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# POLICY OPTIONS DURING A FINANCIAL CRISIS: HONG KONG'S EXPERIENCE DURING THE ASIAN CRISIS

by

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BBA (Economics), University of New Brunswick, 1999

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**Abstract**

When the Asian financial turmoil started in Thailand in July 1997 and spread to other countries in the region, Hong Kong, an important global and regional financial center, was not immune. The effects of the Asian Crisis were similar throughout the affected countries: a substantial downward pressure on stock markets and real estate, an upsurge in interest rates, rising inflation and rising unemployment. Although Hong Kong did not experience sharply depreciated and highly volatile exchange rates, it did experience a downturn in its economy. The downturn was caused by both endogenous and exogenous conditions. Endogenous factors included asset bubbles and a linked exchange rate policy. Exogenous factors involved unstable currencies in neighboring countries. Through analyzing economic conditions in Hong Kong during the Asian Crisis, we can determine which policies, both endogenous and exogenous, can prepare Hong Kong to respond to future financial crises more effectively and efficiently.

***Keywords:*** A Discomfort Index, An Asian Dollar, An Asian Monetary Fund (AMF), Financial Safety Net, Gross Domestic Product, Inflation Rates, Exchange Rates, Unemployment Rates, Interest Rates, Private Consumption, Stock Market, and a Linked Exchange Rate Policy.

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# CHAPTER ONE

# Introduction

## 1.1. Introduction

Of the major financial crises during the 1990s, that in Asia was the most severe. The British currency crisis of 1992 and the Mexican currency crisis of 1994 had an impact only on the countries directly concerned, whereas the Asian crisis, which began in Thailand, spread throughout Asia, and impacted Europe and North America.

In 1992, Britain abandoned the European Rate Mechanism (ERM) because external and internal factors forced the Sterling Pound to leave ERM. Externally, West Germany increased its interest rates, and other ERM memberships such as Britain in turn had to increase their interest rates in order to balance exchange rates. Internally, the British economy was so weak at that moment that if Britain increased its interest rates, its economy would worsen. In 1992, George Soros speculated on the pound sterling and succeeded. In 1997, a similar situation in Thailand created far more serious consequences. The current balance of Thailand was negative, and it had a high interest rate policy. As a result, the Thai currency depreciated, and Thailand's financial distress spread to other Asian countries, and elsewhere.

In Mexico, from 1994-1995, a currency crisis occurred in which the peso deeply devalued, and the country was brought to the brink of default. Mathur, Gleuson, and Singh (1998) explain that the Mexican foreign currency reserve declined from US$30 billion in

1993 to US$ 5 billion by December 1994.[1] At the beginning of 1994, Mexican president Zedillo assured investors and financial markets that Mexico would maintain an exchange rate of peso 3.4 to one US dollar. Unfortunately, he could not keep this promise, and by 27 December 1994, the peso was trading at 5.45 to one US dollar, a decrease of 36 percent. This situation also affected Argentina and Brazil. Thus, the Mexican currency crisis of 1994 was another example of a financial crisis in one country spreading to the economies of other countries in the same region. However, the diffusion was more limited than that of Thailand in 1997, with little impact on capital and exchange rate markets in Europe and North America.

When the Asian Crisis exploded in 1997, the immediate effect was the crash of most stock markets around the world. The crisis not only impacted the Asian region, but also affected other regions such as Asia/Pacific, the Americas, and Europe. This was reflected in the indices of stock markets in Asia/Pacific: Hong Kong (Hang Seng Index), Thailand (SET), Indonesia (Jakarta Composite), Japan (Nikkei), Malaysia (KLSE Composite), New Zealand (NZSE 40), the Philippines (PSE Composite), Singapore (Straits Times), South Korea (Seoul Composite), Taiwan (Taiwan Weighted), and Australia (All Ordinaries). It was also reflected in the stock market indices in the Americas such as the United States (Dow Jones), Brazil (Bovespa), and Argentina (MerVal), and in Europe, France (CAC40), Germany (DAX), the United Kingdom (FTSE100), Portugal (BVL30), Spain (Madrid General), Turkey (ISE National-100), Sweden (Stockholm General), Italy (MIBTel), Denmark (FX), and

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[1] Mathur, I. Gleuson K. C., & Singh M. Did Markets react efficiently to the 1994 Mexican peso crisis? Evidence from Mexican ADRS. Journal of Multinational Financial Management 8, (1998), pp. 39-48.

Netherlands (AEX General).[2]

The fact that most stock markets crashed at that period of time demonstrates the importance of the economies in the Asian region: their financial turmoil spread out to the rest of the world. Some economists argue that the Asian Crisis happened because the pace of the region's development was too fast, and others argue that the governments of these Asian countries had policy problems which caused both political and economic instability. In the next section, we will look at some of their discussions of the factors that led to the Asian Crisis of 1997.

Clearly economists have been concerned about the factors leading to the crisis and the results of the Asian Crisis in three countries -- Thailand, South Korea, and Indonesia -- because these countries were large borrowers from the IMF. However, there has been little discussion about the situation in Hong Kong. Thus, in this thesis, I will focus on the Asian Crisis in Hong Kong. First, I will discuss what internal and external factors existed in Hong Kong before the Asian Crisis and what sectors were influenced by the crisis. Secondly, I will describe how the Hong Kong government handled this financial crisis. Thirdly, I will compare how other Asian countries handled their financial crises, pointing out the difference between their policies and those of Hong Kong, and fourth, I will critique the actions taken by the Hong Kong government to protect its economy during the crisis. Finally, I will determine what the Hong Kong experience tells us about reactions to financial crises and what actions could be most effective in responding to crises in the future.

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[2] See Capital Magazine (December 1997). Cover Story. http://www2.netvigator.com/fina/capital/capital121/cover/page1.html.

1.2. Literature Review

Although so many stock markets across the world were impacted by this financial crisis, precise, visible effects on the economies of ten Asian countries were especially notable: China, Hong Kong, Indonesia, Japan, Malaysia, the Philippines, Singapore, South Korea, Taiwan, and Thailand. Some of these countries recorded negative economic growth rate, and some of them recorded that reduced economic growth. None of them was immune from this financial crisis.

Miller (1998) argues that the Asian financial crisis occurred because of three interrelated risks: Interest rate risk, foreign exchange risk, and credit risk. Interest rate risk relates to both borrowers and lenders. When borrowers take short-term loans that are not fixed, they have to pay more interest if interest rates go up. According to Miller, during the Asian Crisis, interest rates went up extremely high. Thus, the borrowers were not able to pay back the principal and interest in a short period of time. As a result, these loans became bad debts.

Miller explains that foreign exchange risk occurred when borrowers took short-term loans in a foreign currency, either the Japanese yen or the U.S. dollar. If the value of the Japanese yen or the U.S. dollar goes up, these borrowers have to pay more when the loans are mature. During the Asian Crisis, most Asian countries' currencies depreciated. In other words, the U.S. dollar became stronger. Thus, the borrowers had to pay more.

Finally, Miller indicates that a credit risk occurs when countries such as South Korea, Thailand, and Japan, loosen their lending credit evaluations and lend a huge amount of money to the borrowers. If the economic environment gets worse in these countries, the borrowers might not be able to pay back the loans. As a result, the banks need to write-off

parts of their loans or entirely write-off the loans. During the Asian Crisis, when banks could not recover their loans, they stopped making loans to some corporations which had faced financial problems. As a result, the economic environment worsened. Miller also points out that Thailand, Indonesia, and Malaysia had weak banking systems, which caused their people to lose confidence, and these countries suffered more serious damage from the Asian crisis than other countries, such as Hong Kong and Singapore.

Another economist, Wade (1988), maintains that the starting point of the Asian Crisis can be traced back to the economic bubble of Japan in 1985. Japan acquired foreign income from other developed countries, such as the U.S.A., and then Japanese businessmen started to invest in other countries in the Asian region. In addition, Japanese banks lent a lot of money to developing countries in the Asian region, and invested in these countries. Thus, the economies of these countries began to grow.

Wade describes this growth and how it led to a crash. Thailand ran current account deficits in 1996, but its internal economy remained superficially strong. For example, the price of assets, such as real estate, was very high, and this was a signal of economic overvaluation. In July 1997, the Thai Baht devalued sharply. Three months later, in October, 1997, Hong Kong, South Korea, and Taiwan also suffered from the financial crisis. Because South Korea made too many short-term loans, the won dropped quickly. Taiwan's currency (NTD)[3] also dropped. Hong Kong did not devaluate its currency, but its stock market fell by more than 10 percent during that period of time.

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[3] Taiwan's currency is called New Taiwan Dollar (NTD).

Wade concludes with a four-step sequence of the Asian crisis:

> Step one was the exchange rate collapse; step two was an upsurge of bank failures and company bankruptcies as a result of the now much higher cost of servicing unhedged foreign debt. Step three was domestic recession, with falls in consumption and investment and rises in unemployment. Step four was political reaction to the slump, including civil unrest and anti-foreign sentiment. (p. 1547)

Wu (1998) argues that there are several main factors underlying the Asian currency turmoil. First, a large amount of foreign capital had been attracted to the region in the late 1980s and the early 1990s. These capital inflows to the Asian region increased the pace of regional economic growth. For example, in 1992-95, the average GDP growth rate of South East Asia was 9 percent, and the average GDP growth rate of the world was only 3.2 percent. In other words, the economy of the South East Asian region had a faster growth than other regions of the world.

Second, Wu points out that the negative growth of the current accounts in these South East Asian countries was a further factor that created the Asian Crisis. Because these countries normally lacked adequate foreign reserves, the huge inflow of foreign capital had been used to finance their deficits, and this situation accelerated the explosion of the Asian economic bubbles.

Third, Wu argues that pegging currencies with the U.S. dollar and subsequent low interest rates for borrowing the U.S. dollar also created the crisis. For example, when the U.S. dollar depreciated against the Japanese yen in 1994 and 1995, some Asian countries, such as Thailand, pegged their currencies to the U.S. dollar. Of course, when the U.S. dollar

was low, these countries' exports could increase. After mid-1995, the U.S. dollar appreciated, and as a result these Asian countries' exports went down. The low interest rate of the U.S. dollar did not cover the appreciation of the U.S. dollar for the Asian countries. Thus, these countries' exports decreased and their foreign debts increased at the same time.

Fourth, Wu maintains that the local interest rate policies and the financial structures of the South East Asian countries also pulled down the economy of the Asian region. For example, he argues that the Thai government used high interest rates to attract foreign capital inflow, which was put under increasing pressure for appreciation of the Thai Baht. As a result, its price competitiveness worsened, and its current account deficit increased. In addition, according to Wu loosened financial lending was another problem in the South East Asian region. Banks were blindly lending capital to their customers, and these lending policies pushed the overheated economies to another new high. As a result, when the Thai Baht unpegged with the U.S. dollar on July 2nd, 1997, the Asian Crisis officially started.

Corsetti, Pesenti, and Roubini (1999) focus on three interrelated dimensions of the Asian Crisis: corporate, financial, and international. In their discussion of the corporate dimension, they argue that political pressure in these countries pushed their economies to a high economic growth rate. Certain Asian governments provided limitless support to corporations to invest in non-performance (or sunset) industries because these governments wanted their countries which can be a leader in a specialized industry in the world.

In their discussion of the financial dimension, Corsetti et al. argue that most of these countries had had a current account deficit since 1990. Thus, although their economies had weakened, their currencies had appreciated, which meant their currencies were already overvalued before the Asian Crisis. Conglomerates could not make profits when they had

invested huge capital in their businesses. These conglomerates made heavy investments by borrowing U.S. dollars or the Japanese yen with lower interest rates than those of their local currencies. As a result, when interest rates increased, these conglomerates had to pay more interest.

In the international dimension, Corsetti et al. argue that these countries' conglomerates borrowed financial capital on a short-term basis. In other words, when these countries' currencies depreciated, they had to pay back their debts in a short period of time, and they could not wait for their currencies to appreciate. In addition, lenders and borrowers were always over-lending and over-borrowing. Thus, when borrowers could not make payments, lenders also got into financial difficulty. The authors also maintain that before lenders and borrowers made loans, they had not made any risk assessments. As a result, these borrowers, conglomerates that believed that their governments would retain a fixed exchange policy forever, were confidently taking on huge financial debts. Corsetti et al. provide the following table (Table 1-1), which shows the current account status in these countries since 1990.

Table 1-1: Current Account, NIA definition (% of GDP)

| Country | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|---|---|---|---|---|---|---|---|---|
| Korea | -1.20% | -3.20% | -1.70% | -0.20% | -1.50% | -1.90% | -4.80% | -1.90% |
| Indonesia | -4.40% | -4.40% | -2.50% | -0.80% | -1.50% | -4.30% | -3.30% | -3.60% |
| Malaysia | -2.30% | -14.00% | -3.40% | -10.10% | -6.60% | -8.90% | -3.70% | -3.50% |
| Philippines | -6.30% | -2.50% | -3.20% | -6.70% | -3.70% | -5.10% | -4.70% | -6.10% |
| Singapore | 9.50% | 12.40% | 12.40% | 8.50% | 18.10% | 18.00% | 16.30% | 13.90% |
| Thailand | -8.70% | -8.00% | -6.20% | -5.70% | -6.40% | -8.40% | -8.50% | -2.40% |
| Hong Kong | 8.40% | 6.60% | 5.30% | 8.10% | 2.00% | -3.00% | -2.40% | -3.80% |
| China | 3.00% | 3.10% | 1.10% | -2.20% | 1.20% | 0.00% | 0.50% | 3.60% |
| Taiwan | 7.40% | 6.90% | 4.00% | 3.50% | 3.10% | 3.10% | 4.70% | 3.20% |

Note: The source of all the data in these tables is the international financial statistics of the International Monetary Fund (unless otherwise noted). The data for Taiwan are from various sources (Economist Intelligence unit reports, IMF's December 1997 world economic outlook and Asian development bank). The data for Singapore for 1997 are from the economist intelligence unit country report, 2nd quarter 1998. (Corsetti et al. 1999.)

In Table 1, we can see that in 1996 the Thai current account was the most negative of the nine countries; its negative current account started in 1990. Thus, most people believe that the Asian Crisis began in Thailand. The Indonesian current account had also been negative since 1990. Its worst negative amount was 4.3 percent in 1995. Overall, there are three countries which did not have negative current accounts in 1997: Singapore, China, and Taiwan.

Although Miller(1998), Wade(1988), Wu(1998), and Corsetti et al. (1999) focus on different aspects of the factors leading to the Asian Crisis, their conclusions are similar. They all conclude that the Asian Crisis occurred because of government policies: interest rate policies, foreign exchange policies, loose credit and lending policies. They further argue that the crisis was caused by internal economic overheating, the speed of capital inflow to the Asian region, a lack of adequate foreign reserves, and immature financial structures of the South East Asian countries.

Chossudovsky (1998) takes a different approach to what caused the Asian Crisis.[4] Rather than focusing on the effects of internal policies and situations in these countries, he emphasizes an external cause, namely pressure from financial speculators. He argues that financial speculators took the foreign reserves away from developing countries, which had taken a long time to accumulate wealth. In addition, he maintains that those developing countries whose stock markets provided various speculative instruments including futures' and options' trading played key roles in the collapse of all the economies because speculators

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[4] Michel Chossudovsky is Professor of Economics at the University of Ottawa and has written widely in issues of international finance and macro-economic reform. He is the author of The Globalization of Poverty, Impacts of IMF and World Bank Reforms, London: Penang and Zed Books, 1997.

could take chances to attack both stock and currency markets concurrently.

He further points out that for a long time, developed countries, such as G7 countries, amassed a huge amount of capital. Fund managers (or speculators) absorbed this capital and invested it in Southeast Asian countries. These speculators' procedures were to attack the countries' currencies first, and then to use financial derivative tools, such as short-selling and future index contracts of stocks, to devastate their stock markets. As a result, when these institutional speculators sold these countries' currencies, the countries had to give up their foreign reserves and increase their interest rates in order to defend their currencies.

For example, George Soros, a famous speculator, used his funds to attack the Thai currency market, and on July 2nd, 1997, he succeeded in forcing the Thai government to unpeg the Thai currency with the US dollar. Chossudovsky argues that the actions of these institutional speculators plundered central banks' foreign exchange reserves. He also cites the words spoken by Malaysian Prime Minister Mahathir Mohamad: "This deliberate devaluation of the currency of a country by currency traders purely for profit is a serious denial of the rights of independent nations" (p.2).

From Chossudovsky's analysis, it can be concluded that if a monetary policy in a country has loopholes and its stock market is not matured, it is easy for speculators to earn profits from that country. Thailand in 1997 is an good example of a country whose fixed exchange rate was related to interest rate policy. Once interest rates were pushed up, the economy was affected. Hong Kong did not unpeg its fixed exchange rate policy; it paid a high price to defend it, such as elevated interest rates, and its stock market crashed. Thus, Chossudovsky's observations about the loopholes of a monetary policy can provides a basis for a discussion of Hong Kong's monetary policy during the Asian Crisis.

1.3. Organization Of This Thesis

In Chapter Two, I will provide important background information about nine Asian countries, with some economic data about how these countries suffered from the Asian Crisis. In Chapter Three, I will discuss the economic situation in Hong Kong before, during, and after the Asian Crisis. In addition, I will provide some economic data about how Hong Kong's economy changed during the Asian Crisis. In Chapter Four, I will point out the measures taken by the Hong Kong government to handle the crisis in light of the reactions of other Asian countries. Then I will evaluate how Hong Kong government handled its affairs during this period, whether its polices were effective and efficient or not. In Chapter Five, I will discuss that what can be learned from the Asian Crisis in Hong Kong in terms of preventing and reacting to future financial turmoil.

# CHAPTER TWO

## A Review Of The Performance Of The Asian Countries

### 2.1. Introduction

The economy of the Asian region has grown very fast since World War II. Japan is an advanced economy in the Asian region and in the world. Its economy has become the second largest in the world. The Asian tigers, Hong Kong, Singapore, South Korea, Taiwan, are described as the future economic stars in the Asian region. Hong Kong and Singapore are very similar in their economic systems. Both of them are financial centers; the sizes of their GDP in 1998 were ranked 24$^{th}$ and 38$^{th}$ respectively among the economies in the world. South Korea has focused on heavy industry, such as car-manufacturing, ship-building and steel manufacturing. Before the Asian Crisis, it was the 15th largest economy in the world. The economy of Taiwan focuses on hi-tech industry and is the third largest foreign reserve country in the world. Since the 1970s, China has opened its market for foreign investors. Most economists have maintained that in the next several decades, China may become the largest economic country in the Asian region and therefore one of the major economies in the world. Table 2-1 is a summary of the total GDP 1998 of these Asian countries.

During the 1990s, the GDP of China had a strong growth: on average, it grew 11.1 percent per year. Although its economy slowed down in 1999, it still grew 7.1 percent. Other developing countries, such as Thailand, Malaysia, Indonesia, the Philippines, have been growing in similar ways. Although their economies have been smaller than the economy of China, their GDP growth rates have been handsome as well. Before the Asian Crisis, Thailand was described as the fifth Asian tiger by most economists. The economies of

Malaysia, Indonesia, and Philippines also ran well before the Asian Crisis. Table 2-2 is a summary of these countries' performances from 1980 to 1998.

| Table 2-1:Total GDP 1998 | | |
|---|---|---|
| Rank | Country | Millions of US$ |
| 2 | Japan | 3782964 |
| 7 | China | 959030 |
| 15 | Korea | 320748 |
| 17 | Taiwan | 283392 |
| 24 | Hong Kong | 166440 |
| 32 | Thailand | 111327 |
| 37 | Indonesia | 94156 |
| 38 | Singapore | 84379 |
| 42 | Malaysia | 72489 |
| 43 | Philippines | 65107 |

Data are provided by (1) World Bank, 2000 Department Indicators CD-ROM.
www.worldbank.org/data/databytopic/gdp.pdf.
(2) The IMF, The WEO Database September 1999.
www.imf.org/external/pubs/ft/weo/1999/02/data/index/htm.
(3)Ministry of Economic Affairs, the Republic of China. The Statistics Department.
http: www.moea.gov.tw/~meco/stat/four/english/a1.htm.

| Table 2-2: GDP (Average annual % growth) | | |
|---|---|---|
| Country | 1980-1990 | 1990-1998 |
| China | 10.20% | 11.10% |
| Hong Kong | 6.90% | 4.40% |
| Indonesia | 6.10% | 5.80% |
| Japan | 4.00% | 1.30% |
| Korea | 9.40% | 6.20% |
| Malaysia | 5.30% | 7.70% |
| Philippines | 1.00% | 3.30% |
| Singapore | 6.60% | 8.00% |
| Thailand | 7.60% | 7.40% |

Data are provided by World Bank, World Development Report 1999/2000.

In the above two Tables, we can see that in these Asian countries, all of their GDP values were ranked at the top 50 in the world. Thus, if they suffered from any financial turmoil, the impact would spread out to other regions. Ultimately, they would cause a global financial turmoil. Ten countries were impacted the most from the Asian Crisis: Japan, Hong

Kong, Singapore, South Korea, Taiwan, Thailand, Malaysia, Indonesia, the Philippines, and China. These ten countries also can be classified into different categories. For example, Japan is an advanced industrial country. The Asian Tigers (Hong Kong, Singapore, South Korea, and Taiwan) are new industrial countries, and the remaining countries (China, Indonesia, Malaysia, the Phillippines, and Thailand) are developing countries. Although they are in the same region and all suffered from the Asian Crisis, the degree of economic impact varied. Of course, the impact on the developing countries (Thailand, Malaysia, Indonesia, and the Philippines) was the most serious. Japan and the Asian Tigers suffered from this crisis in different patterns, levels or dimensions. Thus, it is important to discuss the different ways that the crisis affected these countries.

2.2. Japan

The economy of Japan has stayed at a low level since 1990. Recently, the Nikkei reached 18,000 points, but it still has not climbed back to its previous highest point of 38,195 in December, 1989. The current low level of the Japanese economy can be traced back to mid-1985. In the middle of 1985, property asset bubbles started to gestate because foreign investors flocked into Japan and set up their business offices. Therefore, the prices of housing went up. In 1991, these bubbles were broken, and housing prices dropped approximately 70 percent in Tokyo. Today, property assets are still at a low level. People may ask who pushed up the prices of housing. The answer is the Japanese government. During the 1980s, the currency board wanted to increase the economic system and productivity, and wanted to control inflation concurrently. Thus, the Japanese government started to achieve these objectives by using land and stock policies. Japanese banks absorbed huge capital from the Japanese people and loaned to small- and middle-business

corporations. These loans allowed the small- and middle-business corporations to buy land and stocks. As a result, both the price of land and stocks went up. In addition, when the banks lent money to these corporations, they asked for collateral only. They neither asked whether or not the price of land was too high nor assessed the credit risks. As a result, when the real estate bubbles broke, the banking system was hurt.

In the early 1990s, when the bubbles of real estate exploded, the bad debt (or non-performing commercial loans) increased considerably. Thus, since 1991, Japan has suffered a prolonged recession and a weak recovery. First, the banks held a huge amount of collateral when they lent money to the corporations. As a result, when the bubbles of real estate exploded, the banking system was hurt, because the corporations were not willing or able to pay back the loans. Second, the collateral had to be re-sold at low prices. As a result, the banking system lost a great deal of money. When the profitability of banks dropped, the stock prices dropped. Thus, the collapse of the real estate industry ultimately caused the collapse of stock market of Japan.

The Japanese government estimated that the banking system might have US$232 billion in bad loans. On the other hand, a private financial institution estimated that the amount was double the Japanese government's estimation. An article in Capital Magazine indicated that the bad debt was close to US$ 564 billion. The Japanese government responded very slowly to these banking problems. As a result, medium to small banks were forced to close in 1995. Although the Japanese government used the method which the U.S.

government had used in 1989 to solve its banking problem, it did not seem to work well.[5] An additional weakness of the Japanese government was that it was unwilling to use public money to recapitalize troubled financial institutions and unable to take decisive actions to bring about regulatory changes that would allow international competition.

These huge bad debts in the Japanese banking system led to the Asian Crisis because the Japanese banks were the largest lenders in the Asian region. Because Japanese discount rates were low, other countries were willing to borrow money from Japan. Of course, when the Asian Crisis occurred, these borrowers were not able to pay back their loans, and as a result the number of bad debts increased. In addition, the depreciation of the Japanese currency has been a factor which has kept the economy of Japan from recovering. On the 28th of August, 1998, the Japanese currency dropped to a new low point: one US dollar could be exchanged for 146 Japanese Yen.

This bad economy not only impacted the banking and property sectors but also created a social problem. The unemployment rate increased to 4.1 percent in 1998. In March of 2000, the unemployment rate was 4.9 percent. The Japanese government forecasted that unemployment would continue to increase and exceed 5 percent in April, 2000. If so, this percentage would represent the highest unemployment rate in Japan since World War II.

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[5] In1989, approximately 750 Savings and Loan Associations were not able to run their businesses well. Poor management, corruption, fraud, and un-receivable mortgage loans led to bankruptcy. The American Congress set up a Resolution Trust Corporation, through which the U.S. government took over these associations, and sold their assets in order to re-pay their depositors' savings. The U.S. government spent US$ 40 billion in six years and succeeded to sell all of the assets of these associations. As a result, all the depositors were able to get their savings back. (Next Magazine (432), June 9, 1998)

2.3. Singapore

Singapore is the sole country that did not get a negative GDP growth during the Asian Crisis. It likes Hong Kong, it is a small place with a population approximately 3.7 million. Also like Hong Kong, it is a financial center; however, it focuses on different regions. For example, Singapore mainly focuses on Malaysia and Indonesia, whereas Hong Kong mainly focuses on China. Singapore has developed itself not only as a financial center, but also as a hi-tech country. Land policy is the main policy in Singapore, and the property industry has led the economy of Singapore. Singapore's political system is very different from those of other Asian countries. Most businesses activities have been supported by the government of Singapore. Thus, the government of Singapore is like a parent to the Singaporean people. Today, more than 80 percent of the people live in government-owned buildings. Although its real estate sector crashed during the Asian Crisis, the degree of its crash was less than the degree of the real estate crash in Hong Kong.

Although Singapore could maintain its positive GDP growth rate, it could not keep its dollar from depreciating. From 1997 to 1998, the Singapore dollar depreciated 15.7 percent against the U.S. dollar.[6] The stock market of Singapore was another sector that suffered from the Asian Crisis. In 1997, the stock index was 1,987.95 points, and in 1998, the stock index was 1,066.66 points. It decreased 46.34 percent.

On June 29th, 1998, the government of Singapore provided a plan to save the economy of Singapore. This plan mainly focused on five big areas. First, it decreased business operating costs; for example, the government refunded 20 percent of harbor parking

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[6] See Capital Magazine (September 1998), Policy and Strategy, p.81.

fees and 40 percent of property taxes to users. Second, it increased the speed of infrastructure development. For example, it speeded up the development of the industrial area, and initiated immediate action on infrastructure projects had previously been planned for construction in the future. Third, it implemented a real estate plan. For example, it stopped the sale of land until the year 2000, and allowed property developers longer time limits for building residences. Fourth, for its monetary plan, it canceled stock trading tax for one year. Fifth, for its tourism plan, it provided a maximum 150 percent of tax subsidies if hotels repaired their facilities. Although these five plans cost a total of 2.043 billion Singaporean dollars,[7] they were effective in stabilizing the economy. Appendix A-1 shows the performance of Singapore during the Asian Crisis.

2.4. South Korea

South Korea has the third strongest economy in the Asian region, behind Japan and China. In 1997, as the result of its GDP, it was ranked as the eleventh largest economy in the world.[8] After the Asian Crisis, it was ranked as the fifteenth largest economy. The South Korean economy suffered from the Asian Crisis in the first quarter of 1998, and the crisis lasted for one year. In the first quarter in 1999, The economy recovered, and its growth rate increased very fast. In the third quarter of 1999, its GDP growth rate was 12.3 percent.

South Korea is an advanced industrial country. Most big South Korean corporations are supported by the South Korean government. In addition, the objective of the South Korean government is to be a world leader in a specific industry. Thus, the government has

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[7] See Capital Magazine (September 1998), Policy and Strategy, p.81

[8] See World Bank, Total GNP 1997, Atlas method, 1999 World Development Indicators CD-ROM.

encouraged big corporations to make investments in industries such as the chemical industry, ship-building, car-manufacturing, and steel-manufacturing. Because these investments have required a huge amount of capital, the South Korean government has helped these big corporations to borrow money from banks and has given them a low income tax rate, subsidizing their exports.

There were three direct factors which caused Korea to suffer from the Asian Crisis. First, before the Asian Crisis, the equity returns (or investment returns) of the corporations were slowed down. Second, these corporations borrowed a lot of money in advance to develop their businesses. Third, they had invested in replete industries, which means that they had a high position in a specific industry in the world, but they could not earn profit. Without analyzing these situations carefully, the government of South Korea encouraged Korean corporations to make huge investments by borrowing money from banks. As a result, these corporations suffered from financial difficulty, and the prices of their stocks went down. Appendix A-2 shows the financial conditions of the top 30 South Korean corporations (*chaebol*) at the end of 1996.

The economic bubbles in South Korea were similar to the economic bubbles in Japan. In addition, most Korean corporations made net losses when they invested in replete industries. When they made net losses, they continued to borrow money from the banks in order to maintain their daily business operations. Their continued borrowing and inability to pay back their loans impacted the Korean banking system. In 1997, there were 26 commercial banks which suffered from these non-performing loans. Five of them were

closed, five of them were merged, and others underwent rehabilitation.[9] Appendixes A-3 and A-4 show the economic performance of South Korea during the Asian Crisis.

Furthermore, social problems occurred when the Asian Crisis hit South Korea. Actually, the Korean unemployment rate was very low before the Asian Crisis. For example, in 1990, the unemployment rate was 2.4 percent. In 1995 and 1996, unemployment dropped further to 2 percent. When the Asian Crisis came, the unemployment rate increased to 6.8 percent in 1998.[10]

2.5. Taiwan

Taiwan was a country which also suffered from the Asian Crisis. From 1992 to 1997, the economy of Taiwan had been thriving. Although it had the third largest foreign reserve in the world[11], it could not avoid the depreciation of its currency during the crisis. The reason that the New Taiwan dollar (NTD) depreciated was that the economic system of Taiwan is similar to that of South Korea and the two countries have been competitors. Therefore, when the South Korean won depreciated, the NTD could not maintain its value because Taiwan had to maintain its export competitiveness.

In 1994 the growth rate was strong, 8.26 percent. After that time, the growth rate slowed down. In 1998, because the external environment affected the economy of Taiwan, it recorded a negative growth rate of 8.15 percent. Although the growth rate was negative in

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9 See Republic of Korea Update, Asia Recovery Report 2000, web site of Asia Recovery Information Center, www.aric.adb.org

10 Sources: Based on data from Key Indicators of Developing and Pacific Countries, 1999, ADB; Human Development Reports, UNDP, 1990-1999; web site of United Nations

11 Data provided by Hong Kong Monetary Authority, December 1999. Http://www.info.gov.hk/hkma/

1998, its economy recovered in 1999, an increase of 5.1 percent. The difference in private consumption did not drop much between 1997 and 1998. On the other hand, the government consumption dropped to 3.1 percent in 1998 from 5.8 percent in 1997, a decrease of approximately 47 percent. The Export section suffered from the Asian Crisis in 1998 because the other Asian currencies depreciated, which caused Taiwanese exports to drop to 2.8 percent in 1998, from 8.7 percent in 1997. The Import section contracted to 5.5 percent in 1998 from 13.4 percent in 1997, due to the depreciation of the NTD. In 1999, we can see that the import section continued dropping to a new low of 2.9 percent.

The CPI has decreased since 1995. In 1999, the CPI of Taiwan was 1.1 percent, due to a weak internal consumption. Because the Taiwanese government allowed its currency to float during the Asian Crisis, the interest rate did not change much. It stayed at 6.8 percent in 1998. On the other hand, the NTD depreciated 21.82 percent to 33.46 against one U.S. dollar in 1998, from 26.16 against one U.S. dollar in 1992. When the economy turned bad, social problems were created. The unemployment rate in Taiwan rose to 2.7 percent in 1998 from 1.5 percent in 1992. Although unemployment increased, it has still stayed at a low level. Appendix A-5 shows the overall economic performance of Taiwan from 1992 to 1999.

2.6. Thailand

Since 1996, the economy of Thailand has become weaker. The export sector has decreased, and the amount of trading deficit has increased. In addition, the tourism sector has not performed well. As a result, the amount of revenue has been less than the amount of expenditure. In 1996, the Thai government knew that it had a huge current account deficit. Thus, the government increased the interest rate to 13.75 percent in order to attract more foreign investment (or capital inflow) and maintain a stable exchange rate. The economy of

Thailand was already very weak, and when the interest rate was increased, the economy of Thailand became weaker. In addition, most Thai business people saw that the U.S. interest rate was lower than the Thai interest rate (five percent lower). Thus, they began to borrow U.S. dollars.

This high interest rate, weakened economy, and a low foreign reserve were the three weak points which most speculators recognized at the time. Therefore, these speculators started to sell Thai Baht and exchange it for U.S. dollars. (George Soros was one of the major speculators to attack the Thai Baht in this way.) The Thai government increased the interest rate further in order to penalize those speculators who sold Thai Baht. However, this increase in the interest rate did not stop the speculators, and it hurt the Thai economy even more. In a short period of time, the Thai government used more than five billion U.S. dollars to defend its currency.

By July 2nd of 1997, the Thai government had used up all its foreign reserve and could not keep the speculators from continuously selling the Thai Baht. As a result, the government announced that it had abandoned the fixed exchange rate policy. After Thailand failed to defend its currency, the Philippine peso, the Malaysian ringgit, and the Indonesian rupiah were attacked one by one, and then this currency contagion spread out to other countries in the Asian region. For Thailand's overall economic performance during the Asian Crisis, see Appendixes A-6, 7, and 8.

2.7. Indonesia

Indonesia was one of the countries which suffered from the Asian Crisis the most. On August 14th, 1997, the government of Indonesia abandoned its exchange rate control. In other words, the government allowed the rupiah to float, based on market demand and

supply. In November of the same year, sixteen banks were closed, and the IMF became involved in order to solve these financial problems.[12] Of course, the government of Indonesia had to meet certain conditions in order to get financial aid from the IMF. Indonesia was a country which was controlled by the army. The president, Suharto, who had controlled Indonesia for 32 years, had become president because the army had supported him. His family and other relatives controlled the main crown corporations.[13] Thus, Indonesia was a political country, in which corruption was a serious problem.

The economic situation of Indonesia was similar to that in Thailand: before the Asian Crisis, the government used a high interest rate to sustain the currency exchange in order to stabilize the country. As a result, people borrowed U.S. dollars because the interest rate was lower. When the Asian Crisis spread to Indonesia, the currency exchange, real estate, and the stock market dropped concurrently. Local corporations were not able to pay back their loans. Thus, the banks accumulated huge amounts of bad loans. As a result, some banks went bankrupt.

Actually, political issues impacted the Indonesian economy the most. The family of President Suharto was worth more than 40 billion U.S. dollars, which was approximately 50 percent of the GDP of Indonesia. In addition, his family controlled four super-crown corporations which monopolized the economy of Indonesia. For example, his family controlled Nusamba company (natural resources – metals and wood), Bognsari Floor Mills (food), Astra International (import car agent), Yama bank, Bank of Central Asia, and

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12 Dr. Kabir, H. (October 1998). The Asian Financial Crisis. Unpublished article.

13 Next Magazine (22 May, 1998). www.next.com.hk

Humpuss Group Indonesia (Airline and harbor). For Indonesia's overall economic performance during the Asian Crisis, see Appendixes A-9 and A-10.

2.8. The Philippines

The impact of the Asian Crisis on the Phillippines was lighter than the impact on other developing countries. In July 1997, when most Asian countries recorded a negative GDP growth rate, the Philippines had a 5.6 percent GDP growth rate. Since the second quarter of 1997, its growth rate has slowed down. In the second quarter of 1998, the GDP growth rate was a negative one percent. Although the Philippines' economy suffered from the Asian Crisis, it recovered fast. In the first quarter of 1999, a positive GDP growth rate was recovered again. For the overall economic performance of the Phillippines during the Asian Crisis, see Appendixes A-11 and A-12.

The downturn of the Asian economy not only impacted the macro-economics of the Philippines, but also created a social problem, a high unemployment rate. In 1996, unemployment was 7.4 percent, and in 1997, it was 7.9 percent. On average, the unemployment rates in 1998 and 1999 were 10.1 and 9.7 percent respectively. The highest unemployment rate was in the second quarter of 1998, which was 13.3 percent.[14]

2.9. Malaysia

Malaysia was a country which changed its flexible exchange policy to a fixed exchange policy during the Asian Crisis. Because Malaysia borders on Thailand, when the Asian Crisis exploded in Thailand, Malaysia was not immune. Malaysia had a negative GDP growth rate, which emerged in the first quarter of 1998, a negative 3.1 percent. This negative

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[14] See Statistical Sources of the ARIC Indicators in the Philippines Update section.

GDP growth rate continued to increase during 1998. In the third and fourth quarters of 1998 respectively which were the most difficult times, the GDP growth rates were negative 10.9 and 10.3 percent. At the end of the first quarter in 1999, the Asian Crisis was over in Malaysia. In the second and third quarters of 1999, the GDP growth rates were 4.1 and 8.1 percent respectively. In other words, after the Asian Crisis, the economy of Malaysia had a handsome growth.

There were two major reasons for this positive growth. First, in September 1998, the Malaysian government used a fixed exchange rate to keep its ringgit from continuing to drop. This action not only prevented the financial turmoil from getting worse, but also saves the confidence of the Malaysian people. Second, the interest rate went down in September 1998, which stimulated people to make more investments. Thus, the Malaysian economy was able to recover more quickly since the second quarter of 1999. For the overall economic performance of Malaysia during the Asian Crisis, see Appendixes A-13 and A-14.

In Malaysia, when both stock and exchange markets crashed, social problems were created. The unemployment rate was one problem. In 1990, the unemployment rate was 5.1 percent. In 1995, 1996, and 1997 the unemployment rates were 2.8, 2.5, and 2.6 percent respectively. In 1998, the unemployment rate jumped up to 4.9 percent.[15]

2.10. China

China is the sole country which did not depreciate its currency and record a negative GDP growth rate during the Asian Crisis. The amount of its foreign reserve has increased since 1992, and the amount of foreign reserve did not go down during the crisis. Instead, it

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[15] Based on data from Key Indicators of Developing Asian and Pacific countries 1999, ADB; Human Development Reports, UNDP, 1990-1999, web site of United Nations.

increased because China has only been a moderately open country: the government has maintained control over capital outflow. For example, Chinese people are not allowed to take more than US$ 2000 out of the country. In addition, we can see that in 1994, the Chinese currency depreciated more than 50 percent. Thus, its currency was very competitive even though other countries' currencies depreciated sharply in the years 1997 and 1998. Furthermore, China did not get hurt in the Asian Crisis because its internal economy has been very weak since 1996. Thus, since that time the Chinese government started to decrease interest rates in order to stimulate internal consumption. Whereas other Asian countries increased their interest rates during the Asian crisis, China decreased interest rates immediately right away. As a result, its economy did not get hurt by increasing interest rates.

The GDP growth rate was 8.8 percent in 1997, and 7.8 percent in 1998. Although its growth rate has slowed down since 1996, during the crisis, it had the strongest GDP growth rate not only in the Asian region but also in the world. Its CPI has decreased since 1996 because its internal consumption has been weak, and its external economic environment became bad in 1997. However, a weak CPI has helped China because it stabilizes prices of imported products and to develop its economy.

Although China's economy has been growing, its unemployment rate has increased since 1992 to 3.1 percent in 1999 for two reasons. First, because China is preparing to join the WTO, it had to restructure unprofitable corporations. As a result, many workers have been laid off. Second, when the Chinese economy was impacted by the external economic environment during the crisis, some companies had to lay off workers. For the overall economic performance of China, see Appendixes A-15 and A-16.

2.11. Conclusion

During the Asian Crisis, most of these countries manifested similar conditions: an increased unemployment rate, depreciation of their currencies, and a sharp drop in their stock markets. Thus, we can conclude that no matter how strong a country is, these basic conditions will exist when a country suffers from a financial turmoil. We can further conclude that if a country suffers from financial turmoil, it usually has previously created inappropriate economic monetary policies or economic development plans.

From fiscal policy's point of view, Japan has used several policies since 1990s on its economy, but none of them were helpful to solve its weak economic conditions. Although this crisis did not hurt Japanese economy too much, its weak economic conditions have consisted. Compare to Japan, Singapore is a small country. During the crisis, the Singapore government adopted new fiscal policy which was helpful to stabilize its economy even though the Singapore dollar depreciated by 15 percent at that period of time.

From monetary policy's point of view, Indonesia and Thailand were unable to defend their currencies during the Asian Crisis. As a result, they had to abandon their fixed exchange rate policy. Instead, both governments allowed their currencies to float. Malaysia has had a stable floating exchange rate policy before the Asian Crisis. The Malaysian ringgit depreciated during the crisis. As a result, the Malaysian government changed the monetary policy to a fixed exchange rate policy. This policy can stabilize Malaysian people's confidence and prevent its currency to drop further.

From banking system's point of view, banks in South Korea, Indonesia, Thailand, and Malaysia had been asked to merge or bankrupt. For example, some of Korean banks had been forced to merge and sell part of their assets to foreign banks in order to stabilize the

confidence. Some banks in Indonesia and Thailand were able to save which had been asked to bankrupt right away. The Malaysian government intended to ask some weak banks to merge rather than asking them to bankrupt or sell part of banking assets to foreign banks.

From political situation's point of view, Indonesia was a serious corruption country. Officials controlled big corporations, and spent the money on their own purposes. As a result, these corporations got a huge net loss, and went to bankrupt.

In the next chapter, we will discuss in depth the economy of Hong Kong and its economic structure before the Asian Crisis. Moreover, we will discuss how the crisis happened in Hong Kong, and how the Hong Kong government handled this sudden event.

# CHAPTER THREE

# A Review Of The Hong Kong Economic Trends Before, During And After The Asian Crisis

## 3.1. Introduction

The economy of Hong Kong has developed very rapidly in the last two decades. It developed so rapidly because the Chinese government opened its market for Hong Kong businessmen to invest. Before China opened its market to Hong Kong, Hong Kong was a secondary production country.[16] After China opened its market to Hong Kong, most of the factories in Hong Kong have moved to China where it can provide cheaper labor and raw materials. After this movement to China, Hong Kong has become a service industry country. At the end of 1997, the Hong Kong government reported that 85.2 percent of services economic activities, and manufacturing make up 14.7 percent only. In addition, financing and real estate sectors accounted for 26.2 percent, and export/import and tourism sectors accounted for 25.4 percent of total economic activities in 1997.[17] Thus, we can see that at least half of total economic activities has been led by financing, real estate, and trading (import export affairs) sectors. As a result, once these sectors collapsed, the whole economy in Hong Kong collapsed as well.

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[16] A secondary production country is also called a manufacturing country; its main export products are clothing, textiles, and electronic products.

[17] Data are provided by the Census & Statistics Department of Hong Kong http://www.info.gov.hk/censtatd/eng/hkstat/hkinf/nat_account/nat_account_index.html

3.2. Hong Kong Suffered From The Asian Crisis

Hong Kong is the only country other than China which did not devalue its currency during the Asian Crisis. The protection of the Hong Kong dollar created problems for Hong Kong: real estate prices dropped more than 50 percent from peak prices, the banking system suffered from non-performing loans; the stock market dropped more than 60 percent from peak highs, and unemployment increased from 2.3 percent to 6.2 percent between the years of 1997 and 1999. These events indicate that the linked exchange rate policy made the situation worse for Hong Kong during the Asian Crisis (See Appendix B). Some people wondered why the Hong Kong government did not unpeg the Hong Kong dollar from the U.S. dollar. They believed that if the Hong Kong dollar were allowed to float, Hong Kong would become more competitive in the Asian region, because most Asian countries had depreciated their currencies. On the other hand, some experts suggested that the Hong Kong government should adopt the U.S. currency as its official currency. These people argued that the foreign reserve was in a position to support this change and that this system would have prevented speculative attacks against the Hong Kong currency.

An alternative suggestion was to retain the linked exchange policy at any price; this was the decision ultimately made. We do not know what would have resulted if the Hong Kong government had chosen to unpeg or use the U.S. currency as domestic currency, but we do know that when the Hong Kong government retained its linked exchange policy, interest rates had to be increased in order to defend capital outflow. When interest rates increased, the economy of Hong Kong collapsed, and the Hong Kong government and the people paid a high price.

The increase in interest rates was not the major factor that precipitated the collapse

at the Hong Kong economy. It was simply one of several factors. There are three factors contributing to the collapse of the economy of Hong Kong: first, internal factors (including land policy and economic transmutation); second, external factors; and third, the consequences of increasing interest rates with a linked exchange rate policy.

3.3. Internal Factors

Before Hong Kong was returned to China, the previous government used "a low supply" land policy. Hong Kong is a relatively small area with a population of six million. Consequently, the demand for land is very high. As a result, the price of housing went up year after year. After Hong Kong was returned to China, the new government recognized that high housing prices were not healthy and would hinder development in the future. Therefore, it decided to supply more land in order to decrease the price of land to be used for housing. The Chief Executive implemented a new housing policy (he suggested that the supply of housing would have at least 85,000 units a year over the next several years) before the Asian Crisis spread to Hong Kong which meant the new policy and external factors both impacted the real estate sector. On the other hand, because the new housing policy is a long term commitment, and it would not affect the existing situation immediately. Thus, during 1997 (but before the Asian Crisis), housing prices continued to rise.

Even as the price of housing went up, the Hong Kong people were willing to pay more money to buy accommodation. This create an "asset bubble" that benefit two business sectors: banks, and property development companies. Banks could make more mortgage loans, and thus, their profits increased. Property developers sold houses and apartments at high prices earning huge profits. In addition, most of these banks and property development companies are listed on the stock market of Hong Kong. As a result, when they earned huge

profits, their stock prices went up. Thus, the Hang Seng Index went to a historic new high at 16,673.27 points on August 7th, 1997, this was called a "stock bubble".

Economic transmutation was another internal factor that pushed up the price of housing to a new high. Since the 1970s, the Chinese government has welcomed Hong Kong investment in China. As a result, more and more manufacturing businesses moved there because China provided plentiful and cheap labor force; salaries ( on a monthly basis) were only ten percent of Hong Kong salaries. The most impacted industries were the textile and electronic sectors. Eventually, the economy of Hong Kong transferred to a tertiary production sector (or pure service economy) from a secondary production (or manufacturing economy). In the 1980s, the distribution of output was one percent in the primary production sector, 31.6 percent in the secondary production sector, and 67.5 percent in the tertiary production sector. At the end of 1996, the distribution of productions changed to 0.2 percent in the primary production sector, 15.5 percent in the secondary production sector, and 84.4 percent in the tertiary production sector.[18] At the end of 1996, in the tertiary production sector, there were five major sub-sectors: 1) financing, insurance, real estate and business services at 24.9 percent; 2) transport, storage and communications at 10.2 percent; 3) wholesale, retail, import/export trades, restaurants and hotels at 25.4 percent; 4) community social and personal services at 17.9 percent, and 5) others at 21.6 percent. From the above information, we can see that the first and the third sub-sectors led the economy of Hong Kong.

Profits earned by Hong Kong businessmen in China were repatriated and consumed

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[18] See Howlett, B (1997). Hong Kong - A New Era, p.44 (chart 2).

in Hong Kong. If the "external demand" to Hong Kong and China was high, they got more orders, and they earned more profits. As a result, they were able to consume more in Hong Kong. In contrast, if external demand was low, they got fewer orders, and they earned less profit. As a result, they consumed less in Hong Kong. During the Asian Crisis, other Asian countries' currencies depreciated whereas the currency of Hong Kong was relatively strong. As a result, Hong Kong lost some export orders due to the increased cost of importing in crisis countries. Therefore, business people either did not earn any profits or earned less profit during the Asian Crisis. As a result, they consumed less than before. This cycle is one of the factors that drove the economy of Hong Kong down.

3.4. External Factors

At the same time as Hong Kong faced these internal weaknesses, the external environment turned negative. On July 2nd, 1997, the Thai government unpegged the Thai Baht to the U.S. dollar, and this was a signal that the fixed exchange policy was not sustainable. Later on, the Thai Baht depreciated, and other Asian countries' currencies depreciated one by one. At that moment, people's confidence dropped to a new low point and Hong Kong people started to wonder whether or not the Hong Kong dollar could remain pegged to the U.S. dollar. Some Hong Kong people predicted that the Hong Kong dollar would be unpegged soon because the Hong Kong people lost confidence in the system, and this prediction caused speculators to attack the linked exchange policy of Hong Kong.

3.5. Linked Exchange Rate And Its Interest Rates

The linked exchange policy has been used by the Hong Kong government since October 17th, 1983 when the government set HK$ 7.8 to one U.S. dollar. Under this policy, the Hong Kong government has accumulated a substantial amount of foreign reserves, US$

96.3 billion in December 1999. Before the Asian Crisis, most people believed that this policy was invincible. During the Asian Crisis, the Hong Kong people became skeptical. Fortunately, the government was able to defend this policy, but the price was the stock market crash. The crash was caused by two events. First, the speculators borrowed the Hong Kong dollar from banks, and sold it to the government (Hong Kong Monetary Authority) in order to exchange it for U.S. dollars. Second, the action of their borrowing caused a shortage of the supply of Hong Kong dollars in the Hong Kong money market. As a result, banks needed to increase interest rates in order to attract people to deposit; when interest rates increased, investment activities slowed, and investors rushed to sell stocks, which caused stock prices to fall dramatically ( See Appendix B).

3.6. Speculating Starts From Attacking Linked Exchange Rate Policy

While some analysts might think speculators earned profits from the currency market of Hong Kong in fact profits did not come from speculation in the currency market. Instead, speculators exploited the loophole of the linked exchange policy to earn profits from the stock market of Hong Kong. Speculators knew that if the supply of Hong Kong dollars became scarce, interest rates would increase, and these increased interest rates would cause the stock market to crash. Thus, before they attacked the Hong Kong dollar, they bought future index contracts, which would later go down. Their speculation strategy was straightforward. First, they bought future index contracts, hoping that the Hang Seng Index would drop, and at the same time sold Hong Kong dollars. As a result, the supply of Hong Kong dollars became short. Second, they waited for the Hong Kong Monetary Authority (HKMA) to increase the interest rate to prevent speculators from selling off the Hong Kong dollars. Third, when the interest rates increased, ultimately, the Hang Seng Index fell and

speculators won profits from the future index contracts.

This sequence, which led to that fell involved different sectors of the economy. For example, people stopped purchasing houses. In addition, property developers with short-term loans suffered from the higher cost of servicing their debt. As a result, these property developers had to decrease the price of houses in order to get their investment back as quickly as possible, to pay back the loans to banks. When they decreased the price of houses, people became scared and believed that the economic environment was turning bad. This reinforced the trend. The negative cycle that also had an impact on the banking system.

First, from the general public's point of view, (if debt exceeded equity) the fall in house prices, meant properties became net negative assets. Some people defaulted on their mortgages because they could not afford their monthly payment as the interest rate was too high. Banks then had to receive these net negative assets, which caused them to lose money because they had lent money to their customers when the price of housing was at its highest point.

Second, from property developers' point of view, when they could not sell houses and get their money back, they were not able to pay back their loans to the banks either. As a result, the number of bad debts increased, which caused banks to lose money. This banking phenomenon is called "double losses".

Third, from the banks' point of view, when they encountered these "double losses", their profits went down. As a result, the prices of their stocks dropped. Appendix A-17 shows the estimates of bad debt in the first half year of 1998 in the banks of Hong Kong.

Therefore, we can conclude that the stock market fell because the general public sold stocks, bank performances were poor due to the profit margins decreased on non-

performance business and mortgage loans, and property developers' profits disappeared due to people lost investment confidence. Thus, although speculators lost some profits from attacking the Hong Kong currency because the Monetary Authority increased the interest rate to penalize the speculators who had sold the Hong Kong dollar, speculators actually earned huge profits in the stock market because they had purchased future index contracts. Thus, overall, the speculators lost little of their "capital" in the Hong Kong currency market, and gained large amounts from their "interest" in the stock market of Hong Kong. Their formula was simple and profitable.

3.7. The Hong Kong Government's Involvement

The Hang Seng Index reached a new high at 16,673.27 points on August 7th, 1997, but then started to decline. On October 28th, 1997 the external economic environment turned negative. On October 23th, 1997, the Hong Kong Interbank Offer Rate (HIBOR) increased by 300 percent, and the Hang Seng Index dropped to 9,059.89 points. It reached a new low point of 6,660.42 points on August 13th 1998. Thus, between 1997 and 1998, the index dropped 10,012.85 points or decreased 60.05 percent. Beginning on 13th, August 1998, the Hong Kong government started to intervene because it concluded that speculators had pulled down the Hang Seng Index to an unreasonable level. If the Hong Kong government had allowed the speculators to continue to destroy the economy, the situation would have been much worse. Thus, the Hong Kong government started to purchase blue-chips in order to keep the Hang Seng Index at a reasonable level. On August 28th, 1998 the Hong Kong government used more than US$ 10 billion to purchase blue-chips in the stock market while the speculators sold the stocks at the same time. On that day, the Hong Kong government was successful in maintaining the Hang Seng Index at 7,643 points. In other words, it

defeated the speculators by pushing up the Hang Seng Index. In fact, if the Hong Kong government had not become involved in purchasing the blue-chips, the Hang Seng Index would have gone even lower, and the speculators would have earned huge profits again. Thus, the Hong Kong government's involvement in purchasing stocks prevented the speculators from earning money from the future stock market.

Overall, from the 14th to 28th of August, 1998 the Hong Kong government spent a total of US$ 15.14 billion to purchase these stocks, but it did not announce how many shares of these blue-chips were bought because it was afraid that the speculators would take other actions to attack the stock market of Hong Kong again. On 22nd October, 1998 the Hong Kong government set up a new company (Exchange Investment Fund Limited -- EIFL) to manage the acquired stocks (See Appendix A-18).

After the Hong Kong government acquired the stocks, the supply of stocks became depleted. Thus, the speculators could not easily pull down the Hang Seng Index. As a result, the Hang Seng Index started to increase. On 19th April 1999 the Hang Seng Index was 12,766 points which was an increase of 91.68 percent from the lowest point of 6,660.42 on 13th August, 1998. Although other foreign investors argued that the Hong Kong government should not have intervened in these economic activities, the value of the acquired blue-chips stocks helped the Hong Kong government to earn more than US$ 10 billion of face value. In 1999, after the internal and external economic environment became stable, the Hong Kong government planned to sell the stocks. However, it knew that once the stocks were returned to the market, the speculators might use these stocks to manipulate the market again. Thus, the Hong Kong government used the progressive method to sell its acquired stocks. Exchange Investment Fund Limited used the method of Standard & Poor's Depositary

Receipts (or Spiders) to sell the stocks. In other words, the government planned to sell the stocks by linkage with the Hang Seng Index. This method would not disturb the normal trading activities, nor allow the speculators to attack the stock market again.

Although the Hong Kong government could defend both currency and stock markets, it was unable to alleviate the accompanying social problem, unemployment. During the Asian Crisis, the economy was distorted by the speculators. Thus, most corporations recorded net losses in the 1998 fiscal year. The management of these corporations had to cut costs in order to maintain their normal business activities. As a result, many workers were laid off by their employers. Not only big corporations, but also most medium and small companies were injured by the Asian Crisis. During the worst period in 1998, the unemployment rate was 6.3 percent. Under high unemployment, people's consumption was even lower than before. As a result, this negative cycle made the internal consumption go down further; deflation occurred.

3.8. Conclusion

Although each Asian country had its unique response to the Asian Crisis, the effects were similar throughout affected countries: a substantial downward pressure on the stock markets and real estate, an upsurge in interest rates, rising inflation and unemployment. However, Hong Kong was the country that retained its linked exchange rate. It also received no help from the IMF. Therefore, its stock market suffered from both exchange rates and interest rates. Data drawn from this period of crisis in Hong Kong will provide a basis for creating a formula that will indicate future trends of the Hang Seng Index.

During the Asian Crisis, the government did not react rapidly to defend its economy. It only increased interest rates, and bought stocks. All these actions were classified as

monetary policy. At the very end of the Asian Crisis in 1999, the Hong Kong government started to implement some fiscal policies in order to stimulate Hong Kong's economy. For example, the Hong Kong government approved two projects: Cyber Port and Disney Land. The function of the Cyber Port project is to attract more world-class IT companies, such as Microsoft and Cisco to set up their far-east head quarter in Hong Kong. The function of the Disney Land project is to attract more travelers to visit Hong Kong. Both projects will be completed in 2005. Even if these two projects will not able to solve the short-term economic difficulty, they created jobs for some unemployed people which have alleviated some of the social problems. It increased the expenses on basic infrastructure development in order to create employment, and provided more financial assistance to poor people. However, to maintain budgetary balance, it reduced some government expenses, such as freeze up the salary and discontinuing support of the new housing policy in order to stabilize prices in the housing market. Although the banking sector suffered from the Asian Crisis which caused these banks to increase their bad debts, the banking system in Hong Kong maintained healthy.

# CHAPTER FOUR

## A Critique Of How The Hong Kong Government Handled The Asian Crisis

### 4.1. Introduction

Thailand and Indonesia stopped pegging their currencies to the U.S. dollar during the Asian Crisis. When countries such as these do not have enough foreign reserve to back up their currencies with a fixed exchange rate policy, ultimately their fixed exchange rate policy will fail. Therefore, they asked the International Monetary Fund (IMF) for help.

However, the Malaysian government did not ask the IMF for help because it did not want the IMF to become involved in its policy making. Malaysia changed from a flexible to a fixed exchange rate policy during the Asian Crisis. Because its economy was indirectly affected by the negative external economic environment in Thailand and Indonesia, the Malaysian currency dropped to an unacceptable point. Its government then had to adopt an appropriate policy to stabilize both the economy and the confidence of the Malaysian people. In September 1998, the Malaysian government pegged its currency to the U.S. dollar.

Hong Kong also did not ask the IMF for help, because it owned a huge foreign reserve. Since 1983, Hong Kong has used a linked exchange rate policy. During the Asian Crisis, the Hong Kong government maintained its currency policy by increasing interest rates, purchasing blue-chip stocks, and applying some fiscal policies to stabilize its economy. During the crisis, it lent a billion dollars to Thailand to help with its financial problems.

The financial impact of the Asian Crisis can be classified into four main areas: 1) monetary policy, which includes interest rates, foreign reserve, and currency exchange rate

policy, 2) intervention in the asset market, which includes property and stock market, 3) fiscal policy, and 4) governance. Thailand and Indonesia suffered in all four areas, whereas Malaysia was able to save its currency exchange market and foreign reserve. Hong Kong was able to save its currency exchange market, and foreign reserve, as well as its stock market. The important questions to consider regarding Hong Kong's responses to the crisis are the following: whether or not it responded appropriately and whether or not certain policies could have been better implemented.

4.2. The Functions Of The IMF And Its Financial Warnings To The Asian Region

The IMF has responded to financial crises in a number of different regions or countries. According to one of its Articles of Agreement, the function of the IMF is to promote international monetary cooperation, the balanced growth of international trade, and a stable system of exchange rates. Thus, to achieve these goals, the IMF has provided advice for its membership countries in five different areas: 1) from a macroeconomic point of view, low inflation and a viable balance of payments are the most important factors for healthy economic growth; 2) from a structural point of view, the IMF supports particular policies to enhance an economy's growth potential; 3) from a fiscal point of view, the IMF advises countries to provide a sound fiscal policy, including a fair and efficient system of taxation, the reduction of unproductive public expenditure, and the re-allocation of spending to activities that are most beneficial to the poor, such as basic health care and primary education; 4) from a financial point of view, the IMF advises good governance and transparency in public sector operations; 5) from a social safety net point of view, it advises its members to provide macroeconomic stability and to remove impediments to long-term sustainable growth.

The IMF used almost the same treatment for Asian countries during the crisis that it used when it responded to the Mexican financial crisis of 1994-95. To restore confidence and support a resumption of growth, the IMF promoted a range of measures, which were tailored to the particular weaknesses of each Asian country. These measures can be divided into four main areas: monetary policy, policies for the financial sector, governance, and fiscal policy.

The IMF required monetary policy to be firm enough to resist excessive currency depreciation, because depreciation could have damaging consequences not only for domestic inflation, but also for the balance sheets of domestic financial institutions and nonfinancial enterprises with large foreign currency exposure. In addition, the IMF suggested that investment confidence had to be restored first with high interest rates. After investment confidence had been restored, interest rates could be allowed to return to normal levels.

Because financial sectors were the major weak points which caused the Asian Crisis, the IMF required that weak but viable financial institutions be restructured and re-capitalized. Furthermore, those that were insolvent had to be closed or absorbed by stronger institutions.

Third, the IMF required governance to be improved in both public and corporate sectors. In addition, transparency and accountability had to be strengthened; for example, the financial reports for corporations were to be provided quarterly rather than semi-annually. Moreover, in order for confidence to be restored, political leaders had to send unambiguous signals that such abuses would no longer be tolerated.

Finally, the IMF required that fiscal policy focus on reducing countries' reliance on external savings and take account of the costs of restructuring and re-capitalizing banking systems. In addition, resources had to be taken away from unproductive public expenditures. The social costs of the crisis had to be minimized and social safety nets strengthened.

4.3. Critique Of The IMF Prescriptions For The Asian Countries

When Thailand suffered from the Asian Crisis at the beginning of July, 1997, the IMF's Executive Board took actions to support it. On August 20, 1997, it approved financial support for Thailand of up to US$4 billion, over a 34-month period. The total amount of financial support came to US$17.2 billion. The Thai authorities adapted its monetary policy to a managed float of the baht; fostered the restructuring of distressed financial institutions, including the closure of 56 bankrupt finance companies; enacted budget cuts to free up resources to help finance the restructuring and to support improvement in the current-account position; deepened the role of the private sector in the Thai economy; and sought to attract foreign capital through other reform measures. Under this support program, the Thai economy was expected by 2000 to have a 4.5 percent of positive GDP growth rate; the current account balance was expected to be positive, and its foreign debts were expected to decrease continuously to US$ 67.8 billion.

Overall, after Thailand received this financial program from the IMF, its economy has been able to maintain an acceptable level. However, the Thai people's investment confidence will be a more important factor than economic recovery in determining the future growth of the Thai economy.

In December 1997, South Korea was helped by the IMF's Executive Board, which approved financing of up to US$21 billion. The objectives of South Korea's crisis resolution strategy were to restore confidence and stabilize financial markets, and to lay the foundation for the resumption of sustained recovery in the real economy. The IMF's financial program thus included a mix of macroeconomic policies and far-reaching structural reforms. In addition, South Korea reached an agreement with foreign banks in early 1998 to extend the

maturity of short-term claims on its banks to avoid default. Under this financial program, by 2000 South Korea was expected to have a eight percent of positive GDP growth rate, a two percent of positive current account balance, and a decrease of foreign debts to US$ 129.6 billion.

Overall, the economy of South Korea has recovered. However, its foreign debt is too large and is a matter of concern. Thus, if the South Korean currency becomes unstable again, the situation of its foreign debts could worsen. As a result, the IMF's financial program might not be have been effective and efficient.

Structural weaknesses in Indonesia's financial sector and the large stock of short-term private sector external debt contributed to doubts about its government's ability to defend its currency peg. In October 1997, the rupiah was floated, and it decreased by 30 percent. On November 5, 1997, the Indonesian authorities entered into a three year stand-by arrangement with the IMF for US$ 10 billion, which was augmented by about US$1.4 billion in July 1998. Large amounts were also pledged by other multilateral institutions ($8 billion) and by bilateral donors ($18 billion--the so-called "second line of defense"). Slippages in program implementation coupled with serious social and political upheaval culminated in the fall of President Suharto in May 1998. By the end of July 1998, the rupiah had fallen by about 65 percent, relative to the end of 1997. The ensuing loss of confidence sparked financial instability, and output collapsed, with a severe impact on the poor. Although the economic environment of Indonesia was controlled under the IMF's support program, the political situation did not stabilize. By the year 2000, Indonesia is expected to have a three or four percent GDP growth rate, a two percent current account balance, and a decrease of foreign debt to US$ 86.9 billion.

Overall, despite IMF support, the economy of Indonesia is still weak, because its unstable political environment has hurt investment confidence. In addition, its foreign debts are still at a relatively high level. Thus, if Indonesia continues to suffer from an unstable political environment, its economy is unlikely to recover.

In the late 1980's and early 1990's, the Philippines embarked on a successful IMF-supported program of macroeconomic adjustment and structural reforms. These reforms enabled it to weather the crisis at a relatively lower cost in terms of output loss, unemployment, and social dislocation. Crisis management after mid-1997 was sound, and the Philippines adapted its policies, including through the floating of the peso, tightening of monetary policy and strengthening of the banking system. It eventually relaxed its fiscal and monetary policies as stabilization took hold in mid-1998.

However, the Philippines' political environment is very unstable. For example, the corrupt president of the Philippines, Joseph Ejercito Estrada, was forced out of office in January, 2001. Therefore the IMF support for the Philippines has not guaranteed future economic stability.

When the Asian Crisis hit, Thailand, South Korea, Indonesia, and the Philippines were unable to solve their financial difficulties alone, and thus they were forced to seek help from the IMF. The IMF provided immediate relief. However, because of IMF restrictions, these countries lost a measure of their autonomy. Furthermore, IMF relief solved short-term economic problems only and provided no guarantee for long-term economic stability. In contrast, the governments of Hong Kong and Singapore were able to implement various policies to solve their own financial difficulties without help from the IMF.

4.4. A Comparison Of Actions Taken By Singapore And Hong Kong During The Asian Crisis

In section 2.2 of Chapter 2, we have seen that the Singapore government used fiscal policies to save its economy during the Asian Crisis. In Chapter 3, we have pointed out that the Hong Kong government primarily used monetary policy, namely increased interest rates, to defend its currency exchange rate policy. In addition, the Hong Kong government also purchased stocks in the Hong Kong stock market to defend against speculators' attacks. It is difficult to determine whether the action of purchasing stocks from the stock market belongs to fiscal or monetary policy. Thus, in this paper, we will identify purchasing stocks as unusual decision making.

Besides its monetary policies of increasing interest rates, and the unusual policy of purchasing stocks in the stock market, the Hong Kong government also used fiscal policies to remedy its economy. First, it stabilized government expenditure. The government froze the salaries of bureaucrats and increased financial assistance for those who suffered from lay-offs during the Asian Crisis. Most public service fees were frozen to help the people of Hong Kong pass through this difficult period. It also speeded up pre-approved infrastructure projects in order to reduce unemployment.

Second, it implemented a real estate policy. Government officials secretly abandoned the new housing policy, in which the government had promised that 85,000 units of apartments would be provided in the future. It also sold less land to the public.[19] The

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[19] The Lands Department indicated that in 1997-98, 1998-1999, and 1999-2000, the total revenues from land sales were HK$ 32,249.67 million, HK$ 10,085.27 million, and HK$ 11,155.6 million respectively. www.info.gov.hk/landsd/lsr/lsr.htm

functions of these two policies were to stabilize the price of housing, and to save people's confidence. The Hong Kong government also set up a fund for the Hong Kong people to buy apartments with low interest rates. The purpose of this action was to absorb the existing unsold apartments. In other words, this action was able to relieve some real estate developers' financial problems as well as to relieve banking bad debt problems.

The situations of Hong Kong and Singapore during the crisis will be compared in terms of the performance of their stock markets, the stability of their currency exchange markets, their real estate sectors, their GDP growth rate, their speed of economic recovery, and their indicators of confidence. Hong Kong fared better in two areas. In the first place, the Hong Kong stock market out-performed the Singapore stock market during the crisis. For example, the Straits Time Index (STI) was 2,271.9 points on 20th January, 1997, and 805.04 points on 14th September, 1998, a decrease of 64.56 percent; whereas, the highest and the lowest of the Hang Seng Index (HSI) were 16,673.3 points on 7the August,1997 and 6,660.42 points on 13th August 1998 respectively, a decrease of 60.05 percent. Hong Kong was also superior in terms of maintaining its currency exchange rate market because the Singapore dollar depreciated 15 percent during the Asian Crisis. Neither Hong Kong nor Singapore performed well in their real estate sectors.

However, Singapore was superior in three areas. It recorded a slightly higher economic growth during the Asian Crisis, whereas Hong Kong recorded a negative economic growth rate in 1998. The economy of Singapore recovered faster than the economy of Hong Kong. The confidence indicator in Singapore was also higher than that in Hong Kong. Thus, we can conclude that during the Asian Crisis, the government of Singapore took actions which were more effective and efficient than those actions the Hong Kong government took.

Also, the overall pace of economic recovery in Singapore was faster than the pace in Hong Kong.

4.5. Ranking Of The Discomfort Index Among The Asian Countries

A "discomfort index" is an indicator to explain how a country and its people suffer from a financial turmoil. A high discomfort index means that the economy of that country is not running well, and its people are not happy with their current economic environment. When people have difficulty in coping with their daily life, they will lose investment confidence. If the investment confidence is lost, the economy of that country will be less than optimum. In Appendix C, the discomfort index is combined by seven indicators: the GDP, the inflation rates, the exchange rates, the unemployment rates, the interest rates, the private consumption, and the stock market. These seven indicators describe how a country and its people suffer from the Asian Crisis.

In Appendix C, Table 9 illustrates that Singapore was ranked third, and Hong Kong was placed fifth. In addition, the discomfort index also indicated that in 1998, Singapore was 40 and Hong Kong was 54.29. In addition, by 1998, the situation was the most difficult time for these ten Asian countries to pass through. Thus, if we compare Singapore to Hong Kong only, a conclusion can be drawn that Hong Kong suffered from the Asian Crisis more than Singapore. If we set a deadline for the Asian Crisis, it should be over at the end of 1998. Thus, after the Asian Crisis, the discomfort indices in 1999 showed the aftereffect of the economic environment in these ten Asian countries.

In Appendix C, Table 10 illustrates that the discomfort index of Singapore had increased to 41.43 in 1999 from 40 in 1998. However, it was ranked second in 1999 from third in 1998. Thus, we can conclude that after the Asian Crisis, the economy of Singapore

did not improve and investment confidence of the Singapore people had not recovered. Although the discomfort index of Singapore did not improve, other countries did not perform as well. For example, Taiwan was ranked second in 1998, and in 1999, its position dropped to fourth, which reflected that after the Asian Crisis, the aftereffect of Taiwanese economy was worse than the prior year.

The position of the Hong Kong's discomfort index in 1999 did not change. It was ranked fifth. However, the amount of its discomfort increased to 55.71 in 1999, which was higher than the discomfort index in 1998. In other words, the people in Hong Kong still suffered from the aftereffect of the Asian Crisis.

In Appendix C, Table 8 illustrates the overall performance for these ten Asian countries during and after the Asian Crisis. Again, Hong Kong was not ranked in the front of other Asian countries. Instead, it was ranked sixth. In addition, its discomfort index also increased to 56.30. From this table, Hong Kong can be analyzed for its overall performance before, during and after the Asian Crisis.

4.5.1. Different Weights On Seven Indicators

In Section 4.5, the discomfort index was calculated by ascribing the same average weight to each of the seven indicators. In this section, the weight was increased on the unemployment rate because it is comparatively more important as an indicator of the economic environment after a financial crisis. Thus, the unemployment rate as an indicator will be weighted at 40 percent, and a 10 percent weight will be allocated to each of the other six indicators. Therefore, the general formula will be as follows:

| Discomfort Index = (0.1) GDP + (0.1) Inflation rate + (0.1) Exchange rate + (0.4) Unemployment rate + (0.1) Interest rate + (0.1) Private Consumption + (0.1) Stock Market |
|---|

when the above formula is applied to information from Appendix C, Table 8, the maximum discomfort index is found to be 39.[20] Malaysia is ranked first, indicating that it had the fewest overall economic problems. Thailand and Indonesia are ranked ninth and tenth. However, Hong Kong which performed only a little better than these two countries, is ranked eighth (See Appendix C, Table 11). Thus, before, during, and after the Asian Crisis, the economy of Hong Kong did not perform well.

When we use the same formula to calculate the discomfort index in 1998, the maximum discomfort index will be 10.[21] In 1998, China is ranked first with a discomfort index of only 2.7. The two countries with the highest discomfort index are Thailand and South Korea, which are ranked ninth and tenth respectively. Hong Kong is ranked seventh, with a discomfort index of 6.5 (See Appendix C, Table 12).

When we use the same formula to calculate the discomfort index in 1999, the maximum discomfort index will again be 10.[22] As we have noted before, the year 1999 was not included within the range of the Asian Crisis. Thus, the economic performances of these

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20 Overall discomfort Index = (0.1) 40 + (0.1) 40 + (0.1) 40 + (0.4) 40 + (0.1) 40 + (0.1) 40 + (0.1) 30 = 39

21 Discomfort Index in 1998 = (0.1) 10 + (0.1) 10 + (0.1) 10 + (0.4) 10 + (0.1) 10 + (0.1) 10 + (0.1) 10 =10

22 Discomfort Index in 1999 = (0.1) 40 + (0.1) 40 + (0.1) 40 + (0.4) 40 + (0.1) 40 + (0.1) 40 + (0.1) 30 = 39

ten countries in 1999 reflect the aftereffect of the impact of the Asian Crisis in 1998. China is ranked first, receiving 3 out of 10, and Hong Kong and Thailand are ranked ninth and tenth respectively. From this result, we can see that Hong Kong's economic environment, rather than recovering, had become significantly worse after the Asian Crisis.

The question is what factors or problems made the discomfort index of Hong Kong increase after the Asian Crisis. If the Hong Kong government were to recognize precisely what these problems were, it would be able to solve them more effectively by using monetary, fiscal, and other policies.

4.6. Problems Hong Kong Faces

Actually, the major problem the Hong Kong people face today is a confidence problem. If the Hong Kong government could allay the worries of the Hong Kong people, most economic problems could be solved immediately. During the Asian Crisis, the Singapore government asked all its people to reduce their salaries by 10 percent, and they readily responded to this request. In contrast, the Hong Kong government did not have the same ability to control the actions of its people. It could only look for ways to maintain the people's confidence. Overall, the Hong Kong government performed well. However, if it had taken faster actions in regard to the stock market, land and real estate policy, the interest rate market, and the banking sector, the pace of recovery might have been faster.

4.7. Monetary System: Interest Rate Policy

The Hong Kong InterBank Offer Rate (HIBOR) fluctuated daily during the years of 1997 and 1998. The HIBOR reached 300 percent in a day. Interest rates increased because speculators sold Hong Kong dollars to the government and caused a shortage of Hong Kong dollars in the Hong Kong money market. As a result, interest rates were pushed up, which

caused the stock market, and real estate, to drop.

The question is why the government did not inject Hong Kong dollars into the money market before the HIBOR increased so dramatically. If the government could have controlled the HIBOR and kept it from going up that fast and that high, the stock market, real estate sector, banking sector, and other business sectors might not have been hurt so seriously. In addition, the stock market was very sensitive to the fluctuation of interest rates. Thus, if the government could have injected Hong Kong dollars into the money market faster, speculators who wanted to earn profits from the stock market would have been disappointed because the stock market would have been more stable. As a result, the Hang Seng Index would not have dropped so fast.

The linked exchange rate was a loophole in the monetary system for speculators to attack. If the interest rate market can be stable, there is no way for speculators to attack. Of course, during the crisis, increased interest rates cannot be avoided, but the government should have tried to minimize interest rate increases. As long as interest rates can be controlled, other sectors such as banking, real estate, and stock market are easy to rescue. I suggest that the Hong Kong government should have prevented interest rates from rising so high. Interest rates can be pushed up to a high level, but they should not be pushed to a prohibitively high level which seriously affects all economic activity.

4.8. A Critique Of The Hong Kong Government's Intervention In The Asset Market

The Hang Seng Index was at its highest at 16,673.3 points on 7th August, 1997. It dropped to 9,059.9 points on 28th October, 1997; a drop of 7,613.4 points within 54 trading days. This was a decrease of 45.66 percent. At that period of time, most individual investors had stopped buying or selling stocks, and only corporate investors were trading. Thus, if the

Hong Kong government could have become involved in the stock market at that moment, it would not have had to use that much foreign reserve to buy up stocks. In addition, it need not have waited until August of 1998 to buy stocks. Moreover, if it had taken this action of purchasing stock earlier, people would have had more confidence in Hong Kong, and the economic environment would not have become negative.

The Hong Kong government not only could have become involved in the stock market earlier, it also could have asked other big domestic corporations for help. For example, the Hong Kong government could have asked these corporations to buy back their stocks in order to stabilize stock prices. If the Hong Kong government had asked for help, most corporations would have supported this idea because CEOs did not want to see their stock prices drop to a low level.

Thus, we can assume that if the Hong Kong government took had taken the action to of becoming involved in the stock market in 1997 rather than 1998, it could have prevented several problems. First, the investors' confidence could have been saved. Second, the Hang Seng Index would not have dropped to a low of 6,660.42 points on 13th August 1998. Third, the Monetary Authority would not have needed to use US$15 billion to purchase stocks. Fourth, a difficult time between 1997 and 1998 could have been avoided. Fifth, the economic environment might not have become so poor in terms of high unemployment and weak internal consumption. Sixth, the banking sector might not have suffered a huge number of bad debts which directly affected its profits and stock prices.

4.8.1. Land and Property Policy

Before the mid-1997, the real estate sector had grown to a new high. Thus, the new Hong Kong government suggested that the price of housing was too high and needed to

prevent the price of housing from going still higher. As a result, the new Hong Kong government at the beginning of 1997 increased the supply units of houses or apartments in the housing market to 85,000. The purpose of this 85,000-unit project was to decrease the prices of housing to a reasonable and affordable level. When the Asian Crisis hit Hong Kong in 1997, the government abandoned the project of 85,000 units, but it did not make any announcement to the public regarding this policy change. As a result, most Hong Kong people thought that the 85,000 units project still existed. Therefore, this situation reduced the real estate investors' confidence even further.

During the Asian Crisis in the years of 1997 and 1998, the average housing price dropped between 50 and 60 percent. For example, Robinson Place was sold at US$ 2,051 per square feet before the Asian Crisis, and in the first quarter of 2001, it was sold at US$897 per square feet, with a decrease of 56 percent. Another example, Dynasty Court, was sold at US$2,564 per square feet before the Asian Crisis, and in the first quarter of 2001, it was sold at US$1,153 per square feet, with a decrease of 55 percent. In fact, if the Hong Kong government had made an announcement that the project of 85,000 units no longer existed, the price of housing would have been more stable and the price of housing would not have dropped that far.

Unfortunately, the Hong Kong government did not make public its plan to abandon the project of 85,000 units until the year 2000. Although the Hong Kong government set up a fund for people to purchase apartments or houses with low interest rates, this fund did not help the real estate sector became stable. In December of 2000, the Centa-City Index (CCI)

was 45.79 points, which was the lowest point since 1997.[23] Because the Hong Kong government was so slow in announcing the abandonment of the project, people's confidence took a long time to recover.

The Hong Kong government did control the supply of land. During the Asian Crisis, the government sold less land. There are three dimensions to interpret why the government sold less land. First, investment confidence was low and if the government sold land to the public, it would have made the price of land drop even more. Second, the supply of housing exceeded the demand for housing. Thus, if the government continuously sold land, it would not get a high revenue. Third, real estate developers held on to a lot of apartments, and were waiting to sell these apartments in order to get their investment back. As a result, we can conclude that during the crisis, the government's decision to sell less land was a correct decision.

4.9. A Critique Of Other Fiscal Policies

In section 4.2, we compared the fiscal policies which were enacted by the Hong Kong and Singapore governments during the Asian Crisis. The Hong Kong government not only used internal fiscal policies to stimulate the economy, but it also used external fiscal policies to do so. These external fiscal policies included Cyber Port and Disney[24] Theme Park projects. In fact, the purposes of these two projects were to ensure stable economy growth for Hong Kong in the future. But during the Asian Crisis, the Hong Kong government was

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[23] Source: The Centa-City Index, provided by Centanet (http://www.centanet.com/cci.htm). This is a monthly index based on all transaction records as registered with the Land Registry to reflect property price movements in previous months.

[24] Source: web site of the Hong Kong government. www.info.gov.hk/disneyland/eng.htm

not able to ensure its best interests in negotiating these two projects.

In the Cyber Port project, the Hong Kong government agreed to provide land for Li and his company, and Li agreed to provide capital to build the projects. In a normal situation, the Hong Kong government would hold an auction for interested parties, and would not deal privately with an individual party. However, in this case, the Hong Kong government expected that this Cyber Port project would bring more business opportunities to Hong Kong, and it made special deal with Li.

In the Disney Theme Park project, the Hong Kong government went even further to provide a generous package to the Disney Company. The Hong Kong government will spend a total of HKS 22.45 billion to enable Hong Kong Disneyland, to proceed:

- $3.25 billion equity
- $5.6 billion loan to the project company, to be repaid with interest over 25 years
- $13.6 billion in land formation and infrastructure costs

However, the government will get back $4 billion in subordinated shares for the Phase I land costs. In addition, much of the infrastructure component would have been part of the government's capital works programme to prepare the site for tourism and recreation development even if a Disney theme park and resort were not to be built.

In the above agreement made by the Hong Kong government and Disney company, we can see that this agreement was too beneficial for the Disney company. In fact, the Hong Kong government did not need to give Disney these benefits, because the company had lost money in France, it needed to find another place to establish a theme park, and China and

Hong Kong were places the Disney company wanted to invest in. It was not in the best interests of the Hong Kong people for the government to give Disney such an advantageous deal. Nevertheless, if this theme park and the Cyber Port project can be completed, they might be able to bring more businesses opportunities to Hong Kong, and they also can help Hong Kong have a healthy economic environment in the future.

4.10. Governance: Banking Sector

While the real estate sector suffered, the banking system suffered from non-performance bad debts and mortgage lending. Non-performance bad debts were created by real estate developers who bought land from the Hong Kong government and made a short-term loan to develop real estate projects. In general, a real estate project needs at least two years to complete and sell to consumers. During these two years, developers pay interest to banks only. The principal is paid back when the project sells. During the crisis, as short-term interest rates went up, developers had to pay more interest and these high interest rates increased their development costs. In addition, when the interest rates increased, consumers were not willing to buy houses. As a result, when real estate projects were completed, developers were not able to sell them to the public and had to make both principal and interest payments. Therefore, most developers did not perform well during the crisis, and this situation directly affected the banking sector.

Furthermore, when real estate was sold to consumers, these consumers made house mortgages. Thus, banks loaned money to these house owners. As a result, when interest rates increased and the prices of housing decreased, owners were not able to make payments to banks. This situation affected the banking sectors as well.

The Hong Kong government should have controlled the ratio of lending to both real estate developers and house owners. According to the Hong Kong Monetary Authority (HKMA), banks are not allowed to lend more than 40 percent of their total lending to the real estate sector. I suggest that the government could have adjusted the percentage of from 40 to 30 percent in order to maintain a healthy banking system. If the ratio of lending to the real estate sector is decreased to 30 percent, the impact to the banking system should be less if another financial turmoil should occur in Hong Kong.

4.10.1. Governance: Political Stability

After the Asian Crisis occurred in Singapore, the Singapore government dealt effectively with its internal situation through restructuring . However, Singapore had no control over its external environment, because the political situations of other countries, such as Malaysia, Indonesia, the Phillippines, and Thailand were not stable. The role of Singapore as a middleman between them was affected. As a result, these unstable conditions and situations directly affected Singapore's economy. For example, the relationship between Indonesia and Singapore can be described as "sometimes they are friends, and sometimes they are enemies". Thus, this situation places Singapore in an uncertain position.

In contrast, the countries around Hong Kong are less volatile. China is a major trade partner with Hong Kong. The political situation in China is stable, and the Chinese government is willing to help Hong Kong if Hong Kong faces a financial or political problem. The political situation in Taiwan is not as stable as that in China, but because Taiwan is one of the major investors in China, it attempts to keep its relationship with China and Hong Kong positive. Thus, Hong Kong does not face any uncertain external political

situations.

4.10.2. Governance: Enforcement Of Bankruptcy

During the Asian Crisis, the economy of Hong Kong had negative growth. Large-sized corporations were faced with financial problems; for example, cash inflow was less than cash outflow. In most situations, cash outflow is related to financing activities or interest expenses. Fortunately, no large corporations went bankrupt. Usually, bankruptcy ordinances are good enough to protect the rights of creditors. However, small and medium companies were not that fortunate during the Asian Crisis. According to the Official Receiver's Office of Hong Kong, the number of bankruptcies increased to a new high after 1997: 1,362 in 1998, 3,876 in 1999, and 5,487 in 2000. The number of compulsory winding-ups were 946 in 1998, 1,161 in 1999, and 1,241 in 2000.[25] From these numbers of bankruptcies and compulsory winding-ups, we can see that when the prices of real estate and stock market dropped, most individual investors were forced to bankruptcy.

4.10.3. Governance: Corruption And Transparency

Corruption is hard to measure. We know that in most developing countries, such as Indonesia and China, their corruption status is serious. A reason that officials in China and Indonesia are corrupt is that those officials have decision-making powers but they are not able to enjoy a generous working packages provided by their governments. As a result, these officials have used their power for their own interests, such as activities of pirated goods.

However, Hong Kong is consistently rated by international surveys as one of the

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[25] Source: Statistics on compulsory winding-up and bankruptcy. Official Receiver's Office. http://www.info.gov.hk/oro/statistics/index.htm

"least-corrupt" places in Asia. In addition, the Independent Commission Against Corruption (ICAC) watches to ensure that government and firms deal fairly and honestly. Hong Kong has become one of the least-corrupt places because the Hong Kong government has provided generous packages to those who work in government departments.

However, we cannot overlook the relationship between Hong Kong officials and big corporations. To some extent, the Hong Kong economy is controlled by large domestic corporations. Thus, these officials and corporations might make private deals regarding development projects. Although these special deals might not constitute corruption, they might give people a feeling that the transparency of government decision making is not enough. For example, the Chief Executive of Hong Kong privately approved the project of Cyber Port to Mr. Richard Li whose father (Mr. Li Ka Shing) is the richest man in Hong Kong.

4.10.4. Governance: Property Rights

The Hong Kong government is the largest landlord in Hong Kong. It has a responsibility for controlling the supply of land and for protecting the property rights of owners. When the Hong Kong government sells land to the public, it uses an auction. The land is sold to the developers bidder. In fact, when the government sells land to these real estate developers, they do not own the real estate freehold. Instead, the government authorizes real estate developers to build buildings on the land, and this is called a lease agreement. A lease agreement will last for 50 years. After 50 years, real estate developers can continuously use this land if they pay extra land tax to the government. However, if the government does not want to continue to lease land to the developers after 50 years, the

government has the right not to renew and to put the land back for other development purposes.

4.11. Conclusion

Hong Kong is a small financial economy if compare to other developed countries, such as Japan and the United States. It is easy to be affected by external economic environments. Thus, the Hong Kong government needs to maintain its internal strengths, such as a strong foreign reserve; and improve its internal weaknesses, such as its linked exchange rate policy with interest rates. If the internal factors can be controlled well, the impacts can be reduced to the least when the external economic environment turns negative. However, the Hong Kong government not only needs to manage the internal factors well, it but also needs to pay attention for the changing of external environments. If external economic environment turns to a poor situation, the Hong Kong government should cooperate with other countries in order to solve it immediately. Meanwhile, it should immediately prepare some internal policies to solve a poor external economic situation if it spread to Hong Kong.

# CHAPTER FIVE

## Lessons Learned From The Asian Crisis Of 1997: Future Endogenous And Exogenous Policies In Hong Kong And In The Asian Region As A Whole

### 5.1. Introduction

When financial turmoil occurs in a country, the people of that country often discover the strengths and weaknesses of their economic policies and thus are better able to enhance these strengths and reduce these weaknesses. For example, during the previous financial crisis of 1987 in Hong Kong, the Hong Kong stock market suffered from an unstable external environment. At that time, most Hong Kong people did not know how to react to the crisis. The Board of Directors of the Hong Kong stock exchange announced that trading would be interrupted for four days in order to let investors think about whether or not they needed to continuously sell stocks. At that moment, the executives of the HKSE were inexperienced at handling this kind of situation. Closing the stock market for four trading days did not help investors calm down. Instead, when the stock market opened, more investors sold their stocks, and ultimately the Hang Seng Index dropped further than expected.

Therefore, by 1997, the Hong Kong government had learned that closing the stock exchange was not a good method to stop investors selling stock. As a result, instead of closing the stock exchange, the government purchased stocks in order to stabilize investment confidence. This policy also applies to Hong Kong's economic climate in 2001, which is based on the free market and free trade: investors should feel free to buy or sell their stocks even if the investment environment is not stable.

In 1998, some foreign financial institutes criticized the Hong Kong government for being involved in the stock market, because this intervention affected normal trading activities. In fact, the Hong Kong government was not the first one to become involved in the stock market. The Taiwanese government influenced trading activities in a similar way before the Hong Kong government did. To some extent, becoming involved in the stock market was positive because it helped to save investors' confidence and stabilize the stock market. The following table (Table 5-1) summarizes that the Hong Kong government implemented the policies during the Asian Crisis.

| Table 5-1: The Hong Kong government implemented the policies during the Asian Crisis |
|---|
| Monetary Policies |
| 1) Increased the interest rates (HIBOR). |
| 2) Defended the Linked Exchange Rate policy. |
| |
| Unusual Policy |
| 1) Bought blue-chip stocks in the Hong Kong Stock Exchange. |
| |
| Fiscal Policies |
| 1) Froze the salaries of bureaucrats. |
| 2) Froze the public goods' fees. |
| 3) Increased financial assistance for those suffered from lay-offs during the Asian Crisis. |
| 4) Speeded up pre-approved infrastructure projects. |
| 5) Sold fewer land during the Asian Crisis. |
| 6) Abandoned the new housing policy which would provide 85,000 units per year. |
| 7) Two additional new projects: Cyber Port and Disney Theme Park. |

It is clear that a country can control its endogenous policies more easily than its exogenous policies. Although exogenous policies must be considered, enhancing its endogenous policies or systems should help Hong Kong to stabilize its economy in preparation for future crises.

## 5.2. Endogenous Policies

In Chapter Four, we have critiqued the timing of the Hong Kong government during the Asian Crisis and shown how different policies took action too slowly to save the economy, thereby causing the economy to suffer seriously. To protect its economy from future financial turmoil, the Hong Kong government should focus on seven endogenous areas: the banking system, the exchange rate, foreign reserves, transparency, corruption, social stability, and education policy.

### 5.2.1. Banking System

In Hong Kong, banks have focused too much on mortgages: a large proportion of bank profits have come from the real estate sector. As a result, when real estate collapsed in 1997, the impact spread to the banking sector as well. In order to reduce the impact on the banking sector from the real estate sector, the ratio of lending to the real estate sector has to be controlled. For example, the HKMA can require the banks to reduce the ratio of lending to real estate to 30 percent from 40 percent. The banks might object to this requirement, but it is a crucial way to ensure a healthy banking system in Hong Kong.

### 5.2.2. Exchange Rate Policy

Exchange rate policy is the most important area for the Hong Kong government to

protect because if Hong Kong's exchange rate policy is undetermined, people's wealth will largely evaporate if the Hong Kong dollar depreciates. We have seen that although the Hong Kong economy was seriously affected by the Asian Crisis, the people's wealth did not evaporate significantly because Hong Kong was able to defend its exchange rate policy. Thus, for the foreseeable future, when the aftereffect of the Asian Crisis still lingers, and when there is uncertainly about the future, the Hong Kong government must maintain its exchange rate policy in order to retain the public's investment confidence.

5.2.3. Foreign Reserve

If the Hong Kong government wants to maintain its linked exchange rate policy, it has to have enough foreign reserve to back up this policy. In the foreseeable future, we do not see any reason why the Hong Kong government has to give up this policy. Thus, it has to accumulate more foreign reserves. Accumulating the foreign reserves will depend on capital inflows. As long as the investment environment in both China and Hong Kong is stable, there will not be a cost attached to increases of foreign reserves for the Hong Kong government. At the end of 2000, the HKMA recorded more than SUS 100 billion in its foreign reserve account, and as the chief executive of the HKMA mentioned, the more the foreign reserve, the better for the linked exchange rate policy.

5.2.4. Transparency

A more transparent public policy making would increase confidence by both domestic and foreign investors. In terms of transparency in government policy making, the Hong Kong government has to make a clear statement regarding whether or not particular policies have been maintained or abandoned. We have noted that when the housing project

of 85,000 units was abandoned in the early in the Asian Crisis, the Hong Kong government did not make a clear statement until the year 2000 that the policy was abandoned. This unclear attitude misled investors, and caused the real estate sector to drop. Thus, in the foreseeable future, the Hong Kong government has to increase the transparency of its policy making. This approach can also increase the government's transparency internationally, and give investors a clearer basis for forecasting the trends of economic activities.

5.2.5. Corruption

Hong Kong has one of the lowest corruption rates in the world. The fact that the government provides a generous package to its public sector employees, is a major reason why the corruption rate is so low. Although corruption in the public sector can be controlled, corruption in the private sector has to be reviewed. For example, the Hong Kong government might provide favor for some of the largest corporations, and ignore others. This situation might not actually constitute corruption, but it could give people the impression that the Hong Kong government gives special advantages to certain big corporations only. This negative impression could affect foreign investors' perception about whether the Hong Kong government would be concerned about their interests or whether it would be concerned about domestic corporations' interests first. Overall, in 2001, the perceived corruption rate in both public and private sectors is low, and the Hong Kong government should maintain its international transparency.

5.2.6. Social Stabilization: Unemployment

During the Asian Crisis, the unemployment rates in ten Asian countries dramatically increased. However, the unemployment rates of the Asian Tigers, Hong Kong, Singapore,

South Korea, and Taiwan, were especially serious. In addition, the unemployment rate in Hong Kong almost increased from 2.2 percent in 1997 to 6.3 percent in 1999, an increase of almost 300 percent. The Hong Kong government announced at the end of 1999 that this increase was a structural increase. In other words, the unemployment rate would not again be reduced to the low level of 1997, but instead would stay close to the current high level.

The unemployed were from low-income and low-skilled jobs. For example, they were construction workers, restaurant workers, and other service workers. In addition, their age ranged between 40 and 60. When these low-skilled workers became unemployed, this situation not only brought great pressure on the government's shoulders, but also created many social problems, such as conflicts in families or suicides. Thus, in 2001, the government should allocate more resources to re-training programs in order to solve this structural unemployment problem. According to the Hong Kong government, structural unemployment cannot be changed in a short period of time, but is expected to decrease to a more acceptable level, such as five percent.

5.2.7. Education

The education system in Hong Kong has always been in a dilemma. On the one hand, in the past, English has been the official language, and on the other hand, since Hong Kong was returned to China in 1997, the Hong Kong government has supported the use of Chinese (both Cantonese and Mandarin) as the first language. As a result, students who have graduated from universities have not been able to perform well in either the Chinese or the English language. During the Asian Crisis, most sectors were declining. However, competition in the job market was rising. Because Hong Kong is an externally focused

community, in the future English will be more important for good jobs than Chinese. Thus, the government should enhance students' language abilities. Singapore is a good example of the benefits of a government that supports English as its first language. Today, most people in Singapore can speak English well. Surely Hong Kong people can do the same.

5.3. Exogenous Policies

If the government can make improvements in the above endogenous areas, economic development should be enhanced in the future. These endogenous areas can be controlled and improved by the Hong Kong government; however exogenous situations will be beyond its control. Nevertheless, it can cooperate with neighboring countries to stabilize the Asian region's economic development. During the Asian Crisis, Hong Kong learned that changing exogenous situations cannot be overlooked. Thus, positive and negative exogenous problems have to be considered, so that Asian countries can cooperate to solve them.

During the Asian Crisis, the Asian economy was distorted. However, after the Asian Crisis, new business opportunities have arisen. There are at least six positive situations, which might be beneficial for Hong Kong. First, China is likely to join the World Trade Organization (WTO) in 2001. This situation should increase investment in China. Because the Chinese government is certain to open its market progressively, at the beginning of China's joining the WTO, Hong Kong can act in the role of middle man between foreign investors and China. It is estimated that China would need at least ten years to open its market totally to foreign countries. These ten years could thus be a golden decade for Hong Kong to develop its economy to a new high.

Second, the Chinese government has announced that it will use more than US$ 36

billion to develop the western area of China. According to the Chinese government, China can be classified into three development areas: the eastern part of China has been identified a high development area; the central part of China has been identified as a middle development area; and the western part of China has been identified an un-developed area. In addition, the Chinese government has estimated that a total investment in the western part of China would require foreign capital of hundreds of billions US dollars. Thus, for Hong Kong, the project of developing the western part of China could be an opportunity for increasing its economic development.

Third, the relationship between China and Taiwan has been improving. If their relationship can be maintained at this position, business opportunities in the Great China Region[26] could be increased. In addition, China and Taiwan have started to conduct small trading activities between their islands, and these can help to maintain their auspicious relationship. A good relationship between China and Taiwan would be beneficial to Hong Kong. However, some maintain that if China and Taiwan have official communication, Hong Kong would lose its function as middle man between China and Taiwan. To some extent that could be true; however, establishing a good relationship between China and Taiwan will be likely a long way off, and in the next five years, their relationship would not change dramatically. Thus, business opportunities for Hong Kong in both China and Taiwan will continue to exist.

Fourth, the relationship between China and the United States has been getting closer. This good relationship was established by President Clinton. Although the current US

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[26] The Great China Region includes China, Hong Kong, and Taiwan.

president, George Bush Jr., may change this relationship to some extent, US corporations need to enter China, and China needs more foreign capital to develop its country. Thus, if these two countries can keep a positive relationship, they are apt to receive mutual benefits, and if their relationship is positive, Hong Kong is likely to receive benefits as well.

Fifth, the economy of the US has slowed down since 2000. This situation was created by the bubble of Information Technology. Thus, the federal reserve of the US has had to decrease interest rates in order to maintain its strong economic growth rate. The currency of Hong Kong is linked with the US dollar. Thus, when US interest rates are decreased, Hong Kong has to decrease its interest rates as well. When the interest rates are decreased in Hong Kong, the economy of Hong Kong will recover faster. Thus, because interest rates have decreased in Hong Kong, the economy of Hong Kong might grow to another new high in the future.

Sixth, the Euro dollar has appreciated against the US dollar, which means that the US dollar has depreciated. Because the Hong Kong currency is linked to the US dollar, if the US dollar is overvalued, the Hong Kong currency will be too strong as well with negative effects on the economy of Hong Kong. Thus, if the US dollar depreciates and the Hong Kong currency becomes weaker, the economy of Hong Kong will be able to recover faster.

5.4. Future Negative Exogenous Situations

Although several positive situations might arise in the future, several negative situations could exist as well. First, the economy of the US has slowed down. This slowdown will affect the whole world's economy because the US leads the world's economy. In addition, the US is the main market for both China and Hong Kong. Thus, if the economy

of the US slows down, the demand for products from China and Hong Kong would decrease. As a result, the export sector of China would decrease, which would cause the re-export sector of Hong Kong to decrease as well. Therefore, the Hong Kong government has to watch this change in the future.

Second, although Japan is an economic leader in the Asian region, its economy has not been recovered yet since 1990, and its weak economy might affect the whole Asian region. In addition, Japan is the second largest economy in the world. If its economy does not do well, the whole world's economy would be impacted. Thus, we have to be concerned about the Japanese economy. In addition, the Japanese Yen should be maintained at a high level. If the Japanese Yen drops to too low a level, another Asian Crisis could be created. Thus, a weaker Japanese Yen, it could have a negative effect on the economy of the whole Asian region.

Finally, the political situations in two Asian countries have not been stable; for example, the Philippines and Indonesia have both suffered from unstable political environments. When the people in these two countries have ousted corrupt presidents, other corrupt presidents have taken over. Thus, if the Philippines and Indonesia do not have stable political environments, ultimately the whole Asian region will be negatively affected.

5.5. Asian Co-ordination: A Safety Net

In sections 5.3 and 5.4, we have discussed possible positive and negative economic and political situations that might occur in the near future. For Hong Kong, external stability is an important topic; if the Asian region is unstable, the whole region's economy will suffer. Two suggestions have been made. First, the countries in the Asian region: create an Asian

Dollar (AD), like the Euro in Europe. Second, the countries in the Asian region should form an Asian Monetary Fund (AMF) to handle potential financial turmoil in the Asian region.

It is believed that if these Asian countries create an AD system and form an AMF, the Asian region will be more economically stable in the future. After the Asian Crisis, some Asian countries' currencies continued to be unstable and continued to drop. Thus, it is necessary to create a stronger currency to keep these currencies from dropping. Therefore, an AD system would expand the Asian financial "Safety Net". In addition, an AD system could cooperate with the Euro system to counteract the strength of the US dollar, and thus the US dollar could be prevented from taking over the currencies of Asian countries.

The function of the AMF would be similar to that of the IMF, except that the AMF would focus solely on the Asian region. By creating the AMF, these Asian countries could help each other during financial crises in the future, and would therefore not need to seek help from the IMF, which places restrictions on a country's internal policy making in return for its financial assistance.

Creating the AMF would be feasible and useful because the benefits of the AMF would return to the Asian countries themselves. Furthermore, if Japan, China, Hong Kong and Taiwan cooperate to form the AMF, the economy of the Asian regions would be more stable because they own the largest foreign reserves in the world.

Finally, a lesson learned from the Asian Crisis of 1997 was useful for us to think about how to respond to a potential financial crisis in the future. Among these Asian countries, they should enhance their endogenous policies; then to expand exogenous policies to stabilize the economy of the Asian region. Thus, the AD system in the Asian region and

the AMF ideas should be considered.

5.6. Conclusion

All the Asian countries, both developed and developing, suffered from the Asian Crisis. Even though Hong Kong is a developed country, it suffered seriously from both during and after the crisis. However, by analyzing the Hong Kong government's actions in 1997 and 1998, both positive and negative, we can recommend improvements for future policies both endogenous and exogenous. Furthermore, concerted monetary efforts within the Asian region as a whole, such as an Asian Dollar and an Asian Monetary Fund can provide a stable economic environment in the region. This kind of regional stability will allow these Asian countries to respond to future financial turmoil with strength and confidence. However, further research will be required to determine how to implement an AD and an AMF.

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# Appendix A

## Data Of The Ten Asian countries

Appendix A-18: Exchange Fund - Hong Kong Equity Portfolio

# Appendix A

## Data Of The Ten Asian Countries

| Appendix A-1: Performance of Singapore during the Asian Crisis (%) | | | | | |
|---|---|---|---|---|---|
| Economic Indicator | 1996 | 1997 | 1998 | 1999 | 2000 |
| GDP Growth | 6.9 | 7.8 | 1.5 | 5.4 | 6 |
| Inflation | 1.4 | 2 | -0.3 | 0.5 | 1 |
| Exports | 6.4 | -3.1 | -5.6 | 6.5 | 6.3 |
| Imports | 5.4 | 0.1 | -9 | 5 | 9.5 |
| Gross domestic saving/GDP | -- | 50.4 | 49.9 | 51.2 | 52 |

Sources: Based on data from Asian Development Outlook 1999 (update), Asian Development Bank, www.adb.org/publications/online/edrc/ado99-update.pdf; Asian Development Outlook 2000, Asian Development Bank, www.adb.org/Publications/ado2000/singapore.pdf.

Appendix A-2: Financial conditions of the top 30 Korean chaebol at the end of 1996

(in hundred million won)

| Chaebol | Total Assets | Debt | Sales | Net profit | Debt/equity ratio (%) |
|---|---|---|---|---|---|
| Samsung | 508.60 | 370.40 | 601.10 | 1.80 | 268.20% |
| Hyundai | 531.80 | 433.20 | 680.10 | 1.80 | 439.10% |
| Daewoo | 342.10 | 263.80 | 382.50 | 3.60 | 337.30% |
| LG | 370.70 | 287.70 | 466.70 | 3.60 | 346.50% |
| Hanjin | 139.00 | 117.90 | 87.00 | -1.90 | 556.90% |
| Kia | 141.60 | 118.90 | 121.00 | -1.30 | 523.60% |
| Ssangyong | 158.10 | 127.00 | 194.50 | -1.00 | 5409.00% |
| Sunkyong | 227.30 | 180.40 | 266.10 | 2.90 | 385.00% |
| Hanhwa | 109.70 | 97.20 | 96.90 | -1.80 | 778.20% |
| Daelim | 57.90 | 45.90 | 48.30 | 0.10 | 380.10% |
| Kumho | 74.00 | 61.20 | 44.40 | -0.20 | 477.90% |
| Doosan | 64.00 | 55.90 | 40.50 | -1.10 | 692.30% |
| Halla | 66.30 | 63.20 | 52.90 | 0.20 | 2067.60% |
| Sammi | 25.20 | 25.90 | 14.90 | -2.50 | 3245.00% |
| Hyosung | 41.20 | 32.50 | 54.80 | 0.40 | 373.20% |
| Hanil | 26.30 | 22.30 | 13.00 | -1.20 | 563.20% |
| Donga Construction | 62.90 | 49.10 | 38.90 | 0.40 | 355.00% |
| Kohap | 36.50 | 31.20 | 25.20 | 0.30 | 589.50% |
| Jinro | 39.40 | 39.00 | 14.80 | -1.60 | 8598.70% |
| dongguk Jaekank | 37.00 | 25.40 | 30.70 | 0.90 | 210.40% |
| Lotte | 77.50 | 51.00 | 71.90 | 0.50 | 191.20% |
| Kolon | 38.00 | 28.90 | 41.30 | 0.20 | 316.50% |
| Haitai | 34.00 | 29.50 | 27.20 | 0.40 | 658.30% |
| Sinho Jaeji | 21.30 | 17.70 | 12.20 | -0.10 | 489.50% |
| Anam Industrial | 26.40 | 21.80 | 19.80 | 0.10 | 478.10% |
| Dongguk Mugok | 16.20 | 13.60 | 10.70 | -0.20 | 587.90% |
| New Core | 28.00 | 25.90 | 18.30 | 0.20 | 1224.00% |
| Bongil | 20.30 | 18.30 | 8.70 | -0.90 | 920.50% |
| Hansol | 47.90 | 37.10 | 25.50 | 0.10 | 343.20% |
| Hansin Kongyong | 13.30 | 11.50 | 10.60 | 0.00 | 648.80% |

Source: Chosun Libo, 29 Novemer, 1997.

| Appendix A-3: The performance of South Korea during the Asian Crisis | | | | | | |
|---|---|---|---|---|---|---|
| Quarterly | GDP Growth Rate | Private Consumption Index | Public Consumption Index | Export Index | Import Index | Gross Domestic Investment Index |
| 96Q1 | 7.10% | -- | -- | -- | -- | -- |
| 96Q2 | 6.80% | -- | -- | -- | -- | -- |
| 96Q3 | 6.50% | -- | -- | -- | -- | -- |
| 96Q4 | 6.70% | -- | -- | -- | -- | -- |
| 97Q1 | 4.90% | -- | -- | -- | -- | -- |
| 97Q2 | 6.20% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| 97Q3 | 5.50% | 101.70% | 105.60% | 102.10% | 99.40% | 93.00% |
| 97Q4 | 3.60% | 100.50% | 118.00% | 100.00% | 90.50% | 106.50% |
| 98Q1 | -3.60% | 89.10% | 95.70% | 99.30% | 65.80% | 44.70% |
| 98Q2 | -7.20% | 88.80% | 99.30% | 95.40% | 62.50% | 56.70% |
| 98Q3 | -7.10% | 91.20% | 105.00% | 91.30% | 59.30% | 55.50% |
| 98Q4 | -5.30% | 93.60% | 117.50% | 91.30% | 63.80% | 80.70% |
| 99Q1 | 4.50% | 94.70% | 94.10% | 96.10% | 70.20% | 54.80% |
| 99Q2 | 9.90% | 96.90% | 97.10% | 100.10% | 76.60% | 73.90% |
| 99Q3 | 12.30% | 100.50% | 103.70% | 103.40% | 84.60% | 74.90% |

Sources: Based on data from ADB database; Bloomberg LP; web sites of Bank of Korea and Ministry of Finance and Economy of Republic of Korea; Monthly Statistics of Korea, National Statistics Office, Republic of Korea, July 1999.

| Appendix A-4: The changing of Average Exchange Rate, Discount Rate, and Stock Price Index of South Korea | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Average Exchange Rate | | | 3-month Interbank | | | | | |
| | Local currency to US$ | | | Lending Rate | | | Average Stock Price Index | | |
| Month | 1997 | 1998 | 1999 | 1997 | 1998 | 1999 | 1997 | 1998 | 1999 |
| 1 | 849.9 | 1701.5 | 1174.7 | 5.00% | 5.00% | 3.00% | 70.6 | 53.8 | 68.6 |
| 2 | 866.9 | 1626.8 | 1187 | 5.00% | 5.00% | 3.00% | 72.6 | 60.3 | 61 |
| 3 | 896.2 | 1488.9 | 1227.2 | 5.00% | 5.00% | 3.00% | 66.4 | 60.7 | 67.9 |
| 4 | 893.6 | 1388.3 | 1205.1 | 5.00% | 5.00% | 3.00% | 70.4 | 51.3 | 84.2 |
| 5 | 892.1 | 1400.1 | 1193.1 | 5.00% | 5.00% | -- | 72.2 | 41.7 | 86.2 |
| 6 | 889.5 | 1395.3 | 1168.4 | 5.00% | 5.00% | -- | 79.2 | 36.1 | 99.9 |
| 7 | 890.5 | 1293.7 | 1187 | 5.00% | 5.00% | -- | 78.2 | 37.9 | 115.7 |
| 8 | 895.9 | 1312.1 | 1197.8 | 5.00% | 5.00% | -- | 76.8 | 35.9 | 111.5 |
| 9 | 909.5 | 1372.6 | 1200.2 | 5.00% | 3.00% | -- | 70.4 | 35.7 | 112.2 |
| 10 | 921.9 | 1336.2 | 1204.8 | 5.00% | 3.00% | -- | 60.9 | 41.5 | 99.7 |
| 11 | 1025.6 | 1290.2 | 1175.9 | 5.00% | 3.00% | -- | 51.8 | 50.1 | 115.6 |
| 12 | 1484.1 | 1211.5 | 1136 | 5.00% | 3.00% | -- | 43.5 | 60 | 112.7 |

Sources: Based on data from International Financial Statistics CD-ROM, IMF, September 1999; Bloomberg LP; web sites of Bank of Korea and Ministry of Finance and Economy of Republic of Korea.

| Appendix A-5: Chinese Taipei: Overall Economic Performance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
| Nominal GDP (billion US$) | 212.2 | 222.6 | 241 | 260.2 | 272.3 | 284.8 | 261.6 | -- |
| Real GDP (growth rate) | -- | 4.90% | 8.26% | 7.97% | 4.65% | 4.60% | -8.15% | 5.10% |
| Private Consumption (% of GDP) | 8.90% | 8.20% | 8.60% | 5.50% | 6.20% | 7.70% | 7.10% | -- |
| Government Consumption (% of GDP) | 4.50% | 6.00% | -1.20% | 1.30% | 5.20% | 5.80% | 3.10% | -- |
| Exports of goods & services (% of GDP) | 5.30% | 7.20% | 5.50% | 12.80% | 7.10% | 8.70% | 2.80% | 6.40% |
| Imports of goods & services (% of GDP) | 12.20% | 8.30% | 3.50% | 9.80% | 5.10% | 13.40% | 5.50% | 2.90% |
| CPI | 4.50% | 2.90% | 4.10% | 3.70% | 3.10% | 0.90% | 1.70% | 1.10% |
| Short-term Interest rate | 7.20% | 6.80% | 6.80% | 6.70% | 5.80% | 6.80% | 6.80% | -- |
| Exchange rate (to US$) | 26.16 | 26.38 | 26.46 | 26.48 | 27.46 | 28.7 | 33.46 | -- |
| Unemployment rate | 1.50% | 1.50% | 1.60% | 1.80% | 2.60% | 2.70% | 2.70% | -- |

Sources: Based on data from Overall Economic Performance, Chinese Taipei, Asia-Pacific Economic Cooperation (APEC). www.apecsec.org.sg/member/taipec_report.html.

| Appendix A-6: The performance of Thailand during the Asian Crisis | | | | | | |
|---|---|---|---|---|---|---|
| Quarterly | GDP Growth Rate | Private Consumption Index | Public Consumption Index | Export Index | Import Index | Gross Domestic Investment Index |
| 96Q1 | 5.60% | -- | -- | -- | -- | -- |
| 96Q2 | 7.00% | -- | -- | -- | -- | -- |
| 96Q3 | 7.90% | -- | -- | -- | -- | -- |
| 96Q4 | 3.50% | -- | -- | -- | -- | -- |
| 97Q1 | 1.10% | -- | -- | -- | -- | -- |
| 97Q2 | -1.60% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| 97Q3 | -2.00% | 90.30% | 119.90% | 101.50% | 92.50% | 102.10% |
| 97Q4 | -4.40% | 86.60% | 98.30% | 103.80% | 74.70% | 85.60% |
| 98Q1 | -9.00% | 86.30% | 97.40% | 96.70% | 62.40% | 70.20% |
| 98Q2 | -12.70% | 85.50% | 94.00% | 94.80% | 61.80% | 40.30% |
| 98Q3 | -13.20% | 78.70% | 134.20% | 92.70% | 61.20% | 60.20% |
| 98Q4 | -6.40% | 83.20% | 113.60% | 93.50% | 60.80% | 82.80% |
| 99Q1 | 0.90% | 86.10% | 98.80% | 93.20% | 61.90% | 77.00% |
| 99Q2 | 3.30% | 86.40% | 108.60% | 100.20% | 69.00% | 45.60% |
| 99Q3 | 7.70% | 83.00% | 138.70% | 103.20% | 74.70% | 61.30% |

Sources: Based on data from International Financial Statistics CD-ROM, IMF, August 1999; Bloomberg LP; Web site of Bank of Thailand.

| Appendix A-7: Unemployment in Thailand | |
|---|---|
| 1990 | 2.20% |
| 1995 | 1.10% |
| 1996 | 1.10% |
| 1997 | 0.90% |
| 1998 | 5.30% |
| 1998Q1 | 4.60% |
| 1998Q2 | 5.00% |
| 1998Q3 | 3.40% |
| 1998Q4 | 4.50% |
| 1999Q1 | 5.20% |
| 1999Q2 | 5.30% |
| 1999Q3 | 3.00% |

Sources: Based on Data from Key Indicators of Development Asian and Pacific Countries, 1999 ADB; Human Development Report, UNDP, 1990-1999, web site of United Nations; ARR (Asia Recovery Report 2000), Thailand Section.

| Appendix A-8: Performance of Thailand (2) | | | |
|---|---|---|---|
| Time | Average Currency Rate | Average Discount Rate | Average Stock Price Index |
| Jan 97 | 25.7 | 10.5 | 826.6 |
| Feb 97 | 25.9 | 10.5 | 733.5 |
| Mar 97 | 25.9 | 10.5 | 702.6 |
| Apr 97 | 26.1 | 10.5 | 697.2 |
| May 97 | 25.9 | 10.5 | 589.1 |
| Jun 97 | 25.8 | 10.5 | 517.9 |
| Jul 97 | 30.3 | 12.5 | 642.6 |
| Aug 97 | 32.5 | 12.5 | 595.4 |
| Sep 97 | 36.3 | 12.5 | 536.5 |
| Oct 97 | 37.4 | 12.5 | 512.9 |
| Nov 97 | 39.3 | 12.5 | 444.3 |
| Dec 97 | 45.3 | 12.5 | 374.9 |
| Jan 98 | 53.8 | 12.5 | 397.7 |
| Feb 98 | 46.1 | 12.5 | 520.4 |
| Mar 98 | 41.3 | 12.5 | 501.1 |
| Apr 98 | 39.5 | 12.5 | 433.9 |
| May 98 | 39.2 | 12.5 | 363.8 |
| Jun 98 | 42.4 | 12.5 | 286.9 |
| Jul 98 | 41.2 | 12.5 | 275.4 |
| Aug 98 | 41.6 | 12.5 | 238.3 |
| Sep 98 | 40.4 | 12.5 | 224.3 |
| Oct 98 | 38.1 | 12.5 | 298 |
| Nov 98 | 36.5 | 12.5 | 359.2 |
| Dec 98 | 36.3 | 12.5 | 348 |
| Jan 99 | 36.6 | 12.5 | 382.6 |
| Feb 99 | 37.1 | 7 | 336.6 |
| Mar 99 | 37.5 | 7 | 352.2 |
| Apr 99 | 37.6 | 7 | 395 |
| May 99 | 37 | 7 | 478.9 |
| Jun 99 | 36.9 | 5.5 | 511.5 |
| Jul 99 | 37.1 | 4 | 493.6 |
| Aug 99 | 38 | 4 | 438.8 |
| Sep 99 | 40 | – | 419.2 |
| Oct 99 | 39.5 | – | 387.4 |
| Nov 99 | 38.7 | – | 414.4 |
| Dec 99 | 38.2 | – | 443.1 |

Sources: Based on data from International Financial Statistics CD-ROM, IMF, August 1999; Bloomberg LP; web site of Bank of Thailand and National Economic and Social Development of Thailand.

| Appendix A-9: The performance of Indonesia during the Asian Crisis | | | | | | |
|---|---|---|---|---|---|---|
| Quarterly | GDP Growth Rate | Private Consumption Index | Public Consumption Index | Export Index | Import Index | Gross Domestic Investment Index |
| 96Q1 | 6.30% | -- | -- | 80.30% | 90.60% | -- |
| 96Q2 | 7.00% | -- | -- | 85.00% | 103.20% | -- |
| 96Q3 | 8.40% | -- | -- | 84.90% | 98.20% | -- |
| 96Q4 | 10.30% | -- | -- | 90.50% | 96.30% | -- |
| 97Q1 | 6.90% | -- | -- | 93.60% | 105.00% | -- |
| 97Q2 | 4.90% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| 97Q3 | 5.30% | 102.20% | 107.60% | 95.20% | 104.40% | 105.60% |
| 97Q4 | 1.10% | 110.90% | 120.20% | 93.90% | 96.70% | 90.80% |
| 98Q1 | -4.00% | 102.90% | 99.70% | 92.70% | 72.90% | 68.40% |
| 98Q2 | -14.60% | 101.90% | 92.70% | 89.50% | 73.10% | 45.10% |
| 98Q3 | -16.10% | 94.90% | 87.10% | 99.20% | 71.60% | 56.90% |
| 98Q4 | -17.70% | 98.80% | 96.20% | 71.80% | 63.20% | 50.50% |
| 99Q1 | -8.00% | 99.40% | 95.80% | 77.80% | 59.50% | 40.20% |
| 99Q2 | 3.10% | 99.90% | 97.50% | 83.80% | 70.60% | 42.10% |
| 99Q3 | 0.50% | -- | -- | -- | -- | 39.10% |

Sources: Based on data from International Financial Statistics CD-ROM, IMF, August 1999; ADB database; Bloomberg LP; web site of Badan Pusat Statistik (central Bureau of Statistics) of Indonesia. – means no data.

| Appendix A-10: The changing of Average Exchange Rate, Discount Rate, and Stock Price Index in Indonesia | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Average Exchange Rate | | | Central Bank | | | | | |
| | Local currency to US$ | | | Average Discount Rate | | | Average Stock Price Index | | |
| Month | 1997 | 1998 | 1999 | 1997 | 1998 | 1999 | 1997 | 1998 | 1999 |
| 1 | 2393 | 9662.5 | 8518.5 | 12.10% | 20.00% | 36.40% | 669 | 417.3 | 416.1 |
| 2 | 2403 | 8950 | 8746.6 | 11.80% | 22.00% | 37.50% | 698.6 | 496.4 | 401.9 |
| 3 | 2413.8 | 9687.6 | 8926.5 | 11.10% | 27.80% | 37.80% | 672.9 | 510.3 | 388.1 |
| 4 | 2426.8 | 7950 | 8611.7 | 10.70% | 46.40% | 35.20% | 643.4 | 506.8 | 450.2 |
| 5 | 2438.3 | 9897.3 | 7972.4 | 10.60% | 58.00% | 28.70% | 664.6 | 424 | 5833 |
| 6 | 2446.6 | 13535 | 7348.3 | 10.50% | 58.00% | 22.10% | 704.1 | 417 | 664.5 |
| 7 | 2518.3 | 13962.5 | 6767.1 | 10.90% | 70.80% | 15.00% | 724.1 | 475.7 | 644.4 |
| 8 | 2800.4 | 11950 | 7471.8 | 13.70% | 70.70% | -- | 623.1 | 401.1 | 581.7 |
| 9 | 3055.3 | 10843.8 | 8265 | 22.00% | 68.80% | -- | 544.6 | 299.3 | 545.1 |
| 10 | 3616.3 | 8287.5 | 7487.5 | 20.70% | 59.70% | -- | 510.6 | 302.9 | 580.7 |
| 11 | 3492 | 7685.3 | 7000.2 | 20.00% | 51.30% | -- | 439.5 | 368.9 | 618.5 |
| 12 | 4908.8 | 7752 | 7143.8 | 20.00% | 38.40% | -- | 391.4 | 400.5 | 642.8 |

Sources: Based on data from International Financial Statistics CD-ROM, IMF, September 1999; ADB database; Bloomberg LP; web sites of Badan Pusat Statistik (Central Bureau of Statistics) of Indonesia and Bank of Indonesia.

| Appendix A-11: The performance of the Philippines during the Asian Crisis | | | | | | |
|---|---|---|---|---|---|---|
| Quarterly | GDP Growth Rate | Private Consumption Index | Public Consumption Index | Export Index | Import Index | Gross Domestic Investment Index |
| 96Q1 | 5.20% | -- | -- | -- | -- | -- |
| 96Q2 | 6.60% | -- | -- | -- | -- | -- |
| 96Q3 | 6.10% | -- | -- | -- | -- | -- |
| 96Q4 | 5.60% | -- | -- | -- | -- | -- |
| 97Q1 | 5.50% | -- | -- | -- | -- | -- |
| 97Q2 | 5.60% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| 97Q3 | 4.90% | 96.60% | 94.80% | 101.30% | 107.20% | 98.50% |
| 97Q4 | 4.70% | 111.100% | 90.30% | 107.70% | 102.40% | 121.70% |
| 98Q1 | 1.10% | 96.60% | 87.30% | 114.40% | 92.70% | 103.50% |
| 98Q2 | -1.00% | 103.90% | 97.60% | 114.40% | 81.90% | 81.80% |
| 98Q3 | -0.10% | 102.50% | 93.60% | 120.70% | 81.70% | 79.60% |
| 98Q4 | -2.00% | 114.00% | 90.80% | 120.00% | 75.80% | 94.60% |
| 99Q1 | 1.20% | 99.00% | 93.90% | 131.80% | 85.70% | 93.50% |
| 99Q2 | 3.60% | 106.60% | 103.70% | 128.30% | 87.10% | 86.90% |
| 99Q3 | 3.10% | 105.20% | 97.00% | -- | -- | 75.40% |

Sources: Based on data from International Financial Statistics CD-ROM, IMF, August 1999; ADB database; Bloomberg LP; web sites of National Statistical Coordination Board of Philippines, National Statistics Office of Philippines and Bangko Sentral ng Pilipinas (Central Bank of the Philippines); Selected Philippine Economic Indicators, Bangko Sentral ng Pilipnas (Central Bank of the Philippines), August 1999.

| Appendix A-12: The changing of Average Exchange Rate, Discount Rate, and Stock Price Index of the Philippines | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Average Exchange Rate | | | Central Bank | | | | | |
| | Local currency to US$ | | | Average Discount Rate | | | Average Stock Price Index | | |
| Month | 1997 | 1998 | 1999 | 1997 | 1998 | 1999 | 1997 | 1998 | 1999 |
| 1 | 26.3 | 42.7 | 38.4 | 10.70% | 17.10% | 12.50% | 3278.3 | 1733.5 | 2068.5 |
| 2 | 26.3 | 40.4 | 38.8 | 9.70% | 18.30% | 12.10% | 3349.4 | 2111.8 | 1943.7 |
| 3 | 26.3 | 39 | 38.9 | 9.60% | 16.60% | 11.50% | 3249.9 | 2242.2 | 1998 |
| 4 | 26.4 | 38.4 | 38.2 | 8.50% | 14.80% | 10.80% | 2939.7 | 2172.1 | 2265.7 |
| 5 | 26.4 | 39.3 | 37.8 | 9.40% | 13.70% | 9.20% | 2657.4 | 2138.2 | 2454.8 |
| 6 | 26.4 | 40.4 | 37.9 | 9.90% | 12.90% | 8.70% | 2811.1 | 1821.8 | 2424 |
| 7 | 27.7 | 41.8 | 38.3 | 10.00% | 14.00% | 7.80% | 2655 | 1752.3 | 2517.2 |
| 8 | 29.3 | 43 | 39.4 | 13.20% | 13.20% | 7.40% | 2462.4 | 1362.8 | 2228.8 |
| 9 | 32.4 | 43.8 | 40.3 | 13.20% | 12.90% | -- | 2082.8 | 1178.8 | 2110.1 |
| 10 | 34.5 | 42.9 | 40.3 | 14.00% | 12.80% | -- | 1953.5 | 1405.7 | 2022.3 |
| 11 | 34.5 | 39.9 | 40.3 | 16.20% | 12.50% | -- | 1846.1 | 1806.5 | 1984 |
| 12 | 37.2 | 39.1 | 40.6 | 14.60% | 12.40% | -- | 1857.1 | 1862.9 | 2007.6 |

Sources: Based on data from International Financial Statistics, CD-ROM, IMF, August 1999; Bloomberg Lp; Statwatch, National Statistical Coordination Board, Philippines, September 8, 1999.

| Appendix A-13: The performance of Malaysia during the Asian Crisis | | | | | | |
|---|---|---|---|---|---|---|
| Quarterly | GDP Growth Rate | Private Consumption Index | Public Consumption Index | Export Index | Import Index | Gross Domestic Investment Index |
| 96Q1 | 12.20% | -- | -- | -- | -- | -- |
| 96Q2 | 8.80% | -- | -- | -- | -- | -- |
| 96Q3 | 9.70% | -- | -- | -- | -- | -- |
| 96Q4 | 9.50% | -- | -- | -- | -- | -- |
| 97Q1 | 8.60% | -- | -- | -- | -- | -- |
| 97Q2 | 8.40% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| 97Q3 | 7.70% | 105.70% | 104.30% | 99.90% | 90.50% | 85.70% |
| 97Q4 | 5.60% | 108.80% | 147.20% | 93.70% | 85.50% | 69.90% |
| 98Q1 | -3.10% | 100.00% | 63.10% | 93.60% | 76.80% | 58.80% |
| 98Q2 | -5.20% | 91.10% | 103.10% | 88.90% | 67.10% | 51.00% |
| 98Q3 | -10.90% | 90.00% | 106.80% | 88.20% | 62.00% | 42.10% |
| 98Q4 | -10.30% | 93.80% | 120.80% | 97.40% | 67.00% | 34.60% |
| 99Q1 | -1.30% | 96.00% | 77.20% | 99.60% | -- | 40.40% |
| 99Q2 | 4.10% | 93.60% | 112.10% | 105.50% | -- | 42.70% |
| 99Q3 | 8.10% | 94.10% | 112.50% | 108.90% | -- | 40.30% |

Sources: Based on data from International Financial Statistics, CD-ROM, IMF, August 1999; ADB database; Bloomberg LP; web sites of Bank Negara Malaysia and Development of Statistics of Malaysia; Joint BIS-IMF-OECD-WorldBank Statistics.

| Appendix A-14: The changing of Average Exchange Rate, Discount Rate, and Stock Price Index of Malaysia | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Average Exchange Rate | | | 3-month Interbank | | | | | |
| | Local currency to US$ | | | Lending Rate | | | Average Stock Price Index | | |
| Month | 1997 | 1998 | 1999 | 1997 | 1998 | 1999 | 1997 | 1998 | 1999 |
| 1 | 2.5 | 4.4 | 3.8 | -- | -- | 6.40% | 1228 | 542.1 | 595.2 |
| 2 | 2.5 | 3.8 | 3.8 | -- | -- | 6.40% | 1254.9 | 714.3 | 558.8 |
| 3 | 2.5 | 3.7 | 3.8 | -- | -- | 5.70% | 1234.6 | 716.6 | 514.2 |
| 4 | 2.5 | 3.7 | 3.8 | -- | -- | 3.80% | 1121.1 | 648.7 | 602 |
| 5 | 2.5 | 3.8 | 3.8 | -- | 11.00% | 3.30% | 1081.3 | 570.7 | 739.3 |
| 6 | 2.5 | 4.0 | 3.8 | -- | 11.20% | 3.30% | 1094.9 | 476.7 | 779.6 |
| 7 | 2.6 | 4.2 | 3.8 | -- | 10.80% | 3.30% | 1035.9 | 431.9 | 826.4 |
| 8 | 2.7 | 4.2 | 3.8 | -- | 9.50% | 3.20% | 904.3 | 340.5 | 741.1 |
| 9 | 3.0 | 3.8 | 3.8 | -- | 7.50% | 3.20% | 809.9 | 370.9 | 722 |
| 10 | 3.3 | 3.8 | 3.8 | -- | 7.00% | -- | 766.2 | 394.1 | 730 |
| 11 | 3.4 | 3.8 | 3.8 | -- | 6.50% | -- | 638 | 465.4 | 729.8 |
| 12 | 3.8 | 3.8 | 3.8 | -- | 6.50% | -- | 577.7 | 540.8 | 765.6 |

Sources: Based on data from International Financial Statistics, CD-ROM, IMF, August 1999; ADB database; Bloomberg LP; web sites of Bank Negara Malaysia and Development of Statistics of Malaysia; Joint BIS-IMF-OECD-WorldBank Statistics.

| Appendix A-15: China | | | |
|---|---|---|---|
| Date | Foreign Reserve | Exchange Rate | Lending Rate |
| 1992Q1 | 44.456 | 5.4675 | 8.640 |
| 1992Q2 | 46.124 | 5.4621 | 8.640 |
| 1992Q3 | 24.301 | 5.5002 | 8.640 |
| 1992Q4 | 20.620 | 5.7548 | 8.640 |
| 1993Q1 | 20.965 | 5.7190 | 8.640 |
| 1993Q2 | 20.059 | 5.7612 | 9.360 |
| 1993Q3 | 20.847 | 5.7868 | 10.980 |
| 1993Q4 | 22.387 | 5.8000 | 10.980 |
| 1994Q1 | 29.826 | 8.7080 | 10.980 |
| 1994Q2 | 33.100 | 8.6526 | 10.980 |
| 1994Q3 | 41.242 | 8.5301 | 10.980 |
| 1994Q4 | 52.914 | 8.4462 | 10.980 |
| 1995Q1 | 59.352 | 8.4269 | 10.980 |
| 1995Q2 | 64.227 | 8.3011 | 10.980 |
| 1995Q3 | 71.426 | 8.3188 | 12.060 |
| 1995Q4 | 75.377 | 8.3174 | 12.060 |
| 1996Q1 | 82.701 | 8.3339 | 12.060 |
| 1996Q2 | 88.606 | 8.3221 | 10.980 |
| 1996Q3 | 97.362 | 8.3017 | 10.080 |
| 1996Q4 | 107.039 | 8.2982 | 10.080 |
| 1997Q1 | 113.962 | 8.2964 | 10.080 |
| 1997Q2 | 122.825 | 8.2908 | 10.080 |
| 1997Q3 | 136.024 | 8.2852 | 10.080 |
| 1997Q4 | 142.762 | 8.2798 | 8.640 |
| 1998Q1 | 143.982 | 8.2791 | 7.920 |
| 1998Q2 | 143.957 | 8.2798 | 7.920 |
| 1998Q3 | 145.016 | 8.2782 | 6.930 |
| 1998Q4 | 149.188 | 8.2787 | 6.390 |
| 1999Q1 | 150.497 | 8.2800 | 6.390 |
| 1999Q2 | 150.565 | 8.2787 | 5.850 |
| 1999Q3 | 154.731 | 8.2775 | 5.850 |
| 1999Q4 | 157.728 | 8.2795 | 5.850 |
| 2000Q1 | 159.769 | 8.2787 | |
| 2000Q2 | 161.285 | 8.2782 | |
| 2000Q3 | 162.585 | 8.2798 | |

Source: IMF monthly statistical book, the IMF.

| Appendix A-16: China Data (2) (yearly in percentage change) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| GDP | 3.80 | 9.20 | 14.20 | 13.50 | 12.60 | 10.20 | 9.60 | 8.80 | 7.80 | 7.10 | N/A |
| CPI | 3.10 | 3.40 | 6.40 | 14.70 | 24.10 | 17.10 | 8.30 | 2.80 | -0.80 | -1.40 | N/A |
| Short-term rate | 9.63 | 9.00 | 8.37 | 9.54 | 9.99 | 11.10 | 9.72 | 7.65 | 6.34 | 5.58 | N/A |
| Unemployment | 2.50 | 2.30 | 2.30 | 2.60 | 2.80 | 2.90 | 3.00 | 3.10 | 3.10 | 3.10 | N/A |

Source: 1996 APEC Economic Outlook and 2000 APEC Economic Outlook, APEC.

| Appendix A-17: Bad debt preparation at the ended of August 7th 1998 | | | |
|---|---|---|---|
| | **1998** | **1997** | **Increase by** |
| **Bank** | **US$ in million** | **US$ in million** | **percentage** |
| HSBC Holding plc | 1137.95 | 256.28 | 344.00% |
| Hang Seng Bank Limited | 115.64 | 26.28 | 340.00% |
| Bank of East Asia Limited | 52.31 | 21.15 | 147.30% |
| Dah Sing Financial Holdings Limited | 8.99 | 3.37 | 165.00% |
| CITIC Ka Wah Bank Limited | 17.95 | 6.36 | 182.00% |
| International Bank of Asia Limited | 6.09 | 4.67 | 30.50% |
| Wing Hang Bank Limited | 15.38 | 8.97 | 71.40% |
| Union Bank of Hong Kong Limited | 4.87 | 4.49 | 8.60% |

Source: Date is provided by Capital Magazine (September 1998), Banking sector, p.37

| Appendix A-18: Exchange Fund - Hong Kong Equity Portfolio | | | |
|---|---|---|---|
| **Constituent Stocks** | **No. of Shares** | **% of issued shares** | **Average purchase Price** |
| HSBC Holdings PLC | 237,001,800 | 8.80% | HK$172.0312 |
| HK Telecom | 972,098,400 | 8.16% | HK$15.2387 |
| Hutchison Whampoa | 304,550,000 | 7.86% | HK$38.0601 |
| China Telecom | 478,806,000 | 4.06% | HK$10.8820 |
| CLP Holdings Ltd | 136,022,000 | 5.50% | HK$35.0154 |
| Hang Seng Bank | 109,202,700 | 5.71% | HK$43.7451 |
| Cheung Kong Holdings | 237,628,500 | 10.34% | HK$33.5349 |
| Sun Hung Kai Properties | 191,660,000 | 8.10% | HK$25.7710 |
| Hong Kong Electric | 124,335,500 | 6.15% | HK$24.9532 |
| Henderson Land | 85,349,000 | 4.96% | HK$23.7743 |
| HK China Gas | 289,041,000 | 6.67% | HK$9.0043 |
| Cheung Kong Infras | 96,403,000 | 4.28% | HK$14.3268 |
| Swire Pacific (A) | 115,433,000 | 12.28% | HK$23.9954 |
| CITIC Pacific | 146,713,000 | 6.90% | HK$10.4062 |
| Cathay Pacific Airways | 119,208,000 | 3.52% | HK$6.2545 |
| New World Development | 236,470,000 | 11.91% | HK$8.9315 |
| Wharf Holdings | 121,679,000 | 5.30% | HK$7.5859 |
| Henderson Investments | 91,308,000 | 3.24% | HK$4.2285 |
| Bank of East Asia | 83,017,600 | 6.10% | HK$8.4639 |
| Amoy properties | 71,135,500 | 2.49% | HK$3.8312 |
| Shanghai Industrial Holdings | 71,413,000 | 8.49% | HK$10.9883 |
| China Resources Enterprises | 136,414,000 | 8.78% | HK$5.6776 |
| Hang Lung Development | 33,156,000 | 2.50% | HK$6.6205 |
| Shangri-La Asia | 61,674,000 | 3.44% | HK$5.0266 |
| Wheelock & Co | 62,391,000 | 3.08% | HK$4.1626 |
| Sino Land Co | 107,238,000 | 3.43% | HK$2.5792 |
| Television Broadcast | 35,741,000 | 8.56% | HK$17.6047 |
| First Paficic | 143,864,000 | 6.07% | HK$2.5912 |
| Hysan Development Co | 60,524,000 | 5.89% | HK$5.2217 |
| HK & Shanghai Hotel | 57,494,000 | 4.97% | HK$4.1801 |
| Hopewell Holdings | 209,323,000 | 4.78% | HK$0.8251 |
| Great Eagle | 24,652,000 | 4.51% | HK$6.5568 |
| GuangDong Investment | 157,472,000 | 6.33% | HK$1.4038 |
| Total Investment made: HK$ 118.1billion or US$15.141billion | | | |

Source: Data is provided by Exchange Investment Fund Limited on 26th August, 1998.
www.info.gov.hk/hkma/eng/press/1998/981026e.htm

# Appendix B

## The Exchange Rate Policy Of Hong Kong During The Asian Crisis

1. Introduction
2. The History Of The Hong Kong Exchange Rate System
3. The Application Of The Linked Exchange Rate Policy Since 1983
4. The Relationships Between The Linked Exchange Rate Policy, The Foreign Reserve, And The Hong Kong InterBank Offer Rate (HIBOR)
5. The Advantages Of Applying The Linked Exchange Rate Policy
6. The Disadvantages Of Applying The Linked Exchange Rate Policy
7. The Impacts Of Maintaining The Linked Exchange Rate Policy During The Asian Crisis
8. Conclusion: The Use Of The Linked Exchange Rate Policy In The Future

Appendix B-1: Resilience Against External Shocks

Graph 1: The Trends of HIBOR

Graph 2: Outstanding Balance At End Of Month

Graph 3: Monthly Growth Rate

Graph 4: Centa-City Lending Index Trend Chart

Graph 5: Centa-City Index Trend Chart

Graph 6: The Trends of the Hang Seng Index

# Appendix B

# The Exchange Rate Policy of Hong Kong During the Asian Crisis

## 1. Introduction

A fixed exchange rate, or linked exchange rate policy, has being used in Hong Kong since 1983. Hong Kong was the only country which did not unpeg its currency regime during the Asian Crisis. Thailand provided an excellent example of the consequences for a country whose foreign reserves were not sufficient to back up its exchange rate regime, and this country ultimately incurred terrible financial turmoil. Hong Kong succeeded in maintaining its exchange rate policy. On the one hand maintaining this policy saved the wealth of most the Hong Kong population. On the other hand, this fixed exchange rate was responsible for the Hong Kong economy's longer recovery period after the Asian Crisis. For example, Hong Kong currency was strong while the currencies in most of the Asian countries depreciated. This stronger Hong Kong currency made Hong Kong stay at a weak price competition. As a result, the economy of Hong Kong recovered slower than those of other Asian countries. It did not recover until the fourth quarter of 1999, whereas Thailand recovered its economy in the first quarter of 1999; Indonesia recovered its economy in the second quarter of 1999; and South Korea recovered its economy in the first quarter of 1999.

Hong Kong is a young country whose exchange rate regime has been changed from time to time. Thus, it is a useful exercise for us to learn more about the history of its exchange rate regime in order to understand why the Hong Kong currency was attacked by

speculators, and on what basis speculation was taking place in 1998. Furthermore, an exploration of whether a fixed exchange rate regime gives Hong Kong an advantage or not is also an important issue for us to investigate.

Hong Kong is also an external trade economy. Thus, its economy stability is easily affected by external economic environments. For example, the total trade in 1999 was HK$274.17 or US$35.15 billion.[27] As a result, the exchange rate policy is very important to Hong Kong in maintaining its external trading activities in a high position in the world. In this paper, I will review the exchange rate system of Hong Kong, especially in regard to whether its fixed exchange rate policy can be retained or not in an economy with a high proportion of financial services production. Then, if it can be retained, I will determine which factors would enable it to be retained, or if it cannot be retained, I will determine which factors would make it difficult to retain.

This paper contains seven sections: 1) The History Of The Hong Kong Exchange Rate System; 2) The Application Of The Linked Exchange Rate Policy since 1983 , 3) The Relationships Between The Linked Exchange Rate Policy, The Foreign Reserve, And The Hong Kong InterBank Offer Rate (HIBOR); 4) The Advantages Of Applying The Linked Exchange Rate Policy; 5) The Disadvantages Of Applying The Linked Exchange Rate Policy; 6) The Impacts Of Maintaining The Linked Exchange Rate Policy During The Asian Crisis; and 7) Conclusion: The Use Of The Linked Exchange Rate Policy In The Future.

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[27] Data is provided by Census & Statistics Department of Hong Kong, http: www.info.gov.hk/censtatd/eng/hkstat/hkinf/ext_trade/ext_trade_index.html

2. The History Of The Hong Kong Exchange Rate System

Hong Kong is the only country that did not devaluate its currency during the Asian Crisis. Since October 1983, it has used a linked exchange rate policy, which is a type of fixed exchange rate policy. This system is based on the issue and redemption of Certificates of Indebtedness. Although this the linked exchange rate system has been used for past seventeen years, this was not the first time that the Hong Kong government linked its currency to the U.S. dollar. However, the functions of the current linked exchange rate policy differ slightly from the previous fixed exchange rate policy.

The history of the Hong Kong exchange rate system can be traced back to more than a hundred years ago. From 1863 to 1935, the currency of Hong Kong was silver, and this exchange rate regime was called the **Silver Standard**, a floating exchange rate policy. In December 1935, the Silver Standard regime was abandoned, and a new exchange rate regime was initiated which was called the **Sterling Exchange Standard**. This policy lasted until June, 1972. From December 1935 to November 1967, the exchange rate between the Hong Kong dollar and the Sterling pound was HKS16 exchanged for one Sterling pound. From November 1967 to June 1972, the exchange rate of the Hong Kong dollar and the Sterling pound was HKS14.55 exchanged for one Sterling pound. In other words, the Hong Kong dollar appreciated against the Sterling pound between the years 1967 and 1972. The Sterling Exchange Standard lasted for 37 years.

In June 1972, the Hong Kong government unhooked the Hong Kong dollar with the Sterling pound. Instead it pegged its currency with the U.S. dollar. This was the first time which the Hong Kong government pegged its currency with the U.S. dollar, but this policy

did not last long. It was applied for 28 months only and ended by November, 1974. During these 28 months, between June 1972 and February 1973, the exchange rate was HK$5.650 exchanged for one U.S. dollar. From February 1973 to November 1974, the exchange rate was HK$5.085 exchanged for one U.S. dollar. Again, the Hong Kong currency appreciated during that period of time.

In 1973, the Oil Crisis occurred. In addition, the economy of the world was in recession. Thus, the Hong Kong people lost their confidence in Hong Kong's economy. The Hang Seng Index dropped to a new low of 433.7 points from 1,755 points. In 1974, the economic situation became even worse. At the end of 1979, the Hang Seng Index had dropped from 433.7 points to 150 points.

In November 1974, the Hong Kong government announced that the fixed exchange rate against the U.S. dollar was abandoned and the **Free Floating Rate Policy** was initiated. Although the Hong Kong government switched to the Free Floating Rate Policy from the fixed exchange rate policy, the Hong Kong dollar did not depreciate. Instead, it appreciated to HK$ 4.956 exchange for one U.S. dollar.

In early 1980s, real estate developed very well. However, the real estate boom created a high inflation rate. In 1982, the world economy was going down, and in September of 1982, the British government and the Chinese government signed the Sino-British Joint Declaration.[28] This joint declaration created another confidence crisis because the Hong Kong people did not know what would happen after July 1997 when Hong Kong would be

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[28] The Sino-British Joint Declaration was an agreement that the British government would return Hong Kong to China in July 1997.

controlled by the Chinese government. This factor affected the Hong Kong people's investment confidence. Thus, on September 24, 1983, the value of the Hong Kong currency dropped to HK$ 9.6 against one U.S. dollar.

In October 1983, the Hong Kong government announced that a linked exchange rate policy[29] (one type of the fixed exchange rate policies) would be used. Hong Kong's monetary policy objective has always been currency stability. Given the highly externally oriented nature of the Hong Kong economy, this objective is further defined as a stable external value for the currency in terms of a fixed exchange rate against the U.S. dollar at the rate of HK$ 7.8 dollar to US$ 1.

Under this linked exchange rate policy, the Hong Kong government has accumulated a huge amount of foreign reserve. In December 1999, the total foreign currency assets were US$ 96.3 billion,[30] which made it the fourth largest foreign reserve country in the world.[31]

3. The Application Of The Linked Exchange Rate Policy Since 1983

Since 1981, the economy of Hong Kong has developed very fast, led by the real estate industry. When the real estate industry developed rapidly, it caused the stock market to go up as well. From December 10, 1974 to July 17, 1981, the Hang Seng Index increased

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[29] The Linked Exchange Rate System, as structured in 1983, required the issue and redemption of bank notes, through the note-issuing banks, to be made against U.S. dollars at the fixed exchange rate of HK$7.8 to US$1. Certificates of Indebtedness, which authorize the note-issuing banks to issue bank notes, are issued and redeemed against the U.S. dollar at that fixed rate and for the account of the Exchange Fund. Under this influence, and the fact that deposit money is convertible to bank notes, the exchange rate for the Hong Kong dollar in the foreign exchange market stays close to the level of the fixed rate.

[30] This includes foreign currency assets held in the Exchange Fund and the Land Fund.

[31] Data is provided by Census & Statistics Department of Hong Kong http://www.info.gov.hk/censtatd/eng/hkstat/hkinf/pub_account/pub_account_index.html

approximately twelve times, from 150.11 points to 1,810.20 points. However, a fast real estate development caused a high inflation rate. High inflation also caused an increase in interest rates. As a result, the real estate development went down, which hurt the investment confidence of Hong Kong people. In addition, by that moment, the Chinese government started to deal with the British government about taking over Hong Kong in 1997. Thus, the Hong Kong people were worried about the future when the Chinese government would take over Hong Kong in 1997. As a result, the Hong Kong dollar depreciated.

By 1981, the exchange rate of Hong Kong dollar to the U.S. dollar was approximately HKS 5.30 to USS 1. By 1982, the Hong Kong dollar depreciated even further. The exchange rate of Hong Kong dollar to the U.S. dollar was approximately HKS6.00 to USS 1, a decrease of 11.67 percent. From mid-1982, the speed of depreciation of the Hong Kong dollar was even faster. At the beginning of 1983, the exchange rate of Hong Kong dollar to the U.S. dollar was HKS6.70 to USS 1, a decrease of another 10.45 percent. On September 24, 1983, the Hong Kong dollar was depreciated to a low level at HKS9.60 per U.S. dollar. At that moment, the Hong Kong government recognized that if the Hong Kong dollar continuously dropped, the economy of Hong Kong and the confidence of Hong Kong people would totally collapse. As a result, in October 1983, the Hong Kong government announced that the linked exchange rate policy would be applied, and the exchange rate of Hong Kong dollar and U.S. dollar were fixed at HKS7.80 to USS 1.

There were two reasons why Hong Kong government chose this linked exchange rate system. First, in 1983, the Hong Kong dollar depreciated too much. Thus, the Hong Kong government needed to find a strong currency to back up the Hong Kong dollar. Second, the

economies of Hong Kong and the United States were very similar. Its inflation rate and the growth rate of the GDP were similar to those in the United States. As a result, the Hong Kong government decided to link the Hong Kong dollar with the United States dollar.

Since the linked exchange rate policy has been applied, the exchange rate between the Hong Kong and U.S. dollars has been stable. Although from 1984 to 2000, six negative external factors occurred, none of them threatened the linked exchange rate policy. These six negative external factors were: 1) the world stock market crash in October 1987; 2) the June 4 Incident in 1989; 3)the Gulf Crisis in August, 1990; 4) the European Rate Mechanism (ERM) Turmoil in September, 1992; 5) the Mexican Crisis in January, 1995; and 6) the Asian Currency Turmoil in July, 1997 (See Appendix B-1).

Although the Linked Exchange Rate System has not broken down since 1983, these negative external factors did hurt the economy of Hong Kong. For example, the world stock market crash in October 1987 caused the stock market of Hong Kong to close for four days, and this was the first time that the stock market had been closed since it started. Ten years later, in 1997, the Asian Crisis occurred. This crisis started from Thailand and spread to other Asian regions, such as South Korea, the Philippines, Malaysia, Indonesia, Taiwan, and Hong Kong. Hong Kong is the sole country which did not devalue its currency during the Asian Crisis. Although the Hong Kong government did retain its currency, it paid a high price to defend. The negative results of defending its currency were: 1) a high interest rate, 2) a stock market crash, 3) pressure to unpeg the linked exchange rate policy, 4) deflation, 5) high unemployment, 6) a negative GDP growth rate, and 7) a decrease in the price of real estate. Some of these results were created by speculators. Thus, the Hong Kong government was

forced to intervene in the stock market of Hong Kong. It bought blue-chip stocks to retain the Hang Seng Index at a certain level. The people of Hong Kong wondered why the Hong Kong government needed to buy stocks on the Hong Kong stock market. The reason was that with the fixed exchange rate policy (linked exchange rate system), the exchange rate, foreign reserve, and the interest rates are linked together, and the speculators could use these special relationships to make some speculative activities in order to earn a huge amount of profits.

In addition, some might wonder what is the difference between most fixed exchange rate policies and the Hong Kong linked exchange rate policy. The Hong Kong dollar which is linked to the U.S. dollar is a very strong form of fixed exchange rate system which is called a currency board system (linked exchange rate policy). It is quite different from the pegged exchange rate system (the fixed exchange rate) that is more widely known and which requires active intervention in the foreign exchange market by the central bank to keep the exchange rate within pre-determined levels. In contrast, a currency board system (linked exchange rate policy) does not require this type of foreign exchange market intervention. Instead, it requires a monetary base, defined in the case of Hong Kong as the amount of Hong Kong dollar bank notes issued and the Hong Kong dollar clearing balance of the banking system held with the Hong Kong Monetary Authority (HKMA), to be fully backed by U.S. dollars at a fixed exchange rate.[32] In other words, any change in the monetary base

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[32] Since the inception of the linked exchange rate system in October 1983, the issue and redemption of bank notes, through the note issuing banks, are required to be made against U.S. dollars at the fixed exchange rate of HK$7.8 to U.S. $1. However, at the time when the linked exchange rate system was introduced, there was no institutional arrangement whereby banks in Hong Kong maintained clearing accounts with the currency board. This situation was rectified in 1988 through the so-called Accounting Arrangements which required the Hong Kong and Shanghai Banking Corporation Limited, as the Management Bank of the Clearing House of Hong Kong Association of Banks, to maintain a clearing account with the then Monetary affairs Branch of Government for the account of the Exchange fund.

has to be matched by a corresponding change in the amount of U.S. dollar reserves held by the HKMA. The change brought about by the HKMA rather passively converts Hong Kong dollars in the monetary base into U.S. dollar reserves and vice versa at the initiative of the banks. In other words, with linked exchange rate policy, the Hong Kong government would allow its currency to rise in value (below HKS 7.80 to US 1), but it would not allow its currency to devalue (higher than HKS 7.80 to US 1). The Hong Kong Monetary Authority has used an **Interest Rate Adjust Mechanism** to apply the linked exchange rate system.

> Under the Currency Board system, the stability of the Hong Kong dollar exchange rate is maintained through an automatic interest rate adjustment mechanism. When there is a decrease in demand for Hong Kong dollar assets and the Hong Kong dollar exchange rate weakens to the convertibility rate, the HKMA stands ready to purchase Hong Kong dollars from banks, leading to a contraction of the Monetary Base. Interest rates then rise, creating the monetary conditions conducive to capital inflows so as to maintain exchange rate stability. Conversely, if there is an increase in the demand for Hong Kong dollar assets, leading to a strengthening of the exchange rate, banks may purchase Hong Kong dollars from the HKMA. The Monetary Base correspondingly expands, exerting downward pressure on interest rates and so discouraging continued inflows.[33]

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[33] For more information about the Currency Board System, see the following web site: http://www.info.gov.hk/hkma/chi/currency/link_ex/index.htm

4. The Relationships Between The Linked Exchange Rate Policy, The Foreign Reserve, And The Hong Kong InterBank Offer Rate (HIBOR)

The linked exchange rate policy, foreign reserve and interest rates are hooked together. The relationship between the linked exchange rate policy and foreign reserve can be illustrated as follows. Assume that a foreign investor wants to invest in Hong Kong. He/she has to bring his home currency (assume that his/her home country's currency is the United States currency) to the Hong Kong government. When the Hong Kong government receives his/her home currency (US dollars), it would put the US dollar into the foreign reserve account and give him/her Hong Kong dollars. As a result, this investor can use the Hong Kong dollars to invest in Hong Kong, such as purchasing real estate or stocks. This is called **Capital Inflow**, and is why the Hong Kong government has been able to accumulate a huge amount of foreign reserve since it implemented the linked exchange rate policy.

On the other hand, assume that a foreign investor wants to leave Hong Kong. He/she would sell all his/her properties and convert them into Hong Kong dollars. This investor then would sell his/her Hong Kong dollars to the Hong Kong government, and the Hong Kong government would give the equivalent amount of the US dollars to this investor. When this investor leaves Hong Kong with his/her US dollars, this is called **Capital Outflow**.

The linked exchange rate system also relates to the Hong Kong interest rates. When there is a capital inflow to Hong Kong, we can say that it is an expansion of the monetary base in Hong Kong. When there is a capital outflow from Hong Kong, we can say that it is a contraction of the monetary base in Hong Kong. Both expansion and contraction of the monetary bases relate to **Interest Rate Adjust Mechanism** (IRAM). The following is an explanation of expansion and contraction of the monetary bases with IRAM.

1) Capital inflow occurs when investors switch from foreign currencies into Hong Kong dollars. Banks buy Hong Kong dollar from the HKMA. As demand for Hong Kong dollars increases, there is upward pressure on the Hong Kong dollar exchange rate. At that moment, the HKMA sells Hong Kong dollars to the banks in return for U.S. dollars. When the HKMA credits the clearing accounts of the banks with Hong Kong dollars, the aggregate balance of the banking system in the monetary base expands. As a result, the Hong Kong dollar interest rate falls automatically with the expansion of the monetary base. When the Hong Kong dollar interest rate falls, banks reduce their holdings of Hong Kong dollars because the rate of return on Hong Kong dollars falls. As a result, the Hong Kong dollar exchange rate stabilizes.

2) Capital outflow takes place when investors switch from Hong Kong dollars into foreign currencies. Banks sell Hong Kong dollars, which causes a downward pressure on the Hong Kong dollar exchange rate. At this moment, the HKMA buys Hong Kong dollars from banks in return for U.S. dollars. As a result, the monetary base contracts. When the monetary base contracts, the Hong Kong dollar interest rates rise, and banks increase their holdings of the Hong Kong dollars. As a result, the Hong Kong dollar exchange stabilizes.

5. The Advantages Of Applying The Linked Exchange Rate Policy

There are four advantages to the Hong Kong government for using a linked exchange rate policy under the currency board system. First, the prices of products would be stable. Hong Kong is a highly external-focused economy that the normal goods the Hong Kong people use, such as water and food, are imported. Meanwhile, a high proportion of finished

products are exported to other countries. In addition, Hong Kong is a re-export harbor which a manages huge amount of re-export products every year.[34]

Businessmen who are externally focused are very sensitive to the risks of exchange rates. Thus, they prefer an exchange rate that can be clear for them to follow and forecast. A stable exchange rate allows these businessmen to forecast the prices of both imports and exports. Therefore, the linked exchange rate policy provides opportunities for businessmen to calculate and predict prices of products with the lowest exchange rate risk.

Another advantage is that a stable exchange rate policy can re-enforce the confidence of investors. Since October 1983, the linked exchange rate policy which has achieved this goal in Hong Kong. Since 1980, the Chinese government has opened its market to foreign investors. Because of its location is at the southern of China, Hong Kong has been a gateway to China if foreign investors want to make investments in China. A stable linked exchange rate policy provides opportunities for investors to invest in both Hong Kong and China. In other words, a capital inflow has emerged under this linked exchange rate policy.

Furthermore, a stable exchange rate policy can decrease exchange rate risks of international trading. Over the past two decades, Hong Kong has developed into a major international financial center. At the end of December 1999, more than 285 financial institutions were operating in Hong Kong, including 76 of the world's 100 largest banks. These financial institutions have focused on the following four categories. First, foreign exchange and derivative trading in Hong Kong, where daily turnover averages HK$ 79 or US$ 10.13 billion, are the sixth largest in the world. Nearly half of this US$10.13 billion is

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[34] Re-exports totaled HK$1,245 billion in 1997, accounting for 85% of total exports of Hong Kong.

in the USS/yen and USS/HKS markets. Their second focus is International banking. At the end of November 1999, external assets of Hong Kong based banks total led HKS482 billion, with 39 percent of lending to Japan, 7 percent to the mainland of China, and 10 percent each to the United Kingdom and Singapore. These lending amounts were in the U.S. dollar base. Third, the stock market of Hong Kong is one of the most active trading centers in the world. At the end of November 1999, market capitalization was USS 540 billion, the tenth largest in the world. Approximately 5 percent was accounted for by Mainland or Mainland-related firms. Approximately 30 percent of turnover was due to regional and global investors. Their fourth focus is other markets. There are small but growing domestic debt and futures and options exchanges, and a large gold bullion market. Hong Kong is also a regional center for portfolio management and insurance.[35] From the above four categories, we can see the importance of maintaining a stable exchange rate policy in Hong Kong. If the Hong Kong government had not used the linked exchanged rate policy since 1983, today, Hong Kong would not have these excellent results.

The final advantage of the linked exchange rate policy is that higher saving interest rates are provided. The Hong Kong government's use of the linked exchanged rate policy has meant that HKS 7.8 is equal to USS 1. In order to attract more people to invest in Hong Kong or capital inflow to Hong Kong, interest rate on savings accounts in Hong Kong have to be higher that those in the United States. For example, Hang Seng Bank shows that its HK dollar annual interest rate is 4.75 percent while the U.S dollar annual interest rate is only 3.75

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35 Source: IMF, People's Republic of China – Hong Kong SAR:Staff Report for the 1999 Article IV Consultation.

percent. This is a strategy which Hong Kong has used to attract people to deposit their money in HK dollars.

6. The Disadvantages Of Applying The Linked Exchange Rate Policy

When the economy of the world is going well, the economy of Hong Kong should also go well. However, if the economy of the world is going down, the economy of Hong Kong would go down also because of its exchange rate system. For example, in 1997, when the Asian Crisis emerged, most of the Asian countries suffered from it. Hong Kong was one of the victims. Two countries suffered from their fixed exchange rate policies, Britain and Thailand. Britain failed to defend its fixed exchanged rate policy in 1992, and Thailand failed to defend its fixed changed rate policy in 1997. Both of these two countries were struck by George Soros. He had said that " When a country designs an exchange rate system, that country would not expect that speculators could earn any profit from its exchange rate system. However, if some speculators can indeed earn profits from that exchange rate system, that proves that there are loopholes in the system. Unfortunately, those government officials who have designed the system would not admit that they made mistakes in the exchange rate policy and would not take responsibility for its failure. Instead, they would scream loudly to execute those speculators only."[36]

We do not know how much George Soros earned from the battle of Thai currency war, but we do know that he earned SUS 1 billion in one night in 1992 when Britain abandoned the European Rate Mechanism (ERM). Sterling pound was one of memberships

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[36] See Financial Pulse, Next Magazine (386). www.next.com.hk/mag/386/business/ab09.htm (Trans. John Yung)

in ERM. Other memberships included Deutsche Mark, French Franc, Swiss Franc, and Italian Lira. These currencies pegged together and the Deutsche Mark was the leader (or locomotive) among the currencies. Since ERM started, there was no conflict between these currencies until the disintegration of the USSR and the unification of east-west Germany in 1990.

The unification of East-West Germany caused a huge amount of capital flow from West Germany to East Germany. This capital movement caused a pressure for interest rates to increase in West Germany. When West Germany increased its interest rates, other ERM memberships in turn had to increase their interest rates in order to balance the exchange rates among countries. However, because the economy of Britain was so weak at that moment, if it increased its interest rates, its economy would become worse than before. By that time, George Soros recognized that one day, the sterling pound would leave ERM. Thus, he started short-selling the sterling pound. For two years, until 1992, the British government increased interest rates to save the sterling pound. By 1992, the British government announced an interest rate increase of two percent in one day. From most people's points of view, increasing the interest rates showed that the British government was determined to defend the weak sterling pound. In contrast, from George Soros's point of view, the British government's increase in the interest rates was equal to "economic suicide". As a result, the British government gave up ERM, and increased interest rates, which caused the devaluing of the sterling pound. George Soros won $1 billion in return.

The story of devaluing the Thai Baht was similar to the story of devaluing the sterling pound. Since 1990, the exchange rate of Thai Baht and the U.S. dollar were stable, in which

24 Thai Baht exchange to USS 1 and Thailand's exports were decreasing. Table 1 shows the current accounts of Thailand since 1990.

| Table 1: History of Current Account (Thailand) | |
|---|---|
| 1990 | -8.70% |
| 1991 | -8.00% |
| 1992 | -6.20% |
| 1993 | -5.70% |
| 1994 | -6.40% |
| 1995 | -8.40% |
| 1996 | -8.50% |
| 1997 | -2.40% |

Source: International Financial Statistics of the International Monetary Fund.

In Table 1, we can see that the amounts of current account were negative which meant that since 1990, the economy of Thailand was performing poorly. Thus, the Thai government had to attract more foreign funds in order to meet of its balance of payment accounts. By attracting more foreign funds, the Thai government increased interest rates and maintained its stable exchange rate policy in order to give confidence to foreign investors. As a result, interest rates had increased to 13.75 percent, and these high interest rates caused its economy to worsen. At the same time, when the Thai interest rates were high, Thai businessmen borrowed U.S. dollars because the U.S. dollar interest rates were lower than the Thai interest rates by 5 percent. At that moment, George Soros did not believe that the Thai government could maintain this high interest rate policy long. Thus, he started to sell Thai currency. He also expected that the Thai government would defend the Thai currency in order to stabilize the foreign funds and the Thai companies. His expectation was accurate, and he started to sell more Thai currency. The Thai government used its foreign reserve to buy Thai currency and increased the Thai interest rates to a higher level. The Thai government used up to USS 5 billion in a short period of time, but it could not stop the selling of the Thai currency. As a result, on July 2nd 1997, the Thai government abandoned

its fixed exchange rate policy, and allowed its currency to float. The Thai currency dropped more than 20 percent in a short period time after the floating exchange rate policy was announced. This was the second time George Soros earned huge profits from a country which had used the fixed exchange rate policy. Hong Kong also appeared to be a potential country which might be attacked in the future on its exchange rate policy.

In addition, maintaining a linked exchange rate policy might be a disadvantage when currencies of other countries depreciate. Table 2 shows how the currencies of seven Asian countries changed before and after the Asian Crisis.

Table 2: Exchange rates of the Asian Countries

| Country | Before Asian Crisis | After Asian Crisis | % of changing |
|---|---|---|---|
| Thailand | 25.7 | 38.2 | -32.72% |
| The Philippines | 26.3 | 40.6 | -35.22% |
| Malaysia | 2.5 | 3.8 | -34.21% |
| South Korea | 849.9 | 1136 | -25.18% |
| Taiwan | 28.7 | 33.8 | -15.10% |
| Indonesia | 2393 | 7143.8 | -66.50% |
| Hong Kong | 7.8 | 7.8 | 0% |

Source: International Financial Statistics CD-Rom, IMF, August 1999.

In Table 2, we can see that the currencies of these countries depreciated from 15 percent to 66 percent respectively, except for the currency of Hong Kong. People would expect that because Hong Kong dollar was not devalued that should be a good thing. However, when the Hong Kong dollar was not devalued, it lost comparative power among these countries. In other words, the value of the Hong Kong dollar was stronger than the values of other countries' currencies. As a result, the Hong Kong Gross Domestic Product (GDP) dropped sharply to negative 4.70 percent. Table 3 shows the trends of the Hong Kong GDP.

| Table 3: The history of Hong Kong GDP | | |
|---|---|---|
| Year | GDP ($US millions) | % of change |
| 1992 | 99915 | 16.60% |
| 1992 | 115059 | 13.20% |
| 1994 | 129601 | 12.60% |
| 1995 | 138096 | 6.60% |
| 1996 | 152806 | 10.70% |
| 1997 | 169726 | 11.10% |
| 1998 | 161833 | -4.70% |
| 1999 | 158140 | -2.30% |
| 1998Q1 | 46794 | 1.00% |
| 1998Q2 | 40378 | -3.80% |
| 1998Q3 | 41323 | -7.00% |
| 1998Q4 | 41029 | -8.00% |
| 1999Q1 | 36693 | -6.20% |
| 1999Q2 | 38831 | -3.80% |
| 1999Q3 | 40627 | -1.70% |
| 1999Q4 | 41988 | 2.30% |
| 2000Q1 | 46696 | 6.30% |
| 2000Q2 | 39855 | 2.60% |

Source: Census of Statistics Department of Hong Kong.
http: www.info.gov.hk/censtatd/eng/hkstat/fas/nat_account/gdp/gdp1_index.html

In Table 3, we can see that when Hong Kong did not devalue its dollar during the Asian Crisis, its GDP decreased to -4.70 percent in 1998. From 1992 to 1997, the regional economic environment was stable. Thus, the linked exchange rate policy was functional. From 1998 to the third quarter of 1999, because the regional economic environment got worse, the linked exchange rate policy caused the Hong Kong dollar to become became a strong currency. Thus, its price competitive power decreased. As a result, the GDP went down. In the fourth quarter of 1998, the GDP went down to negative eight percent if compared to the amount of the previous year. From the results of GDP, we can conclude that during a poor economic environment, the linked exchange rate policy would not be a good policy to promote a country's GDP growth.

Another disadvantage of the linked exchange rate policy is to push up the domestic interest rate during a poor economic environment. In Hong Kong, Hong Kong InterBank

Offer Rate (HIBOR) leads the investment atmosphere. When interest rates are high, the investment atmosphere is low or vice versa. Graph 1 shows the trends of HIBOR from the beginning of 1997 to the end of December 1999.

In Graph 1, we can see that in October 1997, the overnight rate of HIBOR increased to 100 percent. This new high made the investment atmosphere worsen. If interest rates are high, the average person would be more willing to put his/her savings in banks than to spend them. From a business point of view, if interest rates are high, borrowers have to pay more as interest expenses. In other words, the costs of investments increase and the competitive advantages decrease. As a result, during this period, the whole economy of Hong Kong went down, beginning in the third quarter of 1997. Because Hong Kong is a famous financial center with tertiary industry, investment is very sensitive to interest rates. The high interest rate environment of 1997 and 1998 not only hurt the stock market of Hong Kong, but also hurt the other sectors or industries. The next section will focus on impacts to the other sectors during the Asian Crisis.

7. The Impacts Of Maintaining The Linked Exchange Rate Policy During The Asian Crisis

**Impact on the Real Estate Sector**. When the HIBOR increased during the Asian Crisis, the real estate industry was impacted the most. Since 1990, the real estate industry had developed well. The people of Hong Kong could afford house mortgages because that at that time, the Best Lending Rate (BLR) was stable. As a result, they purchased more houses or apartments. Graph 2 shows residential mortgage survey results for November 1997.

In Graph 2, we can see that the accumulated mortgage lending amount increased since December 1992. The amount of outstanding mortgage loans grew by 1.2 percent to

HK$ 425.8 billion or US$ 54.59 billion in November, 1997.[37] This growth in the amount of accumulated mortgage lending tells us that the Hong Kong people were confident about the future of Hong Kong. As a result, they were willing to invest in the real estate. Unfortunately, when the Asian Crisis started in October 1997 in Hong Kong, new loans approved during the month dropped sharply by 45.6 percent to HK$ 12 billion, reflecting the relatively sluggish property market since the end of October. New loans approved during the month, but not yet drawn, also fell significantly by 41.6 percent from HK$ 14.7 or US$ 1.88 billion in October to HK$ 8.6 or US$ 1.11 billion in November in 1997. Graph 3 illustrates the growth rate of new mortgage lending monthly.

In Graph 3, we can see that the monthly growth rate of new loans increased since December 1993. At the beginning of the second quarter of 1997, the growth rate of new loans started to decrease because outside economic environments were not stable; for example, the sharp decline of the Thai currency greatly influenced investor confidence. As a result purchasing power decreased during that time.

Since the Asian Crisis, prices of houses have dropped sharply. A property agency company, Centaline Property Agency Limited[38], has developed two indexes, Centa-City

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[37] Both data and graphs are shown on Residential Mortgage Survey Results for November 1997, by HKMA. Http:. www.info.gov.hk/hkma/eng/press/1997_f.htm

[38] The web site address of Centaline Property Agency Limited is http://www.centanet.com/home.htm.

Lending (CCL) and Centa-City Index (CCI)[39], to illustrate the trends of the prices of properties. Graphs 4 and 5 show the overall price trends of properties since 1994.

In Graphs 4 and 5, we can see that the indices stayed at 100 in July 1997. The CCL index dropped to 48.1 points on the 29th of October, 2000, and the CCI dropped to 47.1 points on 30th of August, 2000. Both indices have dropped more than 50 percent since mid-1997. In the year 2000, the prices of properties have not yet recovered, since the economy of Hong Kong has remained in a weak status, and most Hong Kong people are not willing to buy houses or apartments.

**Impact on the Banking Sector**. When Hong Kong people buy houses or apartments, they pay a 30 percent down payment, and the remaining 70 percent will become a mortgage loan. When the growth rate of selling property is high, the growth rate of mortgage loans will be high as well. During the Asian Crisis, total mortgage loans were higher than 40 percent of the total lending in Hong Kong.[40] Before the Asian Crisis, the Hong Kong Monetary Authority (HKMA) set up a bottom line for banks to keep their ratio on residential mortgage loans and total lending at 40 percent or less. Residential mortgage loans are the best businesses for banks; before the crisis, risks were low and profits were high. For example, during 1997, the savings rates were 4 percent when people deposited their money in banks. On the other hand, mortgage rates were 9 percent or above. Thus, the banks could earn net

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[39] The "Centa-City Index" is a monthly index based on all transaction records as registered with the Land Registry to reflect property price movements in previous months. The "Centa-City Lending Index" is a weekly index based on the current preliminary contract prices in Centaline Property Agency Limited transactions that monitors the up-to-date property price variations. Both indexes were set at 100 in July, 1997. Http://www.centanet.com/cci.htm

[40] Data are provided by Cover story, Next Magazine (issue#: 395). http://www.next.com.hk/mag/395/news/

5 percent profit with a low risk. For this reason, most Hong Kong banks were willing to have more mortgage loans than other type of loans. Before the Asian Crisis, some of the banks over-lent mortgage loans to their customers. In other words, these banks did not follow the bottom line of 40 percent according to the HKMA regulation. As a result, Joseph Yam, the chief executive of HKMA, became involved in these transactions, warning the banks that they had to strictly follow the regulations set by the HKMA.

Although Joseph Yam had forcefully urged the banks to stop over-lending in mortgage loans, he was too late to stop them before the Asian Crisis. Thus, interest rates increased and many people were not able to pay their mortgage loans on time. Some of these people gave up on their payments, and their houses or apartments were repossessed by the banks. After the banks took the houses or apartments back, they sold them at low prices in order to get some of their investment (preferably the balance of the loan) back.

For example, a customer bought a house which was worth a million U.S. dollars. He paid US$ 300,000 as a down payment and mortgaged the remaining US$ 700,000 from the bank of Hong Kong before the Asian Crisis. When the Asian Crisis occurred, the mortgage rate increased and the price of this house dropped to US$ 600,000. As a result, this customer gave up trying to make his monthly mortgage payment, and the bank of Hong Kong repossessed his house. The bank then sold it at US$ 550,000 and caused US$ 150,000 (US$ 700,000 - US$ 550,000) bad debt. During the crisis, most banks in Hong Kong increased the amounts of their bad debts, which caused their profits to drop to a low level.

The following Table 4 illustrates the performance of the four big banks in Hong Kong between 1997 and 1998.

| Table 4: Profit and Loss, and Bad Debts | | | | | | |
|---|---|---|---|---|---|---|
| | Net Income (millions in HK$) | | | Bad Debt (millions in HK$) | | |
| Company | 1997 | 1998 | % change | 1997 | 1998 | % change |
| Bank of East Asia Limited (23) | 413.97 | 426.53 | 3.03% | 37.44 | 193.07 | 415.68% |
| HSBC Holdings Limited (05) | 84772 | 89443 | 5.51% | 7855 | 20427 | 160.00% |
| Hang Seng Bank Limited (11) | 1430.38 | 1455.77 | 1.77% | 81.41 | 317.44 | 289.93% |
| Dao Heng Bank Group Limited (223) | 373.46 | 323.18 | -13.46% | 43.33 | 113.46 | 161.85% |

In the above table, we can see that these four banks did not perform well in 1998. Their net incomes show that they had a slightly higher growth rate in 1998. Dao Heng Bank Group Limited (223) was the only one which recorded a negative growth rate of net income in 1998. All of these four banks had greatly increased the preparation amounts of bad debts. The Bank of East Asia Limited (23) had increased approximately 415 percent for its preparation of bad debt in 1998. The preparation amounts of bad debts of other banks more than doubled. When the amounts of preparation for bad debts increased, this was an indication that many people in various sectors, such as consumer loans, corporate loans, and mortgage loans, did not make payments to banks during the Asian Crisis.

**Impact on the Stock Market.** The stock market of Hong Kong is a major indicator to show a status of the economy of Hong Kong. Graph 6 shows the trends of the Hang Seng Index from 1996 to the present.

In Graph 6, we can see that in mid-1997, the Hang Seng Index went up to 16,673.27 points, which was a new historical high before the Asian Crisis. During the Asian Crisis, the stock market crashed to a new low in mid-1998. The lowest point in 1998 reached a new low of 6,660.42 points on August 13th, 1998, a decrease of more than 60 percent. By August 1998, the Hong Kong government bought stocks from the Hong Kong stock market which made

the Hang Seng Index go up. At the beginning of 1999, the Hang Seng was wandering at 10,000 points. When the Hong Kong government announced that the poor economy was over in the second quarter of 1999, the Hang Seng Index started to go up. It reached a new historical high of 16,962.1 points in December 1999.

Although the stock market of Hong Kong has gone up to a reasonable level, it lost a market capitalization of more than SUS 60 billion between 1998 and 1999. Because the HIBOR increased, the Hang Seng Index decreased. When the Hang Seng Index dropped during the Asian Crisis, that meant that the investment environments were not good. As a result, many companies recorded net losses in their fiscal year. When these companies got net losses, managements started to lay off their staff which caused high unemployment.

**Impact on the Labor Market.** During the Asian Crisis, the economy was distorted by the speculators. Thus, most corporations recorded net losses in the 1998 fiscal year. The management of these corporations had to cut costs in order to maintain their normal business activities. As a result, many workers were laid off by their employers. Not only big corporations were injured by the Asian Crisis, but also most medium and small companies were injured as well. During the worst period in 1998, the unemployment rate was 6.3 percent. Under high unemployment, people's consumption was even lower than before. The following Table 5 shows the history of unemployment in Hong Kong.

| Table 5: History of Unemployment rate in Hong Kong | | |
|---|---|---|
| Year | # of unemployed | Unemployment rate |
| 1997 | 72600 | 2.20% |
| 1998 | 155400 | 4.70% |
| 1999 | 209400 | 6.30% |
| 1998Q1 | 106600 | 3.50% |
| 1998Q2 | 141800 | 4.50% |
| 1998Q3 | 176800 | 5.00% |
| 1998Q4 | 196300 | 5.70% |
| 1999Q1 | 206400 | 6.20% |
| 1999Q2 | 204700 | 6.10% |
| 1999Q3 | 215900 | 6.10% |
| 1999Q4 | 210700 | 6.00% |

Source: Census & Statistics Department of Hong Kong.
http://www.info.gov.hk/censtatd/eng/hkstat/fas/labour/ghs/labour1_index.html

We can see that the worst situation was not in 1998, but in the first quarter 1999. The number of people unemployed was 206,400, and the unemployment rate was 6.20 percent. The Hong Kong government announced that this unemployment condition would not change in the short period term. It also forecasted that unemployment might decrease but would not return to a level as low as before. It also called this change a structured change.

**Impact on Other Sectors**. When the interest rates increased, the property market, the banking market, stock market and labor force market dropped immediately. These impacts also affected other sectors, such as the government and tourism sectors. For example, during the Asian Crisis, the Hong Kong people complained that government expenditures were too high. As a result, the officials of the Hong Kong government announced that the salaries of all government staff would be frozen, and other necessary projects or expenses would not be approved until the Asian Crisis was over. Moreover, there was an impact on the tourism industry, one of the major sources of revenue for the Hong Kong government. During the Asian Crisis, other countries in the Asian region depreciated their currencies by a large amount. In contrast, the currency of Hong Kong remained

unchanged under the linked exchange rate policy. As a result, fewer foreigners came to Hong Kong because there they would have to spend more money than in other Asian countries.

8. Conclusion: The Use Of The Linked Exchange Rate Policy In The Future

On the 2nd of October 2000, Stephen Lam, Information Coordinator of the Hong Kong government, announced that Hong Kong is regarded by the Heritage Foundation as the freest economy in the world. All companies in Hong Kong, regardless of background or size, are free to enter the Hong Kong market. The government treats all investors (including foreign investors) on an equal footing. Remember that in August 1998, the Hong Kong government bought blue-chip stocks and this action made most foreign investment companies unhappy and surprised that the government was involved in the stock market. Nevertheless, Hong Kong's current designation by the Heritage Foundation indicates that as long as Hong Kong is a good place to invest, investors do not care about the government's previous actions. Furthermore, the Heritage Foundation's announcement also indicates that most western countries have forgiven the Hong Kong government for purchasing stocks in the Hong Kong stock market in August 1998.

When the Hong Kong government purchased stocks in the Hong Kong stock market in October 1998, although most financial institutions thought that the Hong Kong government's involvement in the stock market hurt the spirit of free-enterprise, they did not consider what might have happened if the Hong Kong government had not taken the initiative to purchase stocks at that moment. The economy of Hong Kong might have dropped further. Not only its own economy might have been destroyed, but also the rest of the economies in the Asian region might have been destroyed. Of course, people may

complain that the Hong Kong government earned a huge amount of profit by purchasing stocks, but we now know that the Hong Kong government had to do it because the Hang Seng index had been pushed down to an acceptable level. This condition would have cause a negative effect on people's confidence if the government had not gotten involved. If the confidence of people is lost, the economy of Hong Kong would be finished.

When we look back to 1997, we can see that the savings of middle class people were lost in that one day when the Asian currencies collapsed. The governments of Thailand and Indonesia saved their economies by asking the International Monetary Fund (IMF) for help. They borrowed SUS 17 and 33 billion respectively by signing agreements which were treated as unequal agreements.[41] Would the people of Hong Kong want to see Hong Kong follow the solution of these two countries? Of course, the answer is "No".

In fact, the linked exchange rate policy loophole causes Hong Kong currency to be speculated. Foreign funds use currency, interest rates and derivative tools, such as future index contacts and future options, to speculate on the Hong Kong stock market. This is called "kill three birds with one stone" because when the Hong Kong currency devalues, the funds can sell-short Hong Kong currency to make a profit. In addition, when the Hong Kong government increases interest rates (HIBOR) in defense of its currency, speculators can sell-short the future index contract or the put future options to make profits.

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[41] Unequal agreements related to the fact that the IMF has asked these developing countries to open their markets to developed countries, which would indirectly control the economies of these developing countries in the future. In addition, the IMF used financial aid to become involved in those countries' political affairs. For example, expenditures of Indonesian government have been controlled by the IMF.

During the Crisis, the Hong Kong government did save its currency and stock market to some extent, but it was unfortunate because the speculators used a leverage investment strategy to attack both the Hong Kong currency and stock markets. The leverage investment strategy is implemented, for example, when speculators use $100 to borrow $1,000, and they use this $1,000 to do whatever they want to do in both stock and currency markets in Hong Kong. Thus, the leverage ratio is 10 ($1,000/ $100 = 10). In other words, they need to use only a small amount of capital to achieve their goals. On the other hand, during the Asian Crisis, the Hong Kong government used its foreign reserve without using any leverage investment strategy. Thus, its leverage ratio is zero.

From October 21st to the end of October 1998, the Hong Kong government, in total, spent more than SUS 14.1 billion to defend its stock market, but it was fortunately the external economic environments were not stable during that period of time. Thus, the speculators could not focus on the Hong Kong stock market. On October 23rd,1998, the Dow Jones Index dropped 186.88 points, a decrease of 2 percent. On October 27, Black Monday, the New York Stock Exchange (NYSE) stopped trading twice because the Dow Jones Index dropped 350 and 554.26 points. Finally, the Dow Jones Index decreased 7.18 percent on the 27th of October 1998. Because of this decrease, most foreign funds had to give up attending to the Hong Kong stock market, and focused on the New York stock market. As a result, the Hong Kong government was able to defend its stock market.[42]

Overall, it cannot be concluded that the Hong Kong government did the wrong thing. Instead, it did the right thing – to defend its currency successfully. According to a well-

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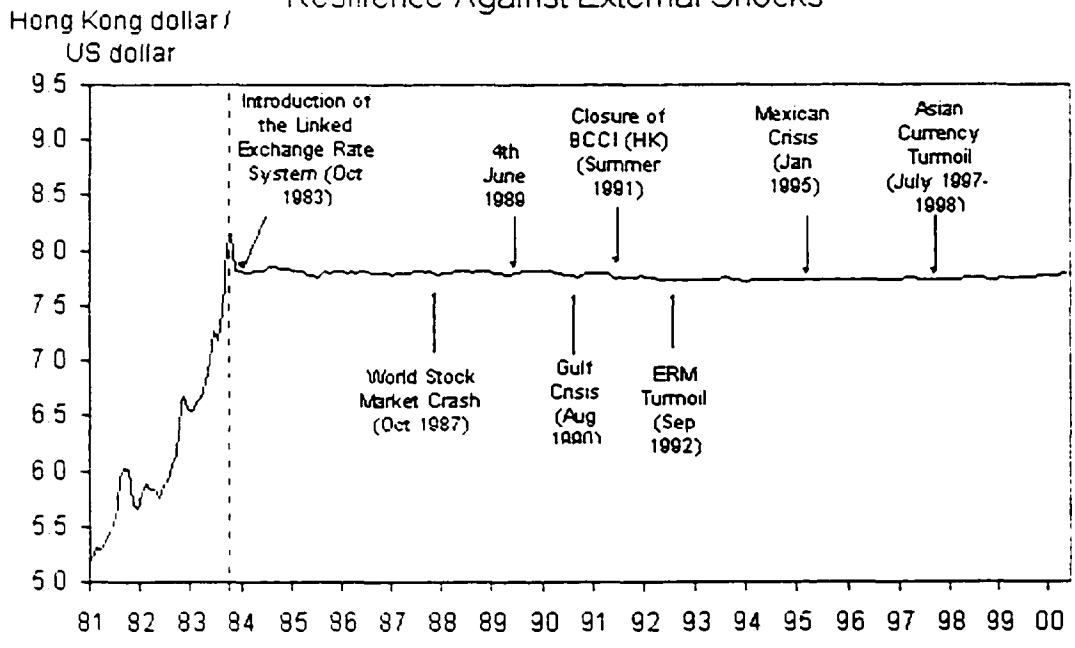
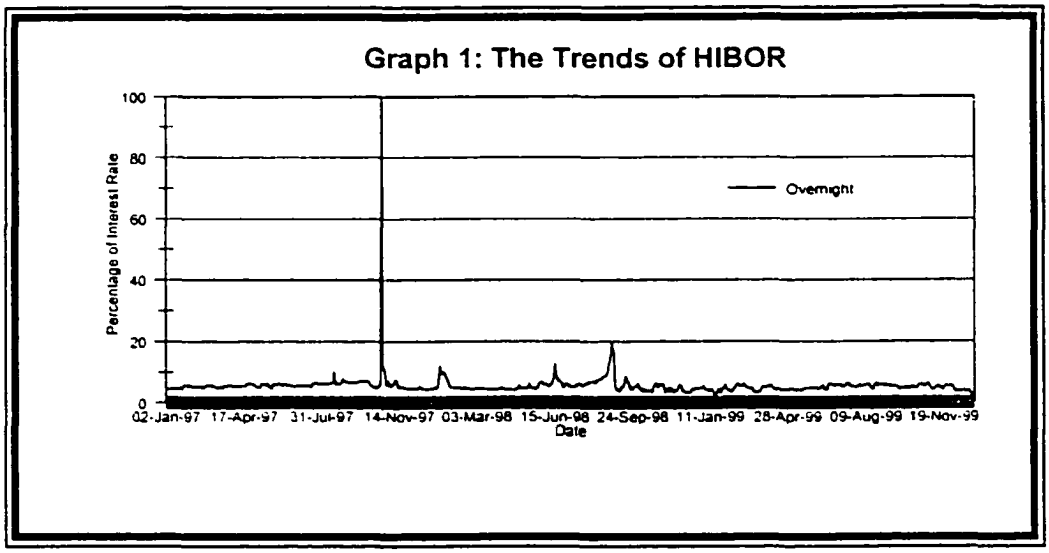
[42] Data are provided by Cover Story, Capital Magazine (121). www.imsp008.netvigator.com/fina/capital/capital121/cover/page1.html

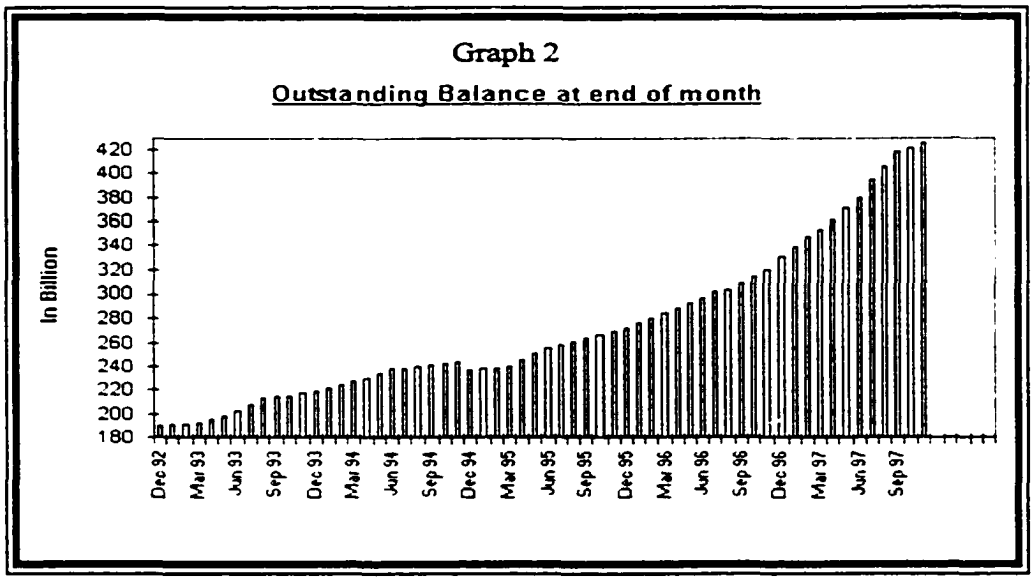
known economist, John Morley (1838 -1923), "it's not enough to do good, one must do it in the right way". In the foreseeable future, we do not see that the linked exchange rate policy will end. In addition, Joseph Yam, the Chief Executive of HKMA, said "the more the better", meaning that if the Hong Kong government has more foreign reserves, speculative actions would be mor difficult to achieve. In fact, he said that in most basic linked exchange rate policies, as long as the amount of foreign reserves gives 100 percent backing to the monetary base, that amount is considered sufficient. However, because people usually cannot predict what will happen in the future, "the more the better". As long as China continues to support Hong Kong as its gateway to China, Hong Kong will be able to accumulate more foreign reserves than ever before. For example if the re-export businesses increase, the Hong Kong government will get more foreign reserves. As long as the foreign reserve is high, speculators will not find it easy to speculate on the Hong Kong currency. Thus, it would be advantageous for Hong Kong to maintain the linked exchange rate policy.

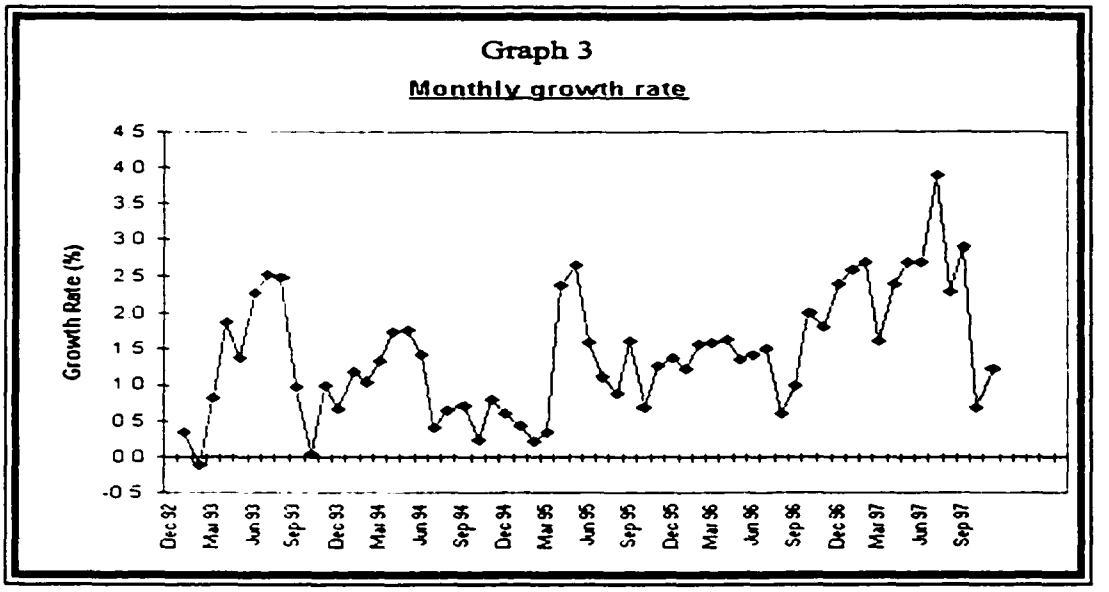
# Appendix B-1

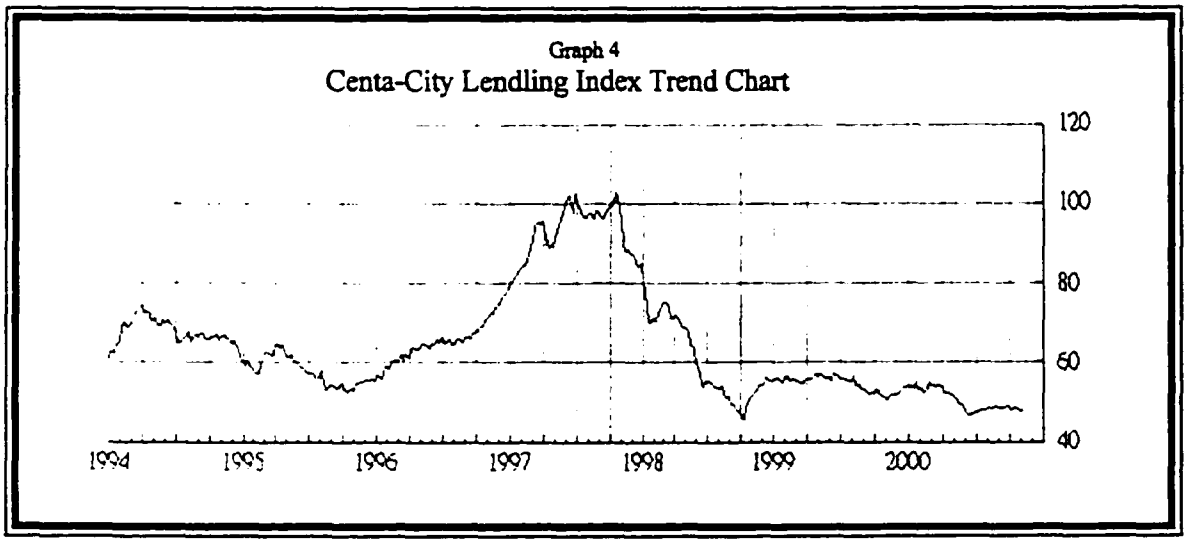
## Resilience Against External Shocks





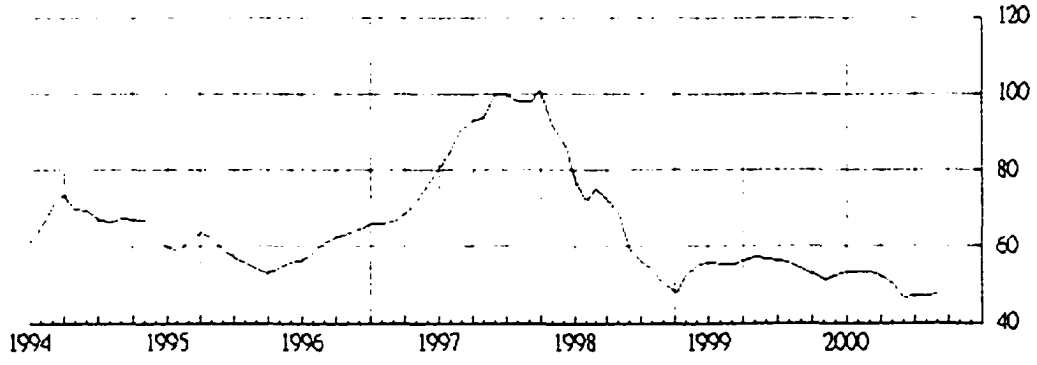



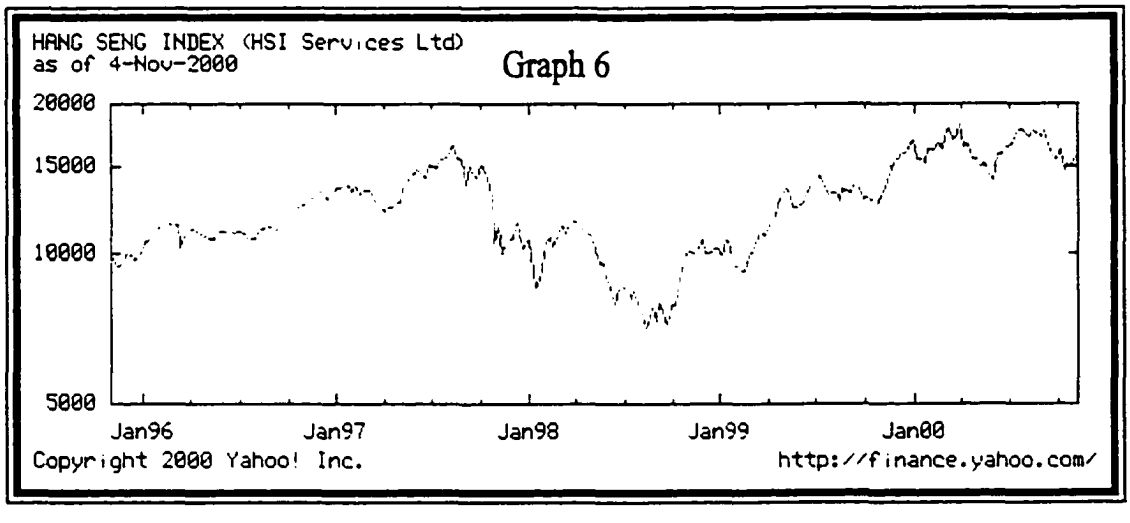


Graph 5

Centa-City Indx Trend Chart



# Appendix C

## A Discomfort Index

1. Introduction

2. The Components Of The Discomfort Index

3. Formulas Of Components Of The Discomfort Index

4. Giving Points To Each Component

5. Data And Results

# Appendix C

# A Discomfort Index

1. Introduction

Normally, when people talk about how a country suffered from financial turmoil, a GDP growth rate would be measured. GDP is a measurement of the performance of a country during a particular year, and is used to compare that performance with the performance in the prior calendar year. Although GDP is an important indicator to indicate of performance of a country, other indicators are also useful when measuring this performance during in a specific period of time.

In this paper, we are going to investigate and analyze the discomfort index in these ten Asian countries during the Asian Crisis. This discomfort index is made up of seven indicators: 1) the performance of the GDP; 2) the performance of the CPI; 3) the performance of the exchange rate; 4) the performance of the unemployment rate; 5) the performance of the interest rate; 6) the performance of private consumption; and 7) the performance of the stock market.

2. The Components Of The Discomfort Index

Although GDP measures the overall performance of a country in a specific period of time, it cannot reflect other aspect of that country's environments. For example, in 1996, the GDP growth rate in Indonesia was 7.8 percent, and in 1998, its GDP growth rate dropped to -13.1 percent. Thus, we know that it suffered greatly from the Asian Crisis. However, this negative number in 1998 cannot reflect the complete situation in Indonesia. For example,

between 1996 and 1998, the Indonesian currency dropped more than 70 percent. Even though it does not reveal the total situation in a country, GDP is an important indicator of overall performance, and thus, is one component of the discomfort index.

The Inflation rate or Consumer Price Index (CPI) is indicated watch how fast the prices of products increase, thereby eroding the present value of a currency. During the Asian Crisis, some of the Asian countries, such as Indonesia and Korea, depreciated their currencies more than expected. When these currencies depreciated, the prices of products increased, resulting in an increase of the CPI. Therefore, it is necessary to analyze how the CPI changed in these Asian countries during the Asian Crisis.

Foreign exchange rate is an indicator of whether or not the currency of a country is strong or weak. If the currency of a country depreciates, the economy of that country is weak, whereas if the currency of a country appreciates, the economy of that country is strong. During the Asian Crisis, some countries were able to maintain their exchange rates, such as Hong Kong and China. Some of them could not maintain their exchange rates, such as Indonesia and Thailand. Thus, it is important to review fluctuations of the foreign exchange rate during the Asian Crisis.

Unemployment rate is an indicator of the social situation of a country during its financial turmoil. Although unemployment would not increase at the beginning of a financial crisis, it would increase close to the end of a financial crisis. Thus, the unemployment rate can be an index to illustrate the aftereffect of a financial crisis in a country. Furthermore, a decrease in the unemployment rate is the most important indicator of economic recovery in

a country. As a result, the unemployment rate is an additional component of the discomfort index.

Interest rates are indicators of economic activities in a country. A low interest rate policy usually stimulates the economy of a country, whereas, a high interest rate policy usually stops the growth of the economy. In addition, interest rates are related to the level of inflation. For example, in 1998, Indonesia increased its interest rates to 47.4 percent when its currency dropped to a low level. Interest rates can also be used as tools to break down a fixed exchange rate policy. For example, in July 1997, Thailand's fixed exchange rate policy was broken down by high interest rates and a weak economic environment. Therefore interest rates are important components of the discomfort index.

Private consumption is an indicator of how people react to a financial turmoil. For example, if a country suffers from a financial turmoil, its economy would turn down, its currency would drop, and unemployment rate, interest rates, and inflation rates would go up. As a result, people would consume fewer imported products. When the private consumption index goes down, this is a signal that people's level of confidence in the economy is low. Private consumption is a component of the discomfort index because it can reflect how people have reacted to a financial turmoil in a particular situation.

Finally, the stock market is a place for people to increase their wealth. Thus, it is a good indicator to show how people react to a financial turmoil. For example, if the economy of a country is good, people put more capital in the stock market, whereas if the economy of a country is bad, people sell stocks, and this situation causes a stock index to drop. When

a stock index decreases, this decrease can indicate to what degree people's wealth has evaporated. Thus, the stock market is a component of the discomfort index.

3. Formulas Of Components Of The Discomfort Index

To create a formula for calculating GDP INDEX, the amount of GDP in 1995 is set as a base. For example, the amount of China's GDP in 1995, which was $5051.1 billion of Chinese Yuan, will be called a BASE GDP. This amount will also be set as 100, which will be called a BASE-GDP-INDEX. The higher the GDP INDEX, the better the economic environment of a country. Thus, the formula of the GDP INDEX calculation is as follows:

| GDP INDEX in 1996 = (GDP amount in 1996 / BASE GDP) * 100 |
|---|

To create a formula for calculating INFLATION-RATE, an average inflation rate from 1992 to 1995 in these ten countries has to be determined. This average inflation rate is called a BASE-INFLATION-RATE, and it will be set as 100, which will be called BASE-INFLATION-INDEX. For example, if a person has $100 this year and the inflation rate will be 10 percent the next year, the purchasing power of this $100 will be $90.91 ($100/ 1.1 = $90.91) in the next year because the 10 percent inflation has eroded the value of this $100. The formula for calculating INFLATION-INDEX is as follows:

| INFLATION-RATE in Year A = BASE-INFLATION-INDEX (100% + inflation rate in Year A) |
|---|
| INFLATION-RATE in Year B = INFLATION-RATE in Year A / (100% + inflation rate in Year B) |

When the above formulas is used normal situations, the inflation index will decrease year after year if inflation rates continue to increase. For example, if the inflation rate of a country is zero for 4 years, its inflation index can be maintained at 100. Thus, the degree to which the inflation index can be stabilized, the lower the inflation rate of a country is.

To create a formula for calculating EXCHANGE-RATE-INDEX, an average exchange rate from 1992 to 1995 will be determined, and it will be called "BASE-EXCHANGE-RATE". This BASE-EXCHANGE-RATE will be set at 100, which is called a BASE-EXCHANGE-RATE-INDEX. Two assumptions will be made: 1) if a currency appreciates, the EXCHANGE-RATE-INDEX will be higher than the BASE-EXCHANGE-RATE-INDEX or higher than 100; and 2) if a currency depreciates, the EXCHANGE-RATE-INDEX will be lower than the BASE-EXCHANGE-RATE-INDEX or lower than 100. The formula for calculating an EXCHANGE-RATE-INDEX is shown as follows:

EXCHANGE-RATE-INDEX in Year A = BASE-EXCHANGE-RATE-INDEX - { [ (exchange rate in Year A - BASE-EXCHANGE-RATE) / exchange rate in Year A] *100}

If an EXCHANGE-RATE-INDEX can be maintained at 100, it indicates that the currency of a country has neither appreciated nor depreciated. The purpose for discovering this EXCHANGE-RATE-INDEX is to determine which countries maintained their exchange rates during the Asian Crisis. The higher the EXCHANGE-RATE-INDEX was, the stronger the currency of that country was.

To create a formula for calculating UNEMPLOYMENT-RATE-INDEX, an average unemployment rate from 1992 to 1995 in a country has to be determined. This average unemployment rate will be called a BASE-UNEMPLOYMENT-RATE, and it set as100, which will be called BASE-UNEMPLOYMENT-RATE-INDEX. Two assumptions have to be made: 1) if the UNEMPLOYMENT-RATE-INDEX is higher than BASE-UNEMPLOYMENT-RATE-INDEX or high than 100, that means the unemployment situation has undergone a positive change; whereas if the UNEMPLOYMENT-RATE-INDEX is lower than BASE-UNEMPLOYMENT-RATE-INDEX or lower than 100, that means the unemployment situation has undergone a negative change. The formula for calculating unemployment is shown as follows:

| UNEMPLOYMENT-RATE-INDEX in Year A = { [ (BASE-UNEMPLOYMENT-RATE - unemployment rate in Year A) / unemployment rate in a Year A ] + 1 } * 100 |
|---|

To create a formula for calculating INTEREST-RATE-INDEX, an average interest rates from 1992 to 1995 in a country has to be found. This average interest rate will be called BASE-INTEREST-RATE, and it also will be set at 100 as BASE-INTEREST-RATE-INDEX. Two assumptions have to be made: 1) if INTEREST-RATE in a year is lower than BASE-INTEREST-RATE, the INTEREST-RATE-INDEX will be higher than 100; whereas if INTEREST-RATE in a year is higher than BASE-INTEREST-RATE, the INTEREST-RATE-INDEX will be lower than 100. Thus, the higher the INTEREST-RATE-INDEX is, the lower the interest rate will be. The formula for INTEREST-RATE-INDEX is shown as follows:

| |
|---|
| INTEREST-RATE-INDEX in Year A = [ BASE-INTEREST-RATE-INDEX/ ( 1 / BASE-INTEREST-RATE * an interest rate in Year A) ] |

To create a formula for calculating PRIVATE-CONSUMPTION-INDEX, the amount of private consumption in 1995 in each country has to be found. The amount of private consumption in 1995 will be called a BASE-PRIVATE-CONSUMPTION-AMOUNT, and will be set at 100, which will be called BASE-PRIVATE-CONSUMPTION-INDEX. The higher the PRIVATE-CONSUMPTION-INDEX is, the higher the consumption confidence will be. The formula of PRIVATE-CONSUMPTION-INDEX is shown as follows:

| |
|---|
| PRIVATE-CONSUMPTION-INDEX in Year A = private consumption amount in Year A / BASE-PRIVATE-CONSUMPTION-amount * 100 |

To create a formula for calculating STOCK-INDEX, a BASE-STOCK-INDEX will be set first. In this paper, the BASE-STOCK-INDEX will be the closing indices on December 18th, 1996 in these ten countries. For example, in China, the closing stock index on December 18, 1996 was 1016.2 points, and it will be a BASE-STOCK-INDEX; the closing stock index on December 17, 1997 was 1207.7 points, and it will be called "1997-STOCK-INDEX. The formula for STOCK-INDEX is shown as follows:

| |
|---|
| STOCK INDEX in China in 1997 = 1997-STOCK-INDEX / BASE-STOCK-INDEX * 100<br>Example: 118.84 points = 1207.7 / 1016.2 * 100 |

Thus, the higher the STOCK-INDEX is, the more the stock index in a country rises; whereas the lower the STOCK-INDEX is, the more the stock index in a country drops.

4. Giving Points To Each Component

The ten countries in question will be compared on the basis of each of these seven components. Points will be give on a scale from 1 to 10, with 10 representing the worst situation and 1 representing the best situation in terms of that component.

5. Data And Results

Tables 1 to 7 indicate the results from these ten countries according to the seven components. Table 8 indicates the overall discomfort index for these ten countries during the Asian Crisis. China received 100 out of 270 points, and it was ranked top performer. The overall performance of Indonesia was the worst. Thus, it got 210 out of 270 points, and it was ranked the worst performer among ten countries. Hong Kong was ranked sixth, just a little better than the Philippines, South Korea, Thailand, and Indonesia. The discomfort index of Hong Kong was 56.3, which was the second highest position among the Asian Tigers.

Table 9 illustrates that according to the discomfort index China was affected by the Asian Crisis the least in 1998, whereas Indonesia was affected by the Asian Crisis the most in that year. Hong Kong placed fifth, which was better than South Korea, but worse than both Singapore and Taiwan. Table 10 indicates that China was affected by the Asian Crisis the least in 1999, whereas Indonesia was affected by it the most in that year. Basically, the Asian Crisis was over in 1998; thus the results in 1999 of these ten countries showed the after-effect of the Asian Crisis. After the Asian Crisis, the economy of Hong Kong did not

improve; in fact, it was worse than it had been the previous year. The discomfort index of Hong Kong in 1999 was 55.71, which was worse than its index in 1998.

According to the discomfort index, Thailand and Indonesia suffered the most from the Asian Crisis. In addition, after the Asian Crisis, their economies have not been able to recover. In other words, their economies are still at a very weak level. Because Hong Kong is a developed country, its performance during and after the Asian Crisis was disappointing. The discomfort index ranks Hong Kong last among the Asian Tigers.

| Table 1: Performance of GDP in 10 countries (billion in their domestic currencies) *Real GDP* | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | China | Hong Kong | Indonesia | Japan | Korea | Malaysia | Philippines | Singapore | Taiwan | Thailand |
| 95 | 5051.10 | 756.00 | 383792.00 | 461893.00 | 377350.00 | 166.63 | 802.20 | 102.81 | 70179.00 | 2933.20 |
| 96 | 6412.00 | 790.00 | 414419.00 | 485219.00 | 402821.00 | 183.29 | 849.10 | 110.56 | 76781.00 | 3095.00 |
| 97 | 6976.50 | 829.00 | 433246.00 | 492142.00 | 423007.00 | 196.71 | 893.20 | 110.10 | 83288.00 | 3081.80 |
| 98 | 7520.90 | 785.00 | 376052.00 | 478051.00 | 394711.00 | 182.22 | 887.90 | 120.32 | 89390.00 | 2768.20 |
| 99 | 8055.90 | 809.00 | 376557.00 | 482201.00 | 436799.00 | 192.51 | 917.40 | 126.76 | 92899.00 | 2860.30 |
| | | | | | | | | | | |
| GDP Index | | | | | | | | | | |
| 95 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 96 | 126.94 | 104.50 | 107.98 | 105.05 | 106.75 | 110.00 | 105.85 | 107.54 | 109.41 | 105.52 |
| 97 | 138.12 | 109.66 | 112.89 | 106.55 | 112.10 | 118.06 | 111.34 | 107.09 | 118.68 | 105.07 |
| 98 | 148.90 | 103.84 | 97.98 | 103.50 | 104.60 | 109.36 | 110.68 | 117.03 | 127.37 | 94.37 |
| 99 | 159.49 | 107.01 | 98.11 | 104.40 | 115.75 | 115.53 | 114.36 | 123.29 | 132.37 | 97.51 |
| Points | | | | | | | | | | |
| 95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 1 | 10 | 4 | 9 | 6 | 2 | 7 | 5 | 3 | 8 |
| 97 | 1 | 7 | 4 | 9 | 5 | 3 | 6 | 8 | 2 | 10 |
| 98 | 1 | 7 | 10 | 8 | 6 | 5 | 4 | 3 | 2 | 9 |
| 99 | 1 | 7 | 9 | 8 | 4 | 5 | 6 | 3 | 2 | 10 |
| Total | 4 | 31 | 27 | 34 | 21 | 15 | 23 | 19 | 9 | 37 |
| Ranking | 1 | 8 | 7 | 9 | 5 | 3 | 6 | 4 | 2 | 10 |

Table 2: Performance of Inflation Rates in 10 countries

| Year | China | Hong Kong | Indonesia | Japan | Korea | Malaysia | Philippines | Singapore | Taiwan | Thailand |
|---|---|---|---|---|---|---|---|---|---|---|
| 92-95 | 15.58% | 9.08% | 8.13% | 0.88% | 5.43% | 3.85% | 7.98% | 2.35% | 3.80% | 4.55% |
| 96 | 8.30% | 6.30% | 6.50% | 0.10% | 5.00% | 3.50% | 9.10% | 1.40% | 3.10% | 5.90% |
| 97 | 2.80% | 5.80% | 11.10% | 1.80% | 4.40% | 2.70% | 6.00% | 2.00% | 0.90% | 5.60% |
| 98 | -0.80% | 2.80% | 77.60% | 0.60% | 7.50% | 5.30% | 9.80% | -0.30% | 1.70% | 8.10% |
| 99 | -1.40% | -4.00% | 2.00% | -0.30% | 0.80% | 2.80% | 6.60% | 0.00% | 0.20% | 0.30% |
| | | | | | | | | | | |
| Inflation Rate Index | | | | | | | | | | |
| 92-95 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 96 | 92.34 | 94.07 | 93.90 | 99.90 | 95.24 | 96.62 | 91.66 | 98.62 | 96.99 | 94.43 |
| 97 | 89.82 | 88.92 | 84.52 | 98.13 | 91.22 | 94.08 | 86.47 | 96.69 | 96.13 | 89.42 |
| 98 | 90.55 | 86.49 | 47.59 | 97.55 | 84.86 | 89.34 | 78.75 | 96.98 | 94.52 | 82.72 |
| 99 | 91.83 | 90.10 | 46.65 | 97.84 | 84.19 | 86.91 | 73.88 | 96.98 | 94.33 | 82.47 |
| Points | | | | | | | | | | |
| 92-95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 9 | 7 | 8 | 1 | 5 | 4 | 10 | 2 | 3 | 6 |
| 97 | 6 | 8 | 10 | 1 | 5 | 4 | 9 | 2 | 3 | 7 |
| 98 | 4 | 6 | 10 | 1 | 7 | 5 | 9 | 2 | 3 | 8 |
| 99 | 4 | 5 | 10 | 1 | 7 | 6 | 9 | 2 | 3 | 8 |
| Total | 23 | 26 | 38 | 4 | 24 | 19 | 37 | 8 | 12 | 29 |
| Ranking | 5 | 7 | 10 | 1 | 6 | 4 | 9 | 2 | 3 | 8 |

Table 3: Performance of Exchange Rates in 10 countries (domestic currency to one US dollar)

| Year | China | Hong Kong | Indonesia | Japan | Korea | Malaysia | Philippines | Singapore | Taiwan | Thailand |
|---|---|---|---|---|---|---|---|---|---|---|
| 92-95 | 7.058 | 7.735 | 2156.25 | 108.53 | 789.98 | 2.55 | 26.18 | 1.55 | 26.15 | 25.198 |
| 96 | 8.310 | 7.734 | 2383.00 | 108.80 | 804.50 | 2.50 | 26.20 | 1.41 | 27.50 | 25.340 |
| 97 | 8.280 | 7.742 | 4650.00 | 121.00 | 951.30 | 2.80 | 29.50 | 1.48 | 28.70 | 31.370 |
| 98 | 8.280 | 7.745 | 8025.00 | 130.90 | 1401.40 | 3.90 | 40.90 | 1.67 | 33.50 | 41.360 |
| 99 | 8.280 | 7.758 | 7050.00 | 113.90 | 1188.60 | 3.80 | 39.09 | 1.69 | 32.30 | 37.840 |
| | | | | | | | | | | |
| Exchange Rate Index | | | | | | | | | | |
| 92-95 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 96 | 84.93 | 99.98 | 90.48 | 99.75 | 98.19 | 102.00 | 99.90 | 109.93 | 95.09 | 99.44 |
| 97 | 85.24 | 99.91 | 46.37 | 89.69 | 83.04 | 91.07 | 88.73 | 104.73 | 91.11 | 80.32 |
| 98 | 85.24 | 99.87 | 26.87 | 82.91 | 56.37 | 65.38 | 64.00 | 92.81 | 78.06 | 60.92 |
| 99 | 85.24 | 99.71 | 30.59 | 95.28 | 66.46 | 67.11 | 66.96 | 91.72 | 80.96 | 66.92 |
| Points | | | | | | | | | | |
| 92-95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 10 | 2 | 9 | 4 | 6 | 7 | 3 | 1 | 8 | 5 |
| 97 | 7 | 2 | 10 | 5 | 8 | 4 | 6 | 1 | 3 | 9 |
| 98 | 3 | 1 | 10 | 4 | 9 | 6 | 7 | 2 | 5 | 8 |
| 99 | 4 | 1 | 10 | 2 | 9 | 6 | 7 | 3 | 5 | 8 |
| Total | 24 | 6 | 39 | 15 | 32 | 23 | 23 | 7 | 21 | 30 |
| Ranking | 6 | 1 | 9 | 3 | 8 | 5 | 5 | 2 | 4 | 7 |

Table 4: Performance of Unemployment Rates in 10 countries

| Year | China | Hong Kong | Indonesia | Japan | Korea | Malaysia | Philippines | Singapore | Taiwan | Thailand |
|---|---|---|---|---|---|---|---|---|---|---|
| 92-95 | 2.650% | 2.275% | 4.350% | 2.700% | 2.400% | 3.175% | 9.525% | 1.975% | 1.600% | 2.248% |
| 96 | 3.000% | 2.800% | 4.900% | 3.400% | 2.000% | 2.500% | 8.600% | 2.000% | 2.600% | 1.540% |
| 97 | 3.100% | 2.200% | 4.800% | 3.400% | 2.600% | 2.400% | 8.700% | 1.800% | 2.700% | 1.510% |
| 98 | 3.100% | 4.700% | 5.500% | 4.100% | 6.800% | 3.200% | 10.100% | 3.200% | 2.700% | 4.370% |
| 99 | 3.100% | 6.300% | 6.400% | 4.700% | 6.300% | 3.000% | 9.700% | 3.500% | 2.900% | 4.170% |

Unemployment Rate Index

| 92-95 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
|---|---|---|---|---|---|---|---|---|---|---|
| 96 | 88.33 | 81.25 | 88.78 | 79.41 | 120.00 | 127.00 | 110.76 | 98.75 | 61.54 | 145.97 |
| 97 | 85.48 | 103.41 | 90.63 | 79.41 | 92.31 | 132.29 | 109.48 | 109.72 | 59.26 | 148.87 |
| 98 | 85.48 | 48.40 | 79.09 | 65.85 | 35.29 | 99.22 | 94.31 | 61.72 | 59.26 | 51.44 |
| 99 | 85.48 | 36.11 | 67.97 | 57.45 | 38.10 | 105.83 | 98.19 | 56.43 | 55.17 | 53.91 |
| Points | | | | | | | | | | |
| 92-95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 7 | 8 | 6 | 9 | 3 | 2 | 4 | 5 | 10 | 1 |
| 97 | 8 | 5 | 7 | 9 | 6 | 2 | 4 | 3 | 10 | 1 |
| 98 | 3 | 9 | 4 | 5 | 10 | 1 | 2 | 6 | 7 | 8 |
| 99 | 3 | 10 | 4 | 5 | 9 | 1 | 2 | 6 | 7 | 8 |
| Total | 21 | 32 | 21 | 28 | 28 | 6 | 12 | 20 | 34 | 18 |
| Ranking | 5 | 7 | 5 | 6 | 6 | 1 | 2 | 4 | 8 | 3 |

Table 5: Performance of Interest Rates in 10 countries (3-months interbank offer rate)

| Year | China | Hong Kong | Indonesia | Japan | Korea | Malaysia | Philippines | Singapore | Taiwan | Thailand |
|---|---|---|---|---|---|---|---|---|---|---|
| 92-95 | 8.725% | 4.552% | 11.050% | 2.675% | 14.150% | 6.625% | 13.325% | 2.938% | 7.350% | 7.313% |
| 96 | 9.720% | 5.460% | 14.100% | 0.600% | 13.500% | 7.200% | 12.400% | 3.410% | 5.900% | 11.000% |
| 97 | 7.650% | 7.124% | 25.400% | 0.600% | 18.600% | 8.700% | 13.100% | 4.100% | 6.800% | 22.000% |
| 98 | 6.340% | 8.061% | 47.400% | 0.700% | 7.700% | 6.500% | 15.300% | 1.720% | 6.900% | 3.750% |
| 99 | 5.580% | 5.840% | 12.200% | 0.200% | 6.800% | 3.200% | 10.200% | 1.680% | 5.100% | 0.940% |

| Inverse of Interest Rate Index | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 92-95 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 96 | 89.76 | 83.37 | 78.37 | 445.83 | 104.81 | 92.01 | 107.46 | 86.14 | 124.58 | 66.48 |
| 97 | 114.05 | 63.91 | 43.50 | 445.83 | 76.08 | 76.15 | 101.72 | 71.65 | 108.09 | 33.24 |
| 98 | 137.62 | 56.48 | 23.31 | 382.14 | 183.77 | 101.92 | 87.09 | 170.78 | 106.52 | 195.00 |
| 99 | 156.36 | 77.95 | 90.57 | 1337.50 | 208.09 | 207.03 | 130.64 | 174.85 | 144.12 | 777.93 |
| Points | | | | | | | | | | |
| 92-95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 6 | 8 | 9 | 1 | 4 | 5 | 3 | 7 | 2 | 10 |
| 97 | 2 | 8 | 9 | 1 | 6 | 5 | 4 | 7 | 3 | 10 |
| 98 | 5 | 9 | 10 | 1 | 3 | 7 | 8 | 4 | 6 | 2 |
| 99 | 6 | 10 | 9 | 1 | 3 | 4 | 7 | 5 | 8 | 2 |
| Total | 19 | 35 | 37 | 4 | 16 | 21 | 22 | 23 | 19 | 24 |
| Ranking | 3 | 8 | 9 | 1 | 2 | 4 | 5 | 6 | 3 | 7 |

Table 6: Performance of Private Consumption in 10 countries (billion in US$)

| Year | China | Hong Kong | Indonesia | Japan | Korea | Malaysia | Philippines | Singapore | Taiwan | Thailand |
|---|---|---|---|---|---|---|---|---|---|---|
| 95 | 322.69 | 84.54 | 121.26 | 3087.40 | 266.43 | 42.64 | 54.94 | 34.71 | 155.65 | 89.46 |
| 96 | 386.91 | 93.35 | 139.15 | 2751.30 | 290.42 | 46.72 | 60.89 | 37.40 | 165.09 | 99.06 |
| 97 | 420.95 | 103.07 | 83.25 | 2528.16 | 268.04 | 45.59 | 59.73 | 38.17 | 171.95 | 83.64 |
| 98 | 445.91 | 98.39 | 82.67 | 2328.24 | 178.64 | 30.28 | 48.41 | 32.71 | 159.23 | 61.15 |
| 99 | 476.23 | 94.74 | 103.59 | 2693.50 | 232.32 | 32.83 | 55.30 | 34.44 | 174.65 | 69.49 |

Private Consumption Index

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 95 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 96 | 119.90 | 110.42 | 114.75 | 89.11 | 109.00 | 109.55 | 110.83 | 107.77 | 106.06 | 110.73 |
| 97 | 130.45 | 121.92 | 68.65 | 81.87 | 100.60 | 106.90 | 108.72 | 109.96 | 110.47 | 93.49 |
| 98 | 138.19 | 116.38 | 68.18 | 75.41 | 67.05 | 71.01 | 88.11 | 94.24 | 102.30 | 68.35 |
| 99 | 147.58 | 112.07 | 85.43 | 87.24 | 87.20 | 76.99 | 100.66 | 99.22 | 112.21 | 77.68 |
| Points | | | | | | | | | | |
| 95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 1 | 5 | 2 | 10 | 7 | 6 | 3 | 8 | 9 | 4 |
| 97 | 1 | 2 | 10 | 9 | 7 | 6 | 5 | 4 | 3 | 8 |
| 98 | 1 | 2 | 9 | 6 | 10 | 7 | 5 | 4 | 3 | 8 |
| 99 | 1 | 3 | 8 | 6 | 7 | 10 | 4 | 5 | 2 | 9 |
| Total | 4 | 12 | 29 | 31 | 31 | 29 | 17 | 21 | 17 | 29 |
| Ranking | 1 | 2 | 5 | 6 | 6 | 5 | 3 | 4 | 3 | 5 |

| Table 7: Performance of Stock Markets in 10 countries (points) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date/Year | China | Hong Kong | Indonesia | Japan | Korea | Malaysia | Philippines | Singapore | Taiwan | Thailand |
| 18 Dec 96 | 1016.2 | 12766.0 | 629.5 | 20093.0 | 661.4 | 1191.9 | 3105.8 | 2195.8 | 6896.5 | 853.8 |
| 17 Dec 97 | 1207.7 | 10692.7 | 368.7 | 16541.1 | 418.5 | 556.8 | 1796.9 | 1569.5 | 8347.2 | 376.2 |
| 18 Dec 98 | 1258.8 | 9939.4 | 412.7 | 14096.3 | 546.0 | 543.0 | 1869.2 | 1359.1 | 6769.5 | 344.5 |
| 14 Dec 99 | 1512.2 | 16282.7 | 648.4 | 18165.6 | 1002.6 | 769.9 | 2011.3 | 2369.3 | 7850.1 | 438.2 |
| | | | | | | | | | | |
| Stock Indics | | | | | | | | | | |
| 96 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 97 | 118.84 | 83.76 | 58.57 | 89.69 | 63.27 | 46.72 | 57.86 | 71.48 | 121.04 | 44.06 |
| 98 | 123.87 | 77.86 | 65.56 | 82.91 | 82.55 | 45.56 | 60.18 | 61.90 | 98.16 | 40.35 |
| 99 | 148.81 | 127.55 | 103.00 | 95.28 | 151.59 | 64.59 | 64.76 | 107.90 | 113.83 | 51.32 |
| Points | | | | | | | | | | |
| 96 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 97 | 2 | 3 | 7 | 4 | 6 | 9 | 8 | 5 | 1 | 10 |
| 98 | 1 | 4 | 6 | 5 | 3 | 9 | 8 | 7 | 2 | 10 |
| 99 | 2 | 3 | 6 | 7 | 1 | 9 | 8 | 5 | 4 | 10 |
| Total | 5 | 10 | 19 | 16 | 10 | 27 | 24 | 17 | 7 | 30 |
| Ranking | 1 | 3 | 6 | 4 | 3 | 8 | 7 | 5 | 2 | 9 |

| Table 8: Overall Discomfort Index in 10 countries (between 1998-99) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| component | GDP | Inflation | Exchange | Unemployment | Interest | Consumption | Stock | Total | Ranking | Discomfort |
| Max. Points | 40 | 40 | 40 | 40 | 40 | 40 | 30 | 270 | N/A | Index |
| China | 4 | 23 | 24 | 21 | 19 | 4 | 5 | **100** | **1** | **37.04** |
| Singapore | 19 | 8 | 7 | 20 | 23 | 21 | 17 | **115** | **2** | **42.59** |
| Taiwan | 9 | 12 | 21 | 34 | 19 | 17 | 7 | **119** | **3** | **44.07** |
| Japan | 34 | 4 | 15 | 28 | 4 | 31 | 16 | **132** | **4** | **48.89** |
| Malaysia | 15 | 19 | 23 | 6 | 21 | 29 | 27 | **140** | **5** | **51.85** |
| Hong Kong | 31 | 26 | 6 | 32 | 35 | 12 | 10 | **152** | **6** | **56.30** |
| Philippines | 23 | 37 | 23 | 12 | 22 | 17 | 24 | **158** | **7** | **58.52** |
| Korea | 21 | 24 | 32 | 28 | 16 | 31 | 10 | **162** | **8** | **60.00** |
| Thailand | 37 | 29 | 30 | 18 | 24 | 29 | 30 | **197** | **9** | **72.96** |
| Indonesia | 27 | 38 | 39 | 21 | 37 | 29 | 19 | **210** | **10** | **77.78** |

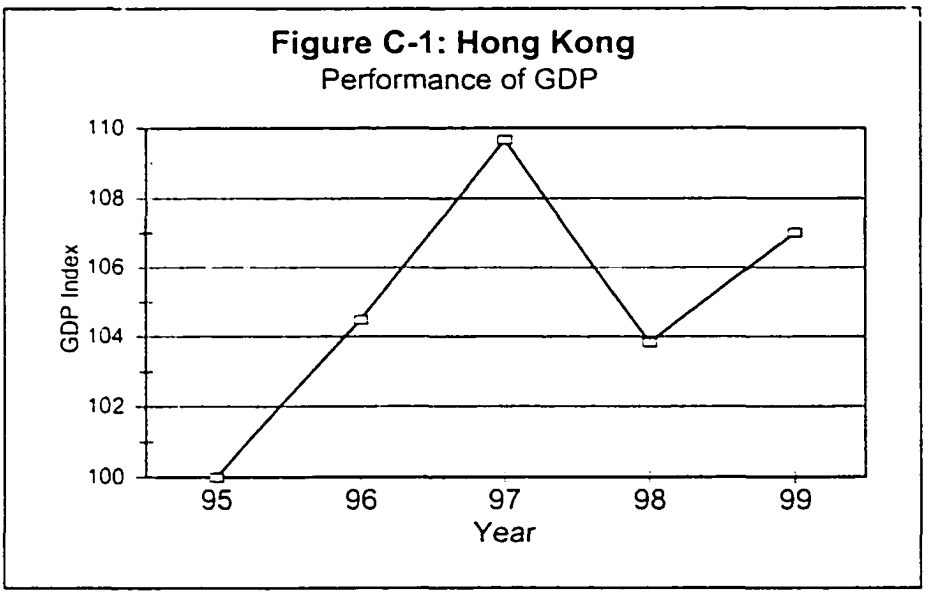
| Table 9: Overall Discomfort Index in 1998 in 10 countries | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| component | GDP | Inflation | Exchange | Unemployment | Interest | Consumption | Stock | Total | Ranking | Discomfort |
| Max. Points | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 70 | N/A | Index |
| China | 1 | 4 | 3 | 3 | 5 | 1 | 1 | **18** | **1** | **25.71** |
| Taiwan | 2 | 3 | 3 | 7 | 6 | 3 | 2 | **26** | **2** | **37.14** |
| Singapore | 3 | 2 | 2 | 6 | 4 | 4 | 7 | **28** | **3** | **40.00** |
| Japan | 8 | 1 | 4 | 5 | 1 | 6 | 5 | **30** | **4** | **42.86** |
| Hong Kong | 7 | 6 | 1 | 9 | 9 | 2 | 4 | **38** | **5** | **54.29** |
| Malaysia | 5 | 5 | 6 | 1 | 7 | 7 | 9 | **40** | **6** | **57.14** |
| Philippines | 4 | 9 | 7 | 2 | 8 | 5 | 8 | **43** | **7** | **61.43** |
| Korea | 6 | 7 | 9 | 10 | 3 | 10 | 3 | **48** | **8** | **68.57** |
| Thailand | 9 | 8 | 8 | 8 | 2 | 8 | 10 | **53** | **9** | **75.71** |
| Indonesia | 10 | 10 | 10 | 4 | 10 | 9 | 6 | **59** | **10** | **84.29** |

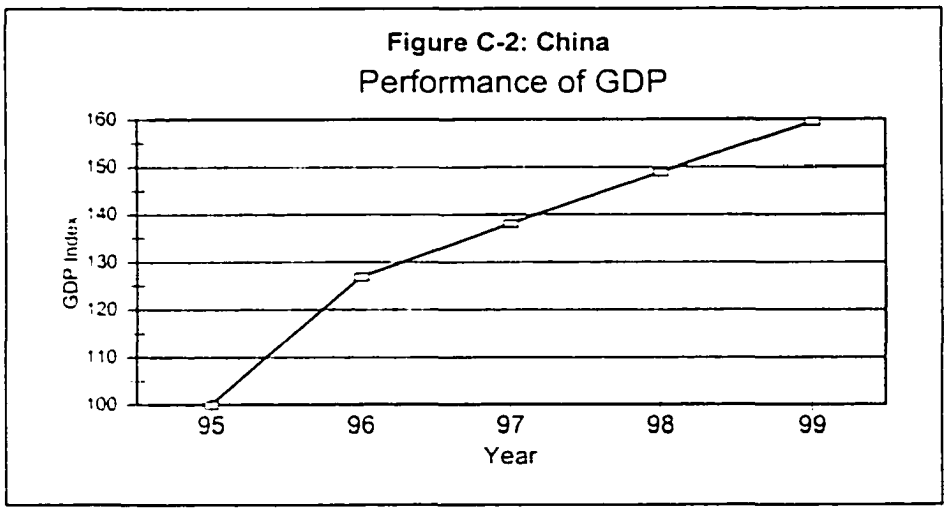
| Table 10: Overall Discomfort Index in 1999 in 10 countries | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| component | GDP | Inflation | Exchange | Unemployment | Interest | Consumption | Stock | Total | Ranking | Discomfort Index |
| Max. Points | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 70 | N/A | |
| China | 1 | 4 | 4 | 3 | 6 | 1 | 2 | **21** | **1** | **30.00** |
| Singapore | 3 | 2 | 3 | 6 | 5 | 5 | 5 | **29** | **2** | **41.43** |
| Japan | 8 | 1 | 2 | 5 | 1 | 6 | 7 | **30** | **3** | **42.86** |
| Taiwan | 2 | 3 | 5 | 7 | 8 | 2 | 4 | **31** | **4** | **44.29** |
| Hong Kong | 7 | 5 | 1 | 10 | 10 | 3 | 3 | **39** | **5** | **55.71** |
| Korea | 4 | 7 | 9 | 9 | 3 | 7 | 1 | **40** | **6** | **57.14** |
| Malaysia | 5 | 6 | 6 | 1 | 4 | 10 | 9 | **41** | **7** | **58.57** |
| Philippines | 6 | 9 | 7 | 2 | 7 | 4 | 8 | **43** | **8** | **61.43** |
| Thailand | 10 | 8 | 8 | 8 | 2 | 9 | 10 | **55** | **9** | **78.57** |
| Indonesia | 9 | 10 | 10 | 4 | 9 | 8 | 6 | **56** | **10** | **80.00** |

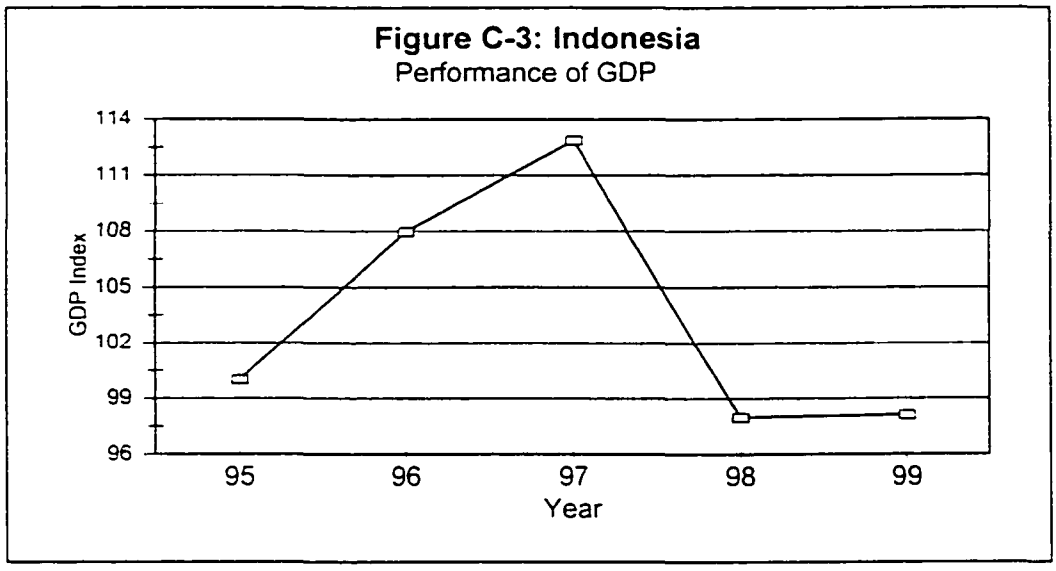
| Table 11: Overall Discomfort Index with different weights in 10 countries (between 1998 and 1999) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| component | GDP | Inflation | Exchange | Unemployment | Interest | Consumption | Stock | Discomfort Index | |
| Weighted | 0.1 | 0.1 | 0.1 | 0.4 | 0.1 | 0.1 | 0.1 | 1 | Ranking |
| Malaysia | 1.5 | 1.9 | 2.3 | 2.4 | 2.1 | 2.9 | 2.7 | 15.8 | 1 |
| China | 0.4 | 2.3 | 2.4 | 8.4 | 1.9 | 0.4 | 0.5 | 16.3 | 2 |
| Singapore | 1.9 | 0.8 | 0.7 | 8 | 2.3 | 2.1 | 1.7 | 17.5 | 3 |
| Philippines | 2.3 | 3.7 | 2.3 | 4.8 | 2.2 | 1.7 | 2.4 | 19.4 | 4 |
| Japan | 3.4 | 0.4 | 1.5 | 11.2 | 0.4 | 3.1 | 1.6 | 21.6 | 5 |
| Taiwan | 0.9 | 1.2 | 2.1 | 13.6 | 1.9 | 1.7 | 0.7 | 22.1 | 6 |
| Korea | 2.1 | 2.4 | 3.2 | 11.2 | 1.6 | 3.1 | 1 | 24.6 | 7 |
| Hong Kong | 3.1 | 2.6 | 0.6 | 12.8 | 3.5 | 1.2 | 1 | 24.8 | 8 |
| Thailand | 3.7 | 2.9 | 3 | 7.2 | 2.4 | 2.9 | 3 | 25.1 | 9 |
| Indonesia | 2.7 | 3.8 | 3.9 | 8.4 | 3.7 | 2.9 | 1.9 | 27.3 | 10 |

| Table 12: Discomfort Index with different weights of 1998 in 10 countries | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| component | GDP | Inflation | Exchange | Unemployment | Interest | Consumption | Stock | Discomfort Index | |
| Weighted | 0.1 | 0.1 | 0.1 | 0.4 | 0.1 | 0.1 | 0.1 | 1 | Ranking |
| China | 0.1 | 0.4 | 0.3 | 1.2 | 0.5 | 0.1 | 0.1 | 2.7 | 1 |
| Malaysia | 0.5 | 0.5 | 0.6 | 0.4 | 0.7 | 0.7 | 0.9 | 4.3 | 2 |
| Japan | 0.8 | 0.1 | 0.4 | 2 | 0.1 | 0.6 | 0.5 | 4.5 | 3 |
| Singapore | 0.3 | 0.2 | 0.2 | 2.4 | 0.4 | 0.4 | 0.7 | 4.6 | 4 |
| Taiwan | 0.2 | 0.3 | 0.3 | 2.8 | 0.6 | 0.3 | 0.2 | 4.7 | 5 |
| Philippines | 0.4 | 0.9 | 0.7 | 0.8 | 0.8 | 0.5 | 0.8 | 4.9 | 6 |
| Hong Kong | 0.7 | 0.6 | 0.1 | 3.6 | 0.9 | 0.2 | 0.4 | 6.5 | 7 |
| Indonesia | 1 | 1 | 1 | 1.6 | 1 | 0.9 | 0.6 | 7.1 | 8 |
| Thailand | 0.9 | 0.8 | 0.8 | 3.2 | 0.2 | 0.8 | 1 | 7.7 | 9 |
| Korea | 0.6 | 0.7 | 0.9 | 4 | 0.3 | 1 | 0.3 | 7.8 | 10 |

| Table 13: Discomfort Index with different weights of 1999 in 10 countries | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| component | GDP | Inflation | Exchange | Unemployment | Interest | Consumption | Stock | Discomfort Index | |
| Weighted | 0.1 | 0.1 | 0.1 | 0.4 | 0.1 | 0.1 | 0.1 | 1 | Ranking |
| China | 0.1 | 0.4 | 0.4 | 1.2 | 0.6 | 0.1 | 0.2 | 3 | 1 |
| Malaysia | 0.5 | 0.6 | 0.6 | 0.4 | 0.4 | 1 | 0.9 | 4.4 | 2 |
| Japan | 0.8 | 0.1 | 0.2 | 2 | 0.1 | 0.6 | 0.7 | 4.5 | 3 |
| Singapore | 0.3 | 0.2 | 0.3 | 2.4 | 0.5 | 0.5 | 0.5 | 4.7 | 4 |
| Philippines | 0.6 | 0.9 | 0.7 | 0.8 | 0.7 | 0.4 | 0.8 | 4.9 | 5 |
| Taiwan | 0.2 | 0.3 | 0.5 | 2.8 | 0.8 | 0.2 | 0.4 | 5.2 | 6 |
| Korea | 0.4 | 0.7 | 0.9 | 3.6 | 0.3 | 0.7 | 0.1 | 6.7 | 7 |
| Indonesia | 0.9 | 1 | 1 | 1.6 | 0.9 | 0.8 | 0.6 | 6.8 | 8 |
| Hong Kong | 0.7 | 0.5 | 0.1 | 4 | 1 | 0.3 | 0.3 | 6.9 | 9 |
| Thailand | 1 | 0.8 | 0.8 | 3.2 | 0.2 | 0.9 | 1 | 7.9 | 10 |





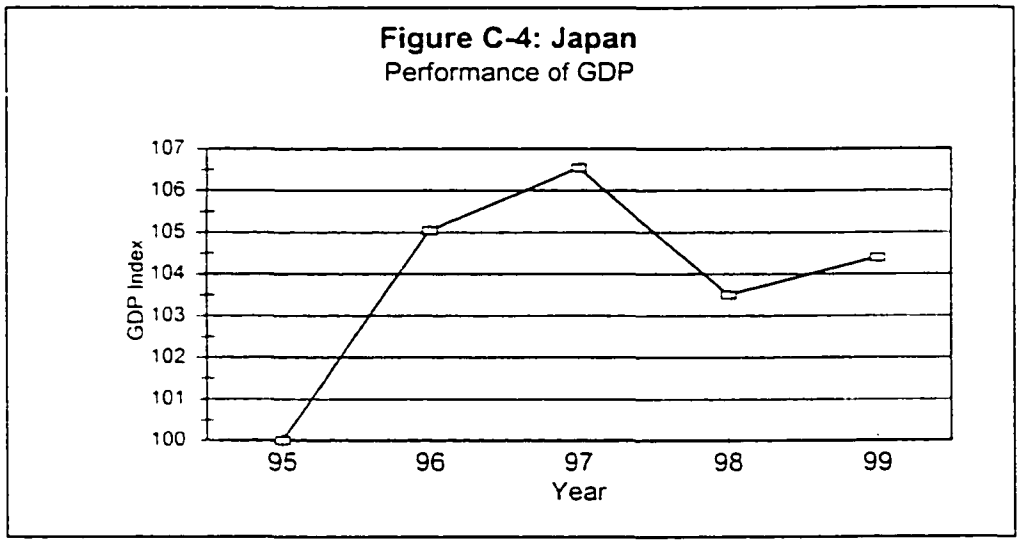



**Figure C-5: South Korea**
Performance of GDP

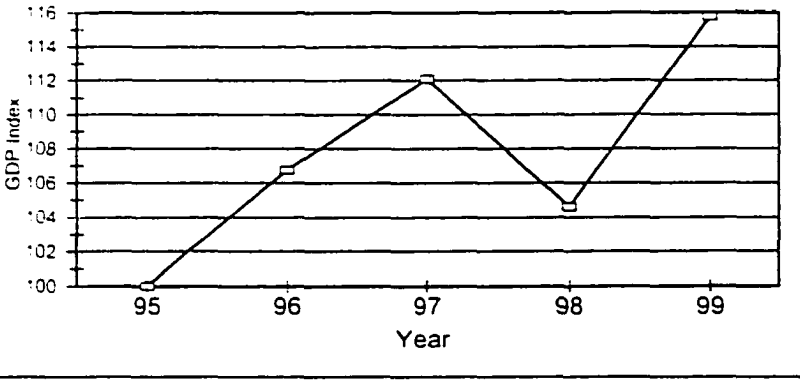



**Figure C-6: Malaysia**
Performance of GDP

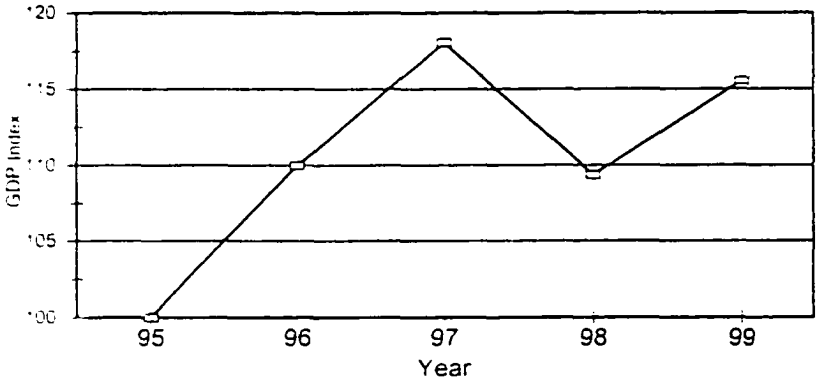


**Figure C-7: The Philippines**
Performance of GDP

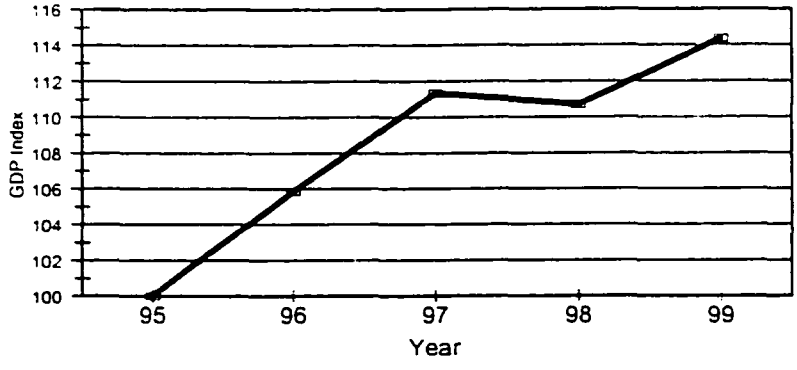



**Figure C-8: Singapore**
Performance of GDP

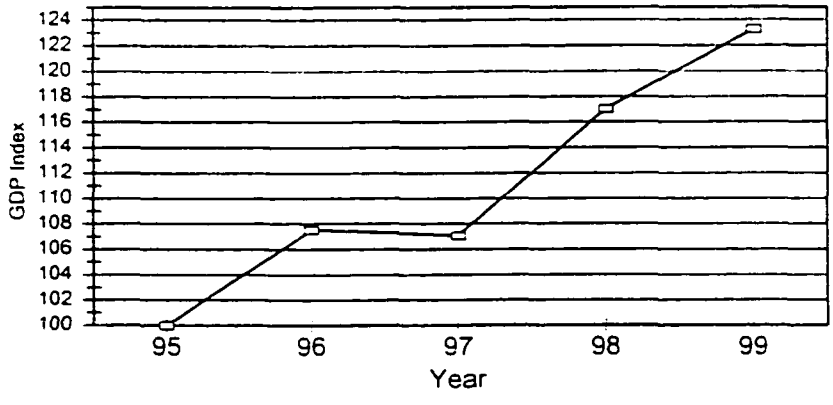


**Figure C-9: Taiwan**
Performance of GDP

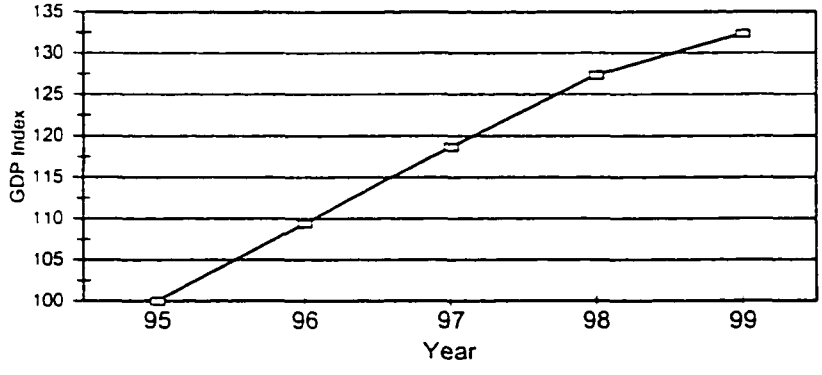
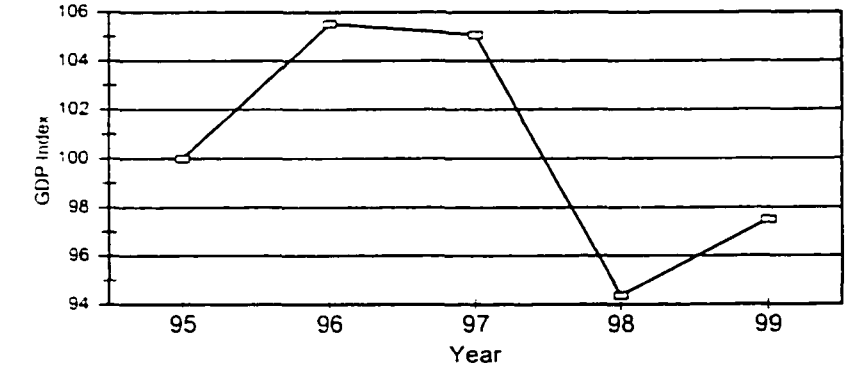
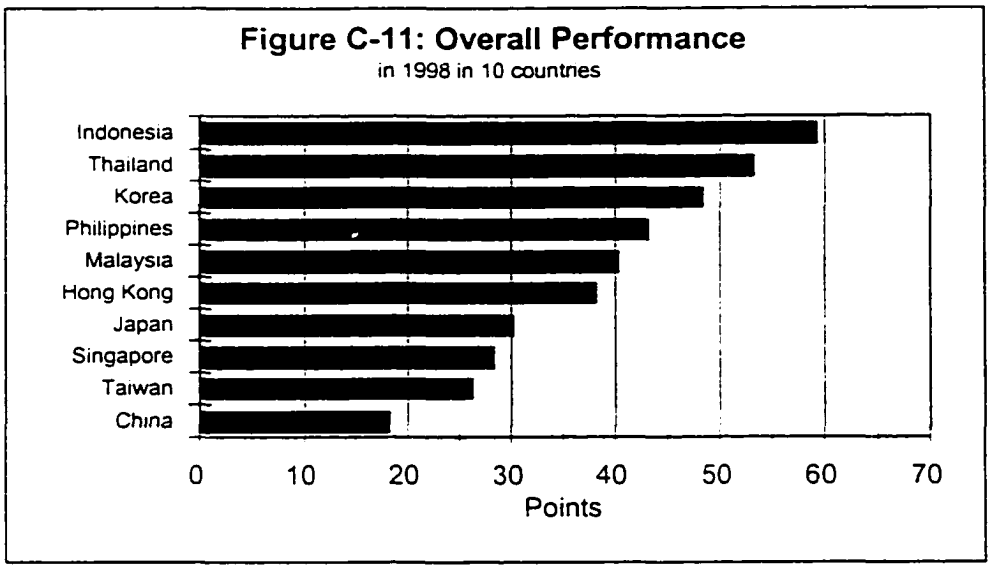
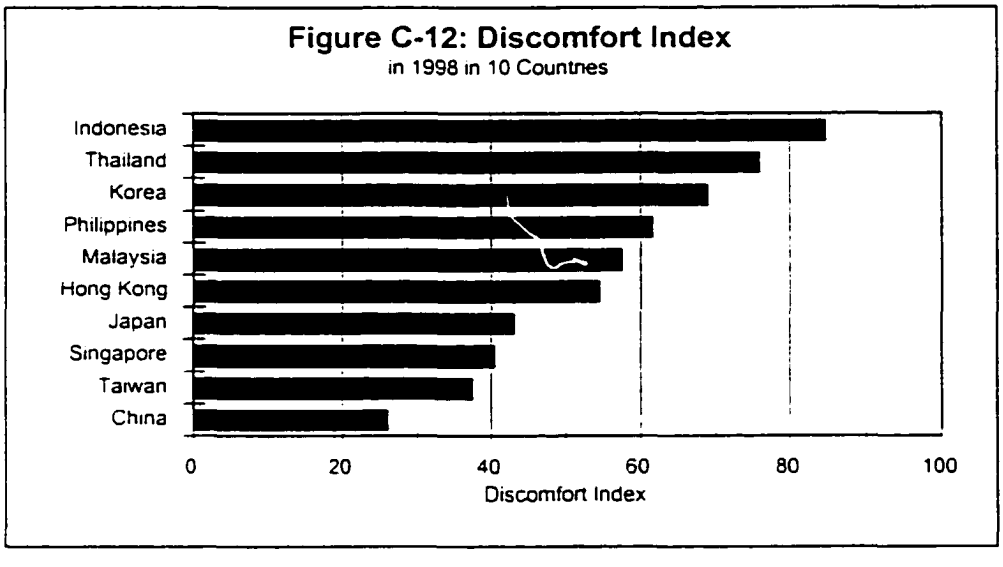
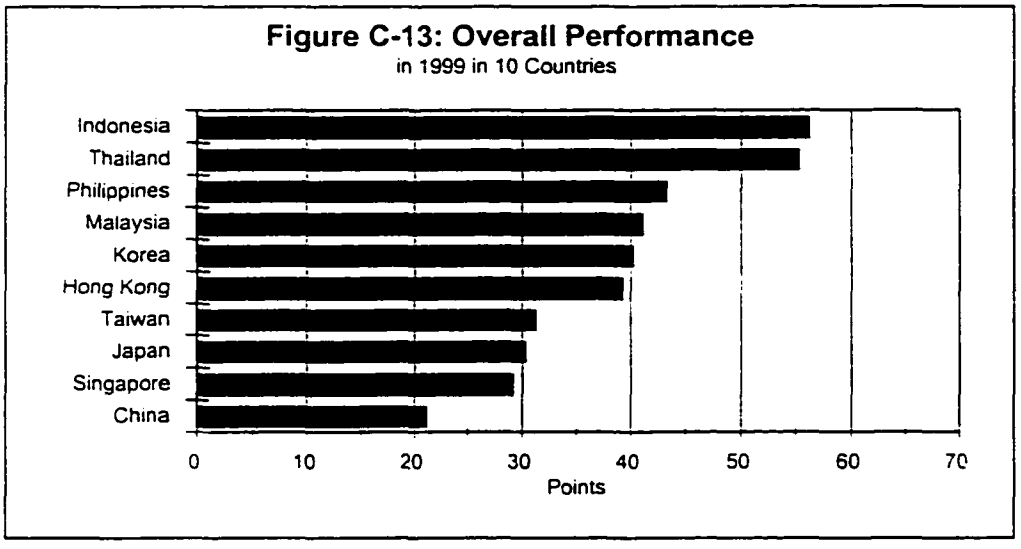



**Figure C-10: Thailand**
Performance of GDP







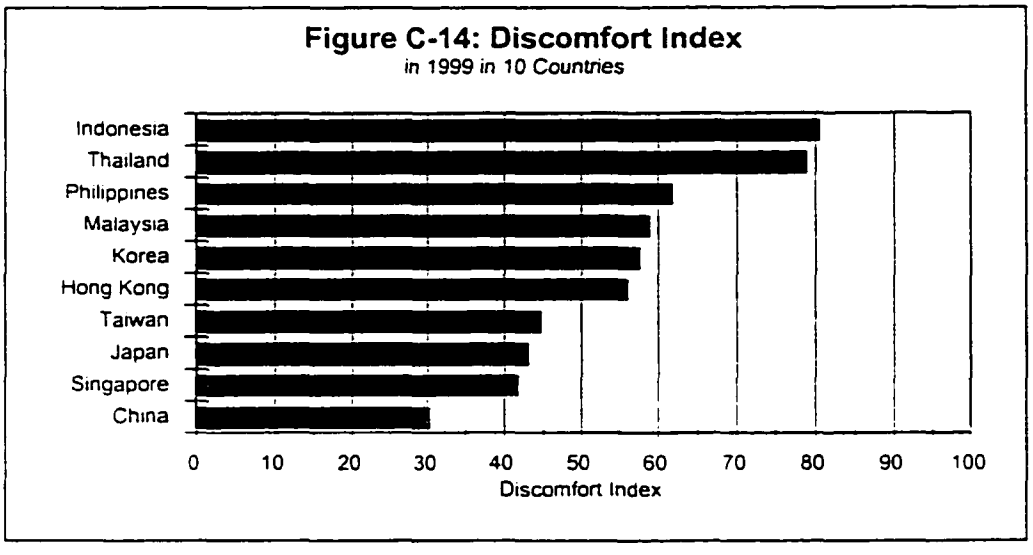



**Figure C-15: Overall Performance**
between 1998 and 1999 in 10 countries

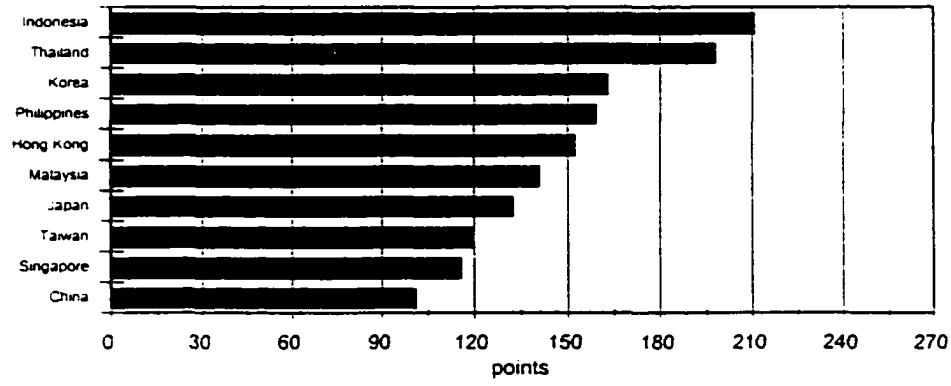
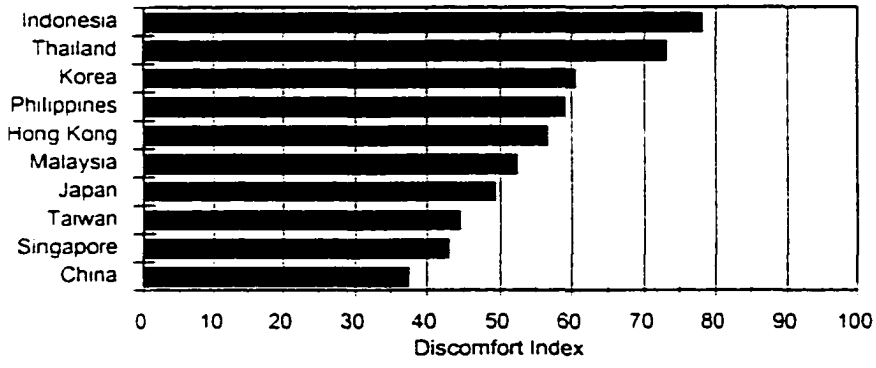
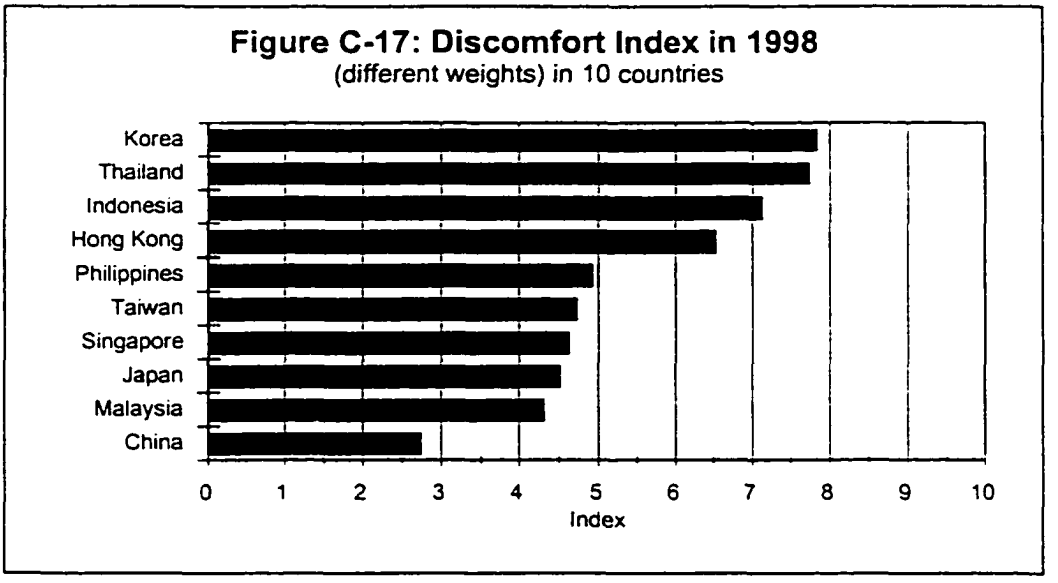



**Figure C-16: Discomfort Index**
between 1998 and 1999 in10 countries





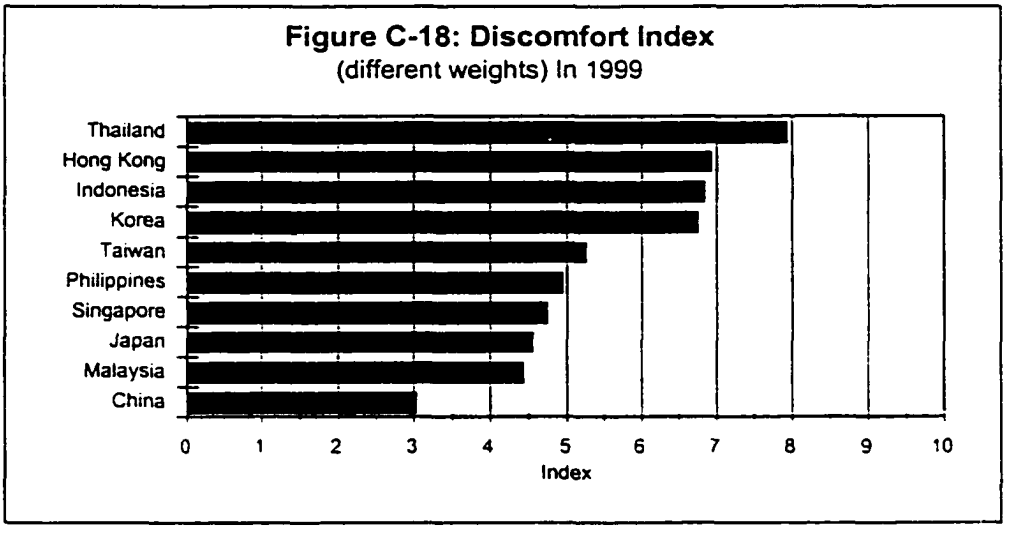
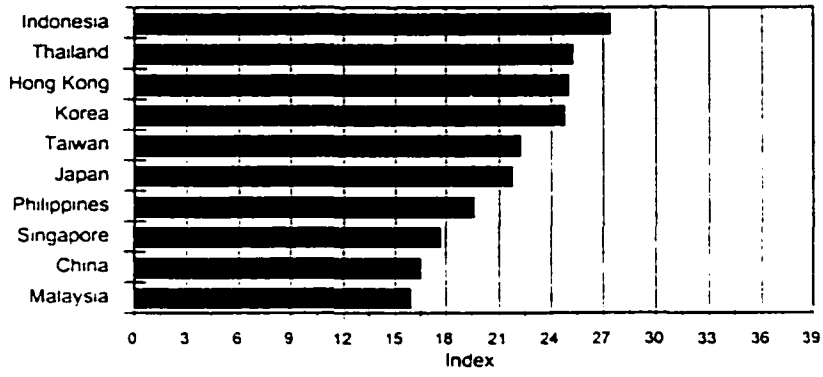



**Figure C-19: Discomfort Index**
(different weights) in 1998 and 1999



# VITA

| | |
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