

**Business Sector Debt,  
Capital Markets Expansion and Liberalization  
in South Korea:  
Evidence from National Accounts Data.**

*by*

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# 1 Introduction

This paper examines the sources of investment financing for the Business Sector in South Korea during the time period 1980-1997. The aim to do this is to answer some questions that are relevant within the debate on the causes of the financial and exchange rate crisis of 1997-1998. Why is corporate debt in these countries so high in comparison to that of western countries? Is the share of bank debt over the total sources of finance too high and thus needs to be reduced? What are the effects of the liberalization and deregulation process on the financial structure of the corporate sector?

These questions are in part related to the debate on the causes of the financial and exchange rate crisis of 1997-1998, since the high debt of both banks and firms has been included in the list of 'wrong' fundamentals, that would have induced investors to withdraw capitals from these countries. The liberalization process would have favoured the accumulation of debt, either because of the implicit assumption of a rescue by the State in case of trouble or the increase in the supply of credit through the openness to international markets. As a matter of fact, the circumstance that fuelled the crisis was the inability to meet payments obligations related to loans contracted in foreign currency.

The empirical work shows that *the expansion of internal capital markets, favoured by the liberalization process, has contributed to the high indebtedness of firms, whose financial structure has changed at least three times during the time interval considered. We can describe three periods, each with a different financial structure, in this time span. We find empirical evidence that the accumulation of debt was due to both the financing of investment and the acquisition of financial assets.*

The second section deals with the debate on what caused the currency and financial crisis of 1997. The third section describes

the debate on what causes the high leverage of firms. The fourth provides evidence on the net financing proportions of investment for the Korean Business Sector over the period 1980-1997. The fifth section deals with the relation between sources and investment, the sixth explains why the liberalization process may have caused the growth in firms uses. The seventh concludes.

## **2 The debate on the causes of the financial and exchange rate crisis of 1997-1998.**

There are two main competing explanations of the financial and exchange rate crisis of 1997-1998. The first focuses on disturbances on the real side of the economies hurt by the crisis such as current account disequilibria, bad balance sheets of firms and banks. The second explanation focuses on financial factors and expectations and describes the crisis as a speculative bubble based on expectations, not related to the state of fundamentals, that has proved to be self-fulfilling.

Both schools of thought agree that the most important factor in the crisis was the withdrawal of foreign capitals that had flown until then to a great extent from foreign countries. According to the first story, however, the capitals had been withdrawn because the fundamentals of these countries were in such a bad shape that the creditors had serious doubts on the solvency of the debtors. Their decision would then be rational and based on fundamentals. The crisis should then be interpreted as the explosion of structural distortions and wrong policies that had weakened the economies of these countries for many years. To prove this thesis various economic indicators are examined such as current account imbalances, foreign debt, bad conditions of firms and financial systems. As to the current account imbalances one relevant circumstance is that the countries, that suffered the worst exchange rates crises, had for many years ahead during the Nineties big deficits in the current account , which in relation to GDP fluctuated

in the ranged 2-8%. According to this view, financial markets may have overreacted so that the loss in value of currencies and financial activities may have been excessive, but the main point in this explanation are still the bad conditions of fundamentals that triggered the funds withdrawal.

The second story focuses instead on the contagion mechanism, which caused the spreading of a small financial disturbance over the region, thus bringing many solvent but illiquid economic units into bankruptcy. The crisis was a terrible run on the banks to get back the money deposited, nourished by loss of confidence and panic. The crisis, started in Thailand, spread, thanks to this mechanism, to all countries of the area causing a chain of exchange rate and stock markets crashes, motivated by purely psychological factors. (Radelet and Sachs 1998, Furman and Stiglitz 1998).

The proponents of this story agree that those economies had some structural problems but argue that the crisis is too violent and pervasive to be considered the consequence of these structural problems. They acknowledge that excessive investment, high foreign debt and high leverage of both firms and financial institutions had weakened these countries but add that, all this notwithstanding, they had reached in short time a good level of economic development. Furman and Stiglitz (1998) argue that it is very difficult to find a set of economic indicators that can be used as crisis predictors for all the countries considered. Though all of them had some structural problems, some of them had big and long-lasting current account imbalances without having high leverage of firms and banks, some of them had only a small and recent current account imbalance but a bubble in the price of financial activities and so on. More important, even if such a set of economic indicators could be accepted as crisis predictors it would remain unexplained why other countries that, according to this theory, should have experienced a crisis did not and were totally unaffected by the world financial turmoil.

The high leverages of both firms and financial institutions are often mentioned among the factors behind the crisis. Some argue that such high leverages are the result of a local form of capitalism based on corruption and state intervention to protect the interests of some influential business groups. Liberalization would have fostered speculative activities by both firms and banks without caring at mounting debt because of the implicit support of the state and of international financial institutions in case of trouble. It would then be a case of moral hazard (see Krugman 1998, Sachs 1997).

The proponents of the second story argue that moral hazard is a problem that any financial system must face when the possibility of contagion is taken into account; therefore that is no peculiar feature of the economic systems of East Asian countries (see Furman and Stiglitz 1998). High leverage may be explained with other peculiar features of the countries considered, such as the high investment rates and the lack of alternative sources of financing for firms. In order to avoid such problems in the future it would be appropriate to strengthen the financial system and to foster the expansion of capital markets that could offer funds to firms (see World Bank 1998).

To both views liberalization may be a good thing, but without corruption and state intervention to the first and only under certain conditions, such as a well regulated and healthy financial system, to the second. To the latter the expansion of capital markets would be a decisive step to strengthen the structure of financial markets and would mitigate the debt problems of firms by opening new financing possibilities different from bank debt.

The aim of this work is to explain the reasons behind the accumulation of debt in the business sector in South Korea in the Nineties and to assess whether the high leverages of the period preceding the crisis depended upon the same set of factors as in the past decades. The author finds empirical evidence that the liberalization process has favoured the persistence of high debt in the business sector. The reasons behind this, however, are different from those mentioned in the above quoted literature. To some the rising indebtedness was due to a moral hazard problem. The belief in the implicit guarantee by the state induced many

firms to ask for debts they knew they could not give back. To others it was due to the high investment and to the insufficient expansion of capital markets that could have helped in replacing bank debt as a means of financing. To the former, liberalization was introduced in wild markets and thus created wrong incentives. To the latter, financial markets are imperfect everywhere, not only in these countries, particularly markets for bank debt because of informational asymmetries. Therefore it would be useful to reduce the dependence of firms on bank debt, though for informational imperfections the possibility of raising equity capital is subject to some limits, both in developed and in developing countries. (see Stiglitz 1998)

*This work finds evidence that the liberalization process favoured the accumulation of business sector debt towards all counterparties, not only the banks and the financial institutions. Most of this debt was due to other counterparties, which means that it is was directly placed on the market. Therefore it was the rapid expansion of capital markets rather than their absence or thinness to have favoured the accumulation of debt.* Moreover the expansion of a specific section of these markets, the market for short term debt instruments, issued by firms underwritten by banks and other financial institutions and sold on the market, is responsible for the contagion since it created a dense web of credits, whose risks were correlated over the whole area. The interdependence of credit risks is the major contagion factor. One does not need to resort to either structural or psychological problems to explain contagion (see International Monetary Fund 1998 for a vivid description of the working of capital markets in these countries).

One could ask why firms did not use more stocks rather than these instruments. One explanation could be the high volatility of the prices of stocks in these markets.

Liberalization has affected both banks and firms. The bad situation of banks were due not only to the nonperforming loans problem but also to the fall in the value of stocks that hurt the bank balance sheets. In the past banks were obviously hurt by shocks to the firms income but these shocks were transmitted through the loans channel

rather than the price of equity channel. In the situation before the crisis banks held substantial shares of stocks in their portfolios. The problems of firms thus hurt them through both these channels.<sup>1</sup> It was the increase in credit availability that increased the demand of firms who used the funds, as we shall see in the next sections, both for investment financing and acquisition of financial activities. In the first phase of liberalization the stock market became an important source of funds for firms (it covered around 25% of net investment financing). This happy state of things lasted just for a few years. Thereafter debt rose again and also financial assets. The fluctuation of leverage is due not only to the debt, which lies on the numerator, but also to the value of equity, which lies on the denominator. After this short expansion in the stock market, the price of equity fell and fluctuated quite a lot.

### **3The debate on why firms have high leverages.**

There is a debate on corporate leverage that dates before the crisis and is mainly related to the difference in financial structures across countries or more generally economic systems; the reasons underlying the difference in corporate leverage between western countries and eastern countries have been often debated and within this subject a particular place is assigned to the Japanese case compared to US, UK or European countries. The most accepted explanation of the high leverage of corporations in Japan has been given by Aoki (see Aoki 1989) High leverage in this case would depend upon the institutional environment and upon the type of corporate governance that rules in this country; the task that banks perform as monitors of the firms is important in this respect. The deviation from the maximization of the price of shares, that seems common practice in this country, is related to the power of banks; they can influence the choice of the managers of the firms making them inclined towards a financial structure where

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<sup>1</sup> The author is planning to deal with this theme in a future work.



bank debt has a bigger weight than that compatible with share price maximization.

Another reason why corporate leverages in Japan are so high is that firms use to hold a lot of short term bank liabilities in their balance sheets. This happens because banks ask them to hold part of the loans granted on their accounts as compensating balances. In practice they are required to redeposit part of the money borrowed at the bank. Moreover it has been noticed that Japanese firms use to hold a great amount of short term financial assets within which also a relevant share of trade credits while having on the other side many short term debts. The ratio of short term financial assets plus trade credit to value added of Japanese firms is high (200%) and bigger than that of firms in UK, US, and Germany (see Prevezer and Ricketts 1994 p.255)

This explanation loses strength if applied to other Eastern countries such as South Korea. In this country, banks are less powerful than in Japan since they are mainly executors of decisions taken by the government. There is a sort of "main bank"; yet the influence that Japanese banks have on managers' investment and financing decisions is hardly conceivable in this institutional environment. Moreover, as the liberalization and deregulation process went on, their influence declined even more.

To others the reasons behind the high leverage cannot be found in microeconomic theories of the firm, but in national accounts data.

One strand of literature is dealing with the difference in investment rates. Since investment rates in Eastern countries are much higher than in Western countries the need for funds to finance investment is much bigger. Given that in almost all countries capital markets do not contribute a lot to this financing (on this see Mayer 1990 and Mayer 1992), the dependence on bank debt is obvious.

There is also another macroeconomic explanation, based on the fact that in these countries both investment and saving rates are very high (see Wade and Veneroso 1998 and Wade 1990). The starting point for this thesis is that the ratio of savings to GDP in Eastern countries is

also very high and higher than in Europe and in the States. Since households save a lot and deposit these savings at the banks the ratio of deposits to GDP is also very high. Being both families and states very cautious in borrowing, the only sector that borrows from banks is the business sector. (see Wade and Veneroso 1998 p.6) Essential to this view is that markets for other instruments to allocate savings do not exist or are scarcely developed. This explains why savings either are held as idle balances or are deposited at banks. The disadvantage of such a state of things is that firms, being loaded with debts, are very sensitive both to interest rate rises and to credit supply or income shocks. Corporate sector financial fragility would depend therefore upon the ratio of bank deposits to GDP on one hand and on the leverage (ratio corporate debt to equity) on the other.<sup>2</sup>

The high leverage of firms would then depend on the type of industrial development that has established itself in these countries whose main features are both a high rate of investment and a high rate of saving without capital markets. This model works only if shocks to interest rates and firms income occur rarely and are not too big. Otherwise many firms would be compelled to go into bankruptcy. A critical assumption of this view is that firms finance their investment exclusively by means of bank credit and that banks are the only intermediaries to receive households savings. *Changing the way firms finance their investment in order to lower their leverage would also mean to throw away this development model.*

The same conclusion has been drawn by reports and scientific articles written by members of international institutions or directly published by them (World Bank, IMF). The judgement behind this common conclusion may be different, since those international institutions foster deep changes inside these economic systems that would make them more similar to the Western economies.

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<sup>2</sup> "The deeper the intermediation of debt (that is, the higher the ratio of bank deposits to GDP and the higher the ratio of corporate debt to equity), the more likely that any depressive shock will cause illiquidity, default and bankruptcy." (Wade and Veneroso 1998)

The analysis of the rationale for high debt may also be similar to that of Wade and Veneroso (1998). Claessens et. al. (1998) write that "the combination of high investment and relatively low profitability in some countries meant that much external financing was needed. As outside equity was used sparingly, leverage was high in most East Asian countries." In a study published by the World Bank we read that firms, because of the absence of markets for stocks and bonds, borrowed too much from banks in order to finance their rapid expansion. Therefore they had a high leverage (World Bank 1998 p.xiv).

Both the supporters of this development model and those who urge for a drastic change, agree that one of its essential features is the dependence of firms on bank debt, that raises leverage. Both parties agree also that the expansion of capital markets according to the Anglo-Saxon model would lower the leverage, though it would also stop this development model. A hidden assumption in this line of thought is that high leverage in the 1990s and particularly in the years before the crisis can be explained in the same way as that of the preceding decades. Thus the deep change that the financial markets of the countries hurt by the crisis have experienced during the liberalization process is completely neglected. *Another missing point is that, though leverage may be high because corporate debt is high, corporate debt includes not only bank credit but also credits of other counterparties.* Debt directly placed on the market, such as bonds and credit securities, raises the numerator of the ratio as well. The denominator, the value of equity, is also neglected in this analysis. Stock market booms and busts that change the value of equity may give the impression of artificially high or low leverage. Since most of these countries experienced a high volatility in the price of financial assets, this is reflected in the calculation of the ratio. In the old state of things, being financial markets underdeveloped, volatility was no matter of concern for firms and changes in the leverage were mostly related to changes in debts and to the ability of firms to repay old debts, which in turn depended on

their income. Thus changes on the real side of the economy were the most important factor.

*In order to assess which kind of debt was responsible for the high indebtedness of firms, this work examines empirically the sources of investment finance for firms during the time period 1980-1997. The choice of such a long time span will allow us to answer the question on the persistence of the same financial structure over the whole period considered, being this the main assumption of the literature on this subject.*

*Another question that calls for an answer is whether the assumption of a strong correlation of debt and investment holds; and, even if it holds, whether the debt was raised exclusively to finance investment or both to invest and to buy financial assets.*

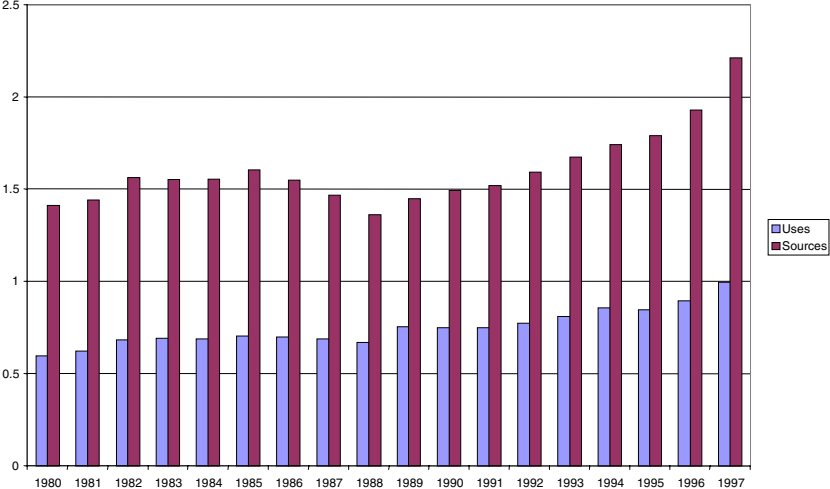
## **4 The sources of investment finance 1980-1997.**

### **4.1 Sources and Uses of the Business Sector.**

In this section we look at the data on the stocks of corporate sector sources and uses (Flow of Funds, Total of Financial transactions). We measure all series in terms of GDP. Graph 1 shows that in the subperiod 1980-1989 the sources fluctuate around a constant whereas the uses show a steady, though weak, growth. In the subperiod 1989-1997 both sources and uses show a strong growth.

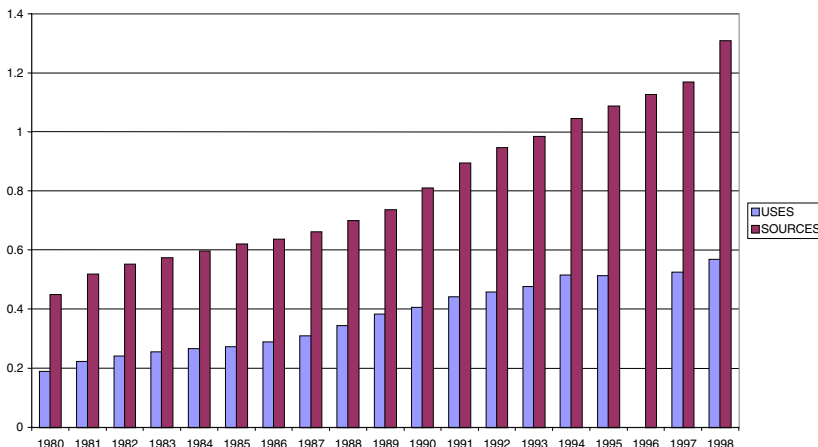
In the first subperiod, the fluctuations of sources may be related to the substitution of external funds with internally generated funds, particularly in the years 1985-1988. This, in turn, may be due to the good business cycle phase. In the second subperiod, instead, both sources and uses grow steadily independently of business cycles phases. This would suggest that in this subperiod no substitution between external funds and internally generated funds has been made by firms, even during good times. Instead the most striking feature of this period is that both sources and uses have the same dynamics.

Graph 1: Sources and uses to GDP.



Since this evolution may be affected by the fluctuations in GDP, we performed the same operation using both sources and uses at constant prices (GDP deflator) and divided them by the stock of capital at constant prices (capital stock deflator).

Graph 2: Sources and uses to capital stock.



Graph 2 shows that both sources and uses grow over the whole period, as it could be expected, but the rate of growth is greater in the last years. Since the capital stock increases strongly in the same period, the rising ratio of sources to capital stock implies that the sources rise more than the capital stock (see graph 7).

#### 4.2 Net financing proportions of investment over the period 1980-1997.

In this section we will calculate net financing proportions for investment<sup>3</sup> during the period 1980-1997. We follow Mayer (Mayer 1990 p.329) in considering the proportions on a net basis. This means that acquisitions of financial assets are subtracted from increases in corresponding liabilities.

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<sup>3</sup> By investment it is meant gross fixed capital formation.

Our proportions tell us how year by year investment on a gross basis has been financed. Both financing sources and investment are taken at current prices.

The patterns of financing that emerge as a result of these calculations are at least three.

*In the first subperiod 1980-1985 the prevailing sources of financing are bank credit, own financing and a mix of sources which include trade credit and financing from abroad. External financing on the market is virtually nonexistent.*

*In the second subperiod 1985-1989 the picture drastically changes insofar as own financing and new issues of shares become the most important sources of financing. The increase in new issues can be explained by the boom in the stock exchange and the high price of shares.*

*In the third subperiod 1989-1997 we notice a strong reduction in the own financing proportions and a big rise in the proportions of securities (both long term and short term). Though the proportion of securities rises, the proportion of stocks falls with respect to the period 1985-1989. This may be related to the fall in the stock index after the boom period.*

In order to assess the main patterns of financing in graph 3 we consider only three net sources: own financing, loans and securities. In the latter item we aggregate both securities and stocks.<sup>4</sup> We do not consider minor items such as trade credit in this preliminary evidence.<sup>5</sup>

This rough division may enable us to assess the contribution of the market for securities to the financing of investment. Thus we see that the item securities proportion shows a positive trend rising

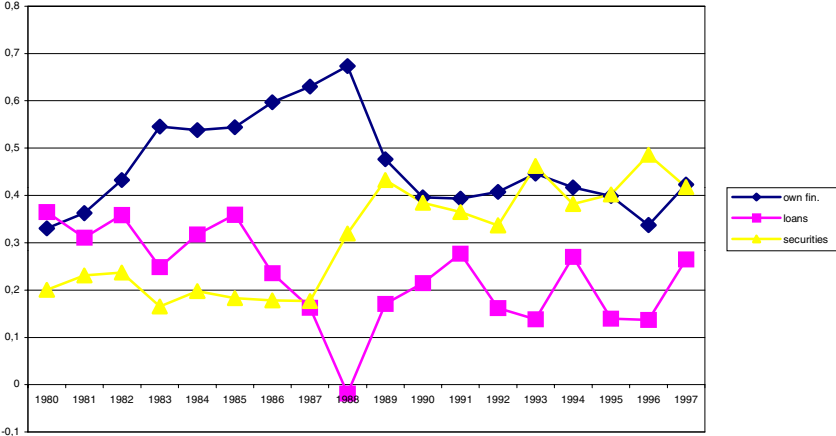
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<sup>4</sup> The effective proportion of securities is thus underestimated since the share of securities in the minor items that are omitted is not taken into consideration.

<sup>5</sup> For a complete table of net investment financing proportions see the Appendix.

from the value of 0.2 in 1980 to the value of near 0.5 in 1996 (just before the crisis broke).

Graph 3: Net financing proportions: own financing, loans and securities.



As shown by graph 3 we see that, in the period 1980-1988, the net proportions of own financing and loans are inversely correlated. This pattern may be explained by the absence of developed market for securities so that the two sources were the major alternative choices among financing means. In 1987 the decline in loans is so strong that the loans proportion becomes equal to that of securities. From 1988 onwards both securities and loans show a rising trend whereas own financing stabilizes at a much lower level than in the preceding period. This can be observed by looking at table 1, which shows the correlation coefficients that are calculated separately for the two subperiods 1980-1988 and 1989-1997. In the first subperiod the correlation coefficient between own financing and loans is



negative whereas in the second is slightly positive. The correlation coefficient for loans and securities is negative in both periods and almost equal in absolute value. We shall remember however that these are net loans.

Table 1: Correlation between financing proportions

Correlation ab	Correlation ac	Correlation bc	Period
-0.75	0.053	-0.56	1980-1988
0.10	-0.06	-0.51	1989-1997

Legenda:

a own financing proportion, b loans proportion, c total securities proportion.

A comparison with the findings of Mayer’s work (see Mayer 1990) on the international financing of industry shows that the pattern of financing that prevailed in the period 1980-1988 is similar to that observed in the majority of countries included in this study. The own financing proportion is quite high and also in the sample studied by Mayer this is the major source of finance for companies ranging from 61.4 for France to 102.4 for the United Kingdom in the period 1970-1985. (see Mayer 1990 p.310 table 12.1)

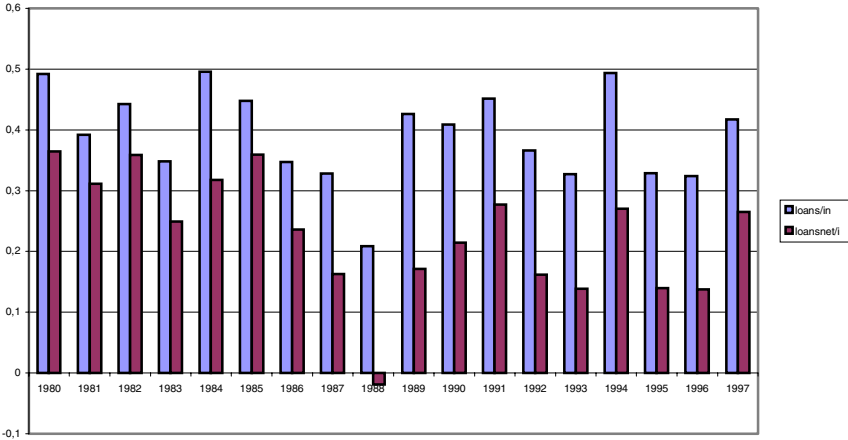
In particular the two main findings of Mayer’s study, namely that retentions are the dominant source of finance in all countries and that in no country companies raise a substantial amount of finance from securities markets may apply to South Korea as well in

the 1980s. The rationale behind the last observation may be different. In the United Kingdom where the markets for securities were highly developed the observed pattern of finance could have been a voluntary choice whereas in South Korea it could have been a matter of necessity. The difference between bank based and market based systems does not emerge in relation to the proportion of securities, being this proportion low even in market based systems such as the United Kingdom. The difference arises in the proportion of loans in the financing of investment which is very low in the United Kingdom and in The United States, while it is quite high in France, Japan and Italy. Another feature of company finance that results from Mayer's work is that there is a strong inverse relation between the proportion of expenditure financed from retentions and bank credit. (see Mayer 1990 p.315) Even this applies well to the case studied here for the first subperiod, being the correlation coefficient between own financing and loans proportions both negative and high in absolute value  $-0.75$ . In short almost all countries do not use securities as an important source of finance; the countries more bank-based use a mix of retentions and credit with a higher proportion of credit; the countries that are generally considered more market-based use a mix of the two sources, where the bank credit proportion is very low.

The pattern of financing that prevailed in South Korea in the subperiod 1989-1997 diverges from both models. The share of securities is high and reaches almost 50% at the end of the period, the share of own financing is low and declining over the whole period, the share of net loans is low and declining, though the same does not hold for gross loans. Thus the high securities and low own financing proportions are in striking contrast to the pattern prevailing in the major industrialized countries. If we consider only the net proportions of financing investment it could be argued that the financial system under the pressure of liberalization was evolving towards a more market based system where the share of loans in financing declines, the importance of banks being also in a declining phase. The advantage of such a move towards a more

market-based system would be that the external indebtedness of firms would decline and thus their leverage, the relation between debt and equity would tend to diminish. This would be a great advantage especially in countries where firms start from a situation of high leverage. Unfortunately this is not the case in South Korea. The declining share of net loans reflects just the opposite side of the firms balance sheet, that is, the net position has improved but a large amount of debt is still demanded and obtained by firms. The net position is just the difference between liabilities to banks and claims on banks; what happened is that the former did not decline with respect to the preceding subperiod, on the contrary the latter increased. We can see this pattern clearly in graph 4.

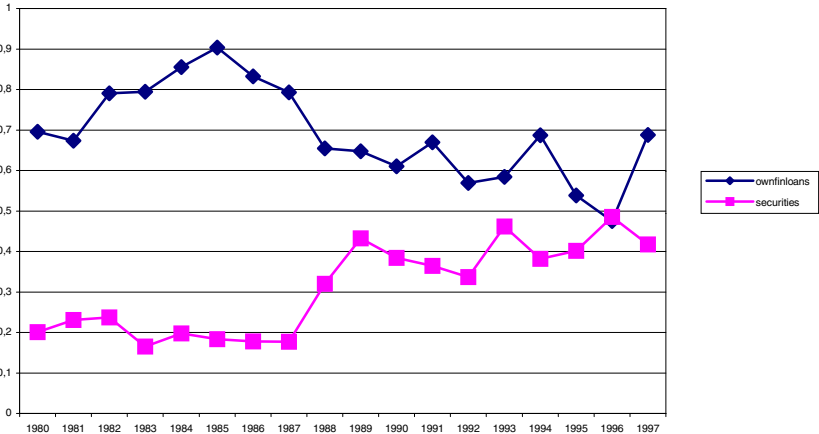
Graph 4



The proportion of investment financed by loans on a gross basis has therefore not decreased. According to these data it appears difficult to support the claim that excessive leverage may be caused by high investment accompanied by low profits which let the own financing

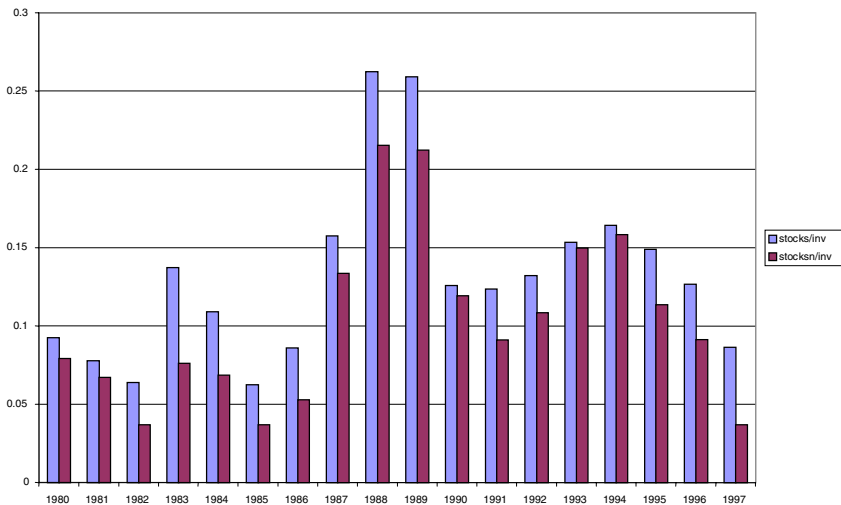
proportion decline in favour of an increase in the amount of loans (see World Bank 1998). We have already seen that own financing and loans proportions are not inversely correlated in the second subperiod as this argument would imply. Over the whole period it seems that the sum of own financing and loans proportions is inversely correlated to the total securities proportion, as it is clear from graph 5.

Graph 5: A comparison between own financing plus loans proportion and securities proportion.



From these data the change in the pattern of financing reflects the substitution of own financing for securities letting almost unchanged the gross proportion of loans. In the set of securities the proportion of equity was not high. Therefore the leverage ratio did not decline as it should be expected if the flow of new securities had replaced bank credit. On the contrary the liabilities increased since the funds raised on the market were added to those borrowed

from the banks. In graph 6 we see the net financing proportion of stocks compared to the gross one.



Stocks are important only in the period 1986-1989, in the years after 1989 they decline and in 1997 they are at the same level as in 1985. The increase in the total sum of liabilities is one of the reasons why the balance sheets of firms worsened during the 1990s. The result of the financial liberalization was therefore the tendency to raise more capital both on the markets and from intermediaries, which increased the debt burden. In the three years preceding the crisis the share of short term securities over total securities has increased, making the liabilities of firms of short maturity ( see Appendix).

## 5 Is there a statistically significant relation between sources and investment?

In this section we will assess the effect of the increase in the ratio of sources relative to GDP as flow entities on the investment. In practice we are dividing both sources and investment with GDP. In particular this relation is examined during the period of liberalization which started in the middle of the 1980s and continued in the 1990s. The year 1997 is excluded since it is the year of the crisis therefore it is very special. We run a OLS regression and the results are summarized in the following regression:

$$\log(\text{INGDP}) = -0.45^{***} + 0.44^{***} \log(\text{SFGDP})$$

(4.36)                      (6.25)

Period 1985-1996

Adjusted  $R^2 = 0.80$

Durbin Watson = 1.44

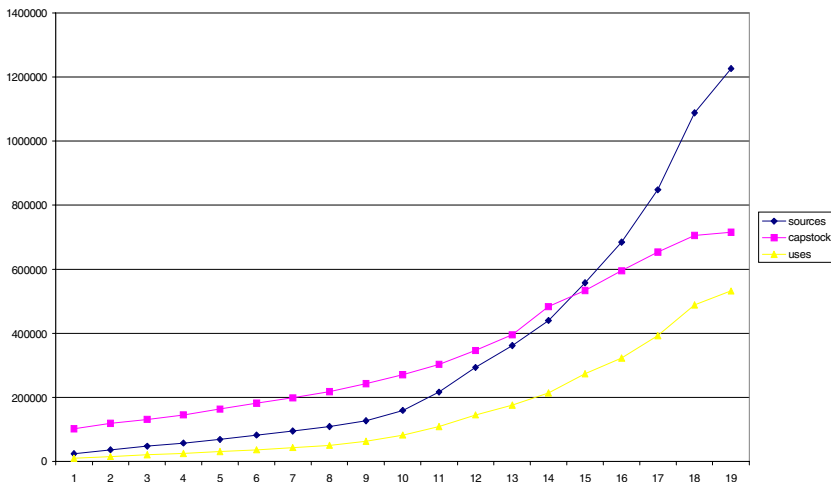
\*\*\* significant at the 1% level.

t-statistics are in parentheses.

The highly significant coefficient (1% level) shows that there has been a positive influence of the change in sources on investment, both measured with respect to GDP. *The value of the coefficient, though high 0.44, shows that not all new sources were used to finance investment.*

Since the regression is made with flows with respect to GDP, we do not have any information on the different speed of accumulation of sources, uses and capital stock. Graph 7 compares the pattern of growth of these three stock variables measured in real terms. Uses and flows are deflated by divided by the GDP deflator, whereas the capital stock is deflated by using a price index of capital goods.

Graph 7



As we can see from the graph the line representing the accumulation of capital stock lies above the line representing the accumulation of the funds raised for most of the sample period. At a certain point they twist each other, and change their position with the sources climbing up whereas the stock of capital lies under their line. This can be interpreted as evidence that in the first phase of liberalization the removal of financing constraints has made possible an increase in investment that has caused an acceleration in the growth of the capital stock. This lasts during the period 1985-1992. Afterwards in the four years preceding the crisis the speed at which funds are raised is much higher than the accumulation of capital but also the rate of accumulation of financial assets increases. This pattern of growth in the last years of the sample could be explained by the higher return on financial activities relative to the return on capital. The former increased in real terms as a consequence of the liberalization. The accumulation of assets

by firms could have been caused by the attempt to improve their poor performance in terms of yield on capital.

## **6 The effect of liberalization on the return of bank liabilities.**

The aim of this section is to answer the question whether the liberalization programme pursued by the authorities has created a structure of relative prices such as to favour the investment in financial activities, particularly, bank liabilities such as various types of deposits, certificates of deposit and other assets issued by banks.

The stages of the liberalization programme can be summarized as follows. In the first phase, starting from November 1991, the liberalization concerned the interest on short term large denomination deposit instruments, such as CD trade bills commercial paper and repurchases, long term time deposits and money in trust with a maturity of at least three years. Regarding interest on loans, in this first stage, the authorities liberalized the interest on bank overdrafts and discounts on commercial bills (with the exclusion of loans assisted by BOK rediscounts) discounts of commercial paper and trade bills of investment and finance companies. Thus, in this first stage, a large amount of bank liabilities (trust accounts amount to a big share of the market in this country) had their yield liberalized, whereas most of the bank assets, namely loans, were still subject to regulations. Thus banks were subject to the competition on the interest paid on their liabilities without being allowed to raise the interest on their assets, the loans. The interest rate on loans of all bank and non bank financial institutions had to be liberalized in the second stage starting from December 1993 but the liberalization was delayed because of the problems of firms. On the side of bank liabilities this second stage foresaw the liberalization of the interest paid on deposits with maturity longer than two years. In the third stage the loans financed by BOK rediscounts and the special purpose loans should be liberalized (see Kim, Eung Jin and Sang Koo Lee 1994).



One part of the story is that this lowered interest margins for banks whereas it gave impulse to the growth of various markets for short term debt and it increased the weight of trust accounts in portfolios. The other part of the story is that real yield on financial activities rose enormously in comparison to the what happened in the previous decades where the return on deposits was either negative in real terms or mildly positive. From data on the real interest on deposits (see Bank of Korea Research Paper 1994) we see that the real return was positive in the 1960s, negative in the 1970s and slightly positive in the 1980s (the mean return over the period 1970-1980 for a one year deposit was around 3.45)

Hellman, Murdock and Stiglitz (1997) argue that the capital markets in these countries during the industrialization period were an example of a "financial restraint" regime as opposed to that of financial repression. In the former case real yield on deposits are positive and the rent that results from the deviation from market conditions is not taken by the state but redistributed from households to firms. In fact the first observation does not apply to South Korea since real yield on deposits were for most of the time negative in real terms, whereas the second factor regarding the redistribution of the rent may apply to this case.

Financial innovation provided many new instruments to allocate savings that were not available in the previous decades and which offered high real returns, as we can see from table 2.

Table 2: The return in real terms (nominal yield minus GDP deflator) of various financial assets.

	a	b	c	d
1992	7.7	10.4	10.4	7.01
1993	7.2	8.1	10.2	6.7-7.7
1994	5.4	6.8	7.4	4.4-5.4
1995	7.4	9.2	9.5	5.1-7.1
1996	7.3	7.7	8.6	5.91
1997	7.6	8.5	8.4	8.61

### Legenda

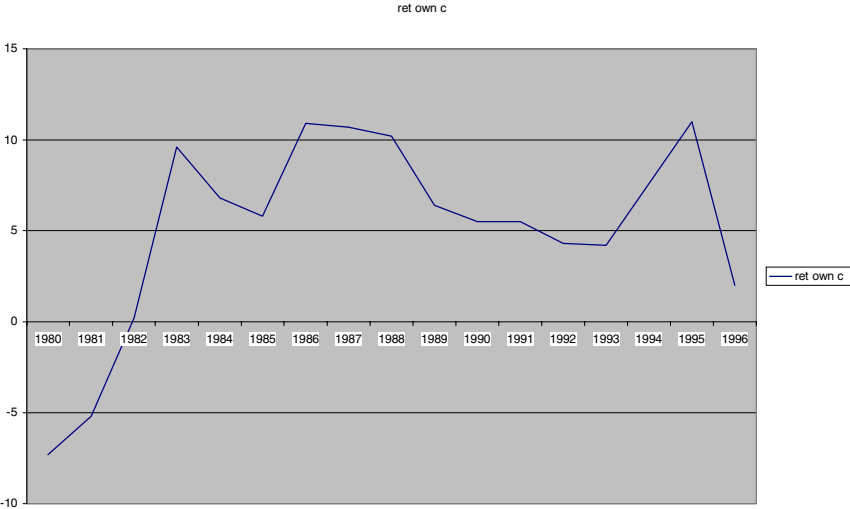
- a= money in trust (corporations)  
b= cash management accounts  
c= Mutual Saving and Finance Companies 2 years or more time deposits  
d= bank deposits (three years less than four)

*Note: for the item d in the years 1993-95 the values are given within a certain range since the authorities allowed them to fluctuate within this range.*

Source: Economic Statistics Yearbook 1998, The Bank of Korea for the nominal yield. Calculations of real returns are made by the author.

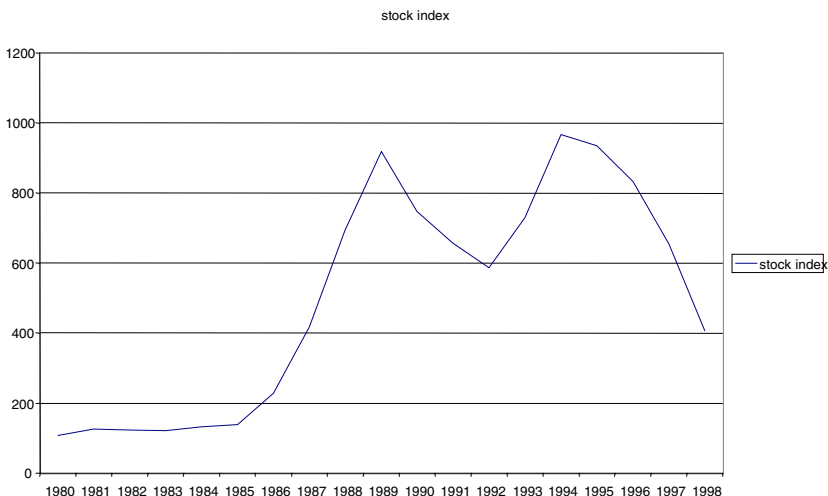
Graph 8 shows that, on the side of firms, the rate of return on own capital declined steadily from 1987 to 1993 going up shortly afterwards and falling again in 1995.

Graph 8: the rate of return on own capital.



Thus there is a strong difference in the performance of investment in real activities and performance of investment in financial activities particularly bank liabilities. We see in graph 9 that the return on shares after the stock market boom in the late 1980s declined in the 1990s and was very low in the two years preceding the crisis.

Graph 9: The stock index



The difference in the yield of investment and of monetary activities did not cause a reduction of the accumulation of capital, a substitution of real assets with financial assets as it could be expected. Investment grew at very high speed (see section 5 for data on this). A possible explanation of the accumulation of monetary assets in the balance sheets of firms is that this practice was a way to compensate the low return on investment and to show better results.

## 7 Conclusions

From the empirical findings of this work one can conclude that indeed the liberalization process, started in 1985, played a role in the high indebtedness of Korean firms. The availability of new

instruments on both the liabilities and the assets side had different effects during the different periods considered.

In the first period 1980-1985 the prevailing sources of financing are bank credit, own financing and a mix of sources which include trade credit and financing from abroad. External financing on the market is virtually nonexistent. In the second period 1985-1989, the picture drastically changes in that own financing and new issues of shares become the most important sources of financing. The increase in new issues can be explained by the boom in the stock exchange and the high price of shares. In the third period 1989-1997 we notice a big reduction in the own financing proportions and a strong rise in the proportions of securities (both long term and short term). Though the proportion of securities rises, the proportion of stocks falls relative to the period 1985-1989. This may be related to the fall in the stock index after the boom period. In the second period considered, firms reduced their indebtedness (as can be seen from the financing proportions) and replaced debt with shares and own financing. Thereafter their indebtedness increased towards banks, non bank financial institutions and towards other counterparts. Most of this new debt was in the form of securities, the most part was short term. Another question we asked was why firms raised so much external finance. We found that over the period 1985-1996 there is a significant and relevant effect of the sources on investment (both in terms of GDP). This means that a relevant part of the funds raised were used for investment, though not all of them. On the other hand we see from stock data that in the 1990s the growth of firms assets with respect to GDP and with respect to the stock of capital accelerated too. From the net proportions of financing calculated in section 4 we saw that the gross proportion of loans did not decline whereas the net proportion did. This is due to the accumulation in firms portfolios of financial assets issued by banks and other non bank financial institutions. We saw that the reason behind this choice might have been the high real return on these financial activities, in

the period considered, both in absolute value and relative to the real return on capital, which was particularly low in the 1990s. Regarding the debate on the causes of the financial crisis in 1997 this study finds that, on the one hand, the high indebtedness of firms is not simply related to the old development model, on the other hand, it cannot be reduced to the absence of developed and well-functioning capital markets. Therefore a policy aimed at fostering expansion and efficiency of capital markets may not be sufficient to avoid future crises.

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## Appendix

### Net financing proportions of investment 1980-1997.

	of	loans	stse	ltse	gl	es	tc	ftc	di	ofdc	misc	stocks	Stat. adjust.	total
1980	33.1	36.5	3.8	8.4	3.7	5.6	-0.9	0	0	20.1	-10.1	7.9	-6.7	101.3
1981	36.2	31.1	6.3	10.1	4.5	6.7	-8.6	0	0	5.9	5.7	6.7	-5.1	99.6
1982	43.2	35.9	4.4	15.7	2.7	4.9	-8.5	0	0	-1.4	4.3	3.7	-2.3	102.4
1983	54.6	24.9	-1.6	10.5	1.8	5.3	-1.7	0	0	3.0	-0.5	7.6	-3.9	100.0
1984	53.8	31.8	3.5	9.4	-0.1	6.0	-9.2	0	0	-3.0	9.5	6.9	-5.9	102.7
1985	54.4	35.9	1.8	12.8	0.2	4.0	-9.0	0	0	-8.2	8.4	3.7	-3.8	100.2
1986	59.7	23.6	4.9	7.6	1.9	3.3	-5.5	0	0	-3.5	-1.9	5.3	2.1	97.7
1987	63.0	16.3	-1.2	5.5	-0.8	6.5	-3.3	0	0	-1.4	2.3	13.4	1.9	102.1
1988	67.3	-1.9	4.8	5.7	0.1	4.7	-4.8	0	0	3.9	2.2	21.5	-3.6	100.1
1989	47.6	17.1	6.6	15.4	-0.2	4.0	-4.7	0	0	-3.3	-1.2	21.2	-0.4	102.1
1990	39.6	21.5	3.6	23.0	-0.1	3.7	-2.7	0	0	5.9	-1.9	11.9	-1.2	103.2
1991	39.3	27.7	1.2	26.1	0.3	3.9	-1.8	0	0	3.1	-1.0	9.1	1.0	108.9
1992	40.7	16.2	8.1	14.7	1.0	2.9	-2.0	3.7	-0.7	1.1	-0.3	10.9	2.3	98.5
1993	44.6	13.8	12.1	19.1	-0.2	2.9	-2.5	0.9	-0.7	-3.0	3.1	15.0	-2.3	102.9
1994	41.7	27.0	4.8	17.5	0.3	2.4	-2.7	2.2	-1.3	1.3	-1.5	15.8	-2.8	104.7
1995	39.8	14.0	11.3	17.5	0.2	3.4	-3.2	2.2	-1.5	2.1	6.0	11.3	-0.7	102.5
1996	33.8	13.7	16.2	23.3	-0.2	0.8	-1.2	3.5	-1.5	3.1	3.1	9.1	-0.9	102.7
1997	42.3	26.5	7.6	30.4	1.6	2.3	-2.8	-3.1	-1.4	0.0	0.9	3.7	-3.4	104.5

#### Legenda

of = own financing

stse= short term securities

ltse= long term securities

gl= government loans

es= equity other than stocks

tc=trade credit

ftc=foreign trade credit

di= direct investment

ofdc= other foreign claims and debts

misc=miscellanea

stat. adjust.= statistical adjustment

Note: The data reported in this table are own calculations based on the *Flow of Funds Total of Financial and Nonfinancial Transactions Business Sector* issued yearly by *The Bank of Korea*.

The Flow of Funds data were also available at the website of the Bank of Korea, <http://www.bok.or.kr>, at the time this work was being done.