

Portfolio limits

Pension investment restrictions compromise fund performance

The value of funded pensions can depend critically on the funds' investment performance. To try and protect people's savings, governments often regulate pension funds strictly, particularly when contributions are mandatory. For example, the new funded pension systems in Latin America and Eastern Europe are more stringently regulated than private pensions in OECD countries, which are mainly voluntary.

These pension fund regulations take three different forms:

- Restrictions on industry structure. Reforming governments in Latin America and Eastern Europe have tended to establish a new pension fund management industry, separated from other financial institutions.
- Regulation of pension funds' performance. These guarantees sometimes specify an absolute return that funds must earn, but more usually, they are related either to the industry's average performance or to the returns on a benchmark portfolio.
- Limits on investments allowed. Quantitative restrictions on the share of particular types of assets held by the fund limit the dispersion of outcomes, particularly for defined contribution schemes. In most mandatory schemes, this leads to a 'single portfolio' environment where members of the scheme are forced to hold basically the same portfolio. Most common are limits on risky assets such as shares and corporate bonds. Often, foreign investments are curtailed.

This briefing focuses on the last of these: quantitative restrictions on pension funds' portfolios.

Why regulate pension portfolios?

Consumers in countries that have introduced mandatory funded pensions often had little experience of investing. Many had little, if any contact with financial services and providers before the pension reform. In addition, financial services industries were rarely well developed. The lack of experience of investment—in particular, of managing risk—might lead to poor portfolio decisions. Indeed, investing in emerging economies is more risky than investing in more developed countries. Capital markets can be fragile, lacking both liquidity and transparency.

Countries with better-developed capital markets where the population has more investment experience may require only a light regulatory touch. Voluntary retirement savings also put less responsibility on the government than mandatory pensions, again suggesting less need for strict regulation of fund investments. Finally, many countries have funded defined benefit pensions provided by employers. These schemes raise many regulatory problems with protecting people's rights and fund assets. But because employers stand behind the promised pension benefit, there is less need for detailed regulation of portfolios than in defined contribution pensions, whose value depends more closely on fund performance.

This briefing is part of the World Bank's Pension Reform Primer: a comprehensive, up-to-date resource for people designing and implementing pension reforms around the world. For more information, please contact Social Protection, Human Development Network, World Bank, 1818 H Street NW, Washington, D.C. 20433; telephone +1 202 458 5267; fax +1 202 614 0471; e-mail socialprotection@worldbank.org. All Pension Reform Primer material is available on the internet at www.worldbank.org/pensions

Effects on the public finances

Because of explicit public guarantees of pension values or pension fund returns, the government's finances might be imperiled if pension funds make excessively risky investments. The sustainability of the whole reform might even be jeopardized. Also, should a fund fail or under-perform its peers consistently, the government might feel obliged to step in to protect pensioners: a kind of implicit guarantee. Portfolio limits, if they succeed in reducing the riskiness of investments and limiting the dispersion of outcomes, might help prevent such calls on the public purse.

Another motive for encouraging investment in government bonds through portfolio limits is to ease the transition from a pay-as-you-go pension system to funding. During this transition, workers' pension contributions are partly diverted into their own pension accounts, meaning another source of revenues is needed to pay for existing public pay-as-you-go pension liabilities.

Encouraging pension funds to buy public bonds can smooth the transition to a funded system in the short run. But continuing this policy into the medium and long term undermines the beneficial effects of the switch to funding (on aggregate savings, economic growth and capital market development, for example).

Prudent person rules

The alternative to quantitative investment limits is a 'prudent person' rule. This approach gives pension fund managers more flexibility but relies heavily on legal precedents and accepted local standards of prudence. For example, the United States requires fund managers to invest

'with the care, skill, prudence and diligence under the circumstances then prevailing that a prudent person, acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims'.

The Employee Retirement Income Security Act of 1974 goes further than common law. It is not sufficient to be a careful amateur: managers must act

as a prudent professional, experienced and educated in financial matters.

Many countries do not use common law and tend to rely on extensive codification and detailed regulations. Most do not have long traditions with private pension funds. In a mandatory system, it may be difficult for many countries to depend on prudent people, at least until the concept was well-defined and understood.

Portfolio limits in practice

Prudent person rules of this sort are the main source of legal protection for pension fund members in around a third of OECD countries. These governments impose few, if any, rules on pension funds' asset allocation (beyond basic prudential restrictions, such as concentration of holdings). These are the English-speaking countries—Australia, Ireland, New Zealand, the United Kingdom and the United States—plus Austria, Spain and the Netherlands.

Figure 1 summarizes asset allocation restrictions. These regimes are often complex, with limits applying to dozens of different asset classes. We focus here on the ceilings on direct holdings in equities of listed companies and on total foreign assets (including bonds, equities and other assets). The OECD countries are at the top of the chart, the Latin American pension reformers at the bottom.

Domestic restrictions, on the left-hand side of the chart, take two different forms in the OECD countries. First, Denmark, Germany, Japan and Switzerland, for example, have a ceiling on the amount that can be invested in equities. The limit is typically 30 or 40 per cent of total assets. Poland, too, will restrict equities' portfolio share in its new mandatory pension system. (Note that the ceiling shown for the Netherlands is an informal one.)

Secondly, Belgium, Denmark, France, Japan and Portugal, impose a minimum investment in public sector bonds. This minimum is more variable—between 15 and 50 per cent—but has the same effect in restricting equity investments.

Restrictions in the Latin American countries, at the bottom of the chart, are generally tighter than in OECD countries. The most relaxed regimes are Chile, Colombia and Argentina, which allow 30 per cent or more in shares. (Peru, however, allows an additional 20 per cent in workers' shares, giving a 40 per cent total equity ceiling.) The situation in Bolivia—not shown in the chart—is complicated. On paper, investment is more lightly regulated than in the rest of Latin America. But a high minimum investment in government bonds has swallowed up most funds in the first few months of the system. Mexico and Uruguay's relatively tight regimes are also supposed only to be temporary, as in Bolivia.

from an outright ban on foreign investment to 30 to 40 per cent ceilings.

Four of the Latin American countries allow foreign investments, ranging from a 5 per cent maximum share in Peru to 12 per cent in Chile. Finally, maximum investments in public bonds are also common in Latin America. The reasoning seems to be a mix of requiring funds to diversify and preventing future governments from appropriating pension funds to finance deficit spending.

International investments

The second common restriction on pension fund managers is on the amount they can invest abroad. One economic rationale is that the pension funds' liabilities are domestic and so, by investing at home, assets and liabilities are denominated in the same currency. Investing abroad, in contrast, incurs exchange rate risk. Although hedging against currency movements is possible, this can be costly and even sophisticated investors have got their fingers burned with the complex financial instruments that hedging can involve. (The case of Long-Term Capital Management in the United States is just one example among many.)

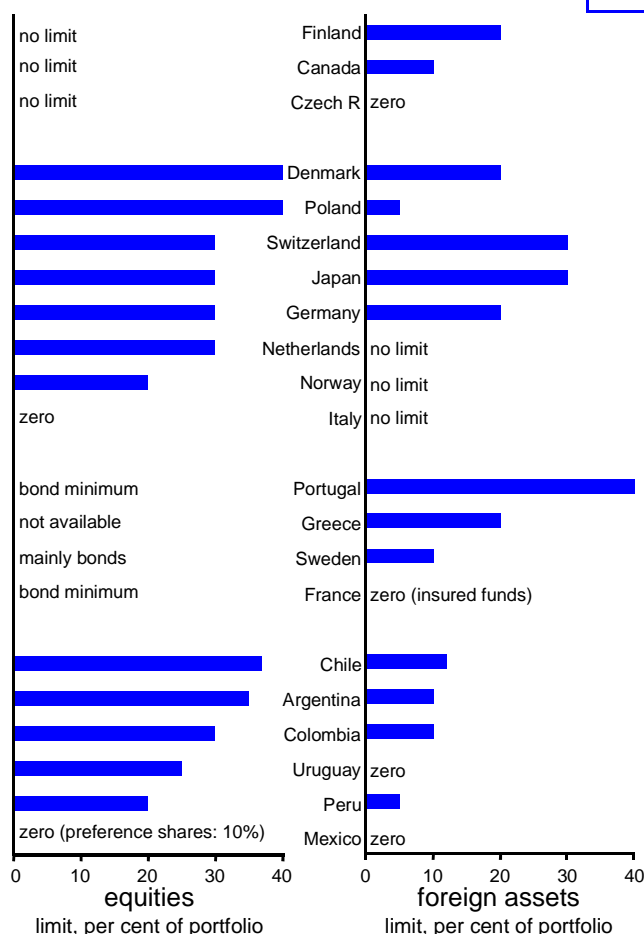
A second motive is to limit capital flows, whose volatility has been blamed for economic crises in the emerging economies of East Asia and Latin America. Reducing capital flight by limiting overseas investment might also help deepen domestic capital markets.

Chile's gradual liberalization

Chile had a restrictive investment regime for the first few years of the new scheme. Between 1981 and 1985, pension funds could only hold public and corporate bonds, mortgage-backed securities or fixed-term deposits. Equity investments—initially up to 30 per cent of the portfolio, now up to 37 per cent—have been allowed since 1985. Mutual fund investments were permitted in 1990. Foreign assets came next, in 1992. The limit, first set at 3 per cent, was increased to 9 per cent in 1995 and 12 per cent in 1997. Finally, the funds have been allowed to use hedging instruments since 1995.

Pension fund portfolio limits

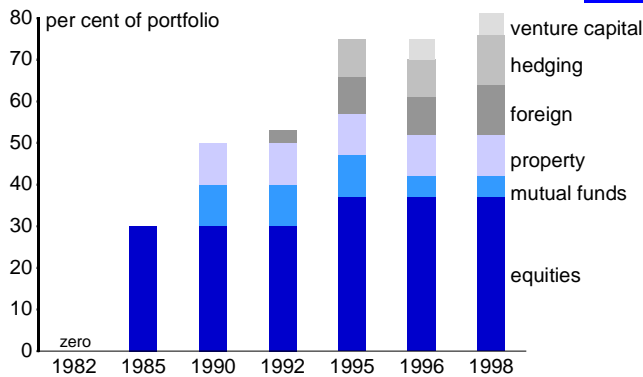
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Turning to foreign investments, on the right-hand side of the chart, the limits in Latin America are again tighter than in the OECD. Twelve OECD countries restrict overseas investments, on average, to 16 per cent of total pension assets. This varies

Chile's regime, illustrated in the second chart, is therefore best characterized as one of gradual liberalization of investments as fund managers and consumers have become more confident in, and more experienced with, the new pension system.

Chile's pension portfolio limits 2



Portfolio limits and asset allocation

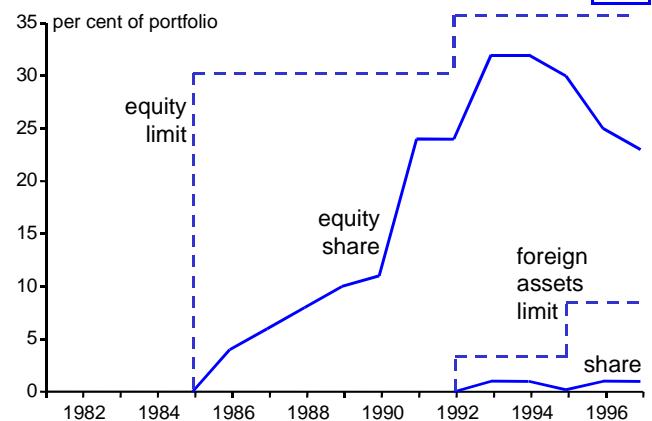
Staying with Chile, Figure 3 looks at how pension funds responded to their newly granted asset allocation freedoms. By 1992, Chile's pension funds had moved 30 per cent of their assets into equities. But the switch into equities was very slow, and it is natural to ask why.

Looking at other parts of the pension funds portfolio offers some answers. Government bond holdings have remained steady since 1983 at around 40 per cent of total assets. Equities have tended to substitute for mortgages and, to a lesser extent, deposits rather than for government bonds. The fall in mortgages' portfolio share—from over half in the early 1980s to 17 per cent—might be driven by supply rather than the regulatory change. Pension funds owned more than half of Chilean mortgages in 1997. Managers might have wanted to invest more in mortgages, but, prevented by their short supply, searched for other investments.

Secondly, rapid portfolio shifts can change asset prices. Chilean pension funds, now worth 43 per cent of GDP, are by far the largest investors in the economy. Reducing bond or mortgage holdings rapidly would drive prices downwards, and buying equities shift prices upwards. A more gradual switch would be less likely to have such an effect.

A final explanation is the effect of other regulatory controls. Pension funds, for example, are only allowed to own 7 per cent of a single company's total share issue. The larger funds push against this limit well before they reach the 37 per cent total equity ceiling. Another rule requires equities, as well as bonds, to be risk rated. Pension funds could only invest in companies rated BBB or better. In practice, this meant just 30 blue-chip companies out of the total 300 stocks listed on the market. Since 1997, however, this rule has been relaxed, and over 200 companies are now eligible for pension fund investment.

Pension fund portfolios in Chile 3



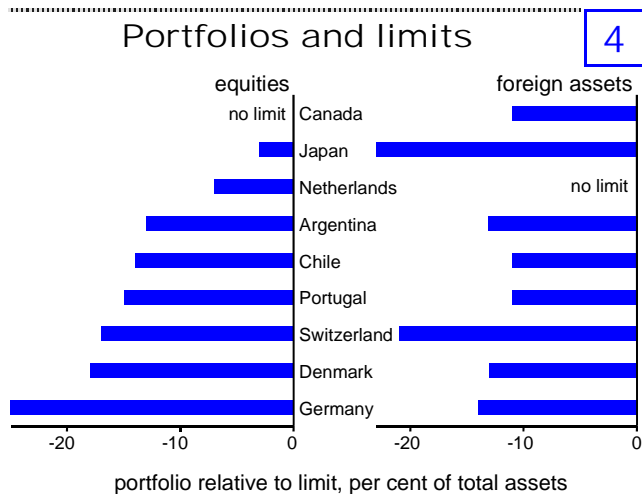
OECD countries

Chile's pension funds, until recently, invested much less in equities than they were allowed. And this pattern is common to many other countries. The fourth chart shows the difference between the regulatory ceiling and the actual share in pension funds' portfolios.

The shortfall in Chile and Argentina is, in fact, lower than in many OECD countries. In Denmark, Germany and Switzerland, for example, pension funds' equity investments are 20 percentage points or so below the statutory limit.

Pension funds are always likely to allow for some gap between actual share and the ceiling because equity values can be volatile. A sudden increase in share prices would force managers to liquidate part of their pension portfolio immediately. Some differences might be explained by other prudential

controls, as in Chile, but this is less likely in the well-developed capital markets of Western Europe.

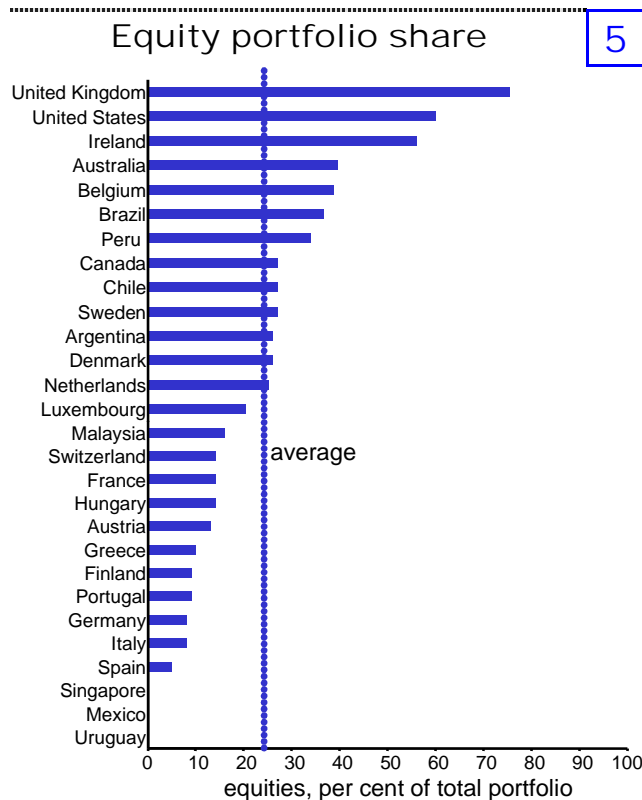


The most convincing explanation is that fund managers in continental European countries are innately conservative. Equity holdings are generally lower than statutory limits and than in other countries (Figure 5). In English-speaking countries, such as Australia, Ireland, the United Kingdom and the United States, pension funds hold 40-80 per cent of their assets in equities. In Austria, France, Germany, Italy, Spain, Switzerland and others, the share is typically 10 per cent or so. These countries lack what is often termed an 'equity culture'. So regulatory restrictions cannot alone explain conservative, bond dominated portfolios. The reforming countries of Latin America lie between these two groups of OECD economies. In fact, Argentina, Chile and Peru's pension funds invest more than the average in equities of the 28 countries shown in the chart.

Asset allocation and returns

The main reason for concern with portfolios with small equity holdings is that shares have historically offered a higher rate of return than bonds. Equity returns are, of course, more volatile than bond returns. But pensions are long-term investments, and much of equities' volatility is smoothed out over a long investment period. Furthermore, any shortfall in returns is very important for the value of the pension. A one per cent increase in annual returns increases the pension value for a

full 40-year lifetime of contributions by 20 or 30 per cent.



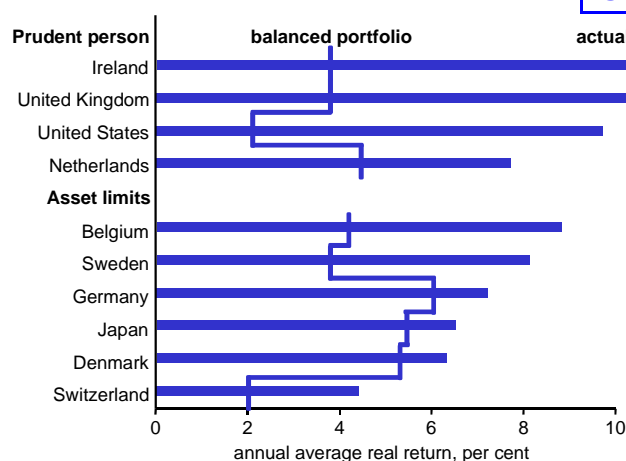
To show the impact of investment restrictions, Figure 6 compares pension funds' actual returns with the return on a 'balanced portfolio'. This benchmark is based on a fund invested half in equities and half in bonds.

Pension funds in the four countries at the top, with relatively liberal investment regimes, earned 9½ per cent a year between 1984 and 1996 (the bars on the chart). In the six countries that restrict asset allocations, returns were around 6½ per cent a year.

There are many possible explanations for this difference. One important reason for differences in pension fund performance might be differences in financial market performance. But we can reject this conjecture. The lines in the chart show the returns on a balanced portfolio. This measure of the market return is actually lower on average in the countries with fewer investment restrictions: 3½ per cent compared with 4 per cent a year.

A second reason for the differences is that this simple comparison ignores risk. The portfolios of equity dominated pension funds are more volatile. As a result, the standard deviation (a simple measure of variability) of the returns on a pension fund's average portfolio in countries with liberal investment regimes is 11 per cent, compared with 8 per cent in more restrictive systems. So some of the extra return is being bought at the price of greater risk. But only investors extremely adverse to risk would choose to forego returns three percentage points a year better for this comparatively small increase in volatility.

Pension and benchmark returns 6



There are many other factors that might be at work—macroeconomic policies, taxation *etc.*—but the chart offers some compelling evidence that investment restrictions do compromise pension fund performance.

Chile and Argentina

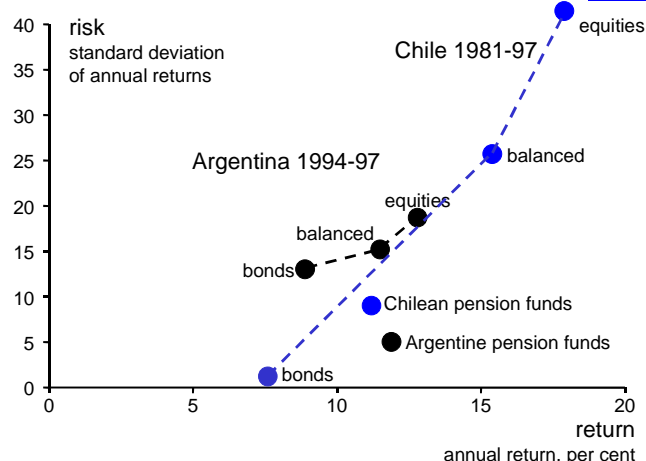
The final chart compares the risk and return of pension funds and different benchmark portfolios in Argentina and Chile since they introduced mandatory funded pensions (Figure 7). The chart plots the average annual return against the standard deviation of returns. Points to the right of the chart have higher returns; moving up the chart implies more variable returns.

Three indices of market returns are used: bonds, equities and a balanced portfolio, combining the two. As might be expected, equities deliver a

larger return but at the expense of greater volatility. In Chile, for example, equity returns averaged 18 per cent over a 16 year period compared with 7½ per cent a year for bonds. But the standard deviation for equities was over 40 per cent compared with just over 1 per cent for bonds.

Chile's pension funds have delivered lower returns (11 per cent a year) than a balanced equity-bond portfolio (15 per cent a year). They have, however, delivered consistent returns: the standard deviation—9 per cent—is less than could be achieved by an equity-bond mix.

The risk-return trade-off 7



The performance of Argentine funds is better in the short, three-year period since they were introduced than in the longer period Chile's funds have been in operation. The annual return is nearly one percentage point higher and the standard deviation nearly half the figure recorded in Chile (5 compared with 9 per cent). But these results must be treated with caution. A quarter of Argentina's funds are held in an 'investment fund', which allows them to avoid counting any losses incurred during the economic turmoil following the Mexican peso devaluation of 1994. This crisis measure means that 'returns' are probably overstated.

Latin American pension funds have delivered high absolute returns: 11 per cent or more, compared with 5 per cent or so in OECD countries (Figure 6). But what matters is returns relative to investment alternatives, and benchmark portfolios

combining stocks and bonds have often done better.

Adverse effects of portfolio limits

We have looked at two types of portfolio restrictions. The first either limits investments in equities either directly or indirectly (by requiring minimum investments in public bonds). The second constrains investment abroad.

Equities have generated higher long-run returns than bonds. And pensions are a long-term investment. We have shown that returns in countries where pension funds have sizeable equity investments have been higher than countries where bonds dominate portfolios, with only a small increase in risk. Portfolio limits could, therefore, have a high cost in terms of reduced benefits for pension members.

There is one potential caveat. Many countries' pension funds invest far less in equities than any portfolio restrictions allow. It does not necessarily follow that freer investment rules lead to more diversified portfolios. But circumscribing portfolio limits is a necessary condition for diversification, even if it is not sufficient.

One objective of moving towards a funded pension system is to enhance individual's responsibility for their own retirement income planning. Individual choice of pension fund manager provides an essential element of choice, and is an important spur to competition between funds in both service and performance. Portfolio limits, along with regulations of industry structure and fund returns, substantially reduce individual choice. These rules interact to produce almost identical pension fund portfolios and performance in Latin America. (This so-called 'herding' behavior is investigated in detail in the Pension Reform Primer briefing on guarantees of fund returns.) Competition between funds is not on investments but on service and sometimes even on gimmicks.

A related point is that pension fund members are diverse. For example, the best portfolio for a younger worker is one with high risks and high returns while older workers are better off invested

at the safe end. 'One-size-fits-all' portfolios offered in Latin America mean that people cannot switch their investments to take account of their own, individual circumstances.

In the United States, members of employer-run defined contribution schemes (called 401(k)s after the relevant clause of the tax code) vary their investments with age, from equity dominated portfolios when younger to safer assets when they near retirement. Pension providers in the United Kingdom have begun to offer 'lifestyle' plans that automatically adjust the risk profile of investments with the member's age

International diversification

Spreading assets across countries can reduce the volatility of investment returns. (Again, we will look in more detail at these issues elsewhere in the Pension Reform Primer.) For example, the correlation between returns on equities in the United States with those in emerging markets is just 40 per cent. Stockmarkets in the larger industrialized economies (Germany, United Kingdom, and the United States) are, however, more closely linked: the correlation is around 60 per cent. But even this degree of linkage allows for substantial benefits from international diversification.

Few funds take advantage of their freedom to invest abroad. The most international funds are in Belgium, Ireland and the United Kingdom, which have 30 per cent or so of assets overseas. In the United States, this proportion is just 10 per cent and elsewhere, usually lower. There are many potential explanations for this effect, called 'home bias', and portfolio restrictions are probably only a small part of the story.

So, again, freer investment rules are necessary for pension funds to reap the rewards in lower risk and higher returns from international diversification of their assets. But they are not sufficient to ensure this outcome.

Further reading

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- Vittas, D. (1998), 'Regulatory controversies of private pension funds', Policy Research Working Paper no. 1893, World Bank. (Internet: www.worldbank.org.)
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- European Federation for Retirement Provision (1996), *European Pension Funds: Their Impact on European Capital Markets and Competitiveness*, London.

Conclusions and recommendations

- governments have a responsibility to ensure that pension funds earn decent returns for their members, especially when contributions are mandatory
- explicit and implicit guarantees of pension values mean governments also have a financial interest in promoting good pension fund performance
- this responsibility has been used to justify strict regulation of pension funds' portfolios, the fund management industry's structure and investment returns
- but these restrictions have a cost: pension funds have often underperformed benchmark portfolios of stocks and bonds in Latin America and OECD countries with liberal investment regimes have had better pension fund returns
- different types of regulations interact to ensure that Latin American funds have similar portfolios and almost identical performance
- liberalizing the pension fund market should offer better returns, increased competition between funds and allow workers to choose a portfolio that matches their individual circumstances
- restrictions at the time of the reform might be necessary to bolster confidence in the new system
- but the medium-term goal should be to move to freer portfolios
- and pension funds' fiduciary duty to their members should eventually be set out in 'prudent person' regulation

