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EXPLAINING THE EAST ASIAN CRISIS WITH BENEFITS OF HINDSIGHT

Abstract

A number of arguments have been put forward to explain the East Asian Crisis of 1997-1998. But as the crisis deepened and spread itself to other parts of the world, economists kept changing their views. Three major arguments stand out — fundamental weakness argument, moral hazard argument and creditors' panic argument. Although it is widely believed that fundamental weaknesses and/or corruption and moral hazard problems in the severely hit countries were responsible for their fall, this paper stands beside the third argument. It has been found that there were some imbalances in the fundamentals and some worrying financial sector weaknesses in the severely hit countries. But those were not severe enough to warrant a crisis as serious as the Asian one. Rather this paper argues in line with the third view that those weaknesses made these countries essentially vulnerable to a sudden shift in creditors' expectations. And as the creditors failed to coordinate their expectations, the vulnerable economies of East Asia were plunged into a crisis..

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1. Introduction

The East Asian financial and currency crisis of 1997-1998 is one of the remarkable events in the last millennium. It is perhaps as astonishing as the disintegration of the Soviet Union and as severe as the Great Depression. It is astonishing since the severely hit countries in the crisis had produced envious growth performance throughout the last three decades. There was not a single hint of an economic crash. There were, however, some economists who argued that the growth of East Asia was the result of input accumulation and was subject to diminishing returns. But they too expected a slowdown in output, not a crash. What then caused such a remarkable event to occur?

The search is on for clues and culprits. There has been a heated debate regarding the causes of the crisis and many related issues, which are far from over even after two years since the onset of the crisis. It has been a great occasion for the economists, market analysts, journalists, commentators and so on. Many journals have had special issues on the crisis; there had been seminars, conferences, and all leading newspapers, magazines, chronicles of the world have been stuffed with articles regarding the crisis for many subsequent months. This paper attempts to summarize the views that have been put forward to explain the East Asian crisis since the onset of the crisis. We will make an effort to find out which explanation fits the Asian experience well with the benefits of hindsight.

Three major interpretations have emerged in the aftermath of the crisis. According to one of these interpretations, weaknesses in the fundamentals of the East Asian economies became larger and obvious in 1996 and 1997 that led to a sudden shift in perception

about the outlook for continued growth and a rapid reversal of financing. An alternative interpretation stresses that the collapse of the East Asian economies was the inevitable result of over-investment in dubious activities resulting from the moral hazard of implicit guarantees, corruption and anticipated bailouts. Finally, there are others who interpret the crisis as being mainly the result of a self-fulfilling panic of creditors — imbalances in the economies just made them vulnerable to a panic.

Among the above three interpretations, we will stand beside the third interpretation after examining the empirical evidence. We will argue that deteriorating fundamentals is neither necessary nor sufficient for a crisis to take place in the sense that, many other countries had similar fundamental problems at the same time but were not hit by a crisis. Although the moral hazard argument is quite a strong one, we do not find enough empirical support to embrace it either. We will first explore the conditions in the real and the financial sectors of the affected countries with the intention of providing evidence against the first two interpretations. While doing so, we will prepare the ground for the explanation of the crisis along the third line of interpretation.

The paper is structured in the following way. In section II, we examine the macroeconomic fundamentals of the affected countries in detail to prove that there were no fundamental weaknesses in the real sector to cause a crisis. Of course, there were some problems in the financial sector. We review these weaknesses in section III and at the same time, provide evidence against the second line of interpretation above. After reviewing the evidence against the first two interpretations, we provide arguments and empirical support in favor of the third interpretation in section IV. We make some concluding remarks in section V.

II. Macroeconomic Conditions: Fundamental Weaknesses?

II.A. GDP growth rates: We begin by looking at the growth rates of Asian economies in the 1990s. Data are provided for Korea, Indonesia, Malaysia, the Philippines, Singapore, Thailand, Hong Kong, China and Taiwan (hereafter referred to as the crisis-hit countries). It is to be noted that the countries most severely hit by the crisis are Thailand, Korea, Indonesia, Malaysia and the Philippines (hereafter called the severely-hit countries). As is evident from Table 1, all the crisis-hit countries had remarkably high growth rates during 1991-1996, the period leading up to the crisis. The average growth rates in this period for Korea, Indonesia, Malaysia and Thailand were 7.42%, 8.67%, 8.65% and 8% respectively. Only in the Philippines (the sick man in Asia), average growth rate in this period was exceptionally low at 2.8%. Growth rates for these countries abated somewhat in 1996, but were still much higher to be considered as a weakness.

Table 1: GDP Growth Rates in the Crisis-hit Countries, 1991-1997

Countries	1991	1992	1993	1994	1995	1996	1997
Korea	9.13	5.06	5.75	8.58	8.94	7.10	5.47
Indonesia	6.95	6.46	6.50	15.93	8.22	7.98	4.65
Malaysia	8.48	7.80	8.35	9.24	9.46	8.58	7.81
Philippines	-0.58	0.34	2.12	4.38	4.77	5.76	9.66
Singapore	7.27	6.29	10.44	10.05	8.75	7.32	7.55
Thailand	8.18	8.08	8.38	8.94	8.84	5.52	-0.43
Hong Kong	4.97	6.21	6.15	5.51	3.85	5.03	5.29
China	9.19	14.24	12.09	12.66	10.55	9.54	8.80
Taiwan	7.55	6.76	6.32	6.54	6.03	5.67	6.81

Source: Reproduced from Corsetti, Pesenti and Roubini (1998a).

II.B. Saving Rates: Saving rates in the crisis-hit countries were also remarkably high during 1990-1996, the period leading up to the crisis. Table 2 shows the saving rates of the crisis-hit countries in the 1990s. The average saving rates as percentage of GDP in the period 1990-1996 for Korea, Indonesia, Malaysia and Thailand were 34.95%, 29.94%, 30.9%, 18.27% and 33.64% respectively. Only in the Philippines, the saving rate was low as compared levels of the other crisis-hit countries. Thus, these countries were not engaged in excessive consumption as the Latin American countries were before the crisis in 1982.

Table 2: Saving Rates (as % of GDP) in the Crisis-hit Countries, 1990-1997

Countries	1990	1991	1992	1993	1994	1995	1996	1997
Korea	35.69	35.74	34.88	34.91	34.60	35.14	33.60	33.06
Indonesia	31.75	31.10	33.41	28.66	29.52	27.65	27.50	27.98
Malaysia	29.07	23.24	30.06	27.70	33.81	34.65	37.81	39.34
Philippines	17.85	17.76	18.16	17.29	20.32	17.16	19.35	18.77
Singapore	45.32	46.56	48.35	46.17	50.82	51.05	51.33	51.30
Thailand	32.33	34.83	33.73	34.26	33.89	33.25	33.22	32.64
Hong Kong	35.85	33.78	33.76	35.67	33.83	31.94	29.95	31.33
China	37.77	37.84	37.26	41.29	42.04	40.22	39.25	41.15
Taiwan	30.50	30.26	28.93	28.68	26.99	26.70	25.92	25.43

Source: Reproduced from Corsetti, Pesenti and Roubini (1998a).

II.C. Fiscal Balance: In the 1990s, all the governments of the crisis-hit countries had maintained a responsible budgetary position, as shown in Table 3. In most of these countries the fiscal balance of the central government was either in surplus or in a small deficit. In 1995 and 1996, only Taiwan and China had fiscal deficits of about 1% of the GDP. So, the severely hit countries' fiscal balances were not in deficit, a fact that frustrates the application of the first generation models, which attribute crises mainly to fundamental weaknesses in the economy.

Table 3 : Governments' Fiscal Balances (as % of GDP) in the Crisis-hit Countries, 1990-1997

Countries	1990	1991	1992	1993	1994	1995	1996	1997
Korea	-0.68	-1.63	-0.50	0.64	0.32	0.30	0.46	0.25
Indonesia	0.43	0.45	-0.44	0.64	1.03	2.44	1.26	0.00
Malaysia	-3.10	-2.10	-1.16	-1.46	1.04	0.57	0.28	0.06
Philippines	-3.47	-2.10	-1.16	-1.46	1.04	0.57	0.28	0.06
Singapore	10.53	8.58	12.35	15.67	11.93	13.07	14.10	9.52
Thailand	4.59	4.79	2.90	2.13	1.89	2.94	0.97	-0.32
China	-0.79	-1.09	-0.97	-0.85	-1.22	-1.00	-0.82	-0.75
Taiwan	1.85	-2.18	-5.34	-3.88	-1.73	-1.09	-1.34	-1.68

Source: Reproduced from Corsetti, Pesenti and Roubini (1998a).

II.D. Investment Rates: Like savings, investment rates in the crisis-hit countries were spectacularly high in the 1990s. As shown in Table 4, in most countries investment rates were well above 30% of GDP and in some cases above 40% of GDP. Exceptions are the Philippines and Taiwan where they were in the range of 20-25% of GDP.

Table 4 : Investment Rates (as % of GDP) in the Crisis-hit Countries, 1990-1997

Countries	1990	1991	1992	1993	1994	1995	1996	1997
Korea	36.93	38.90	36.58	36.08	36.05	37.05	38.42	34.97
Indonesia	36.15	35.50	35.87	29.48	31.06	31.93	30.80	31.60
Malaysia	31.34	37.25	33.45	37.81	40.42	43.50	41.54	42.84
Philippines	24.16	20.22	21.34	23.98	24.06	22.22	24.02	24.84
Singapore	35.87	34.21	35.97	37.69	32.69	33.12	35.07	37.40
Thailand	41.08	42.84	39.97	39.94	40.27	41.61	41.73	34.99
Hong Kong	27.44	27.20	28.50	27.54	31.85	34.91	32.38	35.08
China	34.74	34.77	36.17	43.47	40.88	40.20	38.73	37.55
Taiwan	23.08	23.29	24.90	25.16	23.87	23.65	21.24	22.20

Source: Reproduced from Corsetti, Pesenti and Roubini (1998a).

But Corsetti, Pesenti and Roubini (1998a) argue that "...the official investment rate measures were likely to be upward biased, as several forms of 'investment' in Asian economies may have simply been a disguised form of consumption" (Corsetti, Pesenti and Roubini, 1998a: p.13). To check whether the quality of investments was in fact falling or not before the crisis we can use the incremental capital output ratio (ICOR). ICOR is a crude macroeconomic indicator for measuring the quality of investment or the efficiency of capital, which generally falls when investment quality deteriorates. Table 5 shows the ICOR of the severely hit countries along with those of some other emerging countries. Investment quality, in fact, fell in the period 1993-95 compared to the period 1990-92 in Indonesia, Malaysia and Thailand. But in Korea, it was stable while it rose significantly in the Philippines. However, investment quality also deteriorated in some other emerging economies like Chile, to some extent and Mexico and Turkey, to a large extent. But they did not experience a similar crisis.

Table 5 : Incremental Capital-Output Ratio in Some Emerging Markets, 1987-1995

Countries	1987-89	1990-92	1993-95
Indonesia	4.0	3.9	4.4
Korea	3.5	5.1	5.1
Malaysia	3.6	4.4	5.0
Philippines	3.3	22.8	6.0
Thailand	2.9	4.6	5.2
Chile	2.9	3.3	4.4
Columbia	4.3	4.7	4.1
India	3.2	6.0	4.7
Mexico	8.9	6.5	11.7
Pakistan	2.8	2.9	4.9
Turkey	6.8	5.4	9.2

Source: Reproduced from Radelet and Sachs (1998b).

Corsetti, Pesenti and Roubini (1998a) further state that in Korea there is evidence of low profitability. In this regard Chang, Park and Yoo (1998) argue that the low corporate profitability in Korea is mainly due to high interest payments, rather than to inefficiency. They calculate Korea's post-interest-payments profitability as measured by the ratio of 'ordinary income' to sales and corporate profitability before interest payments as measured by the ratio of 'operating income' to sales. These were then compared with the same figures of some other industrialized countries. Those figures are reported in Table 6. It shows that, Korea's post-interest-payments profitability was as low as 2.8% during 1973-96 as compared to 7.9% in the USA (1995), 5.1% in Taiwan (1995) and 2.9% in Japan (1995). However, Korea's corporate profitability before interest payments has not been low by international standards. Over the period 1973-96, this figure for Korea averaged at 7.4%, higher than the other reported figures except USA (7.7%). Thus, there is not much evidence to claim that the spectacular investment rates of the severely hit countries were actually low.

Table 6 : An International Comparison of Profitability (%)

	Korea (1973-96)	Korea (1996)	Japan (1955-73)	Japan (1995)	Taiwan (1995)	USA (1995)
Ordinary income/sales	2.8	1.0	4.3	2.9	5.1	7.9
Operating income/sales	7.4	6.5	7.2*	3.3	7.3	7.7

*Note: *1961-73.*

Definitions: Operating income = gross profit – selling and general administrative expenses
Ordinary income = operating income + net no-operating income

Source: Chang, Park and Yoo (1998).

II.E. Inflation Rates: Table 7 shows the inflation rates in the crisis-hit countries during the 1990s. It is quite clear that in all the countries inflation rates were relatively low in this period. Only in the Philippines and Hong Kong inflation rates were 18.7% and 11.6% in 1991 respectively but came down to 8.41% and 6.3% in

1996. Between 1995 and 1996, inflation rates decreased in all crisis-hit countries except Korea, the Philippines and Thailand where it increased very modestly from 4.41% to 4.96%, from 8.11% to 8.41% and from 5.69% to 5.85%, respectively. So, there was nothing to worry about inflation rates before the crisis.

Table 7 : Inflation Rates in the Crisis-hit Countries, 1991-1997 (%)

Countries	1991	1992	1993	1994	1995	1996	1997
Korea	9.30	6.22	4.82	6.24	4.41	4.96	4.45
Indonesia	9.40	7.59	9.60	12.56	8.95	6.64	11.62
Malaysia	4.40	4.69	3.57	3.71	5.28	3.56	2.66
Philippines	18.70	8.93	7.58	9.06	8.11	8.41	5.01
Singapore	3.40	2.32	2.27	3.05	1.79	1.32	2.00
Thailand	5.70	4.07	3.36	5.19	5.69	5.85	5.61
Hong Kong	11.60	9.32	8.52	8.16	8.59	6.30	5.83
China	3.50	6.30	14.60	24.20	16.90	8.30	2.80
Taiwan	3.63	4.50	2.87	4.09	3.75	3.01	0.90

Source: Reproduced from Corsetti, Pesenti and Roubini (1998a).

II.F. Real Appreciation: The first sign of vulnerability in the crisis-hit countries was the appreciation of their real exchange rates. Korea, Thailand, Indonesia, Malaysia and the Philippines pegged their currencies to the US dollar in recent years and this was a policy error on the part of the governments since trade of these countries were more or less equally divided between the US, the EEC and Japan[1]. The real effective exchange rates of these countries appreciated when dollar started appreciating after mid-1995 against the yen, major European currencies and the Chinese renminbi which was devalued against the dollar in 1994. The

[1] Thailand operates under a pegged exchange rate, while Korea, Indonesia and Malaysia maintain a crawling peg system. Although the exchange rate of the Philippines operates under a floating regime, market participants assume it to be pegged effectively to the US dollar for its very little variation over time.

consequence of an overvalued currency was that, these countries were losing competitiveness. Table 8 shows the real exchange rate indices of the severely hit countries along with China and four other Latin American countries, taking 1990 as the base year. It can be seen that in all the severely hit countries real exchange rate appreciated between 1990 and the first quarter of 1997 by 25% or over except for Korea, where it appreciated by 11%. However, while real appreciation indicates growing vulnerability, it does not necessarily imply causation. This is because the real exchange rate appreciated by more than 20% in China and by more than 45% in Argentina, Brazil and Chile too. But they were not hit by a crisis of the extent as observed in Asia. Moreover, Mexico's real exchange rate appreciated by 40% between 1988 and 1993, before it was hit by the crisis in 1994.

II.G. Export Slowdown: Another growing concern for the severely hit countries was the slowdown of their exports in 1996 and 1997. There were a number of reasons for this slowdown in exports: (1) The severely hit countries lost their competitiveness to some extent because of the currency overvaluation discussed above. (2) In addition, the severely hit countries lost their competitiveness in labour-intensive products due to rising domestic wage costs. (3) Demand for some major exports from the region like semiconductors and other electronic products declined and growth of world trade slowed down a little in 1996. (4) The severely hit countries faced intense competitive pressure due to China's growing share of exports from the region regardless of whether or not such pressure were magnified by the devaluation of the Chinese renminbi in 1994. (5) Japan's stagnation led to a significant slowdown of exports for its trading partners within Asia. Table 9 shows the growth of merchandise exports in the severely

Table 8 : Real Exchange Rate Index (1990 = 100) in Selected Asian and Latin American Countries

Year	Indonesia	Malaysia	Philippines	Thailand	China	Korea	Argentina	Brazil	Chile	Mexico
Dec. 1988	98	98	90	102	80	102	156	159	94	106
Dec. 1989	93	94	85	98	85	95	692	175	99	107
Dec. 1990	100	100	100	100	100	100	100	100	100	100
Dec. 1991	99	99	82	97	103	99	66	112	91	85
Dec. 1992	92	87	69	90	98	94	49	119	74	74
Dec. 1993	88	88	71	88	86	93	42	148	71	67
Dec. 1994	92	86	62	89	109	91	44	53	66	111
Dec. 1995	89	84	63	87	95	88	46	39	65	123
Dec. 1996	80	78	56	80	84	88	44	35	61	95
Mar. 1997	75	72	53	75	79	89	42	33	55	81
June 1997	78	75	54	76	80	89	42	33	55	79
Sept. 1997	99	92	66	104	77	88	42	33	53	75
Dec. 1997	150	108	75	124	74	157	41	33	53	75

Note: a) Real exchange rate = (foreign country wholesale price index expressed in local currency) /(home country consumer price index);

b) An increase means appreciation;

c) Foreign country WPI is calculated using a geometric average of prices for major developed-country trading partners (Radelet and Sachs, 1998b, p.14)

Source: Reproduced from Radelet and Sachs (1998a).

hit countries during the period 1993-1996, which was clearly fading in 1996. Radelet and Sachs (1998a) rightly said, "Broadly speaking, the export slowdown should have provided some indication that investment quality was weakening, and that firms would be less able to repay foreign exchange obligations. Nevertheless, the slowdown was thought to be very short term and accounted for by specific commodities (e.g. semiconductors), rather than a sign of an impending crisis" (Radelet and Sachs, 1998a: p.15).

Table 9 : Growth of Merchandize Exports (%) in the Severely -hit Countries, 1993-1996

	Indonesia	Malaysia	Philippines	Korea	Thailand
1993	8.3	16.1	15.8	7.7	13.4
1994	9.9	23.1	18.5	15.7	22.2
1995	13.1	25.9	29.4	31.5	24.7
1996	8.8	4.0	17.5	4.1	0.1

Source: and Raihan (1998)

II.H. Current Account Deficit: Export slowdown and rising real effective exchange rates coupled with higher import growth both of consumption and investment caused all the severely hit countries to run huge current account deficits many years before the crisis. Table 10 shows that Indonesia, Thailand and the Philippines had been experiencing current account deficit since 1985. Thailand's current account deficit was more than 5% of GDP in each year in the 1990s approaching 9% of GDP in 1995 and 1996. Indonesia's current account was persistently in deficit although it was more or less stable at around 2-3% of GDP. The Philippines also experienced long-term imbalances in having deficit averaging 0.5% of GDP in 1985-89 and around 4% of GDP in 1990-96. Malaysia observed surpluses during 1985-89 but was having persistent deficits in the 1990s sometimes over 8% of GDP. Only Korea has had surpluses or modest deficits throughout the whole period. But deficits began to climb up since 1993 and stood at 4.75% of GDP in 1996. The other crisis-hit countries, Singapore, Taiwan and China, have had persistent current account surpluses (China experienced a deficit in 1993 only). In Singapore, very high current account surpluses were observed throughout the 1990s, averaging about 10% of GDP. So, the countries having persistent current account deficits seem to have been hit hardest by the crisis.

Thus, the current account deficit was one of the clearest indications of vulnerability.

Table 10 : Current Account Balances (BOP Definition) in the Crisis-hit Countries (% of GDP)

Countries	1985-89	1990	1991	1992	1993	1994	1995	1996	1997
Korea	4.3	-0.69	-2.83	-1.28	0.30	-1.02	-1.86	-4.75	-1.85
Indonesia	-2.5	-2.82	-3.65	-2.17	-1.33	-1.58	-3.18	-3.75	-2.24
Malaysia	2.4	-2.03	-8.69	-3.74	-4.66	-6.24	-8.43	-4.89	-4.85
Philippines	-0.5	-6.08	-2.28	-1.89	-5.55	-4.60	-2.67	-4.77	-5.23
Singapore	n.a.	8.33	11.29	11.38	7.57	16.12	16.81	15.65	15.37
Thailand	-2.0	-8.50	-7.71	-5.66	-5.08	-5.60	-8.06	-8.10	-1.90
China	n.a.	3.09	3.27	1.33	-1.94	1.26	0.23	0.87	3.24
Taiwan	n.a.	6.82	6.94	4.03	3.16	2.70	2.10	4.05	2.72

Source: Compiled from Corsetti, Pesenti and Roubini (1998a) and Radelet and Sachs (1998a).

The above discussion can be summarized by saying that, there were some problems with the Asian economies in a few areas. Examples are, overvalued currency, export slowdown and current account deficits. These problems merely suggested imbalances that needed modest adjustments. By no meanss, they alone could have caused the crisis. Other than these indicators, macroeconomic fundamentals of the underlying economies seemed to be quite strong. It is thus inappropriate to say that fundamental weaknesses in the Asian economies *alone* were responsible for the crisis. Rather we should turn our attention to the financial sector where significant imbalances began mounting in the period leading up to the crisis. The financial sector weaknesses are explored in the next section.

III. Financial Sector Weaknesses: 'Cronyism' and Moral Hazard?

III.A. Financial Liberalization: It is widely believed that many of Asia's problems had their origins in the financial liberalization processes introduced in each of the severely hit countries in the late 1980s and the early 1990s encouraged by the IMF and the World Bank. This led to a very rapid expansion of the financial sector and enthusiastic lending by foreign creditors (Radelet and Sachs, 1999). Liberalization permitted domestic agents to raise finance on foreign markets and gave foreign agents access to the domestic financial market. Hence locals could open foreign bank accounts; banks could extend credit in foreign currencies in the domestic markets; non-bank financial institutions and private corporations could borrow abroad; foreigners could own shares listed by national companies on domestic stock markets; foreign banks could enjoy wider freedom of entry into the domestic banking sector; and offshore banks could borrow abroad and lend domestically (Wade, 1998). This financial liberalization was particularly dangerous for the severely hit countries. As Palma (1998) notes, "This combination of domestic financial markets with almost unlimited access to foreign borrowing, lax regulatory system, and the existence of many inexperienced domestic players (with little initial knowledge of 'financial engineering', but high expectations of quick returns) was the recipe for financial crisis" (Palma, 1998: p.795).

III.B. Credit Boom: The financial liberalization directly contributed to the buildup in foreign capital inflows. In the early 1990s all the severely hit countries experienced a credit (bank and non-bank) boom in the private sector channeled through newly liberalized banks and near-banks, commonly known as financial intermediaries, for many other reasons. First, an economic boom

combined with low interest rate in the US released a huge amount of capital looking for high returns and discovered South East Asia as a lucrative emerging market. Second, domestic investors from a depressed Europe and recession-bound Japan also found this region as an attractive place to invest their money. Third, all these countries maintained a high interest rate to defend their pegged exchange rate. Returns were high in these countries for high interest rates and risks were low for stable exchange rates. Of course, the strong economic fundamentals of these countries were also important for attracting capital.

Table 11 shows the foreign liabilities and foreign assets in each of the severely hit countries in the 1990s. In Thailand, these liabilities grew from a low 5% of GDP to a very high 28.4% of GDP in 1995. In the Philippines, foreign liabilities in 1990 6.2% of GDP, rose to 8.8% of GDP in 1995 and then jumped to 17.2% in 1996. In Malaysia, foreign liabilities of the banking sector grew rapidly to the peak of 19.5% of GDP in 1993, before falling off sharply by 1996. Korea's foreign liabilities grew at a slower rate compared to these three countries in the period 1990-1995, but jumped to 9.3% of GDP in 1996. In Indonesia, however, foreign liabilities did not grow rapidly, since much of the offshore borrowing was undertaken directly by private firms, without using domestic banks as intermediaries (Radelet and Sachs, 1998a).

This concentration of credit brought with it the element of vulnerability. A very large proportion of the foreign debt was of short-term nature and was unhedged which made the crisis-hit countries vulnerable to a sudden withdrawal of confidence. Again, most of the debts were in dollars but domestic intermediaries directed them to long-term investment projects that would generate returns in local currency. So, these financial intermediaries were at

the risk of defaulting on their foreign debt in the face of currency devaluation.

Tables 11 : Foreign Liabilities and Assets of the Banking System in the Severely-hit Countries (% of GDP)

Countries	1990	1991	1992	1993	1994	1995	1996
Indonesia							
Foreign Liabilities	6.5	5.2	6.2	6.2	6.5	6.0	5.6
Foreign Assets	6.0	4.9	5.0	3.4	3.4	3.8	3.9
Malaysia							
Foreign Liabilities	7.0	9.1	12.7	19.5	9.2	7.4	4.4
Foreign Assets	5.8	4.3	3.6	6.5	5.7	4.8	9.2
Philippines							
Foreign Liabilities	6.2	8.4	5.6	5.5	6.7	8.8	17.2
Foreign Assets	10.2	4.4	8.7	9.0	8.7	8.8	9.8
Thailand							
Foreign Liabilities	5.0	4.9	5.9	11.1	21.6	28.4	26.8
Foreign Assets	2.6	2.9	2.7	5.0	4.7	5.8	3.9
Korea							
Foreign Liabilities	4.1	4.9	4.8	4.5	5.5	6.9	9.3
Foreign Assets	3.8	3.8	4.2	4.9	5.4	6.1	7.3

Source: Radelet and Sachs (1998a).

III.C. Financial Sector Fragility: One of the major problems that aggravated the Asian crisis was their weak banking and financial supervision. Capital was channeled to those preferred by politicians and financial decisions were strongly influenced by non-economic factors. As Rudiger Dornbusch says, "In Thailand, almost every politician or official had his hand in the pocket of some bank or business and every bank had a lot of officials in its pocket" (Dornbusch, 1998). Government banks did not assess the credit worthiness of their borrowers and banks often suffered from capital inadequacy relative to the riskiness of their operating

environment (Goldstein, 1998). Banks were also poorly regulated due to the weaknesses in the legal system; quality of public disclosure was poor and above all, there was a lack of transparency. In all there prevailed a terrain of 'crony capitalism'. This means, according to Johnson (1998), corruption, nepotism, excessive bureaucratic rigidity, and other forms of trust violation that could easily occur in these countries whenever they attempted to manipulate incentives or, in other ways, tried to alter market outcomes.

Was Asia's collapse due to 'cronyism'? Not quite. "Corruption on at least a similar scale had existed in Asia for decades, and yet these economies had grown very rapidly without any sign of crisis. If anything, corruption in Korea was probably worse in the mid-1980s than in the mid-1990s, and yet it did not face a similar crisis at that time" (Radelet and Sachs, 1999; p.10). Again, apart from Indonesia, the other severely hit countries are certainly no more corrupt than some other emerging countries like, Chile, Columbia, India, China and Taiwan. Yet, they are not facing a similar kind of crisis. Again Johnson argues that, "The United States' strong economic performance during the 1990s coincided with the biggest outbreak of American crony capitalism since the arrival on the scene of the military-industrial complex during the 1950s...John Carolin in *The Independent* (24 May 1998) describes the United States as 'the most legally corrupt political system in the world'. If crony capitalism brought down East Asia, why has it not similarly affected the United States, where it seems to be endemic?" (Johnson, 1998; p.655). Thus, it will be fair to say that cronyism certainly created some vulnerabilities in the Asian economies but it itself can not account for the severity of the crisis.

III.D. Speculative Investments: Cronyism alone may not account for the severity of the crisis, but according to the proponents of 'moral hazard' argument, it directly contributed to the fall of the East Asian economies. This is the second interpretation in this paper — the collapse of the East Asian economies was the inevitable result of over-investment in dubious activities resulting from the moral hazard of implicit guarantees, corruption and anticipated bailouts. The rationale behind this argument is that, since many large corporations had their political patrons behind them as has been discussed earlier, they had a strong belief that their liabilities were implicitly guaranteed (if not explicitly) by the government. In such a situation there was serious moral hazard problem in the sense that these corporations lacked the incentive to police the riskiness of their investments. In other words they were engaged in investments on the principle of "heads I win, tails someone else loses" as Paul Krugman has called it (Krugman, 1998a). These investments were very risky from the social point of view.

Is this a credible story? Let us take the case of Korea that has been highly criticized for the kind of implicit guarantees we are talking about. Chang, Park and Yoo (1998) in their analysis on the Korean crisis in 1997 found that there has been no instance, at least in the last two decades, where Korean government has bailed out a failing *chaebol* (conglomerate). Three of the largest 30 *chaebols* went bankrupt (Hanyang, Yoowon and Woosung) between 1990 and 1996 alone apart from the six *chaebols* (Kia, Hanbo, Sammi, Haitai, Jinro and Halla)that went bankrupt in 1997 (Kia, Hanbo, Sammi, Haitai, Jinro and Halla). It is to be mentioned that there were occasions when individual firms belonging to a *chaebol* were assisted, but that involved a government-meditated takeover of the

firm by another *chaebol* or by the government-owned banks. In some other cases individual firms belonging to a *chaebol* were assisted, which was conditional on enterprise restructuring that severely restricted managerial autonomy. "In this situation, there is little room for moral hazard, as the managers know that they will lose control over the enterprise if they fail to perform" (Chang, Park and Yoo, 1998: p.743).

In addition to the moral hazard problem at the corporate level, the proponents of the second interpretation argue that there was an international dimension of the moral hazard problem hinged upon the behavior of the international banks. These banks lend large amount of funds to the region's domestic intermediaries without a standard calculation of risk. "Underlying such overlending syndrome may have been the presumption that short-term interbank cross-border liabilities would be effectively guaranteed by either a direct government intervention in favor of the financial debtors, or by an indirect bailout through IMF support programs" (Corsetti, Pesenti and Roubini, 1998c; p.23). Did foreign creditors really expect a bailout?

In the period leading up to the crisis, foreign banks lent to both domestic banks and non-banks and to some extent to the public sector. As Table 12 shows, in all the severely hit countries, lending to non-banks was essentially higher than lending to banks in 1995, 1996 and the first half of 1997 except in Korea. In mid-1997, lending to non-banks in Indonesia, Thailand, Malaysia and the Philippines was about 67%, 60%, 57% and 48% respectively out of the total outstanding loans. In fact, lending to both banks and non-banks continued to grow strongly until mid-1997. It may be reasonable to suppose that international banks lend on the

assumption that lending to banks was at least partly protected by government intervention and IMF bailout in the event of a crisis. It may also be true for those non-bank private firms having strong political connection. But there is really no reason to believe that foreign banks expected such guarantees on lending to the majority of non-bank private corporations. In addition to this, creditors have complained for a long time that the bankruptcy laws and ineffectual judicial systems in Asia reduce their ability to collect on collateral in the event of non-performing loans. This simply means that creditors did have the fear that they would not be compensated if loans went bad. (Radelet and Sachs, 1998b). Moreover, "the fact that all international players left so fast suggests that they did not place much faith in the 'implicit guarantee' that the Asian governments allegedly had offered" (Taylor, 1998; p.673).

The above arguments quickly raise another question: if foreign lenders did not feel protected then why did they lend so heavily even in the first half of 1997? The answer is that international players did not anticipate the crisis at all, which was largely because credit rating agencies and other reports continued to give positive outlooks regarding the severely hit countries. If the lenders knew that there were growing risks but they were protected by expected bailouts, then the ratings of sovereign bonds should have fallen in the period leading up to the crisis. Table 13 provides the long-term debt ratings of rating agencies such as Standard & Poor's and Moody's in this period. It is quite evident that these ratings were stable throughout 1996 and the first half of 1997 for the severely hit countries. In case of the Philippines, the rating in fact improved. In each of the severely hit countries, the outlook

was described as 'positive' or 'stable' until June 1996. Only in December, many months after the crisis had unfolded, the debts were downgraded.

Table 12 : International Claims Held by Foreign Banks in the Severely-hit Countries

(Billions of Dollars)

	Total Outstanding	Obligation by sectors		
		Banks	Public sector	Non-bank Private
A. End 1995				
Indonesia	44.5	8.9	6.7	28.8
Malaysia	16.8	4.4	2.1	10.1
Philippines	8.3	2.2	2.7	3.4
Thailand	62.8	25.8	2.3	34.7
Korea	77.5	50.0	6.2	21.4
Total	209.9	91.3	20.0	98.4
B. End 1996				
Indonesia	55.5	11.7	6.9	36.8
Malaysia	22.2	6.5	2.0	13.7
Philippines	13.3	5.2	2.7	5.3
Thailand	70.2	25.9	2.3	41.9
Korea	100.0	65.9	5.7	28.3
Total	261.2	115.2	19.6	126.0
C. Mid 1997				
Indonesia	58.7	12.4	6.5	39.7
Malaysia	28.8	10.5	1.9	16.5
Philippines	14.1	5.5	1.9	6.8
Thailand	69.4	26.1	2.0	41.3
Korea	103.4	67.3	4.4	31.7
Total	274.4	121.8	16.7	136.0

Source: Radelet and Sachs (1998a)

Table 13 : Market Credit Worthiness: Moody's and Standard & Poor's Long Term Debt Ratings

	Jan 15, 1996		Dec. 2, 1996		June 24, 1997		Dec. 12, 1997	
	Rating	Outlook	Rating	Outlook	Rating	Outlook	Rating	Outlook
Moody's								
(Foreign currency debt)								
Indonesia	Baa3		Baa3		Baa3		Baa3	
Malaysia	A1		A1		A1		A1	
Philippines	Ba2		Ba2		Ba1		Ba1	
Korea	A1		A1	Stable			Baa2	Negative
Thailand	A2		A2		A2		Baa1	Negative
Standard & Poor's								
(Foreign currency debt)								
Indonesia	BBB	Stable	BBB	Stable	BBB	Stable	BBB-	Negative
Malaysia	A+	Stable	A+	Stable	A+	Positive	A+	Negative
Philippines	BB	Positive	BB	Positive	BB+	Positive	BB+	Stable
Korea	AA-	Stable	AA-	Stable				
Thailand	A	Stable	A	Stable	A	Stable	BBB	Negative

Note: *Rating system from highest to lowest —*

Moody's: Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa2, Baa3, Ba1, Ba2, Ba3

S & P's: AAA, AA+, AA, AA-, A+, A, A-, BB+, BBB, BB-, BB+, BB, BB-

Source: *Radelet and Sachs (1998a).*

Apart from the credit rating agencies, there are a number of independent firms that provide ongoing risk analysis. One such popular assessment is the Euromoney Country Risk Assessments that attaches a higher ranking to a country with higher risk. According to this ranking the risk in Indonesia, Malaysia and Thailand did not grow between March 1993 and March 1997. In case of Korea and the Philippines the ranking in fact improved. Only in September 1997, 3 months after the crisis erupted, did the rankings of Korea and Thailand fall sharply. However, the ranking for the other three countries was stable even at that time. In short, investors flew into the country even few months before the onset of crisis not because they expected a bailout but because they expected rapid growth and profitability to continue.

Does the above analysis suggest that there were no speculative investments? We have not claimed that at all. Rather, it should be mentioned that a modest share of domestic bank lending headed for speculative investments in real estate, property and purchase of equity funds. Although official data show only a small share of private bank credit for real estate, these figures are likely to understate the true amount (Radelet and Sachs, 1998a). But the fact of the matter is, such speculative investments are not necessarily the result of moral hazard and cannot by themselves cause a crisis of this extent. There were of course many profitable ongoing investments in manufacturing activities that were earning solid rates of returns and a substantial share of lending supported labor-intensive manufacturing exports that are not associated with boom-burst cycle. However, the growing pressure in the real estate markets should be reflected in the stock price index and the property prices. Table 14 shows the stock price index and property prices (as indicated by the grade A office space) in Thailand and Indonesia, probably the hardest hit countries. It is surprising to see that property prices in Thailand did not have any significant movement between 1990 and 1996. In the early 1997, the prices fell sharply. Stock price index in Thailand rose very sharply in the early 1990s before it started to decline since early 1995. The index fell sharply in the second half of 1996 as concern grew over the health of the property sector. In Indonesia, property prices were almost the same throughout the 1990s. The stock price index did grow throughout the 1990s at a modest rate up until the crisis began in Thailand but it did not show any sign of skyrocketing.

The examination of stock price index and property prices brings us to the end of this section. To summarize, it can be said that there were worrying financial weaknesses in the severely hit

countries that made them vulnerable to a sudden shift of expectations. These weaknesses undoubtedly started to grow since the liberalization process in the late 1980s and the early 1990s when foreign capital started to flow in an environment characterized by inadequate regulatory mechanism, lax supervision and lack of transparency. This is not to say that this lack of transparency by itself caused the crisis but that it contributed significantly to the build up of the crisis. Although speculative investments made the situation much worse, it was not the result of 'moral hazard' of implicit guarantees. After all, we cannot hold life insurance responsible for suicides.

Table 14: Stock Price Indices and Property Prices in Thailand and Indonesia

Period	Thailand		Indonesia	
	Stock Price Index	Sales Price: Grade A Office Space, Bangkok (ooo Baht/m. sq.)	Stock Price Index	Capital Value: Grade A Office Space, Jakarta ($/m. sq.)
Q2 90	439	60.0	92	2525
Q4 90	308	66.0	56	3019
Q2 91	406	70.5	45	2911
Q4 91	392	67.0	33	2788
Q2 92	449	63.5	41	2482
Q4 92	529	60.0	33	2327
Q2 93	554	59.5	44	2279
Q4 93	1103	59.5	67	2402
Q2 94	878	59.8	54	2358
Q4 94	981	60.5	55	2358
Q2 95	1038	60.5	61	2200
Q4 95	963	60.5	64	2179
Q2 96	940	60.7	72	2136
Q4 96	610	60.4	75	2250
Q2 97	391	43.0	80	2267

Source: Radelet and Sachs (1998b).

IV. The Creditors' Panic Argument

The lengthy and rather involved analysis of the conditions of the Asian economies before the crisis now puts us in a position to examine the Asian crisis along the third line of interpretation. It has been shown that the macroeconomic fundamentals of the crisis-hit countries prior to the crisis were quite strong except in the external sector where some imbalances were growing. These imbalances implied disequilibrium and asked for some modest corrections but by no means they triggered a severe crash. In the financial sector, however, some alarm bells were ringing since the sector became increasingly fragile. But the lack of transparency or the moral hazard argument seemed to be over-amplified. And that brings us to the third interpretation, which is that the crisis was mainly the result of a self-fulfilling panic of creditors — imbalances in the economies just made them vulnerable to a panic.

The first two interpretations among the three cited at the onset of the paper are closely related and the interesting thing is that they do not deny the role of creditors' panic to aggravate the crisis once it had erupted. On the other hand, the third interpretation does not deny that the fundamentals of the East Asian economies had deteriorated before the crisis but asserts that the deterioration was not severe enough to warrant a full-blown financial and currency crisis. Thus, while all three of the interpretations admit the growing weaknesses, corruption and over-investment in the East Asian economies and the role financial panic played, their degree of emphasis, is clearly different for different reasons. And the approximate reason, which the interpretations themselves do not provide, is that the first two define a crisis as a collapse of currencies to a severe extent, while the third defines it as a sharp shift of capital from inflow to outflow between year t-1 to year t.

Although the first two interpretations are very neat and straightforward, we will still stand beside the third interpretation. The reason is that one should not forget that there was no financial crisis or currency crisis alone but both of them one after another with financial crisis preceding the currency crisis. Hence, while deteriorating fundamentals can explain currency devaluation, financial panic can better explain the financial crisis preceding it.

There are several other reasons to believe that the crisis was the result of creditors' panic apart from the fact that they were not caused by weak fundamentals and over-investments due to moral hazard. Let us list a few —

- The crisis was largely unanticipated by the market players. They may have had concerns over the growing imbalances in these economies but almost no one anticipated a collapse. This is confirmed by the fact that total foreign bank lending to the 5 severely hit countries expanded from \$210 billion to \$261 billion between end-1995 and end-1996, an increase of 24 percent. It again increased from \$261 billion to \$274 billion between end-1996 and mid-1997, an increase of 10 percent (see Table 12).
- Net inflows of bank loans to the 5 severely hit countries amounted to around 5.9 percent of their combined GDP in 1996, 2.8 percent of combined GDP in the first half of 1997, and –3.6 percent of combined GDP in the second half of 1997. Thus, the reversal in bank loans between 1996 and the second half of 1997 is as high as 9.5 percent of the combined GDP (Radelet and Sachs, 1998a). A swing of such an amount in such a short span of time is very hard to attribute to changes in fundamentals.
- The crisis eased up after about one year, even though several fundamental conditions were not significantly improved (Radelet and Sachs, 1999). In our interpretations this marked

the end of the outflow of the short-term credits and consequently the end of the panic.

- The crisis hit those countries that were in a very vulnerable position to a sudden shift of confidence. We have pointed out those vulnerabilities throughout the previous two sections. One very good indicator of vulnerability is the ratio of short-term debt to foreign exchange reserve. It is a good measure to compare a country's short-term foreign liabilities to short-term foreign assets. In other words, it explains the ability of a country to repay its short-term foreign liabilities. If this ratio exceeds one then the country should be regarded as vulnerable to a creditors' panic.

Table 15 : Short-term Debt and Foreign Exchange Reserves, 1994 and 1997

Country	June 1994			June 1997		
	Short-term Debt (Mil. US$)	Reserves (Mil. US$)	Short-term Debt/ Reserves	Short-term Debt (Mil. US$)	Reserves (Mil. US$)	Short-term Debt/ Reserves
Argentina	17,557	13,247	1.325	23,891	19,740	1.210
Brazil	28,976	41,292	0.702	44,223	55,849	0.792
Chile	5,447	10,766	0.506	7,615	17,017	0.447
Columbia	3,976	7,718	0.515	6,698	9,940	0.674
India	5,062	16,725	0.303	7,745	25,702	0.301
Indonesia	18,822	10,915	1.724	34,661	20,336	1.704
Jordan	647	1,291	0.501	5,82	1,624	0.358
Korea	35,204	21,685	1.623	70,612	34,070	2.073
Malaysia	8,203	32,608	0.252	16,268	26,588	0.612
Mexico	28,404	16,509	1.721	28,226	23,775	1.187
Pakistan	1,708	2,307	0.740	3,047	1,249	2.440
Peru	2,157	5,611	0.384	5,368	10,665	0.503
Philippines	2,646	6,527	0.405	8,293	9,781	0.848
South Africa	7,108	1,755	4.050	13,247	4,241	3.124
Sri Lanka	511	1,983	0.258	4,14	1,770	0.234
Taiwan	17,023	90,143	0.189	21,966	90,025	0.244
Thailand	27,151	27,375	0.992	45,567	31,361	1.453
Turkey	8,821	4,279	2.061	13,067	16,055	0.814
Venezuela	4,382	5,422	0.808	3,629	13,215	0.275
Zimbabwe	704	534	1.319	7,31	4,47	1.635

Source: Radelet and Sachs (1998b)

Table 15 shows the short-term debt to reserve ratio for a number of emerging countries for June 1994 and July 1997. We present the data for June 1994 to show that Mexico and Argentina had similar vulnerabilities before their crisis in 1994-95, which was also a result of creditors' panic[2]. Short-term debt to reserve ratio exceeded unity in both Mexico and Argentina in June 1994 implying that they both were vulnerable before their fall. It should also be noted that the ratio was also greater than one in Indonesia, Korea, South Africa, Turkey and Zimbabwe but they were not hit by a similar crisis. This is not an evidence against the creditors' panic argument. Rather it lends support to the argument, which holds that a panic may or may not occur depending on creditors' expectations. Thus vulnerability is a necessary condition for a panic crisis to occur but not a sufficient condition.

This necessary condition was present in the severely hit countries of East Asia in 1997-98 too. It can be seen from Table 15 that Indonesia, Korea and Thailand had a short-term debt to reserve ratio of greater than one. Although Malaysia and the Philippines had a ratio of less than one, it was not far below. This, however, explains why these two countries were less affected by the crisis. We should also notice that Argentina, Mexico, Pakistan, South Africa and Zimbabwe had a ratio greater than one too. Therefore, they were also vulnerable to a creditors' panic.

These might raise the question as to why some countries were hit by a panic crisis while others were not when all of them were

[2] See, the following two papers for a good discussion on the Mexican crisis in 1994-95 along this line: "Mexico's Balance of Payments Crisis: A Chronicle of a Death Foretold", by Guillermo Calvo and Enrique Mendoza in the *Journal of International Economics*, Vol. 41, No. 3/4 , pp. 235-264, November 1995 and "The Mexican Peso Crisis: Sudden Death or Death Foretold?", by Jeffrey Sachs, Aaron Tornell and Andres Velasco in the *Journal of International Economics*, Vol. 41, No. 3/4 , pp. 265-283, November 1995.

vulnerable. To answer this question we have to introduce a term called 'coordination failure'. We can explain this term with the help of some symmetric, simultaneous moves and complete information games known as coordination games. These games are characterized by multiple Nash equilibria, which are Pareto-rankable. Two such games are presented below.

Player 1 \ Player 2	I	II	III
I	3, 3	3, 2	10,0
II	2, 5	5, 5	0, 0
III	0, 10	0, 0	8, 8

Game 1

Player I \ Player II		
I	3, 3	3, 2
II	2, 5	5, 5

Game 2

In game 1 there are two Nash equilibria — (3,3) and (5,5). Of them (3,3) is the Pareto inferior and (5,5) is the Pareto superior. But it can be seen that there is another outcome (8,8) associated with the cooperative strategy III of both the players that dominate even the superior Nash equilibria. Here, all players are better off playing strategy III yet may be unable to explicitly coordinate their strategies in achieving the most preferred outcome. This situation is called 'coordination failure'. Game 2 is nothing but game 1 without strategy III for both players. Here too, players may be unable to achieve the Pareto superior outcome due to a 'coordination failure'.

In our explanation of the Asian crisis, foreign investors failed to coordinate their expectations and the economy was stuck at a Pareto inferior equilibrium with lower levels of economic activity. It follows that each market participant was playing its optimal strategy so that the equilibrium was one of Nash equilibria.

But the macro outcome was socially undesirable since all the participants could be made better off with a reallocation of their strategies. This type of inefficiency is possible even in economies with Keynesian features according to Cooper and John (1988). They have provided formal proof to show that the inefficiency occurs due to externalities in the players' payoff function. In choosing their strategies players do not take account of their influence on the payoff of other players. For this reason we observe Pareto inferior Nash equilibrium. However, they have also reviewed a number of other situations involving Keynesian features in which coordination failure occurs. An example from the foreign exchange market can be found in Obstfeld (1996)[3].

The central theme of the above analysis is that a Pareto inferior outcome could be observed in a fundamentally 'not so weak' economy, like the East Asian economies before the crisis. In other words, a coordination failure might arise. When this happens the economy will be stuck at a lower level of economic activity which will be undesirable from the social point of view.

V. Concluding Remarks

In this paper we have explored the conditions of the real and the financial sectors of the crisis-hit East Asian countries in the period leading up to the crisis. We have not found empirical support in favor of the fundamental weakness argument. In financial sector there were some growing weaknesses that should have called the attention of the policy makers. These weaknesses made these economies essentially vulnerable to a shift in

[3] Interested readers may also consult the papers: "A Simple Model of Herd Behavior" by Abhijit V. Banerjee published in the *Quarterly Journal of Economics* in 1992 (Vol. 107 No. 3) and "Bank Runs, Deposit Insurance and Liquidity" by Douglas Diamond and Philip Dybvig published in the *Journal of Political Economy* in 1983 (Vol. 91).

expectation of the creditors. But cronyism or corruption was not the cause for the crisis as some observers have suggested. There are also a group of economists who seem to believe that the crisis was mainly the result of moral hazard arising from implicit government guarantees. Such an argument was proved to be wrong.

In our argument, the crisis was the result of a creditors' panic hitting the countries with significant vulnerabilities. Such a crisis may or may not happen depending on creditors' expectations. Thus, it is a bad equilibrium, which may occur but need not. In that sense the Asian crisis is an unfortunate event that could have been avoided. Finally, if we take this interpretation then we can safely say that the Asian economies will roar again in the near future and will continue to impress all.

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