

East Asian Crisis and Recovery :
The Role of International Capital Flows

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The sharp decline in the once-stellar performance of East Asia following the financial crisis in 1997 has sparked an intense debate and a large body of literature seeking to explain its origins, causes and consequences. The currency and financial crisis in East Asia made a modest beginning marked by the collapse of the Thai baht and its subsequent devaluation on July 2, 1997. After a series of speculative attacks, the country was forced to let its currency float. However, what started as a local financial crisis, within weeks, became a regional problem. Within weeks Malaysia and Indonesia devalued their currencies and the Korean and Philippine currencies also began to weaken. Stock markets across the region fell as investors pulled out their capital. As contagion raged and foreign capital fled, equity markets and currencies throughout Southeast Asia came under pressure. Within months, Indonesia and the Republic of Korea (Korea henceforth) were engulfed in crisis. The speed and severity of the East Asian currency and financial crisis took both investors and economists by surprise. Financial turmoil spread with a ferocity that none foresaw and Asia's once vibrant economies, used to decades of rapid growth, were plunged into deeper recession. For many of the East Asian economies the economic hardship was similar to that suffered during the Great Depression of the 1930s.

Half a decade has passed since the now (in)famous East Asian crisis. While it may be too early to clearly assess the economies over their post-crisis years, a preliminary attempt can be made. A comparison of the performance of the major macroeconomic indicators in the pre-crisis and post-crisis years would throw light on whether the East Asian economies have fully recovered or are yet on the path of recovery. Such assessment will not only be introspective for the East Asian economies but also a lesson in responsive adjustment in a similar crisis for other developing countries with similar extent of vulnerability. Because no single element is likely to have caused the East Asian crisis, the issue is the degree to which each of the different factors contributed to its onset and severity.

The present paper addresses these concerns through a comparison of empirically observed data on the East Asian economies over the decade of 1990 to 2000. The emphasis is on the role of international capital flows during the East Asian crisis as well as recovery. The most obvious indicator of recovery is the attainment of the pre-crisis levels of economic performance.

The paper is organized into three broad sections. Section I gives an overall review of the alternative theories, hypotheses and explanations provided for the crisis in the literature. Section II derives the theoretical framework for subsequent analysis of the interactions of various external macroeconomic fundamentals in assessing the East Asian economic performance over the pre- and post-crisis period. Section III concludes with major highlights of the analysis, policy prescriptions and areas for future research.

Asian Crisis in Perspective

To answer some of the fundamental questions on the causes and consequences of the East Asian crisis, it is important to understand the crisis in perspective by first addressing the factors behind the past strong growth performance of the crisis-hit economies and second, trying to explain the causes of the crisis through the various alternative explanations provided.

Over the past two decades, the consistently high growth performance of the East and Southeast Asian economies was marked by growth rates in the range of 6-8 percent per annum together with marked improvement in social indicators. Economic policies were, by far, the main factor and a combination of policies contributed to such superlative performance. These policies fall under four main categories – macroeconomic stabilization policies, strong savings and investment performance, openness of the economies and human capital formation.

Alternative Theories of the Crisis

Why was this prolonged period of strong economic performance interrupted? Two general interpretations dominate the debate. While one blames the poor economic fundamentals and policy inconsistencies, the other argues that Asia fell victim to a

financial panic where negative sentiment became self-fulfilling. However, it is very difficult to persist with the case that the crisis was due to weak fundamentals. In fact, as outlined above, the East Asian victims of the crisis were the countries that had the strongest macroeconomic fundamentals in the world if one observes the traditional fundamentals of fiscal discipline, low inflation, high savings rates, rapid growth, and high reserves and even, in some cases, modest current account deficits and low levels of foreign and domestic debt. Table 1 presents selected macroeconomic indicators of the 8 East Asian economies.

Table 1 Selected Macroeconomic Indicators for the East Asian Economies, 1990-1997 (percent)

Economy	Growth rate			Savings/GDP			Investment/GDP			Current Account/GDP		
	1990-1995	1996	1997	1990-1995	1996	1997	1990-1995	1996	1997	1990-1995	1996	1997
Korea	7.8	7.1	5.5	35.6	33.7	33.1	36.8	38.4	35.0	-1.2	-4.7	-1.8
Indonesia	8.0	7.8	4.9	31.0	27.3	29.9	31.3	30.7	31.3	-2.5	-3.4	-1.4
Malaysia	8.9	8.6	7.7	36.6	42.6	43.8	37.5	41.5	42.0	-5.8	-5.0	-5.3
Philippines	2.3	5.8	5.2	16.6	18.5	20.3	22.4	23.1	23.8	-3.7	-4.7	-5.3
Singapore	8.6	6.9	7.8	47.0	51.2	51.8	34.9	35.3	37.4	0.6	15.4	15.4
Thailand	9.0	5.5	-0.4	34.4	33.7	32.9	41.0	41.7	35.0	-3.9	-7.9	-2.0
Hong Kong	5.0	4.5	5.3	33.6	30.7	31.8	29.6	32.1	35.4	--	--	--
Taipei, China	6.4	5.7	6.8	26.9	25.1	24.8	24.0	21.2	22.0	4.2	4.0	2.7

Source : Asian development Outlook, 1999, Asian Development Bank

Proponents of the ‘fundamentalist’ view, however, argue that Asia’s healthy macroeconomic indicators in table 1 painted a misleading picture. In reality, they argued, Asia’s economies suffered from serious structural problems as well as policy inconsistencies. They point out that the symptoms already existed; in Thailand, for instance, the current account deficit was dangerously large and rising fast. Moreover, seemingly harmless macroeconomic indicators, such as a healthy budget balance could mask real economic weakness.

At the same time, regarding the causes and consequences of the crisis, there is a tendency among commentators to lump together the East Asian economies which are directly or indirectly affected by the crisis and is particularly notable among those who consider the crisis as the end of the ‘Asian model of Development’. However, those familiar with the region are aware of the considerable variations among these countries with respect to policies pursued, institutions established and the level of development reached. The four

tigers – Hong Kong, Korea, Singapore and Taipei (Taiwan) – are different from Indonesia, Malaysia and Thailand. Even within the former group, while Hong Kong is distinguished by its laissez-faire economic policies, the other three are known to have followed a more interventionist approach to development. Also, the latter group of economies is relatively weaker in its economic performance and is not in a position to sustain large current account deficits over the longer term and need to reduce their trade deficits so as to minimize the risk of serious balance of payments problems and a sharp slowdown in growth.

Most commentators who have sought to explain the East Asian crisis have agreed that although some macroeconomic and other fundamentals may have worsened in the mid-90s, the extent and depth of the crisis can be attributed not to a deterioration in the fundamentals but rather to the panicky reaction of anxious domestic and foreign investors. It was not the traditional framework but rather the financial structure that was at the center of the problem. The panic interpretation in this case views the self-fulfilling pessimism of international lenders as the root cause of the crisis. If enough investors are suddenly seized with panic and demand immediate payment, then financial intermediaries are forced to destructively liquidate long-term assets at a great loss.

The Korean crisis, particularly, came as a surprise to many observers but with the benefit of hindsight they seem to have overlooked the significance of three important trends that were under way, which eventually led to the crisis – sustained appreciation of the currency, massive short-term borrowing abroad by the private sector and excessive investment in a number of industries. Korea tapped external finance in its post-war industrialization primarily through borrowing from international banks. Theoretically, as the investment bubble continues, growth remains strong, eventually leading to deterioration in the external balance. In most countries hit by the crisis in 1997, including Korea, aggregate short-term debt overshoot foreign reserves by a substantial margin. As recognition of the fact dawned together with the lack of US dollars as the last resort, financial panic set in. The gap between short-term debt, owned in large part to non-residents, and foreign reserves was, in part, the result of capital account liberalization.

Methodology of the Crisis

The *reversal of capital flows* was the immediate reason for the eruption of the crisis first in Thailand followed by Indonesia and Korea. Following a protracted period of strong economic growth, the East Asian economies had attracted massive inflows of foreign capital during the early 1990s, including inflows of short-term nature. In Thailand, the short-term inflows alone accounted for as much as 5 percent of GDP on average during 1994-96. They were partly promoted by relatively weak economic growth in Europe and Japan in the early 1990s. It was also probably the desire of international investors to diversify their portfolio following the financial crisis in Mexico in 1995. Domestic financial institutions, however, were not in a position to effectively divert these resources into productive uses. Banks, consequently, ended up investing in property and equity and prices on these assets became inflated. In Indonesia, private enterprises were the main debtors of short-term external debt. In Korea, where the scope for enterprises to borrow directly from abroad was limited, banks and their foreign subsidiaries were the main debtors. Once doubts arose about the solvency of the borrowers, investors began withdrawing short-term financing. Exchange rates plummeted as did stock and property prices to an extent that was unimaginable and unprecedented. As the crisis became regional and global in nature, the problems intensified.

The *pegging of exchange rates* to the US dollar and the resultant decline in competitiveness after the strengthening of the dollar in mid-1995 was one of the reasons for the turnaround in short-term capital flows. Export growth weakened in Indonesia and Thailand and current account deficits rose. Authorities abandoned the peg only much belatedly once pressures had already mounted and let the exchange rates float.

There were other structural problems in the region which included (a) *trade restrictions*, such as maintenance of trade monopolies, quantitative restrictions on trade and other trade barriers. (b) *capital controls*, including restrictions on foreigners' access to the equity and corporate bond markets and restrictions on foreign borrowing by corporations. In the case of Korea, foreign borrowing – channeled through the banks – had financed excessive investment of the conglomerates, the so-called chaebol. These conglomerates suffered from very high debt/equity ratios. In addition, a large terms of trade decline

during 1996-97 hurt the profitability of the conglomerates and resulted in a series of bankruptcies in 1997 detrimental to the financial sector.

Thus, East Asia suffered a case of typical private sector external debt crisis by allowing private sector unrestricted access to external finance in the belief that, for private firms, the difference between domestic and foreign debt would not be significant, since they were expected to assess carefully the benefits and costs on which their survival depended. It was also observed that the so-called non-debt-creating financial inflows – acquisition of property and securities by non-residents – played some role in sustaining speculative bubbles in equity and property markets in East Asia. The sizeable capital inflows gave rise to investment in equity and property and the risks associated with price bubbles. While the East Asian crisis can be described either as excessive borrowing abroad by the private sector or as excessive lending by international financial markets, in any case, there seemed to be a failure of free capital markets to produce an optimal global allocation of capital.

Of the 8 East Asian economies, 5 experienced negative growth rates in 1998, the year immediately following the crisis. These were, Hong Kong, Indonesia, Korea, Malaysia and Thailand, while 2 of them – Philippines and Singapore experienced marginally negative growth rates. Taiwan was the only economy to see a positive growth in 1998. What do the former two sets of countries have in common but which distinguishes them from Taiwan? The one feature that discriminates correctly between the two groups is whether or not they had liberalized the capital account of the balance of payments. Thus, if the crisis became a general East Asian crisis, rather than just a Thai crisis, it was because the countries had built up a level and structure of liabilities that made them extremely vulnerable to adverse external shocks.

An Empirical Analysis of the East Asian Crisis

In order to measure the overall economic performance in a comparative framework, various indicators are identified from the foregone discussion. These indicators are :

- Net private foreign capital flows including foreign portfolio investment and private commercial bank lending
- Foreign direct investment flows
- Current account balance
- Capital account balance and
- Trade flows

Each of these performance indicators is examined over the decade so that a comprehensive pattern of the pre- and post-crisis behavior of the variables can be traced. 8 East Asian economies are chosen – Hong Kong, Indonesia, Korea Rep., Malaysia, Philippines, Singapore, Thailand and Taiwan. Of these, Thailand, Malaysia and Indonesia, the primary impetus for the crisis, are closely analyzed.

The paper employs the ordinary least squares Multiple Regression analysis using pooled data for the 8 economies spanning from 1990 to 2000. The period is further sub-divided into the pre-crisis (1990-1997) and post-crisis (1998-2000) periods for a comparative assessment of the impact of the crisis on the East Asian economies. A major part of the data is downloaded from the internet website of the Asian Development Bank (www.adb.org) as well as printed statistical publications and Reports of the Asian Development Outlook.

The Model

The analysis employs a multi-equation model each specifying the interrelationships among the various macroeconomic performance indicators. The equations incorporating the indicators listed above take the following basic specifications –

Trade, Investment, Debt Flows and Growth

$$gdp = c_1 + t_1 + a_1x + b_1m + d_1gdi + e_1ed + u_1 \quad (1.1)$$

$$gdp = c_2 + t_2 + a_2x + b_2m + d_2fdi + e_2ed + u_2 \quad (1.2)$$

$$gdp = c_3 + t_3 + a_3x + b_3m + d_3npkf + e_3ed + u_3 \quad (1.3)$$

Investment flows and Balance of Payments

$$ka = c_4 + t_4 + d_4gdi \quad (1.4)$$

$$ka = c_5 + t_5 + d_5npkf \quad (1.5)$$

$$cad = c_6 + t_6 + d_6fdi \quad (1.6)$$

$$cad = c_7 + t_7 + d_7 npkf \quad (1.7)$$

$$bop = c_8 + t_8 + d_8 fdi \quad (1.8)$$

Investment flows and External Debt

$$ed = c_9 + t_9 + d_9 gdi \quad (1.9)$$

$$ed = c_{10} + t_{10} + d_{10} fdi \quad (1.10)$$

$$ed = c_{11} + t_{11} + d_{11} npkf \quad (1.11)$$

where,

c = constant

t = time trend

gdp = gross domestic product - % change

x = exports/GDP ratio

m = imports/GDP ratio

gdi = gross domestic investment/GDP ratio

fdi = foreign direct investment – US \$ billion

npkf = net private capital flows – US \$ billion – consists of private debt and non-debt flows. Private debt flows include commercial bank lending, bonds and other private credits, while non-debt private flows are foreign direct investment and portfolio equity investment.

ed = external debt – US \$ billion – debt owned to non-residents payable in foreign currency, goods or services. It is the sum of public, publicly guaranteed and private non-guaranteed long-term debt, use of IMF credit and short-term debt.

cad = current account deficit/GDP ratio

ka = capital account - US \$ billion

bop = balance of payments - US \$ billion.

The above model with various specifications of its equations is tested for the two sub-periods of 1990-1997 (pre-crisis) and 1998-2000 (post-crisis). The entire period of 1990-2000 is also tested to understand the overall impact of the crisis on the East Asian economies. The results of the analysis are presented in Tables 1 – 3.

Table 2 : Regression Results – Pre-Crisis East Asia – 1990-1997

Eqn. No.	Dependent Variable	Explanatory Variables [N = 64]										Basic Statistics	
		c	t	x	m	gdi	fdi	npkf	ed	ka	bop	R ²	F
1.	gdp	4.40 (5.10)***	0.08 (0.61)	-0.002 (0.04)	0.13 (2.77)***							0.20	6.31 ***
2.	gdp	- 2.31 (2.02)**	0.02 (0.24)	- 0.01 (0.02)	0.11 (3.22)***	0.22 (7.09)***						0.56	21.21 ***
3.	gdp	3.86 (5.12)***	- 0.08 (0.69)	- 0.01 (0.28)	0.14 (3.44)***		0.48 (4.67)***					0.41	11.82 ***
4.	gdp	4.51 (5.63)***	- 0.20 (1.32)	0.01 (0.17)	0.11 (2.57)***			0.21 (3.30)***				0.32	8.23 ***
5.	gdp	-2.37 (2.09)**	0.08 (0.73)	-0.01 (0.12)	0.11 (3.24)***	0.23 (7.27)***			- 0.01 (1.35)			0.57	17.57 ***
6.	gdp	3.82 (4.58)***	- 0.21 (1.38)	0.01 (0.19)	0.13 (3.27)***		0.51 (4.31)***		0.01 (1.14)			0.42	8.86 ***
7.	gdp	4.91 (6.05)***	- 0.18 (1.21)	0.01 (0.09)	0.11 (2.52)***			0.28 (3.87)***	- 0.02 (1.89)**			0.34	7.59 ***
8.	gdp	4.52 (5.14)***	0.11 (0.75)	0.01 (0.17)	0.10 (1.97)**				-0.01 (0.63)	0.08 (1.67)		0.21	4.40 ***
9.	gdp	4.07 (4.74)***	0.07 (0.53)	0.01 (0.16)	0.10 (2.13)**				0.01 (0.98)		0.16 (2.58)***	0.26	5.41 ***
10.	ka	4.96 (1.01)	- 1.38 (3.17)***			0.002 (0.01)		0.84 (3.45)***				0.21	6.70 ***
11.	ed	23.67 (2.45)***	9.02 (4.48)***					- 5.29 (2.94)***				0.27	11.00 ***
12.	ed	14.53 (1.81) *	1.77 (0.92)					4.01 (4.39)***				0.36	18.11 ***
13.	bop	3.71 (2.45)***	- 1.00 (3.04)***					0.77 (2.71)***				0.16	6.09 ***
14.	cad	- 3.28 (2.09)**	- 0.32 (1.00)					1.14 (3.92)***				0.20	7.78 ***
15.	cad	- 1.65 (1.15)	0.65 (1.90)*					- 0.47 (2.87)***				0.09	4.17 **

Note : (a) t-values in parentheses (b) Refer text for definition of variables (c) *** = 1% significance ; ** = 5% significance; * = 10% significance
Source : Author's Calculations

Table 3 : Regression Results – Post-Crisis East Asia – 1998-2000

Eqn. No.	Dependent Variable	Explanatory Variables [N = 64]								Basic Statistics	
		c	t	x	m	gdi	fdi	npkf	ed	\bar{R}^2	F
1.	gdp	- 11.16 (3.08)***	4.71 (2.62)***	0.10 (0.62)	- 0.05 (0.45)					0.40	6.00 ***
2.	gdp	- 13.00 (2.43)**	4.38 (2.22)**	0.20 (1.06)	- 0.03 (0.36)	0.03 (0.13)		0.32 (1.82)*		0.50	5.66 ***
3.	gdp	- 9.60 (1.52)	4.18 (2.18)**	0.17 (0.88)	- 0.04 (0.48)	0.08 (0.37)			- 0.04 (1.89)*	0.51	5.77 ***
4.	gdp	- 6.83 (2.07)**	3.48 (2.15)**	0.18 (1.34)	- 0.02 (0.24)		0.11 (1.77)*		- 0.04 (2.50)**	0.58	7.32 ***
5.	gdp	- 9.63 (2.78)***	4.47 (2.97)***	0.18 (1.30)	- 0.04 (0.47)			0.24 (1.75)*	- 0.03 (1.78)*	0.58	7.28 ***
6.	gdp	- 17.33 (3.40)***	3.16 (1.61)	0.29 (1.53)	- 0.03 (0.30)	0.32 (1.65)*				0.44	5.57 ***
7.	gdp	- 12.48 (3.86)***	4.52 (2.85)***	0.18 (1.29)	- 0.04 (0.39)			0.34 (2.59)**		0.53	7.46 ***
8.	cad	-7.48 (1.27)	-2.18 (0.96)	0.14 (0.64)	-0.05 (0.47)	0.62 (2.78)***				0.29	3.29 **
9.	cad	5.92 (1.99)**	- 1.16 (0.90)					0.42 (2.48)**		0.21	3.97 **
10.	ed	95.03 (3.68)***	- 5.45 (0.49)					- 3.04 (2.10)**		0.10	2.21

Note : (a) t-values in parentheses (b) Refer text for definition of variables (c) *** = 1% significance ; ** = 5% significance; * = 10% significance

Source : Author's Calculations

Pre-Crisis, 1990-1997

The build-up to the East Asian crisis in 1997 was reflected in the large capital inflows into the region particularly in Thailand, Korea and Malaysia. These inflows were primarily in the form of short-term capital investments which by their very nature are highly volatile and prone to reverse flight at the slightest sign of instability. The regression results in Table 2 corroborate the excessive reliance on private capital flows in East Asia. Economic performance as measured by GDP growth was predominantly determined by imports (*m*), gross domestic investment (*gdi*), foreign direct investment (*fdi*) and net private capital flows (*npkf*). All these variables show the correct, hypothesized positive sign and are statistically significant at the 1% levels in the various specifications either independently or in conjunction with other variables (equations 1-7). The \bar{R}^2 s in all the equations indicate that all these factors explain around one-fifth to more than one-half of the changes in GDP growth in East Asia during the pre-crisis period. However, in all the specifications, the F-value is statistically significant at the 1% level showing a high goodness-of-fit of the equations. *Exports, surprisingly, do not show statistical significance at all in any of the specifications.*

Net private capital flows also explain the changes in the capital account, external debt and current account deficit of the region (equations 10, 12 and 15). The positive coefficients of the variables and the F-values in the former two specifications are statistically highly significant at the 1% level. The \bar{R}^2 s indicate that while the variable explained around one-fifth of the changes in capital account (equation 10), the same explained more than one-third of East Asia's external indebtedness (equation 12). On the other hand, the negative sign of the variable in equation 15 implying a negative association with current account deficit indicates that a part of these private capital flows were also diverted towards meeting the current account deficit. The \bar{R}^2 , albeit, remains extremely low and the F-value is statistically significant at the 5% level.

Foreign direct investment also significantly explains changes in external debt, overall balance of payments and the current account deficit during the period (equations 11, 13 & 14). The negative coefficient of the variable (*fdi*) in equation 11 implies that equity capital in the form of FDI served to ease the external debt burden of the East Asian economies during the period. The coefficient and the F-value are statistically significant

at the 1% levels. The \bar{R}^2 of 0.27 shows an explanatory power of more than one-fourth of the variable. The positive coefficients of *fdi* in equations 13 and 14 indicate towards the positive impact of FDI on current account deficit and overall balance of payments. The implication is quite clear in that FDI served to increase the region's current account and overall balance of payments deficits. Though the \bar{R}^2 s are low, the F-values are statistically highly significant at the 1% levels in both specifications indicating a high goodness-of-fit of the equations.

Finally, through the impact of the above variables on East Asia's overall balance of payments, the latter variable shows a positive impact on GDP growth (equations 9). The deeper implication is that GDP growth in East Asia during the pre-crisis period of 1990-1997 was driven primarily by the region's predominant capital account reflecting the massive capital inflows which was, in turn, reflected in the overall balance of payments. At the same time, the negative coefficient of external debt (*ed*) along with its 5% statistical significance in equation 1 implies that increased external indebtedness served to depress growth in East Asia during the period as part of the income generated through the capital inflows was redirected towards meeting the debt obligations owed to nonresidents outside the economies which eroded the resources available for domestic output generation.

In all the above specifications from equations 1 through 15, while the positive coefficient of the time trend (*t*) shows an accelerating effect of the variables on GDP growth over time in all 8 East Asian countries, the negative coefficient of the same shows their decelerating effect on GDP growth. However, where it is statistically non-significant it can be ignored altogether.

In sum, the regression results in Table 2 reflect the behavioral pattern of East Asian economic performance during its pre-crisis phase and the subsequent build-up to the crisis in 1997.

Post-Crisis, 1998-2000

The consequences of the pre-crisis capital inflows and the actual crisis of 1997 were felt subsequently over the post-crisis period after 1997. Since the relevant data is available only up to 2000, the pooled regression analysis for the 8 countries over the 3-year period have less number of observations (N=24) compared to the previous phase. Although the

results may at best be considered preliminary and interpreted with caution, there are some important observations that can be made. Table 3 presents the post-crisis regression results. As observed in equations 1 through 7, firstly, trade flows, including imports, no longer explain changes in GDP growth during the post-crisis period. In none of the specifications do either exports or imports turn out to be statistically significant variables. Secondly, investment flows, both gross domestic investment (*gdi*) and foreign direct investment (*fdi*) show a very low statistical significance at the 10% level in explaining GDP growth during the period. Thirdly, net private capital flows (*npcf*) continue to show a positive and statistically significant impact on GDP growth while external debt also continues to show a depressing effect on GDP growth with the variable (*ed*) statistically significant at the 5 % level in equation 3. The \bar{R}^2 s are quite high showing the explanatory power of the variables ranging from 40 to 60 per cent.

Net private capital flows and gross domestic investment (*gdi*) have served to increase the region's current account deficit as seen by their positive coefficients, statistically significant at the 5% and 1% levels respectively in equations 8 and 9. The F-value also shows a high goodness-of-fit at the 5% level in both specifications. Their explanatory power (\bar{R}^2) ranges from one-third to one-fifth. At the same time, net private capital flows seem to have been diverted towards meeting external debt obligations since the coefficient of the variable, *npcf*, has a negative sign in equation 10 implying that increased private capital have served to reduce external debt in East Asia. However, although the coefficient is statistically significant at the 5% level, the \bar{R}^2 is extremely low and the F-value, too, is statistically insignificant.

The positive coefficient of the time trend in relation to GDP growth (eqn, 1-7) shows an accelerating effect of the relevant variables over time. The statistical significance is also high at the 1% level so that the impact of the variables over time cannot be ignored. However, the intertemporal impact of trade flows, gross domestic investment and net private capital flows on the current account deficit and external debt can be ignored owing to the statistical non-significance of the time trend in equations 8-10.

In sum, growth in East Asia during the post-crisis period also seems to have been driven by net private capital flows similar to the pre-crisis period. The major difference,

however, remains in the level of statistical significance of the variable between the two sub-periods.

Overall, 1990-2000

Looking at the analysis of the overall period of 1990-2000, net private capital flows, quite presumably, stand out as one of the predominant variables explaining GDP growth and capital account changes with a positive sign of the coefficient in equations 5, 6 & 9 in Table 4. Trade flows, both exports and imports, and gross domestic investment stand out as the other three predominant factors explaining GDP growth (equation 1-6). The latter variable also shows an augmenting impact on the region's capital account as seen from the positive sign of *gdi* in equation 8. Foreign direct investment, while not predominantly explaining GDP growth (equation 3 & 4), significantly and positively explains changes in current account deficits and overall balance of payments and is negatively related to the region's external indebtedness (equations 10-12). While the \bar{R}^2 s are low, the F-values show a high and statistically significant goodness-of-fit at the 1% level.

All in all, the logical outcome of the massive capital inflows into East Asia resulted in the same being a predominant determinant of the region's economic performance during the entire period of 1990-2000 including the pre-crisis and post-crisis sub-periods.

Conclusions

The many explanations forwarded for the East Asian financial crisis in 1997, began with the attack on macroeconomic fundamentals and structural problems in the affected economies. However, as Williamson (2002) very correctly asserts, a closer look at these fundamentals makes this case highly unsustainable. As a matter of fact, these very same economies had the strongest fundamentals. Later studies revealed that the major culprit was financial liberalization in these economies of which the primary indicator was capital account convertibility. At the same time, economies such as Thailand, where the crisis triggered off, followed a pegged exchange rate system which is contradictory to such financial liberalization. Any attempt to intervene in order to protect the peg will lead to huge depletion of reserves. Also, as became the case with the East Asian economies, capital account liberalization, led to massive capital inflows (owing to the very fact of strong fundamentals). However, these were typically disproportionately in the form of

short-term capital that are, by their very nature, highly volatile and prone to reverse flight at the slightest sign of instability.

Equity capital – investment in fixed productive assets – in the form of foreign direct investment, benefits from a consistently growing economy in the debtor country. But portfolio capital, in which form most capital flowed into East Asia, is geared to rapid speculative gains. Fund managers have incentives, first to invest in higher-risk, higher return countries, then to rush for the exits at the first hint of crisis to protect their short-term gains. The result is an unprecedented volatility in financial markets. These tendencies helped to spread the crisis from Thailand to other countries of East Asia.

The various regression analyses done in the study corroborate the overwhelming importance of private capital flows in enhancing growth in East Asia. Such growth at best can be described to be ‘borrowed’ since it not only increases external debt liabilities as it did for East Asia, but also inflates the capital account and thereby the balance of payments of the economy. Over some future time period when these debt obligations are met from the temporarily increased incomes, growth will once again falter. A surprising result of the analysis is the non-importance of exports in explaining GDP growth in East Asia, which stands contrary to popular belief that the superlative economic performance of East Asia was export-driven.

Policy Prescriptions

One of the interesting things about the East Asian crisis is that it was not precipitated by an exogenous shock. The preceding sections of the paper make it clear at once that the root cause of the East Asian crisis was the major macroeconomic policy blunder of poorly regulated capital account liberalization by way of unsupervised financial institutions. This is not to say that capital account convertibility (CAC) must never be adopted or that it should be postponed indefinitely. One needs to consider whether CAC promises other benefits that outweigh its risks and whether there are other policy instruments that can be deployed to avoid risks. Thus, the case is strong for imposing capital controls for *regulated inflows/outflows of capital*. Even within the purview of CAC, mechanisms towards capital controls avoids a dangerous build-up of external debt, particularly in short maturities. This implies taking care with how authorities structure their own borrowings, both international and domestic. Not only should external

borrowing be long-term but also needs to be phased out so as to avoid a bunching of maturities. Though some of the borrowing may be short-term it becomes still important to avoid a preponderance of short-term claims. This would make it more difficult for a run on the currency by domestic residents as well as foreigners. This suggests that financial liberalization must be carefully sequenced.

Another relevant measure is to prohibit borrowing from the domestic financial system by foreigners. This would prevent speculation of the kind that occurred in Thailand prior to the initial devaluation of the baht. However, where bulk of borrowing is undertaken by the corporate sector, mainly exporters, there need to be controls maintained at the border in order to avoid the danger of an excessive accumulation of short-term foreign debt.

In summary, the macroeconomic policy prescription for the East Asian economies and similar developing economies as well, fall under three broad areas –

- Greater efficiency of public spending and prudent management of debt including the government's contingent liabilities.
- Management of exchange rates so as to maintain a margin of flexibility appropriate to the size and openness of the country and
- Regional coordination to enhance financial stability, sustain the growth of trade and price competitiveness.

Needless to say, these macroeconomic measures need to be adopted in conjunction with institutional policy reforms that support and augment the macroeconomic reforms.

Over a future perspective, a new East Asia seems to be emerging, shaped by lessons from the 97-98 crises, and inspired by a strong sense of its own Asian identity. The transition to more open and democratic societies will be in some cases bumpy and at times frustrating. There is a real risk of social and inter-country friction if growth is not maintained at reasonable levels, and the benefits are not shared equitably. Strengthening the investment climate will be the key to achieving this, and all countries of the region have to make this transition and these structural changes in the face of, and to benefit from, a booming Chinese economy. But the countries of East Asia and the Pacific are likely to tackle these challenges with an encouraging mix of cohesion and "Asian-ness",

Table 4 : Regression Results – Pre- & Post- Crisis East Asia – 1990-2000

Eqn. No.	Dependent Variable	Explanatory Variables [N = 64]								Basic Statistics	
		c	t	x	m	gdi	fdi	npkf	ed	R ²	F
1.	gdp	- 4.97 (2.54)**	- 0.33 (2.72)***	0.12 (2.90)**	0.12 (2.90)***	0.28 (5.68)***				0.62	35.83 ***
2.	gdp	- 4.55 (2.34)**	-0.25 (1.95)**	0.12 (2.10)**	0.11 (2.85)***	0.28 (5.75)***			- 0.02 (1.82)*	0.63	30.13 ***
3.	gdp	4.50 (3.92)***	- 0.55 (3.92)***	0.12 (1.78)*	0.14 (2.97)***		0.08 (2.21)*			0.50	22.39 ***
4.	gdp	4.74 (3.98)***	- 0.50 (3.11)***	0.12 (1.75)*	0.14 (2.92)***		0.07 (1.73)*		- 0.01 (0.79)	0.49	17.96 ***
5.	gdp	3.42 (3.21)***	- 0.55 (4.43)***	0.10 (1.57)	0.15 (3.48)***			0.32 (4.93)***		0.59	31.90 ***
6.	gdp	3.92 (3.71)***	- 0.44 (3.47)***	0.10 (1.60)	0.14 (3.47)***			0.34 (5.31)***	- 0.02 (2.40)***	0.61	28.14 ***
7.	gdp	9.72 (9.56)***	- 0.72 (4.51)***						- 0.02 (1.66)*	0.28	17.67 ***
8.	ka	- 2.92 (0.78)	- 0.45 (2.04)*			0.26 (2.58)***				0.13	7.19 ***
9.	ka	4.61 (3.05)***	- 0.69 (3.21)***					0.37 (2.88)***		0.14	8.07 ***
10.	cad	1.03 (0.66)	0.13 (0.67)	-0.15 (1.62)*	-0.09 (1.46)		0.21 (4.28)***			0.38	14.41 ***
11.	bop	1.42 (1.06)	- 0.26 (1.59)	-0.01 (0.14)	0.10 (1.81)*		0.09 (2.24)**			0.11	3.76 ***
12.	ed	19.20 (2.42)***	7.00 (5.60)***				- 1.32 (3.79)***			0.28	17.48 ***

Note : (a) t-values in parentheses (b) Refer text for definition of variables (c) *** = 1% significance ; ** = 5% significance; * = 10% significance

Source : Author's Calculations

East Asia : Trends in Macroeconomic Indicators, 1990-2000

Figure 1

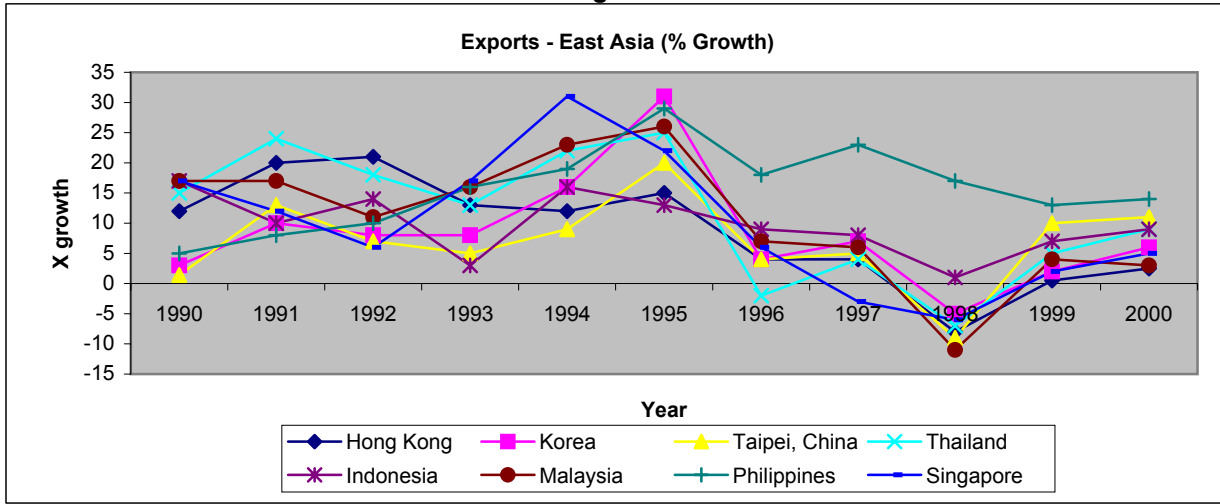


Figure 2

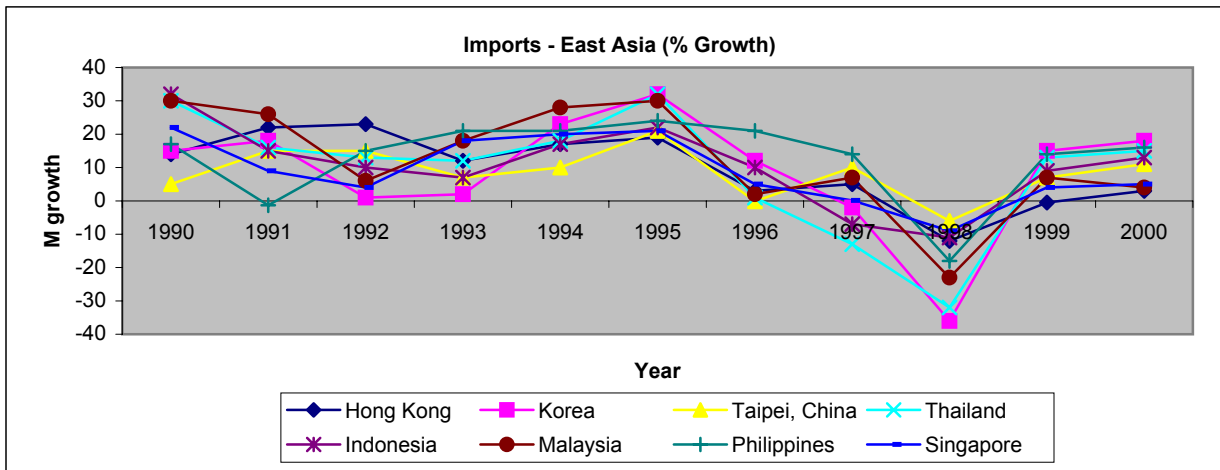
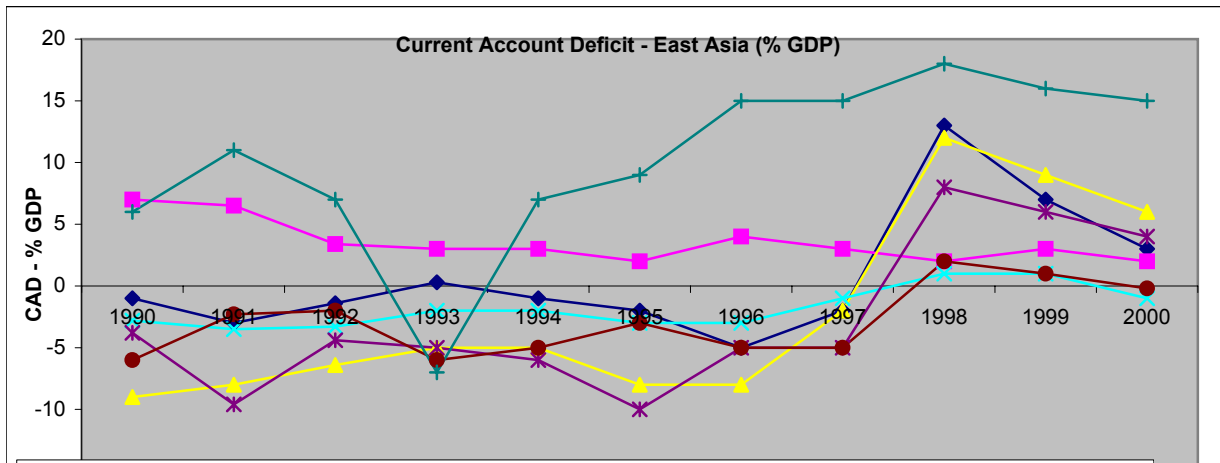


Figure 3





contd.Sheet 2

Year	<u>Exports - East Asia (% Growth)</u>								
	HK	KOR	TAI	THAI	INDO	MALY	PHIL	SING	
1990	12	3	1.4	15	17	17	5	17	
1991	20	10	13	24	10	17	8	12	
1992	21	8	7	18	14	11	10	6	
1993	13	8	5	13	3	16	16	17	
1994	12	16	9	22	16	23	19	31	
1995	15	31	20	25	13	26	29	22	
1996	4	4	4	-2	9	7	18	6	
1997	4	7	5	4	8	6	23	-3	
1998	-8	-5	-9	-7	1	-11	17	-6	
1999	0.5	2	10	5	7	4	13	2	
2000	2.5	6	11	9	9	3	14	5	

Year	<u>Imports - East Asia (% Growth)</u>								
	HK	KOR	TAI	THAI	INDO	MALY	PHIL	SING	
1990	14	15	5	30	32	30	17	22	
1991	22	18	15	16	15	26	-1.3	9	
1992	23	1	15	13	10	6	15	4	
1993	12	2	7	12	7	18	21	18	
1994	17	23	10	18	17	28	21	20	
1995	19	32	21	32	22	30	24	21	
1996	3	12	-0.1	1	10	2	21	5	
1997	5	-2	10	-13	-7	7	14	0.1	
1998	-12	-36	-6	-32	-11	-23	-18	-9	
1999	-0.5	15	7	13	9	7	14	4	
2000	3	18	11	15	13	4	16	5	

Year	<u>Current Account deficit - East Asia (% of GDP)</u>							
	KOR	TAI	THAI	INDO	MALY	PHIL	SING	
1990	-1	7	-9	-2.8	-3.8	-6	6	
1991	-3	6.5	-8	-3.5	-9.6	-2.3	11	
1992	-1.4	3.4	-6.4	-3.3	-4.4	-2	7	
1993	0.3	3	-5	-2	-5	-6	-7	
1994	-1	3	-5	-2	-6	-5	7	
1995	-2	2	-8	-3	-10	-3	9	
1996	-5	4	-8	-3	-5	-5	15	
1997	-2	3	-2	-1	-5	-5	15	
1998	13	2	12	1	8	2	18	
1999	7	3	9	1	6	1	16	
2000	3	2	6	-1	4	-0.2	15	

East Asia : Trends in Macroeconomic Indicators, 1990-2000

Figure 4

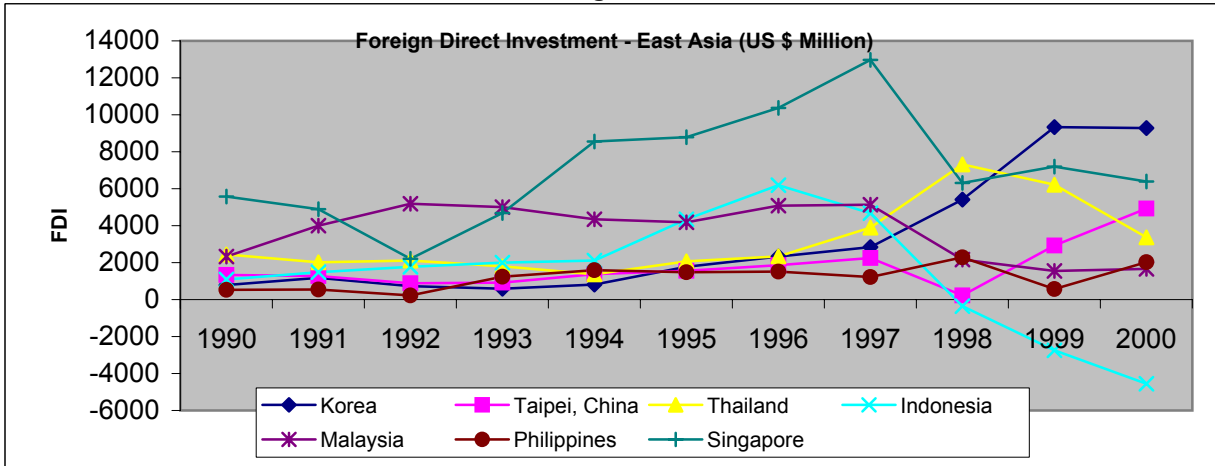


Figure 5

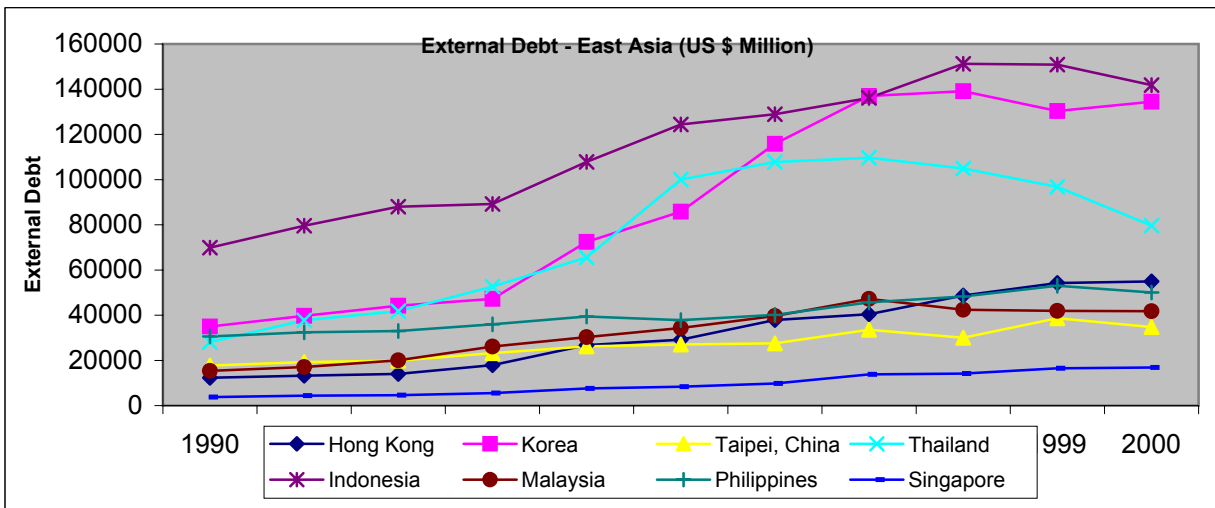
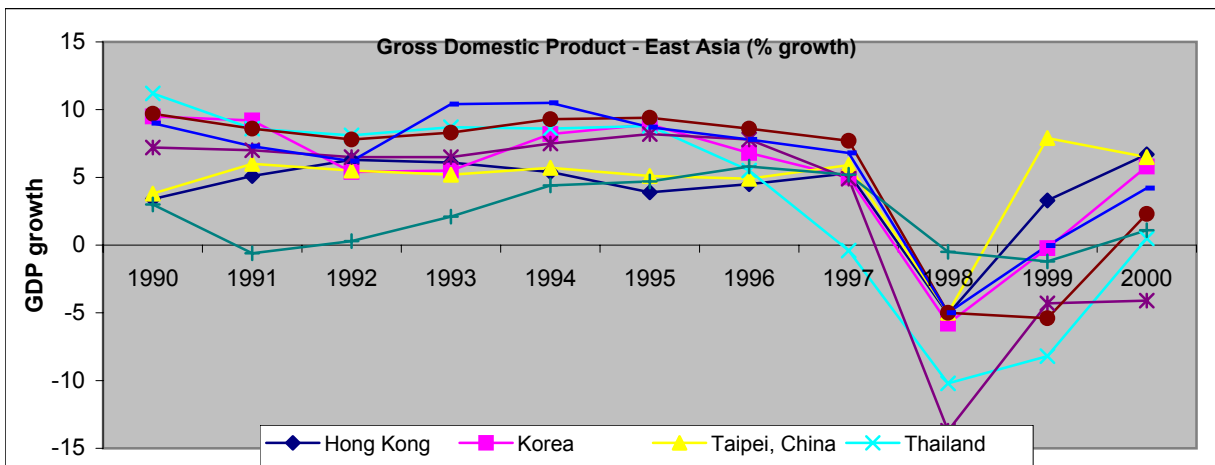


Figure 6



- Hong Kong
- Korea
- Taipei, China
- Thailand
- Indonesia
- Malaysia
- Philippines
- Singapore

contd.Sheet 3

Foreign Direct Investment - East Asia (US \$ Million)

Year	KOR	TAI	THAI	INDO	MALY	PHIL	SING
1990	788	1330	2444	1093	2333	530	5575
1991	1180	1271	2014	1482	3998	544	4888
1992	728	879	2113	1777	5183	228	2205
1993	588	917	1804	2004	5006	1238	4687
1994	810	1375	1366	2109	4342	1591	8551
1995	1776	1559	2068	4346	4179	1478	8788
1996	2326	1864	2336	6194	5078	1517	10372
1997	2844	2248	3895	4677	5137	1222	12968
1998	5412	222	7315	-356	2164	2287	6316
1999	9333	2926	6213	-2745	1553	573	7197
2000	9283	4928	3366	-4550	1660	2029	6391

External Debt - East Asia (US \$ Million)

Year	HK	KOR	TAI	THAI	INDO	MALY	PHIL	SING
1990	12339	34968	17683	28095	69872	15328	30580	3772
1991	13220	39732	19258	37703	79548	17080	32451	4369
1992	14026	44156	19880	41784	88002	20018	33005	4581
1993	17899	47201	23246	52638	89172	26149	35936	5523
1994	26794	72414	26203	65533	107824	30336	39412	7594
1995	29177	85810	27078	100039	124398	34343	37829	8368
1996	37894	115803	27505	107736	128937	39673	40146	9803
1997	40427	136984	33545	109699	136161	47228	45683	13803
1998	48727	139097	30021	104916	151236	42409	48266	14169
1999	54262	130316	38628	96769	150844	41902	53019	16514
2000	54964	134416	34757	79675	141803	41797	50063	16880

Gross Domestic Product - East Asia (% Change)

Year	HK	KOR	TAI	THAI	INDO	MALY	PHIL	SING
1990	3.4	9.5	3.8	11.2	7.2	9.7	3	9
1991	5.1	9.2	6	8.6	7	8.6	-0.6	7.3
1992	6.3	5.4	5.5	8.1	6.5	7.8	0.3	6.2
1993	6.1	5.5	5.2	8.7	6.5	8.3	2.1	10.4
1994	5.4	8.2	5.7	8.6	7.5	9.3	4.4	10.5
1995	3.9	8.9	5.1	8.8	8.2	9.4	4.7	8.7
1996	4.5	6.8	4.9	5.5	7.8	8.6	5.8	7.8
1997	5.3	5	5.9	-0.4	4.9	7.7	5.2	6.8
1998	-5.1	-5.8	-5	-10.2	-13.7	-5	-0.5	-5
1999	3.3	-0.23	7.9	-8.2	-4.3	-5.4	-1.2	-0.03
2000	6.7	5.8	6.5	0.5	-4.1	2.3	1.1	4.2

East Asia : Trends in Macroeconomic Indicators, 1990-2000

Figure 7

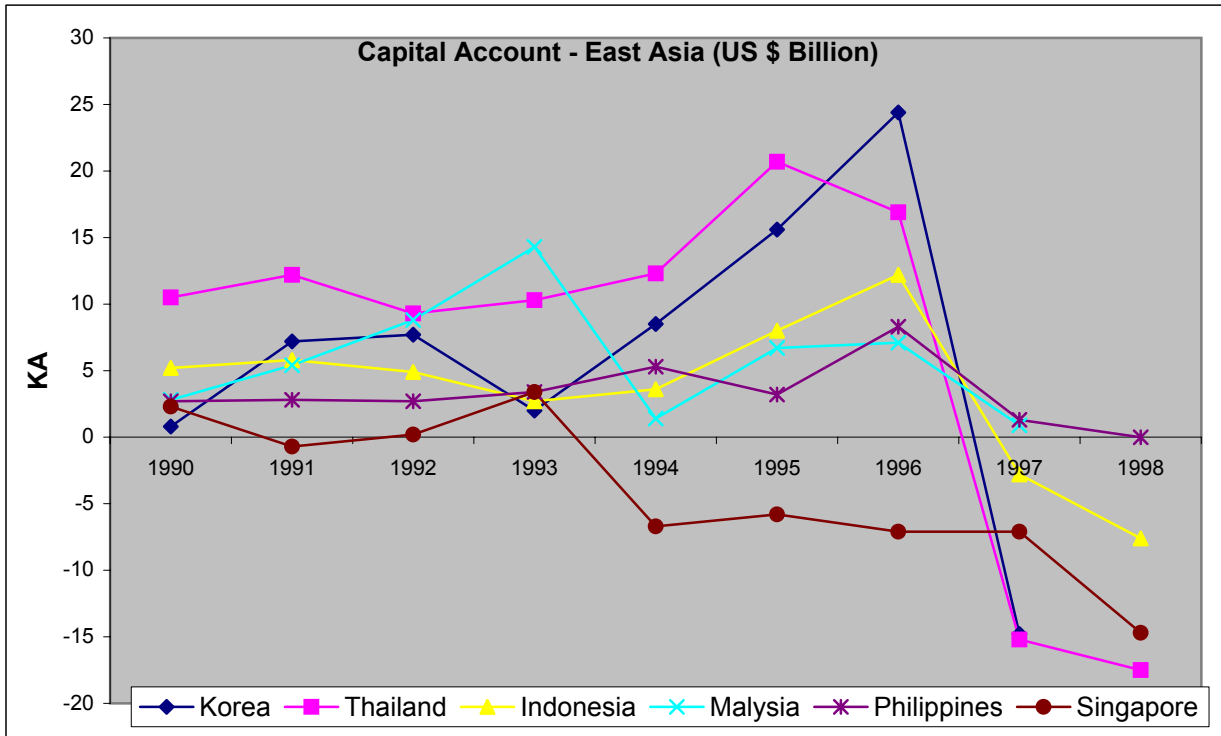
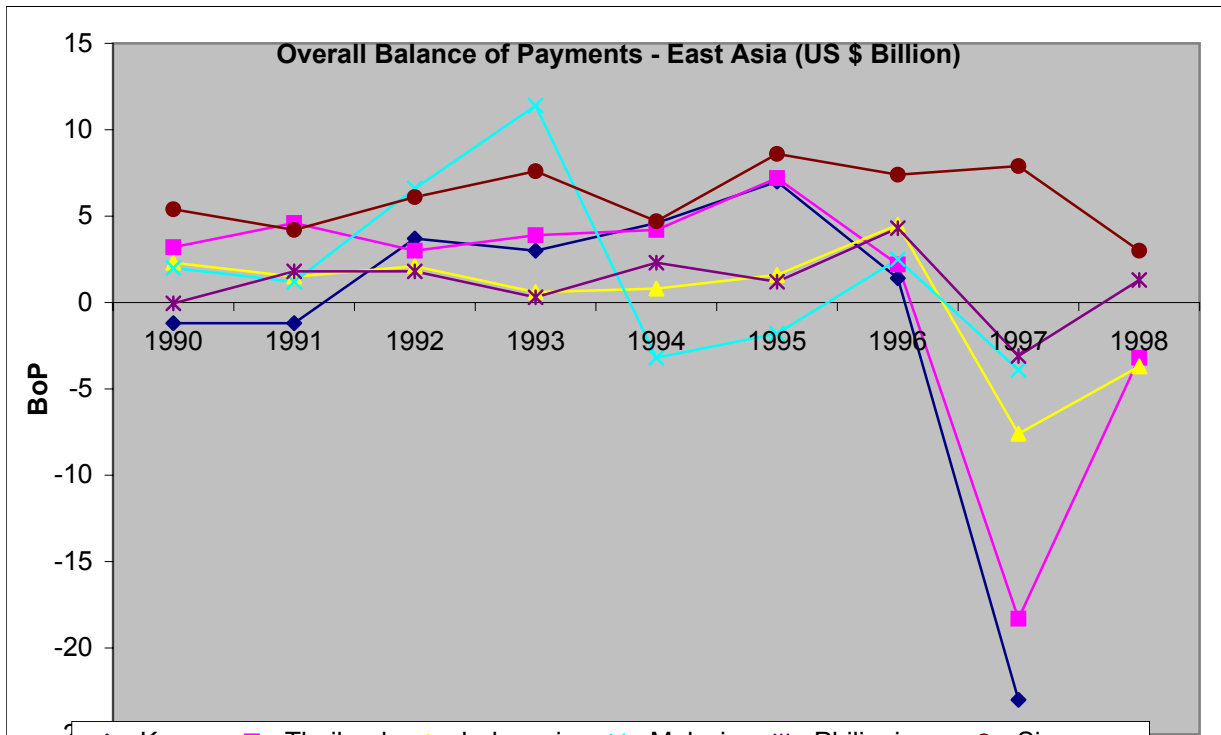


Figure 8



-4

—◆— Korea —■— Thailand —▲— Indonesia —*— Malaysia —*— Philippines —●— Singapore

End

Capital Account - East Asia (US \$ Billion)

Year	KOR	THAI	INDO	MALY	PHIL	SING
1990	0.8	10.5	5.2	2.8	2.7	2.3
1991	7.2	12.2	5.8	5.4	2.8	-0.7
1992	7.7	9.3	4.9	8.8	2.7	0.2
1993	2	10.3	2.7	14.3	3.4	3.4
1994	8.5	12.3	3.6	1.4	5.3	-6.7
1995	15.6	20.7	8	6.7	3.2	-5.8
1996	24.4	16.9	12.2	7.1	8.3	-7.1
1997	-14.8	-15.2	-2.8	0.9	1.3	-7.1
1998		-17.5	-7.6		-0.01	-14.7

Overall Balance of Payments - East Asia (US \$ Billion)

Year	KOR	THAI	INDO	MALY	PHIL	SING
1990	-1.2	3.2	2.3	2	-0.05	5.4
1991	-1.2	4.6	1.5	1.2	1.8	4.2
1992	3.7	3	2.1	6.6	1.8	6.1
1993	3	3.9	0.6	11.4	0.3	7.6
1994	4.6	4.2	0.8	-3.2	2.3	4.7
1995	7	7.2	1.6	-1.8	1.2	8.6
1996	1.4	2.2	4.5	2.5	4.3	7.4
1997	-23	-18.3	-7.6	-3.9	-3.1	7.9
1998		-3.2	-3.7		1.3	3

which suggests that they will continue growing together as a region. This is good news for business and for the poor and vulnerable.

[refer Appendix for Graphs and basic data used for regression analysis in the paper]

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