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Pension Funds, Capital Markets, and the Power of Diversification

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Abstract

The potential for pension funds to contribute to capital markets and thereby economic growth has been argued on a theoretical basis and demonstrated empirically. However, reforms fostering the development of funded pension systems have not had the economic impact hoped for in some countries. Pension fund portfolios in some cases have remained highly exposed to shorter-term assets, such as bank deposits and shorter-term government bonds. This, in turn, has led to relatively low investment returns, thereby potentially affecting income adequacy in retirement. This paper looks at the potential regulatory hurdles to long-term investment by pension funds, while also proposing international diversification and the creation of domestic investment opportunities to help portfolio diversification and ultimately improve the delivery of secure, adequate pensions.

This paper is a product of the Finance and Markets Global Practice Group. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at fstewart1@worldbank.org, romain.despalins@oecd.org, and iremizova@worldbank.org.

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Pension Funds, Capital Markets, and the Power of Diversification[1]

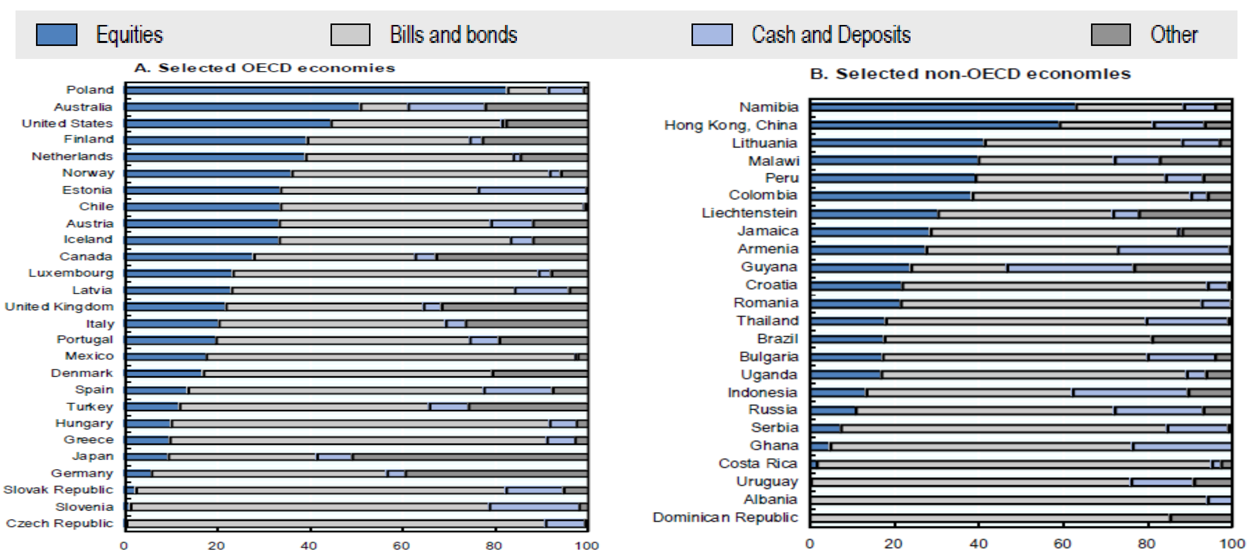
Pension funds asset allocation and performance

Following the global financial crisis of 2008, the theme of long-term investment and the role of institutional investors as providers of domestic capital for economic development have been high on policy makers' agendas. Pension funds are seen as an important source of funding as the balance sheets of governments and banks have become increasingly stretched. Yet, despite these strong theoretical arguments, pension funds' investments in many countries (even those with relatively mature pension systems) remain highly concentrated in bank deposits and government bonds, contributing little to long-term funding for productive investments and economic growth – as well as delivering potentially lower investment returns than what could have been achieved.

OECD Global Pension Statistics[2] show that pension funds held more than 75% of their portfolios in equities and bonds in 18 of 27 OECD economies. Equities represented more than 50% of pension fund portfolios in Australia; Poland;[3] Hong Kong SAR, China; and Namibia. Despite the prolonged low interest rate environment, pension funds still hold a high share of their portfolios in bills and bonds, especially in some Central and Eastern European economies (Czech Republic, Hungary, Serbia, the Slovak Republic) and Latin American economies (Chile, Costa Rica, the Dominican Republic, Mexico, Uruguay), where bills and bonds accounted for more than half of the portfolio.

Figure 1 + 2: Pension Fund Asset Allocation in Selected Asset Classes (2016 preliminary),

as a percentage of total investment



Source: OECD (2017)

The OECD also finds that the portfolio of large pension funds, provident and social security funds is highly concentrated in bonds and cash.[4] These are often the largest potential source of domestic, long-term capital in developing economies.

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[1] This paper was prepared by Fiona Stewart, Global Lead Insurance & Pensions, World Bank, Romain Despalins, Statistician, OECD; Inna Remizova, Consultant, World Bank;. It is based on a chapter prepared for a Universidad de San Martín de Porres (USMP) publication.

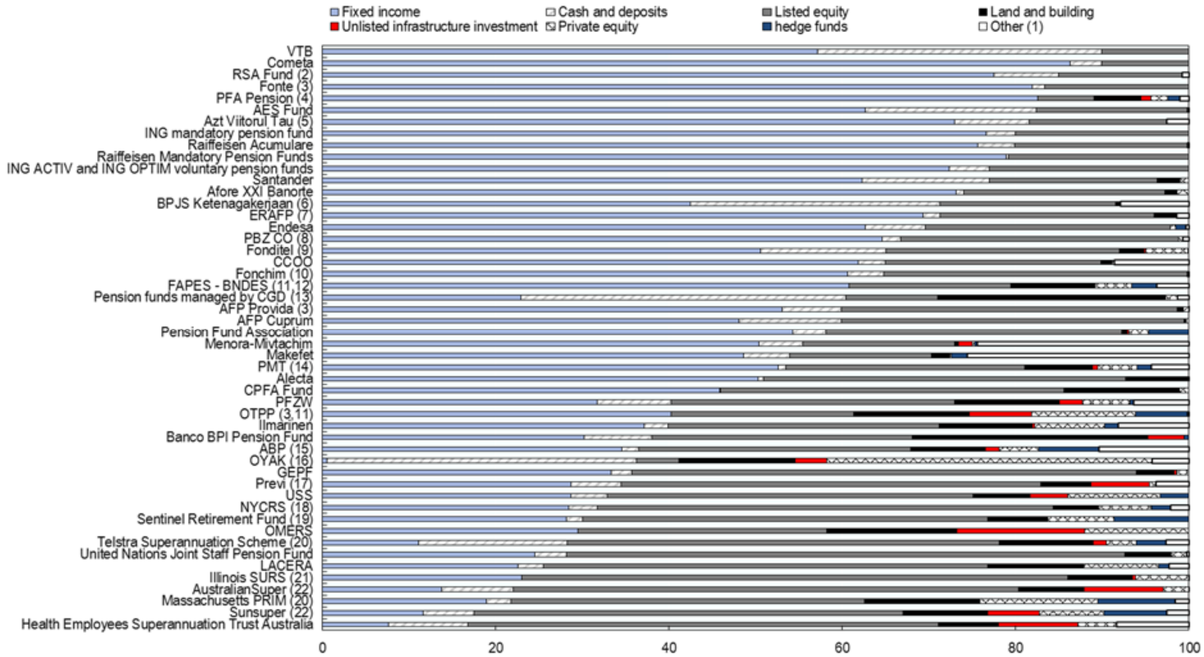
[2] See Pension Funds in Figures, May 2017.

[3] Pension funds in Poland hold the highest share in equities following the 2014 reform that prevents open pension funds from investing in treasury bonds and requires these funds to invest a minimum share of their portfolios in equities instead.

[4] Chan-Lau (2004) also notes this is the case with Asian provident funds – though it should be noted that there have been significant improvements in the diversification of the portfolios of some leading funds (such as the EPF in Malaysia) in recent years.

Figure 3: Asset Allocation of Large Pension Funds (2014),

as a percentage of total investment

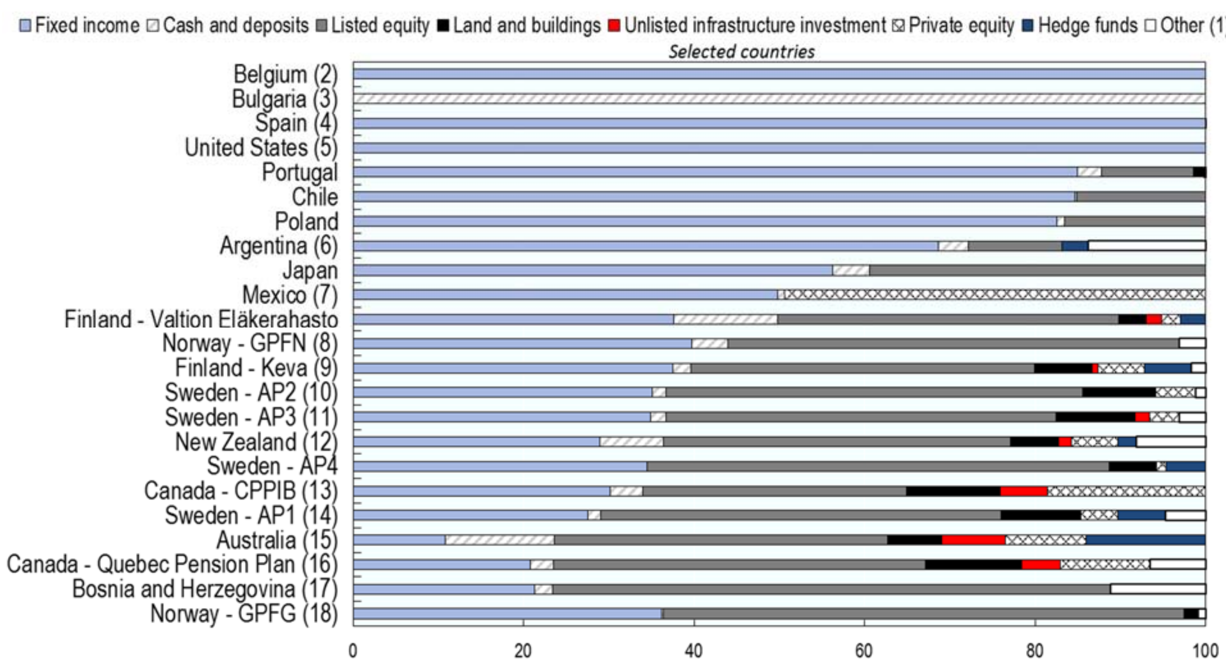


Source: OECD (2015b)

As the OECD has argued,[5] social security and public pension reserve funds (PPRF) invest and manage surplus contributions that would only be tapped in the event that benefit payments exceed contributions, thus stabilizing the financing of the public pay-as-you-go system.

Figure 4: Asset allocation of Public Pension Reserve Funds (2014)

as a percentage of total investments



Source: OECD (2015b)[6]

[5] See OECD (2015b).

[6] Detailed notes on the figure are available in the OECD publication.

In theory, these funds are not driven to seek the short-term returns that many other market participants must achieve due to their investment objectives. In practice, they are often heavily invested in government bonds.[7] The OECD (2015b) notes that when it comes to the performance of these public pension funds: "*the concentration of these portfolios into shorter-term instruments has led to disappointing investment performance in some countries*". Based on the Global Pension Statistics, pension funds in OECD and selected non-OECD countries have delivered positive real investment returns in recent years. The range of returns is, however, broad, with returns lower than wage growth in some countries.[8] Over the period 2009-2015, the Netherlands and the United Kingdom had the best performing pension funds with diversified portfolios offsetting low domestic interest rates, in a context of low wage growth post the financial crisis in these two countries. The Latin American systems have generally delivered positive returns, with systems in Central and Eastern Europe often proving the main laggards.

Figure 5: Real Investment Returns, %

Source: OECD, Global Pension Statistics[9]

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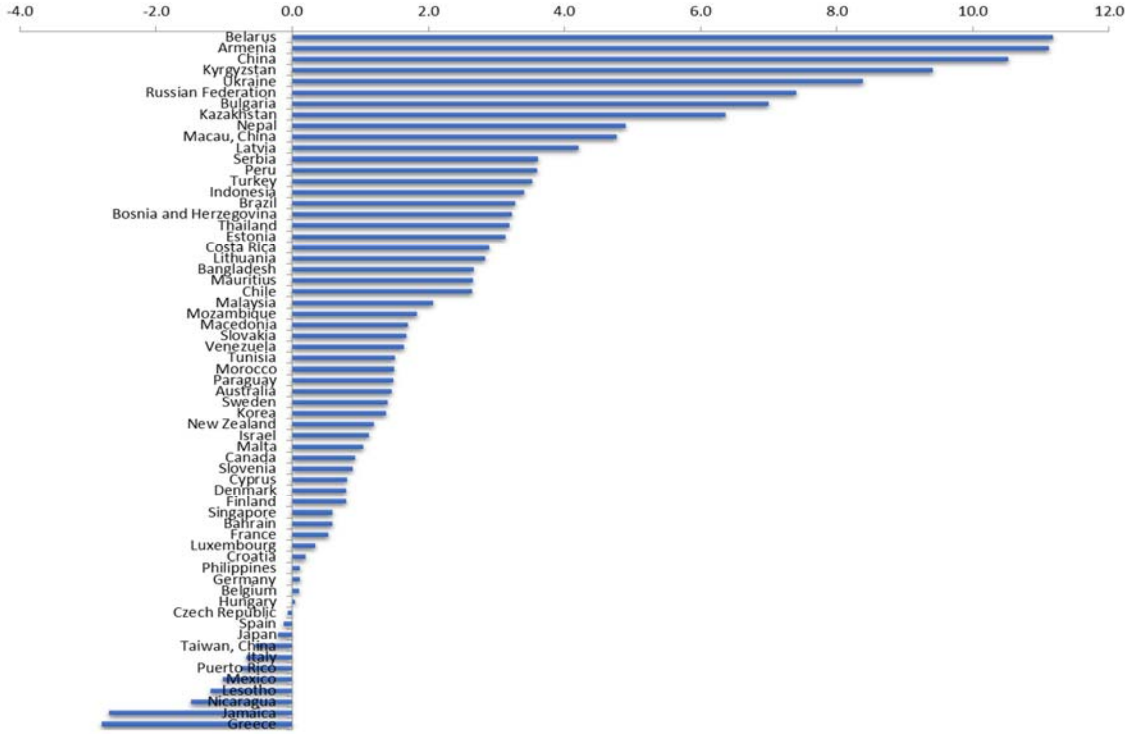
[7] It should be noted that long-term investment can be also achieved via government instruments if these are of long duration and kept until maturity and/or if they are financing particular goals such as, for example infrastructure or green bonds. However, in many countries, pension funds' holdings of government securities are generally of shorter-term duration. It should also be noted that when pension systems are launched in some countries, government bond rates can be high (and remain so for persistent periods). While this is the case, it can make sense for allocations to these assets to remain stable. However, it would be expected that these would decline as macroeconomic conditions and the pension sector develop. Whereas this has been observed in some countries (such as Mexico), others lag in their portfolio diversification trends.

[8] Investment returns are taken from OECD pension statistics. Geometric annual returns were calculated over a period of 7 years between 2009 and 2016 in order to have a sample of non-OECD countries as large as possible. Returns vs. wage growth are shown from the period 2006-2013 based on data available from the ILO wage database.

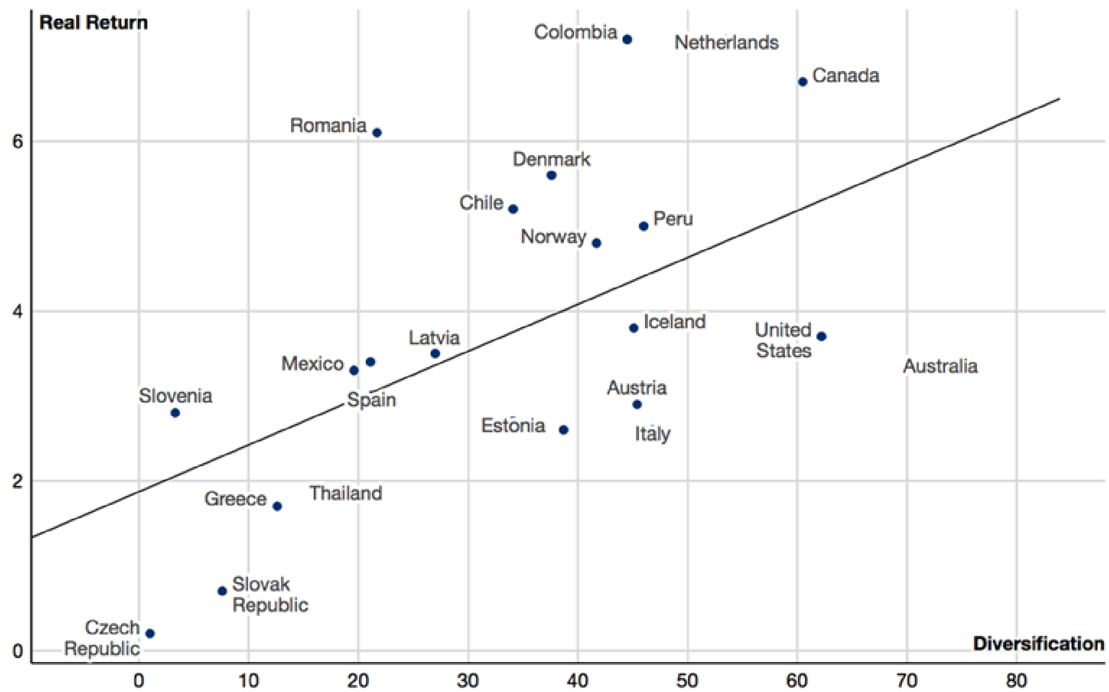
[9] The return period was selected based on the data available for the largest number of countries to allow for a broad comparison.

Figure 6: Nominal Investment Returns – Wage Real Growth, % (2006-2013)



Source: ILO Global Wage Database[10]As the OECD recognizes, the performance of the different pension systems can be linked to the composition of their portfolios. Taking the percentage of equity and 'other'[11] assets as a proxy for the level of diversification in portfolios, real investment returns are generally delivered when pension funds in OECD countries diversify away from generally low-yield assets such as bank deposits and bills. The correlation also holds for some other non-OECD countries in regions where there are fewer diversification opportunities, but the potential for higher returns exist (such as Colombia, Peru, the former Yugoslav Republic of Macedonia, Bulgaria, Romania).

Figure 7: Portfolio Diversification vs. Real Investment Returns OECD countries, % (2009-2016)



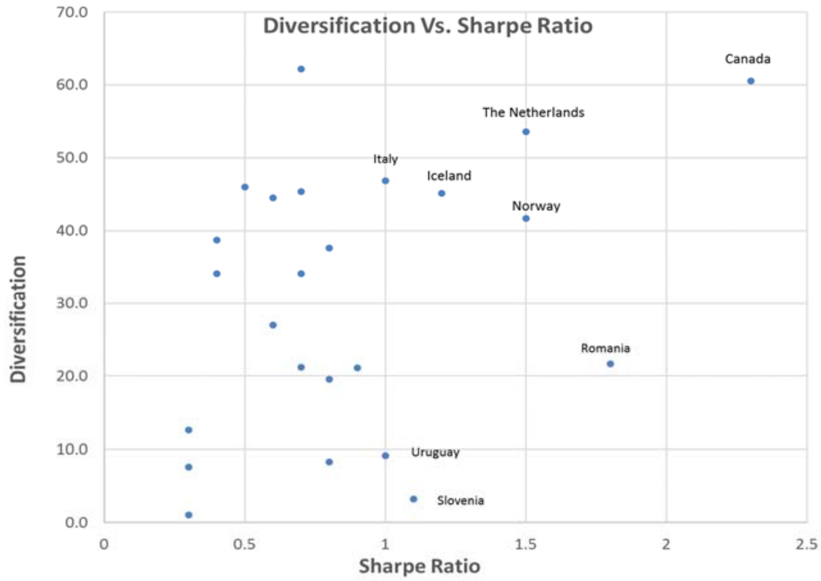
Source: authors' calculations based OECD Global Pension Statistics

OECD data do not break down the maturity of the bond category. For some countries, this will include 10 year+, long-dated government bonds, but also includes short-term Treasury Bills. This category is therefore taken along with deposits as a proxy for short-term. Likewise, the others category contains a diverse range of investments – from hedge funds to real estate, to infrastructure and guaranteed funds offered by insurance companies. The authors recognize the caveats and limitations to this analysis and would gladly undertake a further investigation with more detailed duration data and asset class breakdowns if available.

Using Sharpe ratios also shows that the diversified portfolios are efficiently managed in terms of the risk taken to deliver the returns. The list countries – Canada, the Netherlands, Iceland, and Norway - shows performance with Sharpe ratios more than 1 and a high level of diversification. In the case of the other countries, the Sharpe ratio may help explain whether a portfolio's excess returns were due to informed investment decisions (probably not to diversify in some cases) or a result of too much risk.

[10] The return period was selected to align with the ILO database statistics.
[11] The 'other' category includes loans, land and buildings, unallocated insurance contracts, hedge funds, private equity funds, structured products, other mutual funds (i.e. not invested in cash, bills and bonds, or equities) and other investments.

Figure 8: Portfolio Diversification vs. Sharpe Ratio, % (2009-2016)



Source: authors' calculations[12]

Impact of Regulation

There are many potential causes that could be behind this focus on traditional and short-term instruments of pension fund investment (and indeed of other financial institutions).[13] These causes may include unsupportive macro conditions (high government bond rates dis-incentivizing diversification in some developing economies), poor governance and a lack of investment knowledge and capacity within the funds in developing markets. Regulation may also play an important part.[14]

Defined contribution (DC) pension plans may tend to focus more on the short-term. The main goal of any pension system is to ensure that members receive an adequate pension income when they retire. While traditional defined benefit (DB) pension plans set out what that pension income will be in advance and then strive to deliver it, DC plans accumulate a sum of assets, which can then be turned into a pension income on retirement. However, when providers of DC plans do not offer any investment return or benefits guarantees or promises, the amount of this retirement income is not predetermined. In many countries that introduced DC private pillars recently, pay-out phases will become important only in many years to come or/and the legal framework for setting up the pay-out phase is still in preparation. This frequently leads to a focus by not only most pension providers, but also regulators and pension plan members themselves on the short-term accumulation of pension assets rather than the longer-term goal of securing an adequate retirement income. The risk of not achieving this goal can be termed 'pension risk'.[15]

Pension investment regulation in most countries currently serves to reinforce this focus on the short-term delivery of investment returns rather than the long-term generation of a pension income. This can be caused by the overly restrictive use of asset class restrictions (limiting the amount of a portfolio, which can be invested in certain (risky) assets)[16] – which can control the volatility of returns but can create distortions in asset management, limit opportunities for diversification and hamper investment performance.[17] Vitas (1996) argues that portfolio restrictions may be required in the initial stages of pension reform when there is a lack of qualified asset managers and capital markets lack strength and capacity, as asset allocation limits are a way of isolating pension fund assets from an agency and systemic risks in capital markets. However, as these systems develop, pension funds often end up controlling a disproportionate share of some of the markets for those securities in which they are allowed to invest. Sirivas and Yermo (1999) found that after investment limits were relaxed in the 1980s pension fund performance improved significantly. The asset class restrictions on equity holdings are generally not a binding factor in OECD countries – with portfolio allocations well below limits in most countries. However, these quantitative limits do appear more restrictive in some non-OECD countries.

Figure 9: Portfolio Limits on Pension Fund Investment in Shares in Selected OECD Countries 2015 *(as a percentage of total investment)*

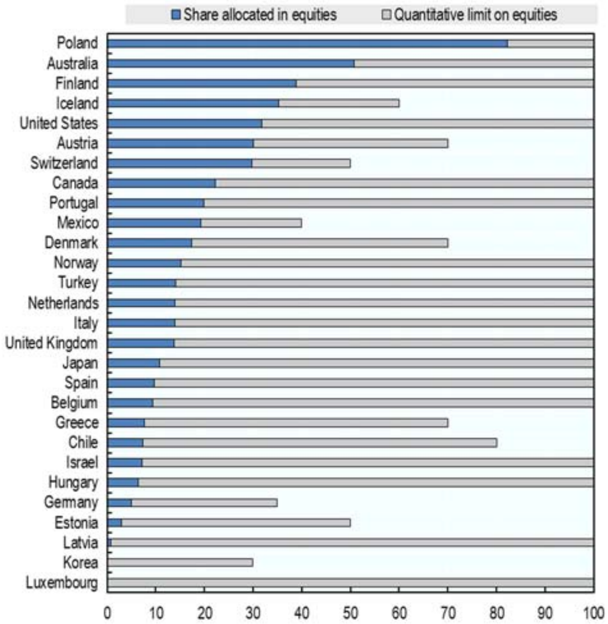
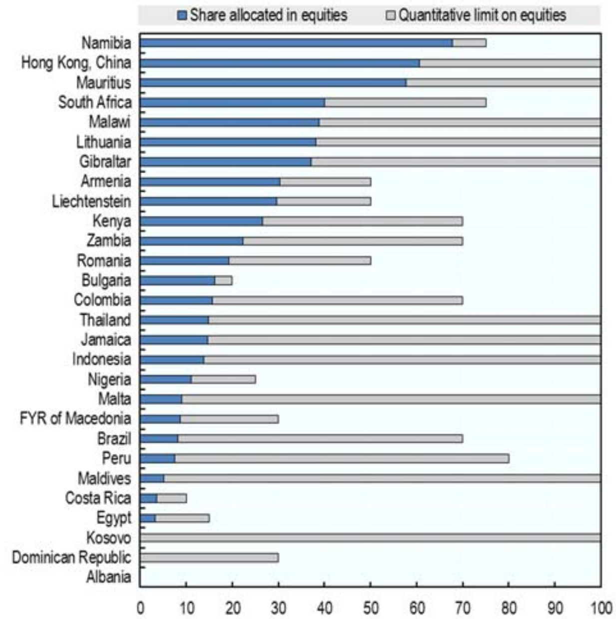


Figure 10: Portfolio Limits of Pension Fund Investment in Shares in non-OECD Countries 2015 *(as a percentage of total investment)*



Source: OECD Global Pension Statistics; OECD Annual Survey of Investment Regulation of Pension Funds

Over and above straight asset class limitations, it has been argued that distortions are also increased when these are combined with relative performance benchmarks, which encourage herding by fund managers and are usually based on short-term measures.[18] The focus on short-term volatility is enhanced by the dislocation between the accumulation and decumulation phase of DC pensions –described by Blake et al (2008) as like taking two different aircrafts, one which transports you for the ascent and one for the descent and having to change between them mid-air.

Other regulatory and agency issues also combine to reinforce the short-term focus of pension fund providers and prevent the full diversification of portfolios into less traditional and longer-term assets include principle-agent issues allowing fund managers to derive profits from short-term performance rather than longer-term gains (particularly where conservative allocations are rewarded almost the same as risky allocations). In addition, fees are often charged based on short-term performance rather than longer–term measures, and accounting and solvency regulations may actually incentivize investment in short-term, liquid assets.

Stewart (2014) notes that the short-term conservatism built into second pillar regulation in Central and Eastern European systems is behind the conservative portfolios, poor performance, the lack of capital market impact and

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12 The Sharpe ratio is the average return minus the risk-free return divided by the standard deviation of return on an investment.
13 Orpazo et al (2015), and de la Torre et al (2011) include discussions of the portfolio allocations by pension funds vs. mutual funds and insurance companies in Chile.
14 de la Torre et at (2011), among other publications, provides a comprehensive discussion of these topics for the Latin America region.
15 For a methodology on pension risk see Berstein, Fuentes and Villatoro (2013).
16 Details of investment restrictions around the world can be found in the regular OECD survey (OECD, 2015c).
17 See Srinivas and Yermo (1999).
18 For a discussion of this issue see Randle and Rudolph (2014), and the Viceira and Rudolph presentation *'The Use of Guarantees on Contributions in Pension Funds'*, World Bank Contractual Savings Conference, January 2012. The issue of herding is also discussed in (Raddatz and Schmukler 2013).

ultimately contributed to policy reversals in some of these systems since the financial crisis.[19] The paper also discusses how regulations could be adapted to incentivize long-term investment horizons by introducing outcome-based benchmarks.[20]

Another form of regulation, which can distort pension fund investment and skews portfolios to short-term instruments, is switching. DC style, open pension systems, which allow members to switch between providers – often at will – have to hold more liquid portfolios to accommodate unexpected outflows. This again forces pension funds into shorter-term, more liquid instruments and does not allow for full diversification into longer-term asset classes, and prevents pension funds from having their potential impact on capital market development. Musalem and Pasquini (2012), examining the pension system in 27 countries from 1990-2007, find that: "*occupational schemes tend to generate higher returns than do personal pension schemes and closed schemes tend to generate higher returns than do open schemes*."

Evidence of such impact can be found in the United States in the difference between portfolio construction and investment performance of (closed) DB and (open) DC pension funds. There is also a difference in asset allocation between fund type in Australia – with open retail funds showing higher levels of cash and lower exposure to other/ illiquid assets than closed industry and corporate funds. As with US DB vs DC schemes, this translates into higher returns for corporate and industry vs. retail funds.

Table 1: USA DB vs. DC Asset Mix + Performance

Asset Class (ranked by returns)	**Asset Mix % AUM**		**Returns (see note)**	
	DB	**DC**	**DB**	**DC**
Private Equity	4%	n/a	12.6%	n/a
Real Assets	5%	n/a	9.3%	n/a
Small Cap Stock	6%	7%	10.2%	8.4%
Employer Stock	0%	21%	n/a	8.6%
Fixed Income	31%	10%	6.8%	6.7%
Hedge Funds	2%	n/a	7.7%	n/a
Stock U.S. Large Cap	26%	30%	6.8%	6.1%
Stock Non U.S. or Global	23%	7%	6.7%	6.5%
Stable Value/ GICs	n/a	17%	n/a	4.9%
Cash	2%	8%	2.9%	3.2%
TOTAL	**100%**	**100%**	**7.9%**	**6.9%**
No. of observations	3,083	1,995		

Source: CEM[21]

Notes: Asset Mix 17 years ending 2013 = arithmetic average of annual asset mix weight / Returns 17 years from 1997 to 2013. Returns are the geometric average of the annual averages for each asset class. Hedge funds were not treated as a separate asset class until 2000, so 60% stock 40% bond returns were used as a proxy for 1997-1999.

[19] See Schwarz and Arias (2014), Price and Rudolph (2013) which raise these issues through also stress that the main driver behind the second pillar reversals was fiscal pressures.

[20] Continuing the airplane analogy, without them Blake et at (2008) describe managing pension funds as the equivalent of worrying about air turbulence on a flight without considering whether the plane is actually going to reach its destination.

[21] Data taken from CEM Database, as presented by Mike Heale, presented at the IOPS/AIOS International Seminar on Pension Systems, San Jose, Costa Rica, February 25, 2015.

Table 2: Australia Fund Type Asset Mix and Performance

Proportion of Assets %	Corporate	Industry	Public Sector	Retail	Total
Australian Shares	30	29	22	26	26
International Shares	28	25	27	22	25
Listed Property	1	1	4	4	2
Unlisted Property	7	10	6	2	7
Australian Fixed Income	14	6	7	15	9
International Fixed Income	6	5	7	7	6
Cash	6	6	9	14	8
Other Assets	8	19	18	9	16
Total	100	100	100	100	100
Rate of Return (2004-2013)	**6.5%**	**6.7%**	**7%**	**4.9%**	**6%**
Volatility	**9**	**9.5**	**9.7**	**9.4**	**9.5**

Source: APRA

Initial evidence from a forthcoming paper[22] suggests that higher switching levels between providers in selected Latin American systems are correlated with higher levels of short-term investments. The analysis also shows that changes in regulation (such as making switching more difficult) can have a positive effect on portfolio turnover and construction.

Table 3: Correlation between calendar-year returns and transfers

	Across Fund Providers	With Fund Providers*
LAC		
Chile	-0.46	-0.41
Colombia	0.15	0.04
Costa Rica	-0.23	
Mexico	-0.41	0.71
Peru	0.18	-0.10
EEC		
Estonia	-0.28	-0.14
Romania	-0.03	

Source: Fuentes, Morales and Stewart (forthcoming)

[22] See Fuentes, Moralez and Stewart (forthcoming).

Figure 11: Short-term Assets and Pension Fund Flows – LAC countries

Source: Fuentes, Morales and Stewart (forthcoming)

In conclusion, although regulation may not be a binding constraint (particularly in more developed pension systems), improving investment regulation can have an impact on pension fund portfolio construction, allowing for greater diversification and ultimately pension fund returns. Regulatory techniques such as the following have had a positive impact on pension systems in different regions: using lifecycle rather than straight investment limits; removing relative return guarantees; benchmarking outcomes; measuring performance and fees over a long-term period, and reducing incentives for frequent switching.

Creating Investment Opportunities

However, in emerging markets changing investment regulations alone may not be sufficient. As shown, pension funds rarely reach the ceiling set by investment regulations on equities. Rather a lack of investment opportunities is also frequently cited as a major barrier to diversifying pension fund portfolios. There is wide variation in the capacity across countries to effectively manage pension assets and in many, the domestic capital markets lack the size and liquidity that would effectively channel these funds and provide reasonable returns. Capital market underdevelopment means that pension funds remain overexposed to government bonds and bank deposits, particularly when overseas investment is not permitted. In order to create investment opportunities for pension funds, both domestic market instruments and international exposure will have to be considered.

Creating domestic investment opportunities

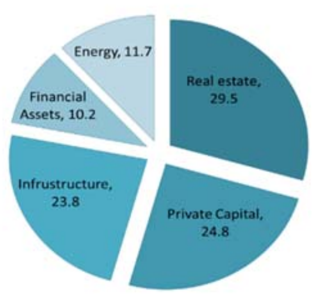
Some countries have been more successful than others in terms of creating innovative domestic investment opportunities to allow pension funds to diversify their portfolios away from shorter-term (and potentially lower yield) instruments, such as government bonds and bank deposits, and into longer-term investments, which can have an impact on economic development and growth. Diversification is linked to the availability of investment opportunities within domestic capital markets but also goes beyond traditional listed instruments.

The Latin American regulators have been leading in terms of determinedly creating investment opportunities for their pension funds, foreseeing the need for such instruments as assets from their mandatory savings systems increase. For example, the Chileans were only one of three countries (along with the UK and the USA) to issue index-linked government bonds when their system was launched in the 1980s. Infrastructure bonds (utilizing monoline insurers to guaranteed construction phase risk) were also launched specifically to meet the investment needs of pension funds. The Peruvian funds have also created trust structures to allow pension funds to invest in infrastructure projects, while in Colombia, the World Bank was involved in the development of infrastructure debt funds, which pension funds have invested in.[23]

In Mexico, the regulator CONSAR has deregulated investment restrictions gradually as alternative investments have been created for pension funds. In July 2009, significant regulatory changes were made to create a new type of securities known as CKDs (Certificados de Capital de Desarrollo), which are traded on the Mexican Stock Exchange. As the principal sources of capital from these instruments are the Mexican mandatory pension funds (or 'Siefores'),[24] part of these regulatory changes involved amending the Siefores' investment rules to allow for the possibility of making investments in private equity, real estate and infrastructure projects through the CKD structure.[25]

CKDs are designed to enhance infrastructure projects (highways, airports, ports, railways, water, electricity etc.); real estate; mining; SMEs; technology development projects; private capital projects. The most active sector in the CKD listing since 2009 has been real estate amounting to almost 30% of the total. The successful implementation of CKDs in Mexico was timely and intended not only to diversify pension funds, but also to finance projects aiming at facilitating economic growth and development.

Figure 12: Sector Participation in Financed Amount by CKDs, 2009-2015



Source: Mexican Stock Exchange[26]

CKDs are registered in the stock exchange, which fosters market discipline and transparency. To ensure that these financial products are consistent with the best interests of members, investors, beneficiaries and other

[23] The experience of pension funds in Latin America investing in infrastructure is documented in (Escriva et al 2010).

[24] Sociedades de Inversión Especializadas en Fondos para el Retiro.

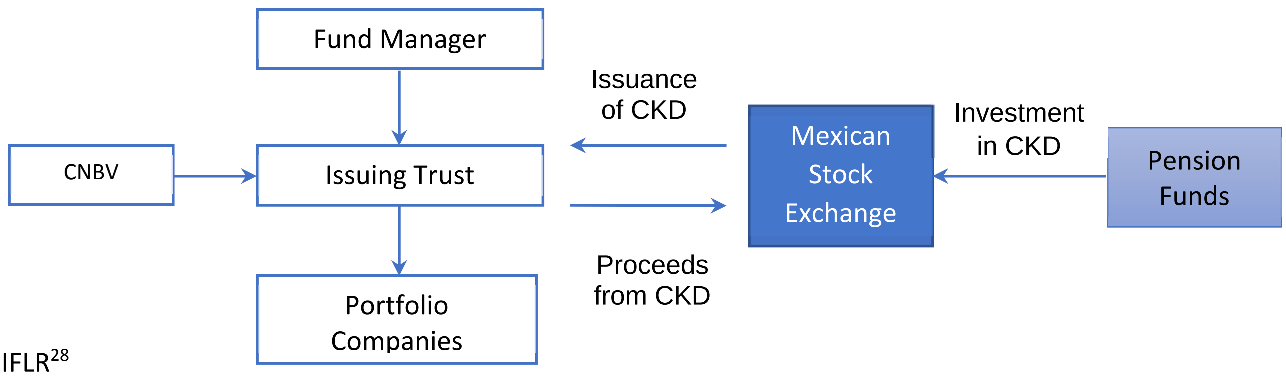
[25] See Groenewold (2012), IFLR (2010) http://www.iflr.com/Article/2660162/Mexico-Institutional-private-equity-emerges.html

[26] https://www.bmv.com.mx/docs-pub/reporteTrimestral/BMV4Q15_Engf.pdf

stakeholders, the National Banking and Securities Commission (CNBV) has established specific regulation regarding CKD's issuances, including shareholders' rights and responsibilities. In addition, the CNBV has developed monitoring and surveillance processes according with best international practices.[27]

The diagram below illustrates an issuance of CKDs in its simplest form. A fund manager, acting as a sponsor, creates a Mexican issuer trust, which in turn obtains the necessary approvals from Mexico's securities regulator, the National Banking and Securities Commission to issue and publicly offer CKDs in Mexico through the Mexican Stock Exchange. The product of the placement of the CKDs is invested in the portfolio companies as an equity, debt or as a combination of both. The issuer trust then enters into a management agreement with a fund manager, who is responsible for finding and recommending investments. Once such investments are approved and made, the fund manager is responsible for managing them until their divestiture is completed. The performance of CKD is linked to the accomplishment of the portfolio companies in which the issuer trust invests.

Figure 13: Illustrative Issuance of CKDs



Source: IFLR[28]

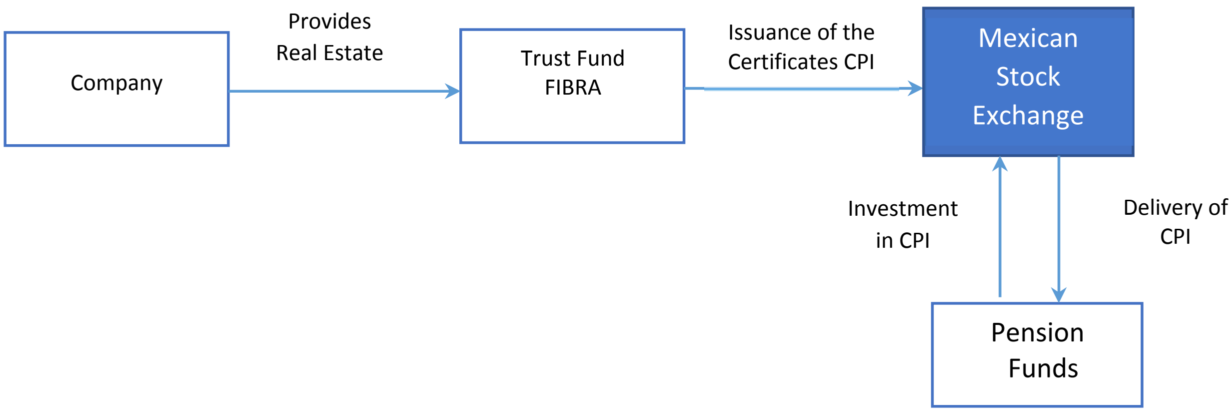
Another contributor to the diversification of the pension fund portfolios was Mexican REITs (Real Estate Investment Trusts) or FIBRAs launched in 2011. Before the launch of these products, pension funds were not allowed to invest directly in real estate assets. FIBRAs are trusts the purpose of which is to issue investment type securities CPIs (Certificados de Participaciyn Inmobiliarios) and raise funds from their placement in the domestic and international capital markets, with the purpose of financing, acquiring and/or developing real estate projects (industrial, commercial or residential).[29] The placement of the CPIs by the FIBRA on the Mexican Stock Exchange (or international capital markets) is backed up by the real estate portfolio comprising the trust assets (along with any lease rights and/or funds destined for the financing of the acquisition and/or development of real estate projects). Holders of CPIs are also able to trade them on the secondary market. Returns on FIBRA investments can be generated in three ways: dividends obtained through leasing less operating expenses (fixed income); performance, through the generation profits on the Mexican Stock Exchange; capital gains. FIBRAs are considered hybrid instruments (fixed and variable income), as holders receive periodic payments (from the lease) and can yield capital gains, as they can be traded on the capital markets. AFORES own the equivalent of 2.9 billion dollars in FIBRAs, or roughly 20% of all FIBRA issuance. The following is a diagram that illustrates an issuance of the certificates CPI in its simplest form.

[27] OECD (2014): https://www.oecd.org/daf/fin/private-pensions/G20-OECD-Report-Annex-Effective-Approaches-LTI-Financing-Sept-2014.pdf

[28] http://www.iflr.com/Article/2660162/Mexico-Institutional-private-equity-emerges.html

[29] As of March 31, 2016 Fibra Uno – the first FIBRA launched - had a portfolio of 511 properties that totaled approximately 76 million sq ft. Fibra Uno targets properties with the best locations, high-quality assets and diversification of geographies, segments and tenants
http://en.fibra-uno.com/wp-content/uploads/2016/06/One-Pager-FUNO-22-Jun-16.pdf

Figure 14: Illustrative issuance of certificates CPI



Source: Mexican Stock Exchange[30]

The pension regulatory authority, CONSAR, amended a series of provisions to their regulations to allow investment by pension fund administrators, AFORES, in structured instruments such as those issued by CKDs and FIBRAs, as well as a tax exemptions related to these products. As the investments environment was deregulated, the portfolios of the pension funds can be seen to have diversified commensurately.

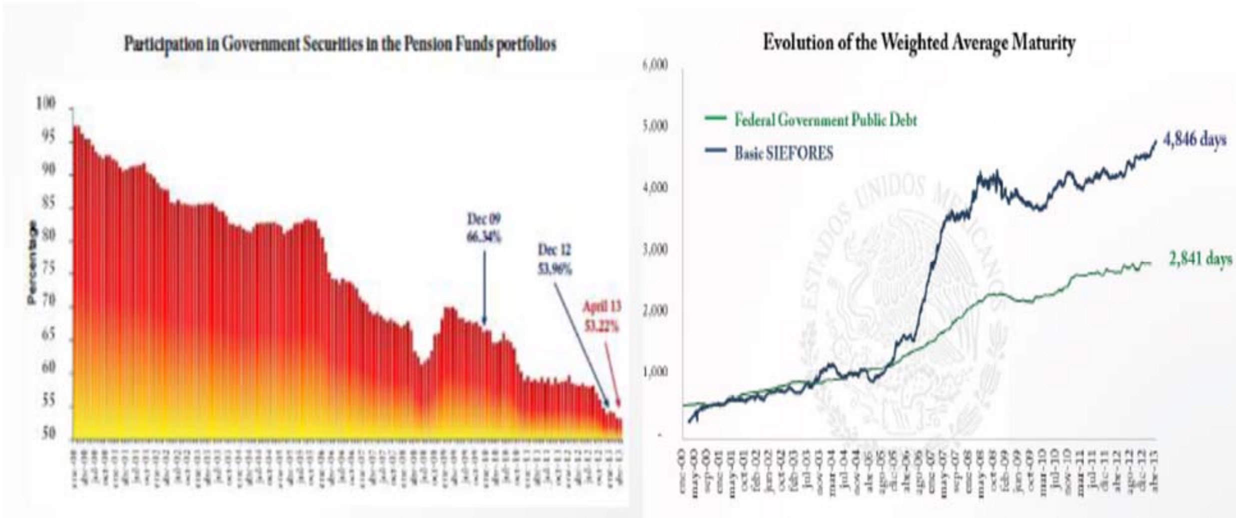
Table 4: Mexico Pension Fund Investment Regulations

Asset classes allowed within the Investment Regime of Pension Funds																							
1997-2016	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16
Debt																							
Currencies																							
Equity	-	-	-	-	-	-	-	-															
Structured Securities (CKD, FIBRA)	-	-	-	-	-	-	-	-	-	-	-	-	-										
Securatizations	-	-	-	-	-	-	-	-	-	-	-	-	-										
Commodities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					

Source: build based on CONSAR

[30] https://www.bmv.com.mx/en/Grupo_BMV/Instrumentos_disponibles/_rid/965/_mod/TAB_CAPITALES

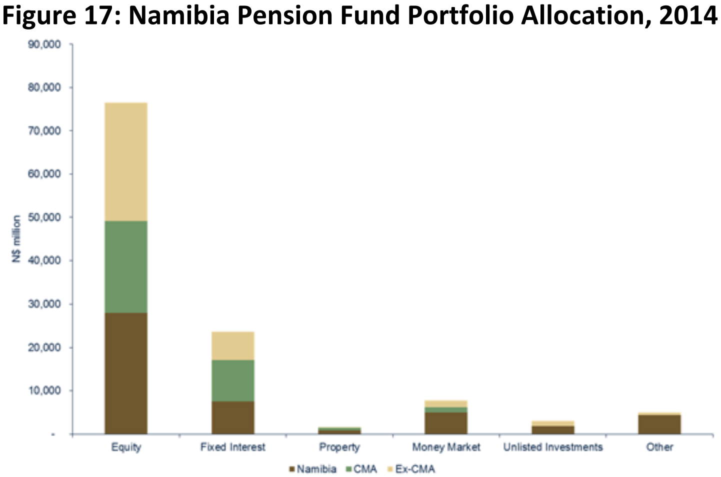
Figure 15+16: Mexico Pension Fund Portflio Diversification and Duration



Source: CONSAR

In Namibia, similar structures have been created to allow for the investment of pension funds into domestic, unlisted assets. The Pension Funds Act was amended in 2014, with Regulation 28 now requiring pension funds and insurance companies to invest between 1.75% and 3.5% in locally unlisted investments. To support institutional investors, Regulation 29 was also passed which creates Special Purpose Vehicles (SPV) allowing them to comply with this requirement. These SPVs must have an independent Board or Trustees with fiduciary duty towards the SPV and its investors. The Board must appoint fund managers specially licensed to manage unlisted investments.[31] The SPVs can invest in debt or equity according to their own objectives. Most so far have invested in real estate and SME debt. Fees average around 2-3% AUM – which is a high PE-style cost, but the regulator, NAMFISA, sees the overall impact on pension funds costs as limited as these instruments will only form a small overall percentage of the total portfolio.

Figure 17: Namibia Pension Fund Portfolio Allocation, 2014



Source: NAMFISA

[31]One existing asset manager has been licensed,with the other newly approved managers having a track record in other jurisdictions.

More initiatives are needed to create these long-term, domestic pension fund investment opportunities for pension funds. Pension fund regulators, capital market authorities and pension funds and their managers should be encouraged to work together to create secure financial instruments which meet institutional investors' needs.

International diversification

Developing investment opportunities is important to use these funds productively, but in many economies, particularly of smaller countries, it will not be possible to absorb all these savings domestically.

Though foreign investment means that pension funds' will not be able to directly contribute to domestic economic development, some international diversification of assets will be required to fulfill the primary objective of the pension system, which is to deliver a secure income in retirement. Standard portfolio selection theory provides a fundamental justification for international diversification: by widening the pool of potential assets, investors can potentially increase returns while possibly even reducing risks through the selection of complementary assets with low correlations.

The benefits of international diversification are well documented, and there is a growing body of research, which argues that increasing international diversification improves pension funds' investment performance – both by pension funds in developed[32] and developing economies. For example, Pfau (in numerous articles, alone and with colleagues), argues for international diversification, even concluding that: "*on average, over half of the pension portfolios of emerging market countries should be in international assets in order to maximize the expected utility of moderate and conservative pension fund participants*."[33] The OECD (1998) also previously concluded that: "*the benefits of global portfolio diversification apply particularly to developing-country pension assets because the volatility of asset returns is high while the risk tolerance of pensioners is low*." [34] Davis (2002), having studied both OECD and selected emerging market economies with funded pension systems, concludes that: '*international investment allows superior investment performance in terms of risk and return*."

Studies have also been undertaken looking at the impact of deregulation of international investment restrictions on pension funds individual countries. Pfau (2009) considered the impact of international diversification on the public pension system in Pakistan and concluded that: "*international diversification could dramatically help to create sustainability for Pakistan's main public pension system available to private workers*." Hu et al (2007) conclude that allowing for international diversification, along with other deregulation of investment limits, would benefit Chinese pension funds. Swinkels et al (2005), in looking at the home bias in Latvian pension funds, note (using empirical analysis) that international diversification lowers investment risks for Latvian pension investors and that the high levels of domestic investment are suboptimal.[35]

The OECD finds that in ten European countries and countries with small or no domestic capital markets, pension funds had a high share (over 30%) of investments abroad in 2015 – with Kosovo leading at 91.9%, the Netherlands at 81.3% and Estonia with 75.8%. The proportion of foreign investments in the portfolio of pension funds was higher in 2015 than 11 years earlier in several countries (e.g. Slovak Republic, Israel, Chile, Bulgaria, Peru and the Former Yugoslav Republic of Macedonia), with the trend in the Latin American countries attributed to the loosening of the regulatory limit for foreign investments that took place in recent years.

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[32] For impact on pension funds in developed economies, see, for example Vanguard (2013), Fadhlaoui et al (2009), among others. Didier et at (2013) discuss parallel evidence on unexploited gains from international diversification in the mutual fund industry.

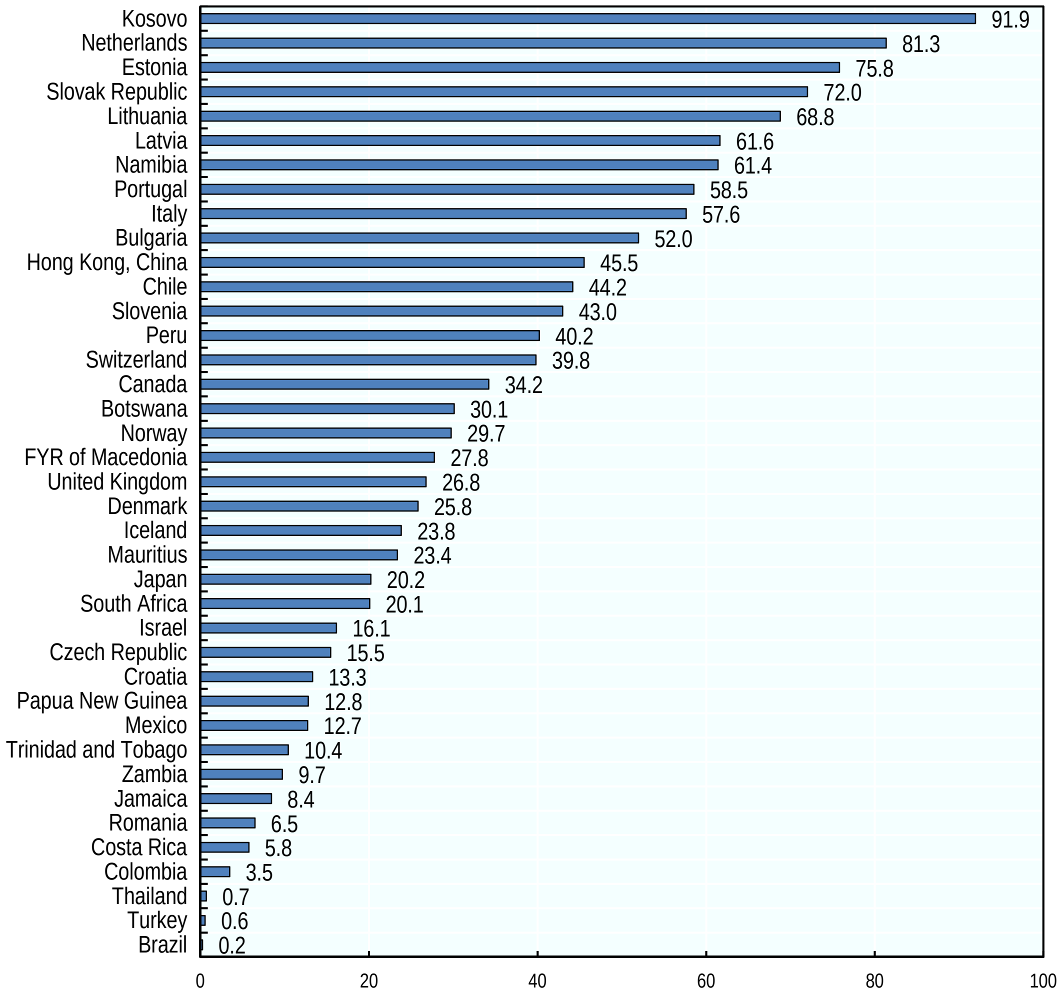
[33] See Ajantha and Pfau (2011), Pfau (2011) also quantifies the costs of prohibiting international diversification.

[34] Musalem and Pasquini (2012) notes that lower volatility in pension returns is associated with restrictions on foreign investing.

[35] Raddatz et al (2014) consider the impact on benchmarks on international asset allocation.

Figure 18: Foreign investments of pension funds from selected OECD and non-OECD countries, 2015

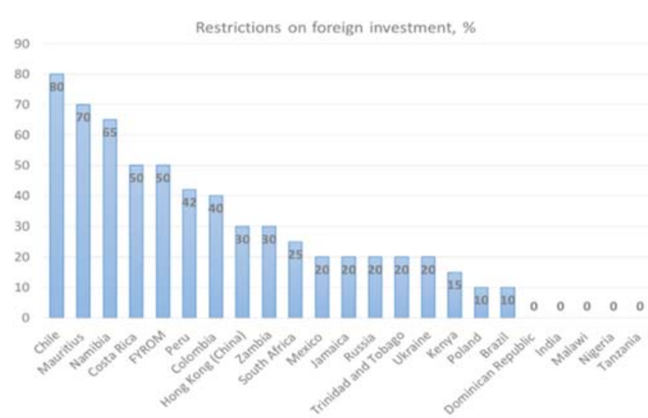
as a percentage of total investment



Source: OECD Global Pension Statistics

Nonetheless, many emerging market countries have regulations that strictly limit the choice of investments for pension funds, in some cases excluding international assets entirely - notably in several African countries. Some Latin American countries are seeing allocations at or approaching limits (e.g. Peru 40.2% allocation vs. a 42% limit).

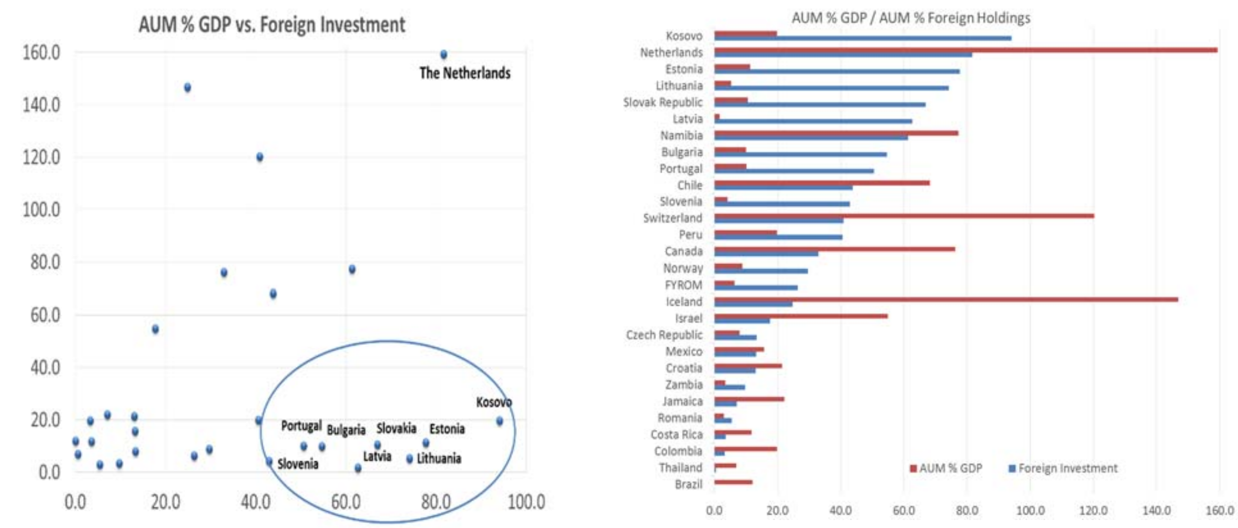
Figure 19: Foreign Investment Limits



Source: OECD (2015c)

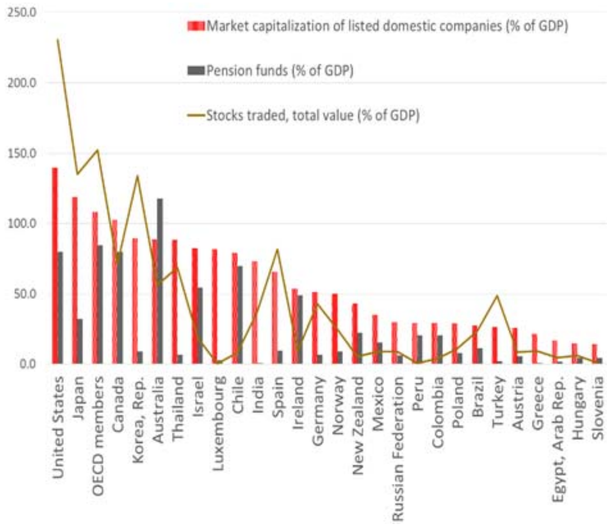
There is often much resistance to allowing pension fund assets to invest overseas as governments and authorities wish to see domestic savings used for domestic purposes. Macroeconomic factors clearly play an important role – including foreign exchange regime, capital flows and policy and availability of foreign currency held by a country's central bank. Indeed, foreign exchange risk cannot be ignored and is a major consideration in more developing economies where hedging instruments are scarce and/or expensive. However, deciding on the amount and allocation of these international investments should be done in a systematic fashion. One important consideration is the correlation between the size of the pension funds asset under management (AUM) as a percentage of domestic GDP and the percentage of foreign investment required. Other factors – such as a size of pension fund assets compared with the size and turnover of domestic capital markets or capital flows and currency movements – and the amount of foreign investment allowed should also be linked. The countries where the pension assets as a percentage of GDP is fairly low (under 20%) but foreign investments are high (around 50% of more) are mainly smaller Eastern European countries (Estonia, Kosovo, Slovenia, Slovak Republic, Bulgaria, Latvia, Lithuania), with limited domestic capital markets, but ample investment opportunities in the region in the same or correlated currencies.

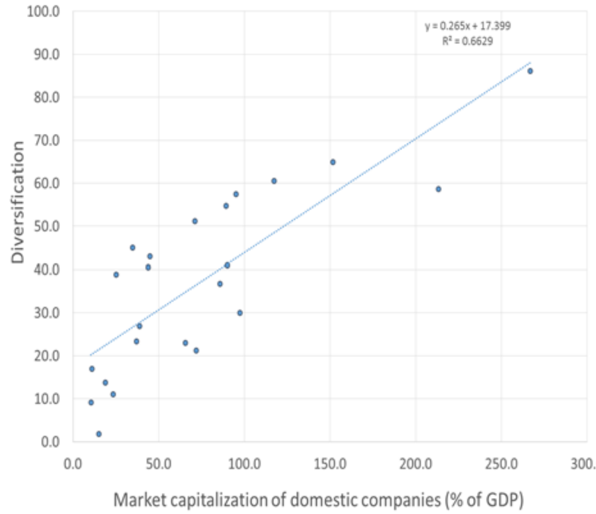
Figure 20+21: Pension Fund AUM % GDP vs. Pension Fund Foreign Investments % AUM



Source: OECD Global Pension Statistics

Figure 22+23: Pension Fund AUM, Domestic Stock Market Capitalization, Stock Turnover as % GDP / Diversification vs. Stock Market Capitalization





Source: OECD, World Bank databases

Chile provides a good example of a country, which has more systematically increased its overseas investment limits – raising these as the pension fund assets have grown and become increasingly too large for the domestic markets to absorb. The regulatory authorities in Peru have also gradually increased their limits on several asset classes, particularly those on foreign investments, private equity, and other alternative securities. The regulators in Peru adopted a similar approach.

Figure 24: Chile Pension Fund Foreign Investment vs. Regulation Ceiling

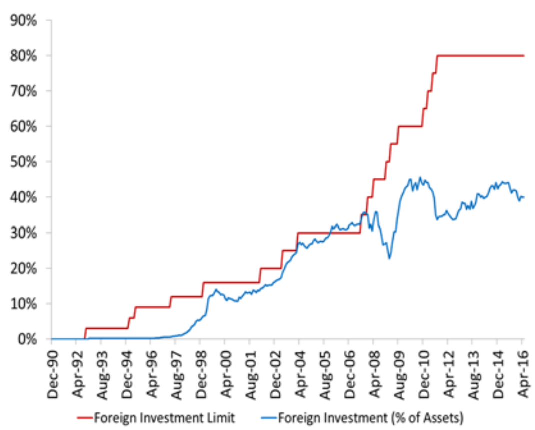
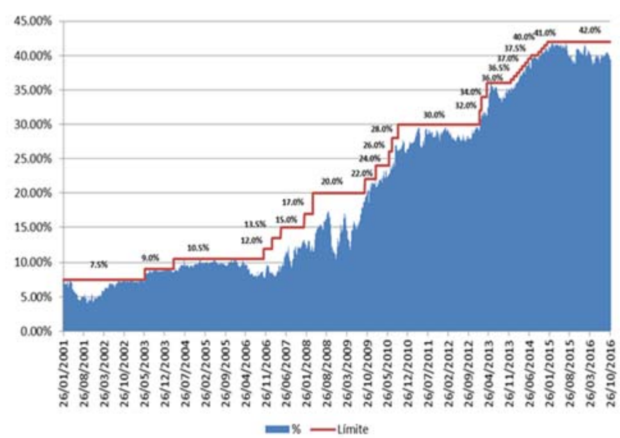


Figure 25 Peruvian Private Pension Fund System Foreign Investment Limits



Source: Superintendencia Chile

Governance

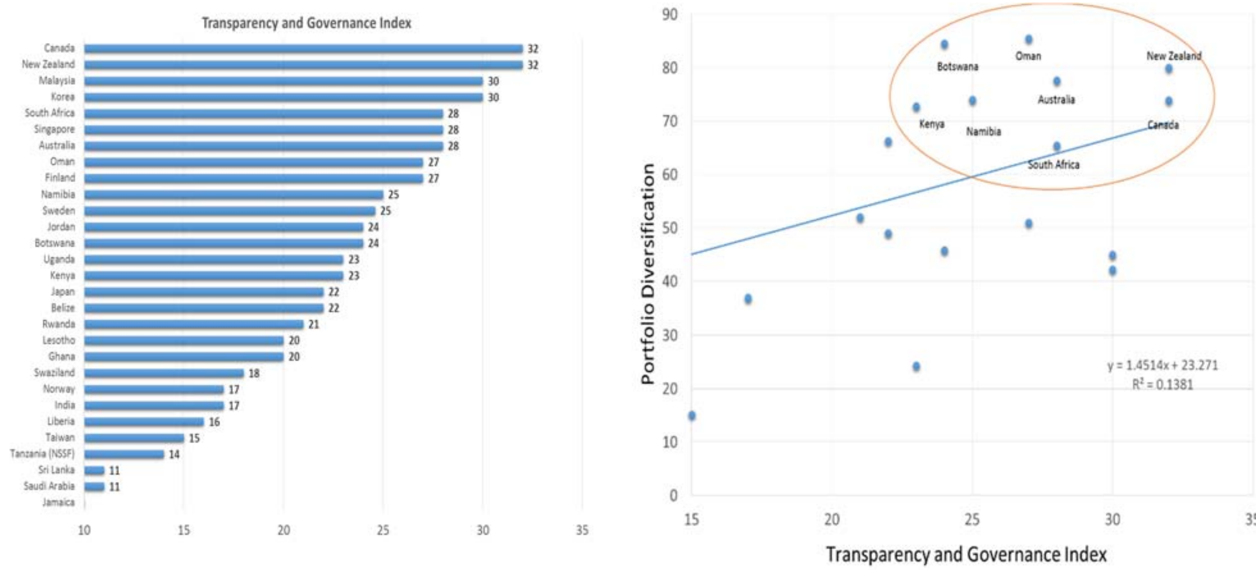
Finally, it should be stressed that strengthening the governance and management of pension funds is an important precondition for diversifying their portfolios. The OECD – along with the World Bank[36] - have argued that this is a particularly important consideration for social security and public pension reserve funds (PPRF), which may be subject to political pressure, which can undermine the perceived certainty and long-term investment horizon of the

[36] See OECD (2014b), Yermo (2008). Previous World Bank reports on the topic include the work of Rajkumar and Dorfman (2011), Carmichael and Palacios (2003), Palacios (2002), Iglesias and Palacios (2000).

asset base, directly influencing their asset allocation decisions. Improving their governance is key to developing their investment capacity and impact.

Souto and Musalem (2012) created a ‘Transparency and Governance Index’ (TGI) to rank public pension funds globally according to a set of criteria which are taken as proxies for good governance.[37] Stewart and Remizova (forthcoming) seeks to take this analysis a step further by linking the governance of the funds to the composition of their investment portfolios. Initial findings suggest that good governance and investment performance are linked, with the better governed funds running more diversified investment portfolios.

Figures 26+27: Public Pension Fund Transparency + Governance Rankings vs. Portfolio Diversification



Source: (Stewart and Remizova – forthcoming)

Conclusions

The potential for pension funds to contribute to capital market and thereby economic growth has been argued on a theoretical basis and demonstrated empirically. However, the development of funded pension systems has not had the economic impact hoped for. Pension fund portfolios in some countries have remained highly exposed to low yield traditional assets with a short-term horizon, such as bonds (mostly government issued) and bank deposits. This, in turn, has led to low investment returns in some areas – and thereby potentially undermining retirement adequacy.

Links between the performance of pension systems in general and the diversification of investments are suggested in the OECD Global Pension Statistics database. However, more granular analysis based on types of funds and other industry structures within national systems would be warranted – and are suggested for further research.

Many factors may lie behind this apparent lack of diversification of pension fund portfolios – with regulations certainly playing a part. Asset class restrictions, which protect pension fund members from overly volatile returns, may be over restrictive, forcing investment into more traditional investments (bonds) which may be less risky but which may deliver less than alternative asset classes and may reduce the accumulated assets for retirement over the long-term. Even where these assets class restrictions are not the main impediment to portfolio diversification, other factors – from investment manager incentives to requirements for relative return guarantees, to switching – may also be leading pension funds to invest in more traditional holdings. Improving investment regulation – by using lifecycle rather than straight investment limits, removing relative return guarantees, benchmarking

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[37] Proxy ratings for transparency include publication of an annual report, investment returns etc. Ratings for good governance include the composition, hiring and removal procedures for members of the fund’s governing body.

outcomes, measuring performance and fees over a long-term period and reducing incentives for frequent switching etc. - can have an impact on pension fund portfolio construction, allowing for greater diversification and ultimately potentially higher pension fund returns. However, over and above investment restrictions, pension funds in emerging markets often have difficulties in diversifying their portfolios due to a lack of investment opportunities. This is compounded if overseas investment is restricted. A combination of the deliberate creation of innovative domestic investment instruments and reasonable overseas investment limits (based on the size of pension fund assets relative to macroeconomic and market factors) can help pension funds deliver the long-term investment returns which are needed.

Finally, improving the governance of pensions – particularly the large, public sector and social security funds which dominate many emerging markets – is key to improving security, diversification, and returns.

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