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## The Role of Banks in the Korean Financial Crisis of 1997: An Interpretation Based on the Financial Instability Hypothesis

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## Introduction

This paper shows the fundamental role of Korean banks in the bursting of South Korea's financial crisis in 1997.<sup>1</sup> It argues that Minsky's financial instability hypothesis can be used as an analytical tool to explain the unfolding of the Korean financial crisis. However, some changes in the original Financial Instability Hypothesis (FIH) are necessary to account for the institutional and structural changes of the last decades.<sup>2</sup>

At the core of Minsky's FIH lies the process of investment and the way the ownership or operational control of capital assets are financed by companies.<sup>3</sup> The process of financial instability emerges from the evolution of the companies' financial structure in undertaking their investments plans during the business cycle. These financial structures become more and more fragile during the business cycle as investments are increasingly financed through borrowed funds from banks.

However, the emergence of financial instability can also be grasped through the performance of banks. This paper is an application of Minsky's FIH to banks, in which the emergence of financial instability in the economy is analysed through banks' balance sheet dynamics during the business cycle. To do so banks' relations with the corporate sector are represented mainly through banks' assets side: securities and loans. This approach is justified by the fact, that in Minsky's framework the solvency of the corporate sector is the condition of the solvency of the banking system.

The 2007-9 global crisis has once more revealed how important financial conditions are for the process of capital accumulation. The abrupt interruption of credit flows in September 2008 caused one of the largest drops ever in industrial production around the

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<sup>1</sup> This paper is based on (Painceira, 2003). I would like to thank Annina Kaltenbrunner for comments. All remaining errors are my responsibility.

<sup>2</sup> Analytical references to those institutional changes are (Minsky, 1986 and 1994), (Chesnais, 1996) and (Plihon, 1995).

<sup>3</sup> For more details see (Minsky, 1986, chapter 8).

global economy during the last quarter of 2008. Korea is no exception. So today, more than ever, it is crucial to understand how financial conditions shape the business cycle. Minsky's analysis on banking relations and business cycle can offer some insight into the current situation in which the relationship between finance and capital accumulation has become more complex as global banks focus their business on trading activities and housing lending and large companies have increasingly raised their funding through open markets.

The paper is organised as follow. Section 1 analyses the role of banks and the concept of banks' liquidity preference as the main economic unit in the determination of the business cycle in Minsky's writings. Section 2 addresses critically two hypotheses underlying Minsky's original model: First, the role of the equality of 'two' prices –the demand price of investment goods and the price of capital assets - for the determination of the investment level. Second the model's assumption of a closed economy given the new characteristics of financial markets. In section 3 the paper discusses the causes of the 1997 Korean financial crisis based on the financial instability theory. It is shown that the main cause of Korea's financial and currency crisis can be found in the performance of Korean financial institutions during the business cycle of 1990s. Section 4 concludes.

## **1- Banks' liquidity preference and the financial instability hypothesis**

The objective and nature of banks can be understood through the definition of banking activity. According to Minsky (1986, pp. 225-6) 'banking is a dynamic and innovative profit-making business. Bank entrepreneurs actively seek to build their fortunes by adjusting their assets and liabilities, that is, their lines of business, to take advantage of perceived profit opportunities. This banker's activism affects not just the volume and the distribution of finance but also the cyclical behavior of prices, incomes, and employment.' In other words, banks are active agents for economic dynamics as their behaviour and performance influence the liquidity of the economic system.

Thus, banks should be understood in terms of their dual role as financial intermediaries (origin of investment banks) and as issuers of means of payment (origin of commercial banks). If those functions are united in the same institution, it is denominated universal bank. Banks' role in the creation of means of payments is crucial to the economy and it is done through customers' deposits. Deposits can be created in two ways. First, when banks acquire assets and/or through lending operations, i.e., in their investment action, deposits created in favour of customers are used to finance investment. Second, banks create deposits due to the customers' cash flow into banks.

However, the nature of banks should be understood not only by their functions as intermediaries and issuer of means of payments, which creates credit risk, but also by their capacity to transform maturities of assets and liabilities.<sup>4</sup> The latter function is known as assets and liabilities management, which in turn creates price (interest rate) and liquidity risk.<sup>5</sup>

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<sup>4</sup> Essentially, banks acquire liabilities of others (banking assets) by issuing their own liabilities in which the process of credit creation is included. The main implications to the banking activities is analysed in this section.

<sup>5</sup> This function is well characterised by Kregel (1998a, pp.78) once that 'maturity transformation is then said to lead to two related types of risk. Funding acquisition of even very short fixed-term assets with sight liabilities creates "liquidity" risk due to the possibility that the assets cannot be liquidated in time to permit the repayment of liabilities. In addition, there will be "price" risk created by the possibility that assets cannot be liquidated in a timely fashion at a price which permits repayment of liabilities.'

In this activity, banks try to adjust maturities by considering different liquidity “premiums” of their assets and by paying different interest rates on their liabilities, depending on the characteristics of their deposits. However, before the discussing the role of maturity transformation more in-depth, it is necessary to analyse the behaviour of banks in Post-Keynesian (PK) theory.

In PK banking theory, banks will adjust their portfolio decisions according to their liquidity preference.<sup>6</sup> In what follows, the trade-off between monetary returns and liquidity in banks’ portfolios is discussed through the analysis of a stylised banks balance sheet. On the asset side, the most important factor on the aggregate level is not the absolute level of banking investment operations or the level of reserves, but the manner in which banks conduct those operations – thus the proportion in which banks allocate their resources among possible asset positions. In decreasing order of liquidity the different investment forms are broadly speaking: 1) short-term loans in the money market; 2) securities in general; 3) loans in general. Normally, the returns on these asset classes stand in an inverse function of their liquidity.<sup>7</sup>

On the liabilities side, the main accounts are: banking deposits (cash and time); borrowing operations through money markets and debt securities, and other liabilities (banking capital included). Generally speaking, bank deposits carry the lowest cost among those liability classes. The investment positions and the financing of those positions in capital assets rely on the banks level of confidence in their return expectations (assets) and sources of funding (liabilities).

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<sup>6</sup> According to (Carvalho, 1999, pp.15) “the liquidity preference approach would naturally explain the *balance sheet strategy*, rather than choices of individual assets or liabilities, according to the perception of risks and profit opportunities by banks.”

<sup>7</sup> The main reference for the liquidity preference theory is the chapter 17 of General Theory where Keynes develops a theory of capital allocation decision; see (Keynes, 1964).

The introduction of the liabilities structure in the analysis of liquidity<sup>8</sup> is fundamental, as the issuance of liabilities can show the level of risk taken by the economic units in their portfolio decisions. According to Minsky, the financial posture of economic units can then be defined as a result of the relation between primary flows of revenue coming from their assets and payments commitments assumed from their obligations. The financial postures are hedge, speculative and *Ponzi*.<sup>9</sup>

Banks can not be hedge units, because these units do not raise their level of debt beyond their expected revenue flow. Given their reliance on short-term finance to take position in capital assets of longer maturity banks are essentially speculative units. In another words, banks have always to refinance their liabilities in order to acquire assets which have longer maturities when compared with their liabilities.

According to Minsky, the greater is the proportion of speculative or Ponzi units in the economic system the higher is the degree of financial fragility. The perception of the level of financial fragility is a decreasing function of the safety margins which is given by assets held for their liquidity premium and not by their expected income. In other words, these assets are assets which are hold as liquidity cushion against possible events of wealth loss called safety margins but once those events become more and more unlikely there is a drop of the safety margins and an increase of the financial fragility. Therefore during crisis time where wealth loss increases among economic agents the demand for liquid or almost liquid assets rises as consequence.

Thus, financial fragility is not the level of indebtedness of agent, but it is the compatibility between assets and liabilities of an economic unit, i.e., fragility is not derived

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<sup>8</sup> The capital asset pricing and portfolio decision theories should take in account the liabilities positions that are interrelated with assets positions once that 'a portfolio decision has two interdependent facets. The first relates to what assets are to be held, controlled, or acquired; the second relates to how the position in these assets – i.e., their ownership or control – is to be financed' (Minsky, 1975, pp.70).

from amount of debt, but from its maturity profile. Some changes in the economic situation might damage the debt profile. The analysis of the environmental change from financial fragility to financial instability is done in the next section.

Banks which incur liquidity risk - as a result maturity transformation - can finance themselves by selling assets, decreasing their reserves, or by issuance of new debt. In the first option, banks will be incurring only liquidity risk, for example, through a withdrawal of a time deposit before maturity. In the third case, by issuing debt banks will also incur interest rate risk due to the possibility that future debt issuances have to be done at higher interest rates. The drawdown in reserves is the most important in terms of liquidity as it can cause an unexpected need of selling assets which could also damage the issuance of debt. The drop in banking reserves is severe, mainly in crisis time. Thus, in light of this banks' liquidity preference will be mirrored in their portfolio management.<sup>10</sup>

Over the last decades there have been fundamental changes in the financial system related to the end of Bretton Woods and to the process of financial liberalisation. Given those institutional changes, financial institutions had to readapt themselves and risk management has become a fundamental tool for banks' survival. According to Kregel (1998a, pp.78) 'the main banks' objective is not the investment income neither the banknotes issuance, but the risk management.' Banks are aware of the risks of capital losses which in turn can not be foreseen. Consequently the assets and liabilities management has become crucial to the financial system.

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<sup>9</sup> Synthetically, the hedge unit does not expect to raise funds from financial markets; the speculative one has to finance the principal of its debt in order to keep it stable; the *Ponzi* needs to raise funds from financial markets to refinance the principal and part of interest, so the unit's indebtedness is increasing. For more details (Minsky, 1986, chapter 9).

<sup>10</sup> "The portfolio preferences of banking and financial institutions determine capitalization rates for different types of capital assets and financing terms for various types of investments". (Minsky, 1986, pp.228)

Due to the institutional changes in financial markets it has become possible to split liquidity and interest rate risks<sup>11</sup> through a periodic rearrangement of financial contracts. Thus the maturities mismatch can be drastically reduced through adequate contractual intervals. In this case however, it is only possible to eliminate the interest rate risk, while the liquidity risk remains. Liquidity risk, in turn, can be drastically reduced if financial institutions have easy or permanent access to liquidity shortage credit lines. This separation of risks has facilitated a better liquidity management by banks.

The existence of derivatives<sup>12</sup> and big secondary markets allows banks to have a smaller exposure to risk through hedging operations and a greater flexibility in their financial positions. However derivative markets, at the same time as they increase the liquidity<sup>13</sup> through increased flexibility of positions and a drop in costs, can also raise financial instability through higher volatility in the assets prices. In this view, derivatives markets are a double-edged sword because, on the one hand they reduce individual risks but, on the other hand they introduce new risks<sup>14</sup> which raise the instability through the increase of the financial fragility of financial institutions.

The relationship between banks' liquidity preference and the business cycle is fundamental to explain the inherent instability of the capitalist system as an endogenous market process. In periods of economic expansion, which are characterised by high degree of confidence of the economic units about their profitability, there is a rise in the level of

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<sup>11</sup> The separation of risks is conducted through "the use of derivatives instruments, other innovative financial instruments and by new techniques of *hedging*". (FED NY, 1990, pp.59)

<sup>12</sup> The importance of derivatives markets is highlighted by the (FED NY, 1990, pp.7) "the derivatives instruments, when equalised to a cash instrument, could provide synthetic alternatives to the current financial instruments or equivalent to those absence instruments."

<sup>13</sup> The rise of the financial system liquidity started in the 1960s when the US banks constrained in the competition for deposits by the imposition of ceilings to the interest paid for clients' deposits had to search other types of funding and profitability areas. This restriction was fundamental to the development of the international wholesale markets, the eurodollar market, and to the rise in importance to the banking activities of the liabilities management. For more details see (Kregel, 1998a).

<sup>14</sup> The main systemic risks would be the difficulties in supervising and regulating the financial operations; the large part of derivatives depend on the pair foreign exchange rate and interest rate which became more volatile as a consequence of the freedom of capital flows; and the concentration on those markets facilitates financial contagion.

investment. During this expansion, economic units decrease their liquidity preference, preferring more risky capital assets with higher return. In this environment, economic units are more likely to hold less liquid capital assets and to incur short-term debt with higher interest rates.

The importance of the banks in the economic boom phase when they expand their credit operations can be observed in the context in what ‘once euphoria sets in, they accept liability structures – their own and those of borrowers – that, in a more sober expectational climate, they would have rejected. (...) The shift to euphoria increases the willingness of financial institutions to acquire assets by engaging in liquidity-decreasing portfolio transformations.’ (Minsky, 1982, pp.122-3).

Favourable financing conditions are fundamental to the process of investment and thus to sustain the trend of economic growth. In this sense, an analysis of how banks expand credit is crucial. Table 1 shows a bank’s balance sheet model during the economic boom phase of business cycle.

**Table 1: Banks' Balance Sheet during the expansionary phase of business cycle**

ASSETS	LIABILITIES
Banking reserves (-)	Demand Deposits
Liquid Assets (public securities and CP) (-)	Time Deposits
Long-Term Securities (+)	Interbank borrowing
Lending operations (+)	
Short-term (-)	Net Worth (-)
Long-term (+)	

During the economic boom, when banks' balance sheets expand, there is a shift towards less liquid assets such as long-term securities (corporate bonds) and mainly long-term loans in general. On the liabilities side, in turn, it is possible to identify a drop in net worth and a higher importance of liabilities management. In relation to the sources of funding, one can observe a rise of time deposits and interbank borrowing, and a drop in the net worth (or decrease in relation to total liabilities) due to the fall in the reserves of capital and profits. In addition, during the boom, there is a rise in financial innovations by banks as the increase in credit demand puts pressure on bankers to find new sources of funding.<sup>15</sup> In addition, banks are trying to find ways of evading constraints of the financial regulation imposed by governments. Thus, a fundamental characteristic of the economic boom is the drop of safety margins of economic units which can be seen by a fall in liquid assets of their portfolio.

The contraction phase of the business cycle which happens after a crisis is characterised by a rise in uncertainty. Therefore the state of confidence of economic units about their monetary returns is low, causing an increase in their liquidity preference. In this phase one can observe a rise in safety margins through an increase of liquid assets holdings in

<sup>15</sup> 'A banker is always trying to find new ways to lend, new customers, and new ways to acquire funds, that is, to borrow; in other words, he is under pressure to innovate.' (Minsky, 1986, pp.237).

banks' portfolios. The table below shows the traditional banks' behaviour during the contraction phase.

**Table 2: Banks' Balance Sheet during the contraction phase of business cycle**

ASSETS	LIABILITIES
Banking reserves (+)	Demand Deposits
Liquid Assets (public securities and CP) (+)	Time Deposits
Long-Term Securities (-)	Interbank borrowing
Lending operations (-)	Net Worth (+)
Short-term (+)	
Long-term (-)	

Table 2 shows how the rise of banks' liquidity preference affects the composition of their balance sheets. In moving towards liquid assets, such as public debt securities and banking reserves, banks decrease their credit supply. This shortage can be verified by fall in long-term securities and loans, and through a rise in short-term assets and reserves. The reduction of credit supply in turn damages the sustainability of capital assets positions, mainly for non-financial units, companies. On the liabilities side, proportionally one can observe a rise in net worth and a decrease in the importance of liabilities management due to a rise in deposits in relation to the other sources of funding. The crisis is reflected in banks' performance towards assets with lower return, but higher liquidity.

Thus during the boom, banks' liquidity preference decreases as capital asset markets become more dynamic and a rise in confidence among economic units arises anticipated

capital gains.<sup>16</sup> Once the liquidity preference decreases, the capacity and willingness of financial institutions to expand the credit supply increases. At the same time required banking reserves fall as banking customers transfer their funding from cash to time deposits, banking certificates, etc. They are moving to banking liabilities without reserve requirements from monetary authority. Consequently there is a reduction of the quotient monetary liabilities and non-monetary liabilities. The capacity of raising the credit supply by non-banking financial institutions is also increasing as agents' confidence allows them to hold non-banking liabilities (debt securities). Therefore new economic activities as well activities related to the current financial and real assets (for example, mergers and acquisitions) are financed, reinforcing the dynamism of capital markets. Thus, while positive expectations last, raising assets prices, declining liquidity preference reduces the level of financial prudence of the financial institutions.

## **2 – Revisiting the Financial Instability Hypothesis**

The main changes to the core of the FIH are related to the hypotheses of equality between the demand price for investment goods and capital assets prices to determine the investment level and by using the FIH model in a closed economy.<sup>17</sup> These reformulations can be justified by the rise of financial dominance in the process of capital accumulation and by the existence of high capital flow mobility among economies. As already outlined above, these processes have taken place in the last decades. In what follows, we analyse synthetically the main reasons for the proposed changes to the FIH model.<sup>18</sup>

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<sup>16</sup> The role of financial system is highlighted by S. Dow when she explains that those markets tend to exacerbate the cycle in nominal terms by raising the credit supply during the expansion and by dropping it during the contraction of the business cycle. (Dow, 1993, pp.63).

<sup>17</sup> The original model of FIH can be found in (Minsky, 1975, chapters 4-6).

<sup>18</sup> For more details on the relevance of those changes and their effects on the original model of FIH, see (Painceira, 2003, section 2).

The process of investment as described in the ‘two prices’ model of Minsky lacks a fundamental dimension. This dimension is the “competition for yield” among assets which are part of an agent’s portfolio. Given that economic units have capital restrictions, the available amount of internal and external financing is scarce. Thus when the expected yield of any asset (for example, debentures or shares) is higher than the expected yield of investment goods, financial conditions are more favourable for that asset and not for the investment good. Therefore in the process of capital allocation it is necessary to take in account a large range of assets, especially financial assets. As consequence the process of investment become more instable.

Some departure from the assumption of a closed economy in the FIH theory is fundamental, given the increasingly importance of international capital flows on the domestic investment trends. As a result, foreign capital has become important source of financing for investment. As such, financing problems in foreign exchange raise the financial fragility of the domestic agents, creating another source of instability to investment. This rise in fragility becomes notable when lenders raise the borrowing rates, constrain the available amount of funding and/or cancel the international credit lines. Moreover, there is another price risk through exchange rate changes. The FIH, analysed on the international level, shows a greater level of instability in relation to its closed economy version resulting from the external financing as another source of investment funding. Thus, in an open economy context, the FIH shows additional channels of contagion and sources of fragility.

Over the last years in which the influence of the financial dimension on capital accumulation has become increasingly dominant, there has been an increase in the cash flows coming from balance and portfolio activities relative to the cash flows coming from income activities.<sup>19</sup> This in turn has implied an increasingly predominance of speculative and Ponzi financial postures on the aggregate level. The concept of financial fragility is microeconomic,

but the Minsky's objectives in his analysis are their systemic effects. Therefore it is possible of having a high level of economic units with a greater share of cash flows coming from balance and portfolio operations in their balance sheets without transforming their greater level of financial fragility in a situation of financial instability, which is systemic. Thus today's financial structure contains a high level of financial fragility and, consequently greater susceptibility to financial instability.<sup>20</sup> This structure is characterized by over-leverage of the economic system where the financial posture of the banking system is crucial to the emergence of financial instability.

So, a highly indebted financial structure characterized by a large proportion of speculative and Ponzi financial postures precedes a financial crisis. Crisis is a situation characterized by a fall in assets prices and a generalisation of liquidity and solvency problems among financial institutions and debtors, in which banks find themselves increasingly incapable of raising funds (credit crunch), generating negative effects on the real economy.<sup>21</sup> According to Gray (1994), a greater integration among domestic financial markets increases the possibility of financial crisis due to the financial contagion among them.

The fundamental difference between financial and foreign exchange crises is that the former is primarily related to the incapacity of refinancing capital assets positions (either domestic or foreign), while the latter is related to a domestic agents' incapacity to refinance their foreign liabilities, which in turn has a direct effect on the exchange rate. That having been said the spread of financial liberalisation and integration of domestic financial system in the global economy has increasingly led to a combined or at least intertwined appearance of financial and currency crisis.

The occurrence of financial crisis is then related to the inability of economic units in refinancing their capital assets positions, being the losses in the financial system and the

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<sup>19</sup> About the importance of cash flows in the process of financial instability, see (Minsky, 1986, chapter 9).

<sup>20</sup> On the importance of cash flows in the determination of financial crisis, see (Minsky, 1986, pp.203-4).

increase in non-paid loans the main reasons to this impossibility. A foreign exchange crisis, on the other hand, occurs if the domestic agents find themselves unable to refinance their external obligations, either through current or capital account. Normally, a balance of payments crisis is accompanied by large exchange rate movements either through the rupture of a managed exchange rate regime or through an overshooting of the exchange rate in the flexible regime.

### **3 – The Financial Instability Hypothesis and the 1997 South Korean financial crisis: from financial globalisation to the financial crisis**

In this section it is shown that Korea's 1997 financial crisis can be explained using Minsky's FIH.<sup>22</sup> This is done through an analysis of the performance of Korean financial institutions in the 1990s. This performance was fundamental to the rise of financial fragility in the Korean financial system, and consequently to the process of financial instability in the country.<sup>23</sup>

The measures of financial liberalisation implemented during the 1990s caused substantial changes in the Korean financial system.<sup>24</sup> For example, the deregulation of interest rates on deposits added to greater managerial autonomy of banks while lower barriers to entry to financial activities allowed Korean banks to engage in better assets and liabilities management. This in turn led to a rise in financial innovations, offering to the financial institutions new sources of funding. As outlined above, during an economic boom one observes a fall in the quotient net worth to total liabilities, as banks - being more confident on

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<sup>21</sup> The references on this concept are (Minsky, 1986) e (Akyüz, 1991, pp.266-7).

<sup>22</sup> Analysis of the East Asian crisis, including the Korean, based on the FIH theory can be found in (Kregel, 1998) and (Arestis and Glickman, 2002).

<sup>23</sup> Other analytical references to the Korean crisis are (Chang, Park and Yoo, 1998) and (BIS, 1998).

<sup>24</sup> On those measures see (Chang, Park and Yoo, 1998).

monetary returns - raise their liabilities in relation to equity. This fall is one of the indicators of a rise in financial fragility and emergence of financial instability.

Furthermore, the increased financial liberalisation allowed banks to raise their equity through foreign branches and foreign subsidiaries, thus facilitating foreign funding, rising the capital inflows and potentially the banks foreign exchange exposure. Depending on amount and maturity, this exposure can generate a currency crisis.

The liberalization of the foreign exchange market was important to the consolidation of financial liberalisation in Korea. This freedom in transacting assets and liabilities denominated in foreign currency had a fundamental impact on the Korean economy during the 1990s as it facilitated the investment and funding of domestic agents, mainly banks, abroad. This in turn was fundamental to rise in the banks' foreign liabilities and to the Korean crisis as will be shown below.

### **3.1- South Korean banks' financial fragility during the 1990s: some considerations**

South Korea's financial sector was always directly connected to the financing of the economic development. This is evidenced by the high share of claims on the private sector (loans or corporate bonds) in the commercial banks' balance sheets (around 80% of total assets).<sup>25</sup> This characteristic is even more striking with respect other financial institutions (OFI),<sup>26</sup> where the claims on the private sector amount to around 90% of their total assets. The importance of the financial sector in the economy can also be measured by credit supply to the private sector as a proportion of GDP. During 1990-95, this rate was around 55% and 57% and, in the period 1996-98, the credit rate jumped from 61% to 74% (World Bank, 1999).

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<sup>25</sup> The statistical data used in this paper are from (IMF, 2008) and (World Bank, 1999).

<sup>26</sup> This aggregate is composed by trust accounts banks (investment banks) and development institutions.

As outlined above, in order to understand the causes of the 1997 financial crisis it is necessary to discuss the Korean financial system behaviour during the 1990s.<sup>27</sup> This in turn will be done through an analysis of commercial banks' and OFI's consolidated balance sheets.

The performance of the financial system during the 1990s, especially the one by commercial banks can be understood through Minsky's FIH.<sup>28</sup> As set out above, in the FIH banks raise their credit supply to the private sector during the economic boom and, in search for new sources of funding, increase their liabilities in relation to their equity accounts (net worth).<sup>29</sup> During the Korean boom between 1990 and 1997, banks and OFI increased the proportion of their claims on the private sector. So during the boom one can observe a fall in assets held by their liquidity premium once that the financial institutions' confidence is raising. In this vein, we can observe in the OFI's balance sheet<sup>30</sup>, a rise in the claims on the private sector from 70% in 1990 to 80% in 1995, keeping the level up to 1997. This rise is based on the favourable economic conditions during the 1990s in terms of economic growth. It happened as the good economic environment leads to positive expectation among the units and, consequently to the rise in their level of indebtedness.

The process of financial liberalisation in Korea allowed the institutions to raise their foreign exchange transactions. On the liabilities side, one can observe an increasing share of foreign liabilities in the institutions' balance sheets. The funding raised through foreign liabilities allowed the financial institutions to raise their loans and securities (foreign or domestic) portfolio and, as the expectations on future returns were favourable, this type of

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<sup>27</sup> For a full understanding of the Korean crisis it would be necessary to analyse the Korean economic and political relations, mainly those among the biggest corporate conglomerate, the Chaebols. This analysis is not part of the paper. However, as can be seen in the next sections, the main cause to the Korean crisis can be found in the financial system performance.

<sup>28</sup> It is necessary to highlight the 1990s is also preceded by period of the strong economic growth. Between 1980 and 1989, the Korean growth average rate was around 6.5%. Thus in the beginning of 1990s the Korean economy was in the economic boom phase.

<sup>29</sup> The analysis of the Korean financial system is based on the banking typology presented in the section 1.

<sup>30</sup> The term OFI, except when established, refers to private financial institutions, essentially investment banks.

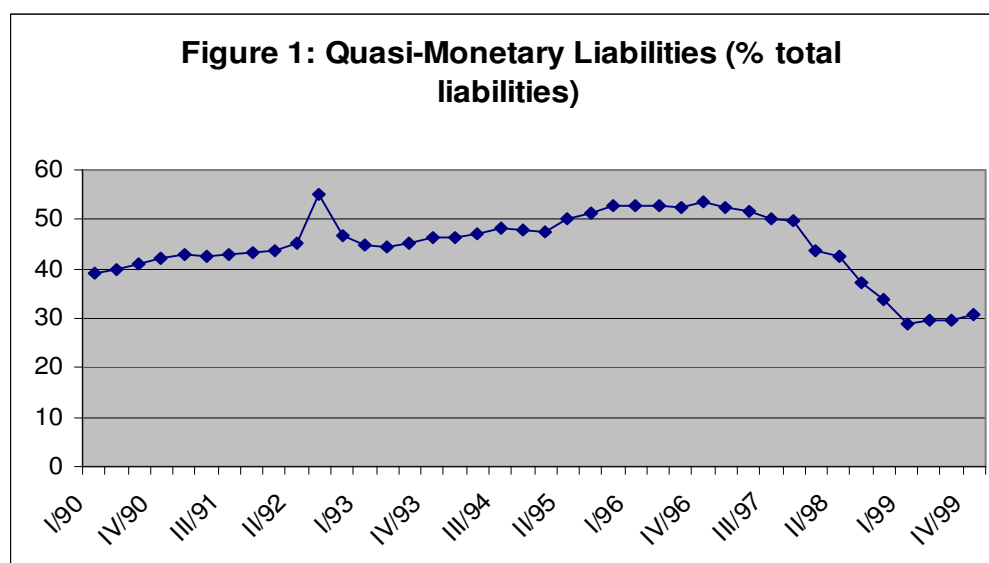
funding continued increasing. This in turn, however, has important implications for financial fragility if foreign liabilities exceed foreign assets.

In summary, the favourable return expectations and institutional changes caused an increase in the foreign assets and foreign liabilities held by financial institutions, mainly after the middle of 1993. On the asset side, there was an increase of foreign assets as a share of total assets from 1.5% to 4% in the middle of 1997. However, the most important development took place on the liabilities side as external financing through loans and bonds issuance became one of the main sources of funding to commercial banks and OFI (including public institutions). As a result, foreign obligations of commercial banks increased from \$10 bn (6.3% of the total liabilities) in the beginning of 1990s to \$43 bn (12% of the total liabilities) in 1997. The speed in which these liabilities were accumulated accelerated in 1995, as international financial market showed an increasing confidence in Korean economic performance. In relation to the OFI's liabilities (essentially investments banks), one can observe an enormous increase in foreign liabilities from \$6 bn (2.5% of total liabilities) in the beginning of 1990s to \$36 bn (10% of total liabilities) in September 1997.

Other important liabilities accounts are demand and time deposits, on the commercial banks side, and the quasi-monetary liabilities, on behalf of investment banks. The proportion of time deposits in relation to the banks' liabilities remained constant until the 1997 financial crisis. Demand deposits, in turn, while remaining relatively constant until 1995, showed a significant drop afterwards and reached a minimum level of 3.8% in first quarter of 1998.

On the investment banks' liabilities, it is possible to observe a rise in the quasi-monetary liabilities as a share of total liabilities. Those liabilities are sources of short-term funding used to finance long-term capital assets position, being less liquid than demand deposits. The increasing share of this form of financing reflects how speculative financial

postures gained share in the system. Figure 1 shows the rise in the quasi-monetary liabilities from 42% in 1991 to the level of 52% between 1995 and 1997.<sup>31</sup>



The above outlined rise in foreign liabilities of the financial system was fundamentally related to two factors: first the low cost of borrowing of foreign funds; second economic unit's state of confidence with regards to the stability of the Korean exchange rate regime<sup>32</sup>, which was based on the belief that the domestic capital asset positions measured in foreign currency will not suffer any capital loss.<sup>33</sup> In the context of open economy, changes in exchange rate have similar effects on the economic units' portfolio than changes in interest rates.<sup>34</sup> The magnitude of those effects depends on portfolio composition of the economic units. As consequence the foreign funding acquires also similar importance to the banking funding in relation to the domestic sources of funding has had in a context of closed economy.

The shortening of liability maturities is one of the main characteristics of Minsky's business cycle. In this line, it is argued that the high level of short-term foreign liabilities in

<sup>31</sup> In the third quarter of 1997, the amount of quasi-monetary liabilities reached \$184 bn.

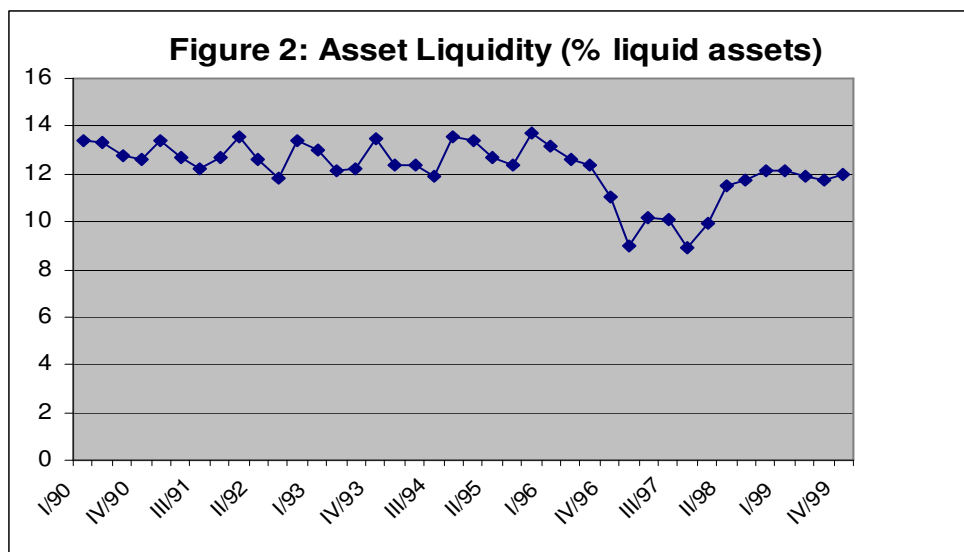
<sup>32</sup> For a graphical representation of this stability see figure 11.6.

<sup>33</sup> In addition to the lower costs, there was an institutional incentive to the short-term borrowing in relation to the long-term one. On this point, see (Chang, Park and Yoo, 1998, pp.739).

<sup>34</sup> For more details on this similarity see (Kregel, 1998).

total foreign liabilities and the impossibility to refinance capital positions were the main causes of Korea's financial and currency crisis. Through the analysis of amount, maturity and type of foreign liability holder it is shown how a financial crisis turns into a currency crisis.<sup>35</sup>

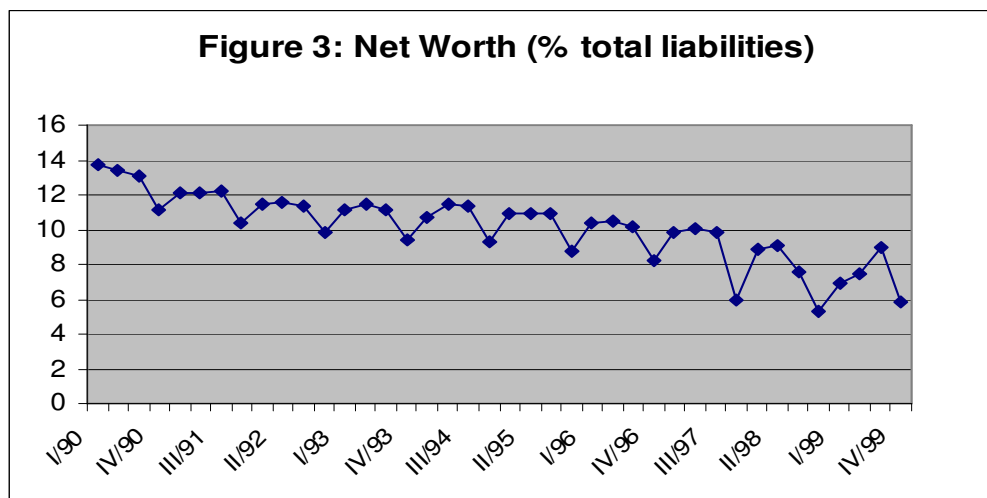
In addition to an analysis of banks' balance sheets, the paper presents several financial indicators to show the rise of financial fragility in the Korean financial system during the business cycle. Figure 2 shows liquid commercial bank assets (banking reserves, claims on central banks and governments) as a percentage of their assets, which up to the middle of 1995 remained relatively stable. After that, however, one can observe a considerably drop of around 35%, in the financial indicator. This fall in the safety margins of the Korean banks, in turn made them increasingly vulnerable to changes in economic conditions and increased the likelihood that they would find themselves unable to meet their outstanding liabilities.<sup>36</sup>



<sup>35</sup> Besides the exchange rate stability, other important factor to attract capital flows was the long period of economic growth in the East Asia. This economic performance contributed to the 'strong growth in the asset prices and lead companies and households, as well banks, to underestimate the overinvestment risk.' (BIS, 1999, pp.119) However, following the Minsky's ideas when the state of confidence is favourable, and all economic units are very confident in their expectations the underestimation of risk is a rational process.

<sup>36</sup> As analysed before, this percentage indicates how the financial institutions are able to deal with unpredictable changes in the cash flows of economic units.

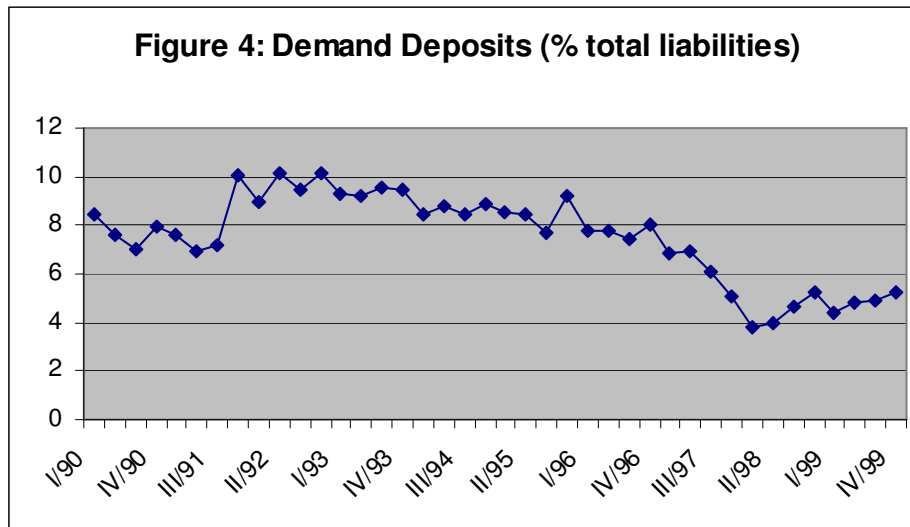
As discussed earlier, the rise of banking liabilities is one of the main characteristics of the boom phase of a business cycle. This indicates a fall in banks' liquidity preference as new asset positions were increasingly financed by taking on new liabilities rather than own capital. As such, the participation of net worth in total liabilities is considered a fundamental indicator of a possible financial fragility of the system.<sup>37</sup> The indicator shows how banks are assuming their liabilities and indicates their capacity to meet financial commitments with their own capital. As shown in figure 3, there was a decreasing trend in that participation during the 1990s.



To conclude this section, as discussed previously, the share of demand deposits in the total liabilities is another indicator of financial fragility.<sup>38</sup> As can be seen in the figure 4, there was a constant fall since 1991. In the case of the Korean banks, the liabilities' rise is mainly through foreign liabilities. The share of foreign liabilities in the total liabilities increased from 3.8% in 1994 to 9% in the first quarter of 1998.

<sup>37</sup> This is one of the indicators used by Minsky (1986: 84) to show the emergence of financial instability in the US economy during 1960s and 1970s.

<sup>38</sup> Ibid footnote 38, (idem: 86).

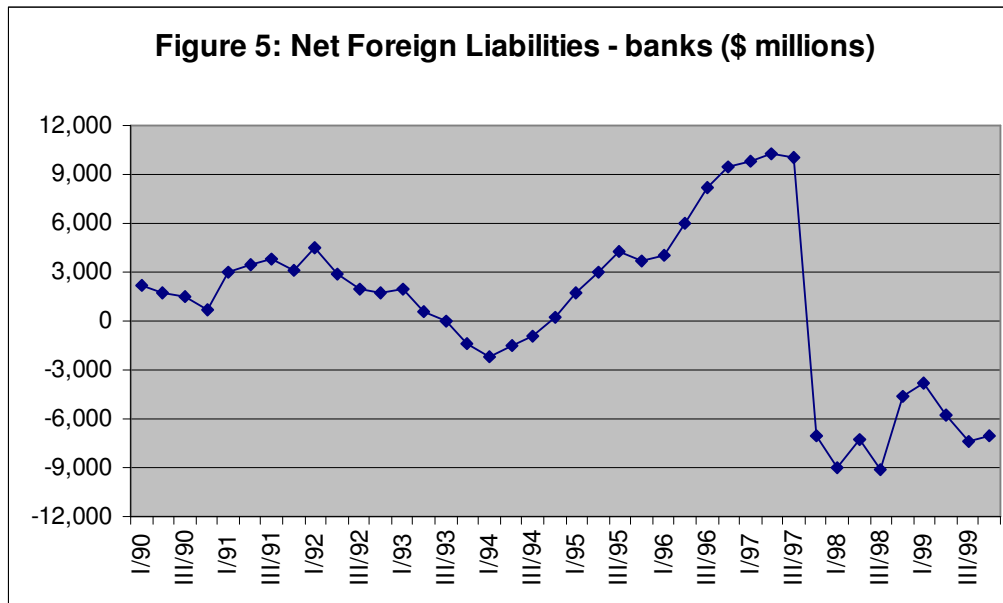


### **3.2- Banks' financial fragility and the emergence of Korean financial instability: the question of foreign funding**

This section analyses the role of banks' foreign exchange exposure in reinforcing Korea's financial fragility during the 1990s and shows other economic variables which help to explain the emergence of Korean financial instability in the end of 1990s. In the context of open economy, as we analysed previously, changes in the exchange rate are important to the balance sheet's adjustments of economic units. In addition, it points out the strong connection between banks' foreign liabilities and total Korean foreign liabilities, which, this paper argues, was the fundamental cause to the currency crisis.

Figure 5 shows the evolution of banks' net foreign liabilities (difference between their foreign liabilities and foreign assets). As already pointed out above, the period of strong external borrowing started in 1994, which is reflected in banks' net foreign liabilities which showed an increasing trend until the third quarter of 1997. This shortage in the banks' external financing was the trigger to the Korean financial crisis as discussed below. In other

words, it was the lack of external financing in the face of outstanding liabilities the trigger of crisis.



Banks drastically reduced their credit supply to the private sector as they found themselves unable to refinance their foreign liabilities, which were largely of short-term maturity. In the third quarter of 1997, 59% of foreign liabilities of all Korean financial institutions were of a maturity below one year. This percentage reached 67% if one includes the overseas branches and subsidiaries of Korean banks.<sup>39</sup> The external financial institutions liabilities were equivalent to 42% of total Korean foreign liability. When considering the overseas subsidiaries and branches of Korean banks, this equivalence reached almost 57% of the country's external liabilities.<sup>40</sup>

It is also necessary to highlight that the speed of expansion of short-term external debt dropped when the Thai currency crisis happened. Since then the perception of foreign

<sup>39</sup> BIS consolidated banking statistics.

<sup>40</sup> The importance of those overseas branches of Korean banks is highlighted when "by the end of November 1997, almost \$17 billion of the Bank of Korea's \$24.4 billion of reserves had been placed on deposit at the overseas branches of Korean banks which had had difficulties meeting their foreign currency obligations." BIS (1998: 128)

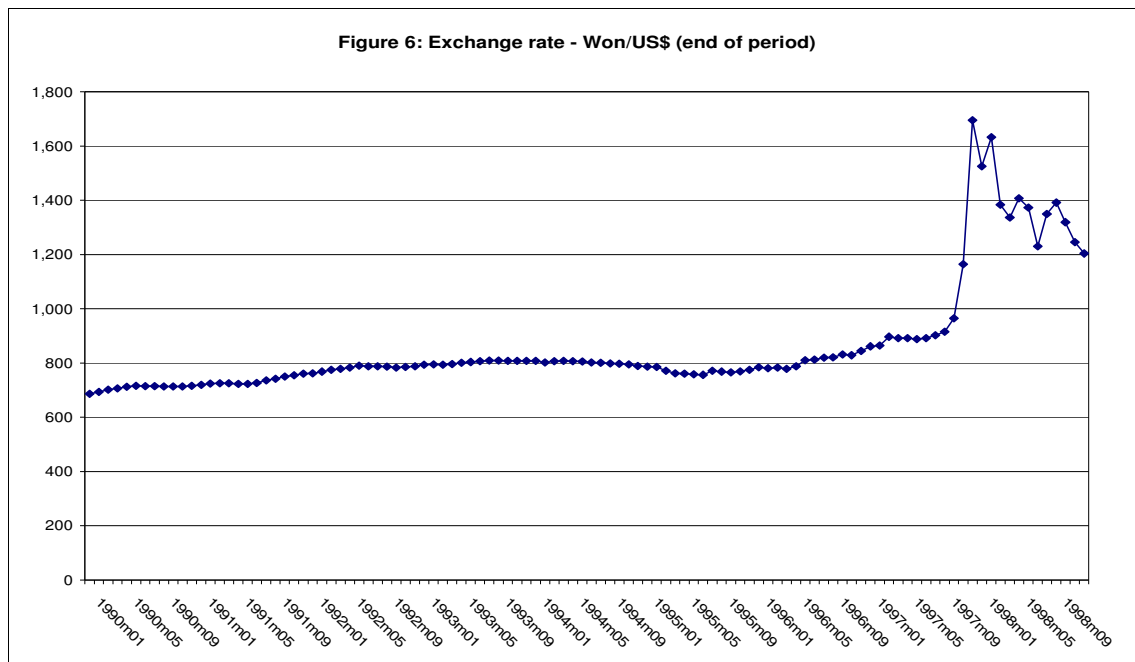
investors and domestic financial institutions in relation to the sustainability of their capital assets positions had started to deteriorate given the high proportion of short-term foreign liabilities in total banking liabilities. In the third quarter of 1997, the amount of domestic financial institutions' net foreign liabilities plus the overseas branches and subsidiaries of Korean banks ones (\$74 bn) was higher than the total net Korean foreign liability (\$67 bn).

Through an analysis of the Korea's balance of payments, it is possible to have a good picture of the main factors and sectors characterized by foreign liabilities during the crisis.<sup>41</sup> In the crisis moment, the Korean net external liabilities dropped by \$20 bn, with banks being responsible for around \$18 bn of this drop. This in turn shows the fundamental role of banks in the process of financial instability in Korea.

The main factor or trigger variable to the financial crisis – or the transformation of financial fragility context in financial instability one – was the Korean exchange rate depreciation. In the crisis time as discussed before, it is more important to stress the financial structure than the trigger mechanism in itself. It is the over-leverage of the system that creates the seeds to the financial instability. In South Korea, it happened because of the high level of Korean financial institutions' net foreign liabilities, mainly of the short-term, in relation to international reserves. Then the Korean financial crisis became also a currency crisis.

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<sup>41</sup> The impact of financial crisis on Korean economy can be evaluated by the total amount of governmental expenditure with the banking restructuration program which reached 13% of GDP during 2 years, see (Balino et alli, 1999, pp.124). Moreover, the fall in the industrial production of 11.2% in the first quarter of 1998 relative to previous quarter.



As pointed out above, financial liberalisation reinforced the relation between banks' performance and business cycle and the rise of Korean external vulnerability to external shocks during of 1990s. In this context, the rises of the stock of portfolio investment and of the short-term capital, which is linked essentially to the banking liabilities, are the main variables to explain the evolution of the Korean financial fragility during the 1990s. The stock of portfolio investment increased from \$10 bn in 1993 to \$70 bn in 1997.

As said previously, the exchange rate stability was also important to maintain the increasing capital flows to Korea during the 1990s as can be seen in the figure 11.6. Other factor to affect the Korean external vulnerability, in a lesser degree, was the trade balance deficit, mainly between 1995 and 1997.

Thus it is possible to affirm that the rise of the South Korean external financial vulnerability during the 1990s was closely related to the external capital inflows, mainly of short-term. As the Korean foreign borrowing was essentially made by banks, it is possible to

establish that the move up of the Korean external vulnerability is essentially supported by the financial institutions' behaviour during the 1990s business cycle.

## **Conclusion**

This paper shows the relevance of Minsky's FIH in a context of a dominance of financial activities and high capital mobility. The importance of this theoretical approach is analysed through banks' liquidity preference during the business cycle. Banks' liquidity preference decreases in the boom phase of the business cycle as banks, which have a higher degree of confidence in their profitability perspectives, prefer to hold less liquid capital assets with higher return. This state of preference causes the expansion of credit supply which sustains the economic boom. This phase can be interrupted by changes in the degree of confidence of economic agents. This paper argues that banks assume a special role, because their liquidity preference determine the credit supply, which in turn will be affected by changes in the interest rates or by changes in the exchange rate which affect the sustainability of the financing conditions of their assets positions. In the contraction phase, banks' liquidity preference increases because of the low level of confidence in their profitability perspectives. Therefore the financial institutions prefer to hold in their portfolio more liquid assets with lower return. Consequently there is a contraction in economic activity as banks reduce the credit supply to the private sector.

Considering a new institutional context, the analysis of the Korean economy during the 1990s demonstrates the relevance of the financial instability hypothesis. It also sheds some light to Korean crisis in September 2008 where the main holders of short-term foreign liabilities were also financial institutions. It is showed that the main causes to Korean financial crisis in 1997 can be found essentially in the financial institutions' behaviour during

the business cycle. During the boom phase – in order to meet increasing credit demand - Korean financial institutions increased their positions in less liquid but profitable assets and raised new sources of funding, mainly denominated in foreign currency and of increasingly short-term nature. This increasing fragility in banks' balance sheet in turn contributed to the outbreak of the financial crisis as a sharp depreciation increased the value of liabilities and external funding for the banks was limited.

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