# Chapter 1. Introduction

1.1. Background

With the spread of the 1997 Asian financial crisis (AFC), Hong Kong which was once labelled by investors as the safe harbour from the turmoils of the financial markets, did not escape completely from continuous financial shocks (Y.-C. R. Wong, 2002). It paid a high price for defending its currency from speculators, with the economy experiencing soaring inter-bank interest rates, stock markets lumps, sluggish Gross Domestic Product (GDP) growth rate, and outlays of foreign reserves. However, its then 14-year-long linked exchange rate regime, as well as its status as an international financial centre, both came out unscathed. Hong Kong's superior performance manifested in several aspects: GDP growth slowed down but decreased less than that of Thailand and Indonesia; Hong Kong avoided the hyperinflation of Indonesia; it had the lowest external debt compared to Thailand, Malaysia, and Indonesia, and the highest stocks of foreign reserves (**Figures 1.1-1.4**).

Figures 1.1-1.4 display the differences in economic indicators for five Asian countries throughout the crisis. Between 1997 and 1999, Hong Kong's GDP
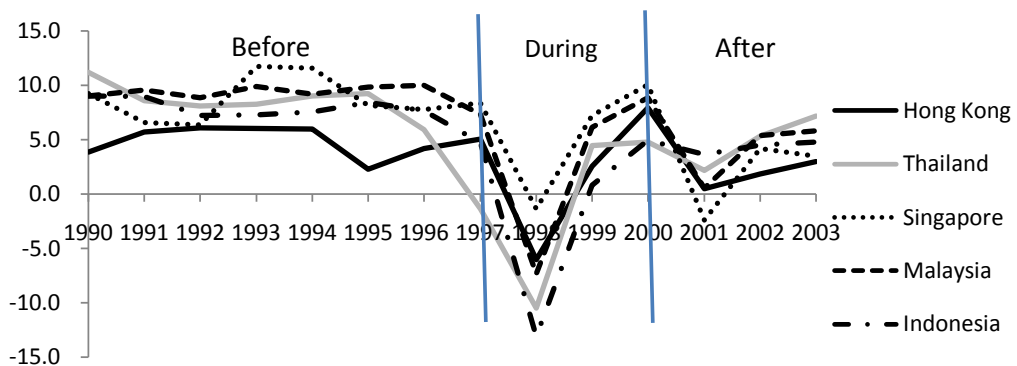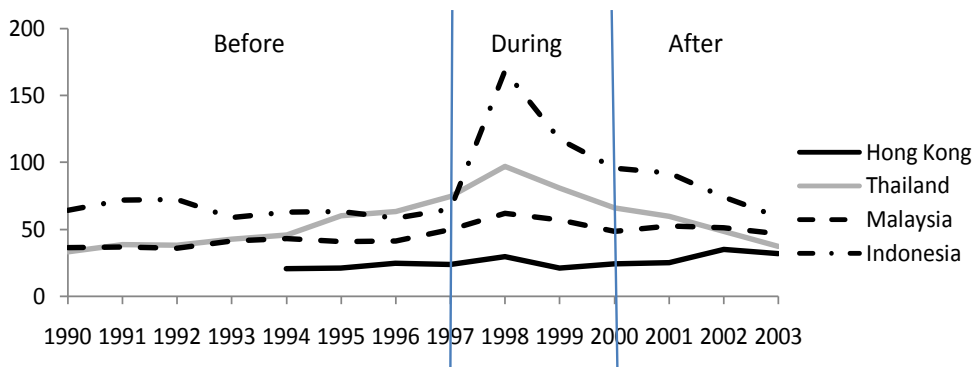

Figure 1.1. GDP growth in five Asian countries (% per annum, 1990-2003).
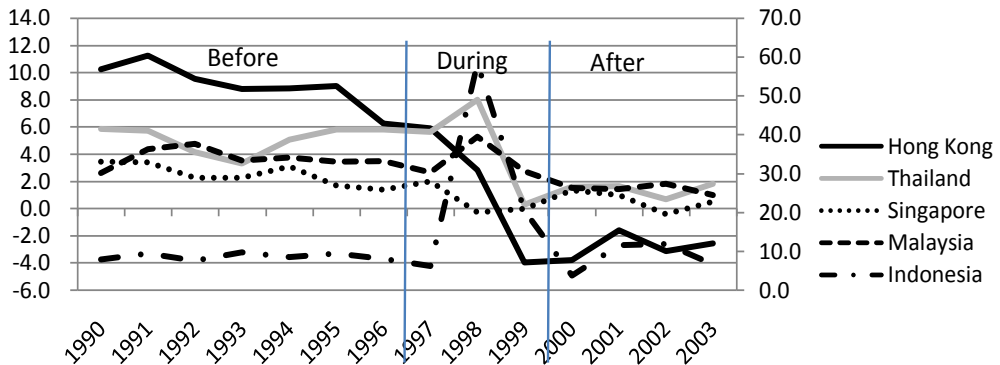
Figure 1.2. Inflation in five Asian countries (% per annum, 1990-2003).
Note: The right y-axis scales inflation in Indonesia, and the left scales the other four economies. Inflation in Indonesia was extreme in comparison with other economies.

Figure 1.3. External debt stocks (% of GDP, 1990-2003).
Note: Singapore has had no public external debts since 1995, so it is not displayed in the graph.
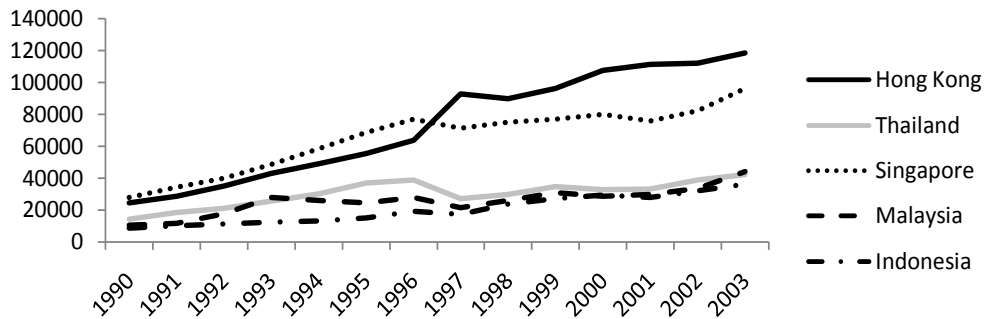
Figure 1.4. Total reserves (includes gold, current USD (million), 1990-2003).
Source: World Bank open data.

growth rate did not go down as much as Malaysia, Thailand, and Indonesia, and it recovered soon after the crisis (**Figure 1.1**). In contrast to Indonesia's hyper-inflation, Hong Kong experienced moderate deflation from the middle of 1998 (**Figure 1.2**). The lowest external debt and largest total reserve also contributed to Hong Kong's survival of the crisis, as shown in **Figure 1.3** and **Figure 1.4**.

The year 1997 was a milestone for Hong Kong, because of two significant events: 1) being hit by the AFC; and, 2) the transfer of sovereignty from the United Kingdom (UK) to China. Under the crisis circumstances, Hong Kong citizens viewed the handover with mixed feelings: pride on reunification with the motherland, and uncertainty over their future as an independent political and economic entity with superior standards of living compared to the mainland.

As the context of this study, the regional background for this crisis is presented first. The AFC officially originated in Thailand. The beginning of the traumatic and devastating event was marked by Thailand allowing the baht to float and its subsequent depreciation on 2 July, 1997. Within days of floating the baht, the turbulence quickly spread to neighbouring Southeast Asian economies. Authorities in Philippines, Malaysia, and Indonesia had to widen the bands for exchange rate fluctuations, which was soon replaced by direct floating. Following that, Singapore also allowed its dollar to depreciate.

In the third quarter of 1997, the turmoil extended northward to economies like Taiwan, Hong Kong, South Korea, and last but not least, Japan. After the initiation of the crisis, Taiwan had to change the managed floating exchange rate regime band it had pursued since 1989. It was widened for the New Taiwan dollar (TWD) from 26-27 per United States dollar (USD) to about 28.7 per USD, and official interventions were introduced to keep the exchange rate stable. However, on 20 October, Taiwan suddenly abandoned intervention and let its currency drop through 30 TWD per USD barrier for the first time in 10 years.[1] The drop of the TWD encouraged international speculators, who then began to attack the

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[1]Data are from *Financial Statistics Monthly, Taiwan District,* Economic Research Department, the Central Bank of China.

Hong Kong dollar (HKD). However, the battle in Hong Kong did not go according to the speculators' plans.

The Hong Kong Monetary Authority (HKMA) easily defeated some probing attacks in July and August of 1997 with no interest rate increment. On 23 October, "Black Thursday", when the Hong Kong's Real Time Gross Settlement became due, many banks which financed speculators found themselves short of the HKD and sought more currencies to sustain it. The Hong Kong Inter-Bank Offered Rate (HIBOR) was pushed up to 280%. The HKD was saved at the expense of soaring HIBOR and a sharp decline of 4.8% in the Hang Seng Index (HSI), which is the main index of the Hong Kong stock market. The close price and daily return of the HSI in October 1997 are displayed in **Figure 1.5**.
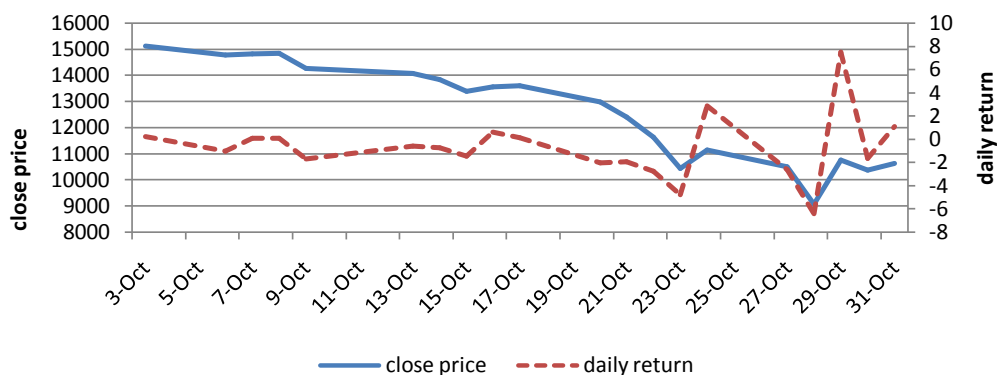
Figure 1.5. HSI close price and daily return in October 1997.
Source: the Hang Seng Indexes Company Limited.

Immediately following "Black Thursday", it was South Korea's turn as the next target for attack. Korean currency, the won, came under heavy selling pressure, while its foreign reserves were rapidly drained. In December, the Korean won was finally allowed to float. Japan was the last target of the speculators. Prior to the final floating of the Korean won in December 1997, one of Japan's 10 largest banks, the Hokkaido Takushoku Bank, went bankrupt in November, marking the starting point of Japan's banking crisis (Ostrom, 1998).

In early 1998, the Indonesian rupiah depreciated to RP 17,000 per USD, and

many Japanese banks cut their loans to the countries affected by the AFC. The regional turbulence and recession soon dashed the hopes for recovery from the crisis. Due to regional struggle of its neighbours, Hong Kong's economic situation was also more precarious in 1998. In the first quarter, Hong Kong's GDP suffered a negative year-on-year growth of −2.8%, which was much worse than expected. China also suffered a deceleration in its GDP and export, as well as domestic deflation. In addition, flood damage in summer affected China's faltering economy.

Taking advantage of the regional downturn, the hedge funds and other international speculators deliberately disseminated rumours about Chinese renminbi (RMB) devaluation (Jao, 2001). At the same time, they launched a so-called "double play", that is, a simultaneous attack on Hong Kong's foreign exchange market and stock market. On 13 August 1998, the HSI had fallen by some 60% off its earlier peak reached in August 1997. At that time, the Hong Kong authority intervened in the stock market and the futures market. Approximately 100 billion HKD worth of blue chips and future contracts were bought with Hong Kong's enormous foreign reserves in August. Controversial as it was, the intervention was successful against the speculators, thus the HKMA managed to maintain Hong Kong's pegged exchange rate. The speculators could not hold their position any longer and had to liquidate beyond October settlements (Jao, 2001).

Signs of recovery finally emerged in 1999. With the exception of Indonesia, all the economies heavily afflicted by the AFC began to resume a positive growth. One of the most obvious indicators of recovery was the stabilization of major currencies. Some major economic indicators of these affected economies throughout the crisis will be examined in more detail in the following sections.

1.2. Theoretical Framework

Since September 1983, the Hong Kong government has pegged the HKD to the USD at a rate of 7.8:1 (**Table 1.1**). This exchange rate regime made the HK dollar acceptable in international trade (Scott, 1997). While the rate has been fixed for

Table 1.1. Official exchange rate of five Asian countries (per USD, 1993-2003).

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
HK	7.7	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.8	7.8	7.8
Thailand	25.3	25.1	24.9	25.3	31.4	41.4	37.8	40.1	44.4	43.0	41.5
Singapore	1.6	1.5	1.4	1.4	1.5	1.7	1.7	1.7	1.8	1.8	1.7
Malaysia	2.6	2.6	2.5	2.5	2.8	3.9	3.8	3.8	3.8	3.8	3.8
Indonesia	2087	2161	2249	2342	2909	10014	7855	8422	10261	9311	8577

Source: World Bank open data.

the issuing and redemption of Hong Kong currency, the exchange rate was freely determined in the foreign exchange market and was maintained by a "cash" and "interest rate" arbitrage mechanism (Kueh & Raymond, 2002). The pegged exchange authority is known as the "Currency Board" (CB). The Board can ensure currency convertibility and maintain the confidence of the public. It can also promote growth, investment, and trade. Despite these advantages, it may also prevent a country from making monetary policy decisions independently and making the transmission of external shocks easier (H. P. Kang, 2000). An alternative exchange rate policy is the floating exchange rate regime, which inherently enables a country to effectively exert monetary policies. In his report, Song (2012) argues that mainland China, which is employing a managed fixed exchange rate regime, could have pushed the revolution of its financial industry forward if it had converted to a floating exchange rate arrangement.

Much of the literature investigates the importance of debt on a country's economy. By focusing on 14 emerging countries, Hussein and de Mello (2001) test the existence of a long-running relationship between exchange rate and foreign debts. Their finding suggests that foreign debt portfolio management was undesirable in the emerging countries under review. According to Chang and Velasco (2001), if a bank cannot commit itself to repay the due debt, the foreign creditors have a tendency to panic. Additionally, Chang and Velasco (2000) develop a model determining external debt, international reserves and structure of interest rates. They find that the term structure of a country's foreign debt de-

pends on its attitude towards the possibility of a bank run. Carmen et al. (2003) find that the threshold of debt intolerance for emerging economies is 15% to 20% of GNP. They propose that poorer countries do not necessarily need to avoid borrowing in boom time. Rather they are better off with a steady flow of capital. In addition, three parameters can be used to stabilize external debt: exchange rate regime, debt, and geographic structure of its trade (Laurent, Meunier, Miotti, Quenan, & Seltz, 2003). These findings can explain the loss of investors' confidence during the AFC in Thailand and Indonesia. In contrast, Hong Kong outperformed these countries in that the authority communicated effectively with the public to sustain investors' confidence in the domestic economy.

Precise figures of Hong Kong's foreign indebtedness are not available between 1985 and 2001. Therefore, the data of debt flows from the World Bank is used as a proxy to measure Hong Kong's indebtedness status. Based on the statistics, the inflow of debts to Hong Kong was 3.8 billion USD in 1996 and 10.2 billion USD in 1997 respectively. International Financing Review data show that Hong Kong issued 941 million and 6.7 billion USD in bonds on international markets in 1995 and 1997 respectively. The increased cost and reduced need for funds caused a decrease of issuance to 6.7 billion USD in 1998. Despite the rising issuance to 4.2 billion USD in 1999, total external debts remained low. According to statistics from the Organization for Economic Co-operation and Development (OECD), Hong Kong's total external debt in 1998 was 48.7 billion USD, which accounted for 29.7% of GDP (OECD, 2000) (see **Table 1.2**). Hong Kong's small external debt was one of the attributes contributing to its success against the currency crisis.

One of Hong Kong's successes in defending the crisis was that it managed to prevent the collapse of its fixed exchange rate regime. The reasons for the commitment of the fixed currency regime are studied under the framework of the Mundell-Fleming model. This model was developed based on the finding of James Meade, who first found the conflict between internal and external equilibrium under a fixed exchange rate. Specifically, a monetary authority cannot achieve internal and external stability solely with the use of monetary policies

Table 1.2. Hong Kong's external debt, 1994-1998 (in USD million).

|		1994	1995	1996	1997	1998
Medium-and long-term debt	Export credit	2122	2605	2778	2987	2664
	Non-bank	1545	1587	1548	1141	920
	Bank	577	1018	1230	1846	1744
	Bank claims and bonds	16,587	17,459	21,138	27,072	35,578
	Total	18,709	20,064	23,916	30,059	38,242
Short-term debt	Banks	7500	7200	12,000	8,500	8925
	Export credits	585	1913	2186	1,805	1489
	Total	8085	9113	14,186	10,305	10,414
	Total debt outstanding	26,794	29,177	38,102	40,364	48,656
	% of GDP	20.5	21.0	24.7	23.6	29.7

Source: adapted from Country Profile 2000: Hong Kong.

under a fixed exchange rate regime (Meade, 1951). In 1963, Mundell proposed the coordination of fiscal and monetary policies (Mundell, 1963). With Fleming's proposal on a fully mature international macroeconomic model (Mundell, 2001), the Mundell-Fleming model came into being. It states that under a fixed exchange rate regime and an open capital account, monetary policy can only change exchange reserves. However, under a flexible exchange rate, monetary policy exerts an obvious effect on national income via the interest rate. In other words, independent monetary policy is effective (Mundell, 1963).

The Mundell-Fleming model laid the theoretical foundation for the Impossible Trinity, which was first presented by Krugman (1999) after the AFC. The Impossible Trinity refers to the impossibility of having a fixed exchange rate, free capital movement, and an independent monetary policy simultaneously. As shown in **Figure 1.6**, Ranges I, II, III are realizable in contrast to Range IV, which represents the Impossible Trinity, i.e., fixed exchange rate, independent monetary policy, and free capital movements cannot be achieved at the same time.

In terms of the model, some countries which suffered badly from the AFC, like Thailand and Indonesia, abandoned their fixed exchange rate regimes for
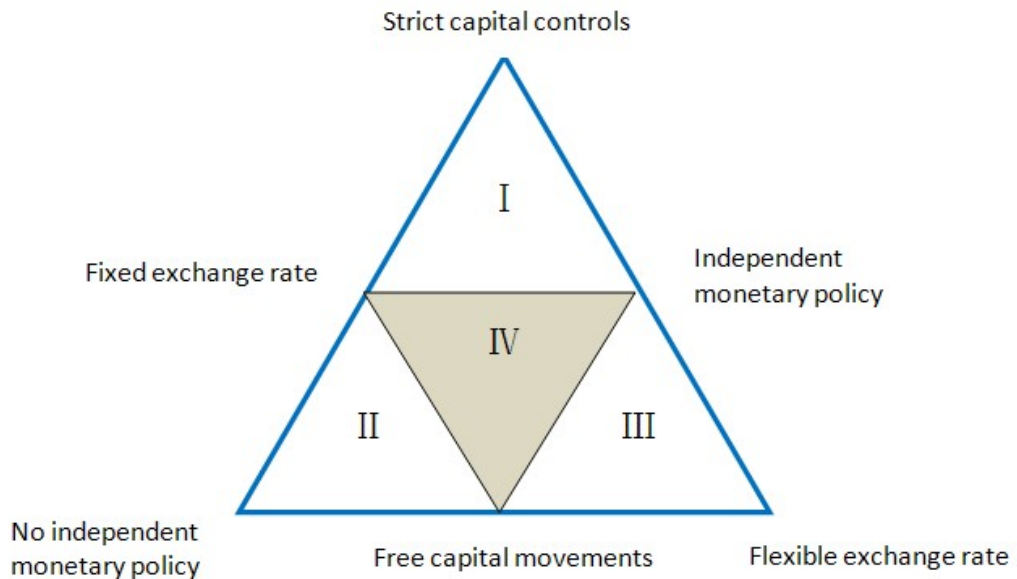
Zone	Exchange rate	Capital movement	Monetary policy	Possibility
I	Fixed	Controlled	Independent	Possible
II	Fixed	Free	Not independent	Possible
III	Flexible	Free	Independent	Possible
IV	Fixed	Free	Independent	Impossible

Figure 1.6. Impossible trinity.

independent monetary policies. In contrast, Hong Kong had committed to the pegged exchange rate and an open capital account since 1983. Therefore, Hong Kong did not impose its independent monetary policy on the economy. It came out of the AFC relatively unscathed compared with its neighbours. For these reasons, Hong Kong is a good candidate for investigating the reasons for standing out in a currency crisis. Specifically, the book studies three main research questions:

➢ What policies and interventions did the Hong Kong authority use to fight against speculators, rebalance its economy from the speculative attacks, and maintain its status as a financial centre?

➢ How did mainland China help in preventing the deepening of the AFC?

➤ What lessons does the experience of Hong Kong during the AFC offer to predict and pre-empt future financial crises?

1.3. Gaps in the Literature

There are four key gaps in extant literature that highlight the importance of this study. These gaps are explained next. First, current literatures concerning the AFC mainly focus on the following aspects: contagion between countries; corporate governance and firm value during the crisis; and the influence of the exchange rate and interest rate on a country's performance in the crisis. Not many studies focus on the impacts of policies taken by government. Second, most researchers concentrate on Southeast Asian countries which were badly affected by the contagions, such as Thailand, Malaysia, Indonesia, and the Philippines. However, Hong Kong, which survived the worst of the crisis and succeeded in fending its pegged exchange rate regime, has not attracted much attention. This is worth investigating because Hong Kong's success contains many implications and insights. Third, most studies on Hong Kong's self-defence are narratives; few apply statistical methods to the research. Fourth, most literature on Hong Kong issues in 1997-98, studies its reunification with mainland China, but seldom investigates the influence of the large investment and foreign reserve support from mainland China on Hong Kong's revitalization. As demonstrated later, China's assistance played a significant role during the period 1997-98.

This book aims to fill the literature gaps by focusing on analysis of the impacts of policies taken by Hong Kong with a combination of statistical methods and qualitative research. In spite of the wide application of statistic models I use in the book, none of existing studies has applied these methods to Hong Kong's defensive strategies during the crisis of 1997. The contributions made to applied statistics are enumerated below:

1) A better understanding of the influences of policy announcements, events, or shifts on stock markets could be gauged by examining what happened on

those specific time points. Such an approach would reveal the reasons why Hong Kong's stock market recovered more quickly than most of the other Asian economies.

2) Few studies estimate the Structural Vector Auto Regressive (SVAR) model for Hong Kong's economy. As a small open economy, its monetary policies are largely influenced by external factors and its special position as a financial centre. It is worth studying the reasons for Hong Kong outperforming in this respect.

3) Only a few studies focus on predicting crises with non-parametric signal approach, among which none takes Hong Kong as the focus of attention. In this book, I concentrate on prediction of Hong Kong's financial crises, and the time span is as wide as the data allows.

4) Apart from the innovations made in the application of statistical methodology, this study is the first on record to qualitatively survey related questions by interviewing senior officers in the HKMA, and university scholars with similar research backgrounds.

1.4. Aims of the Study

This book investigates Hong Kong's economic performance during the AFC starting from 1997. Being faced with attacks from international speculators, most emerging economies in Southeast Asia gave up the previous fixed exchange rate and competed to depreciate their currencies. Hong Kong, on the other hand, managed to maintain its pegged exchange rate despite repeated attacks from speculators. Hong Kong finally escaped the worst of this crisis and the success could be attributed to several factors that are revealed in Chapters 3-4.

The research question posed is why Hong Kong survived the worst of the 1997 AFC. The aims of conducting the study are:

1) To study the contemporaneous relationships between Hong Kong's output, monetary policies, stock market returns, and other economic variables (addressed in Chapter 3);

2) To investigate the monetary transmission mechanism through interest rate, stock exchange, and exchange rate channels (addressed in Chapter 3);

3) To test the role of activist policies adopted by the HKMA during the 1997 crisis in stabilizing the HKD (addressed in Chapter 3);

4) To qualitatively evaluate the effectiveness of the Hong Kong Government interventions; and the importance of the linked exchange rate (focus of Chapter 4);

5) To examine the behaviour of some leading economic indicators of Hong Kong before the crisis (focus of Chapter 5);

6) To provide policymakers timely information to adopt preventive measures (focus of Chapter 5).

1.5. Organization of the Study

This book is comprised of six chapters. The first chapter has introduced the context and rationale for the study, the theoretical framework, the literature gaps, the research objectives, and the significance of this study.

The second chapter introduces Hong Kong's political background, monetary system, and reviews Hong Kong's course of events during the financial crisis of 1997. In addition, based on existing literature, the reasons for the crisis and some of the most affected countries are presented. The following three chapters are the core chapters for the study. Each applies a different methodology on Hong Kong's economic performance during the crisis.

Chapter 3 studies the contemporaneous relationships between Hong Kong's output, monetary policies, stock market returns, and other economic variables. A small open economy SVAR model is estimated with foreign exogenous and contemporaneous restrictions. Through the empirical results of impulse response functions and variance decompositions, both the United States (US) and domestic monetary policies are found effective in affecting Hong Kong's real economy and asset markets. The monetary transmission mechanism through interest rate,

stock exchange, and exchange rate channels is investigated. The empirical results suggest that the deliberate monetary policies adopted by the HKMA during the 1997 crisis were valid and timely.

To obtain knowledge of Hong Kong's survival of the crisis, Chapter 4 reconciles the findings in the previous chapters with qualitative information. It examines the linked exchange rate regime, the performance of the HKMA, the government interventions, the positive "non-interventionism", the public communication, and the lessons related to the AFC. The Mundell-Fleming model is applied to Hong Kong, which could have influenced the economic policies chosen by Hong Kong. The key findings are: 1) the Hong Kong Authority kept its capital account open during the AFC in order to maintain its status as an international financial centre; 2) Hong Kong successfully mitigated the adverse effects from the crisis with sound fundamentals, appropriate policies, and prompt public communication; and 3) Hong Kong had the People's Bank of China, with its large foreign reserves, as a backstop to provide credibility to the market on its ability to defend the HKD.

Following the qualitative analysis is Chapter 5, which tests whether selected indicators effectively issue signals before a currency crisis occurs in Hong Kong, thus providing policymakers timely information to adopt preventive measures. With the signal approach, several findings are listed: 1) 11 currency crises are identified for Hong Kong with the "exchange market pressure" index during the period December 1993 to August 2003; 2) 6 out of 15 indicators are shown to be effective in estimating crises; and 3) combined use of these indicators is effective in forecasting future crises for Hong Kong.

The last chapter concludes this book with key findings of each chapter and the framework of the whole book. It also summarizes the implications for both economic theory and policy practice. The chapter concludes with the limitations and directions for future studies.