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“Pension Reform And Capital Market Development”

by

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PENSION REFORM AND CAPITAL MARKET DEVELOPMENT

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Resilient and dynamic capital markets are essential for the efficient functioning of an economy. The development of capital markets can improve the efficiency of resource mobilization and investment in the economy. In emerging economies, deep and liquid domestic capital markets can help curtail the dependency on foreign capital and thus reduce the economy's vulnerability to external shocks. Recent empirical research has shed further light on the channels through which financial markets affect economic performance. Gallego and Loayza (2000) have shown that capital market development has had a positive impact on firm performance in Chile. Levine and Zervos (1998), and Beck and Levine (2001) have found that capital market development has a positive impact on economic growth.

An important justification for pension reform has been its expected benefits on capital markets. This argument, however, begs the customary chicken and egg question since pension reform requires a certain level of capital market development in order to be successful. Moreover, the benefits from pension reform and capital market development may only materialise to the extent that certain basic initial conditions are in place, such as sound fiscal management.

In Latin America, capital markets have been historically limited to government debt of short maturity, often issued in US dollars. Even today, banks are still the main financial intermediaries in the financial system. With the exception of Chile, the capitalization and liquidity of the corporate debt and stock markets are generally low, even though some of these countries such as Uruguay or Argentina boast some of the oldest stock markets in the world. The markets for derivatives instruments also remain heavily undercapitalised.

In this chapter, we show that capital market development in Latin America has been driven largely by regulations imposed by the government on the pensions industry and other financial institutions, the state-sponsored modernisation of the capital market infrastructure, and

tax and bankruptcy reform. Unlike in some OECD countries, where pension funds have been an independent driving force behind important financial innovations, the role of pension funds in the development of capital markets in Latin American countries is largely determined by government instructions that touch every aspect of their operations, from the amount of contributions that the industry receives to the investment of pension assets.

The main beneficiary of this regulatory framework has been the government debt market. The illiquidity of pension investments, coupled with the conservatism in investment strategies has brought much needed stability to these markets. However, much of this stability is artificial, driven at least in part by portfolio rules that force pension funds to hold mainly domestic assets and in some countries oblige them to invest a minimum percentage of their assets in government bonds.

Macroeconomic stability is essential in order for capital markets to reap the benefits from pension fund investment, regardless of whether such investment is forced or not. The government debt market is most developed in Chile, where the government pursued fiscal consolidation prior to the reform and sustained this effort over later years. The pension reform also contributed directly to financial deepening, since the transition debt was turned into tradable government securities. In Argentina, on the other hand, any positive short term effect from pension fund investment on capital market development has been obliterated by the economic crisis.

Pension funds in Chile and Peru have also participated actively in the securitisation of bank loans, by investing in mortgage bonds (Chile) and leasing bonds (Peru). Such investment helps to diversify risks in the financial system and contributes to the stability of the banking sector. Pension fund investment has also contributed to the growth of corporate debt and equities markets in these countries. In other Latin American countries, investment in bank instruments has been limited largely to time deposits and other short term securities. Investment in non-financial private sector securities has been muted, partly as a result of investment and performance regulations. Regulations have also constrained the role of pension funds in the development of derivatives instruments.

In Chile there is also some evidence of increases in market liquidity as a result of pension fund investment. But liquidity is well below what would be expected for this market, given its high capitalisation. Part of the reason for this muted effect can be traced to the structure of the pension industry as well as investment and performance rules. The pension fund administration industry is highly concentrated, and there is little product differentiation in investment strategies and performance. Pension fund managers have essentially pursued “buy and hold” strategies that are detrimental to the liquidity of capital markets. As pension funds have become large relative to the market, such strategies have become institutionalised since large block sales of securities can turn prices against them.

Despite this apathy, the growing size of pension funds can reach levels where administrators must take a more proactive investment approach in order to preserve an adequate performance. Pension fund administrators in Chile for example have been playing an active role in corporate governance. They have also played a key role in regulatory reform. The opening of the voluntary pensions system to competition from other providers and the introduction of individual choice in the mandatory system are also creating more diversity in investment and may therefore help boost market liquidity.

I. The regulation of the new pension fund industry

Probably the most important development of capital markets in the region has been the introduction of a new type of financial institution, the pension fund administrator, whose function is to invest pension contributions in portfolios of financial assets. Governments have applied to these institutional investors high regulatory standards and have complemented these with vast reforms to depositary, settlement, and risk-rating services. However, in terms of investment and performance objectives, pension funds are hardly different from mutual funds. Hence, it is possible that similar benefits could have been obtained had the pension fund regulatory framework been also applied to the mutual fund industry.

Pension reforms have led to marked changes in the financial sectors of Latin American countries that have introduced mandatory

individual accounts. Foremost among these changes has been the appearance of a new market player - the special-purpose pension fund administrators, who have captured all mandatory (*second pillar*) and the bulk of tax-advantaged (*third pillar*) pension savings. These pension fund administrators manage legally separated pension funds. Insurance companies, meanwhile, have been given new responsibilities in the management of individual risks (except Mexico, where the social security institute has retained the responsibility to manage the disability and survivors' programs).

In terms of financial market development, the reforms can be credited with setting up a new financial industry that, at least in terms of regulatory oversight, has been a role model for other financial institutions in the region. Although pension fund regulators in Latin America have erred on the side of strict caution, there is little doubt that the new systems have achieved some of the highest standards in the region in asset valuation, risk-rating, depository services, and disclosure.

By subjecting the new financial intermediaries to high regulatory and supervisory standards, pension reform has also made a major contribution to the rapid modernisation of the financial market infrastructure observed in the region over the last few years (see Section V) and has forced an adjustment of standards and practices in other financial institutions and in the capital markets (see Sections IV and V). Transparency and integrity in financial markets have been dramatically improved as a result. These improvements observed would have been unthinkable in the absence of the pension reform¹.

¹ An important question is whether the pension reforms necessitated the establishment of a new financial intermediary. It may be argued that if stricter regulatory and supervisory standards had been applied to existing financial institutions such as banks, insurance companies, and mutual funds, and these institutions had been allowed to manage the pension savings, the financial development indicators would have similarly improved. The liberalization of the market for voluntary pension savings in Chile (see Chapter 6) may provide some ground for testing this hypothesis.

The pension fund administrators

The pension fund administrators are independent legal entities whose exclusive purpose is the management of pension funds. In Colombia, however, the administrators are also allowed to manage severance funds. In Bolivia, they also manage the social security fund used to finance a universal old-age flat benefit. In all countries, except Chile and Mexico, the administrators may manage one fund only. In Chile, they can manage two funds since 1999, and five since early 2002. In Mexico, the law in principle permits the AFORES to manage more than one fund but only one has been permitted up to now. In the case where a second SIEFORE is permitted, the AFORE is obliged to offer one SIEFORE invested in low-risk instruments.

All countries except Bolivia opened up the market via licensing. Bolivia chose an international bid process in order to select the two AFPs that offered to charge the lowest management fees. The country was divided in two regions, each assigned to one AFP, while the population in the cities were assigned according to the birth date. Choice of AFP was supposed to start at the beginning of 2000 in the four shared cities, but the merger of the two Spanish banks that owned the AFPs stalled this reform. Nonetheless, the process of opening up the whole market started as foreseen in May 2002.

Some countries have imposed limits in the share of the market that pension fund administrators may have. In Mexico, for example, the AFORES cannot control more than 17 percent of the pension fund market until 2002. After that date, they will be allowed to have up to 20 percent of the market. The law, however, does not specify whether the market share measure is assets under management or number of affiliates.

The governance of pension fund administrators is subject to a variety of regulations that aim to protect the members from conflicts of interest. Such regulations include a prohibition on transactions between the administrator and its employees and the pension fund. Pension fund administrators are also banned from purchasing on their own behalf stocks that may be acquired by the pension fund. In Chile, the pension fund administrators must have some independent directors whose duty is

to guard the interest of the affiliates. Chilean regulations also set forth a high principle of fiduciary responsibility: AFPs should ensure the adequate profitability and safety of the investment of the funds they manage. They are obliged to reimburse the pension fund for any direct damages they may cause, whether by omission or commission.

Regulations also cover the role of pension fund administrators in corporate governance. Chilean pension fund administrators are required to attend the shareholder meetings of those companies in which they have acquired stocks for the pension fund, and they must vote in all agreements, including the election of board members. The AFPs cannot vote for candidates to the board that are persons related to the majority shareholders or to those who control the company. They are also typically required by the supervisory authority to file reports regarding events or transactions by security issuers that may harm pension fund investments.

There are also some regulations that actually limit the extent of collusion in collective action by pension fund administrators. In Chile, the supervisory authority has ruled that "it is entirely contrary to the spirit of the law (D.L. 3.500) for one or more funds to form an association or act in a block in order to exercise their shareholders' rights". Nonetheless, an explicit authorisation can be granted to AFPs to act jointly at board elections. In Chile, there is also a prohibition to "participate in or having any bearing on the management of a company", which essentially restricts the influence of AFPs to their participation in shareholder meetings (Iglesias-Palau, 2000)².

In Peru, pension fund administrators are not required to attend or vote in shareholders' meetings and they face the same prohibition as in Chile with respect to their involvement in the administration of the companies that they invest in.

Rules governing disclosure to plan members, external audit and reporting to the supervisory authority are also applied widely and effectively in Latin American countries. By law, the managing

² Pension funds are also subject to ownership concentration limits as shown below.

companies are required to send regular statements to their affiliates containing the amounts contributed to the fund, the return of the fund, and the commissions and insurance premiums charged over the past month, as well as the total account balance at the end of the month. The supervisors oversee the operations of both the administrators and the pension funds they manage.

Pension fund managers in some countries such as Argentina, Colombia, Chile, El Salvador, and Uruguay must also guarantee a certain minimum return on the pension fund (usually relative to the industry average) and must maintain a capital reserve to meet any shortfalls in the rate of return of the pension fund relative to the minimum. This reserve must be invested in the same way as the pension fund.

Pension fund investment

The pension funds are pool of assets that are legally separated from the administrators and whose owners are the members of the pension fund. The only exception to this legal form is Mexico, where the pension fund is itself an independent legal entity containing a board of directors. However, this board is the same as that of the pension fund administrator, so each SIEFORE is linked to a specific AFORE.

The investment of pension funds is subject to a comprehensive prudential regulatory framework. In each country that has reformed, all liquid financial assets bought by pension funds must be traded in secondary markets and valued at market prices³. For the less liquid assets, the supervisory authorities of some countries such as Mexico, sets a valuation mechanism based on historical prices and valuation of related securities⁴.

3 An important exception is Argentina, where up to 30 percent of pension fund assets can be invested in government bonds held in an “investment account” to maturity, and which are therefore priced at book value.

4 Such a method was originally designed with a view to ensuring the comparability of pension fund portfolios and permit adequate monitoring by the regulator, CONSAR. It is now expected that insurance companies and mutual funds will be required to use the same valuation method.

All countries that permit investment in securities issued by private sector companies and traded in regulated, secondary markets, have also introduced new systems for risk-rating (Colombia is the only exception). In Chile the ratings were initially awarded by a Risk Rating Commission. Since 1994 the risk of bonds is rated by private corporations, and then the Commission sets a risk category on the basis of these ratings. Shares need to be approved by the same Commission before pension funds can invest in them. In order to be approved, the company that issues the shares must have a history of at least three years (with positive operating results for at least the last two) and comply with certain requirements related to their financial ratios.

Bolivia has been the latest country to make risk rating mandatory for pension fund investments. The first risk-rating company was licensed in June 1999. This has permitted the regulator to ease the investment regime and allow investment in corporate bonds (and soon also in equities).

Investment limits include also limits by issuer and ownership concentration. For example, a Chilean pension fund cannot own more than 7 percent of any given company's stock, or invest in it more than 5 percent of its assets. Other countries also impose limits on the percentage of a company stock that pension funds can hold (5 percent in Argentina and El Salvador, 10 percent in Colombia and Uruguay, and 15 percent in Peru).

As shown in Table 1, there are also limits by asset class. These are less justifiable from a prudential perspective except for the fact that capital markets may not be adequately regulated. Governments may also wish to avoid high risk portfolios to the extent that they offer minimum pension guarantees⁵. In Argentina, Bolivia, Colombia, Costa Rica, and Uruguay the regulatory framework does not distinguish between domestic securities issued in local and foreign currency. In Chile the

⁵ Concerns over the fiscal cost of pension guarantees can explain why Mexico does not allow investment in equities. The guarantee is equal to the salary-linked benefit under the previous social security regime for all workers that contributed to it. In other Latin American countries, the state's liability in the funded system is limited to a minimum income guarantee (a flat benefit, at a level somewhat below the minimum wage).

limit on foreign securities applies also to foreign currency denominated securities issued by local entities. In Peru, the limits on private sector securities apply equally to local and foreign currency denominated assets. Pension funds were only allowed to invest in dollar denominated government bonds (Brady bonds) in July 1998. In Mexico, up until December 2001, pension funds could invest up to 10 percent of their assets in dollar, euro, and yen denominated Federal government and Central Bank securities. Since then, private securities are also eligible.

Table 1 - Portfolio ceilings by main asset classes
(December 2002)

	Government securities	Financial institutions	Stocks	Corporate bonds	Investment funds	Foreign securities¹
Argentina	80	30	70	40	30	20
Bolivia	100	30-50	20-40	30-45	5-15	10-50
Chile ⁽³⁾	50	50	30	40	20	20
Colombia	80	42	30	30	5	10
Costa Rica	50	100	5	70 ⁽⁴⁾	10	0 ⁽⁵⁾
El Salvador	100	40	20	40	20	0
Mexico	100	10 ⁽¹⁾	0	100 ⁽²⁾	0	0
Peru	40	55	35	40	12	7.5
Uruguay	65	30	25*	25*	0	0

Note: * joint limit. (1) Maximum of 250,000 in local currency (Mexican pesos) and US\$ 25,000 in foreign currency plus the required amount for currency matching. (2) No limit (AAA rated corporate bond); 35% (AA rated corporate bonds); 5% (A rated corporate bonds). (3) This information refers to the Fund C (the one with the average allocation to equities). The limit on foreign investment applies to the total of all funds administered by an AFP. (4) 70% limit applies to AAA rated bonds; 50% (AA rated corporate bonds); 20% (A rated corporate bonds). (5) Foreign investment is currently not permitted by the supervisor, but the law set a ceiling of 25%, that can be increased to 50% if domestic returns are low.

Source: Pension Fund Superintendencies.

Portfolio limits have been relaxed in some countries, such as Chile, as the respective regulatory and supervisory frameworks were established or reformed to ensure a proper functioning of the capital markets (see Table 2). Hence, for example, equities investment was permitted in Chile in 1985, five years after the passing of the Securities Law. Investment in foreign securities was first permitted five years later, following legal reforms that, for example, permitted companies to issue ADRs for the first time.

**Table 2 - Chile: Portfolio ceilings by main asset classes
(1981-2002)**

	Government securities	Financial institutions	Stocks	Corporate bonds	Foreign securities
1981	100	70	0	60	0
1982	100	40	0	60	0
1985	50	40	30	40	0
1990	45	50	30	40	0
1992	45	50	30	40	3
1995	50	50	37	40	9
1996	50	50	37	45	9
1997	50	50	37	45	12
1998	50	50	37	45	12
1999	50	50	37	45	12
2000	50	50	37	45	12
2001	50	50	40	45	16
2002	50	50	30	40	20

Note: Portfolio limits on investment in collective investment are not shown here. Also omitted are limits by sub-category, such as foreign equity and foreign debt. The limits for 2002 are those of the C Fund.

Source: Superintendencia de AFPs

Other countries are also gradually liberalising their investment regime. Peru first permitted investment overseas in 2001. Mexico recently eliminated a rule that required pension funds to invest at least 65% of their assets in financial instruments with a maturity of less than 182 days.

The investment floors present in some countries are a greater source of distortions. (see Table 3). In Bolivia and Uruguay, the goal of investment floors on government bonds was to ease the fiscal cost of the transition to a funded pension system. In Mexico, the requirement to invest in inflation-indexed securities can also be justified as a measure to ensure a stable real rate of return on the funds. Such conservative investment helps the government to manage its contingent liability as a result of the retirement benefit guarantee offered to transition workers. In Costa Rica, the floor is applied to mortgage securities, a decision which appears to be justified by the government's desire to promote housing finance while offering pension funds an attractive long term investment. Despite the positive objectives of some of these floors, governments must

take into account possible distortions to the diversification and the performance of pension funds.

Table 3 - Portfolio floors by main asset classes

	Description of regulations
<i>Bolivia</i>	The two pension funds together must invest a minimum of US\$180 annually between 1998 until 2013.
<i>Costa Rica</i>	At least 15 percent of the pension funds' assets must be invested in mortgage securities.
<i>Mexico</i>	At least 51 percent of the pension funds' assets must be invested in inflation-indexed securities. Until December 2001 only federal government and central bank securities were eligible for investment under this rule. Since then, state and private securities that are indexed to inflation are also eligible.
<i>Uruguay</i>	Pension funds must invest between 30 and 60% of their assets in government securities.

Source: Pension fund supervisors

Possible conflicts of interest between pension fund managers and related entities arising from the investment of pension funds are also strongly regulated. All countries set low limits on investment in securities of issuers related to the pension fund managers. In Chile and Mexico the limit is set at 5% of the pension fund assets. Pension funds may not be invested in assets issued or guaranteed by members (or relatives) of the governing body of the pension fund administrator, by managers or owners of authorised entities.

In all countries, custody of pension assets must be carried out by entities independent from the pension fund administrator. In Chile until 1994, all assets were safeguarded by the Central Bank. As a result of the Capital Markets Law of 1994, private companies offering security deposit services can also act as custodians of pension funds.

II. Concomitant reforms in the financial system

In addition to laying the basis for the new pension fund industry, Latin American governments have been very active in reforming other aspects of the financial system. Three main reforms can be identified which may have been at least partly driven by the need to ensure the smooth functioning of the private pension system. First, the financial

market infrastructure was modernised. Second, banking and capital market regulations were overhauled and the supervisory framework strengthened. Third, there was a significant tax reform in at least one country that affected directly the financial system (Chile).

The modernization of the financial market infrastructure

Key elements of the financial infrastructure, such as risk rating, custodial, and brokerage services, and trading and settlement systems have been reformed either before or at the same time as the introduction of pension funds. While such functions are essential for every sector of the financial system, it was the reform of the pension systems that brought home the need for improving many of them.

As mentioned above, the development of the risk rating industry in Latin America has been intrinsically related to the establishment of the pension fund industry. Risk rating has also been extended to all issuers of publicly traded instruments in Chile, not just those that receive investments from the pension funds.

Another important pension reform related improvement in the financial infrastructure is the modernisation in trading systems in stock exchanges. Pension fund portfolios are valued daily in Latin American countries. This has necessitated a revamp of the technology used by financial institutions to value their assets. Some hindrances to market trading remain in some countries, however. In Mexico, for example, trades carried out through the electronic system cannot be executed from outside the exchange.

In all Latin American countries, depository and custodian services must be provided by a financial institution independent of the pension fund administrator. This regulation has helped developed the custodial services industry.

Clearing and settlement systems have also been modernised in some countries. In Chile a public company was created in 1989 under Law 18876 to deal with all clearing and settlement of securities transactions. The company is owned by the Santiago stock exchange and the main financial institutions and intermediaries. Settlement of instruments issued by financial institutions takes place the same day of

the transaction, those of fixed income securities the day after, and stocks trading two days after the transaction. The system contrasts with that in place in Peru, where settlement is still concentrated in one medium-sized bank. This could represent a significant systemic risk.

Regulatory reform in the financial sector

The enforcement of financial contracts through regulations and effective supervision is a key institutional feature that enables the development of financial markets. Laporta et al. (1998) argue that the efficiency of the financial system is based on the extent to which contracts are defined – and made more or less effective – by legal rights and enforcement mechanisms. Levine (2000) has provided evidence showing that the quality of legal rights in financial systems can explain economic growth, while the relative role of banks versus markets cannot.

Reforms in securities markets have been often engineered with the goal of improving the functioning of the private pension systems. For example, the 1994 reform to capital markets in Chile had as its main objective increasing the flexibility of the investments by pension funds and life insurance companies. This reform also improved the regulation and supervision of conflict of interests (including insider trading). The reforms to the capital markets law proposed in Peru in 2001 (and in the process of being approved) also contemplate significant changes, such as the introduction of clear fiduciary responsibilities for asset managers.

Some efforts have also been made at improving shareholders' rights. In the recent survey by La Porta et al. (1998), Chile got as high score as Anglo-Saxon countries. Minority shareholder rights have been further strengthened in this country through the latest reform to the capital markets law. In Peru, amendments to the capital markets law and the law protecting the rights of minority shareholders were also proposed in 2001. Some of the measures proposed in Peru include permitting proxy voting by mail, stricter disclosure requirements for listed companies, and the promotion of independent directors.

In Mexico, meanwhile, the legal regime for the protection of the rights of minority shareholders remains rather weak. Shareholders in many cases do not enjoy one-share one-vote rights and proxy voting by

mail is not permitted. Share trading is often blocked prior to general shareholders meeting. As much as 33 percent of share capital is required to call an extraordinary shareholders meeting. A new code of best practice has been recently proposed by the Mexican Stock Exchange to address some of these deficiencies. Some weaknesses exist also in the Argentinean Capital Markets Law. A project recently presented to Congress is expected to improve corporate governance practices in accordance with international standards (including the introduction of a minimum number of independent directors).

Reforms are still needed to strengthen creditors' rights in all Latin American countries. The survey by La Porta et al. (1998) showed some deficiencies in this area, particularly in Colombia, Mexico, and Peru, which had the lowest score in the region. In Mexico, the enforcement of creditors' rights still suffers from several deficiencies, especially in bankruptcy and collateral laws which weaken creditors and undermine market discipline. A bankrupt business can enter into reorganisation without requiring creditors' consent. Secured credits are not necessarily paid first; the claims of various social constituencies precede them.

Various Latin American countries have also recently reformed the regulation and supervision of their insurance industries. These reforms have as their main objective to ensure the compliance with international standards (in particular those established by the International Association of Insurance Supervisors). Nonetheless, the increased responsibility of insurers in the management of disability and survivors insurance and of annuities has certainly pressed governments to overhaul somewhat lax and outdated methods of supervision.

Reforms to the banking system, while largely unrelated to the pension system per se, have also been enacted throughout Latin America since the debt crisis of the early 1980s. In Chile, a new banking law was approved in 1986 that required significant diversification, closer asset-liability matching, and limits on related party transactions. Banks were also prohibited from holding equity, with a few exceptions. At the end of 1997, new amendments were introduced to the Banking Law, leading to

the adoption of the Basle recommendations on capital requirements and a new licensing process.

In Mexico, on the other hand, the banking system is still suffering the aftermath of the 1994-5 crisis. Financial sector policies have concentrated on managing the effects of the crisis. Some improvements were made in the regulations and the supervisory authority, previously a weak and ineffective body, was revamped. The weaknesses of the regulatory and supervisory system have been addressed. Still, some deficiencies remain, such as the extension of liability insurance to all bank creditors, which is a continuing source of moral hazard.

Despite the similarities between the two industries, the mutual fund sector is still handicapped by some regulatory deficiencies in Latin American countries. For example, control of conflicts of interest is not wide spread. In Mexico, conflicts arising from transactions between mutual funds and the owners of the fund's administrators (often banks) are still not properly addressed. Churning of portfolios in order to increase commission income is a particularly widespread problem. The situation has improved significantly since the collapse of the industry as a result of the 1994 crisis. The establishment of the private pension industry has also made more patent the deficiencies of the regulation and supervision of mutual funds. As a result, the government is coming to grips with the problem and is in the process of developing a new regulatory framework to assist its development. This new framework would include stricter disclosure rules and fiduciary standards in line with those applied to the pension fund administrators.

Tax reform

The tax treatment of different forms of savings and investment are a key determinant of the evolution of any financial system. In many countries, debt is preferable to equity as a source of financing because of its less onerous tax treatment. In Chile, a significant tax reform took place in 1984 which led to a drastic reduction in the tax rate for reinvested profits from 46 to 10 percent. It also created uniform taxes for distributed profits by reducing those of open corporations from 43.3 to

31.5 percent. Uthoff (1998) argues that the tax reform explains much of the increase in savings observed in Chile over the last two decades.

The liberal Chilean tax reform contrasts with the Mexican tax structure. In Mexico, capital gains tax must be paid on private sector securities, but not on government securities. The difference in after-tax returns is sufficiently high to distort the investment strategies of pension funds and other institutional investors towards government securities.

III. The rapid growth in pension savings

Thanks to its privileged position in the pension systems of Latin America, the new pensions industry is quickly gaining a dominant position in the financial system. As shown in Table 4, pension assets managed by the pension fund managers amounted to 56 percent of GDP in Chile by 2001. Asset growth in other countries that have undergone pension reform has also been rapid. In Bolivia where, like Chile, the earnings-related PAYG pillar is being phased out, AFP-managed pension assets grew from 3.9 percent of GDP in 1998 to 15.5 percent of GDP in 2002.

**Table 4 - Assets held by Pension Funds in Latin America
as a Percentage of GDP (December 1998 - December 2002)**

	1998	1999	2000	2001	2002
Argentina	3.3	5.9	7.1	7.4	11.3
Bolivia	3.9	7.0	10.8	11.0	15.5
Chile	40.3	53.3	59.8	55.0	55.8
Colombia	2.7	4.2	5.5	7.0	7.7
Costa Rica	0.0	0.0	0.0	0.1	0.9
El Salvador	0.4	1.7	3.6	5.5	7.4
Mexico	2.7	2.3	3.0	4.3	5.3
Peru	2.5	4.1	5.4	6.6	8.1
Uruguay	1.3	2.8	3.9	6.1	9.3
Average	7.1	10.2	12.4	11.4	13.5

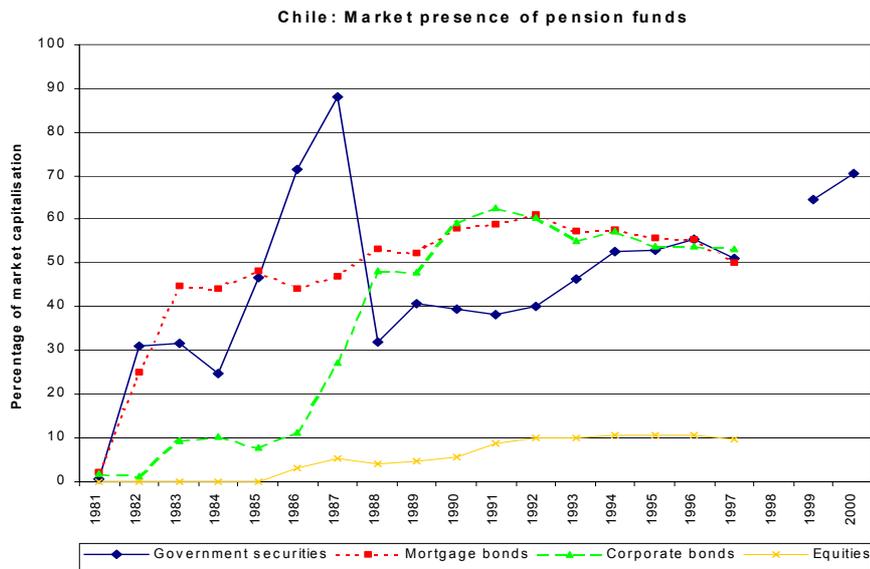
Source: AIOS, *Superintendencia Bancaria de Colombia*.

Note: Assets held by the Bolivian capitalisation fund are not included.

In addition, insurance companies, in their role as providers of disability, survivors', and longevity insurance in the new systems, have also accumulated a significant amount of pension assets. However, since most systems are still primarily in their accumulation stage, the importance of insurance companies as financial market players is dwarfed by that of the pension funds. In Chile, pension fund assets overtook those of insurance companies and mutual funds within a year of being established, despite the fact that the latter had been running for many years. Over the period 1982 to 1997 pension fund asset growth was 26%, against 17% for insurance companies and 13% for mutual funds. By December 2002, the assets held by pension funds were more than three times those of insurance companies.

The dominance of pension funds in the domestic capital markets is demonstrated by the extent of the capitalisation of various markets that they own. In Chile, pension funds are biggest investors in government, mortgage and corporate bonds (see Figure 1). On the other hand, they own less than 10% of listed stocks, but they were more important holders of floating equity.

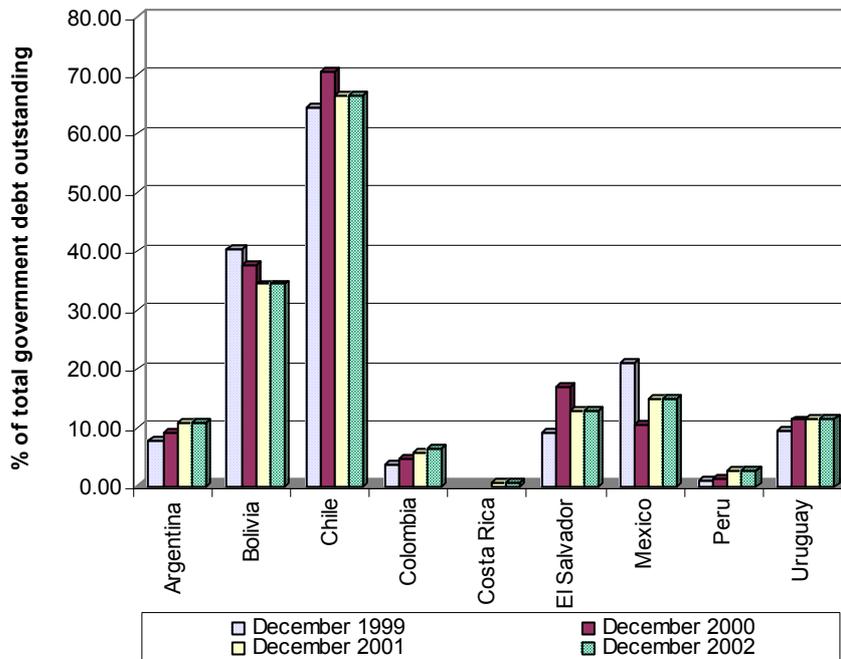
Figure 1 – Chile: Pension Fund ownership of capital markets
 (% of total issues outstanding, 1991-2001)



Source: Lefort and Walker (2000a), Superintendencia de AFPs, Superintendencia de Valores y Seguros, AIOS.

In Argentina and Peru, pension funds are also rapidly increasing their presence in private sector securities markets. At the end of 1997, Argentine pension funds held 2.9 percent of stock market capitalisation, 13.8 percent of the corporate bond market, and 6 percent of the mortgage bond market. In Peru, meanwhile, pension funds held 5.2 percent of the equities market at the end of 1998, and an impressive 40.6 percent of the corporate bond market. Pension funds are also becoming important investors in government debt (see Figure 2).

Figure 2 - Pension Funds Are Major Investors in Government Debt
 (Participation in government debt, % of total debt outstanding, 1999-2002)



Source: AIOS (2002)

The growth of pension funds is turning these institutional investors into key players in the financial system. Yet, because of the high investment in government securities and the banking sector, direct pension fund financing to the private sector through bonds and equities is still relatively low compared to bank credit. Even in Chile, total direct investment in the non-financial private sector represented less than 12% of GDP in December 2002. Bank credit to the private sector, on the other hand, was close to 67% of GDP in December 2002.

As shown in Table 6, direct pension fund investment in the private sector is even lower in other Latin American countries (less than 20% of total pension fund assets), the only exception being Peru (46% of total assets). In Costa Rica, El Salvador, and Uruguay pension funds provide scant financing directly to the non-financial private sector (less than 5% of total assets).

Table 6: Pension Fund Portfolios (%) December 2002

	Government Securities	Corporate bonds	Financial institutions	Equities	Investment funds	Foreign securities	Other
Argentina	76.7	1.1	2.6	6.5	1.8	8.9	2.4
Bolivia	69.1	13.4	14.7	0.0	0.0	1.3	1.5
Chile	30.0	7.2	34.2	9.9	2.5	16.2	0.1
Colombia	49.4	16.6	26.6	2.9	0.0	4.5	0.0
Costa Rica	90.1	4.6	5.3	0.0	0.0	0.0	0.0
El Salvador	84.7	0.5	14.4	0.5	0.0	0.0	0.0
Mexico	83.1	14.8	2.1	0.0	0.0	0.0	0.0
Peru	13.0	13.1	33.2	31.2	0.8	7.2	1.6
Uruguay	55.5	4.3	39.6	0.0	0.0	0.0	0.5

Note: Information for Colombia refers only to the mandatory pension fund system.

Source: AIOS, FIAP (data for Colombia).

IV. The operation of the pension fund industry

In order to understand the role of pension funds in capital market development it is important to consider not just the size of their portfolios but also how these portfolios are managed. Pension fund administrators can also play an important role in regulatory reform and in financial innovation. In this section, we therefore take a closer look at the governance of the pension fund industry.

Decision-making in an oligopolistic industry

Unlike pension funds that support defined benefit plans, Latin American pension fund administrators do not have to meet any contingent liabilities on the funds they manage, other than ensuring that their performance lies within the stipulated bands. Their investment objectives are therefore similar to those of mutual funds. In practice, however, there are important differences between the investment practices of pension funds and mutual funds. The main reason for these differences are investment regulations, which tend to be more strict for pension funds. Secondly, Latin American pension fund administrators have a captured market where individuals' contributions are retained until they retire. Thirdly, the extent of switching between pension fund administrators is heavily regulated. Finally, in all countries except Chile,

individuals have no investment choice. The administrators, under the guidance of regulations, decide the asset allocation.

Some of these regulations (single fund, switching, investment rules, lack of individual choice) have created the perfect conditions for a highly concentrated industry, where the only pressure to perform comes from other regulations (performance rules, fees regulations). The most extreme case is Bolivia, where two administrators were assigned regional monopolies in the market. Even in the other countries, the extent of concentration is very high (see Table 7).

Table 7 - Pension fund management industry
(December 2002)

	Number of administrators	Market concentration (two largest)
Argentina	12	42.7
Bolivia	2	100.0
Chile	7	55.0
Colombia	6	49.8
Costa Rica	9	70.7
El Salvador	3	99.7
Mexico	11	45.0
Peru	4	59.2
Uruguay	4	74.7
<i>Average</i>	<i>6</i>	<i>66.3</i>

Note: Assets held by the Bolivian capitalisation fund are not included. Information for Colombia refers only to the mandatory pension fund system.

Source: AIOS, Superintendencia Bancaria de Colombia.

The herding instinct among pension fund managers is particularly worrying in the context of an industry that is increasingly the dominant investor in capital markets. To the extent that a few pension fund managers that invest in a similar way dominate capital markets, it is unlikely that market liquidity will grow to the levels observed in OECD countries. After all, there are two sides to every trade and if pension funds copy each other's investment portfolios, they are unlikely to increase the breadth of the market much further. The increasing process

of concentration in the pension fund managing industry, while efficient considering the economies of scale in account management and record keeping, will only put investment decisions into even fewer hands.

The 2001 reform to capital markets in Chile, together with the introduction of member choice over five pension funds of different risk-return characteristics may help reverse this trend. By promoting individual choice and competition among different providers in the huge pension savings market, the extent of homogeneity of portfolios and synchronisation of trading decisions is likely to fall substantially. Liquidity, the key to vibrant capital markets, is likely to rise.

Dealing with the transition debt

The pension reforms undergone by Latin American countries were envisaged to end the fiscal imbalances that plagued the social security regimes. However, the move from PAYG to funding raises in itself short term fiscal pressures, because pensions in payments and accrued rights must be financed from a lower level of mandatory contributions. In some countries, such as Bolivia, Chile, El Salvador and Mexico, governments can no longer rely at all on the mandatory contributions since these are destined exclusively to the individual funded accounts.

Despite the radical and pioneer nature of its pension reform, Chile has been by far the country that has been most successful in managing the pension debt. The government run fiscal primary surpluses on the order of 5.5 percent of GDP prior to the reform in order to soften the impact of the transition costs on the government finances.

No other Latin American country, however, has been able to exert such as a huge fiscal contraction prior to reform. On the contrary, some countries, such as Argentina, embarked on the reform with large fiscal imbalances and tensions on the exchange rate. The partial move to a funded system deprived the social security system of a significant amount of contributions and may have therefore contributed to the devaluation in 2001.

The Argentina experience demonstrates that against a backdrop of macroeconomic instability, the private pension system is not free from political manipulation. By the end of 2001, nearly two thirds of the pension fund assets were invested in government securities either directly or indirectly (through bank trusts). The latter were not counted by the Superintendency for purposes of meeting the ceiling on investment in government securities. This move, however, was not sufficient to soak up the debt created by the pension reform. The pension funds had accumulated assets worth only 7.4 percent by December 2001, slightly over half the debt created by the loss in revenue to the social security system.

The burden of the fiscal cost of the transition has forced many other governments in the region to impose quantitative investment restrictions that help channel pension funds towards government securities. Even in Chile, pension funds were not allowed to invest in any asset class other than government bonds and banking instruments during the first four years of the system⁶. Bolivia, Mexico, and Uruguay have imposed floors on government bond investments. Even in the absence of quantitative restrictions, the instability created by a large transition debt is an obstacle to the deepening of financial markets. In the absence of a sustained fiscal effort, therefore, transition costs can severely curtail the positive impact of pension funds on capital markets.

Asset management practices, financial innovation, and regulatory reform

Pension funds have complete freedom in their investments as long as they stay within the regulatory ceilings established by the pension fund supervisor. We can therefore assess asset management practices in Latin American countries taken into the constraints that they face.

Even in the countries with the more liberal investment regimes such as Colombia, Chile, or Peru pension funds' equity and corporate bond portfolios are concentrated in large companies. This is partly a

⁶ Chile first liberalized the investment regime for pension funds in 1985 by permitting investment in equities and corporate bonds.

consequence of the stage of development and small size of their economies, which results in a low number of firms whose securities are traded regularly in liquid markets. Regulations, however, also play a role since investments are restricted according to the risk-rating of individual securities and their trading record in regulated markets. Performance regulations, which require pension funds to obtain a rate of return within a band set as a percentage of the industry average, may also explain the high degree of homogeneity in pension fund portfolios and the general conservatism in their investment strategies.

On the other hand, pension funds have played a role in the process of modernization of financial markets experienced by countries such as Argentina, Chile or Peru. Lefort and Walker (2000a) mention the marked improvement in professionalism in the investment decision-making process and their involvement in bringing about a more dynamic legal framework. For example, in Chile, pension fund managers added flexibility to the foreign investment rules, by obtaining the permission to use currency forward contracts as hedging instruments.

The pension fund administrators also played a central role in the establishment of the Electronic Stock Exchange in 1989 which competes directly with the Santiago Stock Exchange. The pension fund administrators had a strong interest in increasing competition in the market since they pay directly any transaction costs from investment activities.

The role of pension funds in corporate governance

A captured market of mandatory pension contributions and a highly concentrated industry where pension fund managers make all investment decisions may not be the ideal recipe for liquid capital markets. Pension funds cannot easily sell out securities that are performing badly. If they do so, they can turn prices against them, especially since other pension funds are likely to follow suit. On the other hand, pension funds can exert their power on capital markets indirectly, by asking and voting for changes in corporate governance practices. This role, however, is not free of constraints. In all Latin American countries there are limits on the percentage of the capitalisation of a certain issuer

that can be held by a pension fund. These ceilings range from 5 to 15 percent of total capitalisation.

It is largely because of these regulations that pension funds have only began to play an active role as shareholders in Chile. The size of pension funds is such that they have become collectively the largest minority shareholder of many companies traded in the stock market⁷. Iglesias-Palau (2000) identifies three main factors that explain increased shareholder activism by pension funds: the counterproductive effects of exit strategies, the high sensitivity of pension fund managers to the public opinion's reaction to bad investments, and the high concentration of ownership of Chilean corporations.

Some examples of the corporate governance role of pension fund administrators in Chile are their voting for independent directors (a regulatory requirement) and the pressure they exert to improve the transparency of company accounts. Independent directors have been particularly active in monitoring potentially conflicting interests between majority and minority shareholders. Iglesias-Palau (2000) also argues that independent directors have promoted the establishment of specialised committees, such as audit committees.

The pension fund administrators are also required by the supervisor to file reports regarding events or transactions by security issuers that may have negative effects on pension fund investments. This whistle-blowing role is played effectively by the Chilean Association of Pension Funds informing the authorities and the public opinion in general about corporate governance situations that are detrimental to pension fund performance. These regulations have led to better corporate governance despite the fact that pension funds are only minority shareholders. According to Lefort and Walker (2000a), other investors often explain their ownership plans to pension fund administrators and consider their opinion as influential shareholders.

⁷ In Chile, for example, AFPs have become the most important minority shareholder in most of the country's listed corporations. As of December 2000, equity investments by pension funds accounted for over 7% of total market capitalization.

Pension funds are helping to shape a new balance in the Chilean corporate ownership structure. Public firms in Chile, as in other Latin American countries, are dominated by one large group or conglomerate, which often has at the top of the pyramid a single family owner. Pension funds, together with ADR holders, are the largest minority shareholders of Chilean firms. Unlike ADR holders, which are a diversified and unconnected group, Chilean pension funds have similar objectives and follow practically identical investment strategies. Hence, they can present a united and powerful voice in order to defend minority shareholder rights.

V. The market for government debt

Except in Chile and Peru, more than half of pension fund investments are directed towards government securities. In this section we take a closer look at the role of pension funds in the development of this market.

The government as security issuer

In those countries where the transition to the funded pension system was carried out through “recognition” bonds (Chile, El Salvador, and Peru), pension reform has contributed directly to the financial depth of the economy. The Chilean recognition bonds have been a particularly welcome innovation because of their relatively long maturity and the fact that they have a zero coupon. In 1994, these bonds were made transferable and are since traded in exchanges. The bonds have eased the development of a benchmark yield curve that can be used for pricing private sector securities. Unfortunately, other countries where such bonds have been issued do not as yet permit their trading in secondary markets.

The Chilean Central Bank also took an important step in 2000 authorising coupon stripping. This innovation allows insurance companies to match their long term liabilities. Pension funds also have a high demand for long term coupons by virtue of the relative stability of contributions and limited switching between funds.

The introduction of inflation-indexed bonds in Mexico is another financial innovation linked to the pension reform. The government decided that in order to guarantee an adequate performance the pension funds should invest a certain amount minimum amount in such bonds. The issuing of such bonds began in 1998 with the introduction of the mandatory pension funds and has been increasing rapidly ever since to meet the growing pension fund demand.

The development of the government debt market

Historically, one of the key deficiencies of Latin American governments has been their inability to raise long term financing domestically and their consequent fragile dependency on volatile foreign capital. The weakness of domestic government debt markets is itself largely a reflection of a lack of fiscal rectitude that Latin American governments have only recently started to conquer. Chile stands out as having succeeded in the 1980s to avoid the worst of the debt crisis and has been hailed since a model of fiscal rectitude. El Salvador, Mexico, and Uruguay gained investment grade in the 1990s and the prospects for government debt markets were promising. The collapse in liquidity in international markets in 2000-1, however, truncated the hopes of most Latin American governments. The Argentine crisis spread to Uruguay, who lost investment grade. International investors have also stampeded from Colombia, who also lost investment-grade.

Of all Latin American countries, Chile has been the most successful in limiting its dependency from portfolio flows and in lengthening the maturity of the government debt. It may be tempting to link these developments to the role of pension funds. However, there are other more important factors at play. The practical elimination of the government's and central bank's foreign debt, a unique case in Latin America, was a public objective achieved thanks to two decades of fiscal surpluses. Meanwhile, short term borrowing by the private sector and portfolio inflows have been discouraged through punitive reserve requirements. Fiscal frugality has also made possible the successful development of a long-term government bond market in Chile, together with two other factors: the development of an efficient indexation unit,

the UF and the government's promotion of market liquidity through debt management.

The UF was first introduced in 1974, and was adopted widely as the reference index only in 1984. Currently the UF is used for pricing over one half of financial assets, and practically all medium and long term fixed income securities and instruments of financial intermediation. While other Latin American countries have introduced indexation mechanisms, none have been as successful as the UF (see Box 1).

Indexation in bank intermediation and government funding permitted the practical elimination of money illusion and hence created the conditions for macroeconomic stability. The inflation rate has been falling gradually since the early 80s. In 2000, it was already below 4 percent. Indexation permitted also the stabilisation of real interest rates and the targeting of the real exchange rate around what were deemed as equilibrium values. These developments, coupled with the government's tight fiscal policy stance created the conditions for a healthy government bond market. This market has since avoided much of the pain endured by other countries such as Argentina, which went down the alternative route, dollarisation, in their attempt at stabilisation.

The Chilean's government debt management strategies have also been beneficial to the health of the bond market. By promoting liquidity in the market, the indexation unit was made a more acceptable currency unit and have ensured an adequate supply of securities for institutional investors.

The markets have rewarded these policies with the lowest spread from US Treasuries in Latin America. Chilean government bonds also have the longest average duration in Latin America. The bonds have a maturity of between 90 days and 20 years.

While mandatory indexation helped the Chilean bond market develop, it is certainly not a prerequisite for a healthy bond market. Other Latin American countries have recently succeeded in raising the maturity of their debt without requiring indexation of all fixed income securities. In Colombia and Mexico the government is issuing inflation-indexed

securities that are attractive to domestic investors and the average duration of government bonds is increasing.

In Colombia, the government started to issue inflation-indexed bonds in 1999. By March 2002, 22% of domestic treasury bonds were inflation-indexed. The share of government bonds with a maturity of between five and ten years has also increased from 11.5% in 1997 to 46.7% in 2002. In 1997, 86% of government bonds had a maturity of less than five years.

The Mexican government also started recently issuing inflation-securities. Meanwhile, the maturity of the debt is beginning to creep up slowly, from its low level during the 1994-5 crisis. The average maturity of government debt has increased from under one year at the end of 1994 to over two years by December 2001. This trend is likely to progress as the government has stated its objective to lengthen the maturity of its debt. The government recently succeeded in introducing a ten-year bond. Over one half of net public borrowing in 2001 was in fixed rate bonds with three and five year maturities.

Box 1: Inflation-indexed securities in Latin America

Chile was the second country in Latin American, after Brazil, to introduce widespread indexation of financial securities to a measure of the cost of living. Walker (1998) argues that indexation has worked in Chile because: (i) the unit has credibility, in the sense that it will not be manipulated by the authorities, and is based on the CPI, that is computed by an independent entity, the National Institute of Statistics; (ii) legislation require medium and long term credit to be indexed to the UF, and calculation of the assets and liabilities of insurance companies is in UF; (iii) there exists a deep, liquid market for Central Bank indexed bonds, giving a risk-free rate used in other transactions; (iv) tax regulations are consistent with a generalised indexation of the economy. In addition, the UF was successfully adopted in Chile because it is updated on a daily basis, functioning as a quasi-perfect indexation mechanism.

Of all the other Latin American governments only Brazil has had as high degree of indexation of financial securities as Chile. Unlike in Chile, however, there was no single reference unit and adjustments often took place on an arbitrary and irregular basis. Moreover, indexation spread to labour markets from where it sustained ever higher inflationary pressures. The introduction of a new currency, the Real, pegged to the dollar succeeded in bringing down inflation. At the same time, the proportion of indexed debt in total debt has decreased from about 70 percent at the beginning of 1994 to less 30 percent by 2001.

Peru and Mexico have recently began to issue inflation-indexed securities. Peru has a currency unit, the VAC which is CPI-indexed. Unlike in Chile, where most fixed income instruments must be indexed to the UF, in Peru VAC-indexing is voluntary. An average of 25 percent of the total bonds issued (both public and private) is denominated in VAC. The preferred alternative is indexing to the dollar despite the exchange rate risk involved. The Mexican government also issues bonds indexed to an inflation measure (UDI). Only 14 percent of government bonds outstanding at the end of 2000 were UDI-indexed. In the other Latin American countries (Argentina, Bolivia, El Salvador, and Uruguay) governments issue mainly US\$-denominated securities.

There has been much discussion about the benefits and vices of both indexation and dollarisation. Indexation can sustain and even augment inflationary expectations when it spreads to labour markets. Dollarisation, on the other hand, exposes the government to significant currency risk, since tax revenues from the non-tradeable sector are linked to the domestic currency. This may explain why foreign investors have been generally unwilling to provide long term financing denominated in US dollars.

The role of pension funds

There is little doubt that pension reform has contributed to the improved health of the Chilean government bond market. First, by encouraging fiscal restraint by the government. Second, by providing recognition bonds with a long maturity. The *Bonos de Reconocimiento* issued by the government to compensate those who accumulated pension rights under the old system become transferable in 1994 and have been since traded in exchanges. These bonds have relatively long maturities and are therefore a stable source of funds for the Chilean government.

On the other hand, the role of pension funds in the development of the government bond market is less clear. Pension funds have certainly been a significant and reliable source of funding for the Chilean government. In August 2002, over 21% of the mixed fund portfolio consisted of Central Bank bonds with an average duration of three years and eight months. Nearly 6% of the same portfolio was invested in recognition bonds with an average duration of four years and seven months.

The Chilean experience contrasts with that in Peru, where the government has relied mainly on external financing. Pension funds have only been allowed to invest in these issues recently, so their contribution to the development of the market has been minimal. Unlike Chile, Peru has not permitted yet the trading in secondary markets of recognition bonds. Given the lack of long term government securities issued in domestic currency, such bonds would be a highly attractive investment for institutional investors such as pension funds. They would also assist in the construction of a yield curve that can be the basis for the development of the corporate bond market.

In other countries, the role of pension funds has been conditioned by investment regulations that have aimed at ensuring a high level of investment in government bonds. In Mexico, the contribution of pension funds to the growth of the indexed bond market has been determined by investment regulations that require them to invest at least 51 percent of their assets in inflation-indexed securities. The SIEFORES actually invest significantly above this floor. In December 2002 they

invested over 70 percent of their assets in inflation-indexed government bonds.

On the other hand, the Mexican pension funds have made very little contribution to the increase in maturities since until December 2001 regulations impeded them from investing more than 65 percent in instruments of maturities longer than 183 days. The average maturity of the pension fund portfolios during the first two years of the system was in fact only 238 days (Rubalcava and Gutierrez, 2000), well below the average maturity of Mexican government debt over that period.

The experience in other countries has been also largely disappointing. Where pension funds have contributed to providing long term funds, it has been often the result of government regulations or political pressures. In Argentina pension funds could invest up to 30 percent of their assets in an “investment account”, where government bonds, mainly dollar-linked, were held up to maturity. After the 2001 crisis, the government bonds held by pension funds were transformed into illiquid long term loans to the government.

In Bolivia, the requirement to buy US\$ 180 million worth of government securities per year has turned the pension funds into the largest holder holders of these securities in the space of a few years. The pension funds must buy US\$ denominated government bonds that must be held to maturity (15 years) and which pay a 8% coupon. 60 percent of the pension funds’ assets were invested in these bonds in December 2001. In addition, pension funds buy government bonds in the secondary market that have maturities between one and three years. The government is also currently facing fiscal pressures and is considering substituting the US\$ denominated government bonds held by the pension funds into domestic currency denominated debt.

VI. Pension funds and the banking system

Except in Chile, bank loans are still the main form of external financing of the non-financial private sector. In Chile, the stock market overtook bank credit as the main source of external funds in the late 1980s. While capital inflows account partly for the growing size of markets relative to bank in Chile, government policy towards bank

borrowing and credit has probably been even more important (Lefort and Walker (2000b)). The government's response to the debt and banking crisis at the beginning of the 80s was to impose strict regulations on the banks' assets (such as a prohibition on holding equity, strict limits on related party transactions, and prohibition of US\$ loans except in the case of foreign trade loans) and liabilities (reserve requirement). There are also ceilings on maturity and currency mismatches between assets and liabilities. These rules have helped restrain bank credit. Only in 1988 did credit to the non-financial private sector begin to recover. Despite the slow growth, Chile stands out among Latin American countries for its high credit to GDP ratio, about 67% in December 2002, more than double the average for Latin American countries.

The only other country that has approached Chile's bank credit to GDP levels is Mexico. During the mid-1980s, Mexico, like other Latin American countries, engaged in a process of liberalization of its financial sector. The end of financial repression certainly contributed to Mexico's unprecedented growth in credit to the non-financial private sector during the late 1980s. In 1994 bank credit in Mexico reached a level (40 percent of GDP) similar to that in Chile (46 percent). Unlike in Chile, however, this growth was not supported by adequate regulatory and supervisory reform. The result was the bursting of the credit bubble in 1994, and the onset of the Tequila crisis. While at a macro level Mexico recovered relatively rapidly, credit to the non-financial private sector has been hovering below 20 percent of GDP.

While bank regulation and supervision is undoubtedly the crucial determinant in the evolution of the banking system, pension funds can also affect the efficiency of the banking system and the growth in bank credit through their investment strategies. Pension funds can help reduce the cost of issuing securities and hence reduce the market power of banks. As a result of this competitive pressure, net interest margins⁸ may decrease. At the same time, pension funds can contribute to a sustainable growth in bank credit. By helping to promote capital markets, and in particular the stock market, pension funds stimulate information

⁸ The net interest margin is equal to total interest revenues minus total interest expenditures divided by the value of assets. This measure was proposed by Demircuc-Kunt and Levine (1999).

disclosure and monitoring and hence may reduce the credit risk borne by the banking sector. Pension funds may also be attracted by long term deposits, helping to reduce term transformation risk in the banking system.

In addition to their impact on bank efficiency and the growth of credit, pension funds can affect the maturity structure of bank loans. Depending on whether complementary or substitutive effects dominate, the average maturity of loans may increase or decrease. Levine (1997) has argued that stock markets and banks tend to be complements rather than substitutes in emerging economies and thus the maturity of loans would normally increase.

In Latin America, pension funds invest a large portion of their assets in financial instruments issued by banks. Only Argentine, Costa Rican, and Mexican pension funds allocate less than 14 percent of their assets to bank instruments. Pension funds therefore appear to play a complementary role to the banking sector.

The market for banking sector securities

Pension funds have played a central role in the growth of the mortgage bond market in Chile, by far the most developed one in Latin America. Pension funds provide housing financing indirectly through two main types of investment: “letras hipotecarias” (mortgage bonds) and real estate investment funds. The “Letras” are by far the most important, making up over 13% of the pension funds’ portfolio. Pension funds own over one half of this market. Real estate funds account for less than 3% of total pension fund assets.

The “Letras” are mortgage bonds backed by a portfolio of real estate and guaranteed by the commercial banks that issue these instruments. They are traded in exchanges and are thus eligible for investment by pension funds. They can have a maturity of 8, 12, or 20 years. The “Letras” were introduced in 1977, and experienced rapid growth up until the 1982-3 financial crisis. The loans financed through

the “Letras” have financed mainly the middle- and high-income residential sector⁹.

As with government bonds, the reason for the long maturity of “Letras” has much less to do with pension fund investment per se, than with the availability of price indexation for these securities and the increased macroeconomic stability. Indexation to the UF itself has been possible thanks to the availability of a liquid market for UF-indexed government and Central Bank bonds of long maturity. These bonds provide the risk-free benchmark for pricing and, therefore, transacting mortgage bonds.

In addition, the fact that the “Letras” are guaranteed by the total capital of the bank that issues them reduces significantly the credit risk of these mortgage bonds. Indeed, rating agencies assign these mortgage bonds the same risk rating as to the originating banks. Despite these favourable conditions, it took some time before the mortgage took off in earnest. Pardo (1998) reports that in the early years, the Central Bank had to create a purchasing power for mortgage bonds in the face of investor reluctance to buy them.

Pension reform also had a defining impact on this market. Pension funds, together with life insurance companies, have been the main investors in mortgage-backed securities since the early 1980s. Pension funds had 12% of their assets invested in “Letras” in August 2002 with an average duration of four years and seven months. By providing medium and long-term funding for house purchases, pension funds played a central role in the expansion in real estate investment that took place in the second half of the 1980s.

There is another type of mortgage bond called the “Mutuo Hipotecario”, which were created specially for insurance companies. Pension funds cannot invest directly in them, but they can do so indirectly by investing in real estate funds. The “Mutuo” is a kind of illiquid mortgage bond whose only guarantee is the specific real estate

⁹ Lower income households are provided with very generous subsidies to buy their first home. Only a small loan is necessary to be able to access these governmental subsidies (Rojas (1999)).

property behind the debt. They are not traded in formal markets because of their heterogeneity, which explains why pension funds cannot invest in them.

The only other country in Latin American that has seen significant growth in housing related securities is Peru. Leasing bonds account for over 10% of the pension fund portfolios. The market is dominated by subordinated and leasing bonds that are issued by financial institutions. These bonds have replaced government debt as the reference benchmark, since that market is small and illiquid. An increasing portion of private sector bonds are indexed to the VAC, the currency unit that is linked to the consumer price level. As of September 2001 nearly one fifth of all private bonds were denominated in VAC, the rest being mainly denominated in dollars. Peruvian bonds have also increased in maturity over the last decade. The share of bonds with a maturity longer than 5 years increased from 9 percent in December 1998 to 37 percent in September 2001.

Pension funds, however, cannot be held responsible for these changes since they invest largely in dollar-indexed bonds. In 1998 only 10 percent of total private bonds held by them were denominated in VAC. The limited interest in indexed bonds may be a sign of lack of credibility in the indexation unit, in the context of a highly dollarised economy.

Unlike in Chile, the mortgage bond market in Peru (“Títulos de Crédito Hipotecario Negociable”) has not benefited from pension fund investment. These bonds have existed for many years but pension funds have hardly invested in them (less than 0.1% of the portfolio). This apathy derives from the low capitalization of the market. The main obstacle to its development is the inability of banks to issue such instruments directly without the authorisation of the borrower.

Pension funds in other Latin American countries invest a smaller percentage of their assets in securities issued by banks. Most of the assets invested in the financial sector in other countries go to time deposits and liquid bank instruments. In Colombia, for example, pension funds invest

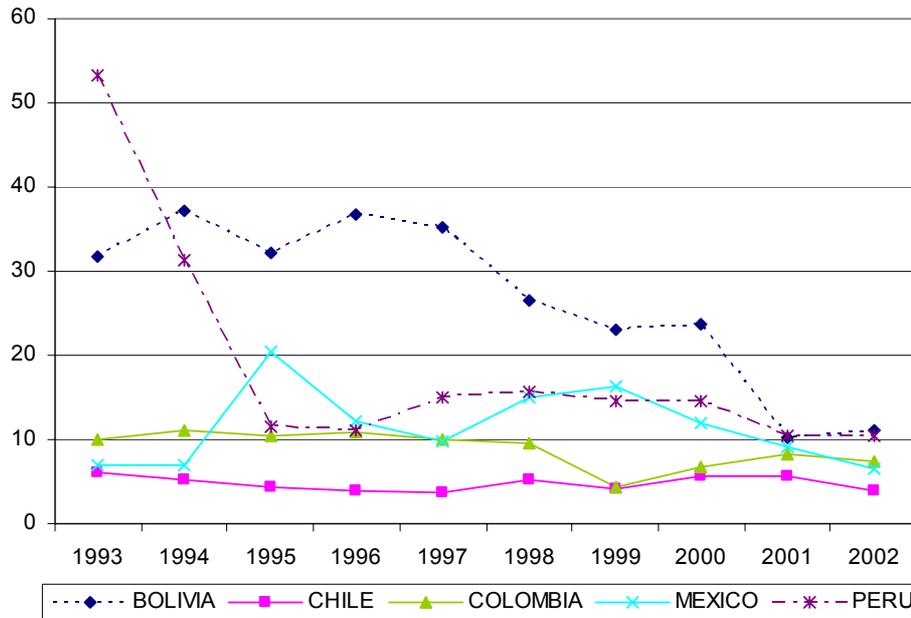
more than one quarter of their assets in the financial sector, but less than one percent is invested in mortgage or leasing bonds.

The impact of pension funds on bank efficiency and stability

Impavido et al. (2001) confirm the complementary nature of the relationship between banks and institutional investors for a broad sample of countries, including four Latin American countries (Argentina, Brazil, Chile and Mexico). Both bank profitability and the maturity of loans increase as pension fund and insurance company activity increases. They find that this result is largely the result of a reduction in credit risk. Differences in bank efficiency across countries are also related to the level of development of the pension fund and insurance company sectors. The positive impact is larger at low initial levels of development, and it decreases as pension funds and insurance companies develop.

This is shown in Figure 3, which plots the interest spread (lending rates minus deposit rates) in selected Latin American countries over the 1990s. The spread is lowest in Chile, the country with the most developed pension fund and insurance company sectors. But over the 1990s, the spread has not declined much. This stability is related to the higher degree of competition faced by the banks in providing financing sources, which has led them to concentrate in alternative markets, such as personal banking or small to medium firms, which are associated with higher costs. In other Latin American countries such as Peru, the competition provided by pension funds and insurance companies is currently sufficient to stimulate a reduction in bank spreads, yet low enough to allow banks to maintain their financing of larger companies.

Figure 3 – Interest rate spreads in selected Latin American countries (1993-2002)



Source: IFS (International Monetary Fund)

Another indicator of improved efficiency is the reduction in operating expenses. Chilean banks have operating costs that are less than 3% of total assets, less than one half the level in other Latin American countries. Pension funds may have contributed to the increased competition in the banking system during the late 1980s and early 1990s by providing an alternative form of financing.

VII. The market for private sector securities

In this section we look deeper into the operation of pension funds in Latin America in order to assess better their role in the development of the market for private sector securities.

Pension fund investment and stock market liquidity

Only in Argentina, Chile and Peru have pension funds been able to invest significantly in the stock market. Colombia is the only other Latin American country where such investments are permitted, but investment in stocks has been minimal (less than 3% in December 2002).

Most of the existing evidence on the impact of pension funds on stock market development is from Chile. The growth in the capitalization of the Chilean stock market after 1984 coincided with heavy investment by pension funds in shares. There is indeed a high correlation between the amount of equities held by pension fund assets and the increase in the ratio of stock market capitalisation to GDP, which has reached levels similar to those of the most developed OECD countries (over 100 percent).

A high correlation between pension fund investment in equities and stock market capitalization, however, is not proof of causality. In fact, the empirical analysis by Catalan et al (2000) using Granger causality tests shows that causality in the Chilean case could run both ways. The driving factor behind this correlation is in fact the high price volatility of the Chilean stock market.

The evidence on market liquidity (measured as the ratio of value traded to GDP or stock market capitalisation) is more supportive of a causal link with pension fund investments. Iglesias (1998) provides evidence showing how transaction costs in securities markets fell in Chile after pension funds started investing in private sector securities. Fees charged by the Santiago Stock Exchange for market transactions dropped from 0.5 and 0.015 percent in 1985 to 0.12 and 0.0 percent in 1994.

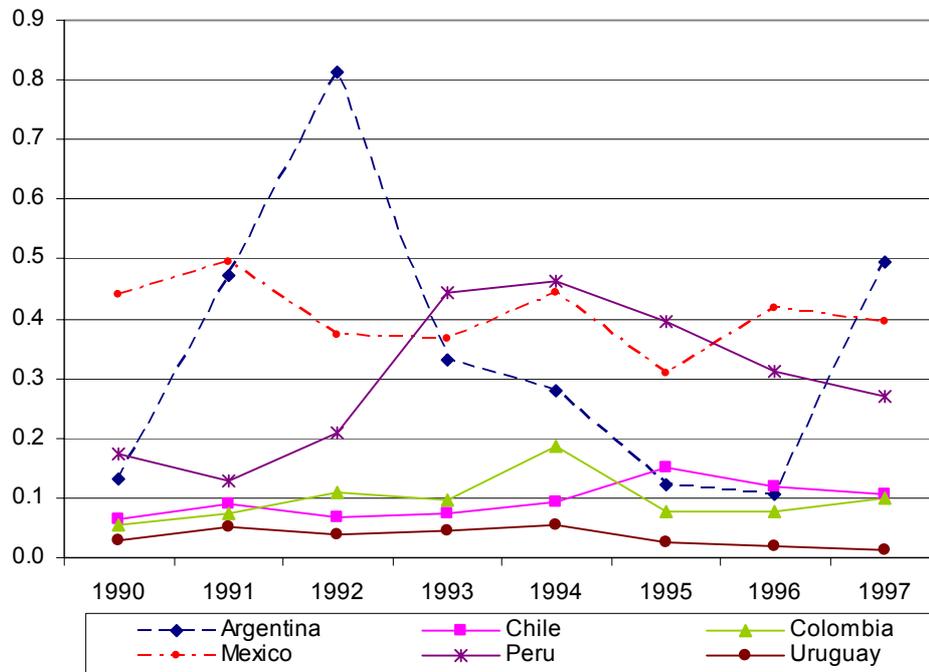
Holzmann (1997) identified a positive correlation between the growth of pension fund assets and stock market liquidity in Chile. Lefort and Walker (2000a) find corroborating evidence showing that the growth in pension investments has contributed to greater liquidity of the stock market in Chile since 1985.

These results are somehow different from those by Catalan et al (2000) who carry out Granger causality tests between pension fund investment and value traded. Catalan et al (2000) cannot reject the hypothesis for the Chilean case that causality runs both ways. The difference in conclusion may be attributed to the sample selected. While Lefort and Walker (2000a) focus on the period when pension funds invested in equities (since 1986), Catalan et al (2001) look at the whole period (since 1981). Since pension funds were not able to invest in equities until 1985, a reverse causality from stock market liquidity to pension fund investment can occur¹⁰.

Despite these positive findings, the liquidity of the Chilean stock market is well below what would be expected from a country with one of the highest ratios of stock market capitalisation to GDP and well developed pension fund and insurance company sectors. The tremendous growth in pension fund investments and the rapidly growing allocation to domestic equities since 1985 does not seem to have raised liquidity to the levels observed in other Latin American countries, let alone in developed countries. In fact, liquidity is below the development threshold level of 15 percent proposed by Demirguc-Kunt and Levine (1999) for the 1990s.

¹⁰ A similar sample bias is present in the analysis by Reisen (1997). He looks at cross-country evidence up to 1993, but two of the three Latin American countries in the sample (Colombia and Mexico, the third one being Chile) only reformed their pension systems after this date. The data includes also insurance companies that hardly invest in equities.

Figure 4 – Stock market turnover ratios in selected Latin American countries (1990-1997)



The low liquidity of the Chilean and other Latin American stock markets can be partly explained by the high degree of ownership concentration and deficiencies in disclosure standards and in protection of rights minority shareholders that have only been addressed recently. Nonetheless, in other countries in the region, such as Brazil and Mexico, these deficiencies have been at least partly offset by foreign investors who have been actively trading in local stocks (though mainly through ADRs¹¹). Foreign investors have helped to make of Brazil and Mexico the two most liquid markets in the region, accounting for over 90% of all Latin American equity trading.

¹¹ American Depositary Receipts (ADRs) are certificates issued by banks in the United States that represent shares or bonds issued by a foreign company or a foreign subsidiary of a US company. ADRs are backed by securities in custody in the country where the firm that issues the securities is based. ADRs can be converted at any time into the underlying securities. ADRs serve as a signalling device and can therefore contribute indirectly to the liquidity of the local stock market.

In Chile, capital controls and an onerous tax treatment of foreign portfolio investment have prevented foreign investors from playing an active role in its markets. Local pension funds, despite their size, have not been able to sustain as high levels of liquidity as foreign investors have in Brazil and Mexico. The high degree of synchronisation in the choice and timing of stock purchases and the rapid accumulation in pension fund assets has contributed to creating a market where “buy and hold” is the only viable investment strategy. Chilean pension funds have no large counterpart that can buy their stocks when they are ready to sell. The positive liquidity effect of pension fund investment is in fact largely a result of the monthly flow of mandatory contributions, rather than the daily trading activities of the pension funds.

This situation may change with the liberalization of the capital account approved at the end of 2001. The Central Bank has since eliminated all administrative barriers that regulated capital flows and ADR issues. The Chilean Ministry of Finance eliminated the tax on short-term purchases and authorised short sales. While the liberalization of the capital account may have a positive impact on stock market development, it may not be enough.

In fact, a high exposure to foreign capital could actually make local markets less liquid and more volatile during a crisis than in more closed economies. The Asian and Argentine crises have dried up liquidity in most Latin American markets. The most prominent case is Argentina, where some of the largest cap companies have been delisted after being acquired by foreign players (for example, YPF, the oil company was sold to REPSOL). Even in Chile, the presence of a large institutional investor industry did not prevent the fall of traded volumes of 55% observed between 1995 and 2000.

In Peru, pension funds invest heavily in equity and the capital account is open, but just one Peruvian stock, gold producer Cia. de Minas Buenaventura, is liquid enough to attract foreign investment. The prevalence of workers’ shares may deter foreign investors because of their attendant dividend and liquidation rights and the complexities and uncertainties associated with them¹². At the same time, the investment

¹² Workers’ shares are non-voting shares created during the military government in 1970 as a form of profit-sharing and popular capitalism.

strategies of Peruvian pension funds do not seem to serve as a stimulant to market liquidity. Indeed, Lefort and Walker (2000) do not find any causal relationship between pension fund investment in stock and market liquidity between 1993 and 1999.

Investment regulations (in particular those rules that limit investment to securities with the highest risk rating and those that limit the portion of capitalisation that pension funds may own) are not conducive either to stock market liquidity. They also reinforce another negative aspect of Latin American stock markets: the high level of concentration of both capitalization and liquidity in a handful of stocks. In Chile and Argentina, three companies account for almost 50 percent of current capitalisation and turnover. In Mexico, Telmex accounts for one quarter of stock market capitalization and between 20 and 40 percent of daily trading.

Relaxing these investment rules within a prudential regulatory framework would go a long way towards improving the diversification of Latin American stock markets. Pension funds in Chile have steadily increased the number of issuers in their portfolios, contributing to the broadening of the market. On the other hand, the continuing high concentration and herding of the industry can hardly be expected to bring about drastic improvements in liquidity. Only in Chile, where workers can now choose between five different funds, its liquidity likely to increase significantly. Diversity in opinions and preferences is an essential aspect of liquid markets.

The development of the corporate bond market

Unlike the mortgage bond market, the corporate bond market has experienced very limited growth in Chile. Longer-term debt has become more dominant but this seems to have much more to do with the availability of indexation than with the growth in pension fund assets. The development of the corporate bond market would also be unthinkable without the tight information disclosure standards introduced by the 1980 Securities Law. Nonetheless, pension funds have an important presence in this market and have been investing in longer term maturities. In August 2002, 5% of their portfolio was invested in corporate bonds with an average duration of 5 years.

Chilean pension funds have also recently been permitted to invest in infrastructure bonds. These bonds are backed by insurance companies that guarantee the reimbursement of the principal payment. The companies that issue these bonds are also guaranteed a minimum revenue by the state. Such investment is still very small, at less than 1 percent of pension fund portfolios.

The availability of leasing and subordinated bonds in Peru has helped develop a local corporate bond market. However, these bonds cannot serve as a perfect substitute for Treasury bills and bonds since they may have a significant credit risk. Without a reliable yield curve, trading corporate bonds in secondary markets exposes pension funds to liquidity risk. Pension funds have been avid buyers of corporate bonds but they do not trade them regularly in secondary markets. The contribution of pension funds to the development of this market is also limited by risk rating requirements.

Peruvian pension funds are also able to invest in real estate backed bonds. Currently, such investment accounts for 2 percent of their assets. In Colombia, pension funds invest over 3 percent in such bonds.

Pension funds are also relatively important investors in corporate bonds in Bolivia, Colombia, and Mexico. In Mexico, pension funds started to invest significantly in corporate bonds only over the last couple of years. So far, their investment has been in short maturities, so their contribution to the breadth of the market has been very limited.

The corporate bond market has shown limited development in Argentina, where they must be held until maturity (of about two years) since they do not have a secondary market. Pension funds currently hold around 1 percent of their asset in corporate bonds. In Costa Rica, El Salvador, and Uruguay, pension fund investment in corporate bonds has also been very subdued.

Corporate finance and firms' cost of capital

An important side-effect of increased liquidity of securities markets should be lower cost of financing for Latin American firms. Pension fund investments can also affect the balance between debt and

equity as sources of external funding and between long term and short term debt.

Following the Impavido et al (2001a) analysis of the impact of institutional investors on corporate finance, one should expect the growth of pension funds in Latin America (all of which have bank-based financial systems, according to the classification by Beck et al. (2000)) to lead to a rise in debt-equity ratios and an increase in the maturity of debt.

In fact, Hernández and Walker (1993) report a significant fall in debt/equity ratios, particularly in the tradable sector. Longer-term debt, however, did become more important and bank-debt less so. In the non-tradable sector, on the other hand, short-term bank debt retains its importance.

The shift towards equity financing cannot be accounted solely by the growth in pension funds, since they have never held more than 10 percent of stock market capitalization. Walker (1998) argues that the decline in debt-equity ratios is a result of the 1984 tax reform which introduced tax neutrality, restrictions to capital flows, and strict regulations on bank activities, such as the prohibition on holding stocks in their portfolios.

In other countries, it is too early to expect any impact of pension funds on corporate finance, since the pool of assets accumulated is too low and most of this is in any case invested mainly in government securities and bank instruments.

Lefort and Walker (2000a) have found some evidence that in Chile pension funds contributed to a lowering of the cost of capital to firms. They find statistical support for the relationship between pension fund equity investments and price-to-book ratios and dividend yields in Chile, but not for Peru or Colombia. This may be attributed to the short history of their pension systems.

The lowering of the cost of capital may have occurred through three main channels. First, by reducing the cost of issuing securities. Second, by extending the time horizon of investment decisions. Third, by introducing risk pooling in investment on a large scale.

Indirect evidence of the impact of pension reform on the reduction in the cost of capital is the increase observed in the number of securities issuers in pension fund portfolios.

Venture capital and real estate funds

Pension funds are not permitted to invest directly in venture capital or real estate. In Argentina, Chile, and Peru pension funds can invest in these assets indirectly, by purchasing shares of investment and mutual funds that themselves own these assets (ceiling at 30 and 20% of the fund, respectively).

In Chile, pension funds invest less than 2% of their assets in venture capital funds (FIDEs). These entities, which take the form of closed-ended mutual funds, were introduced in 1989 and pension funds quickly became their main investors. On the other hand, the real estate fund sector has hardly taken off.

An important obstacle to further investment in these funds are investment regulations that limit the portion of the value of the securities issued by one such fund that can be owned by a pension fund. Given the small size of the private equity industry in relation to the pension funds, such limits are highly constraining. Pension funds are also discouraged from investing in such funds by performance rules, since the valuation of venture capital funds is subject to much uncertainty.

In Argentina, pension funds used to invest in this asset class before the crisis, but since then most of these investments have been sold. In Peru, pension funds can invest in real estate funds, but venture capital funds are not functioning yet. Investment in real estate funds is also very small, representing less than 1 percent of pension fund assets. In other countries, investment in venture capital and real estate funds is not permitted. Indeed, in Mexico and Uruguay pension funds are barred from investing in any type of mutual funds.

It may be expected that pension funds' role as providers of finance for SMEs and infrastructure projects will increase in the future. In a region where small businesses account for the bulk of sales and employment, and where there is such need for massive infrastructural

investment, such a development would be highly welcome. Governments can play an important role by ensuring that investment and performance regulations do not impede pension funds from investing sufficiently in private equity.

VIII. Prospects for the future

Pension reform has had important beneficial externalities on capital markets. In all countries, pension reform has required the creation of a transparent framework for financial regulation and supervision of the new pension fund system. It has also involved the development or modernisation of agents and systems in the financial infrastructure, such as custodial and risk rating services. In principle, these improvements could have taken place independently of the pension reform. However, the mandatory nature of the funded pension systems provided the political justification for these much needed developments.

Pension fund investment has been directed primarily at government debt and instruments issued by the banking sector. These markets have benefited the most from the stability of pension fund investment. On the other hand, their contribution to the development of the corporate bond and stock markets has been rather muted. Except in Peru, pension funds invest less than one fifth of their assets in such assets. Only in Chile, which has the most mature system, is there some evidence of a positive, causal relationship between pension fund investment and stock market liquidity.

The near future of capital markets is also likely to look different in Chile than the other Latin American countries. Chile has introduced individual choice in pension fund investment and has liberalised its voluntary retirement savings system. These changes are likely to create more diversity in preferences and choice of investment and may therefore help revitalise capital markets. Unfortunately, and as discussed in Chapter 3, individual choice is ill-advised for pension assets covered by state guarantees. Other Latin American countries should only consider introducing individual choice for those assets not covered by such guarantees.

Another challenge for policymakers is how to promote investment in small companies and infrastructure projects while

balancing this goal with prudential and liquidity concerns. Pension funds currently invest in the companies that are in least need of financing, being also able to tap the international capital markets. Investment restrictions by risk and ownership concentration limits may have to be relaxed in order to promote investment in venture capital, real estate, and infrastructure. At the same time, the accounting and risk rating standards applied to the securities that are backed by these assets should be strengthened in order to permit an assessment of companies or projects that at best have a short and bumpy track record.

BIBLIOGRAPHY

- AIOS (2002), *Boletín Estadístico Número 8*, December 2002.
- Baker, D. and Weisbrot, M. (2002), *The Role of Social Security Privatization in Argentina's Economic Crisis*, Center for Economic and Policy Research.
- Beck, T., Demirguc-Kunt, A., and Levine, R. (1999), A new Database on Financial Development Structure, mimeo.
- Beck, T. and Levine, R. (2001), *Stock Markets, Banks, and Growth: Correlation or Causality*, mimeo, July 2001.
- Blommestein, H. J. (1997), *Institutional Investors, Pension Reform, and Emerging Securities Markets*, Inter-American Development Bank, Office of the Chief Economist, Working Paper Series no. 359, Washington, D.C.
- Blommestein, H. J. (1998), "Impact of Institutional Investors on Financial Markets", in *Institutional Investors in the New Financial Landscape*, OECD, Paris.
- Bodie, Z. (1989), *Pension Funds and Financial Innovation*, NBER Working Paper 3101, September 1989.
- Catalan, M., Impavido, G. and Musalem, A. B. (2000), *Contractual Savings or Stock Market Development: Which Leads?*, Pension Primer Paper, The World Bank, Washington, D.C.
- Corsetti, G. and Schmidt-Hebbel, K. (1991), "Pension Reform and Growth", in S. Valdes-Prieto (edited): *The Economics of Pensions: Principles, Policies, and International Experience*, Cambridge University Press.
- Cuesta, J., Holzmann R., and Packard, T. (1999), "Extending Coverage in Multi-Pillar Pension Systems: Constraints and Hypothesis, Preliminary Evidence and Future Research Agenda, paper prepared for The World Bank Conference *New Ideas about Old-Age Security*, September 14-15, 1999.
- Davis, E. P. (1998), "Regulation of Pension Fund Assets", in *Institutional Investors in the New Financial Landscape*, OECD, Paris.
- Davis, E. P. (2001), *Institutional Investors, Corporate Governance, and the Performance of the Corporate Sector*, mimeo.

- Demirguc-Kunt and Levine, D. (1999) Bank-based and Market-based Financial Systems: cross-country comparisons. The World Bank, mimeo.
- Eyzaguirre, N. and Lefort, F. (1999), “Capital Markets in Chile: A Case of Successful International Financial Integration”, in *Chile: Recent Policy Lessons and Emerging Challenges*, WBI Development Studies. Ed. G. Perry and D. M. Leipziger.
- Faccio, M. and M. A. Lasfer (2001), *Institutional Shareholders and Corporate Governance: The Case of UK Pension Funds*, Center for Research on Pensions and Welfare Policies Working Paper 11/01.
- Fischer, B. (1998), “The Role of Contractual Savings Institutions in Emerging Markets”, in *Institutional Investors in the New Financial Landscape*, OECD, Paris.
- Gallego, F. and Loayza, N. (2000), Financial structure in Chile: Macroeconomic Developments and Microeconomic Effects, Presented at the Conference “Financial Structures and Economic Development”, World Bank Feb 10-11, 2000.
- Hernández, L. and Walker, E. (1993), *Estructuras de financiamiento corporativo en Chile (1978-1990)*. Estudios Públicos No. 51, Centro de Estudios Públicos, pp. 87-156.
- Holzmann, R. (1997), “Pension Reform, Financial Market Development, and Economic Growth: preliminary Evidence from Chile”, *IMF Working Paper WP/96/34*, Washington, D.C.
- Iglesias, A. (1998), “The Impact of Pension Reform on Capital Markets: the Chilean Experience”. Presented at the Conference *Capital Market Development in Emerging and Transition Economies: Trends and Challenges*, Washington, DC: USA.
- Impavido, G., Musalem, A. R., and Tressel, T. (2001a), *Contractual Savings, Capital Markets, and Firms’ Financing Choices*, The World Bank, mimeo.
- Impavido, G., Musalem, A. R., and Tressel, T. (2001b), *Contractual Savings Institutions and Banks’ Stability and Efficiency*, The World Bank, mimeo.
- Impavido, G., Musalem, A. and Vittas, D. (2002), *Contractual Savings in Countries with a Small Financial Sector*, The World Bank, mimeo

- International Insurance Council (1998), *Latin America: An Insurance Reference Guide*, Washington, D.C.
- James, E., Ferrier, G., Smalhout, J., and Vittas, D. (1998), *Mutual Funds and Institutional Investments: What is the Most Efficient Way to Set Up Individual Accounts in a Social Security System?*, paper presented at NBER Conference on Social Security, December 1998.
- Karpoff, J. M., Malatesta, P. H., and Walkling, R. A. (1996), "Corporate Governance and Shareholder Initiatives: Empirical Evidence", *Journal of Financial Economics* 42, pp 365-395.
- Laboul, A. (1998), *Private Pension Systems: Regulatory Policies*, Ageing Working Paper 2.2, OECD: Paris.
- Laporta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. W. (1998), "Law and Finance", *Journal of Political Economy* 106(6), pp. 1113-1155.
- Lefort, F. and Walker, E. (2000a), *Pension Reform and Capital Markets: Are There Any (Hard) Links?*, Working Paper, Universidad Católica de Chile.
- Lefort, F. and Walker, E. (2000b), "The Effects of Economic and Political Shocks on Corporate Governance Systems in Chile", *Revista ABANTE*, Vol. 2, No. 2, pp. 183-206, October/April 2000.
- Levine, R. (1997), "Financial Development and Economic Growth: Views and Agenda", *Journal of Economic Literature* 32(2).
- Levine, R. and Zervos, S. (1998), "Stock Markets, Banks, and Economic Growth", the *American Economic Review*, June, pp. 537-558.
- Nesbitt, S. L. (1994), "Long Term Rewards from Shareholder Activism: A Study of the CalPERS Effect", *Journal of Applied Corporate Finance*, No. 6, pp. 75-80.
- OECD (1997), *Insurance Guidelines for Economies in Transition*, Centre for Co-operation with the Economies in Transition, OECD, Paris.
- OECD (1998), *Maintaining Prosperity in an Ageing Society*, OECD, Paris.
- OECD (1999), *Institutional Investors' Statistical Yearbook 1998*, OECD, Paris.

- Queisser, M. (1998a), *The Second Generation Pension Reforms in Latin America*, OECD Development Centre Study, OECD, Paris.
- Queisser, M. (1998b), *The Role of Pension Funds in the Stabilization of the Domestic Financial Sector*, mimeo, the World Bank.
- Queisser, M. (1999), *Pension Reform: Lessons from Latin America*, OECD Development Centre, Policy Brief No. 15, OECD, Paris.
- Ramos, J. (1999), *La Experiencia de las Administradoras de Fondos de Pensiones en el Financiamiento de las Empresas a través del Mercado de Capitales en el Perú*. Mimeo, AFP Integra, Perú.
- Reisen, H. (1997), *Liberalising Foreign Investments by Pensions Funds: Positive and Normative Aspects*, OECD Development Centre Technical Paper, No. 120, Paris
- Rojas, E. (1999), *The Long Road to Housing Reform. Lessons from the Chilean Experience*. Inter-American Development Bank, Sustainable Development Department Best Practices Series.
- Rubalcava, L. and Gutierrez, O. (2000), *Políticas para canalizar mayores recursos de los fondos de pensiones hacia la inversion real en México*, Serie Financiamiento del Desarrollo no. 99, United Nations.
- Salomon Smith Barney (1998), *Private Pension Funds in Latin America*, Salomon Smith Barney Latin America Equity Research, December 1998.
- Schmidt-Hebbel, K. (1998), "Does Pension Reform Really Spur Productivity, Saving, and Growth?", Documento de trabajo 33, Banco Central de Chile.
- Shah, H. (1997), *Towards Better Regulation of Private Pension Funds*, PRE Working Paper No. 1791, World Bank, Washington, D.C.
- Skully, M. and Vittas, D. (1991), *Overview of Contractual Savings Institutions*, World Bank, WPS, No. 605, Washington, D.C.
- Smith, M. P. (1996), "Shareholder Activism by Institutional Investors: Evidence from CalPERS", *Journal of Finance*, No. 51, pp. 227-252.
- Srinivas, P.S. and Yermo, J. (1999), *Do Investment Regulations Compromise Pension Fund Performance?: Evidence from Latin America*, Latin

America and Caribbean Region Viewpoint Series, World Bank, Washington, D.C.

Srinivas, P.S. and Yermo, J., *International Diversification by Latin American Private Pension Funds: Issues and Prospects*, World Bank, Washington, D.C., forthcoming.

Uthoff, A. (1998), *Pension Funds, the Financing of Transition Costs and Financial Markets Development: Lessons from the Chilean Privatization Reform*, ECLAC, 26 June 1998.

Vittas, D. (1998a), *Regulatory Controversies of Private Pension Funds*, PRE Working Paper, No. 1893, March. Washington, D.C.: World Bank

Vittas, D. (1998b), *Institutional Investors and Securities Markets: Which Comes First?*, paper presented at the ABCD LAC Conference, June 28-30, 1998, San Salvador, El Salvador

Vittas, D. (1999), *Pension Reform and Financial Markets*, Harvard Institute for International Development Discussion Paper No. 7, Harvard University.

Wahal, S. (1996), "Pension Fund Activism and Firm Performance", *Journal of Financial and Quantitative Analysis*, 31, 1-23.

Walker, E. (1998), *The Chilean Experience Regarding Completing Markets with Financial Indexation*, Documentos de Trabajo del Banco Central No 29, April 1998.

Woidtke, T. (2001), *Agents Watching Agents? Evidence from Pension Fund Ownership and Firm Value*, Texas A&M University working paper.