

financiamiento del desarrollo

Pension funds and the financing productive investment

**An analysis based on Brazil's recent
experience**

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Abstract

This paper analyzes the recent development of pension funds in Brazil in the 1990s (and especially in the second half of this decade). It draws lessons from Brazil's recent experience to assess the potential of these institutions as suppliers of funds to productive investment and to discuss policies that could possibly enhance and make effective this potential.

It concludes that pension fund reforms are important potential suppliers of long-term non-inflationary financing to productive investment. Low inflation and sustained macroeconomic stability are important (even necessary conditions) for the enhancement of this. But they do not seem to be a sufficient condition. In economies where capital markets are shallow and/or inherently volatile, additional institutional and regulatory arrangements need be created in order to stimulate the channeling of long-term funds of pension funds towards the acquisition of newly issued corporate securities.

There seems to be a wide variety of possible regulatory and institutional arrangements, and in this paper we explore one of them.

Introduction

Private pension funds in Brazil were first regulated in 1977, but it was not until the 1990s that they began assuming a prominent role in the Brazilian financial system. Given the size of its current portfolio (over US\$ 90 billion and more than 12% of GDP in December 1998), how these institutions allocate the portfolio does have important impact on different financial markets and on the flows of funds to different economic agents.

In most developed economies, pension funds play a significant role in the provision of long-term funds to the corporate sector. The mechanisms through which this intermediation takes place vary significantly (Table 1): in those economies where capital markets are robust and large (for instance in the United States), pension funds acquire, directly or indirectly, long-term securities, stimulating simultaneously the primary and secondary capital markets. In developed economies dominated by universal banks, pension funds acquire long-term bonds (certificates of deposits, for instance) issued by banks, allowing the latter to provide their corporate clients with loans with different maturities.

This has not been the reality in most developing countries. In Brazil, specifically, pension funds had, until recently, a minor role as providers of long-term funds to productive investors, as most of their resources were directed to the financing of public debt and the acquisition of real assets, such as real state. This behaviour, as we shall argue in this paper, has to do with at least five aspects of the Brazilian macroeconomy and the functioning of its financial markets:

- ✓ High inflation and macroeconomic instability, which led to highly uncertain financial environment and to *short-termist* behavior of most financially surplus units in the country;
- ✓ High levels of public debt, financed by issuance of highly remunerated government bonds;
- ✓ The existence of relatively easy access (for large companies) to long-term, subsidized credit from public institutions
- ✓ Too much volatility of asset prices both in the short and medium run, which makes institutional investors reluctant to invest;
- ✓ The lack of appropriate regulatory arrangements and institutions to stimulate the direct acquisition of corporate securities by pension funds, or to channel their savings towards the financing of productive investment.

Table 1
PORTFOLIO DISTRIBUTION OF PENSION FUNDS IN SELECTED COUNTRIES 1990
(Percentage)

Country	Sight and other bank deposits	Bonds	Loans	Real state	Stock
United Kingdom	7	14	0	9	63(70) ^a
USA	9	36	0	na	46(48)
Germany	2	25	36	6	18(18)
Japan	3	47	13	2	27(27)
Canada	11	47	0	3	29(38)
Sweden	3	84	10	1	1
Switzerland	12	29	14	17	16
Denmark	1	67	1	na	7
France	na	na	na	na	(20)
Australia	23	20	na	16	27
Memo: Italy	21	45	1	32	2

Source : Rabelo (1997: 39). Obs: (a) 1994 data; na= not available.

In the 1990s, Brazil's financial system, as well as its macroeconomics, went through significant changes, stimulated by shifts in domestic regulation, external liberalization and the achievement of price stability in mid-1994. These changes created a new macroeconomic environment (of low inflation and rapid growth of the securities market) and a new regulatory setting in which pension funds operate. Even though this new environment proved to be a necessary condition for asset diversification and for the widening of the maturities of assets held by pension funds, it was insufficient to fully explore the potential of these institutions as suppliers of long-term financing to productive investment. In this paper, we claim that further regulatory changes and institutional building are required, and we explore one possible set of policies to achieve this goal.

The article is organized as follows: in the section II we show that, theoretically, pension funds should have a crucial potential role in the financing of long-term investment. Section III analyses the recent evolution of Brazil's macroeconomy and financial systems. This section should provide the reader with an understanding of the new macroeconomic and regulatory environment surrounding the pension funds in the 1990s – which, we believe, does explain in a significant way their behavior in allocating their portfolio. In section IV we discuss how pension funds evolved, and attempt to interpret this evolution bearing in mind the theoretical framework developed in section II and the macroeconomic and regulatory environment as described in section III. Section V discusses some possible policies toward the enhancement of pension funds as suppliers of long-term financing to productive investment. Section VI summarizes our findings and concludes the paper.

II. The theory briefly revisited

In the 1990s pension privatization assumed a prominent role in the economic and political debate in Brazil. As in many other developing countries, the political arguments favoring such reforms were twofold:

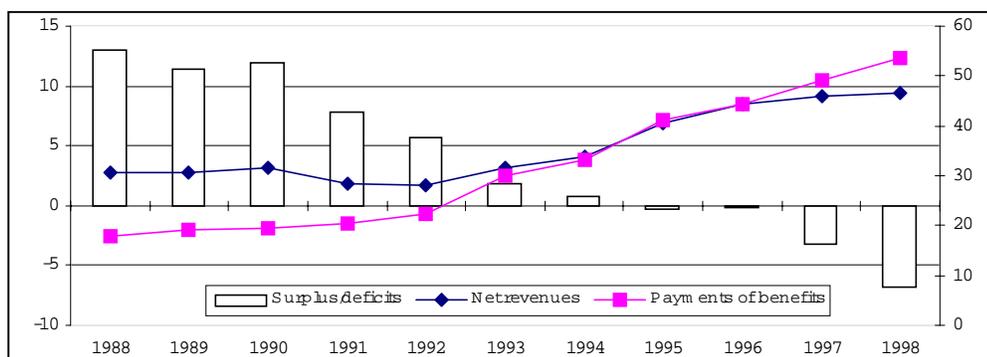
- ✓ The virtual bankruptcy of the existing public pension system in the context of increasing fiscal disequilibria and the search for fiscal balance;
- ✓ The dominant view that private pension funds would increase aggregate private saving, improve savings mobilization and thus allow for a rise of aggregate investment and growth.

The bankruptcy of Brazil's public social security is easily shown by plotting the net revenues of the national institute of social security (INSS) against the payments of pensions (see figure below).

The reasons for such a poor performance varies considerably, from the significant increase in payments implied by the reform of the system as determined by the 1988 constitution (see Ornélas, 1999: 4-6) to the rise of unemployment, especially from 1995 onwards.

This deterioration of the public pension system led to the growth of private pension funds, for at least two reasons. First, because the government did stimulate, through different changes in regulation (as will be seen below) the expansion of private pension funds. Secondly because it led to a subsequent deterioration of the benefits offered by the system, simulating those that could afford it to search for complementary private pension scheme.

Figure 1
**BRAZIL: INDICATORS OF THE DETERIORATION OF THE PUBLIC PENSION
 FUND SYSTEM (INSS) IN THE 1990S**



Source: Ornélas (1999: 5).

One thing is to recognize the immediate need to reform the public pension system. Another is to assert that a change from a public system leads to externalities that improve the macroeconomic performance and the chances of sustainable development. As mentioned above, two main arguments are normally put forth: (i) the growth of pension increases the private aggregate saving; (ii) it improves the allocation of savings, stimulates the growth of a private long-term sources of investment finance.

Whether the growth of pension funds can or cannot increase aggregate saving and investment is a polemical matter. Supporters of such pension privatization, sometimes using (quite simplistic) microeconomic models, such as those based on life cycle hypothesis of saving and consumption, argue that public systems - in general pay-as-you-go, defined benefit systems - discourages saving. Whereas fully funded pension, defined contribution systems are likely to stimulate savings (e.g. Barro, 1974 and Ott, 1998). Many others (e.g. Studart, 1998; Uthoff, 1998), point to the fact that privatization would redirect savings from public pensions to private pensions, without *per se* increasing aggregate saving. Although we recognize the importance of this specific debate, it is outside the scope of this paper.

Most economists however seem to agree that the evolution of pension funds and the way they allocate their portfolio (for instance, whether in government bonds or in private securities, or in short-term or long-term assets) does matter for the financing of productive investment and growth. Reasonable as this statement may seem, the role of institutional investors in the financing of productive investment is seldom neglected by both orthodox and heterodox economists. Further analysis of this role seems in order.

A. Financial liberalization versus institutional building

Traditional macroeconomic approach in the 1950s and 1960s departed from the Keynesian conclusion that, from a macroeconomic point of view, investment determines aggregate saving. "The" interest rate only matters, as determinant of the level of investment, and saving is merely a residual of the income multiplier process. Paradoxically this view also reduces the interest on the role of institutional investors and the myriad of different institutions and markets which represents the way through which productive investment is actually financed. The policy conclusion derived from this view is, naturally, that the only financial requirement for a sustainable growth of

investment is the provision of credit to investors at sufficiently low “interest rates” - no matter how this provision is organized.

From then on, macro and finance theories have made a U-turn. Conventional finance theory returned to the view that prevailed in pre-Keynesian era, that aggregate saving and investment were independently determined. Accordingly, it became the dominant view that the supply of loanable funds with different maturities is directly determined by either individuals’ time preference or by their risk aversion, or both, and therefore total saving is simply the aggregate of the outcome of these decisions. The demand for these funds reflects the marginal productivities of corporate sector investments of different maturities. If these markets were *perfect* - by that meaning that information is perfectly distributed between savers and investors - the *time structure of interest rates* would clear investment and saving at different maturities.

One of the astonishing consequences of such a U-turn in macroeconomic theory has been that, from the purely theoretical viewpoint, financial institutions, whether banks or non-banks play no *essential* role in the financing of productive investment. Add to this view the *Modigliani-Miller Theorem*,¹ and little is left for the theoretical interest on the institutional framework through which investment is actually financed. It is not surprising then that, as regards developing economies, after the seminal works by Shaw (1973) and McKinnon (1973) many thought that the best policy towards increasing saving and investment is actually a “no-policy”. That is, if a perfect market exists, policies towards financial liberalization² should be the only policy needed, and the best way to achieve higher levels of saving and of investment (see e.g. Shaw, 1973 and McKinnon, 1973). Whether savers intermediate their saving through pension funds, directly through capital markets or banks, does not matter so much.

Regarding pension funds, the logical conclusion of this approach is that, if pension funds are freer to search for higher returns on their investment, in a competitive environment this would generate higher aggregate saving and investment.³ The policy conclusion towards this sector should thus be limited to speeding up social security reforms and to improve the supervision of private pension funds, providing more transparency (and thus reducing the informational problems which render financial intermediation imperfect). Hence, the mere change from a defined-benefit, pay-as-you-go public pension system towards a defined-contribution, fully funded private system would enhance aggregate saving (and investment) and improve the allocation of saving.⁴

The evidence seems to indicate that both financial liberalization and neo-Keynesian approaches miss the importance of the financial structure in the process of productive investment financing, leading to incorrect policy conclusions. On the one hand, and in contrast to the mainstream view, several experiences of financial liberalization - which in theory would render financial intermediation more flexible, and markets more efficient - and of high real returns on

¹ The Modigliani & Miller (1958) theorem showed that the capital structure is irrelevant for investment decisions, in a perfect capital market - that is, a complete market where information is symmetrically distributed. From a macroeconomic perspective the *irrelevance theorem* implies that the structure of financial systems is irrelevant to the total supply of long-term funds to investing companies.

² By allowing interest rates to fluctuate according to market forces and reducing “frictions” in the process of financial intermediation (such as selective credit policies) -

³ Some representative articles in this conventional approach to social security reforms, and the role of pension funds, as Feldstein (1974; 1980), Barro (1977) and Arrau & Schmidt-Hebbel (1993).

⁴ Of course, even those economists that share this optimistic long-term view (on social security reforms and on the role played by pension funds) point to problems of transition from one system to another. For instance the initial fiscal burden and the need for improved supervision are often recognized - see for instance, Ott (1997). The analysis of these caveats, and the debate on social security reforms, goes beyond the scope of this paper.

financial assets, did not lead to higher levels of aggregate saving and investment.⁵ On the other hand, analysis of the institutional mechanisms through which investment is financed in different economies does show that *the way investment is financed and savings are allocated* does matter on the financial stability and sustainability of growth.⁶

The more recent literature on market failures and the need for institutional building in order to improve market intermediation in the process of investment financing, lies between these two extreme views. For instance, Stiglitz (1994) emphasizes market failures (and information asymmetries) to show that market allocation of saving in this case can be suboptimal. In Stiglitz's opinion, when such market failures do exist, the State should play a more prominent role in financial markets (a summary of such approach is presented in Arrau, 1994).

Even though this approach claims to be new Keynesian, it departs from a macroeconomic perspective that differs significantly from the earlier Keynesian approach. For instance, saving is still seen as a precondition for investment, and the problem of investment financing lies on possible intermediation failures caused by asymmetric information. Furthermore, no conventional economist would deny that, when markets are imperfect, sub-optimal results are bound to occur. The problem is that in some cases in developing economies market failures do not seem to explain certain distortions in the intermediation of funds to finance long-term productive investment. In most of the cases, the markets and the institutions required for complete intermediation of potential saving do not exist, and there is no evidence that financial liberalization per se leads to the development of such markets and institutions. Government intervention, through selective credit instruments can "fill the gap", but the experience shows that in a significant number of cases this leads to inflationary forms of investment financing and tend to expose governments to unsustainable fiscal burdens.

We claim in this document that there is ample scope for policies to enhance the role of private institutions and markets in order to widen the sources of non-inflationary financing of productive investment – especially if the current trend towards the growth of institutional investors is maintained in the future. In order to assess the possible long-term market-enhancing policies in this case, we must discuss a bit further the problems related to the financing of productive investment in a developing market economy, and the potential role played by pension funds in overcoming these problems.

B. Productive investment: Its risks and financial needs

The problem of maturity mismatching in the process of investment finance can be described stylizing the basic objective functions of the two agents on the final ends of the process of financing productive investment:

1. Productive investors are defined as an entrepreneurs prepared to assume the risks involved in making a long-term commitment of resources (investment), in the expectation that when the investment matures, the demand for the additional output capacity will be enough to generate at least normal (positive) quasi-rents. Assume for instance that the investment will start producing in three years. Until then, all the cash-outflows related to the project are sunk costs, and if resources required to face the cash

⁵ A recent IMF study does seem to corroborate this conclusion; see Schmidt-Hebbel, Servén and Solimano (1996).

⁶ On this, see *inter alia* Zysman (1983), Patel (1994), Stiglitz (1994), Studart (1997).

commitments are borrowed, such loans will be repaid only after the investment has matured.

2. Individual surplus units (wealth holders) hold assets of different types for different reasons. They hold liquid assets, for transactions reasons;⁷ less liquid assets, for (i) speculative purposes or (ii) to provide a flow of income after a certain period of time (pension policies, for instance) or due to actuarially expected events (such as insurance policies). However the reason for holding assets, they will attempt to maximize their return, and the liquidity of their portfolio, since part of future expenditures is uncertain and/or because they do not want to risk severe declines in wealth due to unexpected changes in asset prices.

These objective functions are thus symmetrical, both in terms of liquidity and remuneration (a return for the surplus unit and a cost for the productive investor) of their assets and liabilities. The process of investment financing is thus a chain of maturity-matching processes, where different actors shape their liabilities and assets according to the objective functions described above. Financial institutions and markets are the links in this chain and have different objective functions, depending on their areas of intermediation in which they specialize.

In general, financial intermediaries attempt to maximize their future quasi-rents by offering a set of services, from the provision of a payments system (banks) to the underwriting of corporate securities (investment banks). But the main (interrelated) services these institutions provide in the process of financial intermediation are the management of maturity mismatches between their assets and liabilities, and risk management.

The services of managing maturity mismatches and risk management are provided by different institutions in distinct financial structures. For instance in the US capital-market based financial structure which prevailed before the 1980s,⁸ commercial banks specialized in obtaining sight deposits to finance short and medium term loans to both corporate and household sectors.⁹ In turn, investment banks issued medium and long-term certificates to obtain resources to finance the underwriting of corporate securities for a limited period of time. Finally, institutional investors finance long-term assets, obtaining resources directly from long-term investors, in the form of quotas in investment funds or insurance policies.

Notice that each actor in this financial structure - financial intermediaries, final financial surplus units and productive investors - assumes certain risks, represented by the mismatch of the maturities of their assets and liabilities and the quality of their assets.

The first risk involved is that the issuer of the financial asset ceases to be able to repay - the default risk -, which is directly determined by the capacity of borrowers to repay their debts. The default risk is specific to each different company and economic sector, but is also highly related to the macroeconomic environment: almost by definition, the overall default risk is likely to be higher in a stagnant or contracting economy than in a growing economy.

The second risk lies on the possibility that within the period before the maturity, the asset holder will need to sell the asset due to unforeseen expenditures - the liquidity risk. This risk is

⁷ They also face cash commitments, some of which are expected (those related to the payments of outstanding contracts, such as salaries, rents, acquisition of real and financial assets etc.) and some are unexpected

⁸ And which has been going through rapid changes since then.

⁹ Due to the structure of their liabilities, banks are normally suppliers of short-run loans. And, unless there are no significant technical indivisibilities and the maturity of investment is very short, expanding investment leads to higher levels of outstanding debt of the corporate sector.

associated to the degree of organization of the markets of the assets held by the asset holder. Finally, the market value of the asset can change in an unexpected way, rendering the total return on the asset (quasi-rents plus capital gain) negative. This is the capital risk faced by the asset holders.

In a sense then, the maturity-matching chain represents a way through which the risks embedded in the process of financing long-term placements can be socialized. If such chains do not exist, the productive investor would have to restrict the volume of investment to self-financing, leading to a stagnant or low-growth economy.¹⁰

In rapid growing economies, the existence of chain of maturity matching provides productive investors with ampler access to financing (investment finance), and it may also avoid widening discrepancies between maturities of liabilities and assets, mitigating the rise of both final lenders and final borrowers risks (investment funding).¹¹

For instance, if one single type of financial intermediary existed, let us say, a commercial bank, then the risks involved in the process of managing maturity mismatches would be concentrated either in this financial intermediary or the productive investor. In the first case, this intermediary would have to be prepared for provide long-term credit to finance corporate investors. In the second case, the productive investor would have to assume “the risks” of financing productive investment with short-term credit. In either case, both players would be highly vulnerable to unexpected changes in credit conditions (supply of credit and interest rates) until the productive investment matured and the credit were finally repaid.

Therefore in economies where such chains are not properly developed,¹² growth, especially rapid growth, should be accompanied either by increased financial vulnerability of the banking sector and/ or by rapid “congestion of the short-term loan market”.¹³ The existence of markets and institutions, private or public, which provide mechanism for *funding* – i.e. the transformation of additional short term savings generated in the process of growth into long term sources of *funding* - is therefore a necessary but not sufficient condition, for a financially sustainable process of growth and development.

This leads to the final part of our reasoning: pension funds, as potential providers of long-term funds thus may play a crucial role in this chain of maturity matching, facilitating investment and avoiding financial fragility and instability in growing economies.¹⁴ This role is very much dependent on the way they allocate their financial surpluses, which in turn is very much influenced by the macroeconomic environment, regulation of financial institutions and markets and the volatility of asset prices. Before we analyze how these affect the behavior of pension funds, we must discuss how the process of managing maturity mismatches normally takes place in financial structures that differ from the Anglo-Saxon paradigm. That is, in credit based financial structures.

¹⁰ This point is discussed in Studart (1995: ch. 3).

¹¹ On the distinction between *investment finance* and *investment funding*, see Studart, 1995-6.

¹² Where, for instance, banks are the only financial intermediaries in monetary economies - which is the case of most developing economies (more on this below).

¹³ This partly explains why in some fast growing economies with bank-dominated financial markets banks tend to operate with dangerously high leverages.

¹⁴ This reasoning is the basis of the concept of functionality (Cf. Studart, 1995 and Studart, 1995-96) of financial systems (institutions and markets) in the process of productive investment financing. This concept will be central to our analysis of the potential role played by pension funds in economic growth and development. A financial system is functional to economic development when it produces sustainable mechanisms to finance and fund productive investment with different risk and maturity profiles. That is, if it provides productive investors with funds of different maturities and for different needs at a minimum cost with the minimum possible increase in financial fragility and other imbalances that may halt the process of growth for purely financial reasons.

C. Risk management in credit-based financial structures and the (potential) role of pension funds

Financial structures differ widely in different countries. However, much influenced by the British and American economic history, financial theory normally assumes the existence of capital market-based segmented markets (MBFS, hereafter), where capital markets have an important role in providing entrepreneurs with long-term funds. This bias can lead to distortions when the analysis is applied to other economies rather than the USA or UK.

Most developing economies possess credit-based financial systems (CBFS hereafter), with little segmentation of financial intermediaries, underdeveloped asset markets and predominance of either private universal banks or public financial institutions as suppliers of medium and long-term credit. CBFS can be quite functional in financing accumulation and sustaining growth, but they also do tend to have vulnerabilities. In order to understand these, we must remember that, due to the structure of the liabilities of deposit-taking institutions (commercial banks, mainly), they are usually suppliers of short-term loans. Under such circumstances, as was mentioned¹⁵, expanding investment usually leads to higher levels of outstanding debt of the corporate sector.

CBFS have then important, intrinsic characteristics: **first**, in these systems, medium and long-term credit, especially coming from private banks, tend to be rationed in moments of growth. This also explains why in emerging economies with such financial systems development banks emerged generally accompanied by selective credit policies, and that curb credit markets tend to flourish in periods of rapid expansion. A **second**, interrelated, characteristic of CBFS is that growth, especially rapid growth, is usually accompanied by increasing financial vulnerability of the banking sector as well as the investing corporate sectors. That is because investing firms that do not have access to rationed middle and long-term credit must self-finance their investments, or simply to borrow short to finance long-term positions. **Investment finance schemas in such an institutional environment are thus very vulnerable to changes of financial price assets, and especially in interest rates.**

D. Main determinants of portfolio allocation of pension funds

In CBS structures, the role of pension funds as providers of long-term funding to productive investment is traditionally limited. Not only the supply of long-term securities is limited (normally dominated by government bonds), but also the incentives to acquire them are weak.

However, due to the profile of their liabilities - which are by definition long-term - pension funds are potential buyers of long term securities, and thus *potential* providers of funding in the process of financing productive investment.¹⁶ As any other wealth holder, pension funds will demand long-term securities if, and only if, they present characteristics of long-term return and risk that are compatible with the assets structure. These characteristics are determined by three main factors: (i) macroeconomic environment; (ii) market organization and (iii) asset prices volatility. The diagram below (Figure 2) describes these factors and their effects on the behavior of pension funds.

The macroeconomic environment affects how different actors, financial institutions and the market, perceive the risks of maturity mismatching and adopt strategies that are consistent with

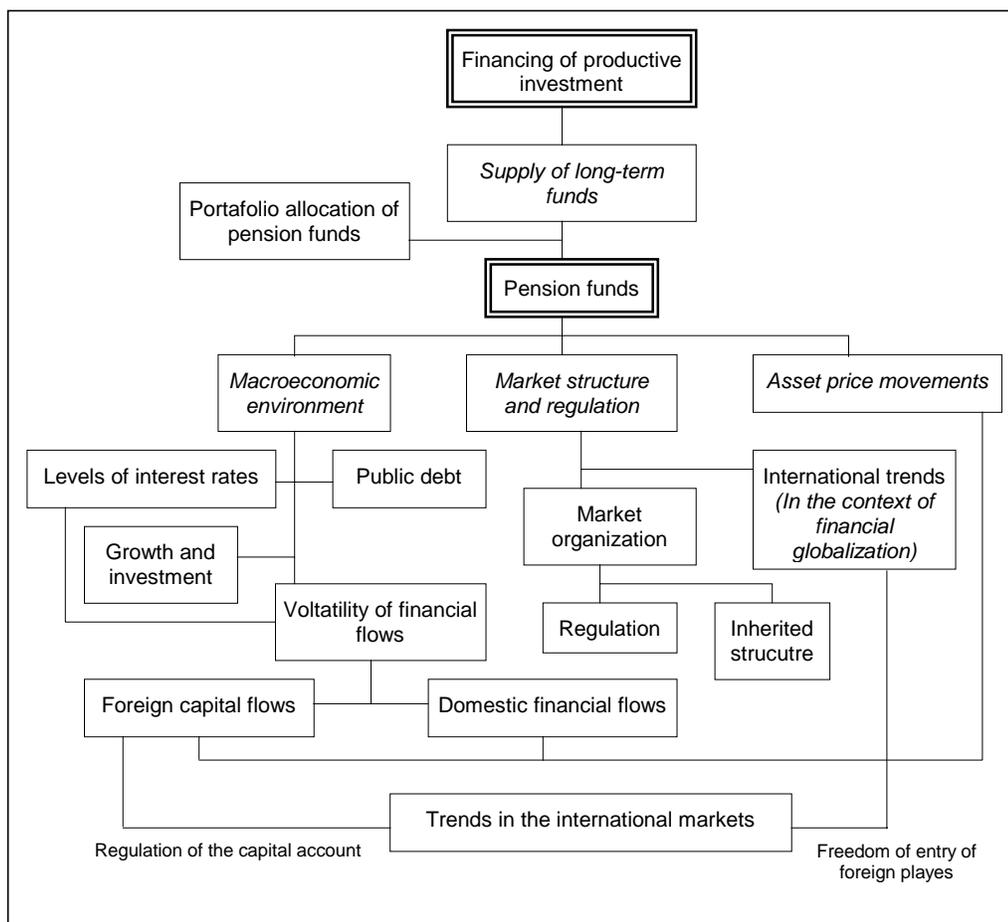
¹⁵ See footnote 9.

¹⁶ We have highlighted “potential”, since the way their portfolio is allocated depends on to the environment in which they operate.

these perceptions. High inflation for instance destroys the attributes of store of value of any domestic currency denominated asset, which leads to their flight towards assets denominated in other units of account - either foreign hard currencies and/or formal or informal indexes.¹⁷ Output instability (i) reduces the expected quasi-rents of securities and (ii) creates a highly uncertain environment for investors, increasing capital risk - leading them to short-term applications. Finally, the financial openness determines how changes in asset allocation will determine financial flows into and within the economy - and how this affects portfolio allocation depends on whether these flows have a stabilizing or destabilizing effect on the volatility of asset prices.¹⁸

Figure 2

MACROECONOMIC, REGULATORY AND MARKET DETERMINANTS OF THE PORTFOLIO ALLOCATION OF PENSION FUNDS



In addition, the development of long-term securities markets is jeopardized by macroeconomic instability - especially if this instability reduces the returns on real assets and/or increases the volatility of asset prices. In turn, the underdevelopment of long-term securities market leads a problem of hysteresis: shallow asset markets tend to be highly responsive to abrupt changes

¹⁷ Cf. Guidotti & Rodriguez (1991).

¹⁸ See Held, 1994.

in financial flows to them, which increases their volatility and enhance the short-termist drive of those that participate in these markets.¹⁹

The market organization can be described by the diversification and depth of asset markets and the regulation which limits the actions (and established penalties for transgression) of main players in these markets.²⁰ Finally, the volatility of asset prices has an important influence on portfolio choices of pension funds. We have mentioned that speculative and volatile environments are little attractive to long-term financial investors - as they increase the risks involved in managing maturity mismatching (especially liquidity and capital risks). In addition such an environment also leads productive investors to be more reluctant to issue negotiable securities - especially shares - because underwriting processes are costly and time taking, and there are risks, in an highly volatile asset market, that the price obtained by such issuance could be lower than expected. In sum, speculative and volatile environments are little attractive to long-term investors, and this unattractiveness perpetuates the underdevelopment of such markets.²¹ Thus, market volatility also tends to affect long-term strategies of the pension funds.

In sum, it is very likely that all asset-holder's, and specifically pension funds, behaviors will be influenced by the macroeconomic, regulatory and market environments. This leads us to starting our analysis of pension funds in the 1990s with a brief discussion of the main changes in these environments and how they have affected the asset allocation of different financial institutions.

¹⁹ More on the relation between asset prices volatility and long term development of capital markets below.

²⁰ Even though policy-makers have ample degrees of freedom in determining the regulation of domestic financial system, financial openness determines that such regulation converges to the "accepted rules" in international financial markets.

²¹ As shown elsewhere (Stuart, 1995), in Brazil this above assertion seems valid: given the environment of overall price and output volatility in the postwar period, capital markets never developed even though the process of rapid growth and development required significant volumes of long term finance.

III. The macroeconomic and regulatory environment surrounding pension funds in the 1990s

In many ways the structure which dominated Brazil's financial landscape – as well as the financial systems of many other developing economies - was shaped to provide long-term financing to the private and public corporate sector, within a state-led, import-substitution development (IS hereafter) strategy. In this previous pattern of development financing, public (federal and state) commercial and development banks had a central role intermediating fiscal and compulsory savings to long term investment in fixed capital. Inflation was traditionally an important source of financing both for government, in the form of inflation tax, and of self-finance for investing companies - especially for those with strong market power and capacity to increase mark-ups rapidly. Finally, the role of private financial institutions was limited to short-term loans (a significant part of which directed to the government) and the intermediation of the foreign saving.

In the 1990s not only the IS strategy has been abandoned, but also the size and scope of action of the public financial sector has been significantly reduced. This was partly due to the financial crisis of both federal and state governments -and hence of their commercial and development banks- and, partly to a policy explicitly meant to reduce the role of the State in different aspects of economic

development. In addition, price stability, achieved in Brazil in 1994, almost by definition limited the role of inflation in the financing of investment, and required the expansion of non-inflationary, private sources of financing for both public and corporate sector.

Therefore, in the 1990s, Brazil's financial system, as well as its macroeconomics, went through significant changes, stimulated by shifts in domestic regulation, external liberalization and the achievement of price stability in mid-1994.

Three important regulatory shifts in Brazil have marked the development of Brazil's financial system in the early-1990s (Hermann & Studart, 1999):

- ✓ External liberalization, begun in 1987²²;
- ✓ The banking reform in 1988 and government programs to restructure the banking sector, after the banking crisis in 1995;
- ✓ The de facto increased flexibility of regulations concerning investment funds and other institutional investors, and the participation of existing, and the entry of new, foreign players, in Brazil's financial system.

As regards the macroeconomic environment, the main characteristics shaping the financial systems were:²³

- ✓ The resumption of capital inflows from 1992 onwards (Table 2, row 4.5), a substantial part of which in the form of flows to investment funds and to securities markets, which lead to a rapid growth of prices of securities (row 1.7) and the appreciation of the *Real* (row 2.3);
- ✓ The success of the *Real Plan* in reducing inflation dramatically from July 1994, onwards (row 2.1);²⁴
- ✓ The rapid deterioration of the balance account, mainly due to the rise of imports (row 4.1);
- ✓ The maintenance of high real interest rates through the period, both in domestic prices (row 2.5) and in dollar terms (row 2.6), in order basically to attract the capital flows necessary to finance the growing current account deficit;²⁵

²² Another significant regulatory change took place in 1994, with Brazil's acceptance of the Basle Agreement capital adequacy ratios to banks. Albeit an important issue, because it leads to questions of financial stability, due to space limitation we leave this discussion for a future paper.

²³ The data behind these the stylized facts described below can be found in Table 2. We will mention the rows of this table, which represent each macroeconomic development described.

²⁴ The Plan was a four-stage program. In the first stage, a fiscal adjustment program was implemented in order to reduce demand pressure as the economy was stabilized. In a second stage, a super-indexation mechanism was introduced as means of creating a stable set of relative prices using the index (URV) as the unit of account. In the third stage, a monetary reform replaced the Cruzeiro Real, the old currency, for the Real – which in fact transformed the URV in the unit of account. The fourth stage comprises the “management” of stability, which required the avoidance of strong disequilibria between aggregate demand and supply. There is now an abundant literature on the *Real Plan* - see *inter alia* Studart and Kupfer (1998) and IMF (1998a), and Sáinz & Calcagno (1999) - and therefore here we will only describe the macroeconomic features of the Brazilian economy after July 1994 which directly relate to our analysis hereafter.

²⁵ Notice, however, that the growth of capital inflows surpassed the needs of financing the current account. This in turn resulted in growth of international reserves, and then to the initial appreciation of the *Real*, an appreciation which was maintained until January 1999 - when the *Real* was abruptly devalued - despite the government policy to gradually devalue the *Real* in real terms.

- ✓ The rapid growth of government debt (row 3.4), in a significant way determined by the interest rate policy and the consequent growth of the nominal deficit (which includes the primary deficit and interest payments) (row 3.3).²⁶

The interaction between these regulatory and the macroeconomic trends led to significant structural changes of the financial sector. Some very distinctive changes were the growth of capital and financial derivatives markets, the more prominent role of foreign financial institutions and domestic institutional investors, especially of investment and pension funds and the privatization of state banks.

Table 2
BRAZIL: MAIN MACROECONOMIC INDICATORS OF THE SECOND HALF OF THE 1990S

	1992	1993	1994	1995	1996	1997	1998
1.0 Level of activity							
1.1 GDP (US\$ billion)	576.00	615.7	667.6	713.3	776.4	804.1	773.8
1.2 GDP (growth rate) (%)	-0.8	4.2	5.9	4.2	2.8	3.7	0.2
1.3 Investment rate (% GDP)	14.0	14.4	15.3	16.6	16.1	17.0	18.0
1.4 Per capita income	3.857.00	4.062	4.343	4.578	4.918	5.029	4.779
1.5 Industrial production (1991=100)	96.30	103.4	111.5	113.3	115.0	119.7	117.3
1.6 Unemployment rate (% PEA – IBGE)	5.8	5.5	5.1	4.6	5.7	5.7	7.6
1.7 Market value of listed companies (R\$ bit)	-	-	160.3	143.5	216.9	255.4	160.9
2.0 Inflation, interest rates and exchange rate							
2.1 Inflation – CPI (INPC, IBGE) (%)	1149.10	2.566.8	868.9	15.2	9.2	7.5	1.8
2.2 Commercial dollar rate (rate of change %)	1059.00	2.532.5	613.4	15.0	6.9	7.4	8.3
2.3 Real exchange index (jul/94=100)	-	-	73.1	81.2	82.1	80.8	84.5
2.4 Nominal Inter-bank interest rate – CDI (%)	-	3.047.3	1.139.9	52.8	27.0	24.6	28.6
2.5 Dollar deflated interest rate – CDI (%)	41.60	19.6	73.8	33.0	18.8	16.0	18.8
2.6 CPI-deflated real interest rate (INPC-IBGE) (%)	31.40	21.6	18.2	25.9	16.4	18.0	26.5
3.0 Government accounts							
3.1 Primary deficit (% GDP)	2.30	2.7	5.3	0.4	-0.1	-0.9	0.0
3.2 Operational deficit (% GDP)	45.40	61.7	50.8	7.5	5.8	5.2	8.0
3.3 Nominal deficit (% GDP)	43.10	59.1	45.5	7.2	5.9	6.1	8.0
3.4 Government consolidated debt (R\$)	-	47.5	108.5	176.2	255.5	323.9	410.5
3.5 Total govt. debt (% GDP)	-	-	-	-	33.3	34.6	46.0
3.6 M4 (% GDP)	25.50	28.3	31.0	36.1	39.9	43.8	48.5
4.0 Foreign sector							
4.1 Trade balance (IS\$ billion)	-	10.47	(3.47)	(5.55)	(8.38)	(6.27)	5.10
4.2 Services (US\$ billion)	-	(14.74)	(18.59)	(21.71)	(27.29)	(28.80)	(29.36)
4.3 Current account (US\$ billion)	-	(1.69)	(18.09)	(24.36)	(33.45)	(33.29)	(22.26)
4.4 Current account (% GDP)	-	-0.3	-2.5	-3.1	-4.2	-4.3	-3.6
4.5 Capital account (US\$ billion)	-	8.70	29.81	32.15	25.53	25.64	17.54
4.6 International reserves (US\$ billion)	-	38.81	51.84	60.11	52.17	44.56	27.11
4.7 Reserves / Imports (months)	-	13.23	12.11	13.29	10.04	9.12	6.78
4.8 Gross external debt (US\$ billion)	-	148.30	159.26	178.13	200.00	234.69	22059
4.9 Gross external debt (%GDP)	-	22.2	22.3	22.9	24.9	30.3	35.8

Source: Banco Central do Brasil. IPEA, Placas Paraná.

²⁶ Evidently this trend was reinforced by the deterioration of the primary surplus, from 1994 onwards, which led to a rising primary deficit until 1998.

A. External liberalization

The “first stage” of external liberalization effectively began in March 1987, when residents living abroad were permitted to invest in Brazil through the constitution of different types of investment funds (Central Bank Regulation 1289). In 1991 this legislation was modified to allow foreign institutional investors to transact with domestically issued bonds and securities (Resolution 1832). Finally, in 1992 Resolution 1289 was further modified to permit the use of Depository Receipts to represent Brazilian securities abroad. The “second stage of liberalization” has to do with opening the Brazilian market to the expansion of existing foreign financial institutions and the entry of new ones (especially banks and investment banks) which happened after 1994.²⁷

Concerning the “first stage” of external liberalization, its effects were only to be felt with the change in credit conditions abroad (Stuart, 1994). From 1992 onwards, capital flows into Brazil began rising rapidly – mainly due to the return of domestic capital fled in the 1980s. The rise of reserves reduced the balance-of-payment constraints, which were so binding in the 1980s, and created room for an exchange rate based stabilization program.

In what regards the domestic financial structure, one important effect of this stage of external liberalization was the stimulus it provided to the growth and deepening of secondary capital markets - as discussed below.²⁸ As regards the “second stage”, its importance has to do with the entry of foreign financial institutions into the Brazilian market. Even though this process has been much more a pragmatic response of the government to the crisis of the banking sector begun in 1995 (see below), their (ongoing and potential) consequences go far beyond the process of mergers and acquisitions which has been taking place within Brazil’s banking system. These consequences have to do with the changes of strategies and operations in the international banks, which, due to competitive forces, may, in some circumstance, be translated into practices of their affiliates in developing economies,²⁹ including their relation with institutional investors such as pension funds.

²⁷ The following quote from IMF (1998b: 87) gives an appropriate description of their evolution after 1994: “the insurance industry grew by about two and a half times since the inception of the *Real Plan*, with total premiums of R\$ 18 billion in 1997. Most of the growth is accounted for by the development of the term life insurance and capitalization products. Several leading international insurance companies have entered the Brazilian market in 1997 ... The number of investment funds has grown from 1,000 in 1994 to almost 3,000 in 1997, following reforms that were enacted in 1995 with a view to increasing the transparency and supervision of fund’s activities. Assets have grown from less than 2 percent of GDP in 1991 to almost 19 percent in 1997, or R\$ 160 billion. At present, there exist about 30 different categories of investment funds, of which 25 are for residents and 5 for nonresidents. The central bank is in charge of the supervision of 17 types of fixed-income funds (funds with more than 51 percent of assets invested in fixed-income securities)... Private pension funds had assets of R\$ 70 billion in 1996.

²⁸ A significant part of the capital flows into Brazil in the 1990s were directed to portfolio investment, the majority of which were the so-called “Anexo-IV”).

²⁹ Financial systems in a significant number of mature economies have changed dramatically in the 1980s and 1990s, as a consequence of domestic deregulation and external financial liberalization. At least four strong trends are observed. First, the borderline between banking and non-banking activities has been blurred in many mature economies. Traditional banking institutions have been transformed into new financial services firms - including those of institutional securities firms, insurance companies, and asset managers. In addition non-bank financial institutions - such as mutual funds, investment banks, pension funds, and insurance companies - now actively compete with banks both on the asset and liability sides of banks’ balance sheets. Second, the growth of capital markets has provided new sources of finance to the corporate sector, a trend that has been highly leveraged by the use of financial derivatives to unbundle risks and securitize. Third, deregulation and growth of institutional investors – specially pension funds and insurance companies – have made their role in the provision of loanable funds more prominent. Finally external liberalization and significant improvements in information technology have increased across-the-border dealings of securities, and internationalization of the financial business. For more detailed description of the changes in the financial systems of mature economies, see *inter alia* BIS (1986), Franklin (1993), Feeney (1994), Helleiner (1994), Bloomenstein (1995) and Stuart (1997). As we shall see, the Brazilian financial system is, albeit slowly, following these trends. And they may have important effects in shaping financial structure and the pattern of development financing. Before we speculate on this, we must discuss how the changing macroeconomic environment in the 1990s affected the behaviour of some key actors in Brazil’s financial structure.

B. Banking reform (1988), crisis (1995-1997) and restructuring of the banking sector

As regards the **banking system**, in 1988, Central Bank Resolution 1524 (dated 21/09/88) authorized previously existing commercial banks, investment banks, finance companies and savings and loans societies to become universal banks – or “multiple banks” as they are known in Brazil.³⁰ The system of chartering (“carta-patente”) was also abolished, and substituted by requirements of minimum capital.

The banking reform had immediate consequences: from 1989 one observes a sharp reduction of commercial banks, investment banks and finance companies, most of which became multiple banks, institutions which were to dominate Brazil’s financial system in the 1990s (Table 3). The importance of this reform lies on the fact that:

- i) It consolidated the overwhelming dominance of universal banks in Brazil’s financial structure, which implied that the strategies followed by these institutions have an increasing importance in shaping the pattern of corporate financing, including the intermediation of funds between productive and institutional investors (Table 4); and
- ii) It enhanced the competition between multiple banks of different sizes. Indeed, one important trend has been the integration, by large multiple banks, of the provision of credit with fee-based services - such as underwriting, capital market advisory, asset management and insurance - and the administration of investment funds. This very much explains how banks reacted to the new challenges posed by the Real Plan, as we shall see next.

During the 1980s banks earned substantial profits from inflationary gains, estimated by IBGE/ANDIMA (1997) by calculating the impact of inflation on nominal assets and liabilities of banks. The rapid fall in inflation rates eroded these and other gains that were only possible in periods of high inflation and in a widely indexed economy.³¹ The abrupt decline of these gains, and the high levels of fixed costs in Brazil’s banking sector, led private banks to initially expand credit – basically towards consumer and commercial credit –, which allowed the boom in the demand for consumer-goods following the Real Plan.³²

The rapid – and sometimes careless – expansion of credit, high interest policy and increasing unemployment provoked a rise of non-performing credit and arrears (**Figure 3**). Due to these, the Brazilian banking system went through severe difficulties in the aftermath of the Real Plan, which prompted a series of central bank interventions meant to avoid systemic risk and to restructure the

³⁰ These universal banks were expected to act simultaneously at least in two of the areas previously covered by the latter four types of institutions.

³¹ For instance: (i) the high spreads provided by intermediation of government debt and (iii) float on basic banking services (bill and tax collection); (ii) the high intermediation spreads due to the constant state of excess demand for credit which is typical of inflationary processes (Carvalho, 1998). It is interesting to note that the intermediation of government debt was practically a risk-free operation for banks. This was due to safety net created by the central bank, known as *automatic zeroing*, which permitted banks, when finding themselves with a larger portfolio of securities it could finance, given the funds at its command, to sell back the excess to the central bank.

³² Domestic demand increased rapidly in the aftermath of the monetary reform. The reasons behind the consumption boom were threefold: (1) the abrupt decline of the inflation gains; (2) the slight increase of real income created the rise of minimum wage during the monetary reform. ; and especially (3) the rapid expansion of consumer and commercial credit, mainly coming from private banks.

private banking system – the PROER.³³ Another program (PROES), introduced in 1997, was directed to the restructuring of the public state financial structures.³⁴ This facility was created by Brazil's Central Bank to provide bridge loans to the federal and state banks in order to speed up their restructuring and in some cases their privatization or liquidation.³⁵

Table 3
NUMBER OF FINANCIAL INSTITUTIONS
OPERATING IN BRAZIL

	June 88	June 98
Multiple banks	5	175
Commercial banks	98	32
Development banks	13	9
Investment banks	49	22
Finance companies	102	50
Leasing companies	54	83
Dealers	259	231
Brokers	419	229
Mortgage finance companies	55	22
Caixas Economicas	6	2
Cooperatives	598	1.167
Funds	394	2.726
Other	522	403
Total	2574	5.151

Source: Banco Central do Brazil.

In sum, the government programs to restructure the banking system (PROER and PROES) were crucial in promoting a significant change in the ownership structure of Brazil's private banks accelerating the wave of mergers and acquisitions that took place in the banking sector after 1994, especially after the first half of 1997. The program also permitted the expansion of the share of foreign institutions in the banking sector, by stimulating take-overs of domestic banks in difficulty by foreign institutions, as indicated in Table 5.

³³ During the first three years of the plan, 40 banks (of the 271 which existed in July 1994) were intervened by the central bank, of which 29 were liquidated, 4 failed, 6 were placed under temporary administration, and one continued to operate. A further 32 banks went through restructuring that resulted in mergers and acquisitions, some of them with government support through the "Program for the Reduction of the Public Sector Involvement in the Banking Sector" - PROER. The IMF (1998a) estimates the number of central bank interventions in the period 1994-97 represent 80% of all interventions made by that institution since it was created in 1964.

³⁴ The public banks in Brazil suffered significant losses with the decline of inflation. First, because they were by far the greatest suppliers of loans of the system (over 75% in the 90s) when inflation gains ceased to exist. And second, because the increase in interest rates and the expansion of primary deficits of States, increased state and municipal debts substantially after 1992 – and public banks are the main financiers of such debts in Brazil. For a more detailed analysis of this process see Studart (1997) and Carvalho (1998).

³⁵ Indeed, under PROES, many large state banks were restructured – such as BEMGE (of the State of Minas Gerais), BANRISUL (State of Rio Grande do Sul) -, were or will soon be privatized – such as BANESPA (State of São Paulo) – or simply liquidated (such as the state banks of Alagoas and Amapá).

Table 4
LOANS OF THE FINANCIAL SYSTEM BY FINANCIAL INSTITUTIONS
(Percentage)

Period	Banking system								Investment Banks	BNDES	Other	Total	
	Total	Bco. Do Brazil	Commercial Banks			Multiple Banks						Public	Private
			Total	Priv.	Publ.	Total	Priv.	Publ.					
1964	80.8	29.5	51.3	nd	nd	-	-	-	-	4.3	10.0	nd	nd
1968	66.6	23.2	43.4	13.0	30.4	-	-	-	5.4	3.4	24.6	66.2	33.8
1972	53.1	19.7	33.4	9.7	23.7	-	-	-	12.6	2.2	32.1	58.0	42.0
1976	50.3	23.3	26.9	9.9	17.0	-	-	-	10.0	6.2	33.5	63.4	36.6
1980	48.8	20.1	28.8	10.7	18.1	-	-	-	10.9	6.5	33.8	62.1	37.9
1984	35.9	9.5	26.3	5.8	20.5	-	-	-	10.0	2.5	51.6	56.7	43.3
1988	46.3	16.2	20.5	2.6	17.9	9.6	9.6	-	4.8	3.0	45.9	66.6	33.4
1989	43.7	9.1	6.9	2.2	4.7	27.7	1.9	25.8	2.1	2.1	52.1	83.2	16.8
1990	61.1	11.9	7.2	3.3	3.9	42.0	6.4	35.6	2.1	3.5	33.3	79.9	20.1
1991	66.5	14.4	7.4	3.2	4.2	44.7	9.4	35.3	1.9	4.7	26.9	79.3	20.7
1992	64.9	14.1	3.8	0.7	3.0	47.0	12.3	34.8	1.8	4.2	29.1	80.5	19.5
1993	74.9	10.5	2.9	0.4	2.6	61.5	17.2	44.3	0.9	3.0	21.2	79.0	21.0
1994	71.1	19.5	3.3	0.4	2.9	48.4	9.9	38.5	0.7	4.5	23.7	86.2	13.8
1995	69.3	18.0	3.6	0.3	3.3	47.7	11.9	35.8	0.6	4.5	25.6	84.8	15.2
1996	73.1	12.8	2.4	2.1	0.3	57.9	25.1	32.8	0.4	4.4	22.1	67.0	33.0
Jun. 1997	75.5	12.2	2.3	2.0	0.3	61.0	21.7	39.3	0.4	3.9	20.2	71.4	28.6
1997	75.7	8.7	2.1	1.9	0.2	64.8	17.9	46.9	0.3	4.5	19.5	75.4	24.6

Source: Banco Central do Brazil.

Table 5
MAJOR MERGERS AND ACQUISITIONS AMONG BRAZIL'S PRIVATE BANKS

	Dec. 94 – Dec. 96	1997	Jan. 98 – Jun 98
Without the use of public funds	12	12	9
Of which foreign	3	9	5
With the use of public funds (PROER)	6	1	0
Of which foreign	0	1	0
Total	18	12	9

Sources: IMF (1998, p.116) for 94-97; author's estimates based on Revista Exame, Nº 664, June 17, 1998.

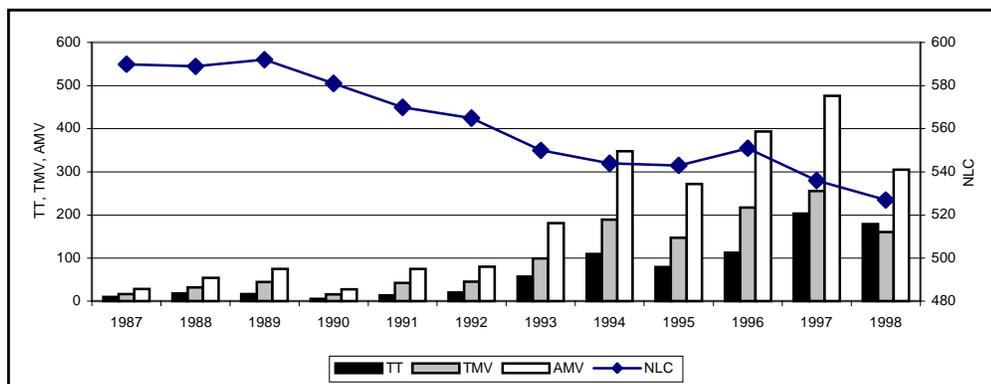
C. Institutional investors and capital markets in 1990s

While the growth of large financial conglomerates was stimulated by government policies, in the beginning of the 1990s, the regulation on investment funds became much more lax, and permitted the rapid growth of the investment funds industry. The number of investment funds, varying from fixed-income to commodities, increased from 654 in 1991 to 3615 in 1998. But until 1994 their assets were concentrated in government bonds - which had very short maturity (Table 6).

In July 1995, the National Monetary Council introduced several modifications to the regulation of these funds, raising compulsory reserves for short-term applications and reducing them for long-term ones. Different funds were also created, such as the *Fundos de Investimento Financeiro (FIF)*, fixed income funds with minimum maturities of 30, 60 and 90 days. Multiple banks administer most of these funds and the concentration on 60-days application shows a lengthening of maturities, if compared with periods previous to 1995.

Capital markets responded accordingly to the rapid increase of financial flows - initially mainly foreign flows, but soon were accompanied by flows of domestic players (such as pension funds). The trade volume in Brazil's main stock exchange (BOVESPA) more than doubled from 1992 to 1993, and the same performance was observed in 1994. The uncertainties related to the aftermath of the Mexican crisis, and the rise in interest rates briefly interrupted this trend in 1995, but was soon resumed in 1996. Only after the Russian crisis did this trend show signs of reversion.

Figure 3
AVERAGE TRADE VOLUME IN SÃO PAULO STOCK EXCHANGES FROM 1994 TO 1998
(US\$ Million)



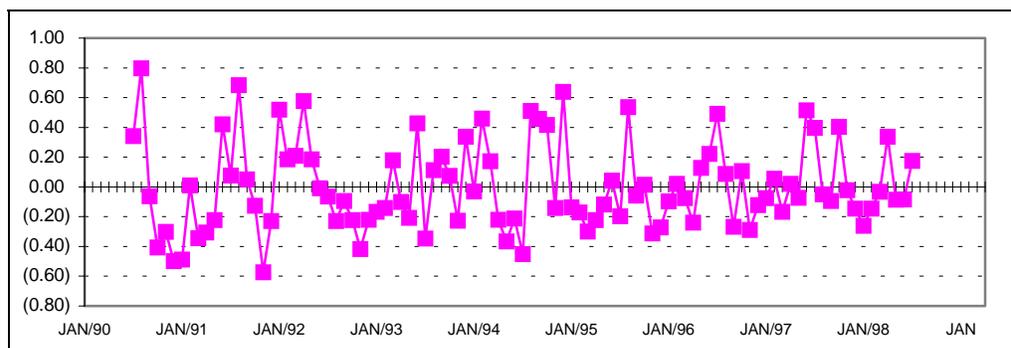
Source: CVM. Obs.: **TT** = Total traded value (US\$ Bi); **TMV** = Total market value of listed companies (US\$ Mi); **AMV** = Average market value of listed companies (US\$ Mi); **NLC** = Number of listed companies.

The growth of the secondary market did not stimulate new issues. As a matter of fact, the number of listed companies declined steadily from 1989 onwards, as can be seen in Figure 4. And even though the value and number of issues rose in 1994, they declined almost constantly until 1998. The same performance could be observed in the market for corporate (medium-term) bonds (debentures), even though their growth was much more prominent than that of stocks.

This is not surprising if we consider that, even though there was a decline in the volatility of Brazil's stock markets, it continued to be significant, as seen in Figure 4 below. This figure shows an indicator of the volatility of stock markets in Brazil: the ratio between the monthly average Sao Paulo stock exchange index (IBOVESPA) - in US\$ dollars - over the 12-month moving average of this same index.

Figure 4

AN INDICATOR OF THE VOLATILITY OF STOCK MARKETS IN BRAZIL



Source: BOVESPA, elaborated by the author.

Table 6

GROWTH OF INVESTMENT FUNDS IN BRAZIL IN THE 1990S

Type of funds	1991	1992	1993	1994	1995	1996	1997	1998
Under the regulation of Brazil's Central Bank								
F. de Inv. em quotas. do Fdo. De Inv. Emações					7	11	52	60
Fundo de Aplicação Financeira-FAF	92	95	56	56	10	0	0	0
Fundo de Aplicação em quotas de FIF					332	981	1184	1154
Fundo de Aposentadoria Progr. Individual							8	29
Fundo de Conversão-Cap. Estrang.	35	35	28	28	46	36	28	27
Fundo de Inv. Commodities		176	222	313	97	2	2	2
Fundo de Inv. Cotas de FAF	81	89	27	26	14	0	0	0
Fundo de Inv. Fin-Div. Est. Emunic.	4	5	5	5	7	6	6	6
Fundo de Invest. Financeiro					909	1112	1369	1418
Fundo de Invest. No Exterior				28	59	58	62	84
Fundo de Renda Fixa-Cap. Estrang.			49	93	137	114	111	121
Fundo de Renda Fixa-Curto Prazo				99	32	3	1	1
Fundo Mútuo de Inv. Empresas Emergentes					1	2	5	4
Fundo Mút. de Inv. Em Q. Mút. Inv. Ações-C.Livre							6	8
Fundo Mútuo de Inv. Renda Fixa	181	184	202	273	77	3	2	2
Sub Total	393	584	589	921	1.728	2.328	2.836	2.919
Under the regulation of CVM (Stock exchange commission)								
Fundo de Inv. Ações-Carteira Livre	4	29	74	167	214	207	461	517
Fundo de Inv. Cap. Estrangeiro	132	55	44	47	55	41	21	14
Fundo de Inv. Cultural e Artístico			1	2	4	4	4	4
Fundo de Inv.-Pait Cond. Aberto/Fechado	19	19	19	18	29	23	10	7
Fundo de Privat. Cap. Estrangeiro	1	1	2	7	37	40	45	39
Fundo de Privat. Cert. Privat.	1	2	2	2	2	2	2	2
Fundo de Privat. Div. Securitizada	2	3	3	3	10	8/	8	6
Fundo Mútuo de Inv.-Ações	102	105	105	112	116	112	113	107
Sub Total	261	214	250	358	467	437	664	696
Total	654	798	839	1.279	2.195	2.765	3.500	3.615

Source: Banco Central do Brasil.

This volatility is, in a significant way, a direct result of the instability of foreign capital inflows which were the basis of the growth of stock markets in Brazil since the beginning of the 1990s. It also affected primarily the behavior of the two main actors in this market: the issuer and the final demander of stocks. The former clearly became more cautious about using the market to expand their source of funds, whereas the latter turned out to be more speculative following the trend of the market as a whole (a “herd behavior”). The theoretical reasons behind these behaviors have already been discussed.

In sum, the securities markets did present significant growth in the second half of the 1990s, a result that was certainly expected given the new regulatory and macroeconomic environment. The new regulations augmented the scope of action of both foreign and domestic investors into these markets, in a moment where liquidity of international markets was buoyant and “emerging markets” became a feature target of most international (especially US) investment funds for asset diversification. The achievement of price stability increased the potential return - and reduced the potential risks (especially exchange risks) of Brazil’s securities markets. However, the pace of growth of the capital inflows into Brazil’s relatively thin markets widened volatility which stimulated short termist approaches of financial investors, including pension funds, as we will see below.

IV. Brazilian pension funds in the 1990s

A. Regulatory changes

Private pension funds formally began to exist in 1977 (Law 6435 of 15 July), when the legislation allowed for the constitution of “complementary pension schema”. The basic idea behind this change of regulation was to promote a smooth shift from a public “pay-as-you-go system” to a fully funded private pension system. This transition implied that the employees who joined the private pension schema would obtain two pensions when retired: the one provided by the public sector (the Instituto Nacional de Seguridade Social - INSS) and the other provided by a private pension funds.

Two types of pension funds were then legally defined: “open” and “closed” pension funds. The open funds operates as administrators of individual savings, obtaining funds by the issuance of fully funded pension policies. “Closed” pension funds (the so-called “entidades fechadas de previdência privada”, hereafter EFPP) are those provided by corporations that administer contributions made by both employers and employees in order to provide complementary pension to the contributors (complementary to the social security fund - INSS). These funds are regulated and supervised by the Secretaria da Previdência of the Ministério da Previdência e Assistência Social (MPAS).

In addition, two types of pension schema were permitted: a defined benefit (DB) and a defined contribution (DC) pension fund. The DB pension fund is an insurance-based concept where the beneficiary obtains the full benefit of the program regardless of his contribution at the age of retirement. In this case the premiums to be collected must be augmented to reflect the insurance component. In the DC systems, the beneficiary receives the full-accrued value of his accumulated contribution plus growth. In 1998, according to MPAS (1998) precisely 50% of Brazilian private pension funds provided defined-benefit schema, whereas only 6% offered DC pension funds and 28% offered plans with mixed contribution schema (the remaining 16% of the pension funds had unknown contribution schema).

Since 1977, when private pension funds were first allowed to operate, the legislation concerning them has been changed substantially. In 1978, the National Monetary Commission through its resolution 460 (23/02/1978) established the distinction between “committed” and “uncommitted” technical reserves. These reserves were to the short-term cash-commitments related to the payments to beneficiaries, and were to be invested in short-term applications.

As regards the regulation on the portfolio structure of pension funds, this resolution established minimum participation of certain assets: at least a 20% and a maximum of 40% of their assets should be invested in securities issued by private companies listed in the stock markets. In order to stimulate diversification, Resolution 460/78 also determined upper-limits of participation for any type of assets in the portfolio of pension funds, including government bonds (50%), limited the holding of shares of the sponsoring corporations and prohibited majority share participation in any company. Finally it imposed a 75% minimum participation of domestically issued companies in the total portfolio. Unlike the Chilean pension system, the Brazilian system does not as yet involve any guarantee by the State.³⁶

A significant change in regulation was to happen only in 1994, through Central Bank resolution 2109 (20/04/94). This resolution established upper-limits (rather than lower-limits) to the applications of the pension funds. These limits were considerably more flexible than the previous legislation, and in addition determined a compulsory reduction of investment in real estate, by reducing their upper-limit by 1% yearly (Table 7).

As mentioned above, the intention behind these regulatory changes was to provide more flexibility to pension funds portfolio allocation, and especially to stimulate a shift from investments into “traditional” assets (such as government bonds and real estate) towards private securities, such as shares and debentures. In sum, the main characteristic of the 1994 legislation was a stimulus given to asset diversification.

B. Growth and concentration

In the 1980s, the growth of private pension funds was quite significant. In 1986 there already existed 172 “entidades fechadas de previdência privada” (EFPP) - closed private pension funds -, and this number rose steadily from then onwards to reach 351 EFPPs (Table 8).³⁷

³⁶ The Chilean pension system has three types of guarantees by the State. First, there is a guarantee for the payment a minimum pension to affiliates who have made contributions for at least twenty years. Second, the State guarantees the minimum profitability of pension funds (more on this below). Finally, the State guarantees the annuity payments for old age pensions as well as for disability and survivorship pensions of failed insurance companies. The guarantee covers 100% of the minimum pension and 75% of the difference between the minimum pension and the value of the benefit involved up to a specified limit.

³⁷ Data from Abrapp.

Despite the rapid growth in number of pension funds, this industry is still dominated by funds sponsored by either large public corporations or by recently large privatized companies. Hence the level of concentration of the pension fund industry in Brazil has been, and still is, very high, especially concerning total investment (Table 9). Even though it declined significantly from the mid-1980s to the beginning of the 1990s due to the rapid increase in their number: until today the 10 largest pension funds hold almost 60% of total investments in the industry, over 20% of all participants and 44% of the beneficiaries (Figure 5).

Table 7
UPPER-LIMITS OF INVESTMENT OF PENSION FUNDS AS
ESTABLISHED BY BRAZIL'S CENTRAL BANK RESOLUTION 2324
(As percentage of portfolio)

Investment	Upper limit
Government bonds	100
Private Fixed-income bonds	80
Floating-income securities	50
Rural bonds	3
Real estate funds	10
Emerging companies funds	5
Real state	20 until 31/12/1997 (annual reduction of 1 until 2002)

Source: Costa (1998).

Table 8
PENSION FUNDS: GROWTH OF NUMBER OF PARTICIPANTS AND BENEFICIARIES

	1985	1990	1992	1993	1994	1995	1996	1997	1998
Number of Institutions			266	297	328	344	349	339	351
Number of participants	900	1300	1798	1879	1939	1865	1796	1788	1671
Number of beneficiaries	51.7	128.9	165	178	211	346	384	428	456
Beneficiaries/contributors (%)	5.7	9.9	9.2	9.5	10.9	18.6	21.4	23.9	27.3
Number of participants/total	# N/D	# N/D	2.76	2.83	# N/D	2.56	2.57	2.51	# N/D

Source: Abrapp.

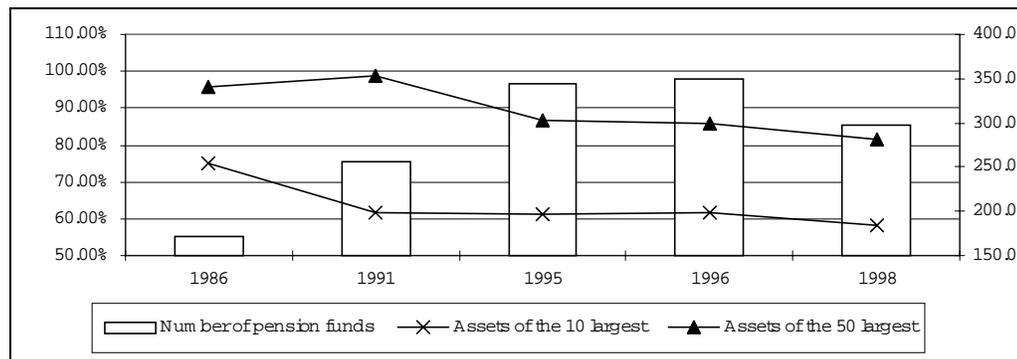
Table 9
INDICATORS OF THE DEGREE OF CONCENTRATION OF THE PENSION FUND INDUSTRY

Number	Absolute values				Accumulated participation (%)			
	Investment (R\$ billion)	Participants (1000)	Dependent (1000)	Beneficiaries (1000)	Investment (R\$ mil)	Partici- pants	Depen- dents	Benefi- ciaries
1-10	50.3	327.8	944.0	160.9	58	20	22	44
1-20	58.3	434.5	1330.2	217.4	68	27	31	60
1-30	63.9	585.3	1772.4	252.2	74	36	42	70
1-40	68.0	670.4	2047.9	271.5	79	41	48	75
1-50	70.5	784.7	2344.9	283.1	82	48	55	78
1-100	78.4	1020.2	na	315.5	91	63	na	87
Total	86.3	1622.4	4258.6	362.5	100	100	100	100

Source: Table 13. Elaborated by de author.

Figure 5

**SOME INDICATORS OF THE DEGREE OF CONCENTRATION OF PENSION FUNDS
IN BRAZIL**



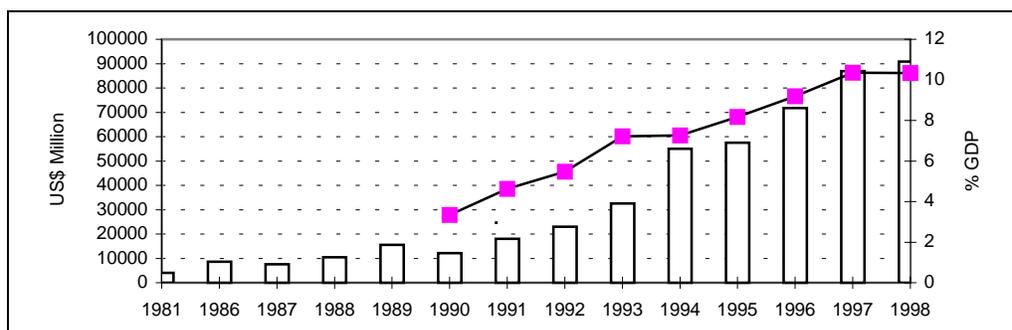
Sources: From 1986 to 1996, Pereira & al. (1997: 30) and 1998 data from Abrapp, elaborated by the author.

Thus, due to this concentration, pension funds, and especially large pension funds, could profit enormously by diversifying their investment in the context of buoyant secondary securities markets and of high interest rates. This is one of reasons which may explain their financial performance in the 1990s: their size has permitted them to obtain high levels of profitability, either by developing their own investment administration or by contracting large professional investment funds, most of them administered by large multiple banks. In addition, the rapid growth of the number of contributors *vis-à-vis* the number of beneficiaries has permitted these institutions to command increasing financial surpluses, which were used to profit from the high returns in different financial markets in Brazil in the period.

Thus, as it is usual in maturing private pension funds systems (Uthoff, 1998), the rate of growth of their assets was quite significant. In 1981 their assets represented little more than US\$ 4 billion, growing almost steadily until 1989 to over US\$ 15 billion; but it was after 1990 that the growth of their portfolio became almost exponential, rising from US\$ 12 billion³⁸ in 1986 to over US\$ 90 billion in 1998.

³⁸ The decline from 1989 to 1990 in dollar values is directly related to losses these funds incurred due to the price-stabilization program implemented in that year (the Collor Plan). This Plan, by causing an enormous reduction of liquidity in the financial sector, led to a process of debt-deflation which affected most of financial markets - including that for government bonds.

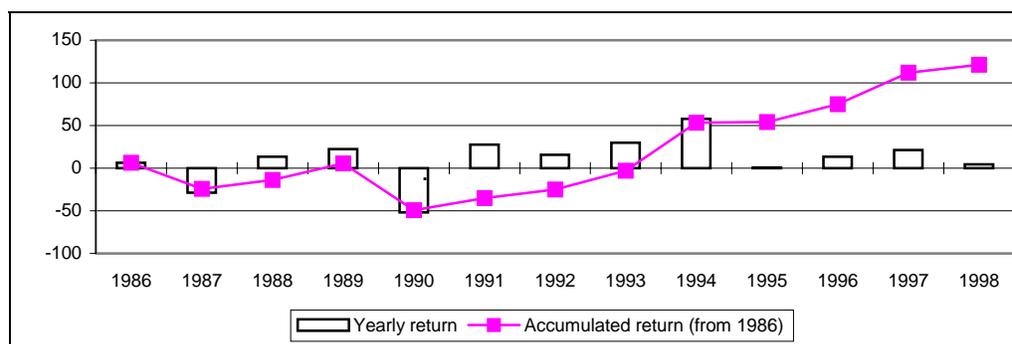
Figure 6
PENSION FUNDS: PORTFOLIO SIZE IN SELECTED YEARS
(US\$ million and percentage of GDP)



Source: Abrapp.

The profitability of these institutions has varied significantly in time, but the accumulated return from 1986 and 1998 surpasses 120% in dollar terms. This performance is however quite inferior to that of, for instance, investment funds, mainly due to the more conservative portfolio structure of the pension funds.

Figure 7
AVERAGE RETURN ON ASSETS OF PRIVATE PENSION FUNDS



Source: Abrapp. Estimated for 1997 and 1998.

C. Portfolio allocation and the provision of long-term finance and funding

There are basically three ways through which pension funds can contribute to the expansion of long-term sources of finance and funding of productive investment:

- ✓ Through the acquisition of corporate bonds and shares directly in organized markets;
- ✓ Through the acquisition of quotas of investment funds, especially if they have a significant part of its portfolio in the above mentioned securities;
- ✓ In a bank-based system, through the acquisition of long-term bank certificate, which allows banks to provide long-term credit to corporate sector.

Notice that whereas in the first case the contribution is straightforward, in the second and third this contribution will depend on the behavior of a financial intermediary - if they are willing or not to invest in long-term securities. Given the investment horizon of pension funds, they are potential buyers of long-term securities. Whether this potential becomes effective or not, depends on the regulatory, macroeconomic and market environment surrounding these institutions. In the 1990s, the main changes in this environment in Brazil can be listed as follows:

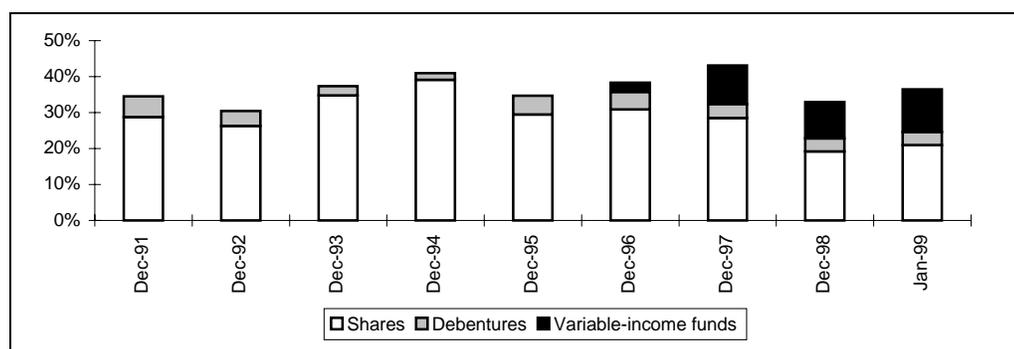
- ✓ The regulatory changes allowed for more freedom of investment by pension funds, and the rapid growth of financial intermediation provided wider choices of application, directly into securities markets and through investment funds
- ✓ The rapid growth of secondary securities markets and the reduction of uncertainty brought about by price stability made applications into long-term securities relatively attractive
- ✓ Privatization opened opportunities for gains in the investment in shares of formerly public companies

This is a scenario which favors asset diversification, away from government bonds and real estate into more risky, long-term securities such as corporate bonds and shares. In this process, as mentioned above, the size of the institution does matter substantially: diversification in practice means obtaining professional expertise or using others'; the search for diversification is costly and only compensates if economies of scale are achieved.³⁹ Hence, the bigger the investor, the wider the possibilities for diversification. This is where the degree of concentration of the pension industry matters.

Following the trends observed in most investment funds, pension funds did indeed increase the amount of private securities and quotas in investment funds in their portfolio from US\$6.2 billion in 1991 to around US\$21 billion in 1999 (Table 10). In relative terms though, the participation of such assets has varied considerably, whereas the share of private stocks and corporate bonds (debentures) only increased in 1994, and declined thereafter. The reason for this is the rise of holdings of quotas in investment funds, which became the predominant intermediary of pension funds.

Figure 8

PARTICIPATION OF SHARES, DEBENTURES AND QUOTAS IN VARIABLE-INCOME INVESTMENT FUNDS IN THE TOTAL PORTFOLIO OF PENSION FUNDS



Source: Table 10.

³⁹ Several examples can be given in this vein, but one suffices here: only large pension funds were eligible to participate in the process of privatization; and only they may have their own professional investment staff or access to the staff of investment funds.

Table 10
PENSION FUNDS: SELECTED ASSETS (1991-1993)

(In US\$ billion and Percentage)

Asset		Dec-91	Dec-92	Dec-93	Dec-94	Dec-95	Dec-96	Dec-97	Dec-98	Jan-99
1	Shares and debentures	6.20	7.00	12.16	22.56	19.92	25.61	28.11	20.69	21.20
1.a	Shares	5.18	6.06	11.33	21.54	16.92	22.16	24.72	17.47	18.10
1.b	Debentures	1.02	0.94	0.83	1.02	2.99	3.45	3.38	3.23	3.10
2	Time deposits and investment funds	2.54	4.64	7.91	13.17	15.19	20.79	32.65	38.68	39.83
2a	Time deposits	na	na	4.73	6.32	8.37	6.89	6.62	8.82	8.41
2b	Fixed-Income funds	na	na	3.18	6.85	6.83	12.06	16.73	20.65	21.12
2c	Variable-Income funds	-	-	-	-	-	1.83	9.30	9.21	10.29
3	Government bonds	1.34	1.50	1.29	2.10	2.56	4.12	3.24	5.92	5.46
4	Real state and mortgages	4.11	5.63	6.23	10.47	11.88	12.91	12.96	13.71	13.54
4a	Real state	na	na	5.21	7.93	8.55	9.23	9.04	9.68	9.53
4b	Mortgages	na	na	1.02	2.54					
5	Internal operations	1.77	3.05	2.89	5.37	6.48	6.55	8.02	9.38	3.82
5b	Loans to participants	na	na	0.36	1.05	1.07	1.59	1.62	1.74	1.73
5b	Loans to holding companies	na	na	2.54	4.32	5.41	4.95	6.40	7.64	2.08
6	Other	2.04	1.21	2.09	1.42	1.45	1.70	1.88	2.38	2.48
Total		17.99	23.03	32.57	55.08	57.46	71.46	86.86	90.76	86.31
Asset (Percentage)										
1	Shares and debentures	34	30	37	41	35	36	32	23	25
1.a	Shares	29	26	35	39	29	31	28	19	21
1.b	Debentures	6	4	3	2	5	5	4	4	4
2	Time deposits and investment funds	14	20	24	24	26	29	38	43	46
2a	Time deposits	na	na	15	11	15	10	8	10	10
2b	Fixed-Income funds	na	na	10	12	12	17	19	23	24
2c	Variable-Income funds	0	0	0	0	0	3	11	10	12
3	Government bonds	7	7	4	4	4	6	4	7	6
4	Real state and mortgages	23	24	19	19	21	18	15	15	16
4a	Real state	na	na	16	14	15	13	10	11	11
4b	Mortgages	na	na	3	5	6	5	5	4	5
5	Internal operations	10	13	9	10	11	9	9	10	4
5a	Loans to participants	na	na	1	2	2	2	2	2	2
5b	Loans to holding companies	na	na	8	8	9	7	7	8	2
6	Other	11	5	6	3	3	2	2	3	3
Total		100								
Memo (1)+(2c)		34	30	37	41	35	38	43	33	36

Source: Abrapp; elaborated by the author.

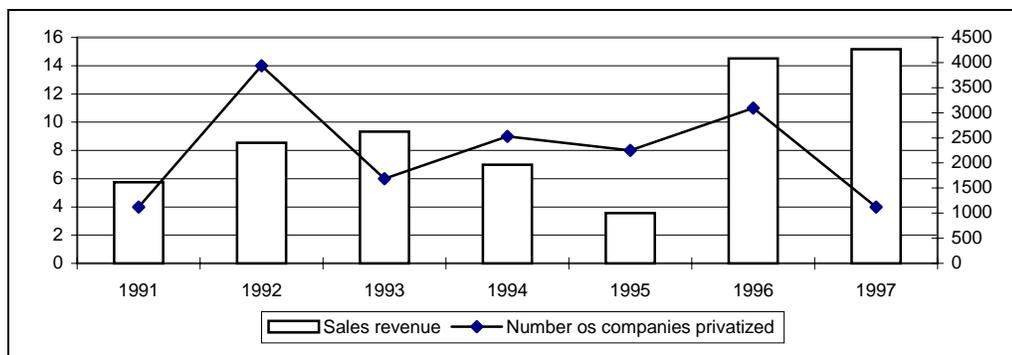
In addition, they have had direct participation in the process of privatization. Since the privatization program (PND) was launched in 1990, it promoted the transfer of 49 enterprises to the private sector, as well as selling share-holding participation of 6 other companies, belonging to federal and state governments.⁴⁰ In the process, investments of pension funds in the acquisition of

⁴⁰ The total revenue obtained in this process reached US\$ 18 billion until 1997 (Figure 10). Most of the privatization took place in the steel, chemical, petrochemical, Electricity and Fertilizers-producing sectors.

shares of privatized companies have represented so far over 13% of the total (over R\$ 2.3 billion) (Figure 10).

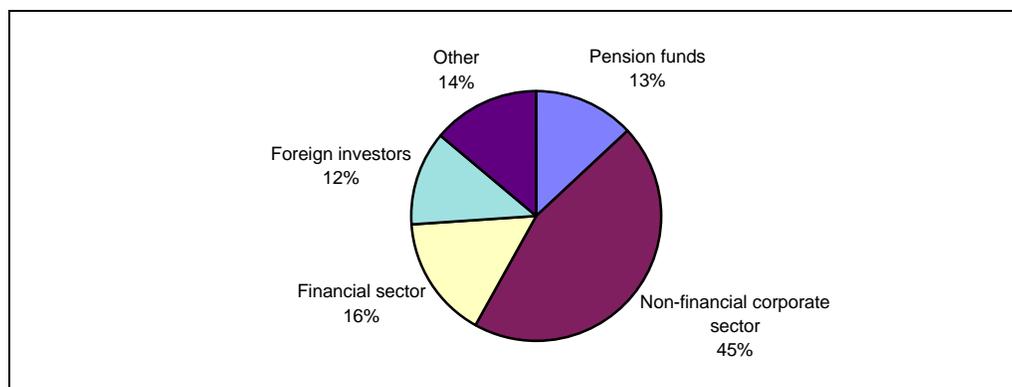
The search for diversification by pension funds is also reflected in the relative participation of sectors in the disbursements. Until 1994, more than 50% of their total investment was allocated to the financial sectors, basically in the form of shares of the banking sector and certificate of deposits. From then on, there has been a significant growth of investments in the services and in industrial sector, which has reached 51.3% of their investment in December 1998.

Figure 9
SOME INDICATORS OF THE PRIVATIZATION IN BRAZIL (1991-1997)



Source: BNDES.

Figure 10
PRIVATIZATION: DISTRIBUTION OF SALES REVENUES BY BUYERS



Source: BNDES.

In sum, despite the relative short period in which regulatory and macroeconomic changes of the environment surrounding pension funds took place, it is clear that they did respond positively, in what concerns their potential role as suppliers of long-term financing to productive investment. That is, in an environment of wider freedom of asset allocation, price stability and growth of assets markets, they tended to increase the participation of private securities, providing direct finance to the corporate sector. In addition, the role of the investment funds as intermediaries between institutional investors and the primary capital markets tends to increase. And these funds also tend to respond to an environment of price stability and growth of asset markets by diversifying towards long-term securities.

This process of widening of the average maturities of securities held by institutional investors would probably have continued in Brazil, were it not for the increasing macroeconomic instability, fiscal deterioration and high interest rates which surrounded the Real Plan. Macroeconomic instability reinforce asset market instability, which in turn increases the risks of holding and issuing long-term securities. The growth of public debt, in an environment of high interest rates, creates the opportunity of obtaining high financial return with lower risks, by investing in government bonds. The process is, therefore, counterproductive concerning the role pension funds can play in the financing of long-term productive investment. The description above tells us only half of the story: it is clear that in a more stable and competitive environment pension funds do tend to diversify their portfolio towards riskier long term securities and this has a direct effect on the secondary capital markets. But does that lead to the deepening of primary markets?

Table 11
DISTRIBUTION OF PENSION FUNDS INVESTMENT BY SECTOR

Sectors	Dec-94	Dec-95	Dec-96	Dec-97	Dec-98	Jan-99
Total in US\$ million	46489	57460	71672	86861	90757	86306
Participation by sector (%)						
Financial	51.5	51.2	51.0	49.9	48.3	49.9
Services	28.5	29.0	28.7	31.1	32.7	30.9
Industrial	20.1	19.9	20.2	19.0	18.9	19.3
Petrochemical	6.4	6.4	6.5	5.6	5.5	5.6
Steel	6.5	5.9	5.9	5.3	4.8	4.9
Capital goods	1.5	1.7	1.8	1.8	1.8	1.8
Chemical	1.0	1.1	1.2	1.2	1.4	1.4
Electrical	0.9	1.0	0.9	0.9	0.9	1.0
Automobile	0.6	0.7	0.7	0.8	0.9	0.9
Foods	0.6	0.6	0.7	0.7	0.8	0.8
Mining	0.4	0.4	0.4	0.3	0.3	0.3
Beverages	0.4	0.4	0.4	0.4	0.4	0.4
Other	1.6	1.7	1.8	1.9	2.1	2.1

Source: Abrapp.

Tables 12 and 13 below present evidences that this link is not straightforward. First, it can be observed that the growth of secondary capital markets has been significant throughout the 1990s: the traded volume increased more than 400% (and more than 1200% compared to 1991), and this implied an increase of the market value of the listed companies of more than 200%.

However the same table indicates that this growth was highly concentrated in the stocks of few companies. As a matter of fact, the number of listed companies decreased during this period. Primary markets of both stocks and debentures also increased substantially, as indicated in Table 12. However the average number of issues in 1990-1997 was substantially lower than that observed in the 1980s, during the “lost decade”.

The analysis indicates that the growth of the secondary markets, to which the growth of institutional investors contributed significantly, did affect positively the primary markets. However only few listed companies benefited from this effect due to the revealed preference of investors for “blue-chips”, most of which issued by public or recently privatized large corporations.

The concentration of the traded volume in relatively few securities tends to exacerbate the volatility of these markets, enhancing the short-termism of institutional investors transacting in them. If this is true for pension funds, it is even more in the case of investment funds, which, in an

increasingly competitive environment, live under the pressure to produce short-term results in terms of average profitability. This means that the short-termist trend tends to be exacerbated as an increasing part of the portfolio of pension funds is administered by investment funds .

All these factors contribute for a slow link between the growth of institutional investor, secondary long-term securities and primary capital markets, even in periods of sustained price stability and growth of secondary markets.

Table 12
SOME INDICATORS OF THE PERFORMANCE OF BRAZIL'S SECONDARY STOCK
MARKETS IN THE 1990S

Year	1991	1992	1993	1994	1995	1996	1997	1998
Market value of listed companies (US\$ billion)	29.7	30.7	72.3	189.1	147.6	216.9	255.4	160.9
Volume traded in secondary market (VMS)	13.4	23.8	39.5	98.4	79.5	115.6	216.1	179.6
Turn-over (Daily average)		96.2	161.6	406.6	327.2	466.1	867.9	728.6
Number of listed companies (CL)	570	565	550	544	543	550	536	527
(VM/PIB) (%)	7.3	7.9	16.8	34.8	20.9	28.0	31.8	20.6
9VM/CL) (US\$ Millions)	52.2	54.3	131.4	347.5	271.8	394.4	476.5	305.3
(VMS/VM) (%)	45	77	55	52	54	53	86	112

Source: Banco Central do Brasil and BOVESPA.

Table 13
BRAZIL: ISSUES OF SHARES AND DEBENTURES (1997-1998)
(US\$ million and number of issues)

Year	Shares		Debentures		Total		Average value
	Issues	Value	Issues	Value	Issues	Value	
1981	78	290	181	1.735	259	2.025	8
1982	82	469	256	1.752	338	2.221	7
1983	72	249	142	696	214	945	4
1984	120	530	84	299	204	829	4
1985	119	585	51	115	170	700	4
1986	154	1.198	10	139	164	1.337	8
1987	53	390	7	27	60	417	7
1988	76	529	29	3.253	105	3.782	36
1989	93	758	34	1.485	127	2.243	18
1990	58	775	84	916	142	1.691	12
1991	52	602	62	1.011	114	1.613	14
1992	28	943	41	339	69	1.282	19
1993	24	841	135	3.843	159	4.684	29
1994	48	2.591	40	3.304	88	5.895	67
1995	30	2.112	148	7.574	178	9.686	54
1996	24	1.152	99	8.289	123	9.441	77
1997	14	1.581	31	3.215	45	4.796	107
1998	#N/D	3.399	#N/D	7.981	#N/D	11.380	#N/D
1981-90	100.56	508.33	97.56	243.56	198.11	1.798.89	11.96
1991-98	36.67	1.888.64	92.67	4.386.05	129.33	6.968.12	61.15

Sources: Banco Central do Brasil and BOVESPA.

V. Policies towards increasing the role of pension funds in the financing of productive investment

A. The need for institutional building

In a most interesting paper on the interrelation between the growth of institutional investors and the development of capital markets, Vittas (1998:6) concludes that:

Experience from Anglo-American countries suggests large potential benefits from the interactive process between institutional investors and securities markets. Institutional investors can act as countervailing force to the dominant position of commercial banks and thus promote competition and efficiency in the financial systems. They can stimulate financial innovation, modernize capital markets, enhance transparency and information disclosure, and strengthen corporate governance.

We subscribe to this view: due to the time-horizon of the assets that pension funds hold, they are potential buyers of long-term private securities. Their growth may not contribute directly to the growth of aggregate saving, but it may certainly increase the sources of long-term financing to productive investment. Whether this potential becomes effective or not, will depend mainly on the environment in which these institutions operate.

An environment of reasonable price stability and growth and of market stability seems to be a necessary, but not a sufficient, condition to enhance the role of pension funds as providers of funds to productive investment. The Brazilian experience shows that in their process of expansion, pension funds have chosen, whenever legislation permitted, to allocate their resources directly through the acquisition of share participation of privatized companies, of quotas in investment funds or directly in secondary markets. However the characteristics of Brazil's capital markets – high concentration and shallowness – made this contribution less functional than it could have been: it enhanced the speculative nature of secondary markets, which for reasons discussed in the theoretical analysis, tends to inhibit the development of primary markets.

Hence it seems that the relation between the growth of secondary markets, usually stimulated by the growth of institutional investors, does not necessarily lead to the growth of primary markets, which are in fact the providers of long-term funds to the corporate sector. In this vein, Arrau (1994) indicates that further institutional arrangements are required to make this link more robust:

“Es una necesidad imperiosa para cualquier país que desee un sistema de pensiones con acumulación de fondos que, simultáneamente, se dediquen energías para desarrollar la institucionalidad que el sistema requiere. **Este proceso no es automático y requiere la decidida voluntad de la autoridad de llevarlo a cabo.** Tampoco es necesario tener un sistema previo demasiado profundo para la implementación de la reforma, aunque que se requiere la claridad de avanzar prioritariamente en las leyes y regulación del mercado de capitales a medida que el sistema se consolide. (op. cit., p. 9; our emphasis).”⁴¹

Our analysis suggests that a policy towards enhancing the role of pension funds in the financing long-term investment should increase the commitment of these institutions into buying long-term securities in the **primary securities markets**. No one single policy can achieve this goal: it requires a set of long-term policies including improving regulation, enhancing markets and institutional building.

B. A risk-sharing institutional scheme to channel funds of pension funds towards productive investors

Brazil's capital markets, both primary and secondary, are highly concentrated in few securities issued by large (generally public companies). Thus, allowing pension funds to acquire securities in the secondary market, or quotas in investment funds (which also buy securities in secondary markets), tends to promote rapid increase of the prices of these specific securities. In contrast to what happens in some developed economies with large and robust securities markets, these price hikes tends to generate self-fulfilling speculative bubbles, which eventually burst, causing long-term damages to capital markets.

The best way to avoid such bubbles is to stimulate the simultaneous growth of supply of and demand for newly issued securities. As regards the supply of securities, it is often claimed that the supply of newly issued securities is constrained by the fact that most large corporations in Brazil are family-owned and because the cost of issuing is too high to stimulate smaller companies to

⁴¹ Held (1994) seems to share the same position, and shows that the close relation between growth of the pension funds industry and of primary capital markets is the direct result of government-oriented institutional developments and tight regulation. In a nutshell, he makes the case that paradoxically financial liberalization requires more, rather than less, financial policies if it is to result in the aimed goal of financial deepening and increasing functionality of private financial institutions and markets to economic development.

become publicly listed. Even though there is some truth in these arguments, it is certainly inconsistent with the fact that whenever there is a sustained rise in securities prices in secondary markets, firms do expand their issues of securities substantially.⁴² It seems thus that if companies had a wider, less costly access to securities markets, they would be prepared to issue more.⁴³

The problems seem thus to lie on the demand for newly issued securities. As regards the demand for such securities by pension funds, the current regulation on portfolio allocation only determines upper-limits of shares of each type of investment (Table 7). In addition this regulation is highly biased towards government bonds and fixed income private bonds (of normally very short maturities) – a bias which is usually justified by the need to minimize their portfolio risks. Even though it is true that augmenting the share of securities that pension funds can hold increases their total portfolio risk, these risks could (almost by definition) be mitigated with the creation of risk-sharing institutions and arrangements.

One such example of institutional building leading to more efficient risk-sharing mechanisms is the development of the US mortgage-based securities (MBS) market. This is not the place for a full description of the system,⁴⁴ but we can simply discuss some important features of its development. First of all, the development of the MBS market was strongly enhanced after the establishing three important institutions: Fannie Mae in 1938, Ginnie Mae in 1968, and Freddie Mac in 1970.⁴⁵ Even though only Ginnie Mae is partly a public institution, all of them were directly or indirectly created by government initiatives.⁴⁶

Second, it was Ginnie Mae that in 1970s issued its first mortgage-backed security, a market which has flourished since then, especially in the 1990s, constituting today the biggest securities market in the world. Third, the scheme is highly dependent on securitization and a rating system, which permits specialized institutions to sell mortgage-backed securities to final demanders, and to institutional investors, such as pension funds.

In sum, the development of the multi-trillion US-mortgage market was strongly determined by a series of government initiatives (throughout the last six decades), with little use of public funds. These initiatives have been extremely functioning in bringing together long-term savers and investors through the years. There is no reason why such initiatives could not be reproduced in less developing countries with a minimum development of institutional investors,⁴⁷ and not only for domestic mortgage-backed assets but also for other types of asset-backed assets.

⁴² Just to mention two examples, this was the case in the boom at the end of the 1960s and has been the case until 1998. In addition, when large corporation had access to issuing securities in the international securities markets (from 1990s onwards) a significant part of them did so in the form of ADRs, and other issuing instruments. On this see *inter alia* Studart, 1997.

⁴³ More on the possible institutional arrangements which can be created to enhance this access, below.

⁴⁴ On this see for instance Feeney (1994).

⁴⁵ Respectively, the Federal National Mortgage Corporation (Fannie Mae), the Government National Mortgage Corporation (Ginnie Mae), and the Federal Home Loan Corporation (Freddie Mac).

⁴⁶ Until 1954 *Fannie Mae* was a fully public institution, a part of the Housing and Urban Development Department (HUD), created to refinance loans from the Federal Housing Association (FHA). Only then it became a "mixed-ownership" corporation owned partly by stockholders. In 1971, the US Congress passed the *Housing and Urban Development Act*, which, split Fannie Mae into two organizations: the private corporation Mae and the government-owned Ginnie Mae. Ginnie Mae's purpose was to FHA, VA (Veterans Association), and RHS loans. Unlike Fannie Mae, Ginnie Mae remains a part of HUD loans.

⁴⁷ In some cases (for instance in Chile and recently in Brazil) this has been done for the mortgage system. For an analysis of the Chilean case, see Arrau (1994) and Uthoff (1995). In the Brazilian case, the National Mortgage System (Sistema Financeiro Imobiliário) is still in development, but it is certainly based on the US-systems. See for instance, Leal (1999).

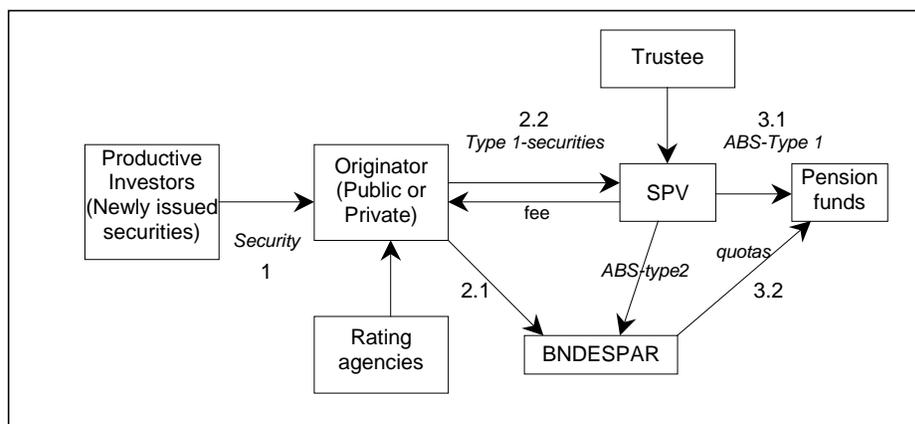
The development of such risk-sharing framework should depend vitally on regulation and institutional building in order to create incentives for pension funds to acquire long-term securities or, more likely, ABS issued by securitizing institutions. A possible scheme is described below.⁴⁸

The scheme is quite simple in theory. Productive investors would apply for long-term credit with an originator, which could be for instance a multiple bank (item 1 in the figure). This latter institution would collect the necessary data, transfer it to a rating company. This in turn would classify the company according to previously determined risk standards. The difference in risks would determine how these applications would be processed from then on.⁴⁹

In the case of relatively low risk assets, they could be sold directly to a public investment corporation (BNDESPAR⁵⁰ in our example) or to a special purpose vehicle (SPV), created with the specific role of selling these securities or assets backed on these securities. In this latter case, the SPV would have to unbundle and repackage the securities, and sell the ABS-type 1 to investment or pension funds.

Figure 11

A SCHEME TO FINANCE LONG TERM PRODUCTIVE INVESTMENT USING RESOURCES FROM PENSION FUNDS



This rating system may create a bias against some types of investing companies. For instance in a rapid growing economy, infant industries are likely to coexist with others already well-established, and their risks are likely to be considered too high by rating agencies – and this rationale also applies to small and medium enterprises. Therefore, type-2 securities, with high-risk

⁴⁸ In developing this scheme we profited enormously from the comments of Gunther Held in a seminar where a first draft of this paper. We gratefully acknowledge Held's comments without incriminating him for remaining errors or omissions in the version presented here.

⁴⁹ In our scheme, the classification is limited to only two types of securities: type I, for those with relatively low risks (for instance, well established listed medium and large corporations); and type II (for small and medium companies).

⁵⁰ BNDESPAR is the equity branch of Brazil National Economic and Social Development Bank (BNDES). Its declared aims are: (i) to strengthen the assets and financial structures of the companies; (ii) to reorganise industrial sectors, through merger and acquisition operations aimed at increasing competitiveness; private equity investments in infra-structure; (iii) develop capital markets, encouraging companies to get public and promoting greater liquidity for the stocks of such companies, with the aim of making these important mechanisms for private companies to raise funds. It participates directly in share subscription operations of private issues, and as underwriter of public issues, in underwritings of shares or convertible debentures. The involvement of BNDESPAR in the scheme proposed herein would then be within its scope of action. However, there is no reason why a specific public institution could not be created for this specific purpose.

level, could be sold to a public institution, such as BNDESPAR, which could unbundle and repackage the securities into ABS-type 2, or could be held by a specific investment fund administered by BNDESPAR. These ABS or quota of the BNDESPAR fund could be sold to pension funds with some guaranteed minimum return. The rating of ABS-type 2 companies could be highly improved if institutions (such as the Brazil's National Development Bank) provided some sort of credit enhancement scheme.

In order to avoid misallocation of pension funds resources and conflict of interests, screening devices should be developed. One possible screening device is the establishment of an investment counseling board, created to supervise the system. Representative of pension funds, the government and the corporate sector could compose this board.

In our scheme, pension funds would be required by regulation to hold a determined share of ABS-type 1, ABS-type 2 and quotas from BNDESPAR investment fund.⁵¹ Notice that such a scheme would mitigate the risks of securities and ABS bought by pension funds, and allow a reduction in the cost of issuing such securities. In addition it would reduce the need of public funds to the amount of the credit enhancement provided by BNDES.

Even though this scheme needs to be further developed in detail, and there are other possible risk-sharing mechanisms that can be developed, it represents a move towards a different role of the State in financing accumulation: from direct financing with public funds, to market enhancement. By mitigating the risks involved in pension funds holding long-term securities, this scheme makes it possible for a more even growth of supply and demand for these assets, lowers potential volatility inherent in the growth of capital markets in CB systems and expands the sources of private funding for productive investment.

⁵¹ Of course, given that pension funds are private institutions, it is quite difficult to impose that they hold a certain amount of risky assets. One way of overcoming this difficulty is to create a system of minimum guaranteed profitability for them, similar to that used in the Chilean system. This is briefly described by Vittas as follows: "the State guarantees the minimum profitability of pension funds. An AFP would first use the profitability reserve of the pension fund, if one already exists, to make up any shortfall in the rate of return and then draw on its investment reserves. An AFP that is unable to make up a shortfall in the rate of return is forced into liquidation. The balances of individual capitalization accounts are transferred to other AFPs, with the State making up the shortfall in profitability" (Vittas, 1995: 13).

Table 14
PENSION FUNDS: MAIN INDICATORS

Ranking	Pension funds	Investments (R\$ million) (1)	Participants (1000) (2)	Dependents (1000) (3)	Beneficiaries (1000) (4)	Acc. % (1)	Acc. % (2)	Acc.% (3)	Acc. % (4)
1	PREVI	22407.9	70.9	27.3	47.5	26.0	4.4	0.6	13.1
2	FUNCEF	5157.0	55.0	157.9	12.2	31.9	7.8	4.3	16.5
3	SISTEL	4973.2	65.7	229.9	16.9	37.7	11.8	9.7	21.1
4	PETROS	4504.9	42.5	242.9	38.4	42.9	14.4	15.5	31.7
5	CENTRUS	3797.0	0.1	0.2	1.7	47.3	14.4	15.5	32.2
6	FUNDACAO CESP	3197.4	29.5	99.9	17.1	51.0	16.3	17.8	36.9
7	VALIA	1929.5	14.0	81.1	13.5	53.3	17.1	19.7	40.6
8	ITAUBANCO	1651.3	30.6	30.5	1.5	55.2	19.0	20.4	41.1
9	FORLUZ	1434.2	12.1	56.9	7.5	56.8	19.7	21.8	43.1
10	FUNDACAO COPEL	1210.7	7.4	17.4	4.6	58.2	20.2	22.2	44.4
11	AERUS	1166.7	34.1	54.8	0.5	59.6	22.3	23.5	44.5
12	FAPES	1102.9	1.8	6.3	0.7	60.9	22.4	23.6	44.7
13	REAL GRANDEZA	1099.8	5.8	16.6	5.0	62.1	22.8	24.0	46.1
14	TELOS	872.8	9.4	33.0	2.4	63.2	23.4	24.8	46.8
15	REFER	779.8	11.9	2.6	30.2	64.1	24.1	24.8	55.1
16	PORTUS	764.7	1.0	32.0	6.0	64.9	24.2	25.6	56.8
17	BANESPREV	762.5	23.2	30.7	1.7	65.8	25.6	26.3	57.2
18	FUNBEP	748.9	9.9	21.7	3.3	66.7	26.2	26.8	58.1
19	CAPEF	741.5	3.7	0.8	3.5	67.6	26.4	26.8	59.1
20	CCF	7.3	5.9	187.7	3.1	67.6	26.8	31.2	60.0
21	ELETROCEEE	681.1	9.4	25.4	2.0	68.4	27.4	31.8	60.5
22	USIMINAS	665.1	12.9	46.7	7.1	69.1	28.2	32.9	62.5
23	PREVI-BANERJ	633.5	7.6	22.7	5.6	69.9	28.6	33.5	64.0
24	IBM	620.2	4.4	0.7	0.9	70.6	28.9	33.5	64.3
25	PSS	606.0	9.0	17.4	2.6	71.3	29.4	33.9	65.0
26	FACHESF	597.9	7.5	22.6	4.3	72.0	29.9	34.4	66.2
27	ECONOMUS	583.3	13.7	40.8	1.6	72.6	30.8	35.4	66.6
28	ELETROS	559.4	1.6	4.4	0.1	73.3	30.9	35.5	66.6
29	POSTALIS	542.4	77.3	231.8	3.7	73.9	35.6	40.9	67.7
30	FEMCO	54.1	7.4	29.6	6.8	74.0	36.1	41.6	69.6
31	FASBEMGE	506.3	6.2	18.3	2.7	74.6	36.5	42.0	70.3
32	SERPROS	493.4	8.8	20.2	1.2	75.1	37.0	42.5	70.6
33	BRASLIGHT	433.3	6.7	17.8	3.0	75.6	37.4	42.9	71.4
34	CERES	424.9	10.5	30.4	1.6	76.1	38.1	43.7	71.9
35	ELOS	414.5	2.5	10.8	2.2	76.6	38.2	43.9	72.5
36	CBS	386.0	7.8	37.8	1.2	77.1	38.7	44.8	72.8
37	BANDEPREV	379.5	1.8	9.2	1.3	77.5	38.8	45.0	73.2
38	PRECE	378.1	10.3	45.4	3.6	77.9	39.4	46.1	74.1
39	PREVI-GM	368.5	26.3	73.3	0.4	78.4	41.1	47.8	74.3
40	FCRT	358.0	4.3	12.3	2.3	78.8	41.3	48.1	74.9
41	BRAHMA	329.5	17.2	51.5	2.3	79.2	42.4	49.3	75.5
42	FUNDACAO BANRISUL	320.6	9.0	17.9	0.3	79.5	42.9	49.7	75.6
43	ATTILIO FONTANA	308.8	21.5	32.7	2.4	79.9	44.3	50.5	76.3
44	CREDIPREV-CREDIREAL	308.3	1.8	6.3	2.7	80.3	44.4	50.6	77.0
45	VOLKSWAGEN	307.2	45.9	137.7	0.3	80.6	47.2	53.9	77.1
46	FIBRA	303.5	1.5	3.9	0.6	81.0	47.3	54.0	77.3
47	FAELBA	302.1	3.8	11.7	1.9	81.3	47.5	54.2	77.8
48	REGIUS	2.9	1.8	4.3	0.5	81.3	47.6	54.3	77.9
49	ACOS	289.2	3.1	9.6	0.6	81.6	47.8	54.6	78.1
50	CITIPREVI	2.7	8.6	21.5	0.0	81.7	48.4	55.1	78.1
51	PREVIMINAS	263.6	22.8	38.1	1.5	82.0	49.8	56.0	78.5
52	PREVIRB	256.9	0.7	1.0	1.1	82.3	49.8	56.0	78.8
53	FUSESC	255.4	5.4	15.4	1.0	82.6	50.1	56.3	79.1
54	TREVO	254.4	5.8	12.6	0.2	82.8	50.5	56.6	79.1
55	CELOS	248.9	5.1	16.4	1.8	83.1	50.8	57.0	79.6
56	BANESES	247.2	2.8	7.3	1.1	83.4	51.0	57.2	79.9
57	RHODIA	245.0	0.0	10.4	0.9	83.7	51.0	57.4	80.2
58	ECOS	239.1	3.2	7.1	0.4	84.0	51.2	57.6	80.3
59	SAO RAFAEL	235.3	6.7	20.1	0.0	84.3	51.6	58.1	80.3
60	INFRAPREV	230.4	7.9	16.9	0.9	84.5	52.1	58.5	80.6
61	BASES	222.7	3.2	9.5	0.5	84.8	52.3	58.7	80.7

Table 14 (continued)

Ranking	Pension funds	Investments (R\$ million) (1)	Participants (1000) (2)	Dependents (1000) (3)	Beneficiaries (1000) (4)	Acc. % (1)	Acc. % (2)	Acc.% (3)	Acc. % (4)
62	SABESPREV	222.6	19.7	39.5	1.6	85.0	53.5	59.6	81.2
63	PREVHAB	222.4	4.8	1.2	0.3	85.3	53.8	59.7	81.2
64	SANPREV	21.1	6.0	1.4	0.2	85.3	54.2	59.7	81.3
65	BRASILETROS	207.6	1.8	5.5	2.3	85.6	54.3	59.8	81.9
66	CAEMI	201.4	0.2	5.5	1.7	85.8	54.3	59.9	82.4
67	FUNDACAO PROMON	191.3	2.0	3.9	0.2	86.0	54.4	60.0	82.4
68	FUNEPP	178.9	13.4	34.9	1.1	86.2	55.2	60.9	82.7
69	PREVIGEL	175.2	1.2	1.9	0.3	86.4	55.3	60.9	82.8
70	FUNSSSEST	174.5	3.7	11.0	0.6	86.6	55.5	61.2	83.0
71	NUCLEOS	171.8	1.9	3.9	0.4	86.8	55.6	61.2	83.1
72	ARICANDUVA	170.1	1.7	2.4	0.0	87.0	55.8	61.3	83.1
73	PREBEG	168.6	3.0	6.1	0.7	87.2	55.9	61.4	83.3
74	PREVIBOSCH	166.7	10.7	33.0	0.2	87.4	56.6	62.2	83.4
75	FASASS	16.7	5.7	14.4	0.6	87.4	56.9	62.6	83.5
76	FACEB	164.9	0.1	5.3	0.6	87.6	57.0	62.7	83.7
77	DESBAN	159.6	0.5	1.5	0.2	87.8	57.0	62.7	83.7
78	FAELCE	158.5	2.8	10.1	1.3	88.0	57.2	63.0	84.1
79	PREVIBAYER	15.5	2.8	4.0	0.9	88.0	57.3	63.1	84.3
80	FRANCISCO CONDE	151.9	5.3	7.0	0.3	88.2	57.7	63.2	84.4
81	PREVINOR	150.8	3.5	10.4	0.3	88.4	57.9	63.5	84.5
82	FIPECQ	14.9	3.1	9.4	0.2	88.4	58.1	63.7	84.6
83	AGROS	148.3	4.5	13.4	0.5	88.5	58.3	64.0	84.7
84	CELPOS	147.1	3.1	11.4	2.5	88.7	58.5	64.3	85.4
85	FUSAN	142.3	4.0	10.6	1.2	88.9	58.8	64.5	85.7
86	PREVDATA	142.1	3.7	0.6	0.6	89.0	59.0	64.5	85.9
87	PREVINORTE	141.7	3.0	7.8	0.6	89.2	59.2	64.7	86.1
88	GERDAU	13.7	9.0	19.3	0.0	89.2	59.7	65.2	86.1
89	SAO BERNARDO	136.3	0.7	24.6	0.9	89.4	59.8	65.7	86.3
90	FASC	135.9	7.2	13.9	0.0	89.5	60.2	66.1	86.3
91	METRUS	134.4	8.0	17.7	0.3	89.7	60.7	66.5	86.4
92	ISBRE	131.7	0.5	1.3	0.1	89.9	60.8	66.5	86.4
93	PREVUNIAO	122.2	6.6	1.4	0.3	90.0	61.2	66.5	86.5
94	COMSHELL	121.7	2.6	4.8	0.2	90.1	61.3	66.7	86.5
95	PREVI-SIEMENS	121.0	8.3	1.2	0.2	90.3	61.8	66.7	86.6
96	DURATEX	117.7	6.1	11.3	0.4	90.4	62.2	67.0	86.7
97	FRANCISCO M BASTOS	11.5	0.0	6.3	0.2	90.4	62.2	67.1	86.8
98	BASF	110.7	5.2	15.7	0.1	90.6	62.5	67.5	86.8
99	ACESITA	106.7	4.0	na	0.1	90.7	62.8	na	86.8
100	ESCELSOS	103.9	1.6	4.0	0.7	90.8	62.9	na	87.0
101	CAPAF	101.5	1.9	1.1	1.3	90.9	63.0	na	87.4
102	ELETRA	100.8	1.5	4.4	0.9	91.0	63.1	na	87.7
103	FUNDACAO CORSAN	99.8	4.6	14.4	1.2	91.1	63.4	na	88.0
104	ARUS	93.5	2.3	6.2	0.3	91.3	63.5	na	88.1
105	UNISYS PREVI	88.6	1.3	4.0	0.0	91.4	63.6	na	88.1
106	COMPREV	85.9	3.5	9.7	1.1	91.5	63.8	na	88.3
107	JOHNSON & JOHNSON	84.9	4.9	na	0.1	91.6	64.1	na	88.4
108	BANORTE	83.7	0.6	0.7	0.5	91.7	64.2	na	88.5
109	PREVDOW	8.4	1.3	2.6	0.1	91.7	64.2	na	88.6
110	PREVI NOVARTIS	0.8	1.3	3.8	0.1	91.7	64.3	na	88.6
111	CABEC	80.8	1.1	2.5	0.5	91.8	64.4	na	88.7
112	PREVIPLAN	78.4	0.5	16.1	0.1	91.8	64.4	na	88.7
113	FUNGRAPA	78.1	1.9	5.7	0.2	91.9	64.5	na	88.8
114	ALCOA-PREVI	77.9	7.6	21.9	0.0	92.0	65.0	na	88.8
115	PREVIREFINACOES	75.1	2.2	5.3	0.1	92.1	65.1	na	88.8
116	PREVEME	72.8	2.9	5.3	0.2	92.2	65.3	na	88.9
117	PREVILLARES	72.4	7.1	17.5	0.2	92.3	65.8	na	88.9
118	CAPESESP	72.4	37.1	104.0	0.1	92.4	68.0	na	88.9
119	MULTIPLA	69.4	0.6	8.0	0.1	92.4	68.1	na	89.0
120	CAPOF	68.2	1.2	2.6	0.3	92.5	68.1	na	89.0
121	SERGUS	64.2	1.0	2.7	0.1	92.6	68.2	na	89.1
122	PREVI-ERICSSON	6.4	3.8	5.6	0.0	92.6	68.4	na	89.1
123	ENERSUL	63.4	0.8	2.4	0.2	92.7	68.5	na	89.2
124	PREVID EXXON	63.0	1.2	2.7	0.1	92.8	68.6	na	89.2

Table 14 (Continued)

Ranking	Pension funds	Investments (R\$ million) (1)	Participants (1000) (2)	Dependents (1000) (3)	Beneficiaries (1000) (4)	Acc. % (1)	Acc. % (2)	Acc.% (3)	Acc. % (4)
125	FUNDAMBRAS	61.3	4.2	0.6	0.2	92.8	68.8	na	89.2
126	PREVISCANIA	61.2	3.3	8.6	0.0	92.9	69.0	na	89.3
127	PREVISC	61.1	6.2	11.1	0.5	93.0	69.4	na	89.4
128	CIBRIUS	60.7	3.4	8.7	0.5	93.0	69.6	na	89.5
129	FUNDIAGUA	59.5	2.8	7.9	0.1	93.1	69.8	na	89.6
130	IAJA	59.1	3.3	5.0	0.5	93.2	70.0	na	89.7
131	CASA	5.9	3.8	8.3	0.0	93.2	70.2	na	89.7
132	AG-PREV	58.8	6.6	11.2	0.1	93.3	70.6	na	89.7
133	SAO FRANCISCO	57.8	1.5	5.8	0.3	93.3	70.7	na	89.8
134	CABEA	57.5	0.7	1.5	0.1	93.4	70.8	na	89.8
135	SUPREV	53.0	0.9	2.7	0.0	93.4	70.8	na	89.8
136	SOMUPP	5.2	0.0	0.0	0.2	93.5	70.8	na	89.9
137	FACEAL	5.2	1.1	3.8	0.2	93.5	70.9	na	89.9
138	MENDESPREV	5.0	2.3	0.7	0.2	93.5	71.0	na	90.0
139	PREVIMAT	49.4	1.3	3.1	0.0	93.5	71.1	na	90.0
140	CIFRAO	48.8	1.7	2.0	0.6	93.6	71.2	na	90.2
141	FACEPI	48.4	1.2	0.0	0.4	93.6	71.3	na	90.3
142	FASERN	47.5	0.6	2.4	0.3	93.7	71.3	na	90.4
143	CASFAM	47.2	2.9	1.2	1.1	93.7	71.5	na	90.7
144	FAPA	46.7	0.1	2.7	0.1	93.8	71.5	na	90.7
145	ABRILPREV	46.5	10.5	11.4	0.0	93.9	72.2	na	90.7
146	ZENECA ICIFUND	45.2	1.1	2.1	0.1	93.9	72.2	na	90.7
147	PREVSAN	0.5	2.7	9.9	0.6	93.9	72.4	na	90.9
148	PRODUBAN	44.9	0.0	0.1	0.2	94.0	72.4	na	90.9
149	GEIPREV	4.5	0.3	0.7	0.1	94.0	72.4	na	91.0
150	FUNASA	44.3	1.9	5.7	0.3	94.0	72.5	na	91.0
151	PREVIKODAK	44.2	2.0	4.7	0.1	94.1	72.7	na	91.1
152	FASCEMAR	43.6	2.4	9.0	0.1	94.1	72.8	na	91.1
153	PREVICAT	4.3	3.0	7.5	0.2	94.1	73.0	na	91.1
154	DERMINAS	42.6	10.0	29.9	2.3	94.2	73.6	na	91.8
155	ROYALPREV	4.2	4.3	7.3	0.0	94.2	73.9	na	91.8
156	COFAPREV	42.1	7.8	13.5	0.2	94.2	74.4	na	91.9
157	MULTIPREV	41.4	9.0	22.6	0.0	94.3	74.9	na	91.9
158	PREVISAQ	40.3	1.7	3.0	0.3	94.3	75.0	na	91.9
159	FUCAE	4.0	4.5	8.2	na	94.3	75.3	na	na
160	GASIU	38.5	0.5	2.2	0.8	94.4	75.3	na	na
161	PARSE	38.3	0.3	0.7	0.1	94.4	75.3	na	na
162	PREVINDUS	37.4	4.4	0.8	0.5	94.5	75.6	na	na
163	CENTRUS MT	36.5	0.7	2.0	0.2	94.5	75.6	na	na
164	PREVILLOYDS	35.7	0.6	1.2	0.0	94.5	75.7	na	na
165	FIOPREV	34.7	3.9	7.5	0.2	94.6	75.9	na	na
166	PREVCUMMINS	34.4	1.1	na	0.1	94.6	76.0	na	na
167	PREVITDB	33.6	3.2	7.1	0.1	94.7	76.2	na	na
168	AEROS	33.0	2.7	3.8	0.1	94.7	76.4	na	na
169	SARAH PREVIDENCIA	32.9	3.5	4.8	na	94.7	76.6	na	na
170	GOODYEAR	32.3	4.8	7.3	0.1	94.8	76.9	na	na
171	FENIPREV	31.7	9.3	19.6	0.0	94.8	77.4	na	na
172	SIAS	31.5	11.7	21.5	1.2	94.8	78.2	na	na
173	FUNREDE	31.2	1.7	0.4	0.2	94.9	78.3	na	na
174	WEG	31.1	6.2	1.1	0.0	94.9	78.6	na	na
175	PREVICOKE	31.1	0.8	1.8	0.0	95.0	78.7	na	na
176	FAPERS	29.3	0.7	1.7	0.1	95.0	78.7	na	na
177	OESPREV	27.4	0.4	8.5	0.0	95.0	78.8	na	na
178	PREVIALBARUS	27.2	0.4	4.9	0.0	95.0	78.8	na	na
179	PREVIM-MICHELIN	27.1	3.8	11.5	0.0	95.1	79.0	na	na
180	PREVIMULTIPLIC	25.6	3.0	6.0	0.0	95.1	79.2	na	na
181	ULTRAPREV	25.3	0.0	0.0	0.0	95.1	79.2	na	na
182	HERINGPREV	25.2	0.2	0.0	0.0	95.2	79.2	na	na
183	ODEPREV	25.1	2.6	0.7	na	95.2	79.4	na	na
184	SPASAPREV	23.9	11.7	12.8	0.1	95.2	80.1	na	na
185	PREVI GILLETTE	21.8	0.2	3.6	0.0	95.3	80.1	na	na
186	TEXPREV	21.7	1.1	na	0.0	95.3	80.2	na	na
187	PENA BRANCA	21.4	1.0	3.1	0.0	95.3	80.2	na	na

Table 14 (Continued)

Ranking	Pension funds	Investments (R\$ million) (1)	Participants (1000) (2)	Dependents (1000) (3)	Beneficiaries (1000) (4)	Acc. % (1)	Acc. % (2)	Acc.% (3)	Acc. % (4)
188	VIKINGPREV	20.7	1.6	na	0.0	95.3	80.3	na	na
189	GEBSA-PREV	20.5	2.7	4.4	0.0	95.3	80.5	na	na
190	FABASA	2.0	4.1	12.3	0.0	95.4	80.8	na	na
191	INSTITUTO SANDOZ	19.3	0.6	1.2	0.1	95.4	80.8	na	na
192	FUCAP	18.6	2.2	2.9	0.2	95.4	80.9	na	na
193	PREVIDA	18.6	0.1	0.5	0.1	95.4	80.9	na	na
194	PREVBEP	18.3	0.2	0.5	0.0	95.4	81.0	na	na
195	PREVI-INCEPA	18.3	3.2	na	0.0	95.5	81.2	na	na
196	CHAMPREV	17.9	3.5	7.1	0.0	95.5	81.4	na	na
197	FUNSEJEM	17.1	1.5	na	0.0	95.5	81.5	na	na
198	INERGUS	16.8	0.6	1.8	0.3	95.5	81.5	na	na
199	CARBOPREV	16.5	0.7	na	0.0	95.5	81.5	na	na
200	PREVIDEC	16.3	na	na	na	95.6	na	na	na
201	PREVHENKEL	16.2	0.2	0.5	0.0	95.6	na	na	na
202	SUPRE	15.8	0.8	2.5	0.1	95.6	na	na	na
203	FAPECE	15.6	0.9	1.9	0.0	95.6	na	na	na
204	FAECES	15.4	0.1	0.3	0.3	95.6	na	na	na
205	BERONPREV	15.1	0.9	2.2	0.0	95.6	na	na	na
206	MARCOPREV	14.7	4.7	9.4	na	95.7	na	na	na
207	BRASPREV	14.0	0.2	0.4	0.0	95.7	na	na	na
208	PINUSPREV	13.8	2.6	6.3	0.0	95.7	na	na	na
209	RECKITT & COLMAN	13.7	1.4	2.7	0.0	95.7	na	na	na
210	MAPPIN	13.5	8.3	7.8	0.0	95.7	na	na	na
211	MAUA PREV	13.0	2.2	4.8	0.0	95.7	na	na	na
212	BOAVISTA	12.5	1.5	4.6	0.2	95.8	na	na	na
213	CAFBEP	12.0	0.9	2.1	0.1	95.8	na	na	na
214	PORTOPREV	11.9	1.8	1.5	na	95.8	na	na	na
215	URANUS	11.6	0.0	0.0	0.1	95.8	na	na	na
216	CAVA	11.6	4.6	6.1	0.6	95.8	na	na	na
217	VULCAPREV	11.4	1.6	3.5	0.1	95.8	na	na	na
218	PREVIBAN	11.3	0.3	0.7	0.1	95.8	na	na	na
219	PREVMOBIL	1.1	0.2	0.3	0.0	95.8	na	na	na
220	ALPHA	11.2	1.0	2.9	0.0	95.9	na	na	na
221	JOAO M SALLES	11.1	0.2	0.5	0.3	95.9	na	na	na
222	PREVIARMCO	10.4	0.7	2.2	0.0	95.9	na	na	na
223	SINGER	10.1	2.0	3.4	0.0	95.9	na	na	na
224	PREVCAPCO	10.0	2.2	5.2	0.0	95.9	na	na	na
225	PREVER HAAS	9.9	0.3	0.9	0.0	95.9	na	na	na
226	FUNCASAL	9.9	1.0	0.3	0.1	95.9	na	na	na
227	HOLANDAPREVI	9.5	1.9	4.8	0.0	95.9	na	na	na
228	PREVI-CLARIANT	9.4	0.8	1.6	na	95.9	na	na	na
229	PREVMON	9.4	0.5	0.1	0.0	96.0	na	na	na
230	EATONPREV	8.8	0.5	1.3	0.0	96.0	na	na	na
231	PREVQUAKER	8.6	3.2	5.7	0.0	96.0	na	na	na
232	POTIPREV	8.6	0.3	0.7	0.1	96.0	na	na	na
233	RANDONPREV	8.4	3.6	0.8	0.0	96.0	na	na	na
234	FMCPREV	8.3	0.4	1.3	0.0	96.0	na	na	na
235	FIBERPREV	8.2	0.8	1.7	0.0	96.0	na	na	na
236	FUNTERRA	7.7	0.5	1.4	0.0	96.0	na	na	na
237	LOCTITE	7.3	0.4	1.1	0.0	96.0	na	na	na
238	PERDIGAO	7.3	14.1	21.2	0.0	96.0	na	na	na
239	J&HPP	7.3	0.4	1.3	0.0	96.1	na	na	na
240	BANKBOSTON	7.1	4.2	6.8	na	96.1	na	na	na
241	PREVDEUTSCHE	7.1	0.3	0.7	0.0	96.1	na	na	na
242	CISPER	0.7	1.2	2.3	0.0	96.1	na	na	na
243	GTMPREVI	6.9	7.2	13.1	0.0	96.1	na	na	na
244	DAREXPREV	6.6	0.5	0.8	0.0	96.1	na	na	na
245	RESAPREV	6.3	0.3	0.7	0.0	96.1	na	na	na
246	ALCANPREV	6.2	2.6	5.9	0.1	96.1	na	na	na
247	ROCHEPREV	6.0	1.4	2.2	0.0	96.1	na	na	na
248	PREVICASTROL	5.7	0.3	0.8	0.0	96.1	na	na	na
249	MULTIPLIC	5.7	0.0	0.1	0.0	96.1	na	na	na
250	ORIOUS	5.3	0.0	0.1	0.1	96.1	na	na	na

Table 14 (Continued)

Ranking	Pension funds	Investments (R\$ million) (1)	Participants (1000) (2)	Dependents (1000) (3)	Beneficiaries (1000) (4)	Acc. % (1)	Acc. % (2)	Acc.% (3)	Acc. % (4)
251	TRICHESPREV	5.2	0.6	0.0	0.0	96.1	na	na	na
252	LILLY PREV	5.1	0.9	2.4	na	96.1	na	na	na
253	PREV AMERICA LATINA	4.9	0.3	0.3	0.0	96.1	na	na	na
254	VAN LEER	4.8	0.8	2.3	0.0	96.1	na	na	na
255	RBS PREV	4.8	6.6	5.5	0.0	96.2	na	na	na
256	FACOPAC	4.6	1.5	3.0	0.0	96.2	na	na	na
257	SILIUS	0.4	0.2	0.9	0.2	96.2	na	na	na
258	PREVI-FIERN	4.5	0.6	2.0	0.1	96.2	na	na	na
259	ICATU HARTFORD	4.4	4.6	9.9	na	96.2	na	na	na
260	PREVICEL	4.3	0.5	0.9	na	96.2	na	na	na
261	PREVCHEVRON	4.3	0.1	0.2	0.0	96.2	na	na	na
262	ZENPREV	3.7	0.5	0.1	na	96.2	na	na	na
263	SANEPREVI	3.6	1.1	na	0.2	96.2	na	na	na
264	JOSAPREV	3.4	4.5	4.8	na	96.2	na	na	na
265	P&G PREV	3.1	0.2	0.9	na	96.2	na	na	na
266	PREVIF	3.0	0.3	0.4	0.0	96.2	na	na	na
267	PREVPISA	0.3	0.4	1.2	na	96.2	na	na	na
268	GZM-PREVI	2.9	1.7	0.4	na	96.2	na	na	na
269	PREVINTAS	2.8	0.4	0.3	0.0	96.2	na	na	na
270	TRAMONTINAPREV	2.5	4.1	0.7	na	96.2	na	na	na
271	UNIPREVI	0.3	1.1	1.7	0.0	96.2	na	na	na
272	NALCOPREV	2.5	0.2	0.4	na	96.2	na	na	na
273	FUMBESC	2.0	0.1	0.1	na	96.2	na	na	na
274	BNL PREVILAVORO	1.9	0.2	0.3	0.0	96.2	na	na	na
275	CREMERPREV	1.9	1.3	1.8	0.0	96.2	na	na	na
276	MW PREV	1.8	0.1	0.1	na	96.2	na	na	na
277	FUNDO NORCHEM	1.6	0.2	0.3	na	96.2	na	na	na
278	LWW PREV	1.4	1.1	1.8	na	96.2	na	na	na
279	PREVILEAF	1.3	0.9	1.8	na	96.2	na	na	na
280	RIBEIRAO PREV	1.1	0.3	0.6	na	96.2	na	na	na
281	FOLHAPREV	0.9	6.5	11.3	na	96.2	na	na	na
282	MESSIUS	0.7	0.6	0.7	na	96.2	na	na	na
283	BD PREV	0.6	na	na	na	96.2	na	na	na
284	PRO-FUTURO	0.5	0.2	na	na	96.2	na	na	na
285	PREVIVER	0.1	0.1	0.2	na	96.2	na	na	na
286	STEIO	0.0	0.0	0.1	0.0	96.2	na	na	na
287	CAPEB	na	0.2	0.4	0.0	na	na	na	na
288	CARFEPE	na	2.1	3.7	0.0	na	na	na	na
289	CEPLUS	na	4.3	13.8	0.3	na	na	na	na
290	CORRENTE	na	5.0	6.3	0.0	na	na	na	na
291	FUNDAÇÃO GAROTO	na	2.8	6.9	na	na	na	na	na
292	FUNDAÇÃO MAC LAREN	na	0.1	0.3	0.0	na	na	na	na
293	HP PREV	na	0.8	1.7	0.0	na	na	na	na
294	MAGNUS	na	0.5	11.7	0.0	na	na	na	na
295	MERCAPREV	na	0.7	1.4	na	na	na	na	na
296	PREVIMA	na	0.2	0.2	na	na	na	na	na
297	PREVISERV	na	0.1	0.1	na	na	na	na	na
Total		86305.5	1622.4	4258.6	362.5	100.0	100.0	100.0	100.0

Source: Abrapp.

VI. Conclusions

The growth of pension funds does not per se increase aggregate saving, which is primarily determined by investment decisions and the supply of finance to the corporate sector. It does however provide potentially more stable mechanisms of productive investment funding, since, due to the characteristics of the assets they finance, they are potential demanders of long-term securities.

Whether this potential becomes effective depends on several characteristics in which these institutions operate. Three of these have been highlighted in this paper:

- ✓ The macroeconomic environment;
- ✓ The degree of volatility of asset prices
- ✓ Market organization and regulation
- ✓ The existence of appropriate institutions to intermediate between institutional investors and primary corporate securities markets

The macroeconomic environment affects the perception of different risks of asset-holders in general – and specifically both the perceived discounted value and the capital risk of pension funds portfolio.

Even though pension funds should have a long-termist approach to portfolio allocation, it is irrational for any asset-holder to maintain risky assets. This is the case of those securities issued by corporations that, due to macroeconomic instability, may have less predictable medium and long-term performance. It is additionally irrational to

maintain them if there exist other less risky assets that present shorter maturities and/or high real returns (such as government bonds in a situation of high government indebtedness).

The market organization defines the degree of liquidity of long-term negotiable securities, and thus determines the degrees of freedom an asset-holder has in adjusting its portfolio in view of a change of risk perception or unexpected cash needs. If asset markets are poorly organized, asset-holders will prefer assets with higher liquidity, in detriment of those with lesser degree of negotiability. In addition, market organization determines the ease with which final issuers of assets have to recourse to such markets when they need to raise resources to finance or fund their investment.

Even if the securities markets are well organized, high volatility of asset markets does tend to scare off both long-term (individual and institutional) investors. Again this characteristic does impede both the demand for and the supply of long-term securities, which could potentially be sources of productive investment and funding.

Finally, it is important to note that the development of securities markets suffers from hysteresis: underdeveloped thin markets tend to be highly sensitive to abrupt changes in financial flows into them. This has important consequences for the evaluation of the role played by foreign capital inflows in the development of securities markets of developing economies.

Financial institutions and markets in the 1980s became highly dependent on revenues obtained by financing government debt and from other inflation gains, and concentrated their assets on short-term application. The reduction of the fiscal deficit, the external liberalization early in the 1990s, and the achievement of price stability in 1994, led them to change their strategies. The changes in regulation and the new entries of foreign players changed their behavior in some important ways. These changes in behavior can be summarized as follows: (i) their drive towards private credit and securities, and the lengthening of the maturities of their investment (ii) the increase in competition; and (iii) a wider role played by international players - both financial investors and institutions.

As regards institutional investors, their growth has also been significant in the 1990s. The portfolio composition shows an initial decline in the participation of holdings of government bonds and real estate, and an increase in holdings of shares and quotas in investment funds. These trends indicate the potential of these investors as long-term loanable funds providers.

However, this trend did not last for long. Due to the continuing fiscal crisis, regulation on pension funds determines that a significant part of their portfolio be allocated into government bonds. Furthermore, the recent increase of the participation of stocks in the portfolio of these institutions has to do with their participation in the privatization of "blue-chip" government enterprises. Given the rapid rise of prices in secondary stock markets, the capital gains of such strategy have been substantial. Accordingly, the recent falls of prices in Brazil's stock markets have led not only to huge losses by pension funds, but led to a shift towards government bonds. In sum: a sustainable, less volatile growth of both secondary and primary long-term securities markets seems to be a precondition for an increasing participation of pension funds - as well as other institutional investors - in the provision of long-term sources of funding.

Thus, even though maturities increased in 1995 and 1996, recently maturities have tended to decline substantially after the beginning of the East Asian crisis. It is clear that such maturities are determined by the state of liquidity and liquidity preferences in the international credit market - which, as we have observed recently, can change dramatically in very short periods of time.

Our analysis suggests that a policy towards enhancing the role of pension funds in the financing long-term investment should increase the commitment of these institutions into buying

long-term securities in the primary securities markets. No one single policy can achieve this goal: it requires a set of long-term policies including improving regulation, enhancing markets and institutional building.

In what concerns the improvement of regulation, it is certainly possible to create further incentives for pension funds to acquire newly issued corporate securities. Currently, the legislation only determines upper limits of pension funds investments in long-term corporate securities and quotas in investment funds. There are no reasons for which selective tax incentives should not be created for the investment in corporate securities. In special, these incentives could be aimed at expanding the allocation of pension funds to smaller sized companies, which often have little (or no access) to capital markets or any other sources of long-term (private or public) funding.

Creating incentives may be not enough to establish the link between institutional investors and the financing of productive investment. In the Brazilian case, the intermediation of funds of pension funds was partly done by investment funds, which are highly risk averse and suffer pressures for short-term profitability that impedes them to have a longer-term perspective on portfolio allocation. Furthermore, due to the lack of liquidity and the high risk of many types of investments (such as those of small and medium enterprises, or those that involve new technologies and markets) when allocating portfolio investment funds tend to favor securities of well-established (generally) large companies.

In this case, it does take further institutional building to consolidate a link between long-term saving and long-term productive investment. Fortunately, recent development in the financial business, such as securitization and the widespread use of derivatives to manage risks, allows a wider scope of institutional arrangements in this vein. One of them was explored in section V of this paper: the creation of a scheme involving a minimum involvement of public funds only in guaranteeing a process of securitization of assets issued by investors. As mentioned, this is one possible institutional arrangement, of the many which should be part of sustained policy of financial development.

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