JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

DIRECTORATE GENERAL OF CUSTOMS & EXCISE
MINISTRY OF FINANCE
REPUBLIC OF INDONESIA

THE STUDY

OF

IMPROVEMENT OF CUSTOMS SYSTEM

IN

INDONESIA

FINAL REPORT

VOLUME V

ECONOMIC AND FINANCIAL ANALYSIS

MARCH, 1999

NTT DATA CORPORATION

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Final Report

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CHAPTER 1 Establishment of Socio-economic Framework

1.1 Performance of Indonesian Economy until 1996

Indonesia has enjoyed a high economic growth since 1986 as a result of its efforts to reform economic structure since 1983 in order to get rid of heavy dependence on oil exports.

1.1.1 Economic situation

As a result of aggressive financial deregulation in 1993, Indonesia enjoyed improved economic growth due to recovered domestic demand and increased capital investment. Its target growth rates in the sixth Five-year Development Plan were fulfilled: 7.5% in 1994, 8.2% in 1995 and 7.8% in 1996.

The contribution to GDP of the manufacturing sector exceeded that of the agriculture sector for the first time in 1991, 20.0% and 18.4%, respectively. In 1996, contribution of the manufacturing sector increased to 24.6%, while contribution of the agricultural sector decreased to 15.2%. Those numbers indicate that although the agricultural sector continued developing, the manufacturing sector developed more rapidly than the agriculture sector. Moreover, contribution of oil-and-gas exports to GDP, which was more than 20% in early 1980s, fell to 13% in 1992 as a result of an extensive effort to export non oil-and-gas products. To support export-oriented industries, the Indonesian government launched the following measures of deregulation in June 1996:

- Provision for excise reduction of 1,497 products,

- Reduction of products previously prohibited to import, and

- Simplification of export/import procedures.

In addition, the government announced the provision of corporate income tax exemptions called the "tax holiday" for particular industries. The promotion of free trade and deregulation continuously became an important issue. The inflation rate of consumer price, which was at 10.2% in 1993, declined to 6.7% in 1996.

1.1.2 Population and employment

In the latest projection, the population of Indonesia was estimated to increase from 195 million in 1995 to 210 million in 2000, an annual growth rate of 1.6%.

Fifty nine percent of the population or 115 million people, were concentrated in Java island in 1995. Java Island covers only 7% of the total area of Indonesia, which shows a very high population density of 1,474 people per square km. Moreover, the proportion of urban and rural population, which was 36% and 64% in 1995, is projected to be 41% and 59% in 2000, since the urbanization flow is predicted to continue.

According to a survey in 1995, employment in the primary, secondary and tertiary industry was 43.9%, 18.2% and 37.8% respectively, totaling 80 million work forces. However, the employment rate was high in the informal work with less than 35 working hours, which were not included in the formal statistics. Unemployment rate was as low as 2% for a long time.

1.1.3 Trading

1.1.3.1 Development of Indonesia's foreign trade in 1988-1996

Table 1.1.3.1-1: Value of Indonesia's Foreign Trade in 1988-1996

(US$ billion)

Year	Including Oil and Gas*)		Excluding Oil and Gas*)	
	Exports	Imports	Exports	Imports
1988	19.2	13.2	11.5	12.3
1989	22.2	16.4	13.5	15.2
1990	25.7	21.8	14.6	19.9
1991	29.1	25.9	18.2	23.6
1992	34.0	27.3	23.3	25.2
1993	36.8	28.3	27.1	26.2
1994	40.1	32.0	30.4	29.6
1995	45.4	40.6	35.0	37.7
1996	49.8	42.9	38.1	39.3

Note: *) Including other gases.

Table 1.1.3.1-1 shows the value of Indonesia's foreign trade in 1988-1996. In 1996, Indonesia's imports increased by 5.66% over the previous year to reach US$ 42.9 billion. This stemmed from the fact that imports of oil products rose by 23.52% US$ 3.6 billion and those of non-oil products increased by 4.28% to US$ 39.3 billion. Meanwhile, exports from Indonesia increased by 9.68% to US$ 49.8 billion. Exports of oil products increased by

12.02% to US$ 11.7 billion and exports of non-oil products increased by 8.98% to US$ 38.1 billion.

The share of non-oil product exports decreased by 0.49% over the previous year to 76.47% in 1996. Moreover, the import portion decreased by 1.22% to 91.62%. Although its portion declined, it should be noted that non-oil products continued to be the main contributor to Indonesia's foreign trade.

For the last five years, exports from Indonesia grew at an average rate of 11.36% per annum, higher than the increase of 0.38% in its imports. The increase in exports resulted from the increase in exports of both oil and non-oil products, up 16.03% and up 1.74% per annum, respectively. The increase in imports resulted from the increase in imports of both oil and non-oil products by 9.94% and 11.12%, respectively.

1.1.3.2 Growth of Indonesian foreign trade with major trade partner countries in 1985-1996

Japan, USA, Singapore, Republic of Korea, Germany, Australia, Taiwan, and the People's Republic of China were eight major trading partners of Indonesia in 1996. The trade between Indonesia and those eight economies amounted to US$ 61.5 billion or 66.35% of Indonesia's total trade. Japan remained the largest trading partner with a value of US$ 21.4 billion or with a share of 23.06%. USA came in the second place with a value of US$ 11.9 billion (12.78%). Other countries are Singapore (US$ 7.4 billion, 8.02%), Republic of Korea (US$ 5.7 billion, 6.14%), Germany (US$ 4.5 billion, 4.84%), Australia (US$ 3.7 billion, 4.03%), the People's Republic of China (US$ 3.7 billion, 3.94%) and Taiwan (US$ 3.3 billion, 3.53%), respectively. Indonesia's exports to these eight major trading economies increased by 9.01% to US$ 33.9 billion compared with the previous year. The total exports to the eight economies were 68.02%, compared with 68.43% in the preceding year.

Japan remained the largest buyer of Indonesia's exports with a share of 25.87%, compared with 26.06% in the preceding year (decreased by 0.19%). USA came in the second place with a share of 13.64% (decreased by 0.28%). Others are Singapore with 9.16% (increased by 0.87%), Republic of Korea with 6.59% (increased by 0.17%), the People's Republic of China with 4.13% (increased by 0.30%), Taiwan with 3.23% (decreased by 0.62%), and Germany with 2.99% (decreased by 0.05%).

1.1.3.3 Import value from major countries/groups and its contribution to total import in 1985-1996

In 1996, the largest portion of Indonesia's imports up to 1995 originated from Japan, namely 19.81% or a decrease of 2.87%, compared with 22.68% in the previous year. Imports from EU ranked second with the share of 21.51% or a decrease of 1.39%, compared with the preceding year. On the other hand, the share of imports from USA and ASEAN countries increased from 11.71% to 11.79% and from 9.73% to 11.38%, respectively. During 1985-1996, Indonesia's imports from Japan was the largest in 1986 (29.18%), those from USA in 1985 (16.77%), those from ASEAN countries in 1996 (11.38%), and those from European Community countries in 1993 (23.48%).

1.1.3.4 Import by goods and its contribution to total import in 1985-1996

Table 1.1.3.4-1 shows imports by goods and its contributions to total imports from 1985 to 1996. In terms of goods categories, the composition of imports in 1996 was similar to that in the preceding years: raw materials ranked first and grew at an average rate of 72.86% per annum during the period from 1985 to 1996. The second rank was still held by imports of capital goods with a share of 22.78%, while the share of consumer goods was 4.36%.

In 1996, both shares of consumer and capital goods increased from 5.79% to 6.54% and from 21.39% to 22.48%, respectively. The share of raw materials, however, decreased from 72.82% to 70.98%.

Table 1.1.3.4-1: Import by Goods and Contributions to Total Import in 1985-1996

Year	Import Value (US$ billion)			
	Consumer Goods	Raw Materials	Capital Goods	Total
1985	0.38	8.16	1.72	10.26
1986	0.45	8.36	1.91	10.72
1987	0.46	9.47	2.44	12.37
1988	0.47	10.22	2.56	13.25
1989	0.69	11.91	3.77	16.36
1990	0.88	14.89	6.07	21.87
1991	0.96	17.23	7.68	25.87
1992	1.21	18.70	7.37	27.28
1993	1.15	20.03	7.15	28.33
1994	1.43	23.13	7.42	31.98
1995	2.35	29.59	8.69	40.63
1996	2.81	30.47	9.65	42.93

1.1.3.5 Trade balance

After the tremendous increases in the trade surplus during 1992/93, the increase in imports tended to slow down, but it increased from US$ 4.76 billion in 1995 to US$ 6.94 billion in 1996. Exports of electronic goods and processed foods were increasing, but exports of labor-intensive products such as plywood and textile were decreasing.

1.1.4 Direct investment

Upon the implementation of the deregulation package in 1994, there were tremendous increases of foreign direct investment during 1994/95. However, the investments in 1996 were US$ 29.9 billion, a decrease of 25%, compared with the previous year, for the first time in three years. Concerning direct investments by categories, in 1996, the investments in chemicals, electronics, gas and water supply, machinery and metal work were on the top list. By investing country, Japanese small and medium-sized companies, such as automotive parts companies, recorded a noticeable expansion, doubling that of the previous year. Other countries in the top list were Australia, U.K. and Singapore.

1.1.5 National balance

Previously, with a large amount of oil and gas exports, Indonesia had a surplus balance. However, the current account balance was a deficit due mainly to a deficit in the service balance stemming from a deficit in transportation and interest payment of foreign debt.

When there was a tremendous deficit in the current account balance, it was feared that the accumulated debt would be also tremendous. In December 1997, the government and private sector's debt totaled US$ 140 billion.

The Indonesian government has conducted a planned debt payment, but since the debt of the private sector increased drastically, the percentage of debt in the private sector to total debt is also high. If the percentage of private sector's debt, which usually has a higher interest rate compared with public sector, becomes higher, then the total interest will be heavier.

1.2 Impacts of Economic Crisis after 1997

1.2.1 Emergence and expansion of currency crisis

In July 1997, the financial crisis erupted in Thailand and the plummeted value of the Thai currency spread to the Philippines, Malaysia and Indonesia. The shock hit Hong Kong in October and South Korea in November 1997.

In Indonesia, the rupiah's value was 2,432 against the US$ at the end of June 1997, which remained relatively stable up to September 1997. However, as many private companies rushed to purchase large amounts of foreign currencies for their debts due at the end of September, the rupiah lost its value at an accelerated speed.

In October, the Indonesian government was forced to ask IMF for financial assistance in a desperate attempt to regain confidence in its currency and financial system. In exchange for the request totaling $40 billion, the government proposed some measures. Those measures are 1) bolstering of financial institutions through promotion of state-owned banks and other measures, 2) budget tightening by means of cutbacks in the government's investment in state enterprises, 3) improvement of financial and foreign exchange policies and 4) deregulation including the lowering of tariff rates.

In 1998, the situation aggravated again when the 1998 government budget announced on January 6 was criticized by IMF as an expansion, and the rupiah dropped below 10,000 against the US$. The government again secured financial support from IMF by accepting additional conditions.

Then the rupiah recovered to a range between 7,000 and 10,000 partly due to the reelection of President Soeharto to his seventh term in March 1998 and the re-agreement with IMF on economic reforms. It plummeted again due to the riots on May, which were triggered by the price hikes in energy and public utilities. It continues to stagger after the resignation of President Soeharto and the inauguration of his successor, President Habibie.

1.2.2 Impacts of economic crisis

As Indonesia accepted international financial support led by IMF, it will likely face a significant slowdown in economic growth under deflationary pressure to be created by fiscal and financial austerity measures, one of the conditions of IMF loans. While these measures will help promote the country's structural reforms in the long run, they surely have negative impacts on the already-troubled economy in the short run.

In fact, the average short-term interest rate of bank loans surged from approximately 21% at the end of June 1997 to 40% in February 1998 (and then went up to 60% at maximum). The inflation rate of consumer prices soared from 5.1% in June 1997 to 32% in February 1998.

The increase of unemployment rate is also becoming a serious problem. Postponed construction projects are said to have caused around 2 million workers to lose their jobs in Jakarta. According to the central bank, 2.5 million people newly enter the labor market each year in Indonesia and economic growth at an annual 7% level is required to absorb such inflow.

IMF adjusted its forecast from zero growth in early 1998 to a negative 5 percent in May 1998. This means that private companies will deteriorate further and cut their work force. Increased unemployment will raise a risk of stirring up social unrest and instability.

The grave economic outlook coupled with inflation, loss of job and high interest rates of loan have cooled down the consumer demand quickly. Automobile sales are forecast to drop from approximately 380,000 units in 1997 to a range between 50,000 and 60,000 in 1998. Household appliance manufacturers are facing a slump in product sales, while facing difficulty in raising prices to compensate for increased import prices of materials, components and parts.

Sluggish consumer spending and lofty interest rates force businesses to cut back their capital spending including equipment purchase. Public projects are also on the decline. In September 1997, infrastructure projects totaling $38 billion were postponed or suspended. Many real estate development projects have been pigeonholed due to high capital costs and the shortage of funds.

Meanwhile, exports also lost momentum to one-digit growth in the second half of 1997, compared with more than 10% in the first half. The devaluation of the rupiah does not give buoyancy to the sector partly because export manufacturers are unable to finance their intended purchase of machinery, parts and components under the credit crunch in the country that is losing its creditworthiness in the international financial market.

The government strives to cope with massive external debts in the private sector, the largest problem that the Indonesian economy faces (amounting to $72.4 billion as of March 1998, estimated by the government). Indonesia has agreed on the following relief measures through the negotiation in Frankfurt with the delegates of Japanese, American and European banks: 1) to convert short-term loans to mid-term ones; and 2) to give grace or defer repayment by private companies for eight years. Also, the central bank decided to establish and operate the Indonesian Debt Restructuring Agency (INDRA) that will assume exchange rate risks related to debt repayment. INDRA started its activity in August 1998.

1.2.3 Causes for currency and financial crisis

The crisis wreaking havoc on the country and economy seems to stem from structural problems that are commonly seen in the East Asian economies:

1) Uncontrolled inflow of private short-term funds and inability of financial system to monitor,

2) Overvaluation of local currency due to U.S. dollar-linked (pegged) foreign exchange system, and

3) Vulnerable industrial structure.

1) Uncontrolled inflow of private short-term funds and inability of financial system to monitor

East Asian countries have been proceeding with liberalization of their financial systems as an engine for high economic growth by filling a gap between domestic saving and investment. In the process, the private sector has built up the system to secure overseas funds.

The system has encouraged the inflow of short-term funds, resulting in the rapid growth of external debt by the private sector. On the other hand, the financial system was unable to effectively monitor and control capital inflow from overseas (especially hot money). Efforts to attract foreign capital did not go side by side with the development of the financial system. An example is seen in bloated real estate investment, which was driven by financial institutions that obtained large amounts of funds from overseas but did not have the ability to evaluate feasibility of development projects. As a result, economic bubbles were created.

Another problem related to the financial system was the absence of proper risk management. While the financial system increasingly relied on foreign capital as financial source, there were not the markets of futures and other facilities to hedge against a foreign exchange risk. This motivated the government to control the risk by linking the local currency with the U.S. dollar. However, it created sizable bad loans by excess investment in the real estate market and shook the financial system and its stability.

2) Overvaluation of local currency due to U.S. dollar-linked foreign exchange system

The dollar-pegged foreign exchange system has attracted foreign capital in an undesirable way. East Asian countries have been linking their currencies with the U.S. dollar, a variant of the fixed exchange rate system. This allows foreign investors to divert their funds to these countries, practically free from the foreign exchange risk. As a result, short-term funds flew in, including those looking for arbitrage trade to earn from differences in interest rates among currencies. The East Asian governments intended to stabilize their currencies against the

U.S. dollar, but as the depreciation of the yen against the dollar adversely affected their macroeconomic conditions.

The devaluation of Chinese yuan in 1994 created overvaluation of East Asian currencies that were pegged to the strong US dollar. Since 1996, these countries have lost competitiveness in the export market, and coupled with recession in the semiconductor market, their current account in balance of payments deteriorated. However, they failed to take proper policy to correct overvaluation and insisted on maintaining the dollar-pegged exchange rate system, making them susceptible to the speculative attack of hot monies.

After Indonesia was forced to move to the floating system, the rupiah depreciated rapidly to expand external debts.

3) Vulnerable industrial structure

Finally, high economic growth in the countries entailed the following structural problems:

- Undeveloped supporting industries

- Shortage of human resources including engineers

- Lagged development of social and economic infrastructure

Despite these problems, foreign capital and technology bolstered high economic growth. The inflow of short-term funds caused overvaluation of assets while economic expansion stimulated consumer demand and boosted imports. Efforts to adjust to the fluctuation of foreign exchange rates were virtually abandoned under the dollar-pegged system. Meanwhile, the development of infrastructure and human resources was lagged behind.

1.2.4 Road to economic recovery

At present, the Indonesian government continues to pursue two conflicting goals; of structural reforms and stability of people's life. In particular, structural reforms of the economic system are essential if the country is to regain confidence in the international community. To this end, efforts must be proceeded by focusing on the following goals that need to be achieved steadfastly in a balanced manner:

1) To build healthy economy by controlling investments to the level of domestic savings, reducing the current account deficit and curtailing external debts.

2) To stabilize the financial system by early consolidation of financial institutions and write-off of non-performing loans, while establishing the system to protect depositors, thereby to reestablish the financial intermediary function as early as possible.

3) To create good investment climate by making efforts to develop competitive industry and high productivity for medium- and long-term perspectives, including human resource development.

To improve the current account in the balance of payments, it is imperative to control investment in parity with domestic savings. Such efforts entail cancellation and postponement of large projects. On the other hand, there is strong public demand for construction of infrastructure and some projects are indispensable in attracting new investment. Thus, it is important to set priority in a fair and justifiable manner.

Another concern is an anticipated decline in saving rate due to the increasingly unfavorable employment situation. It is, therefore, important to encourage savings by providing diverse systems, such as pension scheme and insurance, which allow people to save money according to their income level and stage of life.

To improve the current account in the medium and long term, trade balance and industrial policy must be adjusted to increase local procurement of capital goods, parts and components that are highly dependent on imports. In this sense, the fostering of supporting industries is called for from the viewpoint of strengthening the technological base and establishing the stable labor market.

The recovery of the financial intermediary function implies that the financial market must play its intrinsic roles, i.e., check-and-balance capability to alert and control the economy when overheated, and the ability to allocate resources in an optimum way.

The normalization of the financial system will accompany relentless selection of financial institutions whether they are able to survive or go out of business. In the process, depositors must be protected to avoid the total collapse of the financial system.

Education and stabilization of the labor market require particular attention as a firm basis of economic recovery. It is important to develop human resources that meet demand for advanced skills through the efforts to provide stable and high-quality workers, including the development of infrastructure, the support for corporate education and the training program.

1.3 Establishment of Socio-economic Framework until Year 2003

1.3.1 Establishment of two scenarios

The following items have been estimated in order to forecast the volume of traffic to the year of 2003.

- Population and employment
- Real GDP growth rate
- Composition of industry
- Export/import value
- International trade balance

Two types of forecasts are made: "Higher Growth Scenario Case (hereinafter referred to as H Case)" and "Lower Growth Scenario Case (hereinafter referred to as L Case)." In the "L Case" scenario, a lower number is used in estimating Indonesian economic development, where the monetary crisis continues for some time before recovering. In this scenario, the economic growth rate in 1998 is close to that of the forecast announced by Central Bureau of Statistics (BPS) in July 1998. On the other hand, in the "H Case", it is projected that the various policies are effectively implemented in closer cooperation with IMF and consequently Indonesian economic development can be implemented more smoothly than in the "L Case." Hence, Indonesian economy will recover rapidly to continue the economic growth and reach the 6% level in the long-term Development Plan in 2003. The advice from economic researchers at the University of Indonesia is considered in the projections.

1.3.2 Projection figures

The details of the "H Case" and the "L Case" are shown in Table 1.3.2.2-1 and Table 1.3.2.2-2, and a summary of both cases is shown in Table 1.3.2.3-1. The projection is made on the basis of the data obtained in the first and third survey in Indonesia. The projections are as follows:

1.3.2.1   Population and employment

Average population growth rate from 1995 to 2000 is set at 1.6%. However, the average annual growth rate from 1998 to 2003 is set at 1.43% since it tends to decline from year to year.

According to the estimates by the Labor Ministry, the total number of unemployment is expected to reach 20 million before the end of 1998.

In the analysis, average employment growth rate during a period from 1998 to 2003 is set at 2.2% because it is projected that the number of employment is increased as the result of economic recovery after 2000.

1.3.2.2 Real GDP growth rate and structure of industry

Categories of industry in this analysis are as follows:

- Primary industry   : agriculture, forestry and fishery.

- Secondary industry   : mining, electronics, gas, water supply and construction

- Tertiary industry   : services.

The real GDP growth rate in 1997 was 4.8% year on year, and the respective growth rate was 0.6% in the primary industry, 5.6% in the secondary industry and 5.1% in the tertiary industry.

Then, in BPS's announcement, the real GDP growth rate fell by 12.2% year on year in the first half of 1998, and the respective growth rate was 0.3% in the primary industry, -16.2% in the secondary industry and -12.9% in the tertiary industry. The major losers during the period were manufacturing, construction, trade, hotel & communication, and financial services.

According to the forecast by BPS, the real GDP growth rate is expected to fall by 13.1% in full year.

Under such circumstances, the following real GDP growth rates toward the year 2003 are forecast in the analysis.

Table 1.3.2.2-1: Details of Higher Growth Scenario Case

	1996	1997	1998	1999	2000	2001	2002	2003
1. Population								
Growth rate (%)	—	1.60	1.55	1.50	1.45	1.43	1.40	1.37
Population (mil.)	197.90	201.07	204.18	207.25	210.25	213.26	216.24	219.21
2. Employment								
Growth rate (%)	—	2.40	-16.00	0.00	2.00	2.50	3.00	3.50
Employment (mil.)	82.10	84.07	70.62	70.62	72.03	73.83	76.05	78.71
3. GDP								
Real growth rate	7.80	4.81	-12.00	1.50	4.00	5.00	5.50	6.00
Sectoral output (%)								
Agriculture	1.90	1.92	1.00	2.10	2.20	2.30	2.40	2.50
Industry	10.50	5.59	-12.00	6.50	8.00	8.50	9.00	9.50
Services	7.80	5.06	-16.58	-4.17	0.00	1.70	2.09	2.45
GDP (Rp. trillion)								
Agriculture	62.94	64.15	64.79	66.15	67.61	69.16	70.82	72.59
Industry	177.34	187.25	164.78	175.49	189.53	205.64	224.15	245.45
Services	173.49	182.27	152.06	145.71	145.71	148.19	151.29	155.00
GDP total	413.77	433.67	381.63	387.36	402.85	422.99	446.26	473.03
4. Balance of payment (US$ billion)								
Exports	52.04	53.44	49.76	50.51	52.53	55.15	58.19	61.68
Imports	-45.82	-41.68	-36.68	-37.23	-38.72	-40.65	-42.89	-45.46
Services	-14.29	-13.29	-14.00	-14.00	-15.00	-15.00	-16.00	-17.00
Current balance	-8.07	-1.53	-0.92	-0.72	-1.19	-0.50	-0.70	-0.78
Capital balance	12.67	12.00	13.00	14.00	15.00	16.00	17.00	18.00
Balance of payment	4.60	10.47	12.08	13.28	13.81	15.50	16.30	17.22

Note: GDP at 1993 constant prices.
Sources are BPS and University of Indonesia.

Table 1.3.2.2-2: Details of Lower Growth Scenario Case

	1996	1997	1998	1999	2000	2001	2002	2003
1. Population								
Growth rate (%)	—	1.60	1.55	1.50	1.45	1.43	1.40	1.37
Population (mil.)	197.90	201.07	204.18	207.25	210.25	213.26	216.24	219.21
2. Employment								
Growth rate (%)	—	2.40	-16.00	0.00	2.00	2.50	3.00	3.50
Employment (mil.)	82.10	84.07	70.62	70.62	72.03	73.83	76.05	78.71
3. GDP								
Real growth rate	7.80	4.81	-15.00	1.00	2.50	4.00	4.50	5.50
Sectoral output (%)								
Agriculture	1.90	1.92	0.30	1.80	2.00	2.10	2.20	2.30
Industry	10.50	5.59	-16.20	5.00	7.50	8.00	8.50	9.00
Services	7.80	5.06	-19.15	-3.61	-3.07	-0.22	0.07	1.84
GDP (Rp. trillion)								
Agriculture	62.94	64.15	64.34	65.50	66.81	68.21	69.71	71.32
Industry	177.34	187.25	156.92	164.76	177.12	191.29	207.55	226.23
Services	173.49	182.27	147.36	142.04	137.68	137.38	137.48	140.00
GDP total	413.77	433.67	368.62	372.31	381.62	396.88	414.74	437.55
4. Balance of payment (US$ billion)								
Exports	52.04	53.44	48.45	48.93	50.16	52.16	54.51	57.51
Imports	-45.82	-41.68	-35.43	-35.78	-36.68	-38.15	-39.86	-42.06
Services	-14.29	-13.29	-14.00	-14.00	-15.00	-15.00	-16.00	-17.00
Current balance	-8.07	-1.53	-0.98	-0.85	-1.52	-0.99	-1.35	-1.55
Capital balance	12.67	12.00	13.00	14.00	15.00	16.00	17.00	18.00
Balance of payment	4.60	10.47	12.02	13.15	13.48	15.01	15.65	16.45

Note: GDP at 1993 constant prices.
        Sources are BPS and University of Indonesia.

Table 1.3.2.2-3: Forecast of Real GDP Growth Rates

Year	Scenario	H-Case	L-Case
1998	Consolidation	-12.0%	-15.0%
1999	Consolidation	1.5%	1.0%
2000	Recovery	4.0%	2.5%
2001	Growth	5.0%	4.0%
2002	Growth	5.5%	4.5%
2003	Growth	6.0%	5.5%

The real GDP growth rate of the primary industry is estimated at 2% while the real GDP growth rate of the secondary industry is estimated to increase as the result of the economic recovery. The tertiary industry, which includes the financial sector, is projected to have a minus growth for 2 years in the "H Case," and for 4 years in the "L Case."

1.3.2.3 Trade balance and international balance of payments

Data on service and capital in the balance of payment were taken from the sources in the University of Indonesia. The trade surplus is the result of expansion of exports, and the current account balance deficit is the result of the deficit in service.

International balance of payment will be surplus since balance of payment of capital (which is capital minus the debt) is surplus.

Table 1.3.2-1: Summary of Socio-economic Framework

Item	Unit	1996 Base	1997 Revised	1998 H Case	1998 L Case	2003 H Case	2003 L Case
Population	million	197.9	201.1	204.2	204.2	219.2	219.2
Employment	million	82.1	84.1	70.6	70.6	78.7	78.7
Real GDP Growth Rate	%	7.8	4.8	-12.0	-15.0	6.0	5.5
GDP	Rp trillion	414.0	433.7	381.6	368.6	473.0	437.6
Industrial Structure	(% of GDP)						
Primary Industry (Agriculture)	%	15.2	14.8	17.0	17.5	15.3	16.3
Secondary Industry (Mining and Manufacturing)	%	42.9	43.2	43.2	42.6	51.9	51.7
Tertiary Industry (Services)	%	41.9	42.0	39.8	39.9	32.8	32.0
Total Foreign Trade							
Export	US$	52.0	53.4	49.8	48.4	61.7	57.5
Import	US$	45.8	41.7	36.7	35.4	45.5	42.1
Trade Balance	US$	6.2	11.7	13.1	13.0	16.2	15.4

Note: GDP at 1993 constant prices.
Sources are BPS 1996 and 1997.

CHAPTER 2 Cargo Traffic Analysis

2.1 Current State at Tanjung Priok Port and Soekarno Hatta Airport

2.1.1 Tanjung Priok port

Table 2.1.1-1 and 2.1.1-2 show the volume and value of export/import cargo traffics for nine year-period from 1988 to 1996 at the port of Tanjung Priok and at the entire ports in Indonesia, respectively.

Table 2.1.1-1: Volume and Value of Export/Import at Port of Tanjung Priok

Year	Exports		Imports	
	Volume (million tons)	Value (US$ billion)	Volume (million tons)	Value (US$ billion)
1988	8.1	2.8	6.2	6.5
1989	9.8	3.9	7.2	8.4
1990	8.2	5.1	9.3	12.0
1991	8.7	6.9	10.1	14.3
1992	12.0	9.7	11.2	14.1
1993	10.5	10.9	12.6	15.3
1994	10.3	11.3	16.1	18.7
1995	9.4	12.8	18.2	23.3
1996	10.8	14.1	18.5	22.5

Table 2.1.1-2: Volume and Value of Exports/Imports at All Ports in Indonesia

Year	Exports		Imports	
	Volume (million tons)	Value (US$ billion)	Volume (million tons)	Value (US$ billion)
1988	115.4	19.2	21.5	13.3
1989	102.3	22.2	26.0	16.4
1990	107.6	25.7	30.3	21.8
1991	115.5	29.1	34.2	25.9
1992	151.5	34.0	36.0	27.3
1993	177.5	36.8	38.0	28.3
1994	225.3	40.1	46.1	32.0
1995	246.1	45.4	55.4	40.6
1996	214.2	49.8	58.8	42.9

- Exports

  For the 9-year period, the volume of export cargo handled at Tanjung Priok increased by 1.32 times and the value increased by 5 times. For the latest 5-year period, the ratios of volume and value in exports at the port of Tanjung Priok to the total volume and value in exports at the entire ports in Indonesia are 5.4% and 28%, respectively.

- Imports

  For the 9-year period, the volume of import cargo handled at Tanjung Priok increased by 2.98 times, and the value increased by 3.45 times. For the latest 5-year period, the ratios of volume and value in imports at the port of Tanjung Priok to the total volume and value in imports at the entire ports in Indonesia are 32.7% and 55%, respectively.

The following is information obtained from the officers of Indonesia Port Corporation II at the port of Tanjung Priok

- The Third Container Terminal (C.T. III) located next to the wharf was available in 1996.
- The current port facility has enough capacity to handle cargo until 2003.
- A new port Bojonegara, 100 km westward the current port (port of Tanjung Priok) planned to be constructed in order to cope with the future increase in the volume of cargo.

2.1.2 Soekarno Hatta airport

Table 2.1.2-1 shows the volume and the value of export-import cargo handled at Soekarno Hatta airport for 9-year period from 1988 to 1996.

Table 2.1.2-1: Volume and Value of Exports/Imports at Soekarno Hatta Airport

Year	Exports		Imports	
	Volume (thousand tons)	Value (US$ billion)	Volume (thousand tons)	Value (US$ billion)
1988	24.1	0.6	58.2	0.6
1989	31.7	0.7	25.5	0.7
1990	45.9	0.7	19.0	1.3
1991	50.9	0.7	70.9	1.5
1992	47.7	0.9	149.7	1.4
1993	43.5	1.0	113.3	1.6
1994	47.4	1.6	212.1	1.5
1995	56.9	1.1	76.6	2.3
1996	61.9	1.5	146.9	3.7

- Exports

  For the 9-year period, the volume of export cargo handled at the airport increased by 2.56 times while the value increased by 2.49 times.

- Imports

  The volume of import cargo handled at the airport increased by 2.52 times while the value increased by 6.68 times.

2.2 Forecast of Cargo Traffic by Using Regression Formula

An analysis to forecast the volume of export/import cargo traffic until the year of 2003 has been done by using previous export/import data and regression formula.

2.2.1 Procedures

2.2.1.1 Hinterland

Hinterland, where imports are consumed and exports are produced is Jakarta.

2.2.1.2 Procedures

The volume of export/import cargo traffic was estimated by the following procedures:

1) GDP per capita in Jakarta (X), the highest coefficient of determination (R^2) or correlation coefficient (R), was selected as an independent variable to forecast cargo traffic in Jakarta (Y).

2) The regression formula is as follows:

$$Y = aX + b$$

   While,   X: GDP per capita in Jakarta

   Y: volume of cargo traffic in Jakarta

   a, b: constants

3) Future GDP and population in Jakarta were estimated.

4) Future volume of export/import cargo traffic until the year 2003 is estimated by using the regression formula described above.

2.2.2 Regression analysis

2.2.2.1 Pricing level

The pricing level is settled at a constant price in 1993. Exchange rate used was Rp. 2,079 / US$ in 1993.

2.2.2.2 Calculation of GDP per capita in Jakarta

The GDP per capita in Jakarta was calculated by dividing GDP (excluding oil and gas) by population in Jakarta.

2.2.2.3 Volume of cargo traffic

The past data of the volume of export/import cargo traffic were those at the port of Tanjung Priok and Soekarno Hatta airport.

2.2.2.4 Regression formula

- Tanjung Priok port

    Exports: $Y = 1.4394X + 5878.5$ $(R^2: 0.28)$

    Imports: $Y = 10.89X - 16,550$ $(R^2: 0.95)$

- Soekarno Hatta airport

    Exports: $Y = 0.0217X - 12.542$ $(R^2: 0.76)$

    Imports: $Y = 0.1015X - 170.42$ $(R^2: 0.42)$

2.2.2.5 Estimation of GDP and population

We used the "Higher Growth Scenario Case (H Case)" and the "Lower Growth Scenario (L Case)" to make forecast of GDP and population until the year of 2003.

1) GDP was calculated by excluding oil and gas sectors from total GDP. In recent years, GDP in oil and gas sectors was approximated 9% of total GDP.

2) The rate of GDP in Jakarta to the total GDP (excluding oil and gas sectors) is adjusted in accordance with the following formula:

Rate of GDP in Jakarta in current year (%) = [Rate of GDP in Jakarta in the previous year (%)] x 1.008

3) The GDP in Jakarta was calculated in accordance with the following formula:

GDP in Jakarta = [Total GDP obtained in step 1)] x [Rate of GDP obtained in step 2)]

4) Population growth rate per year from 1998 to 2003 in Jakarta was set at 1.99%.

2.2.2.6 Forecast of volume of cargo traffic

The GDP per capita (mentioned in 2.2.2.2) and the regression formula (mentioned in 2.2.2.4) were used to estimate the volume of export and import cargo traffic. The estimated numbers are shown in Table 2.2.2.6-3 and Table 2.2.2.6-6.

Table 2.2.2.6-1 and Table 2.2.2.6-2 show the forecast of volume of export and import cargo traffic at the Port of Tanjung Priok and Soekarno Hatta airport.

• Tanjung Priok Port

Table 2.2.2.6-1: Forecast of Exports/Imports at Tanjung Priok Port

(Unit: 1,000 ton)

	1998		2003	
	H Case	L Case	H Case	L Case
Export	10,314	10,162	11,063	10,674
Import	17,004	15,860	22,674	19,732

• Soekarno Hatta Airport

Table 2.2.2.6-2: Forecast of Exports/Imports at Soekarno Hatta Airport

(Unit: 1,000 ton)

	1998		2003	
	H Case	L Case	H Case	L Case
Export	54.3	52.0	65.6	59.8
Import	142.3	131.7	195.2	167.7

Table 2.2.2.6-3: Regression Analysis at Tanjung Priok

(Higher Growth Scenario Case)

Year	GDP in Indonesia (trillion rupiah)		GDP in Jakarta (tr. rupiah)	Population in Jakarta	GDP per Capita	Import Volume	Export Volume
	with/ oil,gas	w/o oil,gas	w/o oil,gas	(1,000)	(US$)	(1,000t)	(1,000t)
1988	233.87	208.42	33.78	8,087	2,009	6,196.5	8,144.0
1989	251.32	224.99	37.07	8,156	2,186	7,237.9	9,759.0
1990	269.52	242.12	40.25	8,225	2,354	9,245.0	8,176.0
1991	286.69	257.54	43.39	8,395	2,486	10,053.6	8,671.0
1992	309.65	278.17	47.14	8,569	2,646	11,217.9	11,950.0
1993	329.78	298.28	51.11	8,747	2,811	12,577.8	10,463.0
1994	354.64	321.38	55.51	8,928	2,991	16,046.0	10,261.0
1995	383.77	348.27	60.64	9,113	3,201	18,244.2	9,403.0
1996	413.77	375.74	65.94	9,294	3,032	18,496.4	10,763.0
1997	433.67	394.64	69.81	9,479	3,542	22,027.5	10,977.5
1998	381.63	347.28	61.93	9,667	3,081	17,004.3	10,313.6
1999	387.36	352.50	63.36	9,859	3,091	17,112.0	10,327.8
2000	402.85	366.59	66.42	10,055	3,177	18,050.3	10,451.8
2001	422.99	384.92	70.30	10,255	3,297	19,356.5	10,624.5
2002	446.26	406.10	74.76	10,459	3,438	20,890.1	10,827.2
2003	473.03	430.46	79.88	10,667	3,602	22,673.5	11,062.9

Note: GDP at 1993 constant prices.

Exchange rate used in GDP per capita is Rp. 2,079/ US$ at 1993 constant price.

Table 2.2.2.6-4: Regression Analysis at Soekarno Hatta

(Higher Growth Scenario Case)

Year	GDP in Indonesia (trillion rupiah)		GDP in Jakarta (tr. rupiah)	Population in Jakarta	GDP per Capita	Import Volume	Export Volume
	with oil,gas	w/o oil,gas	w/o oil,gas	(1,000)	(US$)	(1,000t)	(1,000t)
1988	233.87	208.42	33.78	8,087	2,009	58.2	24.1
1989	251.32	224.99	37.07	8,156	2,186	25.5	31.7
1990	269.52	242.12	40.25	8,225	2,354	19.0	45.9
1991	286.69	257.54	43.39	8,395	2,486	70.9	50.9
1992	309.65	278.17	47.14	8,569	2,646	149.7	47.7
1993	329.78	298.28	51.11	8,747	2,811	113.3	43.5
1994	354.64	321.38	55.51	8,928	2,991	212.1	47.4
1995	383.77	348.27	60.64	9,113	3,201	76.6	56.9
1996	413.77	375.74	65.94	9,294	3,032	146.9	61.9
1997	433.67	394.64	69.81	9,479	3,542	189.1	64.3
1998	381.63	347.28	61.93	9,667	3,081	142.3	54.3
1999	387.36	352.50	63.36	9,859	3,091	143.3	54.5
2000	402.85	366.59	66.42	10,055	3,177	152.1	56.4
2001	422.99	384.92	70.30	10,255	3,297	164.2	59.0
2002	446.26	406.10	74.76	10,459	3,438	178.5	62.1
2003	473.03	430.46	79.88	10,667	3,602	195.2	65.6

Note: GDP at 1993 constant prices.
    Exchange rate used in GDP per capita is Rp. 2,079 /US$ at 1993 constant price.

Table 2.2.2.6-5: Regression Analysis at Tanjung Priok

(Lower Growth Scenario Case)

Year	GDP in Indonesia (trillion rupiah)		GDP in Jakarta (tr. rupiah)	Population in Jakarta	GDP per Capita	Import Volume	Export Volume
	with oil,gas	w/o oil,gas	w/o oil,gas	(1,000)	(US$)	(1,000t)	(1,000t)
1988	233.87	208.42	33.78	8,087	2,009	6,196.5	8,144.0
1989	251.32	224.99	37.07	8,156	2,186	7,237.9	9,759.0
1990	269.52	242.12	40.25	8,225	2,354	9,245.0	8,176.0
1991	286.69	257.54	43.39	8,395	2,486	10,053.6	8,671.0
1992	309.65	278.17	47.14	8,569	2,646	11,217.9	11,950.0
1993	329.78	298.28	51.11	8,747	2,811	12,577.8	10,463.0
1994	354.64	321.38	55.51	8,928	2,991	16,046.0	10,261.0
1995	383.77	348.27	60.64	9,113	3,201	18,244.2	9,403.0
1996	413.77	375.74	65.94	9,294	3,413	18,496.4	10,763.0
1997	433.67	394.64	69.81	9,479	3,542	22,027.5	10,977.5
1998	368.62	335.44	59.81	9,667	2,976	15,860.4	10,162.4
1999	372.31	338.80	60.90	9,859	2,971	15,804.1	10,154.9
2000	381.62	347.27	62.92	10,055	3,010	16,226.9	10,210.8
2001	396.88	361.16	65.96	10,255	3,094	17,140.1	10,331.5
2002	414.74	377.41	69.48	10,459	3,195	18,245.7	10,477.7
2003	437.55	398.17	73.88	10,667	3,332	19,731.5	10,674.1

Note: GDP at 1993 constant prices.
Exchange rate used in GDP per capita is Rp. 2,079/US$ at 1993 constant price.

Table 2.2.2.6-6: Regression Analysis at Soekarno Hatta

(Lower Growth Scenario Case)

Year	GDP in Indonesia (trillion rupiah)		GDP in Jakarta (tr. rupiah)	Population in Jakarta	GDP per Capita	Import Volume	Export Volume
	with oil,gas	w/o oil,gas	w/o oil,gas	(1,000)	(US$)	(1,000t)	(1,000t)
1988	233.87	208.42	33.78	8,087	2,009	58.2	24.1
1989	251.32	224.99	37.07	8,156	2,186	25.5	31.7
1990	269.52	242.12	40.25	8,225	2,354	19.0	45.9
1991	286.69	257.54	43.39	8,395	2,486	70.9	50.9
1992	309.65	278.17	47.14	8,569	2,646	149.7	47.7
1993	329.78	298.28	51.11	8,747	2,811	113.3	43.5
1994	354.64	321.38	55.51	8,928	2,991	212.1	47.4
1995	383.77	348.27	60.64	9,113	3,201	76.6	56.9
1996	413.77	375.74	65.94	9,294	3,032	146.9	61.9
1997	433.67	394.64	69.81	9,479	3,542	189.1	64.3
1998	368.62	335.44	59.81	9,667	2,976	131.7	52.0
1999	372.31	338.80	60.90	9,859	2,971	131.1	51.9
2000	381.62	347.27	62.92	10,055	3,010	135.1	52.8
2001	396.88	361.16	65.96	10,255	3,094	143.6	54.6
2002	414.74	377.41	69.48	10,459	3,195	153.9	56.8
2003	437.55	398.17	73.88	10,667	3,332	167.7	59.8

Note: GDP at 1993 constant prices.
Exchange rate used in GDP per capita is Rp. 2,079 /US$ at 1993 constant price.

CHAPTER 3 Economic and Financial Analysis

3.1 Current State of Customs and Clearance Service in Indonesia and Major Issues

3.1.1 Current state of Customs and clearance service

3.1.1.1 Background

The delay in customs clearance service in Indonesia became a serious problem during a period from the late 1970s to the early 1980s due to the lack of work efficiency and rampant corruption among Customs officers, causing significant impacts on the country's economic development.

Under the pressure to restructure its Customs service, the Indonesian government took away the rights of clearance service from Customs in 1985 and entrusted the service to a Swiss company, SGS, in an attempt to streamline the service and simplify the clearance procedures (pre-shipment inspection system).

The pre-shipment inspection system was abolished at the end of March 1997. A new customs law was adopted by the Parliament at the end of 1995 and under the new law, the Customs has been responsible for examination and inspection of imported goods. Since April 1997, the new law incorporated a variety of regulations that had not been found in Indonesia, including GATT-WTO tariff evaluation system (prerequisite to the country's participation in WTO), duties on dumping and countervailing, control of imports infringing intellectual property, bookkeeping obligation of importers and appeal system. Coupled with the provisions on EDI-based Customs declaration, the new law is close to that in industrialized countries.

For the purpose of ensuring smooth clearance, the Customs introduced the EDI Customs declaration system in compliance with UN/EDIFACT in April 1997. The system was designed to streamline Customs clearance service by interconnecting 1)Customs, 2)Customs brokers, 3)importers, and 4)banks realizing electronic process of data related to the declaration and permission of imports.

3.1.1.2 Current state of the customs system development plan

1) Organization of Customs

The current organization and staffing of DJBC, the Department of Finance are summarized as follows:

- Central organization: Directorate General of Customs and Excise
- Local organization: Twelve Regional and 123 Service offices
- Number of staff: Approximately 11,000

DJBC has a computer division (ADP) that is responsible for system development, operation and maintenance. The ADP consisting of approximately 80 staff (including 30 system engineers), plans, designs, installs, operates and maintains computer systems in ADP and Customs as a whole.

2) Current state of computer systems

DJBC is currently operating three computer systems, all of which have been developed, expanded and optimized by the ADP staff in line with the country's economic conditions, computer technology and availability of the communication infrastructure.

The three computer systems that are currently operated by the department and the customs are as follows:

- CFRS   : To process import clearance procedures
- SE-11   : To prepare statistics of tax revenues
- EDP Audit System : To monitor inventory levels at bonded factories and warehouses

3.1.2 Current state of CIS and CSS

3.1.2.1 CIS

1) Current state of information management

The current information management is summarized as follows:

- The monitoring of exporters and importers on the blacklist, who are subject to vigilant review and regulation, is primarily carried out manually. Information among related departments, Regional Offices and Service Offices are not shared each other.
- Customs clearance data are used solely as the basis of preparing statistics and are not properly classified or utilized for risk management.

2) Definition

CIS is essentially an extensive database to support the Customs services including monitor clearance and follow-up investigation. The database is designed to store the following data and information:

- Exports and imports by individual exporters and importers
- Cargo cleared by Customs brokers
- Embarkation and disembarkation by ships and aircraft
- Cargo handled in bonded areas
- Crime and violation record by exporters, importers, Customs agents, ships, aircraft, bonded areas and passengers

CIS is designed to enable in-depth analysis of the Customs operation and reliable risk management to ensure adequate and streamlined service.

3.1.2.2 Current state of CSS

1) Current state of the clearance system

Import clearance procedures are currently handled by a single system called CFRS. It faces bottlenecks in terms of performance and maintenance because it has increased complexity due to a series of system upgrades and required emulated operation of the existing software due to hardware replacement.

In addition, the major challenge for CSS is to develop and incorporate an export clearance and cargo control system.

2) Definition

CSS is a new system designed to address the above issues and integrate the Customs clearance and related processes. More precisely, it offers the following capabilities:

- Customs clearance processes for exports and imports
- Bonded transportation processes
- Warehousing
- Cargo handling and control

CSS is designed to provide efficient clearance service in order to ensure streamlining, normalization and transparency.

3.1.3 Major issues and causes

3.1.3.1 External demand for streamlined clearance system

The streamlining of Customs clearance service in Indonesia is demanded from the outside the country as well as domestic economic circles and the government itself.

First of all, the demand is raised in APEC's agenda that focused on liberalization and streamlining of trade. Secondly, domestic industries voice the need for faster clearance processes and improved transparency.

1) Improved clearance system as part of APEC's demand for trade liberalization and streamlining

i) Background

In 1994, APEC held its informal summit meeting in Bogor, Indonesia, which issued the Bogor Declaration setting forth the specific goals and issues. In particular, the following goals were established to be achieved by advanced economies in the region by 2010, and developing economies by 2020:

- Realization of free and open trade and investment
- Expansion and encouragement of trade and investment streamlining plans
- Strengthening of development assistance

Then, the Osaka Conference adopted the Osaka Action Agenda (hereinafter referred to as OAA) that would form the framework for future APEC activities toward the common goals for the member countries. In 1996, APEC issued its first action plan for the goals set by the Bogor Declaration and the OAA, entitled "Manila Action Plan for APEC (hereinafter referred to as MAPA)."

ii) OAA

The OAA embraces a wide range of areas including future tariff reduction, the accelerated implementation of the WTO agreement and promotion of deregulation.

Most relevant to this project is the development of the principles on streamlining of the customs clearance process, which consist of a) promptness, b) accountability (rationality and predictability), c) consistency (universal application of regulations), d) transparency (publication of procedures and rules), and e) simplification.

iii) Trade liberalization and streamlining under the MAPA

The MAPA consists of three components: Individual Action Plan (hereinafter referred to as IAP), Collective Action Plan (hereinafter referred to as CAP) and joint actions in economic and technical cooperation. The IAP contains reports on the current state of trade liberalization and streamlining submitted by the APEC member countries as well as future action plans. On the other hand, the CAP sets forth actions to be undertaken jointly by the member countries in accordance with the OAA, covering fifteen areas (e.g., tariff, non-tariff and clearance procedures).

- Improvement of market access

Under the MAPA, APEC member countries have been stepping up their move toward trade liberalization. Indonesia's action plan includes the elimination of the surcharge by 2003, while reducing tariff rates to 5% and 10%.

- Trade streamlining measures

Trade streamlining measures are primarily designed to eliminate unnecessary burdens in the Customs clearance processes and reduce trade barriers in technical aspects by introducing new technology and cost saving measures, thereby to reduce business-related costs.

As for the Customs clearance processes, APEC will work toward the reduction of business costs incurred by complex clearance procedures and the development and operation of simplified, harmonized efficient and transparent rules and procedures.

- Computerization and its role in Customs

As discussed above, computerization DJBC is positioned as part of the country's action toward trade liberalization and streamlining.

Among the fifteen areas defined in the CAP, relevant agenda, including the establishment of the tariff database and computerization of Customs clearance procedures, are specified in the areas of tariff, non-tariff and clearance procedures.

2) ASEAN initiative

Meanwhile, in 1995, six ASEAN countries agreed on the schedule, under the ASEAN Free Trade Arrangement (hereinafter referred to as AFTA), to reduce tariff rates for industrial

products and unprocessed farm products within the region to a range of 0-5% by 2003. Clearly, this represents the move toward trade liberalization and exerts pressure, directly and indirectly, on the improvement of the Customs clearance system in each country.

3) Improvement demanded by domestic industries

JETRO conducted interview surveys for Japanese manufacturers operating in the ASEAN countries in between 1994, 1995 and 1996. The results are summarized in Table 3.1.3.1-1 to 3.1.3.1-3, covering major problems related to management control.

In Indonesia, "procedures of Customs" ranked in top three during the three consecutive years, which are not seen in other countries. More precisely, the problems related to "procedures of Customs," as cited by respondents, are the slow clearance processes, complicated procedures and the delay in tax return.

In comparison, the results of the questionnaire survey conducted by the JICA Study Team are summarized in Figures 3.1.3.1-1 and 3.1.3.1-2, asking the reasons for delay in import procedures in relation to physical distribution, procedures and communication. In the area of physical distribution, "inspection and examination by customs" ranked first for both marine and air cargoes. As for procedures and communication, "weekend and holiday," "procedures (permit/approval) other than Customs" and "duty payments" ranked at top three for both sea and air cargoes.

While the problems identified in these surveys need to be solved through communication between users and Customs, they constitute major issues to be resolved under the project.

Table 3.1.3.1-1: Problems on Management Control in Manufacturing Industry, ASEAN (1994)

Rank	Overall	Thailand	Malaysia	Philippines	Indonesia	Singapore
1	Labor problem (488)	Labor problem (149)	Working hour (175)	Unstable Exchange rate (39)	**Procedure of Customs (72)**	Rise of labor's wage (87)
2	Rise of labor's Wage (464)	Procedure of customs (149)	Rise of labor's Wage (139)	Insufficient Infrastructure (35)	Procedure of administration (71)	Labor problems (85)
3	Unstable exchange rate (359)	Rise of labor's wage (142)	Unstable exchange rate (109)	Rise of labor's Wage (29)	Rise of labor's wage (67)	Unstable exchange rate (61)
4	Procedure of Customs (308)	Quality control (105)	Visa and labor Permission (77)	Procedure of Customs (27)	Various domestic taxes (66)	Competition with other companies (51)
5	Quality control (272)	Unstable Exchange rate (87)	Unstable exchange rate (71)	Working hour (26)	Unstable exchange rate (63)	Market trend & Quality control (24)

Note: The above table shows the main problem on management control in manufacturing industry seems to be procedure of Customs
( ); The number of companies answered, plural answers.
Response rate is 43.3% in ASEAN (931 organizations answered out of 2,100).
Response rate is 56.9% in Indonesia (174 organizations answered out of 306).
Source is JETRO.

Table 3.1.3.1-2: Problems on Management Control in Manufacturing Industry, ASEAN (1995)

Rank	Overall	Thailand	Malaysia	Philippines	Indonesia	Singapore
1	Labor problem (610)	Rise of labor's wage (204)	Labor problem (234)	Labor problem & Rise of labor's Wage (41)	Procedure of administration (105)	Rise of labor's Wage (85)
2	Rise of labor's wage (596)	Labor problem (193)	Rise of labor's Wage (190)		Unstable exchange rate (99)	Labor problems (79)
3	Unstable exchange rate (461)	Procedure of customs (170)	Unstable exchange rate (124)	Unstable exchange rate (40)	**Procedure of Customs (96)**	Unstable Exchange rate (64)
4	Procedure of customs (351)	Unstable exchange rate (134)	Visa and labor Permission (103)	Insufficient Infrastructure (39)	Various domestic taxes (81)	Competition with Other companies (60)
5	Competition with Other companies (339)	Quality control (132)	Competition with other companies (93)	Procedure of Customs (34)	Rise of labor's wage (76)	Market trend (28)

Note: ( ): The number of companies answered, plural answers.
Response rate is 43.2% in ASEAN (977 organizations answered out of 2,262).
Response rate is 54.4% in Indonesia (203 organizations answered out of 373).
Source is JETRO.

Table 3.1.3.1-3: Problems on Management Control in Manufacturing Industry, ASEAN (1996)

Rank	Overall	Thailand	Malaysia	Philippines	Indonesia	Singapore
1	Rise of labor's Wage (628)	Rise of labor's Wage (180)	Labor problem (282)	Insufficient Infrastructure (32)	Unforeseeable expenses & Complicated tax systems (120)	Rise of labor's Wage (101)
2	Labor problem (620)	Labor problem (165)	Rise of labor's wage (225)	Rise of labor's Wage (31)	Rise of labor's wage (91)	Labor problems (81)
3	Competition with other companies (398)	Quality control (132)	Quality control (134)	Difficulties in purchasing local parts (28)	**Procedure of Customs (87)**	Competition with Other companies (68)
4	Quality control (357)	Procedure of customs (131)	Competition with other companies (132)	Procedure of Customs (22)	Competition with other companies (80)	Market trend (37)
5	Unstable Exchange rate (323)	Competition with other companies (113)	Visa and labor permission (114)	Unforeseeable expenses & Complicated tax systems (17)	Labor problem (77)	Unstable exchange rate (36)

Note: ( ); The number of companies answered, plural answers.
Response rate is 41.1% in ASEAN (1,056 organizations answered out of 2,568).
Response rate is 42.7% in Indonesia (211 organizations answered out of 494).
Source is JETRO.

(1) It takes (long) time to work for:
(Sea Cargo)
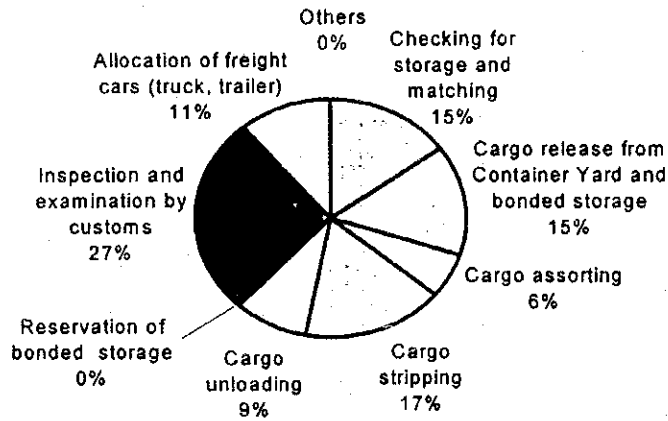
(2) It takes (long) time to work for:
(Air Cargo)
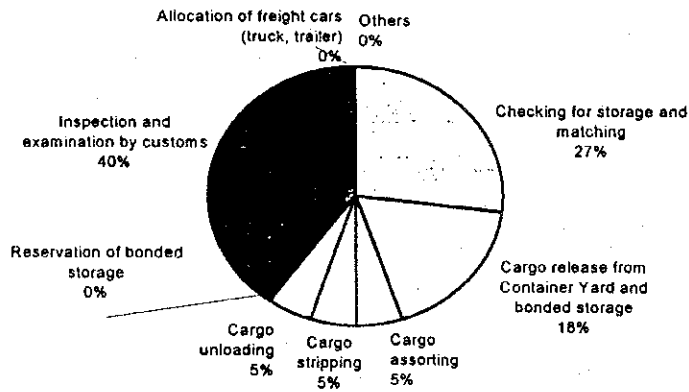
Note: The result is based on 21 samples.

Figure 3.1.3.1-1: Reason for Import Process Delay in Distribution and Logistics

(1) It is delayed due to:
(Sea Cargo)

Appointment of delivery date by importers 0%
Others 6%
Amendment of necessary documents 6%
Weekend and holiday 32%
Duty payments 28%
No use of CFS 0%
Pressure of business 0%
Procedure (permit, approval) other than customs 22%
Receipt of documents from consignors 0%
Procedure of bonded transport to storage 6%

(2) It is delayed due to:
(Air Cargo)

Appointment of delivery date by importers 3%
Others 0%
Amendment of necessary documents 13%
Weekend and holiday 21%
Duty payments 16%
No use of CFS 0%
Pressure of business 3%
Procedure (permit, approval) other than customs 22%
Receipt of documents from consignors 13%
Procedure of bonded transport to storage 9%

Note: The result is based on 21 samples.

Figure 3.1.3.1-2: Reason for Import Process Delay in Procedures and Communication

3.1.3.2 Analysis of major issues related to customs clearance system
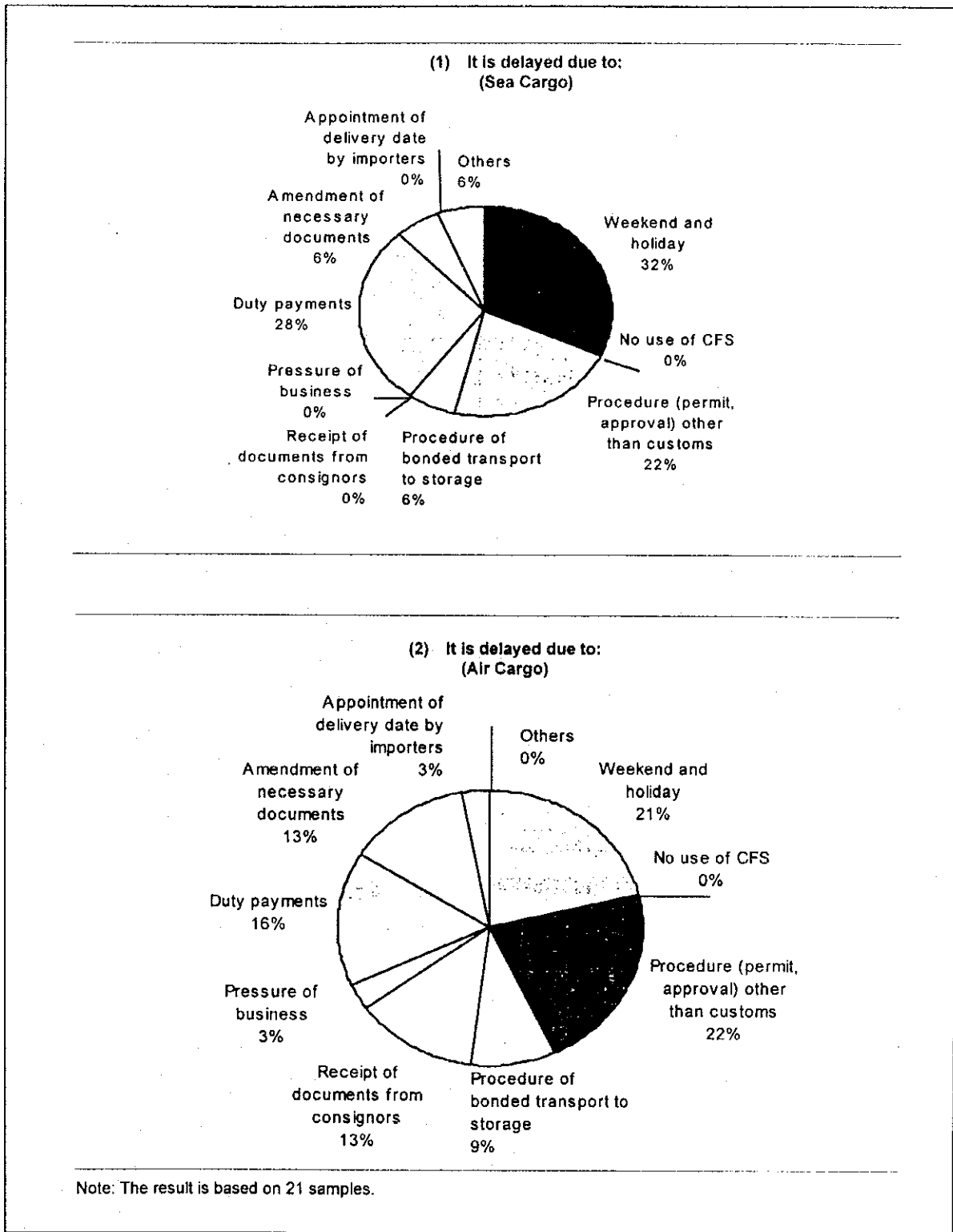
Since the nationwide introduction of the EDI application system in April 1997, it has been used for all Customs applications made in Jakarta, whereas it has not been widely used in Surabaya and other areas. Because the use of the system is expected to increase steadily throughout the country in the near future, the establishment of automatic examination and evaluation standards is required for smooth processing, and the present clearance system must be upgraded to simplify the entire procedures.

Furthermore, with the anticipated introduction of the self-declaration and prior examination systems that entails the adoption of the GATT/WTO tariff evaluation system, it is important to ensure the effective use of the system.

Finally, drug abuse by young people becomes a serious problem in Indonesia and effective border control is called for to prevent contrabands from entering the country.

Major areas of improvement expected for information management to address the above issues are summarized. For follow-up investigation to supplement the tariff evaluation system as well as monitoring for border control of contrabands, centralized management of information using computers is essential in streamlining of their work. By storing information on the subjects of investigation and monitoring (suspects and so on) and by conducting sophisticated analysis and evaluation, focused resource allocation becomes feasible for follow-up investigation. The illegal exports and imports can be effectively controlled at the border. The storing of information about applications by exporters and importers as well as their processing (examination and inspection) can help Customs develop examination standards for simplified clearance procedures.

CSS must be designed as an integrated system capable of handling an entire range of the Customs clearance process, including import, export, bond, and cargo control, in order to ensure smooth work flow. In particular, the system should incorporate an automated examination process to improve efficiency in examination and inspection, while eliminating a risk of arbitrary processing and ensuring transparency in the entire clearance procedures.

3.2 Economic Analysis

Economic analysis uses the economic internal rate of return (hereinafter referred to as EIRR) to measure the project's profitability. Financial analysis is not applicable to this project, because CIS and CSS are not expected to charge fees to users and their costs will be financed by the government's budget.

3.2.1 Basic framework for economic analysis

3.2.1.1   Scope of economic analysis

In economic analysis of projects, a range of investment must be equivalent to that of benefit from the investment. This is generally referred to as the cost/benefit-matching rule. For economic analysis, the following scope of the project was assumed:

1) Geographical scope

This project will be carried out at the Tanjung Priok port and the Soekarno Hatta airport and will deal with clearance procedures of direct import and export.

- Import clearance

From port entry (arrival of cargo) to cargo delivery

- Export clearance

From preparation of an export application to loading of cargo

Note that time required for the above processes is hereinafter referred to as "clearance time."

2) Investment coverage

Within the geographical scope above, the precise scope of the project is the scope of project costs (embracing both hardware and software) presented in Volume II and IV. Likewise, benefits must be limited to those generated directly by investment made within the scope of the project.

3) System indivisibility

CIS and CSS to be introduced under the project are assumed to function in an integrated manner and produce a number of economic benefits.

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3.2.1.2 Establishment of "With" and "Without" cases

Profitability of the project is computed by a "With/Without" approach. A "With" case is defined as a case where the project is implemented while a "Without" case is a case where the project is not implemented. In those cases, both costs and benefits are calculated. The EIRR is computed on the basis of the difference in costs and benefits between the "With" case and the "Without" case. These "With" and "Without" cases assumed as the following.

- "With" case

  The project is implemented successfully to streamline the Customs clearance processes and shorten congestion (waiting) time of cargo.

- "Without" case

  If the project is not implemented and if the volume of cargo increases, either of the following two consequences is expected to occur. Firstly, when the current ability to process Customs clearance remains unchanged, congestion time will increase. Secondly, when congestion time is maintained at the current level, the clearance capacity of labor will have to be increased, resulting in a rise in cost. An assumption is that DJBC will not increase staff. On the basis of the assumption, the former scenario of expected increase in congestion time is selected in the "Without" case.

3.2.1.3 Economic benefits

Economic benefits expected from a project are defined as increased national income due to the implementation of a project.

Economic benefits are either direct or indirect, as defined below.

- Direct benefits

  System users enjoy direct benefits as a direct result of the project implementation. The benefits can be divided further into quantitative benefits and qualitative benefits. The latter can only be presented in a descriptive form.

- Indirect benefits

  Indirect benefits are enjoyed by the government and society as a whole and are derived from the implementation of a project. Indirect benefits are also divided into quantitative benefits and qualitative benefits. It is sometimes difficult to determine that the benefits are only from the project and what percentage of the project actually contributes to the benefit (e.g., the decrease in illegal trade). In this analysis, thus, indirect benefits are presented in a descriptive form.

3.2.1.4 Direct benefits

As the project is designed to help the streamlining and simplification of Customs clearance service, it will primarily generate direct benefits in the following two areas.

- Reduction of costs due to smooth cargo delivery

  The project is expected to reduce the period required for cargo to wait for Customs clearance, resulting in a shorter inventory period.

- Reduction of costs related to Customs procedures

  Computerization of paperwork including documentation and processing will reduce costs incurred by the customs and users for clearance procedures.

3.2.1.5 Indirect benefits

Indirect benefits, which are derived from and induced by streamlining and simplification of the Customs clearance processes, together with computerization thereof, can be classified as follows:

- Benefits from the establishment of appropriate and streamlined clearance processes;
- Benefits from improved transparency of clearance service;
- Effects of computerization of Customs;
- Effects on foreign direct investment and benefits from the growth in international cargo;
- Benefits from effective prevention of illegal trade; and
- Benefits from accurate statistical data on Customs.

These indirect benefits are evaluated in the form of qualitative analysis, as discussed in 3.2.3.

3.2.1.6　Economic costs

Costs related to the project are roughly divided into those incurred during the system development and operation stage. The costs identified are screened on the basis of criteria according to the "With" and "Without" cases.

1) Development stage

Costs expected during the system development stage consist of development costs for CIS (estimated in Volume II) and CSS (Volume IV), which are required for project implementation ("With" case).

2) Operation stage

During the system operation stage, Customs and users will incur costs.

* Customs

    As the project assumes that Customs will not add staff for clearance service, the number of Customs officers and other costs will remain unchanged in the "With" and "Without" cases. On the other hand, additional costs may be incurred due to implementation of the project and will be accounted for estimation in the "With" case.

* Users

    Costs include those incurred by importers and Customs agents in relation to system operation including training, which are partially offset by cost savings due to the reduced paperwork. In any case, their impacts on project feasibility are considered to be minimal.

3.2.2 Direct benefits

3.2.2.1　Basic assumptions for economic analysis

1) Price

    Theoretically, the EIRR should be determined from the benefits and costs that have been adjusted to their constant prices by applying the respective rates of inflation and discounting them by deflators. In Indonesia with its current economic conditions, however, it is difficult to set the inflation rates and deflators, so that all the prices used in the analysis are fixed in 1998 when the JICA study takes place, with no inflation thereafter being taken into account.

2) Currency and exchange rate

The economic analysis uses the U.S. dollar as the base unit of currency, and any values expressed in the local currency are converted to the dollar by applying the following exchange rate on November 30, 1998:

US$1 = Rp. 7,375

3) Project life for economic analysis

The project's preliminary schedule is as follows:

- Start of CIS/CSS development: in 2000
- Start of operation of CIS and CSS: in 2003
- Final year of the project: in 2012

The project life for economic analysis is assumed to be thirteen years including four years for system development.

4) Method for conversion from market price to economic price

The economic analysis uses the economic price to measure costs and benefits. For this purpose, the market price used in the financial analysis is converted to the economic price according to the following procedures.

- Taxes

As taxes including tariff and VAT are considered to be transfer of income from an economic entity to the government, they are deducted from benefits and costs in the economic analysis.

- Goods and services

Economic prices of goods imported are CIF prices excluding tariff. Economic prices of locally produced goods are FOB prices for export if goods are exportable, while an opportunity cost is deemed to be economic prices for non-exportable goods. The same principle is applied to services.

For this analysis, economic prices of goods imported and exported, constituting the basis of calculating benefits, are indicated in CIF and FOB prices. For costs related to CIS and CSS, economic prices are determined by subtracting tax (VAT) from market prices.

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5) Opportunity cost of capital (OCC)

The opportunity cost of capital is used as the criteria to determine whether the project is economically feasible. For the project, the opportunity cost of capital is assumed to be 10%. (The opportunity cost of capital serves as a yardstick and is generally selected from the minimum level of rate of return on recent projects that were carried out in the country. International financial institutions assume the opportunity cost of capital in the range between 8% and 14%, depending upon the country.) It is used as the basis of estimating loss of opportunity cost due to congestion of cargo during the Customs clearance process.

3.2.2.2 Estimation of direct benefits

As discussed earlier, direct benefits expected from the project are the decline in congestion cost related to dead stock of cargo and the decline in customs clearance cost. While the latter will not contribute much to profit, the former is expected to contribute significantly and is estimated as follows.

The estimation process begins with the forecast of the volume of cargo to be handled at the Tanjung Priok port and the Soekarno Hatta airport after 2003. Clearance time is estimated for each of the "With" and "Without" cases. Then, on the basis of the estimation, congestion time and costs are calculated. The decrease in congestion cost is thus considered to be the direct benefits from the project.

1) Cargo volume forecast

In Chapter 2, the volume of cargo handled at Tanjung Priok port and the Soekarno Hatta airport until 2003 was estimated for "H Case" (high growth) and "L Case" (low growth).

In this section, cargo volumes to be handled at the two ports after 2003 are estimated.

i) Import cargo

The volume of import cargo handled at the two ports in 1998 and 2003, as well as the average growth rate of import during the five-year period between 1998 and 2003 are shown in Table 3.2.2.2-1.

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Table 3.2.2-1: Import Cargo Volume Forecast and Average Growth Rate of Import

(Unit: 1,000 ton)

Year	Tanjung Priok			Soekarno Hatta		
	H Case	L Case	Middle	H Case	L Case	Middle
1998	17,004	15,860	16,432	142.3	131.7	137.0
2003	22,674	19,732	21,203	195.2	167.7	181.5
Annual Growth Rates	5.9%	4.5%	5.2%	6.5%	5.0%	5.8%

In the table above, the average annual growth rate of import between 1998 and 2003 was calculated by the mid-value between H and L cases, namely 5.2% for the Tanjung Priok port and 5.8% for the Soekarno Hatta airport.

Note that this analysis assumes that cargo import will continue to grow at the above rates after 2003. The breakdown of import cargo volumes up to 2012 is presented in Table 3.2.2-5, and the changes in import cargo volume at a five-year interval are shown below.

Table 3.2.2-2: Summary of Import Cargo Volume Forecast

(Unit: 1,000 ton)

Port	1998	2003	2008	2012
Tanjung Priok	16,432	21,203	27,320	33,461
Soekarno Hatta	137	182	241	302

Note: The year of 2012 is the final year of the project.

ii) Export cargo

The volumes of export cargo handled at the Tanjung Priok port and the Soekarno Hatta airport in 1998 and in 2003, as well as the average growth rate of export during the five-year period between 1998 and 2003 are shown in Table 3.2.2-3.

Table 3.2.2.2-3: Export Cargo Volume Forecast and Average Growth Rate of Export

(Unit: 1,000 ton)

Year	Tanjung Priok			Soekarno Hatta		
	H Case	L Case	Middle	H Case	L Case	Middle
1998	10,314	10,162	10,238	54.3	52.0	53.2
2003	11,063	10,674	10,869	65.6	59.8	62.7
Annual Growth Rates	1.4%	1.0%	1.2%	3.9%	2.8%	3.3%

In the table above, the average annual growth rate of export between 1998 and 2003 was calculated by the mid-value between H and L cases, namely 1.2% for the Tanjung Priok port and 3.3% for the Soekarno Hatta airport. Note that this analysis assumes that cargo export will continue to grow at the above rates after 2003. The breakdown of export cargo volume up to 2012 is presented in Table 3.2.2.2-5, and the changes in export cargo volume at a five-year interval are shown below.

Table 3.2.2.2-4: Summary of Export Cargo Volume Forecast

(Unit: 1,000 ton)

Port	1998	2003	2008	2012
Tanjung Priok	10,238	10,869	11,537	12,101
Soekarno Hatta	53	63	74	84

Note: The year of 2012 is the final year of the project.

Table 3.2.2.2-5: Summary of Cargo Volume Forecast

(Unit: 1,000 ton)

Year	Import Cargo		Export Cargo	
	Tanjung Priok	Soekarno Hatta	Tanjung Priok	Soekarno Hatta
1998	16,432	137.0	10,238	53.2
1999	17,286	144.9	10,361	55.0
2000	18,185	153.4	10,485	56.8
2001	19,131	162.2	10,611	58.6
2002	20,126	171.7	10,738	60.6
2003	21,203	181.5	10,869	62.7
2004	22,306	192.0	10,999	64.8
2005	23,465	203.2	11,131	66.9
2006	24,686	214.9	11,265	69.1
2007	25,969	227.4	11,400	71.4
2008	27,320	240.6	11,537	73.8
2009	28,740	254.6	11,675	76.2
2010	30,235	269.3	11,816	78.7
2011	31,807	284.9	11,957	81.3
2012	33,461	301.5	12,101	84.0

2) Estimates of present clearance time and reducible waiting time

   i) Use of questionnaire survey results

As discussed in 3.1.3.1, the questionnaire survey was conducted for Japanese companies operating in Jakarta to find out possible reasons for delay in import clearance procedures in terms of administrative procedures and physical distribution.

The results provided useful information on the current state of import clearance procedures.

   ii) Methodology related to interview survey

Based on the results of the questionnaire survey, the interview survey was conducted for users of customs clearance service.

The interview survey estimates the amount of time required for the import clearance process that is classified into the following four stages. Note that it is estimated for full container load (hereinafter called as FCL) cargo destined to factories. The outline of the current import clearance procedures in the country is:

a) From port entry (arrival of cargo) to unloading

Cargoes are unloaded to the yard, while their manifests are submitted to Customs office.

b) From unloading to application for import clearance

Importers in the country are required to pay their import duties prior to the filing of the application with Customs. They bring their import declaration forms (PIB) to the bank and make payment, and the bank returns it with its stamp on the PIB on the following day when the PIB is accepted by 11:00 a.m. on the day of payment.

Now, importers can choose to go through the EDI-based application process or submit necessary documentation and the certified PIB to the Customs office thereafter.

c) From application to permit

The Customs office examines the documents and data submitted by importers and classifies them to those that require physical examination (Red Channel) and those that do not require it (Green Channel). For Green Channel declarations, the Customs office issues cargo release permit (SPPB) with which the importer can take delivery of its cargo. For Red Channel declarations, an instruction for examination (PJM) is issued and the importer is required to have its cargo inspected according to the

Customs direction. Upon completion of the examination, the SPPB is issued for cargo release.

d) From permit to cargo delivery

The importer submits documentation to the Customs office, pays a port charge and receives a container transportation permit (SP2). The importer brings a trailer to the yard and loads its cargo. After the SP2 and cargo are checked at the gate, the importer can leave the port to complete the import clearance process.

Then, for each of the above steps, waiting time (reducible) and processing time (non-reducible) required for import procedures are estimated.

For the above purpose, reducible waiting time is estimated on the basis of the top-rank reasons for delay cited in the questionnaire survey. Similar estimation is made for export clearance.

iii) Establishment of standard clearance time and reducible waiting time

Based on the analysis of data collected from the interview survey, standard clearance time is established and is then divided into reducible waiting time and non-reducible processing time.

Major findings from the survey, concerning the import clearance process at the Tanjung Priok port, are as follows:

a) All the respondents feel that clearance time for Green Channel (4 days) is reasonable, while they think that around one day can be saved by streamlining some steps, including the payment to the bank.

b) The similar responses are heard about Red Channel, except for the time required for examination. They feel that 2 days required for examination in Red Channel are inevitable. In practice, however, the examination does not take 2 days but takes 4 days due to the involvement of various participants in the examination process including Customs officers. They consider that the 2 additional days are waiting time.

c) Based on the questionnaire survey, it is assumed that 90% of cargoes go through the Green Channel procedures and 10% through the Red Channel procedures, although the Red Channel procedures have been on the rise after the survey.

Responses were also obtained for the time required for import clearance at the Soekarno Hatta airport and the time required for export clearance at the Tanjung Priok port and the Soekarno Hatta airport. Most of them think that duration can be reduced by around 0.5 days.

The results of the survey and the analysis are summarized in Tables 3.2.2.2-6 and 3.2.2.2-7.

Table 3.2.2.2-6: Estimation of Time Required and Possible Waiting Time Shortened from Current Import Customs Clearance

(Unit :days)

Work Flow	Tanjung Priok						Soekarno Hatta		
	Green Channel (90%)			Red Channel (10%)					
	Standard Number of Days	Reduction of Waiting Time		Standard Number of Days	Reduction of Waiting Time		Standard Number of Days	Reduction of Waiting Time	
		Reducible	Non-reducible		Reducible	Non-reducible		Reducible	Non-reducible
1. From Port Entry (arrival of cargo) to Unloading/Warehousing	1.0	—	1.0	1.0	—	1.0	0.5	0.5	2.0
2. From Unloading/Warehousing to Application	1.0	0.5	0.5	1.0	0.5	0.5	0.5		
3. From Application to Approval	1.0	—	1.0	5.0	2.0	3.0	1.0		
4. From Approval to Cargo Delivery	1.0	0.5	0.5	1.0	0.5	0.5	0.5		
Clearance Time	4.0	1.0	3.0	8.0	3.0	5.0	2.5	0.5	2.0

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Table 3.2.2.2-7: Estimation of Time Required and Possible Waiting Time Shortened from Current Export Customs Clearance

(Unit: days)

Work Flow	Tanjung Priok			Soekarno Hatta		
	Standard Number of Days	Reduction of Waiting Time		Standard Number of Days	Reduction of Waiting Time	
		Reducible	Non-reducible		Reducible	Non-reducible
1. From Preparation of Application to Unloading/Warehousing	1.0	0.5	2.5	1.0	0.5	0.5
2. From Unloading/Warehousing Application to Approval	0.5			0.5	—	0.5
3. From Approval to Loading	1.5			0.5	—	0.5
Clearance Time	3.0	0.5	2.5	2.0	0.5	1.5

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3) Estimation of clearance time under the "Without" case

In 3.2.1, the "Without" case of the project assumes that the Customs clearance capacity will remain unchanged and congestion time will increase with the growth of cargo volume.

The increase in congestion time means the increase in waiting time due to the delay in the Customs clearance process.

As discussed earlier, present clearance time is divided into non-reducible processing time and reducible waiting time (congestion time).

Based on the above assumptions, clearance time under the "Without" case is assumed to increase as waiting time increases with the increase in cargo volume, while non-reducible processing time remains unchanged.

Table 3.2.2.2-8 summarizes the estimates of clearance time under the "Without" case.

Table 3.2.2.2-8: Clearance Time in "Without" Case (1/3)
-Import Clearance at Tanjung Priok-

(Unit: days)

Year	Green Channel					Red Channel					"Without" Clearance Time
	Processing Time	Waiting Time	Rate of Increase (5.2%p.a.)	Green %	Clearance Time	Processing Time	Waiting Time	Rate of Increase (5.2%p.a.)	Red %	Clearance Time	
1998	3.0	1.0	1.00	90.0	3.60	5.0	3.0	1.00	10.0	0.80	4.40
1999	3.0	1.0	1.05	90.0	3.65	5.0	3.0	1.05	10.0	0.82	4.46
2000	3.0	1.0	1.11	90.0	3.70	5.0	3.0	1.11	10.0	0.83	4.53
2001	3.0	1.0	1.16	90.0	3.75	5.0	3.0	1.16	10.0	0.85	4.60
2002	3.0	1.0	1.22	90.0	3.80	5.0	3.0	1.22	10.0	0.87	4.67
2003	3.0	1.0	1.29	90.0	3.86	5.0	3.0	1.29	10.0	0.89	4.75
2004	3.0	1.0	1.36	90.0	3.92	5.0	3.0	1.36	10.0	0.91	4.83
2005	3.0	1.0	1.43	90.0	3.98	5.0	3.0	1.43	10.0	0.93	4.91
2006	3.0	1.0	1.50	90.0	4.05	5.0	3.0	1.50	10.0	0.95	5.00
2007	3.0	1.0	1.58	90.0	4.12	5.0	3.0	1.58	10.0	0.97	5.09
2008	3.0	1.0	1.66	90.0	4.19	5.0	3.0	1.66	10.0	1.00	5.19
2009	3.0	1.0	1.75	90.0	4.27	5.0	3.0	1.75	10.0	1.02	5.30
2010	3.0	1.0	1.84	90.0	4.35	5.0	3.0	1.84	10.0	1.05	5.40
2011	3.0	1.0	1.93	90.0	4.44	5.0	3.0	1.93	10.0	1.08	5.52
2012	3.0	1.0	2.03	90.0	4.53	5.0	3.0	2.03	10.0	1.11	5.64

Note: Green Clearance Time = (Processing Time + Waiting Time x Rate of Increase) x 90%
Red Clearance Time = (Processing Time + Waiting Time x Rate of Increase) x 10%
"Without" Clearance Time = Green Clearance Time + Red Clearance Time

Table 3.2.2-8: Clearance Time under the "Without" Case (2/3)
– Import Clearance at Soekarno Hatta –

(Unit: days)

Year	Processing Time	Waiting Time	Rate of Increase (5.8%p.a.)	Clearance Time
1998	2.0	0.5	1.00	2.50
1999	2.0	0.5	1.06	2.53
2000	2.0	0.5	1.12	2.56
2001	2.0	0.5	1.18	2.59
2002	2.0	0.5	1.25	2.63
2003	2.0	0.5	1.33	2.66
2004	2.0	0.5	1.40	2.70
2005	2.0	0.5	1.48	2.74
2006	2.0	0.5	1.57	2.78
2007	2.0	0.5	1.66	2.83
2008	2.0	0.5	1.76	2.88
2009	2.0	0.5	1.86	2.93
2010	2.0	0.5	1.97	2.98
2011	2.0	0.5	2.08	3.04
2012	2.0	0.5	2.20	3.10

Note: "Without" Clearance Time = Processing Time + Waiting Time × Rate of Increase

Table 3.2.2.2-8: Clearance Time under the "Without" Case (3/3) — Export Clearance —

(Unit: days)

Year	Tanjung Priok				Soekarno Hatta			
	Processing Time	Waiting Time	Rate of Increase (1.2%p.a.)	Clearance Time	Processing Time	Waiting Time	Rate of Increase (3.3%p.a.)	Clearance Time
1998	2.5	0.5	1.00	3.00	1.5	0.5	1.00	2.00
1999	2.5	0.5	1.01	3.01	1.5	0.5	1.03	2.02
2000	2.5	0.5	1.02	3.01	1.5	0.5	1.07	2.03
2001	2.5	0.5	1.04	3.02	1.5	0.5	1.10	2.05
2002	2.5	0.5	1.05	3.02	1.5	0.5	1.14	2.07
2003	2.5	0.5	1.06	3.03	1.5	0.5	1.18	2.09
2004	2.5	0.5	1.07	3.04	1.5	0.5	1.22	2.11
2005	2.5	0.5	1.09	3.04	1.5	0.5	1.26	2.13
2006	2.5	0.5	1.10	3.05	1.5	0.5	1.30	2.15
2007	2.5	0.5	1.11	3.06	1.5	0.5	1.34	2.17
2008	2.5	0.5	1.13	3.06	1.5	0.5	1.38	2.19
2009	2.5	0.5	1.14	3.07	1.5	0.5	1.43	2.21
2010	2.5	0.5	1.15	3.08	1.5	0.5	1.48	2.24
2011	2.5	0.5	1.17	3.08	1.5	0.5	1.53	2.26
2012	2.5	0.5	1.18	3.09	1.5	0.5	1.58	2.29

Note: "Without" Clearance Time = Processing Time + Waiting Time × Rate of Increase

4) Estimation of clearance time under the "With" case

   i) Establishment of rate of reduction in waiting-time.

      Japanese Customs and NACCS Center, the Ministry of Finance, conducted surveys to monitor the results of streamlining efforts for import clearance.

      Table 3.2.2.2-9 summarizes the changes in clearance time required for import clearance in Japan before and after the introduction of NACCS and the rate of reduction. Note that clearance time is indicated in the number of days lapsed from port entry to approval for sea cargo, and the number of days required from landing to delivery for air cargo.

      As seen in the table, comparison between prior to the introduction of NACCS and five years after the introduction indicates that clearance time fell from 7.0 days to 4.0 days for maritime cargo. The comparison also indicates that clearance time fell from 4.5 to 2.3 days for air cargo handled at the Narita airport and that clearance time fell from 9.6 to 4.9 days for air cargo handled at Baraki (a freight handling center in the Narita area).

      Based on the data, it is assumed that Indonesia will be able to achieve reduction of clearance time at rates similar to those shown in Table 3.2.2.2-9, because performance and configuration similar to Japanese CIS and NACCS will be introduced to CIS and CSS. Thus, the rates of clearance time reduction experienced in import in Japan are applied to the project.

Table 3.2.2.2-9: Required Time and Reduction Rate after Introduction of NACCS on Import Customs Clearance in Japan

(Unit: days)

Year	Tanjung Priok			Soekarno Hatta				
	Survey Year	Time Req'd All Over Cuntry	Reduction Rate	Survey Year	Narita		Baraki	
					Time	Reduction	Time	Reduction
Before Introduction	1991	7.0	0%	1977	4.5	0%	9.6	0%
After Introduction								
1 year	1992	6.2	10.9%	1979	3.9	13%	7.1	26%
2 year	1993	4.8	30.9%	1980	3.0	33%	6.9	28%
3 year	—	—	—	1981	2.4	47%	6.1	36%
4 year	—	—	—	1982	2.1	54%	5.7	41%
5 year	1996	4.0	43.5%	1983	2.3	49%	4.9	49%

Note: Sources are Customs & Tariff Bureau, Ministry of Finance for sea cargo and NACCS Center (Survey by Customs in 1977) for air cargo.

The following assumptions are established to apply the data:

- As CIS and CSS are scheduled to start operation in 2003, the base year to calculate the ratio of reduction is set in 2002. Thus, the rate of reduction in 2002 is 0%.

- As for marine cargo, for which no survey was conducted in the third and fourth year after the introduction of NACCS, the rate of reduction in 2005 and in 2006 is estimated by interpolation. The rate of reduction from approval to delivery of cargo is set at the same rate as that from port entry to approval. As for air cargo, the average rate of reduction for Narita and Baraki is applied to the analysis.

- The rates of reduction after the fifth year are set at the rate in the fifth year.

On the basis of the above assumptions, the rate of clearance time reduction for import clearance, under the "With" case, is summarized below.

Table 3.2.2.2-10: Breakdown of Rate of Time Reduction in Import Clearance

Year	Marine Cargo	Air Cargo
2003	10.9%	19.5%
2004	30.9%	30.5%
2005	35.2%	41.5%
2006	39.2%	47.5%
2007	43.5%	49.0%
:	:	:
2012	43.5%	49.0%

As for exports, no reliable data on reduction of clearance time in the "With" case are available. Therefore, the rate of reduction for exports in the base year (2002) is assumed to be 0% and remains at 0% after the introduction of CIS and CSS.

ii) Estimation of clearance time in the "With" case

Clearance time in the "With" case is obtained by multiplying the clearance time in 2002 (base year) by the above rate of reduction (reducible time), followed by subtracting the reducible time from the clearance time in 2002.

iii) Estimation of congestion time

Congestion time is obtained by subtracting the clearance time in the "With" case from that in the "Without" case.

Table 3.2.2.2-11 presents the results of calculation of congestion time and clearance time in the "With" and "Without" cases.

Table 3.2.2.2-11: Breakdown of Congestion Time and Clearance Time in "With" and "Without" Cases (1/3) – Import Clearance at Tanjung Priok –

(Unit: days)

Year	Clearance Time under the "Without" Case	"With" Case				Congestion Time (W/O - With)
		Clearance Time in 2002	Rate of Reduction (%)	Time Reduced	Clearance Time	
2002	4.67	4.67	0.0	0.00	4.67	0.00
2003	4.75	4.67	10.9	0.51	4.16	0.59
2004	4.83	4.67	30.9	1.44	3.23	1.60
2005	4.91	4.67	35.2	1.64	3.03	1.88
2006	5.00	4.67	39.2	1.83	2.84	2.16
2007	5.09	4.67	43.5	2.03	2.64	2.45
2008	5.19	4.67	43.5	2.03	2.64	2.55
2009	5.30	4.67	43.5	2.03	2.64	2.66
2010	5.40	4.67	43.5	2.03	2.64	2.76
2011	5.52	4.67	43.5	2.03	2.64	2.88
2012	5.64	4.67	43.5	2.03	2.64	3.00

Table 3.2.2.2-11: Breakdown of Congestion Time and Clearance Time
in "With" and "Without" Cases (2/3)
– Import Clearance at Soekarno Hatta –

(Unit: days)

Year	Clearance Time under the "Without" Case	"With" Case				Congestion Time (W/O - With)
		Clearance Time in 2002	Rate of Reduction (%)	Time Reduced	Clearance Time	
2002	2.63	2.63	0.0	0.00	2.63	0.00
2003	2.66	2.63	19.5	0.51	2.11	0.55
2004	2.70	2.63	30.5	0.80	1.83	0.88
2005	2.74	2.63	41.5	1.09	1.54	1.21
2006	2.78	2.63	47.5	1.25	1.38	1.41
2007	2.83	2.63	49.0	1.29	1.34	1.49
2008	2.88	2.63	49.0	1.29	1.34	1.54
2009	2.93	2.63	49.0	1.29	1.34	1.59
2010	2.98	2.63	49.0	1.29	1.34	1.64
2011	3.04	2.63	49.0	1.29	1.34	1.70
2012	3.10	2.63	49.0	1.29	1.34	1.76

Table 3.2.2.2-11: Breakdown of Congestion Time and Clearance Time
in "With" and "Without" Cases (3/3)
– Export Clearance at Tanjung Priok & Soekarno Hatta –

(Unit: days)

Year	Tanjung Priok			Soekarno Hatta		
	Clearance Time under the "Without" Case	Clearance Time under the "With" Case	Congestion Time (W/O – With)	Clearance Time under the "Without" Case	Clearance Time under the "With" Case	Congestion Time (W/O – With)
2002	3.02	3.02	0.00	2.07	2.07	0.00
2003	3.03	3.02	0.01	2.09	2.07	0.02
2004	3.04	3.02	0.01	2.11	2.07	0.04
2005	3.04	3.02	0.02	2.13	2.07	0.06
2006	3.05	3.02	0.03	2.15	2.07	0.08
2007	3.06	3.02	0.03	2.17	2.07	0.10
2008	3.06	3.02	0.04	2.19	2.07	0.12
2009	3.07	3.02	0.05	2.21	2.07	0.15
2010	3.08	3.02	0.05	2.24	2.07	0.17
2011	3.08	3.02	0.06	2.26	2.07	0.19
2012	3.09	3.02	0.07	2.29	2.07	0.22

4) Estimation of direct benefits

   i) Establishment of unit prices for export and import cargoes in 1998.

     Unit prices of export and import cargoes in 1998 are not available yet and are estimated on the basis of the average prices in the past five years.

     a) Import cargo

       The volume and value of import cargo cleared through the Tanjung Priok port and the Soekarno Hatta airport during the past five years, as well as the unit price, are presented below.

Table 3.2.2.2-12: Changes in Unit Price of Import Cargo

Port	1992	1993	1994	1995	1996
Tanjung Priok					
Volume of import cargo (1,000 tons)	11,218	12,578	16,046	18,244	18,496
Value of import (million US$)	14,116	15,340	18,714	23,314	22,525
Unit price (US$/ton)	1,258	1,220	1,166	1,278	1,218
Soekarno Hatta					
Volume of import cargo (1,000 tons)	150	113	212	77	147
Value of import (million US$)	1,370	1,548	1,467	2,323	3,715
Unit price (US$/ton)	9,133	13,699	6,920	30,169	25,272

Note: The value of import is indicated in CIF price.

     The average price of import cargo during the past five years is US$1,228/ton at the Tanjung Priok port and US$17,039/ton at the Soekarno Hatta airport.

     b) Export cargo

       The volume and value of export cargo, cleared through the Tanjung Priok port and the Soekarno Hatta airport, are shown below.

Table 3.2.2.2-13: Changes in Unit Price of Export Cargo

Port	1992	1993	1994	1995	1996
Tanjung Priok					
Volume of export cargo (1,000 tons)	11,950	10,463	10,261	9,403	10,763
Value of export (million US$)	9,731	10,903	11,317	12,809	14,083
Unit price (US$/ton)	814	1,042	1,103	1,362	1,308
Soekarno Hatta					
Volume of export cargo (1,000 tons)	48	44	47	57	62
Value of export (million US$)	904	1,040	1,550	1,128	1,489
Unit price (US$/ton)	18,833	23,636	32,979	19,789	24,016

Note: The value of export is indicated in FOB price.

The average price of export cargo during the past five years is US$1,126/ton at the Tanjung Priok port and US$23,851/ton at the Soekarno Hatta airport.

ii) Estimation of values of export/import cargoes

The values of export and import cargoes are estimated by multiplying the volume of export or import cargo shown in Table 3.2.2.2-5 by the export or import unit price in 1998.

a) Annual value of import cargo

Annual value = (Annual volume of import cargo) x (Unit import price)

b) Annual value of export cargo

Annual value = (Annual volume of export cargo) x (Unit export price)

iii) Estimation of congestion cost saved

The amount of reduction in the congestion cost as the direct benefits from the project is obtained by calculating the congestion cost of export/import cargo in the "Without" and "With" case.

a) Import cargo

- Inventory cost

  Inventory cost in "Without" case = (Annual value of import cargo) x (Clearance time (days) in "Without" case) / 365 days

  Inventory cost in "With" case = (Annual value of import cargo) x (Clearance time (days) in "With" case) / 365 days

- Congestion cost

  Congestion cost in "Without" case = (Inventory cost in "Without" case) x (Opportunity cost of capital)

  Congestion cost in "With" case = (Inventory cost in "With" case) x (Opportunity cost of capital)

- Congestion cost saved

  Congestion cost saved = (Congestion cost in "Without" case) - (Congestion cost in "With" case)

b) Export cargo

- Inventory cost

  Inventory cost in "Without" case = (Annual value of export cargo) x (Clearance time (days) in "Without" case) / 365 days

  Inventory cost in "With" case = (Annual value of export cargo) x (Clearance time (days) in "With" case) / 365 days

- Congestion cost

  Congestion cost in "Without" case = (Inventory cost in "Without" case) x (Opportunity cost of capital)

  Congestion cost in "With" case = (Inventory cost in "With" case) x (Opportunity cost of capital)

- Congestion cost saved

  Congestion cost saved = (Congestion cost in "Without" case) – (Congestion cost in "With" case)

c) Total congestion cost saved

  Total cost saved = (Congestion cost saved for import cargo) + (Congestion cost saved for export cargo)

The summary of direct benefits for import cargo is shown in Table 3.2.2.2-14.

Table 3.2.2.2-14: Breakdown of Direct Benefits Expected from the Project
(Cost Savings Related to Reduced Congestion Cost) (1/4)
- Import Clearance at Tanjung Priok -

Year	(1) Import Cargo Volume	(2) CIF Value	(3) Import Value (1)×(2)	"Without" Case			"With" Case			(10) Net Saving in Congestion Cost (6) - (9)
				(4) Clearance Time	(5) Inventory Cost (3)×(4)/(11)	(6) Congestion Cost (5)×(12)	(7) Clearance Time	(8) Inventory Cost (3)×(7)/(11)	(9) Congestion Cost (8)×(12)	
	(1,000 tons)	(US$/ton)	(mil. US$)	(days)	(mil. US$)	(mil. US$)	(days)	(mil. US$)	(mil. US$)	(mil. US$)
2003	21,203	1,228	26,037.3	4.75	338.84	33.88	4.16	296.82	29.68	4.20
2004	22,306	1,228	27,391.2	4.83	362.46	36.25	3.23	242.17	24.22	12.03
2005	23,465	1,228	28,815.6	4.91	387.63	38.76	3.03	238.91	23.89	14.87
2006	24,686	1,228	30,314.0	5.00	415.26	41.53	2.84	235.81	23.58	17.94
2007	25,969	1,228	31,890.3	5.09	444.72	44.47	2.64	230.53	23.05	21.42
2008	27,320	1,228	33,548.6	5.19	477.03	47.70	2.64	242.52	24.25	23.45
2009	28,740	1,228	35,293.1	5.30	512.48	51.25	2.64	255.13	25.51	25.73
2010	30,235	1,228	37,128.4	5.40	549.30	54.93	2.64	268.40	26.84	28.09
2011	31,807	1,228	39,059.0	5.52	590.70	59.07	2.64	282.35	28.24	30.83
2012	33,461	1,228	41,090.1	5.64	634.93	63.49	2.64	297.04	29.70	33.79

Note: (11); 365 Days
(12); Opportunity cost of capital (O.C.C.), 10%

Table 3.2.2.2-14: Breakdown of Direct Benefits Expected from the Project
(Cost Savings Related to Reduced Congestion Cost) (2/4)
-Import Clearance at Soekarno Hatta -

Year	(1) Import Cargo Volume	(2) CIF Value	(3) Import Value (1)×(2)	"Without" Case (4) Clearance Time	(5) Inventory Cost (3)×(4)/(11)	(6) Congestion Cost (5)×(12)	"With" Case (7) Clearance Time	(8) Inventory Cost (3)×(7)/(11)	(9) Congestion Cost (8)×(12)	(10) Net Saving in Congestion Cost (6)-(9)
	(1,000 tons)	(US$/ton)	(mil. US$)	(days)	(mil. US$)	(mil. US$)	(days)	(mil. US$)	(mil. US$)	(mil. US$)
2003	181.5	17,039	3,092.6	2.66	22.56	2.26	2.11	17.91	1.79	0.46
2004	192.0	17,039	3,271.9	2.70	24.21	2.42	1.83	16.36	1.64	0.79
2005	203.2	17,039	3,461.7	2.74	26.01	2.60	1.54	14.57	1.46	1.14
2006	214.9	17,039	3,662.5	2.78	27.95	2.79	1.38	13.84	1.38	1.41
2007	227.4	17,039	3,874.9	2.83	30.05	3.00	1.34	14.22	1.42	1.58
2008	240.6	17,039	4,099.7	2.88	32.33	3.23	1.34	15.05	1.50	1.73
2009	254.6	17,039	4,337.5	2.93	34.81	3.48	1.34	15.92	1.59	1.89
2010	269.3	17,039	4,589.0	2.98	37.51	3.75	1.34	16.84	1.68	2.07
2011	284.9	17,039	4,855.2	3.04	40.45	4.04	1.34	17.82	1.78	2.26
2012	301.5	17,039	5,136.8	3.10	43.64	4.36	1.34	18.85	1.89	2.48

Note: (11); 365 Days
(12); Opportunity cost of capital (O.C.C.), 10%

Table 3.2.2-14: Breakdown of Direct Benefits Expected from the Project
(Cost Savings Related to Reduced Congestion Cost) (3/4)
- Export Clearance at Tanjung Priok -

Year	(1) Import Cargo Volume	(2) FOB Value	(3) Import Value (1)×(2)	"Without" Case			"With" Case			(10) Net Saving in Congestion Cost (6)-(9)
				(4) Clearance Time	(5) Inventory Cost (3)×(4)/(11)	(6) Congestion Cost (5)×(12)	(7) Clearance Time	(8) Inventory Cost (3)×(7)/(11)	(9) Congestion Cost (8)×(12)	
	(1,000 tons)	(US$/ton)	(mil. US$)	(days)	(mil. US$)	(mil. US$)	(days)	(mil. US$)	(mil. US$)	(mil. US$)
2003	10,869	1,126	12,238.5	3.03	101.62	10.16	3.02	101.41	10.14	0.02
2004	10,999	1,126	12,385.4	3.04	103.06	10.31	3.02	102.63	10.26	0.04
2005	11,131	1,126	12,534.0	3.04	104.51	10.45	3.02	103.86	10.39	0.07
2006	11,265	1,126	12,684.4	3.05	106.00	10.60	3.02	105.10	10.51	0.09
2007	11,400	1,126	12,836.6	3.06	107.50	10.75	3.02	106.37	10.64	0.11
2008	11,537	1,126	12,990.6	3.06	109.03	10.90	3.02	107.64	10.76	0.14
2009	11,675	1,126	13,146.5	3.07	110.58	11.06	3.02	108.93	10.89	0.16
2010	11,816	1,126	13,304.3	3.08	112.16	11.22	3.02	110.24	11.02	0.19
2011	11,957	1,126	13,463.9	3.08	113.76	11.38	3.02	111.56	11.16	0.22
2012	12,101	1,126	13,625.5	3.09	115.38	11.54	3.02	112.90	11.29	0.25

Note: (11); 365 Days

(12); Opportunity cost of capital (O.C.C.), 10%

Table 3.2.2-14: Breakdown of Direct Benefits Expected from the Project
(Cost Savings Related to Reduced Congestion Cost) (4/4)
- Export Clearance at Soekarno Hatta -

Year	(1) Import Cargo Volume	(2) FOB Value	(3) Import Value (1)×(2)	"Without" Case			"With" Case			(10) Net Saving in Congestion Cost (6)-(9)
				(4) Clearance Time	(5) Inventory Cost (3)×(4)/(11)	(6) Congestion Cost (5)×(12)	(7) Clearance Time	(8) Inventory Cost (3)×(7)/(11)	(9) Congestion Cost (8)×(12)	
	(1,000 tons)	(US$/ton)	(mil. US$)	(days)	(mil. US$)	(mil. US$)	(days)	(mil. US$)	(mil. US$)	(mil. US$)
2003	62.7	23,851	1,495.5	2.09	8.56	0.86	2.07	8.48	0.85	0.01
2004	64.8	23,851	1,544.8	2.11	8.92	0.89	2.07	8.76	0.88	0.02
2005	66.9	23,851	1,595.8	2.13	9.30	0.93	2.07	9.05	0.90	0.03
2006	69.1	23,851	1,648.4	2.15	9.70	0.97	2.07	9.35	0.93	0.04
2007	71.4	23,851	1,702.8	2.17	10.12	1.01	2.07	9.65	0.97	0.05
2008	73.8	23,851	1,759.0	2.19	10.56	1.06	2.07	9.97	1.00	0.06
2009	76.2	23,851	1,817.1	2.21	11.03	1.10	2.07	10.30	1.03	0.07
2010	78.7	23,851	1,877.1	2.24	11.51	1.15	2.07	10.64	1.06	0.09
2011	81.3	23,851	1,939.0	2.26	12.02	1.20	2.07	10.99	1.10	0.10
2012	84.0	23,851	2,003.0	2.29	12.55	1.26	2.07	11.36	1.14	0.12

Note: (11); 365 Days

(12); Opportunity cost of capital (O.C.C.), 10%

3.2.2.3 Estimation of costs

1) System development costs

The system development costs for CIS and CSS are estimated in Volume II and Volume IV, respectively. Because VAT is a transfer of income, the system costs excluding VAT are used in the economic analysis.

The CIS development costs include hardware (server machine (dual), personal computer, network device, etc), software (server package product, PC package product), cabling, installation, training, CIS application development and contingencies, while the CSS development cost include hardware, package software, telecommunication tailor-made software and contingencies.

In addition, maintenance cost and network fee are required for the development.

The CIS development is divided into stages. Because a period of each stage is expressed in the total number of months, the CIS development costs in each stage are divided by the total number of months and allocated to the year.

The breakdown of annual system development costs for CIS and CSS is shown in Table 3.2.2.3-1.

Table 3.2.2.3-1: Breakdown of System Development Costs

(Unit: US$ million)

Year	CIS	CSS	Total
2000	7.00	6.28	13.28
2001	5.08	5.26	10.34
2002	4.02	14.12	18.14
2003	1.62	—	1.62
Total	17.72	25.66	43.38

Note: Costs exclude VAT.
   For reference, in case that CIS development is the first stage only, total development costs are US$ 33.24 million (US$ 7.58 million for CIS and US$ 25.66 million for CSS).

2) Annual operation costs

Additional annual operation costs such as maintenance cost and network fee due to the implementation of CIS and CSS are summarized in Table 3.2.2.3-2.

Table 3.2.2.3-2: Annual Operation Costs

(Unit: US$ million)

Year	CIS	CSS	Total
2003	0.62	1.43	2.05
2004-2012	1.48	1.43	2.91

Note: Costs exclude VAT.

3.2.2.4 Results of economic analysis

On the basis of the various assumptions, the EIRR of the project is determined at 24.63%, and the net present value (hereinafter called as NPV) is US$ 51.0 million discounted by opportunity cost of 10%. (For reference, the EIRR is 28.91% in case that CIS development is the first stage only.)

Detailed calculation results are shown in Table 3.2.2.2.4-1. The table revealed that the benefits from import clearance rather than those from export clearance contribute to the viability of the project.

Then, sensitivity analysis is made in case that the major factors, such as import cargo traffic and development cost, are changed. In the analysis, the assumed worst cases and the result are shown below.

- In case of a slowdown in annual growth rates in import cargo traffic in L case:
    1) Annual growth rate at Tanjung Priok will be revised from 5.8% to 4.5%.
    2) Annual growth rate at Soekarno Hatta will be revised from 5.2% to 5.0%
    3) Due to the above decrease in annual growth rates, the waiting time will be changed.
    4) The result is as follows:

    EIRR   :   21.13%

- In case of an increase in development cost by 20%, EIRR is 21.14%.

The above result revealed that both cases have the same effect on the viability of the project.

From above mentioned analysis, it is considered that the project has reasonable feasibility. Moreover, the project still keeps the viability of more than 20% even if the annual growth rates in import cargo traffic will decrease or the development cost will increase as shown in the sensitivity analysis.

Table 3.2.2.4-1: Economic Calculation Sheet -Base Case-

(Unit: US$ million)

Year	CIS Cost (1)	CSS Cost (2)	Total Cost (3) = (1) + (2)	Saving of Imports (4)	Saving of Exports (5)	Total Benefit (6) = (4) + (5)	Benefit - Cost (7) = (6) - (3)	Net Present Value (8) =(7) / (1+OCC)$^{t-1}$
2000	7.00	6.28	13.28	0.00	0.00	0.00	-13.28	-13.28
2001	5.08	5.26	10.34	0.00	0.00	0.00	-10.34	-9.40
2002	4.02	14.12	18.14	0.00	0.00	0.00	-18.14	-14.99
2003	2.24	1.43	3.67	4.67	0.03	4.70	1.03	0.77
2004	1.48	1.43	2.91	12.81	0.06	12.87	9.96	6.81
2005	1.48	1.43	2.91	16.02	0.09	16.11	13.20	8.19
2006	1.48	1.43	2.91	19.36	0.12	19.48	16.57	9.35
2007	1.48	1.43	2.91	23.00	0.16	23.16	20.25	10.39
2008	1.48	1.43	2.91	25.18	0.20	25.38	22.47	10.48
2009	1.48	1.43	2.91	27.62	0.24	27.86	24.95	10.58
2010	1.48	1.43	2.91	30.16	0.28	30.44	27.53	10.61
2011	1.48	1.43	2.91	33.10	0.32	33.42	30.51	10.69
2012	1.48	1.43	2.91	36.27	0.37	36.64	33.73	10.75
Total	31.66	39.96	71.62	228.18	1.87	230.05	158.43	50.96

EIRR is calculated by using the following formula:

$$\sum_{t=1}^{n} R_{t-1} / (1+d)^{t-1} = 0$$

Where d : EIRR t : The t th year n : The 13 th year (in 2012)

R : The value in each year in (7)

EIRR:	24.63 %

NPV:	US$50.96 million
(Discount rate :	10% (OCC))

3.2.3 Indirect benefits

3.2.3.1 Classification of indirect benefits

Indirect benefits, the benefit to the government and society, of the project are classified and analyzed in detail. Those benefits are:

1) Benefits from the establishment of appropriate and streamlined clearance processes

   Analyzing CIS data carefully, Customs evaluates future risks. Based on the risk assessment, customs can identify high-risk import/export goods and border crossing peoples and can allocate its maximum resources to item and minimize intervention to those of low risk.

   Consequently, law-abiding importer/exporter can get privilege of faster clearance service, and Customs can reduce its inspection-related time.

2) Benefits from improved transparency of clearance service (standardization)

   CSS covers all Customs formalities and CIS stores all customs-related information with electronic media. By using item effectively, Customs can provide unified Customs clearance procedure all over Indonesia, which also increase transparency of its procedures

   As the result, importer can predict its clearance time and costs and can reduce unclear expenditures.

3) Effects of computerization of Customs

   Computerization of Customs will promote computerization of government organizations as a whole. Computerization is expected to have significant impacts on management and operation of bonded warehouses and zones, which will stimulate the development of domestic industries and increase domestic employment opportunities.

4) Effects on foreign direct investment and benefits from growth of international cargo

   Improved Customs clearance service will increase foreign investment in Indonesia. As a result of the increase in foreign direct investment, domestic employment and exports will increase. The Customs clearance system will realize smooth flow of import/export cargo, accelerate division of labor, and expand trade within ASEAN countries.

5) Benefits from effective prevention of illegal trade

   High quality risk assessment provided by CIS is expected to become a powerful weapon in order to detect smuggling and commercial frauds. Detection of such activities contributes

to an increase in revenue of the government, protection of domestic industries and society, and prevention of the outflow of black money.

6) Benefits from accurate statistical data on Customs clearance

Efforts to develop reliable database including import and export statistics in CIS and CSS will help improve the country's credibility in the international economy, while assisting the country to establish its export/import strategies and industrial policy.

3.2.3.2 Benefits from the establishment of appropriate and streamlined clearance processes

The database built in CIS allows immediate access to a wide range of data including: 1) export and import clearance data; 2) ship/airplane arrival and departure data; 3) cargo handling in bonded area; and 4) violation by exporter, importer, Customs broker, ship/airplane and bonded area. By analyzing those data carefully, Customs can evaluate future risks. Based on the risk evaluation, Customs can determine intensification (for high risks) and simplification (for low risks) of their procedures (review and inspection) for each subject. This allows efficient allocation of human resources by focusing on high-risk subjects, thereby reduces burdens of Customs officers. At the same time, beneficiaries will receive faster clearance service. Also important is the strengthening of Customs in the ability to identify and control illegal imports and exports by detailed analysis of high risk subjects, which allows efficient discovery of commercial frauds, such as products infringing intellectual property rights and tax evasion, and anti-social goods.

Thus, the effective use of the CIS database enables Customs to assess risks threatening the society and economy and to prevent at the border. In addition, reliable assessment of low risk subjects can simplify Customs clearance procedures significantly, resulting in prompt and efficient service.

3.2.3.3 Benefits from improved transparency of clearance service (standardization)

As customs clearance data are stored in the database, product classification and profile of exporters and importers are available in a systematic manner. By using them effectively, Customs officers and managers can share unified inspection standards and criteria, which increase transparency of Customs clearance procedures and avoid the difference in

interpretation among officers. As a result, exporters and importers do not have to think about individual officers, reducing time required for document preparation.

3.2.3.4 Effects of computerization of Customs

1) Effects of advanced computerization on Customs and other government agencies

    i) Information technology as key factor for national development

Today, industrialized countries are working with structural reforms of their societies and economies, which have become one of the global challenges after the end of the cold war. In particular, industrialized countries are struggling to reform their administration system and fiscal policies. Information technology plays a central role in such reform process. Meanwhile, Asian countries are increasingly adopting advanced systems into their society by utilizing information technology fully.

The reforms toward the 21st century inherently point to liberalization and globalization. Progress of the reform in turn owes much to the development of information and communication technologies. The progress in information technology is closely related to the direction of social reforms in each country. More precisely, many countries are reforming the society and promoting the domestic industry in an integrated form, under the common goals of an open government and structural reforms, and the reform and promotion rely on information and communication infrastructure which are increasingly digitized and networked, as seen in the Internet. Each country needs to make strategic decisions in the international context while promoting domestic reforms.

    ii) Promotion of information technology in public administration

The public administration system constitutes infrastructure of today's society and serves as a major drive for the expansion of information technology to the society. In other words, successful deployment of information technology in public administration is the key for social development in the country.

The delay in adoption of information technology in the public sector may disturb healthy growth and activities of the private sector, depending upon the degree of government's influence on the industry and economy.

Furthermore, today's public service cannot meet the needs of people fully without the effective use of information technology. But for information technology in the public sector, international communication may be hindered because the exchange of electronic data becomes common in the increasingly global society. Under these circumstances,

each country promotes information technology in the public administration sector as well as social reform.

iii) Promotion of computerization

At present, Indonesia is in the midst of the major challenges to reform and build a new social system. In this context, the project is expected to play an important role as a model to promote an effective use of information technology for public administration. Computerization of Customs, starting from Tanjung Priok and Soekarno Hatta will expand to other offices under this project. The successful improvement of Customs' work by computer networks, as proposed, is expected to help spread computerization and benefits to the Ministry of Finance as a whole, related agencies and organizations. Then, computer networks are expected to expand to the private sector by creating significant benefits. Computerization will spur the advanced use of information technology for public service. Major benefits from simplified administrative procedures include reduction of paper, data sharing by computer networking, and one-stop service:

a) Electronic processing of application and reporting

Private enterprises, particularly those having advanced electronic data processing systems, can enjoy significant benefits if application documents and reports to the government can be made and stored electronically. However, if application and reporting procedures are shifted to electronic systems, the government will have to shoulder heavy burdens on improvement of infrastructure, technology and institutions.

b) Improvement of access to public service

The improvement of access to public service can be achieved in one-stop service, non-stop service and multi-access service:

• One-stop service

This service represents the removal of traditional independence among government agencies, or integration of public services. One-stop service allows people to apply for and receive services provided by different governmental departments or agencies through a single counter.

• Non-stop service

This represents the removal of time limitation on the availability of public service, allowing people to receive services at any time.

- Multi-access service

  This means expansion of access points for public services by using information networks, allowing people to use any government office as a contact point for one-stop service.

2) Effects of computerization on bonded warehouses and zones

- Bonded warehouses

  A bonded warehouse, functioning as a physical distribution center for import goods, reduces financial burdens in the payment of customs duties and interest, while enabling importers to respond to market opportunities quickly.

  Computerization of bonded warehouses is expected to create significant effects on simplifying and streamlining the work and procedures of delivery, storage and shipment. Hence, the computerization will contribute to smooth distribution of import goods and promotion of imports, which are essential in accelerating further development of domestic industries.

- Bonded zones

  A bonded zone consists of export-oriented and bonded factories that are mechanism strategically designed for the development of the Indonesian economy.

  Computerization of bonded zones will contribute greatly to smooth movement of export goods and export promotion by simplifying and streamlining the work and procedures of delivery, storage and shipment. In particular, it has powerful impacts on processing of foreign materials for value-added export products, which will stimulate the development of domestic industries and increase domestic employment opportunities.

3.2.3.5 Effects on foreign direct investment and benefits from growth of international cargo

1) Improved competitive advantage of Indonesia in foreign investment

   According to JETRO's surveys for Japanese companies operating in ASEAN, "procedures of Customs" were cited as one of the top three problems in Indonesia. Once the problem is solved by the project, prospective foreign companies will invest in Indonesia aggressively. The increase in foreign direct investment will lead to an increase in employment and exports.

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2) International division of labor in ASEAN countries

A trade expansion in Asia has been driven by rapid economic development. One factor for spurring a fast economic growth is the increasing linkage of the economies within the region. Asian countries specialized in products where they have competitiveness in price and other aspects. This reflects the development of horizontal division of labor that facilitates the supply of raw materials, semi-finished products and finished products in accordance with technology levels in those countries.

For Indonesia, economic ties with the ASEAN countries will be intensified in the future for the following reasons:

- Growth of foreign electronics manufacturers in Indonesia
- Increasing demand from foreign manufacturers for local products and services
- Active moves to promote division of labor in ASEAN region

To realize smooth flow of export and import cargoes, it is essential to establish a modern Customs clearance system. The system will accelerate division of labor and expand trade within the region.

3) Effects on importers, industry and society

i) Importers

The improvement of Customs' work will promote the streamlining of clearance procedures for imports or the simplification of import procedures. This will enable importers and related service providers to enjoy faster clearance and reduce workload.

ii) Industry

The computerized Customs system will allow accurate calculation of import tariff beforehand and will ensure predictability of time required for Customs clearance, resulting in early determination of import costs. The system also helps importers make an accurate production plan with an accurate estimation of cash flow in advance. The manufacturing industry that processes import goods for export will enjoy significant benefits.

iii) Society and nation

The effective risk management at Customs will help find anti-social goods to protect the society. The risk management also helps prevent tax evasion to increase tax revenue of the nation.

3.2.3.6 Effective prevention of illegal trade

Customs has been striving to prevent the smuggling of illegal goods at the boarder by collecting information from related agencies and by introducing resources including drug detecting dogs, X-ray equipment and risk management training of the staff. As a result, major smuggling attempts have been uncovered, e.g., approximately 300,000 tablets of illegal stimulants called "ecstasy (MDMA)" in 1996. Nevertheless, Customs must continue to fight against smuggling attempts including those connected with international criminal organizations and is expected to prevent illegal goods from eroding people and the society.

CIS and its database are expected to become a powerful weapon to monitor and detect criminals engaged in drug trafficking. By developing nation-wide Customs system, information can be shared on a real time. Effective control of illegal imports will contribute to prevention of outflow of black money and social stability.

The computerized information system will assist customs to find commercial fraud and will lead to an increase in tax revenue due to correction of tax evasion. The tax evasion includes declaration of low value. In addition, the system prevents inflow of illegal goods to the market and revitalizes domestic industries to boost production and employment.

3.2.3.7 Development of accurate trade statistics

CIS and CSS are designed for electronic processing of raw data. Thus, most of manually handled data are replaced with electronic data that can be stored permanently in computer system, and can minimize human errors. Provision of accurate trade and Customs statistics by using the new systems is expected to create the following indirect benefits:

1) Establishment of reliable trade and customs statistics

Indonesia has extensive statistics including population, industry and exports/imports. However, the country needs improve accuracy of data because there are apparent errors. For instance, the sum of export and import of each industry does not agree with the total of the industry. Major reasons for those errors seem manual recording of statistical data and lack of cross checking. Those are attributable to the lack of advanced information processing equipment in statistical office, such as optical mark reader (OMR), optical card reader (OCR) and scanner, and manual work and eye check.

2) Establishment of national image of having global statistical standards

Industrial countries, in general, have developed integrated statistical infrastructure. Japan, the U.S. and other industrial countries maintain and publish accurate and updated statistics, which indicate a sharp contrast to developing countries.

Although Indonesia's statistical infrastructure is relatively well developed, further improvements are required to catch up with the level of industrial countries in terms of accuracy and promptness.

The proposed systems are expected to help the government collect and publish a wide range of statistical data that meet global standards. Accurate and updated statistics will contribute to the country's perception positively in the international marketplace.

3) Statistics as powerful tool to establish export/import strategies and industrial policy

At present, the country seems to establish trade policy by relying on past trends solely, rather than on advanced analysis of statistical data. Statistical analysis with accurate and elaborate export/import data can be used as the basis of establishing effective export/ import strategies. For instance, advanced analysis of export data on a specific item produced by domestic industry, such as hypothesis testing (correlation and regression analyses) is a powerful tool for the government to develop export strategy in the future. Similar statistical analysis helps the government develop import substitution.

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