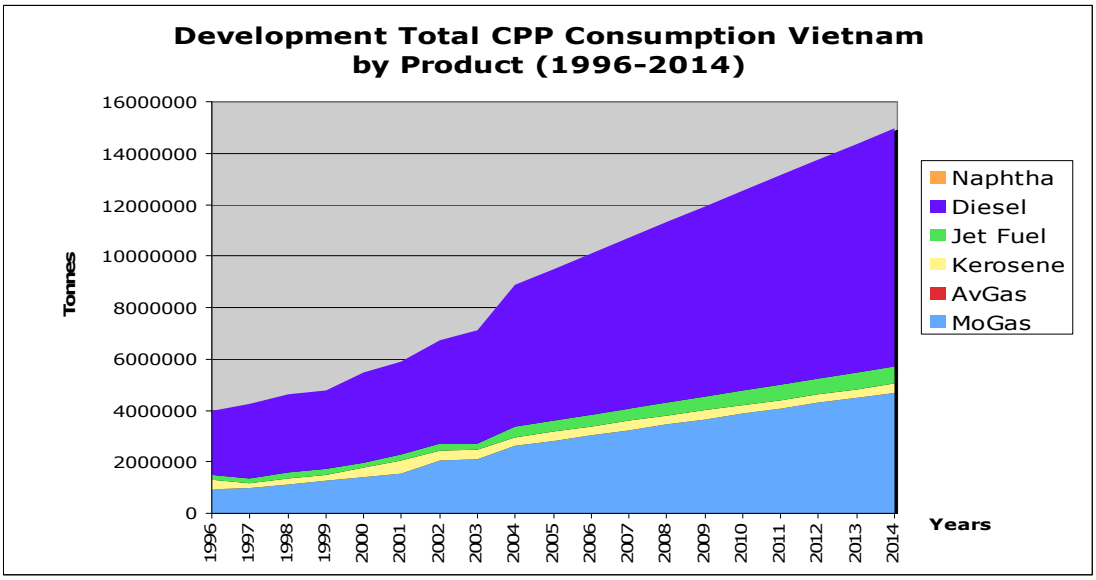


Figure 10.26 Development Total CPP Consumption Vietnam by Product (1996-2014) (Based on: IEA non-OECD Statistics

10.8.3 Comparison

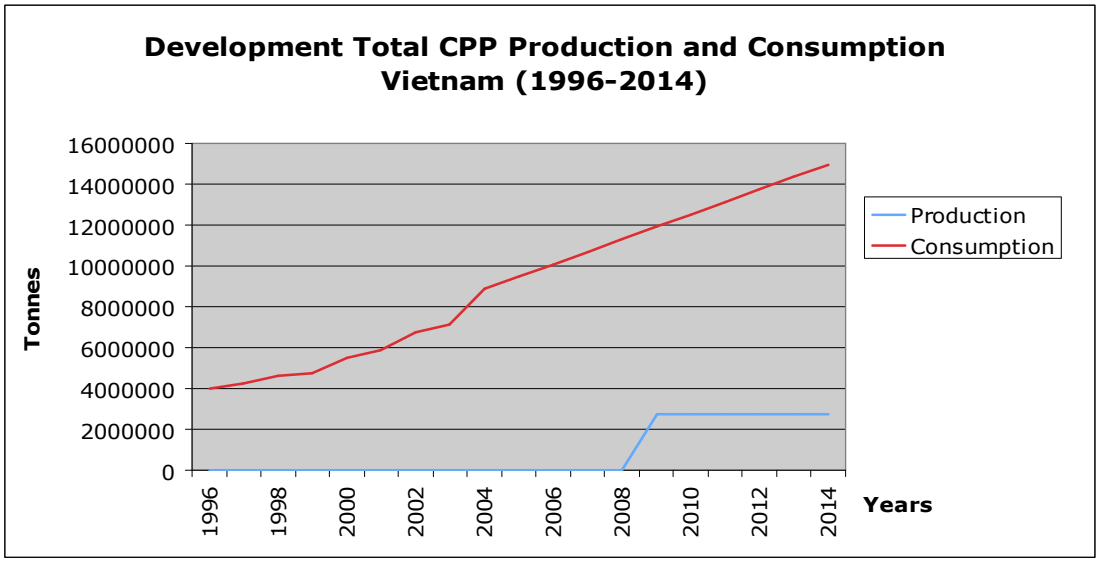


Figure 10.27 Development Total CPP Production and Consumption Vietnam (1996-2014) (Based on: IEA non-OECD Statistics)

It is clear seen from the figure 10.27 that the opening of the new refinery in 2009 will contribute temporarily to the shrunk of the production deficit. After 2009 is expected that the deficit will further increase since the consumption will grow with higher rhythms than production. The temporary shrunk of the deficit will affect in different way each CPP with MoGas and Diesel to face the highest impact since they will have the highest proportion in the production.

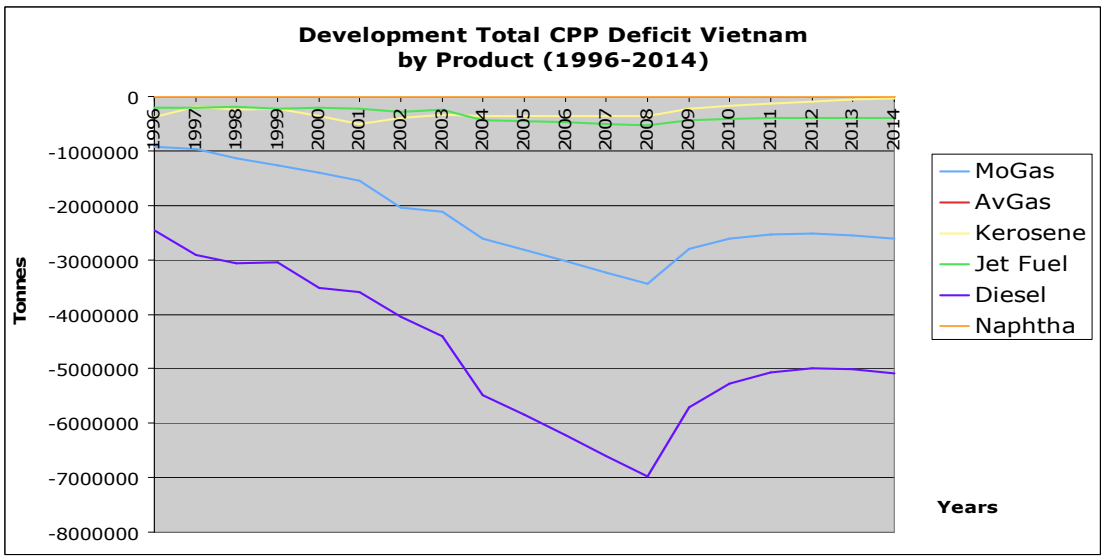


Figure 10.28 Development Total CPP Deficit Vietnam by Product (1996-2014) (Based on: IEA non-OECD Statistics)

Summary

The development of the refining industry in the country is projected that will help Vietnam to loose temporarily the dependence on CPP imports. However the industrialization of the country will drive the CPP consumption in higher levels contributing to the maintenance of the production deficit.

11. Future Developments of the CPPs trade flows

After future production and consumption that were discussed in the previous chapter, chapter 11 will discuss changes from products' perspective. The future trading relationship among ASEAN members and the trading quantity will be the main discussion in this chapter.

11.1 MoGas

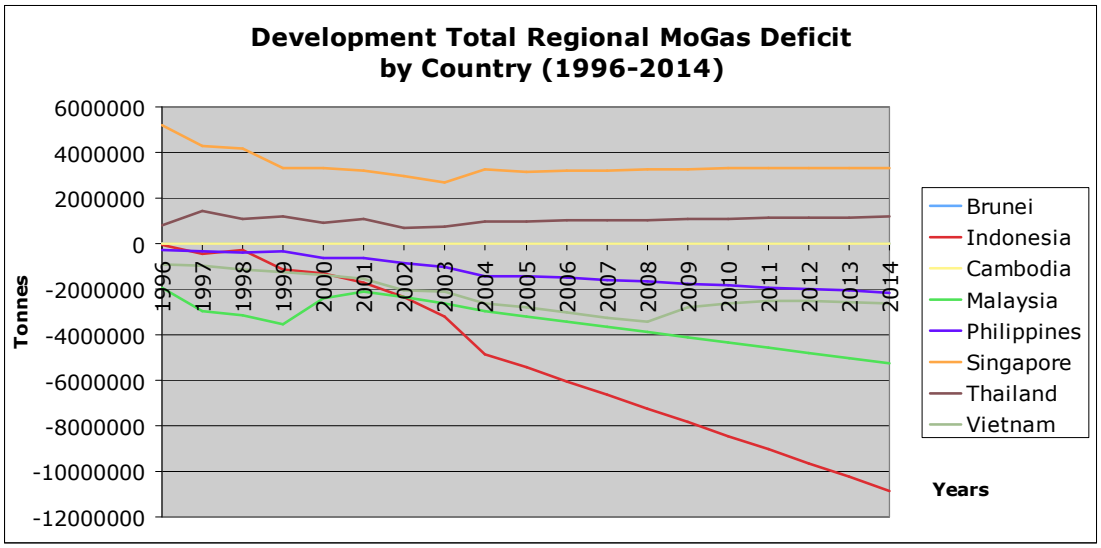


Figure 11.1 Development Total MoGas Deficit (1996-2014) (Based on: IEA non-OECD Statistics)

Singapore is projected to remain the main exporter of MoGas within the ASEAN region over the forecasted period. **Malaysia** is projected to remain Singapore's main trade partner. The export volume is likely to increase gradually as Malaysia's needs in MoGas are forecasted to follow a significant upward trend reaching a deficit of almost 5 million tonnes in 2014 and part of it will be filled mainly by Singapore's exports as its surplus will be increased. Singapore's exports to **Indonesia** have performed a significant increase over the last nine years establishing a major trade flow which is expected to enlarge even more as Indonesia's deficit in MoGas will considerably increase in the forecasted period. **Vietnam's** economic development will result in the

increase of MoGas consumption that is likely to develop even more the established trade flow with Singapore. Singapore's exports to Vietnam is expected to confront a slight decrease in 2009-2010 due to the new refinery that will operate in Vietnam although it will increase again later on due to the disproportional increase of consumption in Vietnam compared to the country's production. Exports to **Philippines** are also expected to increase compared to the exported volumes of 2003 and 2004 as Philippines' deficit in MoGas is projected to follow an upward trend over the forecasted period. Finally exports to **Thailand** are projected to decrease although it represents an unstable flow and exports to **Cambodia** are likely to slightly increase whereas it will account for a small percentage of the total exports of Singapore to the ASEAN.

Thailand's surplus of MoGas is projected to slightly increase during the forecasted period resulting in increased exports of MoGas in the region although the exporting quantity will still account for around 10% of the total amount in the region. **Singapore** is projected to remain the main importer of MoGas from Thailand, driven mostly by trading reasons rather than consumption needs, representing a constant flow during the forecasted period. Thailand's exports to **Vietnam** have been dramatically decreased to nearly zero since 2003 and this relation is expected to stay the same over the next ten years with slight fluctuations. Exports to **Cambodia** are projected to develop in a stable trade flow that will follow the upward trend of the last years. The trade relation between Thailand and **Indonesia** that has initiated in 2000 is forecasted to grow even more as Indonesia's deficit in MoGas is increasing fast and will be in need of further trade relations to fill the country's gap. Exports to **Philippines** and **Malaysia** are likely to remain high volatile but still of minor importance as the exporting quantities will continue to be inconsiderable.

Indonesia's exports of MoGas are expected to decline as the country's deficit is expanding fast. Exports to **Singapore**, which is Indonesia's main trade partner, are more likely to decrease over the forecasted period while trading relations with **Thailand** and **Malaysia** will remain of minor importance.

Exports from ***Malaysia*** (142 ktonnes) and ***Philippines*** (72 ktonnes) represent relations of insignificant importance in the region.

11.2 AvGas

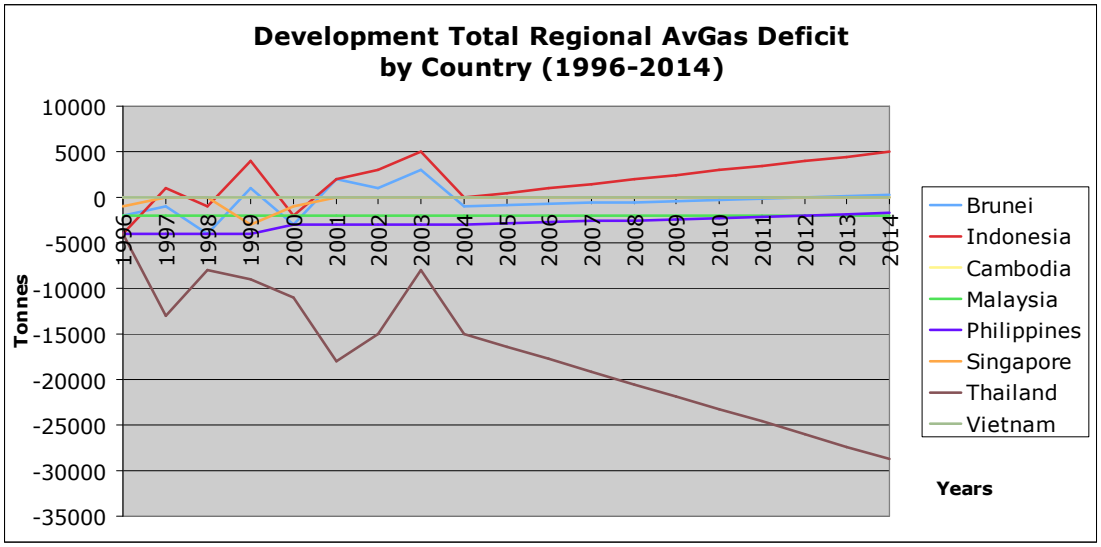


Figure 11.2 Development Total AvGas Deficit (1996-2014) (Based on: IEA non-OECD Statistics)

The trade flows of AvGas within the ASEAN region are expected to change over the forecasted period as the consumption of the product shows a declining importance and most of the countries will be around the self sufficient status. According to the above figure 11.2 **Thailand** is forecasted to present an increased deficit of AvGas that can generate a new trade flow within the region.

11.3 Kerosene

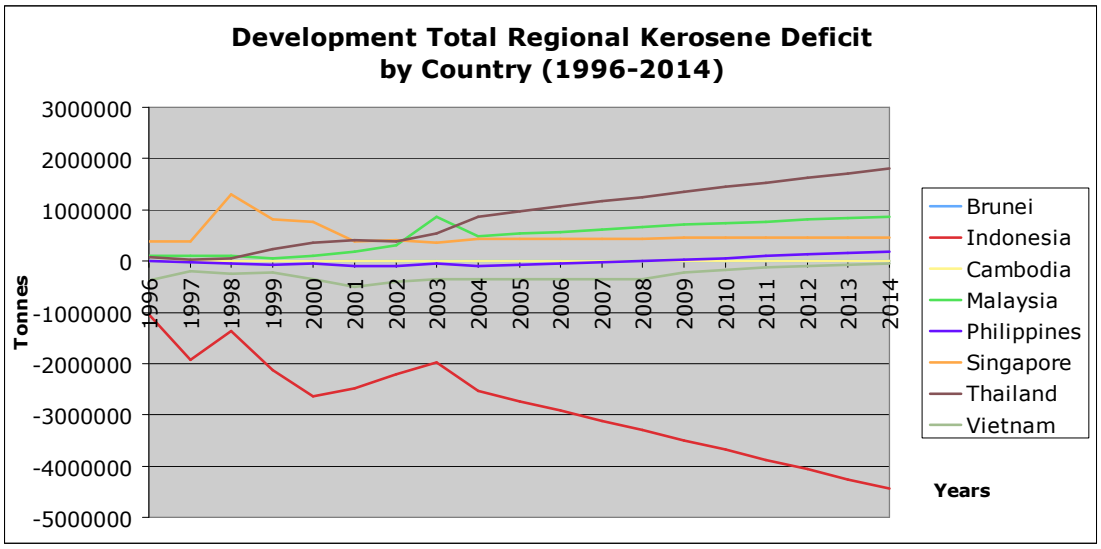


Figure 11.3 Development Total Kerosene Deficit (1996-2014) (Based on: IEA non-OECD Statistics)

Singapore, as the biggest exporter in the region, is expected to maintain its exporter position. **Indonesia**, one of the most important trading partners with Singapore, will strengthen its trading activities with Singapore due to the projection of higher deficit, which is the consequence of rapid growth in Kerosene consumption. Therefore, imports of Kerosene would increase. **Vietnam**'s Kerosene imports are expected to decline soon after the operation of the new refinery. In 2009, imports of Kerosene by Vietnam should drop because of this new refinery. Other importer like **Thailand** does not show promising imports trend to Singapore.

Malaysia, the second biggest Kerosene exporter in the region, is expected to maintain its exports capacity in the future due to an increasing surplus of Kerosene. Malaysia's major trading partners in ASEAN are Indonesia and Singapore. As mentioned before, **Indonesia** would require more imports of Kerosene in the future. Thus, due to increase in surplus of Malaysia, the country will be capable to support more Indonesia's need of Kerosene. For **Singapore**, imports of products were not to fulfil domestic consumption, since the country always gain surplus. It is more likely that Singapore imports

products (not only Kerosene) for trading activities. For this reason, imports from Singapore should maintain, if not increasing. If the imports from Singapore should increase, this should come from the need of Singapore to maintain its trader's role in clean petroleum products market. **Thailand** also imported from Malaysia, but the trend seems to show no pattern. The amount fluctuated and even the highest imports from Thailand accounted for less than 10 percent of Malaysia's Kerosene exports.

Thailand, the smallest exporter of Kerosene in the region, will try to retain its trading relationship. Important trading partners are Singapore and Vietnam. **Singapore** will import for trading activities. Imports amount from Singapore should also increase. **Vietnam**'s import was not stable and will drop significantly in 2009 after the new refinery start. **Indonesia** can be an interesting future market for Thailand, since it will need more Kerosene in the future.

11.4 Jet Fuel

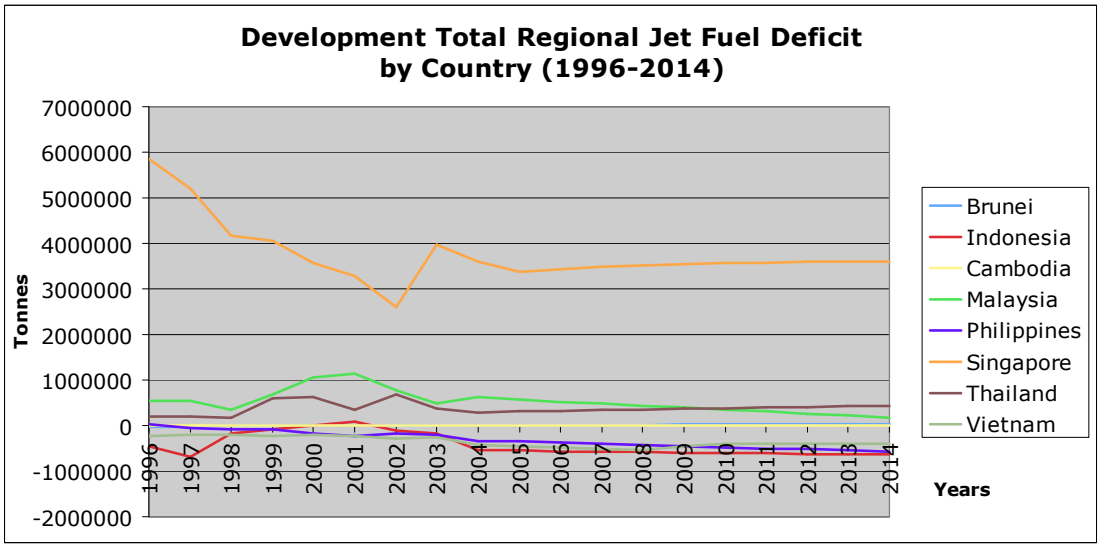


Figure 11.4 Development Total Jet Fuel Deficit (1996-2014) (Based on: IEA non-OECD Statistics)

Trading partners of ***Singapore*** are mainly Malaysia, Vietnam, and Philippines. **Malaysia**'s surplus in Jet Fuel showed a declining trend, even after the

introduction of new refinery in 1998. Malaysia may have to import occasionally to fulfil the domestic consumption. **Vietnam**'s consumption exploded in 2004 because of rapid development of the country. This development will continue to boost Jet Fuel consumption. Nevertheless, Singapore might not benefit from this increase because of influences from a new refinery in 2009. For **Philippines**, the closing down of the refinery is expected to affect imports of Jet Fuel in the future.

Malaysia might not be able to perform its Jet Fuel exporter function in the future because a continuous decline in surplus will impede its exports role. Major trading partners with Malaysia are Singapore, Indonesia, and Vietnam. **Singapore**, as the biggest import of Jet Fuel in ASEAN, should continue importing role to fulfil its domestic consumption as a regional hub and trading activities. The trading flows between Malaysia to Singapore, however, will decline due to smaller surplus from Malaysia side. **Indonesia**'s imports will expand along with bigger deficit. **Vietnam**'s imports, as same as other products, will decline after 2009.

Thailand will maintain some exports into the region since there is no huge change in its surplus. Main trading partners are Singapore, Vietnam, Philippines, and Cambodia. **Singapore**, as the air transportation hub for the region, may import to fill up the gap of domestic consumption, if necessary. Major reason to import would be trading activity. Exports to **Vietnam** will drop after 2009. Even though exports to **Philippines** and **Cambodia** exist, they are not consistent. However, these exports grow overtime and Thailand will gain good markets in the future.

11.5 Diesel

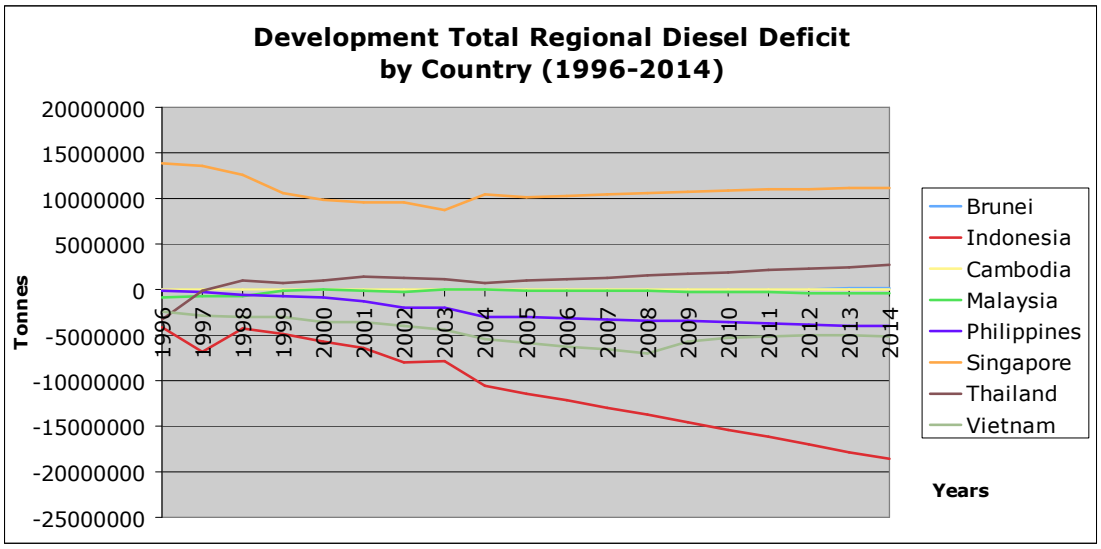


Figure 11.5 Development Total Diesel Deficit (1996-2014) (Based on: IEA non-OECD Statistics)

With regard to Diesel trading, ***Singapore*** is leading exporter over this period, with relations with almost all the countries analyzed, as shown in figure 11.5. Singapore exported 16.6 million tonnes to **Malaysia** over this period. Due to no significant changes in deficit and a supposed increasing trend of exports to Malaysia over the analyzed period, this situation is projected to remain and even increase. Trading arguments rather than consumption necessity will mainly drive these exports, based on production and consumption statistics. Within ASEAN **Vietnam** is mainly relying on Singapore for its Diesel imports with 11 million tonnes over the analyzed period with an increasing trend. In the short term this relation is expected to remain to have the same trend, although due to the installation of new refineries expected to start in 2009, the exports to Vietnam are expected to drop. Singapore exported 5 million tonnes to **Cambodia** over this period, with a fluctuating line but significant yearly quantities. Due to the fact that there will not be an increase in production and with a projected decline in consumption due to promotion of renewable energy, the situation is expected to remain or slightly decrease. With regard to **Thailand**, the relations have been slowing down over the years. Especially now that Thailand is projected to have a bigger surplus in Diesel, this trend is

expected to continue. Trading relations with **Philippines** for Diesel are expected to increase due to the close down of a refinery and as Singapore is the main ASEAN trading partner of the Philippines, the Diesel is expected to be fed from the city-state. Relations with **Brunei** will remain minor, only meant to balance out the temporary deficits in the country that are not projected to exist based on forecasted production and consumption. One interesting relation is with Indonesia. As the deficit for Diesel in **Indonesia** will increase just like the surplus in Singapore, this relation is projected to prevail, although the size cannot be projected due to insufficient data on Diesel imports and exports. In spite of that, due to the size of the deficit in Indonesia and surplus in Singapore, it can be expected that a significant trading relation will grow or prevail.

Looking to the export relations of ***Malaysia***, being the second biggest exporter of Diesel in the region, main partner is **Singapore**, importing 8 million tonnes over the analyzed period. These flows are led by trading initiatives rather than consumption necessity of Singapore. Due to increased trading activities in the city-state this flow is expected to prevail and even grow. Smaller relations can been seen with **Thailand** (1 million tonnes), which can be led back to e.g. Melaka-II feeding Conoco-stations in Thailand, over the analyzed period has shown an increase in tonnes, which is expected to remain to have the same trend, due to the installation of the refining capacity for these purposes. With **Vietnam** a volatile relation for Diesel has been identified, with a decline in more recent years. Due to main reliance of Vietnams imports from Singapore and the expected installation of the refineries in Vietnam, the trading relations with Vietnam could get into a wring. Outbalancing its necessary stock would be a more likely typology of this future relation. Exports to **Indonesia** have been fluctuating and with small quantities with maximum exports of 112 ktonnes in 2000. This relation is not expected to change drastically. Relations with **Cambodia** and **Brunei** are very small and not expected to change drastically in the future.

From ***Thailand***'s perspective, also the main relation is with **Singapore**, which has been steady for the first seven years, but in recent years the amounts

dropped. This exporting trend is tricky to foresee, but most like to be on a more downward trend. **Vietnam**'s imports have been unsteady in the analyzed period but had a high increase in 2004, which could show an increased importance for Diesel towards Vietnam. **Cambodia** is the third largest trade partner of Thailand with regards to Diesel with increasing amounts, followed by **Philippines**, which is also increasing in recent years. These relations are expected to prevail in the same manner, especially as Philippines with its closed refinery will become more reliant on external trade. **Malaysia** and **Indonesia** show small relations.

Exports from ***Indonesia*** (347 ktonnes) and ***Philippines*** (26 ktonnes) are showing minor relations in the region.

11.6 Naphtha

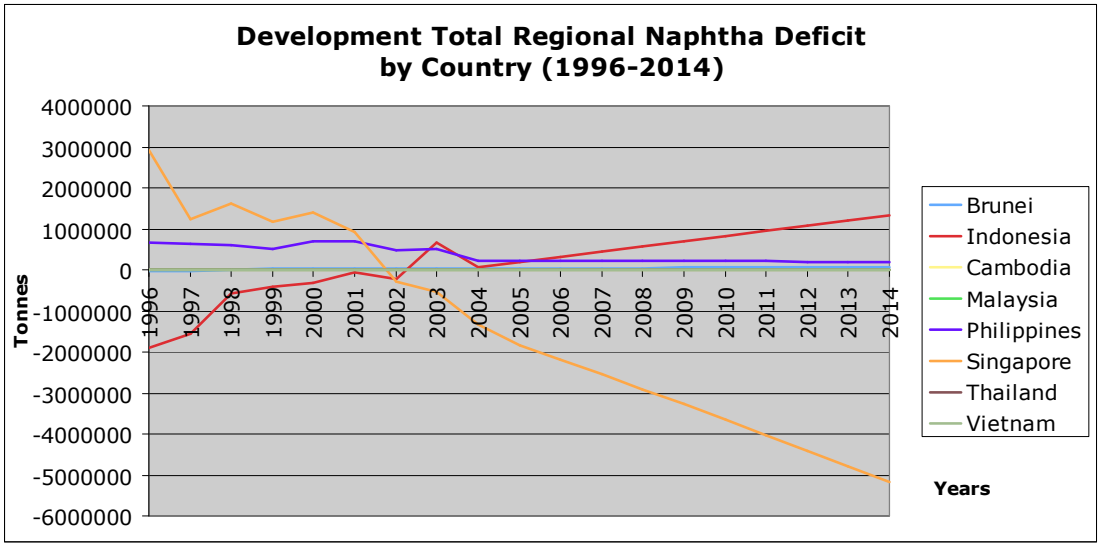


Figure 11.6 Development Total Naphtha Deficit (1996-2014) (Based on: IEA non-OECD Statistics)

As it has been mentioned in chapter 6 ***Malaysia*** has been the main exporter of Naphtha in the region for the last nine years with strategic trade partners being **Singapore** and **Thailand**. The projected increase of CPPs production in Malaysia and the simultaneous increase of the consumption in Singapore are likely to enlarge the exports from Malaysia to Singapore during the

forecasted period. The exports to Thailand are expected to present a slight drop due to the fact that the expected enlargement of production in Malaysia is not enough to cover the increased demand of Thailand for the specific product.

The second most important exporter of Naphtha in the region is ***Singapore*** which is expected to decrease slightly these exports in order to contribute more to its increased domestic consumption. Especially the exports to **Malaysia** are likely to decrease to some extent since the country is the main trade partner of Singapore. The same situation is projected for the exports of Singapore to **Thailand** whilst both of the countries are planning to focus more on the petrochemical industry which demands higher amounts of Naphtha. The remained exports will be mainly dedicated for trading reasons.

11.7 Summary

Summarizing the future situation of the CPPs trade flows in Southeast Asia region, it is clear that the expected increase of CPP consumption will drive the countries which are in the deficit status to develop more their trade partnerships. Singapore is projected that will remain the main trade hub in the region although some of its trade relations will be decreased even eliminated due to the strategy of some countries to reach the self-sufficient status.

12. Regional Forecast

In this chapter, all future developments that have been previously discussed for each country will be discussed for ASEAN giving the whole picture of the region for the different topics.

12.1 Regional Politics

The political situation in the ASEAN region is projected to improve in the forecasted period as most of the countries are expected to develop towards a more stable political environment. Brunei's politics will remain stable, under the power of Sultan, whereas Indonesia political situation will face a number of challenges in the short future and in the long run the stability of the domestic political life will be notably affected by the result of the new presidential elections in 2009. The powerful Prime Minister of Cambodia is forecasted that will continue to control the political scene of his country without any major development in the foreseeable future. As far as Malaysia is concerned the unsolved ethnic tensions is not expected that will affect the present stability of the domestic political life. Instability and insecurity will characterize the political environment in Philippines as President Arroyo is likely to face serious opposition in the future with the threat of a new military coup to be still a possible scenario. The present political stability of Singapore is forecasted that will remain unaffected due to the presence of the powerful president Mr. Lee Sr. The recent military coup has put Thailand in a new unstable period which is expected to change after the new elections. Vietnam political life is expected to remain dominated by the Communist Party for the forecasted period although developments towards a more liberal environment are possible in the long run.

12.2 Regional Economics

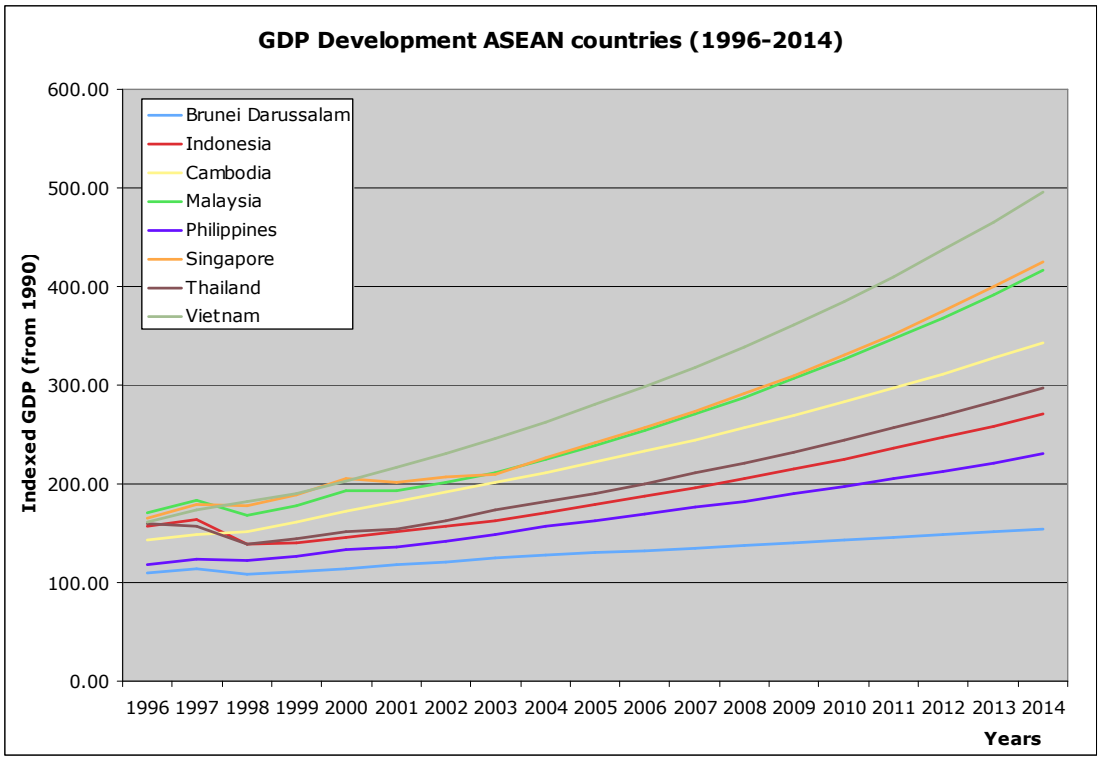


Figure 12.1 GDP Development ASEAN Countries (1996-2014) (source: based on UN Statistics)

Looking at the development of the different GDP's in the region, Vietnam is increasing relatively the most rapid of these countries to 500% compared to 1990, followed by Singapore (425%) and Malaysia (412%). Brunei will develop the least of the region to only 153% of its 1990 GDP.

12.3 Business Environment

The business environment in the ASEAN region is generally forecasted to improve in the next ten years as most of the countries are expected to stand up against corruption and bureaucracy in order to become more attractive for companies to invest in. The further concentration of Brunei's government on the oil sector will continue to discourage new investments in the short future whereas the situation is likely to change in the long term with the development of other sectors. The Indonesian business environment is expected to improve in the future by the introduction of the new investment law, the acceleration of deregulation process and decrease of corporate taxes. The

establishment of new business administration departments will encourage more foreign firms to invest in the country. Cambodia investment climate is likely to change as a result of the judiciary reforms. Simplification of the business procedures and the reduction of the cost of doing business will be the major changes of Malaysian business environment. The effort to eliminate the corruption and the privatization of state-owned companies is the main plan of Philippines' government for the restoration of the country's business environment which has been affected by the political uncertainty. Singapore is expected that will stay the most attractive environment in terms of transparency and protection of intellectual property. The stabilization of the political situation is the main concern of the Thai government which wants to improve the FDI rates by relaxing the existing investment law. The acceptance of Vietnam from WTO is projected that will increase further the flow of foreign investments in the country even though the existence of high corruption.

12.4 Downstream Oil Industry

Regard to the downstream oil industry, Brunei Shell Company will continue to be the main player of Brunei's market. Plans for a new refinery are likely to become reality in the long term. Expansions of the present refineries and the removal of subsidies are the priorities of Indonesian government for the domestic downstream oil industry which is projected that will remain under the total control of Pertamina. The future of Cambodia in the same sector is unpredictable with high import taxes and high regulations to discourage new players to entry into the domestic market. The gradual removal of subsidies is the only development that is expected for Malaysia. There in no projection for significant changes in downstream oil industry of Philippines, that will remain totally open to competition. Singapore is foreseen that will expand even more its operations in this specific industry with new depots and petrochemical plants. The Thai downstream oil industry is likely to stay unchanged due to the fact that is already totally open to the competition. New refineries in the

short and long term are the major changes in the Vietnamese downstream oil industry.

12.5 Energy Demand Overview

In terms of energy demand it is forecasted that transportation sector will be the main consumer of energy consumption in Brunei for the forecasted period. The population growth and the development of industry are the main reasons that will affect the consumption of energy. Cambodia will remain dependent on fuel wood while in the long term efforts towards more alternative energy sources will be accelerated. Transportation and industrial sector will be the main sectors that will contribute to the future increase of the energy consumption in Malaysia. The same situation is also projected for Philippines while the focus on more sustainable energy sources is among the plans of the government in the long future. The development of the petrochemical industry is likely to lead the consumption of energy of Singapore in higher levels during the forecasted period. The insufficiency of Thailand in energy consumption is projected that will lead to the increase of energy imports from neighbouring countries. The development of the country will drive the Vietnamese energy consumption in higher levels with industrial and transportation sector to be responsible for the most of this growth.

12.6 Regional Production

From the past 10 years, it is noticeable that the whole region has tried to maintain its total production amount. This mentality keeps the production in the region around 123 million tonnes in 2009 and 133 million tonnes in 2014, coming down to an increase of around 22% in the 10 years forecast mainly due the operation of the new refinery in Vietnam, increased refinery utilization and further de-bottlenecking of the refining industry.

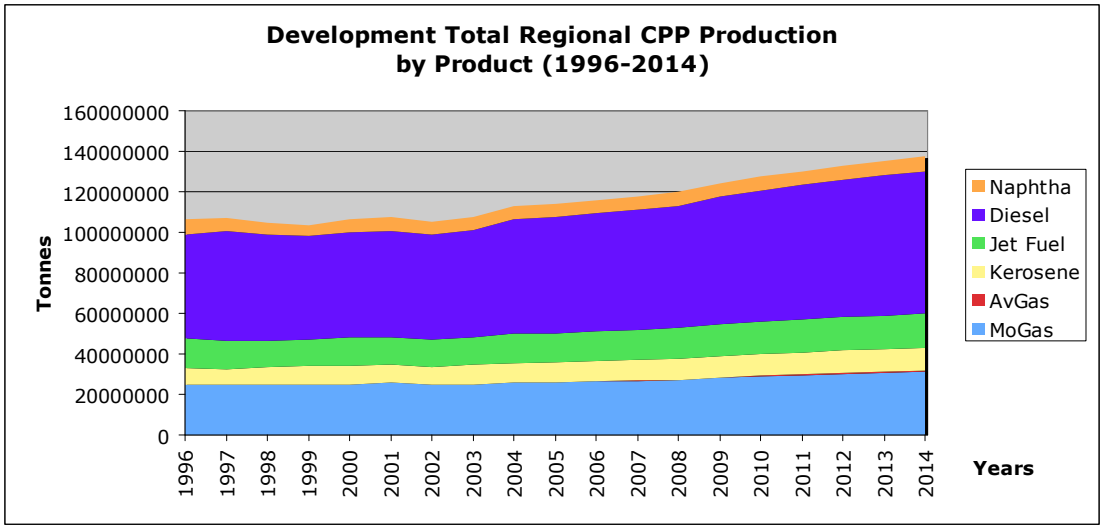


Figure 12.2 Development Total Regional CPP Production by Product (1996-2014)

Even though the CPP production will increase over time, the proportion of each product is not likely to change. Major products like Diesel and MoGas will maintain their share of the total production with 50% and 23% respectively. Production of Jet Fuel will account for almost 12% while Naphtha and Kerosene are projected to account for 8% and 5% respectively. AvGas and still exists in ASEAN production, but the amount is small and it is expected to further decline in the future.

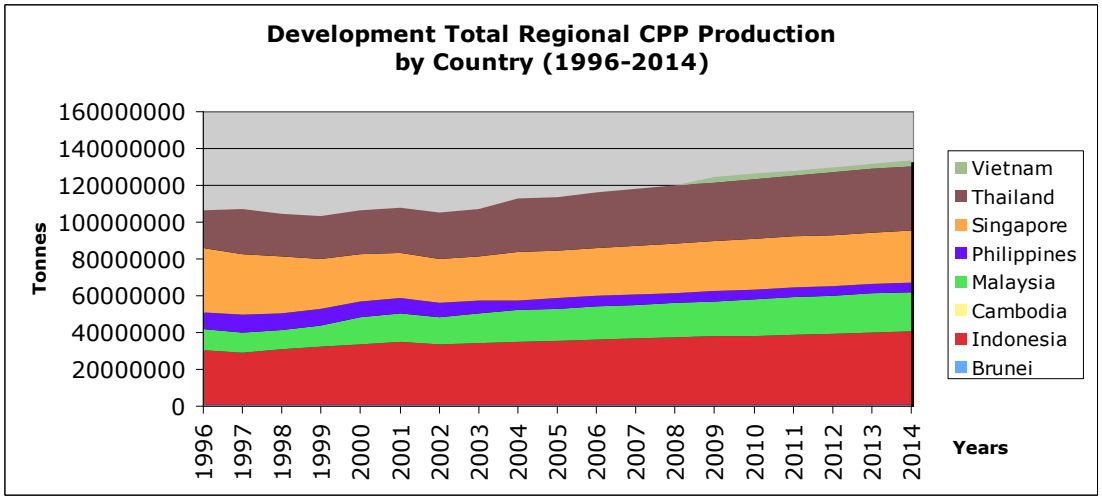


Figure 12.3 Development Total Regional CPP Production by Country (1996-2014)

Looking at the different countries, the proportions of produced products remains steady over the forecasted period. Increasing of production capacity in Vietnam will have notable impact to ASEAN production. Indonesia will maintain its position as the major producer in the region accounting for approximately 29% followed by Thailand and Singapore with 25% and 21% respectively. Malaysia's share will be around 15% while Philippines and Vietnam's proportion will account for around 4% of the total production correspondingly. Brunei's proportion will remain of minor importance only 0.5%.

12.7 Regional Consumption

Contrarily to the production, consumption grows at a faster rate increasing around 34% over the forecasted period. In 2009, the consumption will increase to 148.7 million tonnes and will further increase in 2014, reaching the level of 170.3 million tonnes increased by 33% compared to 2004.

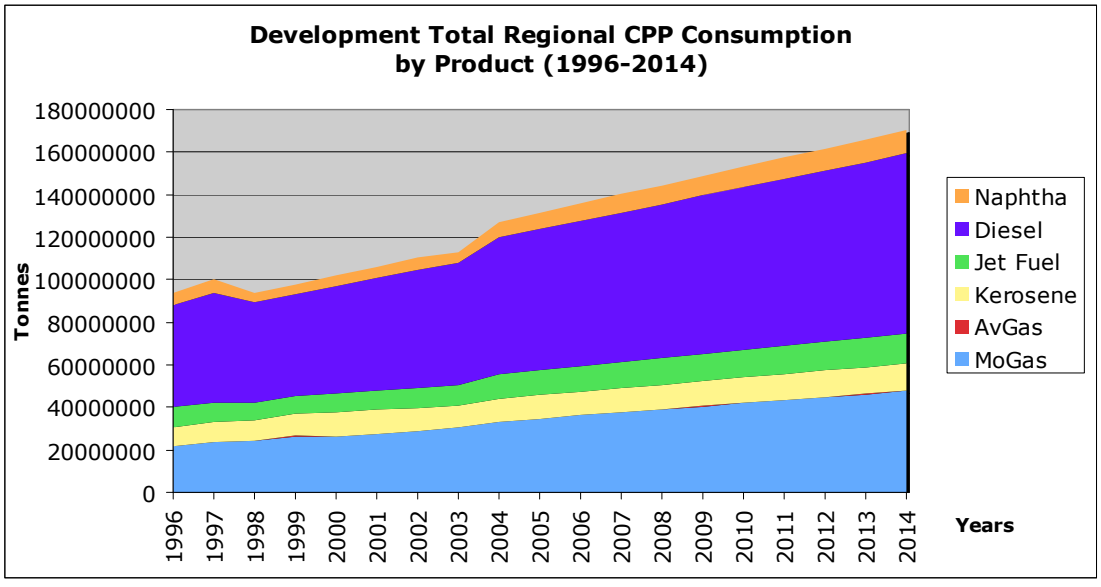


Figure 12.4 Development Total Regional CPP Consumption by Product (1996-2014)

During the forecasted period, consumption of MoGas will increase by 43% while Naphtha will grow at an even faster rate by approximately 46%. Consumption of Diesel will also grow by 31% followed by Jet Fuel (26%) and

in lower extent Kerosene by 18%. AvGas consumption is expected to double however it is of minor importance in terms of quantity. Regarding the proportion of each product in 2014 slight fluctuations are expected compared to 2004. Diesel will remain the most common consumed CPP accounting for 50% of the total consumption followed by MoGas accounting for 28%. The rest amount is spread between Kerosene around 7%, Jet Fuel 8% and Naphtha approximately 7%.

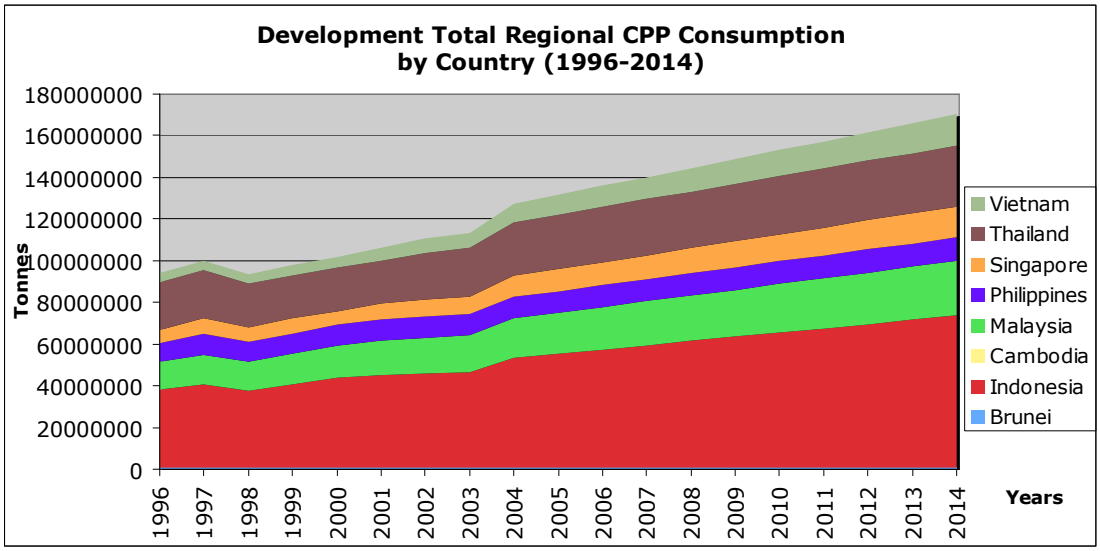


Figure 12.5 Development Total Regional CPP Consumption by Country (1996-2014)

As it is shown from the figure 12.5 regarding the CPP consumption by countries it is clear that all of them will increase over the forecasted period. Brunei's consumption is expected to increase with a slow AAGR of 0.25% and will account for almost 0.25% of the total region CPP consumption in 2014. The CPP consumption of Cambodia is expected to increase due to the development of the economy, although there are no historical data. According to the forecast, Indonesia's consumption will grow with an AAGR of around 3% from 2004 to 2014. Indonesia will maintain its position as the highest CPP consumer within the ASEAN region accounting for almost 43% of the total regional consumption. Malaysia's consumption is expected to continue growing with an AAGR of approximately 3.2% and maintain its share of almost 15% of the regional consumption. Philippines and Thailand's CPP consumption is projected to increase with a slow AAGR of around 1.2% and

1.3% respectively. Proportionally theirs share in 2014 is expected to slightly decrease to 6.7% compared to 7.8% in 2004 for Philippines and to 17% (20% in 2004) for Thailand. Singapore's consumption is forecasted to grow with an AAGR of 3.7% mainly driven by the increased demand for Naphtha, while its share will remain stable to around 8.5%. Vietnam is a fast rising consumer of CPP products in ASEAN growing with an AAGR of around 5.3% per year. Proportionally, Vietnam's share in ASEAN will be increased to 9% in 2014 compared to 7% in 2004.

12.8 Regional Trade Flows

In order to have a more constructive discussion on the prognosis given in the previous chapter, three different cases have been identified: a most likely case, a likely and a less likely case. In the first case the likely scenario will be drawn on developments in production and consumption in the selected countries, together with what effects that would have on the regional flows. The second case includes developments in production and the result of these changes in the trade flows that are likely to be happened in the region but with small probability. The last case includes all identified developments, considering the fact that everything will grow according to a positive view that no huge obstacles will delay the regional development.

First case: most likely scenario

The first and the most likely scenario consider three main developments in the region that will occur:
-The increase of the regional CPP production by around 22%,
-The increase of the regional CPP consumption by approximately 33%,
-The first refinery in Vietnam will start operating in 2009.
-Huge increase of oil storage in Singapore.

Looking at the production side it has been mentioned above that this will present an increase of 22% which is a result of the projected increase of the regional refining utilization and the operation of the first refinery in Vietnam. On the other hand regional consumption in 2014 is expected to be 33% higher than in 2004. The increased deficit in production due to insufficiency in refining capacity and the fast growing regional consumption will lead to increased trade flows of CPPs within the ASEAN region. Singapore will play an even more important role in the region as it can increase its refining utilization rate in order to cover the increased demand and develop even more as the refining and trading hub in the region. The CPP trading is expected to grow rapidly due to newly developed storage facilities, including Hin Leong's huge facilities. This impulse in the storage sector will have huge repercussions on imports and exports of the island state. As Singapore will have more and often cheaper products to offer, this will influence its importance as trading hub in the region.

Second case: likely scenario

The second case considers five major developments in the region that will occur next to the ones mentioned in the first case

- The production in Indonesia will go up 20% before 2012,
- The refining utilization in Singapore will increase more that is projected,
- A second refinery will be operating in Vietnam in the forecasted period,
- Further development of petrochemical industry in Singapore,
- Brunei and Thailand's petrochemical industry will grow.

From the production side of the developments, if the production of Indonesia will be upgraded in this period the demand for imports for CPPs will decrease, mainly from Singapore. But as the deficit of Indonesia will grow rapidly as well, the effect on Singapore's outward flows towards Indonesia are not expected to undergo major changes by this development. An increase of refining utilization in Singapore will happen in effect of a developing region and CPP market, as margins need to increase to make it possible. But as utilization is on bottom level and the crude prices are going down again, it is

expected that the refining market can slowly climb out again and margins can increase too. The increase in the refinery utilization rate and the expansion of its oil storage capacity will influence exports of Singapore to its major trading partners positively. The likely operation of a second refinery in Vietnam will further affect the flows of CPPs from Singapore which is Vietnam's most important trade partner.

For the consumption side, the petrochemical sector is most likely to develop further in Singapore, making it more important to feed its Naphtha consumption from either its own refineries, but also from other sources, which will positively influence Naphtha imports into Singapore. This is also expected for the development for the petrochemical industry in Brunei and Thailand.

Third case: less likely scenario

The third case considers three other major developments in the region that will occur, next to the ones mentioned in second case:

- A new export oriented refinery will be opened in Brunei before 2014,
- A new refinery will be build in Indonesia before 2010,
- A third refinery will be operational in Vietnam before 2014.

The third case developments are vivid on the production side, where a potential export oriented refinery will not only stimulate Brunei's limited diversified economy but also influence the international trade flows by confusing the converged lines from Singapore to the region into splinters coming from the Sultanate. Also the newly developed refinery in Indonesia will add to the divergence of the flows centralized in Singapore, as this refinery also has an export oriented focus. Finally, the third refinery in Vietnam will bring flows between the lion city and Vietnam to a further halt, as the new refinery will mainly influence the relations between those two countries. Other relations that Vietnam relies for its imports will also be affected but have lesser impact due to the size of the flows, e.g. Thailand.

12.9 Summary

In general, most of the countries in the region are expected to show stability in the future. For politics, Brunei's stability will be maintained under the reign of Sultan Hassanah Bolkiah. Prime Minister Hun Sen will continue to rule Cambodia without opponents. Malaysia might have some problems regarding conflicts between ethnic groups, but that should not shake the political environment. Singapore dominated democracy under Mr. Lee Jr. will rule the country without difficulties. Vietnam does not show any signs of changes in politics. Therefore, Communist Party will continue to drive the country in the future.

Indonesia, Philippines and Thailand are on the instable side of the region. Indonesia's future will rely on the presidential election, which will be held in 2009. President Arroyo of Philippines will continue to face with opposing power from the people, and a military coup is considered possible in the future. Thailand is the shakiest in terms of politics condition. The recent military coup increased Thailand's political instability. This risk will also continue after the military coup has handed the democracy back to the Thai people.

The region will continue to grow very fast regarding economy. With steady growth of GDP close to 10%, Vietnam will become the main force driving ASEAN economy in the near future. Trading partners with Vietnam will benefit lucratively from this rapid growth. Other major countries in ASEAN will slowly change their role to fuel Vietnam's expansion. Singapore, Malaysia, Thailand, and Indonesia will grow at a modest rate, since there are no external factors to trigger the growth. Cambodia's economy can also change rapidly, if the country will improve its basic infrastructure in the future.

Business environment in the region tends to improve in the future. All of the countries see the benefits of FDI and are trying to ease regulations involving foreign investments. This trend is expected to continue in the long future.

Downstream oil industry in ASEAN will definitely change its shape after the introduction of new refinery in Vietnam in 2009. Vietnam will be able to cover one pat of its domestic consumption with the new refinery. This would lead to a temporary decline of CPP imports of Vietnam which will continue to import the majority of the products. Current players like Petrovietnam will expand exponentially in the country. Indonesia and Philippines will try to maintain its capacity in downstream industry, even though it is forecasted that they will run into trouble of supplying clean products. Singapore, Malaysia, Thailand, and Brunei will invest more in petrochemical industry which means that the consumption of Naphtha in these will be increased significantly.

All the countries in ASEAN will consume more energy, either more or less, and transportation is the main cause in this growth. Vietnam will increase its consumption so rapidly that it may need supply from other sources, or places. Singapore will also increase its consumption due to a robust petrochemical industry in the country. Thailand has problem with inefficiency in energy usage and consumption is forecasted to grow rather fast.

CPP production in the region will increase overtime and Vietnam will slightly affect the regional production in 2009. In spite of increase in production, proportion of products will remain the same. Diesel and MoGas will maintain their shares in CPP production. There will be no huge increase from one country but the region will be more likely to grow at a small and steady rate. On the contrary, consumption is forecasted to grow at a faster rate. This would bring some countries to a deficit status, or widen this deficit status. Indonesia and Philippines will fall under this situation eventually. Other countries will maintain its surplus/deficit status. Diesel and MoGas will be the main products for consumption in the region.

Generally is expected that the regional trade flows will be increased since the consumption in the region will grow much faster than the production resulting to the enlargement of the deficit. Singapore’s trading role will be further developed since the majority of the flows will continue to have starting point or

destination the city-state. The opening of the new refinery in Vietnam is forecasted that will affect temporary the trade flows of the country which will cover only one part of its domestic consumption.

In case that the second scenario will took place which means that the regional refining capacity will be expanded due to the second refinery in Vietnam and the upgrade of the refineries in Indonesia is projected that the trade flows of CPPs

Generally is expected that the regional trade flows will be increased since the consumption in the region will grow much faster than the production resulting to the enlargement of the deficit. Singapore's trading role will be further developed since the majority of the flows will continue to have starting point or destination the city-state. Next to this scenario it worth considering further developments that can influence the trade flows in the region although they are less likely to happen.

Part IV. Conclusions and Recommendations

13. Conclusions

Southeast Asia represents a fast growing petroleum market both production and consumption. The market is dynamic and supports rigorous CPP trading flows among its members. These flows gradually grow with the development of the whole region. Development, in this case, includes politics, economics, business, downstream oil industry and energy demand of each country in the region. Politically seen, Southeast Asia still has some vibrations. The Southeast Asian economies are among the fastest growing in the world with Vietnam taking the lead in this expansion. The whole region is now more open to investment. There is plenty of room for the downstream industry to develop in Southeast Asia, especially in Vietnam. The energy consumption will multiply with the growth in the region.

The region will produce and consume more CPP products. Production will grow at slower rate than consumption, and this would lead to greater deficit, where Singapore will play its role as a trader to fulfil this gap. Countries like Indonesia, Malaysia, and Philippines will face more deficits due to higher consumption. Vietnam should be successful in introducing a new refinery in 2009. This refinery is expected to partially cover the domestic demand, but imports will persist. After all, the trading bonds in ASEAN will be stronger because of higher deficit in some countries.

Main exporter countries like Singapore and Thailand are trying to develop themselves as producers of higher value-added products by investing in petrochemical industry. Singapore will continue to lead in this segment due to its geopolitical situation and the size of the industry. A big country like Indonesia would rather emphasize its investment to close down its huge gap between production and consumption in CPP. Vietnam, with its new refinery, will also focus to fulfil its domestic consumption. Brunei will continue to seek the opportunity to develop itself from crude exporter to higher value-added products.

14. Recommendations

Short sea shipping in the ASEAN region is not as exclusive as the scope definition makes it to believe. Within the region there are many developments that trigger higher production or consumption, but the world economy is responsible for these developments too. In this research we have focused on the developments in the region. For a better picture the **world economy** should be integrated as well. Also, countries that are (just) out of scope in the **surrounding areas of ASEAN**, or even a bit further away, can have significant influence on the refining capacity or trading activities. In Asia, Japan, Taiwan and South Korea are considered to have huge refining capacities and especially South Korea is known for its quick development to turn into a 'refining hub'. Also in countries like India and China, the quick development of its society and downstream oil industry make them to become significant players in this field. Although mostly the refining capacity will be meant for domestic consumption and the growth of the consumption levels would even demand bigger amounts to be imported, the dynamics of these powerhouses that are almost bordering ASEAN will have significant influence on trading activities in the region. In the beginning, this influence is expected to be in a positive way by giving additional trading activities, but as the downstream oil industry develops in these countries, this could turn against the region. But as the scope limits to the Southeast Asian region, influences from these areas are not considered, although its influence to trading hub Singapore could turn out to be important for its future development. We recommend for further study that the influence of these countries on the flows should be considered.

In this project analysis on international seaborne trade flows has been realized. This means that the figures show nothing on **domestic transport** of the selected products. The reason for this is that this information did not seem available and because of that had to go out of scope in a late stage on the project. This does not mean that the domestic flows would not represent a

significant proportion of the flows. Even though the countries of interest in this field (Indonesia, Malaysia and Thailand) have heavy cabotage regulations, for a full picture of the flows domestic trade flows would be recommended to look into deeper, especially inter-island transport in Indonesia (e.g. Java, Sumatra, and Kalimantan) and transport between Peninsular Malaysia and East-Malaysia.

Another aspect that has not been included in the analysis is a **'port-to-port analysis'**. This means that instead of international trade flows, the exact port of destination until the exact port of disembarking should be analyzed. In the research it has been tried to include port of origin and port of destination of the imports and exports, but due to insufficient information, it was not possible to include it. Only Indonesia has this information available (for the products MoGas, AvGas and Kerosene).

The fourth aspect that could be interesting to look into for further research is **seasonality**. In appendix x a small analysis is done on trade flows in the region heading towards or from Singapore, accounting for more than 70% of the flows. The analysis was based on monthly data from IE Singapore. According to this analysis, no real hard seasonality showed per product, some products seemed to have some 'peaks' during the year. As we consider this analysis to be not fully covering the whole scope of seasonality, we recommend looking deeper into the topic to get a better picture.

Finally, in order to translate this analysis to a more logistics environment some aspects are recommended to be highlighted in future research: batch size, frequency, the cost of transport and transport lead-time. The **batch size** of the international trade flows had been difficult to analyze as Clarkson keeps track of ships above 30.000 DWT. Smaller vessels did not seem to be kept track of. In appendix x, a small analysis is done on the batch size of the bigger size vessels and how much they account in comparison to the total flow. The **frequency** of the bigger vessels was kept at Clarkson's too. We recommend that to get a better picture on the general batch size and frequency of the transported products, more research needs to be done. The **cost of**

transport, meaning the market price in the region, would be another factor that would turn the current analysis into an opportunity analysis in the region for Broström Tankers AB. This would show how low the cost structure should be for the company in order to be able to compete with the market prices for CPP transport in the region. Mapping the **transport lead-time** would add much value to future research too, as this will give a picture of how long the resources will be allocated for. Two aspects would be of interest here: (1) handling (loading/disembarking) and calling time at the ports in the region (2) sailing time between locations. We recommend for further research that the lead-time should be mapped in the region.

Reference List

Books

Ananta A., Nurvidya Arifin E., Suryadinata L., *Emerging Democracy in Indonesia,* ISEAS Publications, Singapore, 2005.

Aspinall E., 'Politics: Indonesia's year of elections and the end of the political transition' in Budy P. Resosudarmo (ed), *The politics and economics of Indonesia's natural resources,* ISEAS Publications, Singapore, 2005.

Chatib Basri M., 'Indonesia's economic transformation: Before and during the Economic crisis' in Aris Anta (ed), *The Indonesian crisis: a human development perspective,* ISEAS Publications, Singapore, 2003.

Chatib Basri M., Van der Eng P., *Business in Indonesia,* ISEAS Publications, Singapore, 2004.

Chong, T., 'Singapore: Globalizing on its own terms' in Daljit Singh & Lorraine C. Salazar (eds), *Southeast Asian Affairs 2006*, ISEAS Publications, Singapore, 2006.

Daniels J. and VanHoose D., *International Monetary and Financial Economics (Third Edition),* South-Western College Publishing, US, 2004.

Gilpin R., *Global Political Economy: Understanding the International Economic Order,* Princeton University Press, US, *2001.*

Simon H.A., *Models of Bounded Rationality,* MIT Press, 1997.

Koopman G., Matthies K., Reszat B., *Oil and the International Economy: Lessons from Two Price Shocks*, Hamburg, Verlag Weltrachiv, 1984.

Krugman P.R. and Obstfeld M., *International Economics: Theory and Policy (Sixth Edition),* Addison Wesley, 2002.

Lumsden, K.R. L., *Fundamentals of logistics*, Compendium, Department of transportation and logistics, 2003.

Mathews V., 'Positioning for 2008' in Daljit Singh & Lorraine C. Salazar (eds), *Southeast Asian Affairs 2006*, ISEAS Publications ,Singapore, 2006.

Merdekawaty, E., *"Bahasa Indonesia" and languages of Indonesia*. UNIBZ - Introduction to Linguistics, Free University of Bozen, 2006.

Morgan, N., Pritchard, A., Pride, R.,: *Destination Branding: creating the unique destination proposition (Second Edition),* Butterworth-Heinemann, 2001.

Mutebi, A. M., 'Thailand's independent agencies under Thaksin relentless gridlock and uncertainty' in Daljit Singh & Lorraine C. Salazar (eds), *Southeast Asian Affairs 2006*, ISEAS Publications ,Singapore, 2006.

Nathan, K.S., 'The challenge of money politics and religious activism' in Daljit Singh & Lorraine C. Salazar (eds), Southeast Asian Affairs 2006, ISEAS Publications ,Singapore, 2006.

Newman P., *The Theory of Exchange*, Prentice-Hall, 1965.

Smith A., *Wealth of Nations,*1776.

Verleger P.K., *Adjusting to Volatile Energy Prices*, Institute for International Economics, US, 1994.

Encyclopedia

Encyclopædia Britannica 2006, *“Airplane",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-64163, viewed on 2 Nov. 2006

Encyclopædia Britannica 2006, *“Cracking",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-64163, viewed on 2 Nov. 2006

Encyclopædia Britannica 2006, *“Kerosene",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-9045165, viewed on 2 Nov. 2006

Encyclopædia Britannica 2006, *“Petroleum Refining",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-64163, viewed on 2 Nov. 2006

Encyclopædia Britannica 2006, *“Reforming",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-64163, viewed on 2 Nov. 2006

Encyclopædia Britannica 2006, *“Vietnam",* available from Encyclopædia Britannica Online at http://search.eb.com.ezproxy.ub.gu.se/eb/article-9112888, viewed on 2 Nov. 2006

SPECIALIZED SOURCES

Personal Communication

Ahmad Dzuhair Hanafiah, Interview with the managing director of Serene Quest Marine, Kuala Lumpur, 25 September, 2006.

Capt Abdul Rahman Mohd, Interview with the Senior Executive, Operations-Support Services Chemical Business, MISC Berhad, Kuala Lumpur, 24 September, 2006.

Capt. Channarong Tungfung, interview with Managing Director of Thaimarine Tanker, Thailand, 22 October, 2006.

Capt. Chanwit Anakkul, interview with Managing Director of Kanchana Marine, Thailand, 22 October, 2006.

Capt. Mak Kwok Thong, Interview with Managing Director, Brostrom Tankers Asia Pte Ltd, Singapore, 4 September, 2006.

Capt. Mark Heah Eng Siang, Interview with Deputy Director (shipping), Maritime and Port Authority of Singapore, Singapore, 5 September, 2006.

Cecilya Malik, Interview with the office manager of ASEAN Centre for Energy, Jakarta, 12 October 2006.

Do Van Ha, Interview with the general manager of International Cooperation Division of Petrovietnam, Hanoi, Vietnam 27 September 2006.

Faiz H. Hussin, Interview with the senior analyst oil markets of PFC Energy, Kuala Lumpur, 24 September, 2006.

Ho Siow Keng, Interview with the Director, Department of Statistics, Kuala Lumper, 25 September, 2006

Jipada Chuengprapa, Interview with the Administration and Finance Expert of Danish Energy Management, Jakarta, 11 October 2006.

Khalid Nazary, Interview with Research Fellow at MIMA, Kuala Lumpur, Malaysia, 25 September, 2006.
Mr Nguyen Xuan Thang, Interview with the communication manager of BP Vietnam, Hanoi, Vietnam 28, September 2006.

Mr. Jonathan Le Feuvre, Interview with Sale and Purchase Manager, Clarkson Asia, Singapore, 15 September, 2006.

Mr. Lee Wei Sheng, Interview with Senior Officer of Economic Development Board Singapore, Singapore, 6 September, 2006.

Mr. Lim Wei Hong, Interview with Manager of International Maritime Centre Division, Maritime and Port Authority of Singapore, Singapore, 5 September, 2006.

Mr. Robert de Souza, Interview with Executive Director of The Logistics Institute-Asia Pacific, Singapore, 5 September, 2006.

Mr. Seri Viriyasakultorn, Interview with Director of Horizon Petroleum Limited, Bangkok, Thailand, 12 October 2006.

Mr. Soh Wei Liang, Interview with Manager of Commercial Project & Planning, Titan Ocean Pte Ltd, Singapore, 8 September, 2006.

Mr. Wong Tack Wai, Interview with Assistant Director of The Logistics Institute-Asia Pacific, Singapore, 6 September, 2006.

Nguyen Thuy Huong, Interview with Director General Issues &Policy Department, Ministry of Planning & Investment Foreign Investment Agency, Hanoi, Vietnam, 25 September 2006.

Olaf Griffioen Meeting with Vice-President Business Development OilTanking, Singapore, 14 August, 2006.

Patrick Tan, Meeting with Sales Manager, OilTanking, Singapore, 14 August, 2006.

Rasidah Bt Sulaiman, Interview with the Knowledge Executive, Corporate Affairs & Business Development Division, PTM Malaysia Energy Centre, Kuala Lumper, 24 September, 2006.

Tan Joo Jin, Meeting with Charterer Brostrom Singapore, Singapore, 15 September, 2006.

Widy Haryono, Interview with the office manager of NAFED, Jakarta, 10 October 2006.

ELECTRONIC MATERIALS

Journal article on electronic databases

.

Asia Monitor: South East Asia Monitor Volume 1, *'China Relation Reinforced',* Jun 2006, Vol. 17, Issue 6, available from Business Source Premier AN 20948986, viewed on 21 November 2006.

Asia Monitor: South East Asia Monitor Volume 1, *'CPP: Unity Not Guaranteed.'* Nov 2005, Vol. 16 Issue 11, available from Business Source Premier AN 18611644, viewed on 20 November 2006.

Asia Monitor: South East Asia Monitor Volume 1, *'FDI inflows continue to disappoint'*, Feb2005, Vol. 16, Issue 2, available from Business Source Premier, viewed on 25 October 2006.

Asia Monitor: South East Asia Monitor Volume 1, *'Oil Boom or Bust?'* Nov 2006, Vol. 17 Issue 11, available from Business Source Premier AN 22758012, viewed on 20 November 2006.

Business Monitor International, *'Oil and Gas Report Indonesia Q2 2006'*, available from Business Monitor International Database, viewed on 10 August 2006.

Business Monitor International, *'Oil and Gas Report Malaysia Q2 2006'*, available from Business Monitor International Database, viewed on 10 August 2006.

Business Monitor International, *'Oil and Gas Report Philippines Q2 2006'*, available from Business Monitor International Database, viewed on 10 August 2006.

Business Monitor International, *'Oil and Gas Report Singapore Q2 2006'*, available from Business Monitor International Database, viewed on 10 August 2006.

Business Monitor International, *'Oil and Gas Report Thailand Q2 2006'*, available from Business Monitor International Database, viewed on 10 August 2006.

Business Monitor International, *'Oil and Gas Report Vietnam Q2 2006'*, available from Business Monitor International Database, viewed on 10 August 2006.

Country Watch, *'Country Review 2006:* Brune*i'*, available from Business Source Premier Database, viewed on 19 August.

Country Watch, *'Country Review 2006: Indonesia',* available from Business Source Premier, viewed on 25 August 2006.

Country Watch, *'Country Review 2006: Malaysia',* available from Business Source Premier, viewed on 25 August 2006.

Country Watch, *'Country Review 2006: Philippines'*, available from Business Source Premier, viewed on 1 November 2006.

Country Watch, *'Country Review 2006: Singapore',* available from Business Source Premier, viewed on 14 August 2006.

Country Watch, *'Country Review 2006: Vietnam'*, available from Business Source Premier Database, viewed on 25 August 2006.

Data monitor, *'Malaysia Country Profile 2006',* available from Business Source Premier, viewed on 25 September 2006.

Data monitor, *'Philippines Country Profile 2006'*, available from Business Source Premier Database, viewed on 25 August 2006.

Data Monitor, *'Vietnam Country Profile 2006'*, available from Business Source Premier Database, viewed on 25 August 2006.

Economist, *'More Unhappy Muslims.'*, Oct 2006, Vol. 381 Issue 8501, available from Business Source Premier AN 22953954, viewed on 22 November 2006.

Energy Forecast Asia & Australia, *'Thailand'*, Dec 2005, available from Business Source Premier AN 20389133, viewed on 22 November 2006.

Euromoney, *'PTT: Confident of Sustained Healthy Growth.'*, Sep 2006, Vol. 37, available from Business Source Premier *AN 22628006*, viewed on 22 November 2006.

Global Insight, *'Global Insight Report: Malaysia (Energy)'*, available from Business Source Premier, viewed on 22 September 2006.

Hyland A., Asia Money, '*From Killing Field to Oil Field'*, Sep 2006, Vol. 17 Issue 8, available from Business Source Premier AN *22846132,* viewed on 21 November 2006.

Kovac and Matt, *Biofuels Turn Up The Heat*., ICIS Chemical Business, 31 July 2006, Vol. 1 Issue 30, available from Business Source Premier *AN 21958013*, viewed on 22 November 2006.

Lloyd's register, *FairPlay*, CD-ROM, 2003, Database.

PRS Group Inc., *'Political Risk Yearbook Indonesia 2005'*, available from Business Source Premier, viewed on 14 November 2006.

Pyun & Chong Soo, *'Roles of the IMF in the Asian Financial Turmoil'*, Multinational Business Review, 1525383X, Fall99, Vol. 7, Issue 2, available from Business Source Premier, viewed on 21 October 2006.

Singapore Risk Summary, *Asia Monitor: South East Asia Monitor Vol.2 (June 2006), Vol. 17 Issue 6*, available from Business Source Premier, viewed on 21 November 2006.

Thailand Business Forecast Report, *'Chapter 1: Political Outlook.'*, 2007 1st Quarter, available from Business Source Premier AN 22915416, viewed on 21 November 2006.

Thailand Business Forecast Report, *'Chapter 2: Economic Outlook.'*, 2007 1st Quarter, available from Business Source Premier AN 22915417, viewed on 22 November 2006.

Thailand Business Forecast Report, *'Chapter 4: Business Environment.'*, 2007 1st Quarter, available from Business Source Premier AN 22915419, viewed on 22 November 2006.

The Economist Intelligence Unit, *'Country Commerce Indonesia 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006.

The Economist Intelligence Unit, *'Country Commerce Malaysia 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006.

The Economist Intelligence Unit, *'Country Commerce Philippines 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006.

The Economist Intelligence Unit, *'Country Commerce Singapore 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006.

The Economist Intelligence Unit, *'Country Commerce Vietnam 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006.

The Economist Intelligence Unit, *'Country Forecast Indonesia May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006.

The Economist Intelligence Unit, *'Country Forecast Malaysia May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006.

The Economist Intelligence Unit, *'Country Forecast Philippines 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006.

The Economist Intelligence Unit, *'Country Forecast Singapore May 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006.

The Economist Intelligence Unit, *'Country Forecast Vietnam 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August.

The Economist Intelligence Unit, *'Country Profile Brunei 2006'*, available from Economist Intelligence Unit Database, viewed on 18 August 2006.

The Economist Intelligence Unit, *'Country Profile Cambodia 2006'*, available from Economist Intelligence Unit Database, viewed on 18 August 2006.

The Economist Intelligence Unit, *'Country Profile Indonesia 2006'*, available from Economist Intelligence Unit Database, viewed on 18 August 2006

The Economist Intelligence Unit, *'Country Profile Malaysia 2006'*, available from Economist Intelligence Unit Database, viewed on 18 August 2006.

The Economist Intelligence Unit, *'Country Profile Philippines 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006.

The Economist Intelligence Unit, *'Country Profile Singapore 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006.

The Economist Intelligence Unit, *'Country Profile Thailand 2006'*, available from Economist Intelligence Unit Database, viewed on 17 August 2006.

The Economist Intelligence Unit, *'Country Profile Vietnam 2006'*, available from Economist Intelligence Unit Database, viewed on 21 August 2006.

The Economist Intelligence Unit, *'World Investment Prospects: The revival of globalisation'*, 4th edn, available from Economist Intelligence Unit Database, viewed on 17 August 2006.

The Economist, 'A Blow to Thai Democracy', *Economist*, 00130613, 4/8/2006, Vol. 378, Issue 8472, available from Business Source Premier, viewed on 27 October 2006.

Journal article on electronic Journal

Abdul Rahman Mohamed, Keat Teong Lee, *'Energy for sustainable development in Malaysia: Energy policy and alternative energy'*, Energy Policy, Vol 35, Issue 4, available from ScienceDirect, viewed on 30 October 2006.

Douglas Sikorski, *'The perspective for privatization in Singapore',* Asian Journal of Public Administration, available from Internet, http//sunzi1.lib.hku.hk/hkjo/view/50/5000300.pdf, viewed on 30 October 2006.

'Worldwide Refineries - Capacities as January 1, 2006', available from *Oil & Gas Journal, December 19, 2005*, viewed on 5 September 2006.

World Wide Web

Agency for Toxic Substances & Disease Registery, U.S. Department of Health and Human Services, available from Internet, http://www.atsdr.cdc.gov/toxprofiles/tp72-c4.pdf, viewed on 5 November 2006.

Aljazeera website, "Indonesia considers leaving Opec", *Aljazeera.net*, Available from Internet, http://english.aljazeera.net/NR/exeres/6DA91AFC-F571-49E7-B459-5DB55AF0F285.htm, viewed on 2 November 2006.

AllBusiness website, available from Internet, http://www.allbusiness.com/mining/oil-gas-extraction-crude-petroleum-natural/752905-1.html, viewed on 2 November 2006.

APEC 2000 Brunei Darussalam, *'Brunei studies prospects for big investments'*, available from Internet, http://www.apec2000.gov.bn/stories/downstream.htm, viewed on 21 November 2006.

APEC Forum website, http://www.apec.org , viewed on 24 September.

ASEAN website, http://www.aseansec.org, viewed on 24 October 2006.

Asia Pacific Energy Research Centre (APERC) , *APEC Energy Overview,* 2005, available from Internet, http://www.ieej.or.jp/aperc/ viewed on 25 August 2006.

Asian Development Bank, *'Asian Development Outlook 2006',* available from Internet, http://www.adb.org, viewed on 31 October 2006.
Asian Development Bank, *"Country Strategy and Program Indonesia 2006-2009"* , available from Internet, http://www.adb.org/Countries, viewed on 29 October 2006.

Asian Development Bank, *'Country Strategy and Program Malaysia 2006-2009'* , available from Internet, http://www.adb.org/Countries/, viewed on 29 October 2006.

Asian Focus Group website, http://www.aseanfocus.com, viewed on 28 October 2006.

AsiaPulse website, http://www.asiapulse.com, viewed on 14 November 2006.

Backman M., '*Smutocracy is a facade for democracy'*, The Age (May 17, 2006), available from Internet, http://www.theage.com.au/news/business/smutocracy-is-a-facade-for-democracy/2006/05/16/1147545327046.html, viewed on 20 November 2006.

BBC News, '*Singapore head starts second term',* September 1, 2005, available from Internet, http://news.bbc.co.uk/2/hi/asia-pacific/4204752.stm, viewed on 20 November 2006.

Blagov S., “Russia plays nuke card with Vietnam”, Asia Times Online, available from Internet, http://www.atimes.com, viewed on 10 September 2006.

Brunei Government website, http://www.brunei.gov.bn, viewed on 25 October 2006.

Brunei Shell Marketing Company website, http://www.bsm.com.bn, viewed on 26 October 2006.

BusinessWeek Online website, “*Indonesia: Oil Smugglers Buy Low and Sell High”* available from Internet, http://www.businessweek.com/magazine/content/05_38/b3951078.htm viewed on 12 October 2006.

Cambodia Inter-Censal Population Survey (CIPS), *2004 Labour Force and Employment*, available from Internet, http://nis.gov.kh/SURVEYS/depth-cips04/lfe-cips/summary_lfe.htm, viewed on 26 October 2006.

Chevron Website, http://www.chevron.com/news/press/2003/2003-09-23.asp, viewed on 12 November 2006.

CIA World Fact Book website, https://www.cia.gov/cia/publications/factbook/geos/id.html, viewed on 25 October 2006.

Department of Statistics Malaysia, http://www.statistics.gov.my, viewed on 25 October 2006.

Doing Business, “*Doing Business 2007 - How to Reform”,* available from Internet*,* http://www.doingbusiness.org/main/country-data-summaries.aspx, viewed on 31 October 2006.

Economist Website, http://www.economist.com, viewed on 18 November 2006.

EDB Singapore, '*Singapore Is Dynamic Because Of Strong Manufacturing Ties',* available from Internet, http://www.sedb.com/edb/sg/en_uk/index/news_room/reports/singapore_is_dynamic.html, viewed on 23 November 2006.

Embassy of the United States of America in Jakarta, *Petroleum Report Indonesia 2005 – 2006*, available from Internet, http://www.usembassyjakarta.org, viewed on 12 September 2006.

European Commission website, available from Internet, http://ec.europa.eu/comm/external_relations/cambodia/intro/index.htm, viewed on 17 August 2006.

Giang V., "Port flags bid for private investment",Vietnam Investment Review, available from Internet, www.vir.com.vn, viewed on 10 October 2006.

Guerin B., "Tigers count the cost of easing fuel subsidies", *Asia Times Online*, 10 March 2005, available from http://www.atimes.com, viewed on 25 October 2006.

H.E. Ong Keng Yong, 'Towards an ASEAN Single Market and Single Investment Destination'*, at Boao Forum for Asia Annual Conference 2003*, available from ASEAN Secretary website, http://www.aseansec.org/15365.htm, viewed on 21 November 2006.

Herald Tribune website, The Associated Press, *'Cambodia, Vietnam begin formal border demarcation'*, 27 September 2006, available from Internet, http://www.iht.com/articles/ap/2006/09/27/asia/AS_GEN_Cambodia_Vietnam_Border.php, viewed on 2 October 2006.

Human Rights Watch website, http://www.hrw.org/worldreport99/asia/cambodia.html, viewed on 2 September 2006.

Indonesia's Investment Coordination Board website, http://www.bkpm.go.id, viewed on 14 November 2006.

Indonesian Central Statistics Bureau, *Tingkat Kemiskinan di Indonesia Tahun 2005-2006*, Press release, available from Internet, http://www.bps.go.id, viewed on 26 September 2006.

Institute of energy economics, Japan (IEEJ); Asia Pacific energy research centre (APERC), *APEC downstream oil market study* 2005, Japan, available from Internet, http://www.ieej.or.jp/aperc/, viewed on 25 August 2006.

International energy agency (IEA), *Non-OECD Country Energy Statistics,* available from Internet, http://www.iea.org/, viewed on 28 August 2006.

Jin N.,K., *Coping with the Asian Financial crisis: The Singapore Experience*, available from Internet, http://www.iseas.edu.sg/, viewed on 29 October 2006.

Kazmin A. and Daniel C., "Vietnam rolls out a red carpet for Bush", Financial Times Website, available from Internet, http://www.ft.com, viewed on 17 November 2006.

Library of Congress – Federal Research Division, *Country Profile Indonesia, July 2006*, available from Internet, http://lcweb2.loc.gov/frd/cs/profiles/, viewed on October 30, 2006.

Library of Congress – Federal Research Division, *Country Profile Philippines, July 2006*, available from Internet, http://lcweb2.loc.gov/frd/cs/profiles/, viewed on 30 October 2006.

Library of Congress – Federal Research Division, *Country Profile Singapore, July 2006* available from Internet, http://lcweb2.loc.gov/frd/cs/profiles/, viewed on 30 October 2006.

Malaysia Economic Unit Prime Minister Department website, *'Ninth Malaysian Plan 2006-2010, Putrajaya, 2006'* , available from Internet , http://www.epu.jpm.my, viewed on 17 November 2006.

Ministry of Trade and Industry of Singapore, *Economic Survey of Singapore 2001*, available from Internet, http://www.mti.gov.sg/, viewed on 29 October 2006.

National Library of Medicine: ChemIDplus Advanced Record, '*Kerosene RD: 8008-20-6',* available from Internet, http://chem.sis.nlm.nih.gov/chemidplus/jsp/common/ChemInfo.jsp?type=note, viewed on 2 November 2006.

Ngiam Kee Jin, *Coping with the Asian Financial crisis: The Singapore Experience*, available from Internet, http://www.iseas.edu.sg/, viewed on 29 October 2006.

NGV website, http://www.ngv.org/ngv/ngvorg01.nsf/bytitle/Glossary.htm, viewed on 27 October 2006.

Office of the Prime Minister of Malaysia website, "Vision 2020", available from Internet, http://www.pmo.gov.my/website/webdb.nsf/vfs_utama1?openframeset, viewed on 16 November 2006.

Ong Eng Tong, Singapore Oil Industry, April 2006, available from Internet, www.iseas.edu.sg, viewed on 5 September 2006.

OPEC website, http://www.opec.org/, viewed on 31 October 2006.

PDP Australia Pty Ltd/Meyrick and Associates, '*Promoting Efficient and Competitive Intra-ASEAN Shipping Services' – Indonesia Country Report,* (REPSF Project No. 04/001), available from Internet, http://www.aseansec.org, viewed on 17 August 2006.

Pertamina website, http://www.pertamina.com, viewed on 13 December 2006.

Petron website, www1.petron.com, viewed on 27 October 2006.

PFC Energy, "Downstream Monitoring Service, Vietnam Country Profile", PFC Energy, available from Internet, http://www.pfcenergy.com, viewed on 26 September 2006.

Philippines Energy, http://www.wn.com/philippinesenergy, viewed on 23 October 2006.

Philippines government website, http://www.doe.gov.ph/down_petro/default.htm,viewed on 14 October 2006.

Platts website*,* Anita Nugraha*, 'Pertamina to boost capacity at existing refineries 20% by 2012'*, 23 August 2006, available from Internet, http://www.platts.com/, viewed on 21 August 2006.

PS21 website, http://www.cutredtape.gov.sg/, viewed on 20 November 2006.

PTT Co., Ltd, 'Thailand's Petroleum Balance 2002', Energy Fact, Fact & Figures, available from Internet, http://www.pttplc.com/en/document/energy_stat/45/p15-25.pdf, viewed on 26 October 2006

Pui Kwan-Tse, *The mineral industry in Singapore (2001),* available from Internet, http://minerals.usgs.gov/minerals/pubs/country/2001/snmyb01.pdf, viewed on 10 November 2006.

Puri S., ‘Cambodia’s WTO Accession: Risks and Benefits’, World Bank Institute The World Bank, available on the internet, http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/CAMBODIAEXTN/0,,contentMDK:20251732~pagePK:141137~piPK:217854~theSitePK:293856,00.html, viewed on 27 October 2006.

Renewable Energy Sources website, http://www.doe.gov.ph/NRE/default.htm, viewed on 23 October 2006.

Reuter, ‘World Court hear Malaysia/Singapore over Isle Dispute’, *New Zealand Herald, November 17, 2006*, available from Internet, http://subs.nzherald.co.nz/section/story.cfm?c_id=2&objectid=10411240, viewed on 21 November 2006.

Shell Aviation website, available from Internet, http://www.shell.com/home/Framework?siteId=aviation-en&FC2=&FC3=/aviation-en/html/iwgen/productservice/aviationfuels.html, viewed on 5 November 2006.

Shell Philippines website, http://www.shell.com/home/Framework?siteId=ph-en, viewed on 23 October 2006.

Singapore People’s Party website, http://www.spp.org.sg/, viewed on 20 November 2006.

Siphana S., ‘Legal and Judicial Reform Strategy for Cambodia’, Secretary of State for Commerce Member, Phnom Penh, 2001, available from Internet, http://www.moc.gov.kh/laws_regulation/legal_reform_strategy-fnal_draft.htm, viewed on 17 October 2006.

Starlims, ‘Legacy LIMS replaced at Thai legacy’, available from Internet, http://www.starlims.com/ARC.html, viewed on 26 October 2006.

Transparency International, ‘Corruption Perception Index 2005’, available from Internet, http://ww1.transparency.org/cpi/2005/cpi2005.sources.en.html#cpi, viewed on 31 October 2006.

UN statistics website, http://www.unstats.un.org/, viewed on 28 October 2006.

United Nations Commodity Trade Statistics Database, ‘Comtrade Explorer-Snapshot: Thailand’, 2005, available from Internet, http://unstats.un.org/unsd/comtrade/ce/ceSnapshot.aspx?r=764, viewed on 23 October 2006.

US Department of Labor, Occupational Safety and Health Administration website, available from Intrenet, http://www.osha.gov/dts/osta/otm/otm_iv/otm_iv_2.html#2, viewed on 8 November 2006.

Vietnam Ministry of Foreign Affairs, *‘VietNam-Cambodia relations featured in workshop’*, available from Internet, http://www.mofa.gov.vn/en/nr040807104143/nr040807105001/ns061004094025, viewed on 25 October 2006.

World Bank website, ‘Energy and Development Report 200’, available from Internet, http://www.worldbank.org/html/fpd/esmap/energy_report2000/, viewed on 17 October 2006.

World Health Organization website, http://www.who.int/csr/sars/en/, viewed on 11 November 2006.

World Trade Organisation (WTO), *Understanding WTO: Member list*, available from Internet, http://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm, viewed on 26 October 2006.

Wu J., *'The mineral industry of Malaysia'*, available from Internet, http://minerals.usgs.gov/minerals/pubs/country/1995/9318095.pdf, viewed on 17 August 2006.

Xueying L., '*PAP wants 'hip, happening' image to click with the young*', The Straits Times (July 27, 2006), available from Internet, http://straitstimes.asiaone.com/, viewed on 20 November 2006.

Appendix

For reasons of confidentiality and sensitivity, we decided to not openly publish the appendices in this online version of the report. In order to get the remaining and crucial underlying data, you can contact us.

Michiel Franzen
michielf@hotmail.com
+31647650910 / +31725640529

Kornnarong Tungfung
kornnarong@mac.com
+66859066332

Ioannis Basinos
giannis_bas@hotmail.com

Christos Divanis
cdivanis@hotmail.com
+306936714053