

## **Financial Markets and the Behavior of Private Savings in Latin America**

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## I. Introduction

Recent concerns about the availability of funding sources for domestic investment in Latin America have resulted in a number of studies of savings behavior in the region. While there are several competing hypotheses about the determinants of savings, a review of the recent literature indicates that the stylized facts of savings in Latin America can be summarized by four features: First, Latin America national savings rates are lower, relative to GDP, than in many other developing countries; second, for the region as a whole, national savings rates have shown a declining trend in the 1990s; third, higher foreign savings are inversely correlated with national savings rates; and fourth, the improvement in the public savings rate during the 1990s has been largely offset by a deterioration in private savings.<sup>1</sup>

In addition to the four features described above, there is a fifth stylized fact that has been largely ignored in the literature of savings in Latin America; namely, that, in contrast to industrial countries and other developing countries, corporations save much more than households in Latin America. A related fact accompanies this observation: generally speaking, Latin American corporations distribute few profits; for all practical purposes, most of corporate profits are saved in the form of retained earnings.

There are many arguments for explaining the most prominent features of savings in Latin America. For example, the low savings ratios in the region are attributed to factors such as low per capita economic growth on a sustained basis, demographical features resulting in a higher dependency ratio than in other parts of the world, and the persistence of high current account deficits. There are also alternative arguments to explain the reduction in national savings rate during the 1990s. Some analysts claim that, by increasing expected permanent income, the introduction of market reforms in the early 1990s has resulted in an increase in private sector consumption--and, therefore, a reduction in private savings. In contrast, others hold a more pessimistic view, by arguing that, because the reforms were not expected to be permanent (especially financial and trade liberalization), households increased consumption expenditures (decreased savings) on the expectation that the value of real savings would decline after the reversal of the reform efforts.

This paper complements previous studies by arguing that the low private savings ratio in Latin America can be associated with the limited confidence of households and businesses in domestic financial institutions. Previous studies have established a relationship between private savings and financial markets either by using a measure of "financial depth" (see for example, Edwards (1995)) or a measure of **A**borrowing constraints@ (see, for example, Schmidt-Hebbel , Webb and Corsetti (1992) and Jappelli and Pagano (1994)). In the former case, deepening of financial markets--usually defined as the ratio of a monetary aggregate to GDP--is associated with increased private savings

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<sup>1</sup> See, for example Edwards (1995), Gavin, Hausmann and Talvi (1996), and Schmidt-Hebbel and Serven (1995).

rate. In the latter case, the lack of access to credit is associated with a higher savings rate: even if the private sector wants to consume more by dissaving, borrowing constraints would prevent them from doing so. Under this hypothesis relaxing borrowing constraints, through, say, financial liberalization, would reduce the private savings rate.

This paper offers an alternative view by claiming that the private savings rate relates positively to the confidence of the private sector in the strength of the financial system and that the latter concept can be approximated by the ratio of corporate demand for bank liquid assets to household demand for bank liquid assets.

The argument is derived from the analysis of corporate and household behavior in the uncertain financial environment that characterizes Latin America. As is well documented,<sup>2</sup> remaining fragilities in Latin American financial markets have resulted in making households reluctant to hold domestic assets in the formal financial markets. Indeed, households as well as small enterprises can cover a significant proportion of their demand for liquidity by holding cash (or by borrowing from informal markets).<sup>3</sup> In contrast, large and medium-size firms need to hold liquid assets in the formal financial markets because of two fundamental reasons. First, for this kind of firms, maintaining liquidity is essential to maintaining the production process. For example, they must pay taxes and cover workers' contributions to social insurance, even when the financial system does not perform well. They must also use deposits to pay other firms operating in the formal sector for inventory, supplies, etc.<sup>4</sup> Second, in the risky financial environment of Latin America, corporate borrowers must find some means of protecting themselves from the uncertainty of fund availability. With the exception of a few large corporations, the Latin American corporate sector has limited access to relatively cheap sources of foreign funds and even those firms with access find that they are shut out of international markets on short notice at the first sign of financial problems in their home country. The desire of the corporate sector to assure access to bank loans under conditions of uncertainty encourages corporations to accumulate liquid bank balances.

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<sup>2</sup> See for example, Rojas-Suarez and Weisbrod (1996a).

<sup>3</sup> After all, in Latin America, fragile financial markets have implied low expected real rates of returns on domestic financial assets on a sustained basis as negative real interest rates in crisis periods have tended to wipe out positive real returns in good times.

<sup>4</sup> Even where firms attempt to conserve on the use of bank deposits by circulating receivable claims among themselves, they must ultimately convert some of the receivables into bank deposits to pay taxes.

Thus, it is expected that a financial market where confidence is low would be associated with a higher ratio of corporate to household holdings of liquid bank assets than that prevailing in strong financial markets. *Ceteris paribus*, this high ratio would, in turn, be associated with a low private savings ratio.

To assess the validity of the arguments stated above, the paper analyzes cross-country flows of funds and financial data for industrial, newly industrialized, and Latin American countries. An important limitation of the analysis is the scarcity of data available for Latin American countries. Indeed, data on holdings of liquidity by corporations and households is only available for a few countries and for a short period of time. This limitation precludes the use of econometric methods of analysis to test fully specified models of savings. Therefore, the conclusions derived from this paper should be taken as preliminary.

Notwithstanding these caveats, the evidence supports the hypothesis advanced in this paper. Latin American countries, where private savings rates are lower than in other developing countries and most industrial countries, display the highest corporate to household bank deposit ratios among the three groups of countries considered here. The evidence also indicates that the ratio of corporate to household deposit holdings is strongly correlated with another indicators of the fragility of the banking system, such as the cost of bank liquidity. The ratio of corporate to household deposit holdings is also inversely correlated with a more traditional measure of financial market depth, such as the ratio of liquid financial assets to GDP.

The rest of the paper is organized as follows: Section II provides an overview of the stylized facts associated with savings ratios across the three groups of countries. Section III develops an accounting framework to examine how confidence in domestic financial sector can be approximated by the ratio of corporations to household deposit holdings. Section IV analyzes the empirical evidence relating relative deposit holdings to confidence in the financial system and ultimately differences in private savings ratios across countries. Section V concludes the paper.

## II. The Stylized Facts

As is well documented in the literature, the national savings rate differs significantly across regions of the world.<sup>5</sup> Marked differences in savings rates are also evident among industrial countries and among developing countries groups. The extent of these differences is shown in Table 1 which presents the recent behavior of gross domestic savings ratios, which include capital consumption allowances, as a percent of GDP for industrial, Latin American and South East Asian countries. Clearly, in each of the three periods considered in the Table, Latin America has displayed the lowest average and median savings rates among the three groups of countries. An important feature, is that, in contrast to South East Asia where the average savings rate shows an increasing trend, the average

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<sup>5</sup> For a discussion of saving patterns in different regions of the world, see IMF (1995).

national savings rate in Latin America during the 1990s is similar to that of the 1970s; this despite the comprehensive stabilization programs and the structural reform efforts undertaken by this group of countries in the early 1990s.

Table 1 Gross National Savings Rates by Region (Percent of GDP)						
	1970-1981		1982-1989		1990-1994	
	average	median	average	median	average	median
Industrial Countries	23.8	23.4	20.6	20.2	20.0	19.0
Latin America	17.9	17.3	15.5	15.2	17.1	16.7
South East Asia	22.9	21.3	30.2	30.7	33.2	34.2
Source: IMF database						

Data for private savings rate show even more dramatic features for Latin America. First, average private savings rate in the region, which by the 1970s were higher than those experienced in South East Asia, declined during the 1990s and were only slightly above half of the level reached by South East Asia. Second, in Latin America, the median savings rate, i.e., the **Atypical** savings rate in the region, was much smaller than the average savings rate.

Table 2 Private Savings Rates by Region (Percent of GDP)						
	1970-1981		1982-1989		1990-1994	
	average	median	average	median	average	median
Industrial Countries	22.0	20.4	20.9	20.1	21.3	21.0
Latin America	16.0	7.9	16.8	10.8	14.7	10.9
South East Asia	14.1	11.1	23.3	21.1	24.0	23.4
Source: IMF database						

To further analyze the behavior of private savings during the 1990s, Table 3 presents data for a sample of individual industrial and developing countries. The Table includes data for six developed countries, France, Germany, Italy, Japan, the U.K., and the U.S., two newly industrialized countries, Korea and Taiwan, and Latin American countries, including Argentina, Chile, Colombia, Mexico, and Peru. For most countries, these ratios are five year averages during the early 1990s, with the exceptions noted in the Table.

Table 3 indicates that, among the sample countries, private savings relative to GDP is highest for Korea and lowest for Mexico. All the Latin American countries represented in the Table have gross savings ratios significantly lower than Italy, Germany, France, Japan, Korea, and Taiwan. For reasons that will be discussed below, savings rates in the United Kingdom and the United States are particularly low.

**Table 3**  
**Private Saving**  
(Percent of GDP and Composition)

Countries	France	Germany	Italy	Japan	U.K.	U.S.	Korea	Taiwan	Argentina	Colombia	Chile	Mexico	Peru
Years	1990-94	1991-95	1990-94	1989-93	1991-95	1991-94	1990-92	1987-91	1990-94	1990-94	1990-94	1990-94	1991-94
Gross Private Saving	20.4	19.6	24.6	26.0	16.1	11.7	28.2	22.2	15.2	11.6	18.4	10.6	13.2
Composition													
Business	50.7	49.3	22.0	46.3	48.5	31.3	38.2	24.8	N.A.	44.1	104.6	70.5	54.3
Household	49.3	50.7	78.0	53.7	51.5	68.7	61.0	75.2	N.A.	55.8	-4.6	29.7	45.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	N.A.	100.0	100.0	100.0	100.0

Note: For Taiwan, the ratio is percent of GNP.

Source:

France: OECD, Financial Accounts of OECD Countries, France 1980/1995.

Germany: Deutsche Bundesbank, Monthly Report, various issues.

Italy: OECD, National Accounts, 1982-1994.

Japan: Economic Planning Agency, Annual Report on National Accounts, 1995

U.K.: Office for National Statistics, Economic Trends, various issues.

Korea: The Bank of Korea, Monthly Statistical Bulletin, various issues.

Taiwan: Central Bank of China (Taiwan), Flow of Funds in Taiwan District, 1992.

Latin American Countries: IMF database, Agosin, Manuel, Gustavo Crespi T, and Leonardo Letelier S., 1996, Calderón Madrid, Angel, 1996, Gonzales de Olarte Efraín, Cecilia Lévano de Rossi, and Pedro Lontop, 1996.

When private savings rates are decomposed between households and corporations savings contributions, a further conclusion emerges: In contrast to other regions, corporations are the most important source of private savings for most of the Latin American countries represented in Table 3.<sup>6</sup> Correspondingly, household savings in Latin America is relatively low.<sup>7</sup>

<sup>6</sup> While we are not aware of a study that discusses this feature of savings in Latin America at the regional level, individual country studies acknowledge this characteristic. See, for example, Agosin, Crespi, and Letelier (1996), Calderon (1996), Cardenas and Escobar (1996), and Gonzales de Olarte, Rossi and Lontop (1996).

<sup>7</sup> Data by sector are available for Chile, Mexico, and Peru, in Latin America, as well as for Korea and Taiwan and three industrial countries.

However, data on corporate savings must be interpreted with some care. Part of the problem with gross savings rates is that capital consumption allowances are included. Because capital consumption allowances are actually included in the price of the good, they are, in an economic sense, a cost of production. For accounting and tax purposes, they are also treated as expenses, but in the national income accounts, they are included as part of gross savings because they are used to fund the equipment replacement element of gross investment. Capital consumption allowances are, therefore, automatically part of gross corporate savings. As a result, if net savings by both households and corporations is low, consumption allowances will be a large portion of gross savings, which will increase the share of corporate savings in total savings. This is the case for the United Kingdom and the United States.

Thus, ideally, we would like to determine whether corporate savings are high, after accounting for depreciation. This, of course, would require measuring net retained earnings of all businesses. Since many countries do not keep such statistics, we approximate business savings behavior by looking at retained earnings ratios of corporations listed either on the IFC stock exchange index for the individual country or a popular domestic stock exchange index. These data, which are presented in Table 4, indicate that business savings (retained earnings) as a percent of total earnings have been very high in all the Latin American countries represented in the Table. They are also high in Korea, and they have also been, until very recently, extremely high in Taiwan and Japan as well. Retained earnings ratios are low in Germany, the U.S., and the U.K.

Countries	Germany	Japan	U.K.	U.S.	Korea	Taiwan	Argentina	Chile	Colombia	Mexico	Venezuela
1986	n.a	74.2	n.a	n.a	74.0	90.3	97.9	73.1	92.7	97.1	n.a
1987	n.a	64.7	n.a	n.a	83.7	61.8	93.1	n.a	90.2	96.8	n.a
1988	n.a	71.2	n.a	n.a	99.7	99.7	90.9	99.9	99.9	n.a	n.a
1989	n.a	72.6	n.a	54.2	99.7	99.6	n.a	99.2	99.5	98.5	n.a
1990	55.9	82.8	n.a	44.6	73.5	82.7	n.a	94.5	90.0	99.9	n.a
1991	46.4	79.8	n.a	42.4	78.4	79.0	n.a	99.8	87.3	97.4	92.3
1992	12.0	71.3	n.a	26.2	78.6	80.3	58.9	99.9	76.0	n.a	94.8
1993	29.0	n.a	n.a	34.5	79.7	93.5	80.4	93.8	79.4	97.5	94.2
1994	16.8	41.4	21.2	45.7	79.1	17.6	86.7	94.9	91.1	97.3	95.6
1995	37.6	n.a	n.a	57.9	n.a	24.2	n.a	n.a	n.a	n.a	n.a

Note: Retained earnings ratio is the percent of retained earnings relative to total earnings.  
n.a: not available

Source:  
Germany: Deutsche Borse  
Japan: Nomura Research Institute (1993)  
U.K. and U.S.: Bloomberg Information System  
Korea, Taiwan, Argentina, Chile, Colombia, Mexico and Venezuela: IFC database.

Thus, data from either a macroeconomic source--the national accounts-- or a microeconomic source--corporations=earning ratios reported at the stock exchanges--confirm that a main feature of savings pattern behavior in Latin America is that corporate savings are, by and large, the most important contributor to private savings in the region. This is an additional feature distinguishing saving behavior in Latin America from both industrial and other developing countries.



### III. Corporate and Household Demand for Liquidity and the Strength of Financial Markets

The previous section focused on the stylized facts of private savings in Latin America. This section relates how one particular element of corporate and household behavior -- accumulation of bank deposits -- can be used to assess confidence in the financial system. To achieve this objective, the section is divided into two subsection. The first one reviews why trust in the financial system is a necessary condition for effective use of savings in an economy. The second subsection develops an accounting framework to explain how corporate desire to accumulate bank deposits relative to household desire to accumulate bank deposits is affected by (a) differences in financial market structure and (b) differences in degree of confidence in financial systems.

#### 1. The Impact of Confidence in the Financial System on the Deployment of Savings

Whether financial institutions that hold marketable securities develop (the often-labelled Anglo-Saxon system) or whether financial institution development is confined mainly to banks and other investment institutions that do not actively trade securities (the often-labelled universal banking models), households will not entrust their savings to these institutions if they do not feel that these institutions will maintain the real value of their accumulated savings. Corporations that save in excess of their immediate funding needs will face the same problem since they, too, must accumulate financial assets. Hence, lack of confidence in the financial system creates a disincentive to save for both households and corporations.

While both households and firms can avoid using a financial system in which they have no trust by spending their income on real goods and services, they could also save by exporting capital. In fact, as will be evident from the empirical analysis for Korea and Taiwan presented in Section IV, there is some support for the fact that domestic savings rates are positively affected by the ability of households to hold foreign securities, even when the domestic financial system is considered weak.

For households and corporations to build trust in the domestic financial system, they have to perceive an expected positive real rate of return on domestic financial assets on a sustained basis. An environment characterized by highly volatile real interest rates coupled with periods of negative real rates creates a disincentive for domestic savings. As household and corporate confidence in the domestic system grows, they will have incentives to substitute out of domestic expenditures or foreign asset accumulation into holding domestic financial assets. Notice, however, that if improved trust in the system is accompanied by an increase in expected real interest rates, the domestic savings rate will be affected by both a substitution and a wealth effect resulting from the expected increase in real interest rates. While the substitution effect will promote a higher domestic saving rate, the wealth effect will induce higher current consumption and, therefore, a decline in the domestic saving rate.

Once confidence in the financial system has been established, the economy can reap numerous

economic benefits. For example, financial institutions can convert liabilities issued by non financial firms into securities that more closely meet the needs of households. They can pool securities to permit small investors to achieve more diversification than they could achieve on their own. They can create sophisticated financial products such as annuities or products that provide payoffs in the event of specific contingencies, such as death or prolonged illness.

In addition, financial institutions can improve the performance of non financial firms by placing controls on corporate managers that are not economically feasible to be performed by most individual investors. They can provide a pool of capital to engage in leveraged buyouts of under performing firms. Or, as equity holders, they can influence boards of directors to discipline or replace current management.

Trust in financial markets implies a deepening of financial markets in the sense that economic agents are willing to hold claims on borrowers in the system. This implies that trust in the financial system should encourage domestic private sector savings since saving is one method by which financial claims are accumulated.

It must be noted that financial deepening does not necessarily lead to the development of an Anglo Saxon-type financial system with the securitization of a wide variety of claims on borrowers. Indeed, most deep financial systems in the world are bank-dominated systems. In the event that an Anglo Saxon financial system develops, numerous institutional investors that hold marketable securities, such as pension fund managers, mutual fund managers, and, to some extent, life insurance fund managers, create active financial markets. For example, in the United States between 1975 and 1989, pension fund and mutual fund (excluding money market funds) assets grew from 19 percent of household financial assets to 31 percent of household financial assets. Over this same period the turnover ratio (the percentage of shares traded to listed shares per day) on the New York Stock Exchange increased from an average of about 25 percent in the 1970s to about 55 percent in the 1980s.

In the next subsection, we present an accounting framework to explain how both the structure of the financial system and confidence in the system affect corporate demand for bank liquidity relative to household demand for bank liquidity.

## 2. How Market Structure and Confidence Affect the Corporate to Household Deposit Ratio

This subsection provides a framework to evaluate how financial structure and confidence in the system affect the corporate to household bank deposit ratio.

Corporate demand for liquid financial assets is directly tied to the need to maintain working capital for the production process whereas accumulation of other financial assets is related to the long-term investment decisions of the firm.

At low levels of confidence in the financial system, corporate demand for liquid financial

assets provided in the formal markets--largely formed by banks-- tend to be more stable than household demand for liquid financial assets because corporations must hold liquidity as part of the production process. For example, medium and large corporations need liquidity to pay the wage bill, including withholding taxes and social insurance contributions and to maintain the ability to adjust inventory levels quickly if sales should exceed expectations. Moreover, low levels of confidence in the financial system are usually associated with an uncertain financial environment. Under such conditions, corporate borrowers must find some means of protecting themselves from the uncertainty of fund availability, especially since, in economies where these type of financial markets prevail, most of the corporate sector has limited access to relatively cheap sources of foreign funds. The desire of the corporate sector to assure access to bank funds under conditions of uncertainty encourage corporations to accumulate liquid bank balances. This fact contributes to the stability of corporate demand for deposits in many developing countries.<sup>8</sup>

Of course, households and small firms must also hold liquidity for transaction purposes. But economies in which trust in the financial system is low often have large informal sectors where bank deposits, the primary means of holding liquidity for medium and large corporations, play a much less important role in providing liquidity than in the formal sector. Thus, in economies where the private sector has low confidence in the soundness of the domestic financial markets, the ratio of corporate to household holdings of bank deposits will tend to be high.

While the level of confidence in the financial system affects corporate demand for liquidity, this demand is also affected by other factors, in particular, the structure of financial markets. Empirically, in bank-dominated systems, the lack of diversified and liquid financial markets implies that corporations will be limited in their ability to borrow liquid funds on demand;<sup>9</sup> hence, corporations will need to hold more liquidity than they do under more securitized and liquid financial systems.

The processes by which firms and households manage liquidity in three types of markets is analyzed in the following accounting framework. The first market is bank dominated in which economic agents have little confidence in the financial system. The second is a bank-dominated system in which confidence is high, and the third is a securitized financial system.

The two examples in figure 1 represent two cases in which financial markets are dominated by bank loans and bank deposits rather than marketable instruments. In both these cases, we assume the household sector owns the corporate sector. Figure 1a represents the case in which there is little

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<sup>8</sup> Corporations in developing countries usually maintain a relationship with a bank precisely for the reason of retaining access to liquidity. When they borrow, they, in fact, borrow a bank deposit. To be able to access loans in a liquidity crisis, they must hold balances with their relationship bank during normal times. This limits the ability of corporations to substitute out of banks into the informal sector.

<sup>9</sup> This empirical observation holds for high-trust systems, such as Germany, as well as developing countries. However, in the former, it is probably the policies of the authorities that prevent the development of markets for immediate funds whereas in the latter it is underlying economic conditions.

confidence in the banking sector. In this example, corporations finance liquid asset holdings with retained earnings to minimize the uncertainty of access to credit. Also, in this example, the household sector holds no liquid assets because the firm retains the funds through which the household sector accumulates deposits. Thus, in this example, lack of confidence in the financial sector results in all private sector holdings of liquidity taking place through the corporate sector.

As illustrated in Figure 1a, when a firm (company A) accumulates financial assets, for example, a demand deposit, it does this by retaining earnings, in which case it has a liability to the household sector in the form of equity and a demand deposit as an asset. This demand deposit can then be used to fund a loan to a second firm (company B), which might hold inventory as an asset, as illustrated in Figure 1a.

Another alternative, when there is more confidence in the financial system, is that the firm pays dividends to the household as it has no need to retain all of its earnings. In this case, the household receives a demand deposit as an asset, as illustrated in Figure 1b. However, for company A to hold liquid assets, it must now issue a liability, in this case a loan, to acquire its deposit. In this example, the cost of liquidity is the spread the firm must pay between the cost of borrowing and the return on the deposit.<sup>10</sup> To balance loans and deposits, we again assume that a second firm issues a loan to fund inventory.

In the two cases described above, the corporation with the demand for liquidity can use its bank deposit to purchase inventory if it needs to do so unexpectedly, which is an important reason for holding a liquid asset. The recipient corporation (company B) uses the demand deposit to pay off its loan, which reduces the quantity of loans and deposits in the system.

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<sup>10</sup> In many Latin American countries the spread is quite high, encouraging firms in this region retain earnings to finance liquidity.

1a

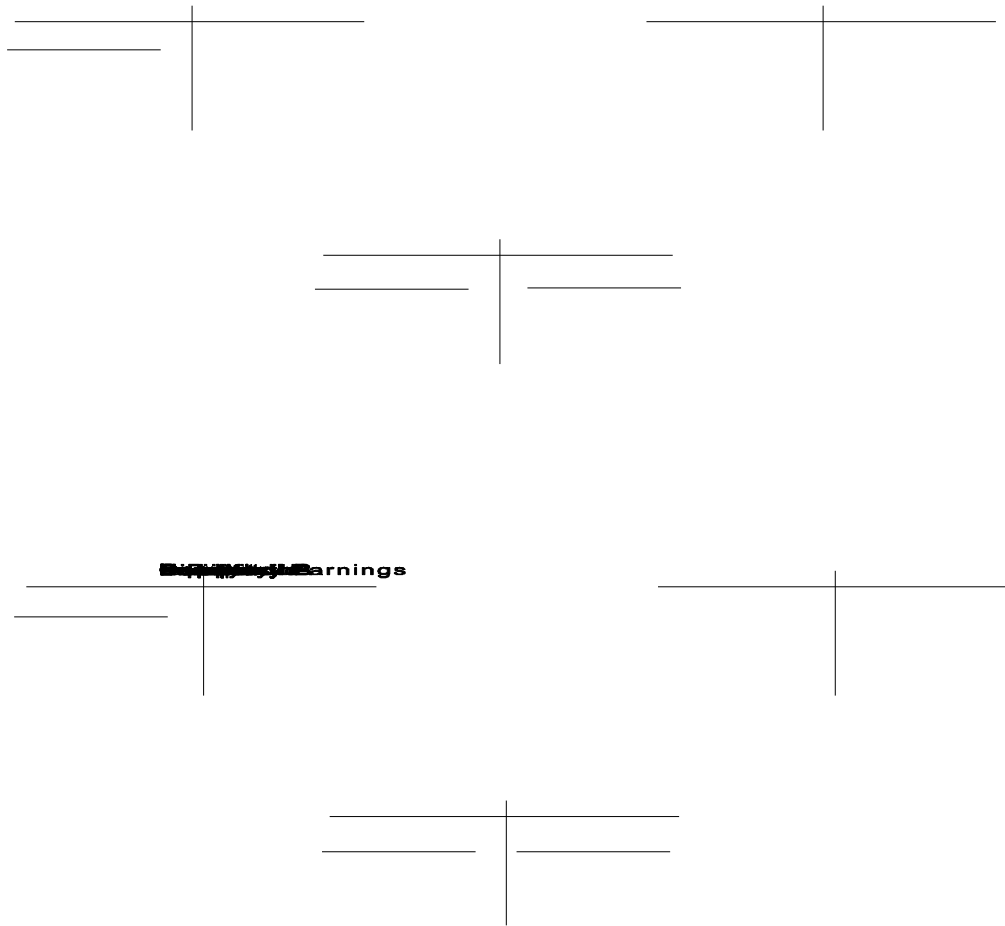


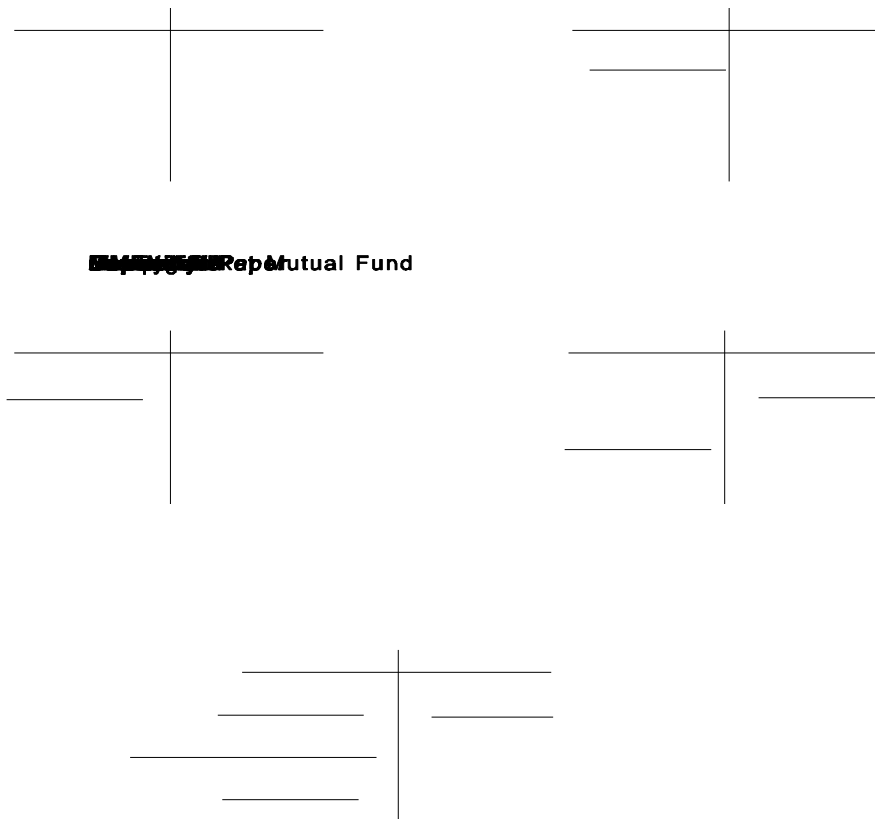
Figure 1

Note: Lines drawn through an item indicates that such item is liquidated in the examples described in the text.

In the third case, where there is a liquid market for financial assets, the same transaction can occur with fewer financial assets, as illustrated in Figure 2. In this case, the corporation (company A) pays out earnings to the household, so the household has a demand deposit (deposit A) as an asset and an equivalent amount of net worth on the liability side of its balance sheet. Immediately, the household transfers its demand deposit (deposit A) to a money market mutual fund in exchange for

a share in the fund. Company B, which is funding inventory with a bank loan funded by deposit A, issues commercial paper to a securities dealer. The dealer funds his inventory with a bank loan, which creates a deposit (deposit B) that the dealer gives to company B in exchange for the commercial paper. Company B then uses this deposit to pay off its bank loan so both bank loan and deposit are extinguished. The dealer then sells the commercial paper to the money market mutual fund, receiving deposit A in return. The dealer then uses deposit A to pay off his loan.

Figure 2



Note: Lines drawn through an item indicates that such item is liquidated in the examples described in the text.

Company A in this example holds neither financial assets nor liabilities. If company A wants to buy inventory, it issues a marketable security, such as commercial paper, at the time of inventory

acquisition. It sells the commercial paper to a dealer who, using a line of credit with a bank, acquires a loan and a demand deposit, which he uses to pay for the commercial paper. Company A then uses the demand deposit to acquire the inventory from the second firm. Company B uses its demand deposit to pay off its maturing commercial paper; hence, it transfers the demand deposit to the account of the money market mutual fund. The money market mutual fund then uses the demand deposit to purchase commercial paper from the dealer. The household never participates in these transactions; during the entire time, it holds a share in a money market mutual fund.

If the settlement system is efficient in the above case, all of these transactions can occur within a single day so no financial institution, other than the money market mutual fund, need hold assets and liabilities overnight. The requirement here is that the banking system be willing to accept promises to deliver funds at the end of the day rather than require the delivery of funds against each transaction. For example, when company A issues commercial paper, it cannot actually receive the delivery of funds to its demand deposit account until the end of the day. The banking system must therefore be willing to let the first firm pay for inventory before it has actually used funds. The banking system is willing to do this if conditions in the money market are such that any bank caught short of funds at the end of the day can be almost completely certain that it can obtain them in the money market.

Hence, a condition for these transactions to occur is a large and liquid money market. Large and liquid money markets require a network of dealers that are willing to perform the functions described above as well as financial institutions, such as money market mutual funds, that are willing to be active participants in the market for securities. The gain in creating conditions in which these transactions can occur is that the economy saves on the cost of financial intermediation, as illustrated in the second case where the household receives earnings from company A and the company borrows to obtain a deposit (Figure 1b). In the first case, where the firm retains the earnings and holds a deposit, the household must suffer the consequences of illiquidity and therefore must borrow if it wants to purchase real goods or services. Hence, the cost in this case is measured by the household's cost of borrowing. In some Latin American countries, this cost can be extremely high.

We conclude that where confidence in the system is low, the financial system will be bank dominated because no one has confidence in open market instruments, and corporations will hold substantially more liquid assets than households. Where trust in the system is high, but policy decisions prevent liquid markets from developing, corporate liquidity declines relative to household liquidity. In markets where confidence in the system is high and securitized markets are permitted to develop, households will hold almost all the liquidity.

Therefore, based on the above analysis, the following relationship can be established:

$$(C/H)_1 > (C/H)_2 > (C/H)_3$$

Where:

$(C/H)_1$  represents the ratio of corporate to household holdings of liquidity in the case where

economic agents do not trust the domestic financial system  
(C/H)<sub>2</sub> represents the ratio of corporate to household holdings of liquidity in the case where economic agents trust a bank-dominated financial system  
(C/H)<sub>3</sub> represents the ratio of corporate to household holdings of liquidity in the case where economic agents trust a securitized and liquid financial system

#### IV. Empirical Evidence of the Impact of Confidence in the Financial System on Gross Private Savings Ratios

In this section, we first show evidence indicating that the corporate to household deposit ratio can indeed be used as a proxy for confidence in the financial system. Then, we consider the effect of this proxy on gross private domestic savings ratios across three groups of countries: industrialized countries, newly industrialized countries, and Latin American countries.

##### 1. The Corporate to Household Deposit Ratio as a Proxy for Confidence in the Financial System

To evaluate whether the corporate to household deposit ratio can be used as a proxy for confidence in the financial system, we first consider whether the relationship established in the previous section holds for a sample of countries where data on corporate and household bank deposits is available.

Table 5 shows data on corporate to household bank deposit ratios for Chile, Mexico and Peru, the only three Latin American countries for which data is available. Consistent with the high financial fragility in Latin America, the ratio of corporate to household bank deposits is extremely high for Mexico and Peru. In Chile, where the financial system is strongest among Latin American countries, this ratio is significantly lower than the other two Latin American countries.<sup>11</sup> However, it is still considerable higher than that experienced in industrial and newly industrialized countries.

In France, Germany, Japan, and the newly industrialized countries of Korea and Taiwan, where securitized markets have not yet fully developed, but where confidence in the stability of financial markets is strong, corporate to household deposit ratios are lower than in Latin America.<sup>12</sup> In the United States, where securitized markets are quite prevalent, and Italy, where there is an active short-term government bond market with outstandings equal to about 20 percent of GDP, corporate to household deposit ratios are the lowest among the countries in the sample.<sup>13</sup> In the United Kingdom,

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<sup>11</sup> See Rojas-Suarez and Wesbrod (1995) for indicators of financial market strength in Latin American countries.

<sup>12</sup> Notice that "confidence in the financial system" is a relative concept. For example, there can be relative high confidence in Japan's financial system in spite of the current problems in its banking system because the public expect that the authorities will resolve these difficulties successfully and that holders of bank deposits will not lose the real value of their assets.



where securities markets are also developed, the ratio is low, but slightly above that for Taiwan.<sup>14</sup>

Countries	France	Germany	Italy	Japan	U.K.	U.S.	Korea	Taiwan	Chile	Mexico	Peru
Year	1995	1994	1995	1994	1990	1995	1994	1991	1992-95	1991-94	1994-95
Households	81.3	72.1	90.5	78.0	80.4	92.5	78.0	85.1	62.9	49.7	54.9
Business	18.7	27.9	9.5	22.0	19.6	7.5	22.0	14.9	37.1	50.3	45.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Ratio of corporate to household deposits	23.0	38.0	10.5	28.2	24.4	8.1	28.2	17.5	59.0	101.7	82.2

Note: The data for Chile are the average of yearend of 92, 93, 94, and 95. For Peru, they are the average of Dec.94, Aug.95, Jan.96.  
Source:  
France: OECD, Financial Accounts of OECD Countries, France 1980/1995.  
Germany: Deutsche Bundesbank, Monthly Report.  
Italy: OECD, Financial Accounts of OECD Countries, Italy 1989/1995.  
Japan: Economic Planning Agency, Annual Report on National Accounts, 1995.  
U.K.: Flow of Funds.  
U.S.: Board of Governors of the Federal Reserve System, Flow of Funds Accounts of the United States, 1996.  
Korea: The Bank of Korea, Monthly Statistical Bulletin  
Taiwan: Central Bank of China (Taiwan), Flow of fund in Taiwan District, 1992.  
Chile: Superintendencia de Bancos e Instituciones financieras (Chile), Información Financiera, various issues.  
Mexico: Calderón Madrid (1996)  
Peru: Superintendencia de Banca y Seguros, Información Financiera Mensual (various issues).

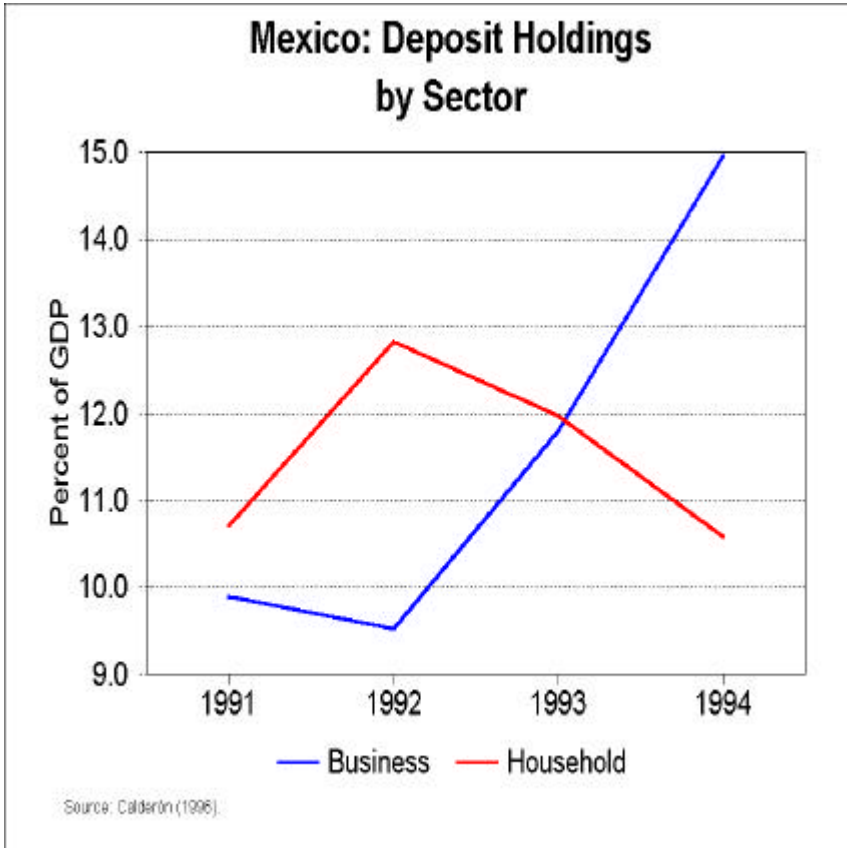
Further substantiation that the ratio of corporate to household deposits provides an indicator of confidence in the system is presented in Chart 1, which depicts corporate and household deposits relative to GDP in Mexico for 1991 through 1994. As shown in the Chart, in the period preceding the Mexican financial crisis, household deposit holdings fell relative to GDP whereas corporate holdings actually increased, probably in an attempt to increase liquidity in a more uncertain environment. Thus, the corporate to household deposit ratio increased in times of financial market

<sup>13</sup> Italy does not have a commercial paper market, but its liquid government bills market permits corporations to raise liquidity quickly because a lender can easily sell a government bill.

<sup>14</sup> The Taiwan data are affected by their high savings ratio and the lack of any other financial instruments other than deposits for households to hold. As will be explained below, the ratio of liquid assets to real assets at Taiwan firms is substantially above this ratio in the U.K, indicating that firms in Taiwan are more worried about maintaining liquidity than their U.K. counterparts.

distress.

Chart 1

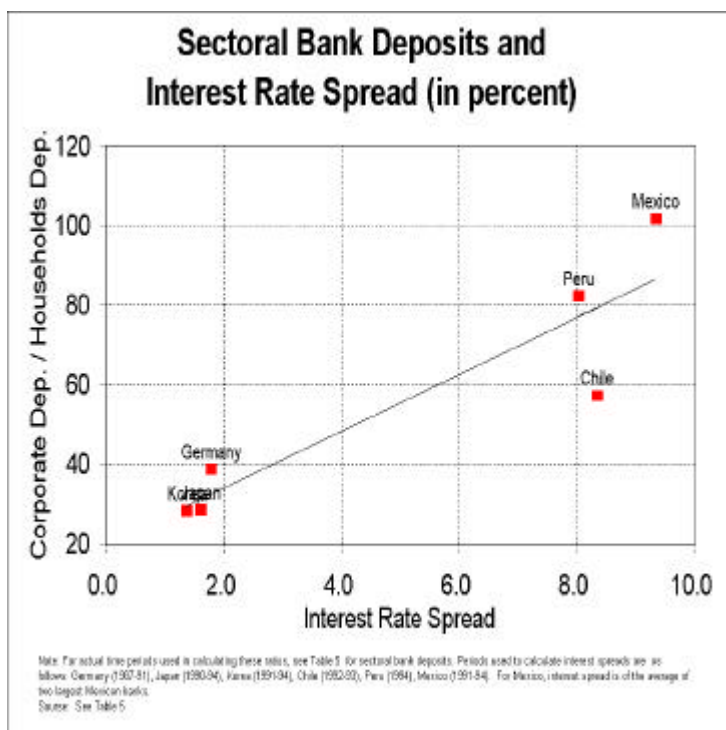


The data presented in Chart 2, which plots the corporate to household deposit ratio against net interest margins at banks for a sample of countries, also suggests that the quality of the financial system is influential in determining the extent to which households are willing to hold bank deposits. Bank spreads are much higher in Latin America than in Germany, Japan, and Korea. While there are numerous factors affecting

spreads, including the competitive environment, an important factor is that banks in Latin America provide their customers with protection against liquidity crises, which are more frequent in the volatile economies of the region than in the other economies represented on the chart. This protection in effect gives bank customers assurance of access to a limited supply of credit in a liquidity crisis at an interest rate below that prevailing in the interbank market. In return for this assurance bank customers are willing to supply deposits to the bank at interest rates below the interbank interest rate and to pay a premium for bank credit in periods when credit market conditions are relatively easy.<sup>15</sup>

<sup>15</sup> See Rojas-Suarez and Weisbrod (1996b).

Chart 2



Thus, the width of bank interest rate margins can be viewed as a gauge for the likelihood of a significant lack of liquidity in a financial system. Since such an event can lead to numerous bank failures, this signal becomes a proxy for savers=demand for protection against the consequences of liquidity shortage. In such an event, weak banks may fail, causing some savers to lose the real value of their savings. The probability of liquidity shortage appears to be particularly high in the Latin American countries depicted on the chart.<sup>16</sup>

Table 6 displays the ratio of corporate to household deposit holdings against the ratio of liquid financial assets to GDP, which is a traditional measure for financial depth, for the countries in the sample. The Table shows a clear inverse correlation between these two variables: the liquid asset to GDP ratios are substantially lower and the corporate to household deposit holdings are substantially higher for Latin American countries than the other countries presented in the Table.<sup>17</sup> Thus, the corporate to household deposit ratio as a measure of confidence in the financial system provides a signal about confidence consistent with that provided by the more frequently used concept of financial depth.

<sup>16</sup> There are policies that can be instituted to encourage households to accumulate bank deposits even when liquidity crises are frequent. For example, the authorities can hold a store of international reserve assets to assure depositors that they can switch to foreign assets in the event of a crisis. See, for example, footnote 7 below.

<sup>17</sup> The relatively high (compared to Peru) ratio of liquid financial assets to GDP in Mexico is largely explained by a large presence of government bills. In contrast, in Chile, private assets account for most of the depth of the system.

Countries	France	Germany	Italy	Japan	U.K.	U.S.	Korea	Taiwan	Chile	Mexico	Peru
Year	1995	1994	1995	1994	1990	1995	1994	1991	1992-95	1991-94	1994-95
Ratio of Corporate to Household Deposit Holdings	23.0	38.0	10.5	28.2	24.4	8.1	28.2	17.5	59.0	101.7	82.2
Year	1995	1995	1995	1995	1995	1995	1995	1995	1995	1992-94	1995
Ratio of Liquid Financial Assets to GDP	70.9	66.6	65.9	219.5	98.2	76.1	73.5	205.1	35.2	33.5	16.8
<p>Note: Ratios of corporate to household deposit holdings are from Table 5. Liquid assets include checkable deposit, currency, time deposits, savings deposits, money market fund shares, security RPs, foreign deposits, government securities, municipal securities, mutual fund shares, and open market paper.</p> <p>For Mexico, the number of 1995 is not used because that is a crisis year.</p> <p>Source: Table 5 and IMF, International Financial Statistics, various years.</p>											

The next three subsections deal with the relationship between structure of the financial system and confidence in the financial system--as measured by the ratio of corporate to household deposit holdings-- and the private savings ratio. Subsection 2, considers evidence from the industrial countries, where structure plays a role in determining private savings. Subsections 3 and 4 deal with newly emerging industrial countries and Latin America, where confidence plays the most important role.

## 2. Examining the Relationship between Confidence in and Structure of Financial Markets and Private Savings in Industrial Countries

It is well known that the financial systems of the United Kingdom and the United States are more securitized than those in Germany and Japan. This is reflected in the structure of financial assets held by households and the structure of financial assets held by financial institutions. As indicated in Table 7, households in the United Kingdom and the United States hold a much smaller portion of their assets in the form of liabilities of banks than is the case in Germany or Japan. In the United States, the pension fund reserves are the largest single financial asset, and in the United Kingdom the largest financial asset is pension and insurance reserves, items which cannot be separated in the United Kingdom flow of funds. In Germany, households hold primarily bank deposits and bonds issued by banks. In Japan, households hold a much greater portion of their financial assets in

insurance reserves and trust account assets than in Germany, although bank deposits are still the primary financial asset.<sup>18</sup>

Table 7				
<b>Bank Liability Holdings</b>				
(Percent of Household Financial Assets)				
Countries	Germany	Japan	U.S.	U.K.
Year	1994	1994	1994	1990
Percent of Total Financial Asset Holding	41.4	52.6	18.2	27.3
Source:				
Germany : Deutsche Bundesbank, Monthly Report, various issues.				
Japan: Bank of Japan, Economic Statistics Annual, 1995.				
U.S.: Board of Governors of the Federal Reserve System, Flow of Funds Accounts of the United States, 1996.				
U.K.: Flow of Funds.				

Institutional investors in the United States hold most of their assets in marketable securities, either bonds or stocks, as indicated in Table 8. The case is similar in the United Kingdom. In contrast, in Japan, life insurance companies and trusts, the most important institutional investors in that market, hold a high percentage of their assets in non marketable loans. Thus, even though Japanese households have a wider array of financial institutions to choose from than German households, this has not resulted in active financial markets as has occurred in the United States and the United Kingdom. The wide variety of financial institutions in Japan has also not led to the development of large and liquid money markets. As indicated in Table 9, the ratio of money market instruments to GDP is over 60 percent in the United States and less than 20 percent in Japan.

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<sup>18</sup> The Italian financial market is an interesting hybrid of a securitized and bank dominated market. As indicated above, it has a very liquid money market, but it has a very undeveloped institutional investor market. For example, insurance companies, the only major institutional investors, have assets equal to only 10 percent of the assets held by banks.

Table 8 Composition of Institutional Investors' Assets (In Percent)			
Countries	Japan	U.K.	U.S.
Year	1992	1990	1992
Loans and/or Deposits	45.0	17.6	8.0
Equities	23.0	70.6	35.0
Domestic & Foreign Bonds	32.0	11.8	57.0
Total	100.0	100.0	100.0
<p>Note: Loans include mortgages for both US and Japan. Bonds includes money market instruments for US. Bonds include both domestic and foreign bonds. US equities are market values, for Japan, equities for bank trusts and securities investment trust, equities are market value, for insurance companies, equities are lower of market or acquisition cost. For U.K., equities are all U.K. company securities, which may include some corporate bonds.</p> <p>Source:            Japan: Bank of Japan, Monthly Economic Statistics.            U.S.: Board of Governors of the Federal Reserve System, Flow of Funds Accounts of the United States (1996).            U.K.: Flow of Funds.</p>			

Table 9 Money Market Instruments Outstanding (Percent of GDP)		
Countries	Japan	U.S.
Year	1995	1995
	16.8	64.3
<p>Note: Money market instruments include certificate of deposits, call money, financing bills, bond repos and commercial paper.</p> <p>Source:            Japan: Bank of Japan, Economic Statistics Annual (1995).            U.S.: board of Governors of the Federal Reserve System, Flow of Funds Accounts of the United States (1996), Federal Reserve Bulletin (June 1994)</p>		

The differences in financial institution behavior in the United Kingdom and the United States on the one hand and Germany and Japan on the other should result in non financial firms in the latter two economies holding a higher proportion of liquid assets on their balance sheets than non financial firms in the former two economies. This is because the United and the United kingdom firms should be able to raise funds from diverse sources much more quickly than their German and Japanese counterparts. As indicated in Table 10, by various measures, the evidence is consistent with the reasoning above as well as the framework developed in the previous section. Ideally, we would like to compare liquid assets to tangible assets valued similarly across markets. These figures are available for the United States, the United Kingdom, and Japan. By this measure, Japanese non financial firms hold substantially more liquid assets than non financial firms in the other two countries.

Table 10 Non-financial Firms= Liquid Asset Holdings (In percent)
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Countries	Germany	Japan	U.K.	U.S.	Korea	Taiwan
Year (average)	1994	1989-93	1987	1990-94	1993-94	1991-92
Liquid Asset to Tangible Assets	n.a	19.4	11.3	9.2	n.a	n.a
Liquid Asset to Real Asset Estimate	70.2	37.9	12.7	9.5	58.1	25.0

Note: Liquid assets include checkable deposit, currency, time deposits, savings deposits, money market fund shares, security RPs, foreign deposits, government securities, municipal securities, mutual fund shares, and open market paper.  
n.a: not available  
Source:  
Germany: Deutsche Bundesbank, Monthly Report.  
Japan: Economic Planning Agency, Annual Report on National Accounts (1995).  
U.K.: Flow of Funds.  
U.S.: Board of Governors of the Federal Reserve System, Flow of Funds Accounts of the United States (1996).  
Korea: The Bank of Kores, Monthly Statistical Bulletin.

Since we do not have tangible asset estimates for Germany, we estimate a proxy value for the real assets of the firm that we can use across all four markets. We take the market value of equities as reported in the flow of funds data for each country plus the book value of other financial liabilities less the reported value of financial assets.<sup>19</sup> By this measure, the liquid asset to real asset ratios are significantly higher in Japan and Germany than they are in the United Kingdom and the United States.

German corporations finance their liquid assets at least partially through borrowing from financial institutions. The evidence for this is provided in Table 4, which presents retained earnings ratios across countries, which shows that German corporations retain less than their United States, United Kingdom and Japanese counterparts. Thus, German firms represent the classical illustrated in Figure 1b.

In contrast, Japanese firms have, until recently, retained a much higher portion of their income than firms in the other three markets. Financial institutions are the major holders of equity in Japan. The fact that they permitted corporations to retain income indicates that, until recently, they believed that the risk of leaving resources in the hands of non financial corporate managers was low relative to the cost of reintermediating the funds. This view, is, however, beginning to change as the prolonged recession is creating doubts about whether the Japanese corporate system can restructure itself to return to profitability without pressure from financial intermediaries. This has become especially urgent with the realization that an aging population needs high financial returns to provide a comfortable retirement.

While corporations have been forced to payout more of their earnings, Japanese overall private savings rates have remained fairly constant over the last five years. This indicates that households have not lost faith in the stability of the financial system, even though they, through financial intermediaries, are demanding more cash flow from corporations. Part of the reason for this is that the government has stood behind deposits at private banks and offers a government-owned

<sup>19</sup> Financial assets in Japan and Germany include equities held at market value. U.K. and U.S. firms do not hold substantial equities on their balance sheets.



alternative depository institution in the form of the postal savings system, which has grown rapidly in recent years.

As far as the private gross savings to GDP, Japan saves a much higher portion of GDP than the other three countries, but Germany saves significantly more than either the United Kingdom or the United States. To what extent are the differences in the financial systems across the four countries responsible for this? A recent study on capital market productivity by McKinsey suggests that capital investment made in the United States over the last twenty years has been much more productive than similar investments made in Germany and Japan over the same period. As a result of the higher income on capital, a US\$1,000 investment in a portfolio of U.S. stocks and bonds in 1974 yielded US\$5,666 by 1993, after inflation, compared to a US\$4,139 after inflation yield on a \$1,000 investment in German stocks and bonds, and US\$3,957 yield after inflation on a \$1,000 portfolio of Japanese stocks and bonds.<sup>20</sup>

### 3. Examining the Relationship between Confidence in Financial Markets and Private Savings in Newly Industrialized Asian Countries

A comparison of the recent experiences of Taiwan and Korea provides insights into the role that confidence in the financial system plays in affecting private savings rates. Taiwanese households, unlike their Korean counterparts, hold a large portion of their financial assets directly in the form of equities. In the late 1980s, there was an asset boom, both in terms of equity prices and real estate prices and a subsequent collapse in 1991. Taiwanese households decreased their savings rate from 20 percent of GNP to 16 percent between 1986 and 1991. However, over the same period, household deposit holdings increased from 47 percent to 50 percent of household financial assets. By 1992, they had increased to 54 percent of household financial assets. Most of these deposits were held in the postal savings system and in commercial banks, both of which held substantial assets in claims on foreign reserves. In addition, between 1986 and 1990, government savings remained high, and these funds were invested in foreign reserve assets, which increased household faith that their liquid assets could be converted into foreign currency in a crisis. Thus, by making available savings instruments that would ultimately permit savers to have a claim on foreign assets, the government was able to stem the decline in domestic savings resulting from fears about the value of domestic financial assets.

It should also be noted that the ratio of corporate savings is relatively low in Taiwan (Table 3), despite the fact that retained earnings ratios have, until recently, been quite high (Table 4). This may indicate that the Taiwanese financial system may be failing to police how firms use financial resources, which may be another reason why overall private savings ratios in Taiwan have been declining.

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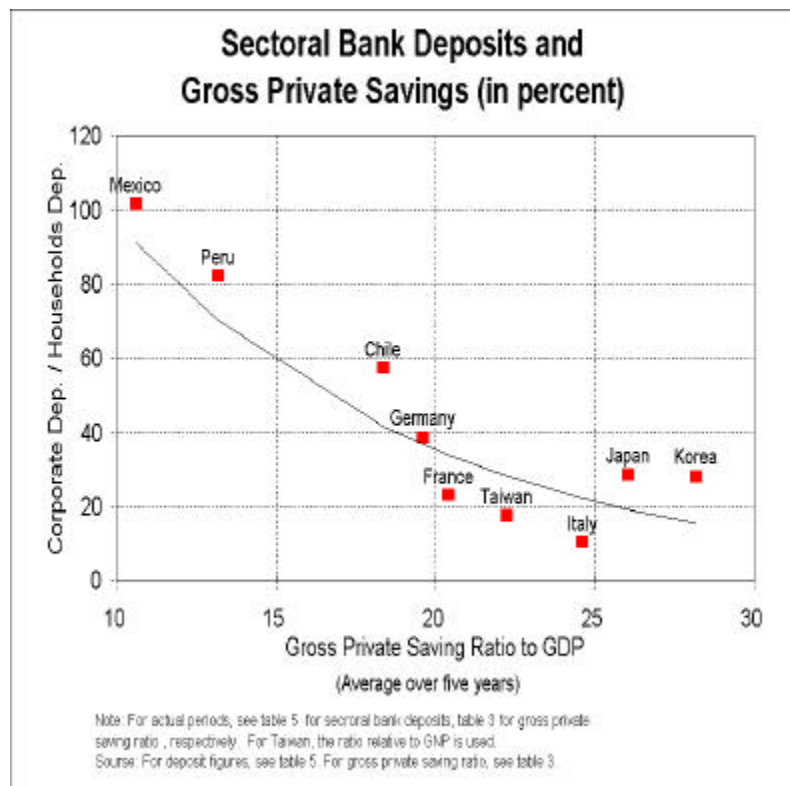
<sup>20</sup> See, Capital Productivity, McKinsey Global Institute, Washington, DC, June, 1996. The portfolio yields are quoted from The Wall Street Journal, November 25, 1996, p.A18.

4. Examining the Relationship between Confidence in Financial Markets and Private Savings in Selected Latin American Countries

As discussed above, the ratios of corporate deposit holding to household deposit holding are much higher in Latin America than in any of the other markets discussed so far, reflecting the fact that confidence in financial markets in this region is lower than in the rest of the countries in the sample. This limited confidence should lead to lower overall domestic savings ratios in Latin America than in the other countries discussed above, except where securities markets have been developed extensively and have resulted in very high capital market productivity as is the case for the United Kingdom and the United States. This fact is confirmed in Chart 3, which plots the corporate to household deposit ratio against the gross private savings rate, excluding the United Kingdom and the United States.

Chart 3

An interesting feature from Chart 3 is that Chile looks more similar to Germany than to Mexico and Peru. This is consistent with the fact that Chile has been a pioneer in establishing a stable banking system after a crisis and in has achieved the most developed financial market among Latin American countries. Thus, although Chile has not yet reached the degree of confidence in financial systems attained in industrial countries, it is clearly on its way.



The experiences in the United Kingdom and the United States provide Latin America with another apparent option for dealing with a low savings rate. If it is difficult to increase savings, why not increase the efficiency of savings use by promoting the increased securitization of financial markets? This might appear to have the added bonus of by passing a banking system in which investors do not seem to have much faith. The problem with this solution is that, unless financial institutions, including banks, have highly developed credit skills, creation of liquid markets merely provides risky borrowers with the opportunity of

taking a larger share of the scarce savings. This fact is well illustrated by the recent experience of

Mexico.

In the early 1990s, the central bank of Mexico embarked on a policy to maintain liquidity in the market for government bills and notes. It agreed to purchase these securities under an agreement to resell from banks facing a deficit in their clearing accounts with the central bank at the end of the day. This guarantee effectively assured banks that they could continuously roll over their repurchase agreements with the central banks. In other words, they were guaranteed the right to run continuous deficits in their payments accounts.

This policy had its intended effect. Fluctuations in short-term interest rates were dampened because banks that were short of funds at the end of the day did not have to bid for scarce funds in the interbank market. The market for government securities became more liquid as banks could always count on the central bank to make a market. The unintended consequence of the policy, however, was that risky banks were able to expand their loan portfolios very aggressively because they knew that if borrowers were occasionally late with a payment they could still meet their commitments by borrowing from the central bank through the repo market. In the peso crisis, the cost of attempting to create liquidity before the market is ready for it became obvious.

This experience implies that the Latin American countries should first build the credibility of the banking system and other financial intermediaries before they attempt to build liquid securities markets.

## V: Conclusion

This paper complements previous studies aiming at explaining the low private savings rate experienced in Latin America. The major claim in the paper is that the low Latin American private savings rate can be associated with the limited confidence of households and businesses in domestic financial institutions, where the low confidence can be proxied by the observed high ratio of corporate to household holdings of bank deposits.

The paper establishes an accounting framework to analyze the impact of confidence in the financial system and financial market structure on the ratio of corporate to household deposit holding. This analysis suggests that in markets where confidence is low, households will substitute out of liquid financial assets whereas medium and large corporations will not, primarily because the latter have a larger stake in remaining connected to the formal financial sector than the former. Moreover, in the risky environment that characterizes financial systems where confidence is low, corporate borrowers must find some means of protecting themselves from the uncertainty of fund availability: the desire of the corporate sector to assure access to bank loans under conditions of uncertainty encourages corporations to accumulate liquid bank balances. Thus, corporate demand for liquid financial assets will increase relative to that of households as confidence deteriorates.

The analysis also shows that the structure of financial markets interacts with confidence in

the financial system to determine the corporate to household holdings of liquid assets. In bank-dominated systems, corporate liquidity demand relative to that of households will be higher than in securitized financial systems.

Empirical evidence for the above propositions is developed by analyzing experiences across industrialized, newly industrialized, and Latin American countries. The evidence suggests that the ratio of corporate to household holdings of bank deposits is a believable proxy for confidence in the financial system. This evidence is obtained by presenting data showing a positive relationship between interest rate spreads and corporate to household deposit ratio as well as a comparison across countries of the behavior of corporate and households holdings of bank deposits. An additional result from the analysis is that the ratio of corporate to household holdings of deposits is negatively correlated with more traditional measures of financial depth, such as the ratio of liquid financial assets to GDP.

The evidence also shows a clear negative relationship between private savings rate and the ratio of corporate to household holdings of bank deposits. Indeed, the financial systems of Latin American countries, where private savings rates are lower than in other developing countries and most industrial countries, exhibit the behavior of bank-dominated, low confidence systems in that corporate to household liquidity ratios are highest among the countries studied.

The conclusions in this paper strengthens the case that policies to improve the quality of financial systems must be aggressively pursued. In Latin America, the first priority must be in creating confidence in the banking system. This is because strong and reliable capital markets cannot be built without a well-functioning banking system that can provide liquidity to financial markets without excessive reliance on liquidity from the central bank. If financial market liquidity is primarily dependent on central bank provision of liquidity, in weak financial systems, investors can easily interpret such support as leading to monetary instability, which, in turn, encourages financial disintermediation.

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