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THE MODELS OF THIRD GENERATION: CONTROVERSIES ON THE PROFOUND NATURE OF THE ASIAN CRISIS



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ABSTRACT

Keywords

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E58, G15, G18, F59, F60.

This paper is consecrated to the literature review of the theoretical and empirical literature devoted to the outbreak of the Asian crisis in July 1997 which takes birth in Thailand on 2 July. Addressing the limits of the models of first and second generation giving a key role to the macro-economic fundamental, the models of third generation come to give a redefinition of vulnerability factors to crises by focusing on the imperfection of the financial markets and the risks of international banking liquidity.

Contribution/ Originality: This study contributes to the existing literature by providing a comprehensive framework for better understanding the Asian crisis. It further points to the lack of consensus on the origins of this crisis and the existence of a multitude of reflections offered by the literature.

1. INTRODUCTION

The collapse of the Thai Baht in July 1997 following a speculative attack was followed by an unprecedented financial crisis in East Asia, from which these economies are still struggling to recover. The speculative attacks on the Thai Baht show that even economies with sound fundamentals are not immune. In fact, it has been observed a rapid contagion to Malaysian, the Philippines and Indonesian currency, as well as the emergence of intense tensions in the domestic financial system (very high interest rates, and the collapse of stock prices, risks of massive bankruptcies in the banking sector and manufacturing).

A great deal of effort has been devoted to trying to understand the causes of this crisis. Among the new trends in the modeling of international financial crises called 'third generation of crises', one view is that there was nothing inherently wrong with East Asian economies, which

have historically performed very well. These economies experienced a surge in capital inflows to finance productive investments that made them vulnerable to a financial panic. Radelet and Sachs (1998a); Chang and Velasco (1998). In this vision (Cartapanis, 2004) argued that this crisis is due to the influx of foreign capital, which have made the emerging Asian economies, particularly vulnerable to self-fulfilling panics, previously modeled by Diamond and Dybvig (1983) in closed economies. There was, certainly, of the structural difficulties in the Asian economies but, according to the proponents of this vision, the fundamental changes can no longer explain by themselves the magnitude of the crisis, as well as the phenomena of surge in international capital inflows. An alternative view is that weaknesses in Asian financial systems were at the root of the crisis. These weaknesses were caused largely by the lack of incentives for effective risk management created by implicit or explicit government guarantees against failure, Krugman (1998); McKinnon and Pill (1996); Corsetti *et al.* (1999). The weaknesses of the financial sector were masked by rapid growth and accentuated by large capital inflows, which were partly encouraged by pegged exchange rates. The Asian crisis has generated a very large number of bankruptcies and closures of banking institutions, in the presence of an important link between the governments, the supervisors, the politicians, the business and financial institutions. All this makes the Asian crisis of 1997 an interesting case to study. This paper begins by examining the board characteristic of the East Asia crisis in 1997 we consider its chronology and its progress. In section II, we debate on the appropriateness of the theoretical models which were previously presented that prevailed for the Asian crisis's evaluation.

2. CHRONOLOGY OF THE SOUTH-EAST ASIAN CRISIS IN 1997

The Asian crisis has begun in July 1997 when Thailand has abandoned its fixed exchange rate system in response to speculative attacks on its currency. Investors started to flee Asia, and the crisis rapidly spread to other countries namely Malaysia, the Philippines, Republic of Korea and Indonesia. The financial crisis severely undermined public finances in a number of countries and prompted the IMF to organize a rescue package totaling \$112 billion for Thailand, Korea and Indonesia. Despite this support, interest rates rose sharply, causing many companies to become bankrupt as the cost of borrowing rose. Foreign and domestic investors withdrew funds. The region experienced a collapse in the level of economic activity while the number of bankruptcies and level of private sector debt escalated. Between July 1st and mid-October 1997, the exchange rate have been depreciating between 30% and 50 %, the stock price losses amounted to between 20% and 30% etc. according to the IMF (world economic outlook, October 1998) serious problems have continued to affect the banking sector in Asia of the five countries until the autumn of 1998, and the nonperforming loans were estimated at 20 or 30 per cent of the total outstanding. Several Asian countries, then commit major reforms in the financial sector and elsewhere. The first signs of improvement appeared toward the end of 1998.

2.1. *The Walk toward the Crisis*

Since 1996 Thailand is considered the most extremely vulnerable country. Whereas the growth had reached 10% per year in 1985 but it is slowed down considerably in 1996 to 5.9%. In fact, the economy was gradually entered a state of overheating, which had seen the inflation rate increased by more than 1.7% between 1993 and 1994, and then passed to 5.8% in 1995¹. The central bank had begun to tighten its monetary policy in mid-1995, in order to slow down the activity. In doing so it had introduced measures in an attempt to mitigate the effect on the economy's liquidity by the additional external capital inflows attracted by a higher remuneration and by the stability of exchange rate policy. This trend mainly reflects the increase in the reserve requirement ratio on short term operations. In this context also the central bank issued treasury bills to remove liquidity on the local market (August 1995). The slowdown in domestic demand, which began in 1995, was combined in 1996 with a slowdown in external demand addressed to Thailand. While exports had displayed an average annual growth rate of 18% in value between 1990 and 1995. The year 1996 saws a dramatic reversal of this trend: exports falling by 1.9% in value. The imports stagnated, after an explosion in 1995 (+ 31.9 %). Accordingly, the trade deficit, which had already reached the level of -8.7% of GDP in 1995, has furthered increased in 1996 to reach - 8.9% of GDP. For its part the balance of payment was stabilized at a degraded level: -7.9% of GDP in 1996 as in 1995. Thus, Thailand started the 1997 with macroeconomic conditions less favorable than in previous years. The lack of visibility on the situation is pushing international investors to question the sustainability of external commitments of the country, which is sustainable in the short term only if the growth of exports allows the reimbursement. In addition, the first tensions appear in the financial system. In January 1997, the first Thai financial institution '*Finance one*' had reported difficulties resulting from non efficient operations of the property developers. At the same time the rumors ensures that the proponent '*sompransong*' would be pulling funds from a soon-to-be-failing institution. Would be close of payment default denominated in foreign currency. (This default was confirmed on February 5th, 1997). On February 14th the rating agency Moody's announced that it placed under surveillance, with negative implications, the long-term sovereign debt of Thailand. Severe pressure on the Thai Baht led to the increasing of interest rates. In the month of March 1997, the Thai markets are agitated again. In order to resolve its liquidity problems, the central bank announced that the corporation '*Finance one*' must be merged with the twelfth commercial bank in the country. Ten other financial institutions are urged to strengthen their own funds and their provisions for bad debt, especially affecting the real estate industry. The drop in the stock market of Bangkok led the authorities to suspend trading of financial securities and banking. Faced with these troubles of local markets, the government announced that it intends to issue for \$3.9 billion²

¹ The data are from the report of the International Monetary Fund (IMF)

² The information is drawn from the study: "the *Asian capital markets dynamics and spillover*"; chapter II of the international annual report capital market prepared by the IMF (September, 1998).

of treasury in order to purchase establishments in difficulty and a part of non-performs loans on real estate assets. Except that, nor the governmental draft of impaired loan redemption nor the draft affiliation of *Finance one* has been made, however the exchange market does not react to these internal disclaimers. Instead, the Baht has been facing a violent attack in mid-May 1997, because a rumor about the constituting of a strong short- position of the Baht against the dollar by the Hong Kong branch of a large Thai Bank. Thus, the central bank of Thailand has contacted several commercial and off shore banks to sell forward the Baht against the dollar and thus defend the parity of its currency. On May 14th, the speculative attacks restart again, and the central bank spent in a few hours \$10 billion (in the form of forward sales). Hence, on May 15th, faced a depletion of its foreign exchange reserves, the Bank of Thailand decided to abandon the peg and allowed the currency to float. The central bank mobilizes more than \$23 billion, it raised its basic interest rate and instituted a capital control which detached domestic market from the offshore market. Immediately, the cost of constitution of sale position on the bath strongly increases and the market operators rush to buy Bahts in order to cover their positions: the central bank's foreign exchange reserves increase again while the parity of the bath is preserved³.

On July 2nd 1997, the government and Thailand's Bank announced that the Baht will be submitted to a "float control", the first reaction of the financial markets has been favorable: the Bangkok stock exchange earned 8% the day after the announcement and 8.5% the following day. ⁴

However, the Baht drop of 15% on the domestic market and 20% on the market offshore, the investigation carried out by the IMF proved that the abandonment of the fixed link between the Baht and the dollar has aroused expectations of depreciation from the domestic actors, who were exposed to currency risk (including through a debt in foreign currency without coverage), these domestic firms would have then bought massively the dollars on the spot market, contributing to the movement of the bath depreciation. On July 28th 1997, the Thai government requested assistance from the IMF. The first signs of a regional contagion appear: between May 9th and May 16th, the interbank interest rates on a day-to-day changes from 14% to 16% for the Indonesian rupiah, the same rate goes from 7% to 19% for the Malaysian Ringgit and 11% to 20% for the Philippines peso.

2.2. *The Neighboring Countries are affected*

The shock was automatically created the new shocks on the other emerging area countries due to the growing interdependence of these Asian economies. Thus, after the depreciation of

³According to the IMF, the losses of central Baht counterpart of the term contract would have been between 1 and 1.5 billion dollars between min-May and the end of June 1997. Study of the IMF: «Developments and prospects in Emerging market », international capital market 1997.

⁴ According to Morgan (1997): the free float will not without cause some suffering, it does not solve the problems overnight liquidity of Thailand, the difficulties of its financial sector nor the immense capital requirements (Page 146).

the Baht, the pressure is scope for other Asian countries presenting the similar characteristics, notably an overvalued currency and a banking system weakened by non-performing loans.

The financial crisis has spread to Malaysia, the Philippines, the Republic of Korea and then to Indonesia. Since July 1997, the "miracle Indonesia" has been swept away by the financial turmoil of the other economies of the region and has revealed the deep political and economic cracks of the country. The Indonesian companies, relying on the continuation of a high growth rate, are subject to borrow to speculate. Billions of dollars were spent in the real estate and in the stock market, creating a dummy prosperity. As in the Thailand's case, the foreign capital has brutally doubted of the robustness of this growth and decided to fly out. By a domino effect the rupee takes down the dollar at the beginning of 1998 and loses up to 80% of its value. Unable to dam up a crisis, which strikes thousands of companies, the government called the IMF and the World Bank for assistance. On November 5th, 1997, the authorities concluded an agreement of three years with the IMF of an amount of US\$ 15 million. In January and February 1998, Jakarta becomes the epicenter of the crisis. The value of the shares is collapsing and the fall of the rupee exceeded all other currencies of the area. The social impacts of the crash are very critical. Inflation and serious devaluations are decreasing the purchasing power of the Indonesians. In this context the government decides on May 5th to raise subsidies on primary products resulting a rise of prices (in particular oil products). This lifting of subsidy aimed at consolidating the public finances and proving the respect of Indonesia commitments to the reforms required by the IMF, marked by social unrest. The World Bank estimated that the unemployment rate have passed from 4.9% to 13.8 % in 1998; the net salaries have fallen from 40% to 60% in the first year of the crisis, there were also an extremely important increases in the prices of electricity (200 %), milk (50 %) and rice (36 %) etc. In January 1997, the Southeast of Korea is facing to an important social crisis marked by strikes and violent acts. But what worried the financial market operators is not the social unrest (in a country relatively accustomed to labor struggles) rather than the information relating to the health of the productive sector is more disturbing.

The Korean economy is dominated by the "chaebol", industrial conglomerates largely oriented toward exports. The chaebols have funded their development by a massive debt to the banking and domestic financial sectors. This deep indebtedness attached to a low profitability made the chaebol particularly vulnerable to any shock on their cash-flow. The banks on their sides depended on the health of chaebol directly by their claims and indirectly by the assets guarantees on the value of the chaebol securities. In the first months of 1997, the creditor banks of the steel group Hanbo Steel refuse to renew the short-term credit which representing more than \$350 million. Faced with this refusal and the impossibility to find complementary sources of financing, the Hanbo group has defaulted on the debt maturing January 23rd, 1997, then, it is declared bankrupt. This last is the second bankruptcy of an important chaebol (classed fourteenth of the country) and have left 45 creditor banks with an outstanding debt of \$5.8 billion. The loans of the major creditors of Hanbo have been made without sufficient guarantees and are practically unrecoverable. After Hanbo, a new important actor in the Korean steel industry is declared in cessation of payment on March 19th 1997 (Sammi Steel). The bankruptcy of Sammi Steel has

weakened a large number of sub-contractors and again deteriorating the quality of the portfolios of Korean banks. In fact, in the fall of 1997, the situation of Korean's firms and banks inspires growing concerns. The list of flaws is lengthened then.

On October 24th, the rating of the sovereign risk of the Korea is degraded. This decision launched a spiral of the mistrust which led later to the collapse of the exchange rate. Korea's situation is worsening day-to-day; the Korean government and the IMF have reached an agreement on 3rd December. The financial support provided to the Korea amounted to \$57 billion over three years, including \$21 billion paid by the IMF, \$10 billion paid by the World Bank and \$4 billion paid by the Asian Development Bank. Malaysia and the Philippines were not immune to this "contagious flu"; on July 11th, the central bank of the Philippines indicates that the peso will be fixed by the market. The floating of the currency takes place while the intraday interest rate has reached 32 %. The defense of the peso has ceased, the latter has depreciated by more than 11 %, whereas the Philippines stock exchange earned 7.6 %. Investors appreciate the decision of the Philippines, that they consider it more relevant to the requirement of the economy. The pressures are then stronger on the Malaysian Ringgit and the central bank of Malaysia is forced to put the overnight rate at 50 %. It abandoned the defense of its currency on July 14th. The same day the IMF decided to extend until 31 December 1997 a credit facility of \$650 million.

Therefore, the end of 1997 marks a stopping point for the international crisis and opens a few months of relative calm. Only Indonesia remains unstable into the turmoil.

Table-1. The external financing of the five Asian countries (in billions of dollars)

	1996	1997	VARIATION 1996-1997
Private Capital	93.0	-12.1	-105.1
Direct Investments	7.0	7.2	+0.2
Portfolio Investment	12.1	-11.6	-23.7
Capital of the banking sector	55.5	-21.3	-76.8
Other non-banking claims	18.4	13.7	-4.7
Public and official capital	-0.2	27.2	+27.4
Total of net external funding	92.8	15.2	-77.6

Source: Institute of International Finance, "capital flows to Emerging Economies", January 1998.

2.3. The Consensus on the Fault Lines of the Asian Economies

The factors at the origin of the financial crisis in South-East Asia seem today rather well-known, even if the debate on their relative importance will probably still continue at a certain time. For the majority of observers, the various errors of domestic policy have constituted the first cause of a 'classic' overheating which has triggered the financial crisis, but in addition most of the countries of the region had an under-developed and low financial sector. The governments sought to promote the industrial firms and services by encouraging the credit to the priority sectors and by capping the interest rates and through public financial institutions.

- A macroeconomic management handicapped by the fixed exchange rate policy (currency board)

The countries of South-East Asia partly based their strategies of industrialization on the establishment of a fixed link between their currencies and the dollar. This policy of nominal anchor thus retained is effective as long as the economic cycle is synchronized between the countries whose currencies are linked and when the country which its currency constitutes the reference (the United States) has an important part in the external trade of the emerging country. However, these two conditions are progressively weakened. The purpose of creating the currency board was to provide for the inhabitants with the benefits of a stable and convertible currency and help to establish a stable external environment during the period of growth driven by exports. With the maintenance (at certain times) of a slightly under-valued exchange rate (World Bank, 1993) this policy has played a very important role to promote export. The importance attached to the export-promoting policies could explain why the Asian countries have hesitated to abandon the fixed parities when their exchange rates have been subjected to growing pressures in the middle of the years 90, this situation which seemed ideal for putting an end to the fixed exchange rate regime without causing disruptions (Eichengreen and Masson, 1998).

The United States being the main outlet for Asian exports, the currencies were generally attached, *de jure or de facto*, to the dollar. The close link between the Asian currencies and the U.S. dollar has not allowed to correct the degradation of the competitiveness introduced in the mid-1990s; in fact, the appreciation of the US currency, since the mid 1995, would be the main cause of serious current account imbalances. These imbalances are resulted by a widening of current accounts equivalent to several percentage points of GDP. Malaysia recorded the highest deficit current in 1994 (-14% of GDP). In Indonesia, the deficit narrowed between 1995 (-4.3% of GDP) and 1996 (-3.3% of GDP), while remaining higher than the performance recorded in 1993 (-0.8% of GDP) and 1994 (-1.5% of GDP), but in 1990 and 1991, the current account deficit reached -4.4 per cent of GDP. A similar pattern can be observed in Thailand: a high current account deficit in 1990 and 1991 (greater than 8% of GDP), then it decreased in 1995 and 1996 (respectively - 8.4 and -8.5 of GDP). For its part with the exception of 1991 (-3.2% of GDP), the Korea has known current deficits slower than 2% of GDP between 1990 and 1995. In contrast, 1996 saws singular degradation, the current account deficit widening to -4.8% of GDP.

In any event, except for Malaysia, it seems clear that the current balances are deteriorating from 1994 in the other four countries most affected by the crisis (Korea, Indonesia, the Philippines and Thailand). Several factors have been put forward to explain this deterioration:

- In the first place the link of these currencies with the dollar would have led to an appreciation of the real exchange rate. -In the second place, the exports of the Asian countries have been affected by the severe crisis which has occurred in 1996, in the semiconductor market. The prices of semiconductors have lost up to 80%; this causes a drop in the prices of the other electronic products. However, the countries of Southeast Asia have massively reoriented their production system for electronic products. By increasing the part of high-tech products that are intended for a very competitive market on which Japan occupied a dominant position, Asian market economies have become more sensitive to fluctuations of the value of the dollar vis-à-vis the yen. Of this fact, their currencies' peg to the dollar has become more and more inappropriate,

and it became a source of instability when the yen has started to go down against the dollar in 1995.

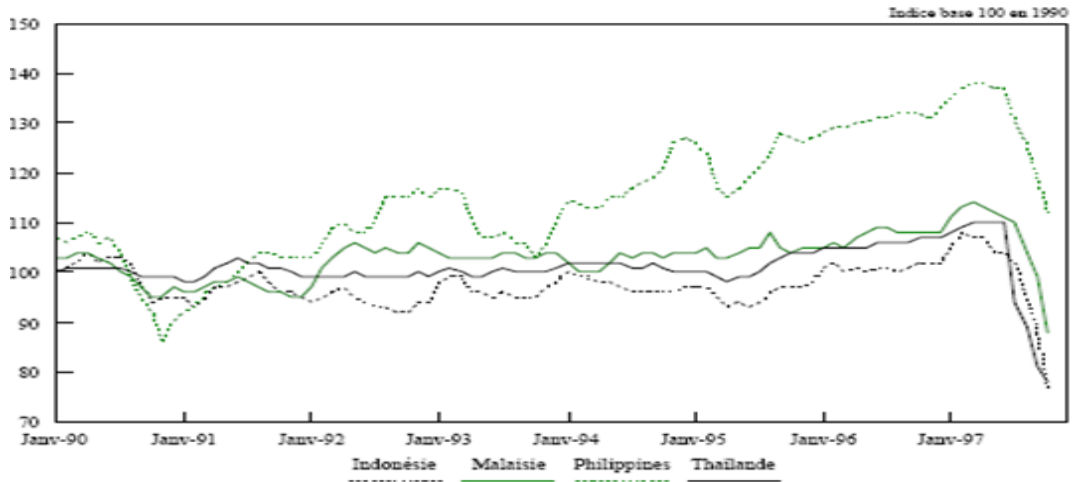


Figure-1. Real effective exchange rate

Source: International Monetary Fund (IMF)

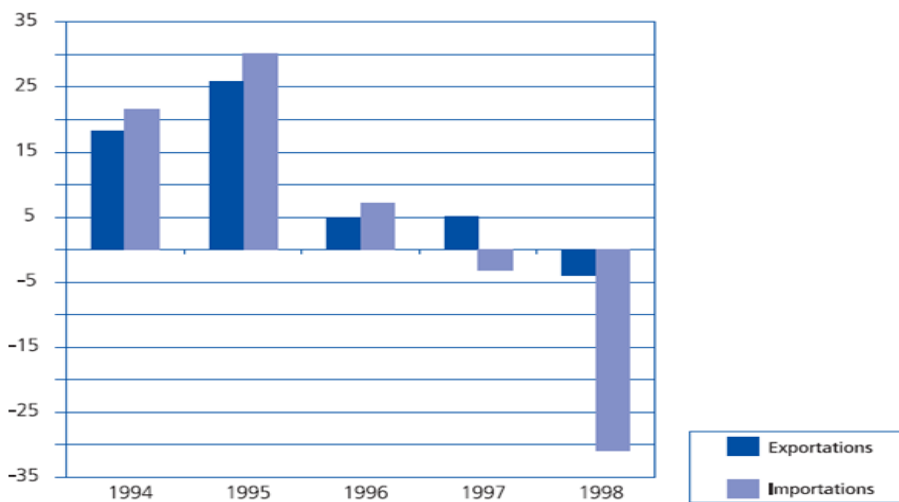


Figure-2. Evolution of trade in the countries of South-East Asia in crisis, 1994-1998

Source: International Monetary Fund (IMF)

In the third place, the countries affected by the crisis would subject to an increasing competition of the Asian countries whose production costs are lower, and competition from China is often mentioned in the economic literature devoted to the Asian crisis.

- *A financial liberalization leading to the failure of financial systems.*

Financial liberalization has allowed an exceptional development of capital inflows in Asian countries from the end of 1980, the low level of interest rates was inciting the holders of liquidity to seek on the emerging markets a higher remuneration than those expected in the mature markets. The South-East Asia has become the main destination of private capital flows in the

early 1990s, its share in the flows to emerging countries passing by 10% at the beginning of the years 1980 to over 40% in the years 1990.⁵

At the same time, the deficiencies of the financial systems have undoubtedly heavily contributed to the high volatility of capital flows in some countries of South-East Asia. Also the borrowing operations carried out by the Asian banks on the international markets at low interest rates in order to make loans at higher rates on the local markets have been shown to be highly cost-effective. However, it requires betting that the exchange rate would be more stable than currently expected by financial markets, judging by the interest rate differentials. Moreover, these operations have been possible because the national companies have been ready to increase significantly their debt burden and the international banks have shown a willingness to fund them. The strong demand of domestic credit was due to the high expansion of investment plans that were focused on increasing market share with inadequate attention to the returns generated, the latter were tolerated expressly or implicitly by the authorities.

In this context, the economist, [Krugman \(1998\)](#) has argued that: this extraordinary expansion took place not primarily because of new and highly profitable opportunities, but because banks in the countries where credit expanded fastest accepted increasingly narrow interest margins even as riskier business was being undertaken. The less efficient banks were not forced to leave the industry or to merge with more efficient banks; instead, government guarantees, implicit or explicit, kept such banks afloat.

In short, the macro shock was amplified by the balance-sheet vulnerability caused by the weaknesses of Asian banks, nonbanks and corporations. Firms in developing East Asia were highly dependent on indirect finance (i.e., bank loans) for working and investment capital and had high debt/equity ratios. Moreover, the local banks and nonbanks were exposed to two kinds of balance-sheet mismatches. They borrowed in USD and lent to domestic projects in local currency (*currency mismatch*). In addition, they borrowed in short term loans but lent to long-term domestic projects (*maturity mismatch*). When the currency depreciation began, the balance sheets of these financial institutions were immediately hit and bad debt increased. When foreigners demanded repayment, they had no foreign cash. This is a liquidity problem, but as the crisis deepened, it created insolvency as well. In addition, the collapsing domestic demand, which was caused by panic, credit crunch (malfunctioning of the banking sector) and wrong policy prescriptions (in some countries), damaged the real sector and led to the accumulation of bad debt. This further deteriorated the quality of the balance sheets of financial institutions.

The vulnerability of the all system has also been increased by the increase short-term external debt. Several indicators can be used to estimate the capacity of a country to assume its external commitments with its liquid resources. In fact, the ratio of external debt to short-term foreign exchange reserves has sharply increased between 1994 and 1997 furthermore the ratio of

⁵ [Ezaka and Takagi \(2000\)](#), the National Bureau of Economic Research

debt/reserves in the three countries most affected by the crisis (such as Indonesia, Korea, Thailand) had exceeded 100% in 1997.

- A fragility of banking systems illustrated by an excessive risk-taking because of moral hazard

It should be noted that the banking business is based for a large part on the mechanism of transformation, in particular for the deposit banks. The banks make loans, they are refinancing through deposits collected by the network operators. These sight deposits are by nature perfectly liquid. However the risk arising from this transformation is reduced because the deposits are overall stable and that their possible fluctuations can be rather easily apprehended. It is quite otherwise when resources in the short term which depends on the bank may provide the refinancing of its loan portfolio which comes from interbank credit lines. Their renewals depend on the appreciation that the creditor bank relates to the debtor bank, generally, this appreciation is more volatile than that of the large mass of the particular depositors.

Moreover, the imbalance of maturities in the balance sheets of the banks and companies is added a misalignment in the currencies used to denominate the liabilities and the assets. The loans were generally carried out in dollars or yen to be converted into local currency and then to finance refundable investments in local currency. In the absence of hedging of foreign currency liabilities, the balance sheets were thus exposed to currency risk.

Thus, the solidity of the banking sector, in this context, is an essential component of the stability of the economy as a whole. In all the countries concerned, the progressive liberalization of financial relations with foreign countries is coupled with an internal liberalization of conditions for the financing of the economy; these countries have dismantled little by little the quantitative and qualitative credit control and also the regulation of interest rates.

For several years, the increase in the price of financial or real estate assets and the expansion of the credit bank have been mutually reinforcing. The banks invested directly in shares or were taking shareholdings in other types of financial institutions. These institutions were essentially unregulated; there was too much 'connected lending' to bank directors, managers and their related businesses; there was excessive government ownership or involvement in the institutions; and the quality of public disclosure and transparency requirements was also poor. The institutions were also not required to hold sufficient equity in their balance sheets. As a result, they were subject to a severe moral hazard problem in which the owners of the institutions were encouraged to engage in excessively risky lending in the expectation that they would be bailed out if things went wrong.

Similarly, the boom of the real estate fuelled the expansion of credit to this sector: the borrowers raised funds, even at high interest rate, in order to purchase the assets which are appreciated quickly, whereas the banks continue to grant credit for the value of their security increased, this excessively risky lending fuelled asset price inflation, creating a virtuous circle. [Chote \(1998\)](#) explains this situation by: risky lending drove up the prices of risky assets, which made the financial condition of the intermediaries seem sounder than it was, which in turn encouraged and allowed them to engage in further risky lending.

Difficulties have appeared since 1993 when the price of the real estate assets and shares of companies operating in the real estate industry has left the ascending trajectory on which they were placed for a few years to get to fluctuate. At the beginning of 1998, the analyzes of JP Morgan estimated that the banking risks related to real estate were high in Indonesia, Japan, Malaysia and Thailand, and moderate in Hong Kong, the Philippines, Singapore and Korea.

Independently of the weakening arising from the phenomena of a speculative bubble on the bank's balance sheet, the quality of the loan portfolio was also weakened by the link between the banking environment, the political power and the productive sector.

In order to avoid a deterioration of confidence in the financial system, the authorities of the emerging economies (as in the case of advanced economies) play the role of "lender of last resort", with the aim to prevent a large financial institution either put into bankruptcy in the case of a liquidity problem. In developed financial systems, the State generally brings its assistance only provided that the shareholders of the banks assume the important losses and that the leaders are replaced. However, in South-East Asia, before the 1997 crisis, the safety net has generally allowed the permanent injections of public funds into the private banks. In mitigating the financial risks as well for managers than for the shareholders, these measures have caused problems of moral hazard. The role and functioning of the banking sector seem to be more closely linked to the public authorities in the emerging market economies. These closer ties do not result in a higher financial participation of the State in the banks, but rather take the form of a credit control and means of funding, as well as the control of the tax regimes which are generating distortions. In these conditions, the banks are not autonomous seeking to maximize their profits, but operate on the contrary, as bodies of quasi-fiscal distributing quasi-subsidies for certain sectors that do not appear in the accounts of public administrations. However, this practice may suggest that the loans as well as the international commitments of the banks are guaranteed by the State. In a period of rapid economic growth, the performance which is below the average of these appropriations administered, tend to be masked by the increase in deposits (and, in some cases, by additional injections of public capital in the banks). By contrast, when economic activity slows down, this system can seriously weaken the banking sector. In Korea, Indonesia, Malaysia, the Philippines and Thailand, the banks have been encouraged by regulatory measures (or by pressures), to distribute a fixed proportion of their loans to certain sectors (Folkerts-Landau and Ito, 1995; The OECD Economic Outlook Highlights, 1998). As a result, the banking sector in these countries has become particularly vulnerable.

3. CHARACTERIZATION OF THE ASIAN CRISIS

3.1. The Models of First and Second Generation Seem to be Inappropriate to Explain the Asian Crisis

The models of the first generation are effective to explain the Asian crisis:

The model founder of the first generation is due to Krugman (1979) following the Latin-American crises of the year's 1970s. This model has been improved during the 1980s, especially under the impulse of the work of Flood and Garber (1984). In this family of models, the crisis is explained by a degradation of the fundamentals of the economy, which at a given time, become

incompatible with the maintenance of fixed exchange rate: an objective contradiction between the two macroeconomic aspects, namely the deficit of current payments and the fixity of the exchange rate. For Artus (2000) "the model cannot apply too badly", taking into account the fact that some countries had a trade deficit at the time of the crisis (this is not the case for Malaysia and Indonesia), that their currencies are experiencing a real over-evaluation and that inflation was higher than inflation in the United States, but it is not either satisfactory; the author adds that this type of model may be the best adapted for Korea.

Krugman (1998) the first generation of model applies imperfectly to the Asian crisis: according to this theory of crisis, foreigners analyze in a way priority the aspects of the fundamentals. However, despite a few difficulties in the current balances in 1996, it seems hardly possible to explain the Asian crisis exclusively by a degradation of the fundamental. A second feature of models of the first generation must be confronted with the Asian crisis: the idea of the possibility of anticipation of the currency crisis. Radelet and Sachs (1998a) specify that the currency crisis of Asia has not been anticipated at all. In the 'deterministic' model of Krugman, the speculative attack of currency can be triggered in an early way the currency crisis when the speculators feel the inadequacy (and or the exhaustion) of monetary reserves to maintain the fixity. Experience has shown that this crisis was indeed anticipated neither by the international institutions (World Bank and IMF) nor by the rating agencies.

In the final, the model of first generation applied to the Asian crisis butte on three essential points:

- The limited impact of the slight degradation of fundamentals on the anticipation of monetary market
- The lack of taking into account the international private banking flows in the destabilization of the exchange markets.
- A lack of anticipation in the devaluation
 - The models of second generation do not explain the Asian crisis in a satisfactory manner:

The second generation introduces the existence of multiple equilibria: in this type of models of crisis, the operators have a doubt in the maintenance and the validity of the system. These crises called self-fulfilling because the quality of the fundamental and the robustness of financial systems does not justify their breakup.

The model of Obstfeld which the main novelty lies in the introduction of the concept of 'self-fulfilling prophecy' can it explain the nature of this crisis with more success compared to the first generation? The sharp reversal of expectations of investors about the economic performance of the Asian countries seems to confirm the relevance of this type of model especially when it happened a radical change of the fundamental. As well, it could be in the case of a scenario with multiple equilibria within that a purely deterministic framework. Then, these models of second generation insist on a game of conflict between international investors and national governments; the case of this crisis is particularly interesting because this kind of game has been well observed before the crisis of July 1997. These Asian countries have known degradation in their current

balances (in particular the fall of exports) resulting a decline of the State's revenues and an aggravation of the budget deficit. Nevertheless, foreign investor's concern about these unfavorable developments has pushed the governments to take measures of budgetary restrictions at the end of 1996. Therefore, in the game between the authorities and the foreign investors, it appears that this government action has helped to keep intact the belief in the maintenance of the fixity. Indeed, the model of Obstfeld (1994) shows that the government analysis with some rational manner the importance to remain in fixed exchange regime: it is not proven that the authorities (notably Thai) had had the intention to leave this exchange rate regime. Moreover, the Thai government has tried to save this exchange rate regime, whatever the cost until July 1997.

It seems, therefore, that except for a short period, between the end of 1996 and the beginning of 1997, the second generation model cannot apply fully to the Asian crisis; it appears that the difficulties of financial systems which seems to be a determining factor in the explanation of this crisis, have not been taken into account by this modeling.

In short, these models of Obstfeld are partially inadequate to explain the unfolding of the crisis of 1997. The main point that was taken by this type of model is directly linked to the nature the crisis: for these models the crisis is the final result of a macroeconomic dysfunction, whereas in the case of the crisis in the Asian countries, the latter appears as a collateral effect.

With the Asian crisis, within the framework of a new third generation, it will be highlighted the interactions between currency crisis - banking crisis and financial crisis.

3.2. The Models of Third Generation: A Debate on the Nature of the Crisis in South-East Asia

Developments in the aftermath of the Asian crises of 1996-98 led to two broad categories of approach: a moral-hazard approach emphasizing the effects of information asymmetries in financial markets (e.g., McKinnon and Pill (1996) and a financial fragility approach emphasizing the potentially destabilizing effects of intermediation (e.g., Goldfajn and Valdés (1997) or Chang and Velasco (1998)). Both approaches provide a more integrated view of financial crises and stress, in particular, the links between banking difficulties and currency crises.

Three themes are present in this new literature to explain the origin of the Asian crisis of 1997: a solvency crisis, a liquidity crisis and a crisis of transition.

A solvency crisis: some analysts have attributed the origin of this crisis to the economic policies set by the Asian governments. For them the crisis translates the concern of the creditors of these countries about their ability to repay their foreign debts. The political leaders of the Asian countries would not correctly controlled overheating emerged in the first half of 1990. This led to the creation of speculative bubbles mainly in the real estate and financial assets, which served to make economic actors more fragile. With these fundamental imbalances, the structural distortions of economic policy would have precipitated the outbreak of the currency crisis, in July 1997.

The followers of this explanation come quickly denounce the interactions too narrow between the exercise of political power, financial power and economic power.

In conclusion, the famous Asian model of development is thus ultimately, a '*crony capitalism*' which, at best, came at out of gas, in the worst case, had been able to build its success only on the

complacency and the blindness of the advanced countries. It must collapse when the markets confront it with the operational mechanisms of economic rationality.

In this analysis, the theme of moral hazard becomes central. At company level, to maintain high rates of growth, political pressures have aroused a long tradition of guarantees and quasi-public guarantees to private projects, some of which, have been undertaken by the government, supported by grants or financed by privileged loans. Production strategies have naturally underestimated the cost and especially the risks pertaining to the projects implemented. With the feel that the governments would in any event to support the failing firms, investors have been led to believe that the return on investment was practically immunized against the economic shocks.

At the level of the financial sector, a poor regulation and a lax supervision, have prevented the authorities to impose an effective risk management to banking institutions and assimilated.

Finally, the moral hazard appears in the behavior of the international banks, which until the period preceding the crisis, was lent to the Asian country, without any respect to the normal practices of risk assessment. Underlying this syndrome of over-financing (Corsetti *et al.*, 1999) the presumption that the cross-border interbank credits would be effectively guaranteed, either by a direct intervention of the governments, either through the international institutions (such as the IMF), has been determined factor of the interbank insouciance.

The analysis of Stanley Fisher (International Monetary Fund, 1998) focuses on objective factors, which could be diagnosed before the beginning of the events. He considers in the first that the signs of economic overheating became increasingly evident on the eve of the crisis and that the IMF sees it coming 18 months in advance. He cited in particular the magnitude of the current deficits, the fixity of the currencies against the dollar, the domestic debt increasing in foreign currency, the loss of competitiveness of exports, the training of speculative bubbles on the stock markets and real estate, the overexposure to exchange risk of the company and the financial institutions and even the laxity of prudential and supervision systems. Fisher added that the Asian countries, especially Indonesia, suffered from a lack of transparencies regarding the links between the government, the companies and the banks, which had contributed to the crisis and has complicated the efforts to defuse. In short, the thesis of the IMF is that the crisis appears to have originated in an inadequate economic policy, and in a lack of information and transparency. In other words, according to some observers, it is a crisis of Asian capitalism, which could not call into question the benefits of financial globalization.

For its part, Krugman (1998) which has concentrated its analysis of the fragility on the financial sector and on the weakness of the regulation, considers that the Asian crisis is mainly due to a speculative bubble in asset prices. Turbulences on the markets are a symptom of the crisis, but not their cause. According to him the problems began with the financial intermediaries. In fact, the behavior of excessively risky loans of these institutions is responsible for inflation on the asset price. Krugman's analysis does not reject the traditional interpretations, but recognized the existence of spontaneous self-fulfilling crises: *"I hereby capitulate. I cannot see any way to make sense of the contagion of 1997-98 without supposing the existence of multiple equilibria, with countries vulnerable to self-validating collapses in confidence, collapses that could be set off by events in faraway*

economies that somehow served as a trigger for self-fulfilling pessimism". According to Krugman, these self-fulfilling crises can be said to have resulted from a combination of a weak and inadequate policy of supervision and speculative bubbles led by excessive credit growth, and financial liberalization.

With this approach, Krugman is not far to join the holding of the second vision, which focuses on Asian's illiquidity rather than on their insolvency.

A liquidity crisis: we notice that the external debt of the Korea, represented only a limited percentage of its GDP, Feldstein (1998) has developed, in an article entitled: "This was clearly a case of temporary illiquidity rather than fundamental insolvency " the thesis of the liquidity crisis. The latter reveals that a temporary imbalance in the balance of payments did not in any way mean that the countries concerned should be regarded as insolvent.

Stiglitz (1998) investigates the sources of the 1996-97 Asian crises. For this author, the core of the crises lies in the financial system. Further, he focuses on the accumulation of short-term debts in dollars by the private sector. He also mentions the potentially destabilizing effects of financial liberalization and lending booms in a context of absence correct measurement of risk, a weak policy of regulation and a lack of transparencies.

Overall, the analyses of Stiglitz calls into question the liberal ideology that open financial markets are favorable to the growth of the activity. He clearly locates the various responsible: "The problem did not come from imprudent governments, but from the private sector".

Sachs (1998) radicalized yet the financial analysis of the Asian crisis. He certainly recognizes that emerging Asia had exposed itself to financial chaos because its financial systems were riddled by insider dealing, corruption, and weak corporate governance, which in turn had caused inefficient investment spending and had weakened the stability of the banking system. He argued that the banking sectors in all of the crisis countries remain illiquid and heavily undercapitalized. Since the banks are net borrowers from abroad, the sharp real depreciation of the national currencies almost surely have meant that a large proportion of net worth has been wiped out. He added also that the 1997 crisis was largely unanticipated, although the concerns were more pressing on Thailand in the first half of 1997.

A crisis of transition: in his book entitled " *dragons of fire, dragon of paper. Asia has it a future?* ", Godement (1998) deviates from the approaches Anglo-Saxon which centered on the controversies relating to the economic causes of the financial crisis, he develops a more structural approach.

The basis of his reflection is the large widespread paradox ie. This crisis has been both unanticipated and inevitable. It is unanticipated because the behavior of actors (including investors and market operators) is a highly volatile parameter.

In parallel, the crisis was inevitable in the sense that the Asian economies were afflicted with default more inadmissible. Francois Godement joined the "conventional" analyzes relating to the structural weaknesses of emerging Asia. He argued that this crisis was a macro and financial phenomenon involving banks, nonbanks and borrowers. But deeper down, according to this view,

the real cause was the structural weaknesses of the developing economies in East Asia. As long as these weaknesses remain, similar crises can occur in the future.

The World Bank report *East Asia: Recovery and Beyond* (June 2000) argued that East Asian countries would not continue to recover unless they improved in three areas: (i) managing globalization; (ii) revitalizing business; and (iii) forging a social contract and role for government. Among these, "revitalizing business" means dealing with the under-capitalization of banks and high indebtedness of corporations, and reducing the government ownership of banks and corporations which were temporarily nationalized after the crisis.

4. CONCLUSION

The Asian crisis by its magnitude and the originality of its causes and its unfolding has given rise to a renewal in the economic theory of financial crises, especially when the models of first and second generation have shown their inability to explain this crisis. The collapse of this "Asian miracle" has triggered a major debate on the existence of a "third generation of crises". Among the new trends in the modeling of international financial crises, it identifies a first vision that puts forward the financial fragility of the emerging countries in the outbreak of the crisis, [Radelet and Sachs \(1998a\)](#); [Chang and Velasco \(1998\)](#).

An alternative vision is based on the deteriorating "ex-post" of a fundamental quantity of the fact of the existence of the governmental guarantees implicit and explicit who have misled a phenomenon of moral hazard in terms of bank credit, [Krugman \(1998\)](#); [McKinnon and Pill \(1996\)](#); [Corsetti et al. \(1999\)](#).

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