Working Party on Financial Statistics

Pension funds: latest developments on the financial markets of OECD countries, with a particular focus on Chile and Japan

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PENSION FUNDS: LATEST DEVELOPMENTS ON THE FINANCIAL MARKETS OF OECD COUNTRIES, WITH A PARTICULAR FOCUS ON CHILE AND JAPAN

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I. Pension Funds in OECD countries
   - Asset allocation
   - Stock markets (2006-2012)
   - Asset re-allocation during the financial crisis of 2007-2008
   - Based on the SNA-related databases available at OECD

II. The Pension System in Chile and Japan
   - Structure
   - Latest developments in financial markets
   - Based on data available in the Chilean Superintendence of Pensions and the Japan Pension Funds Association
Pension fund reserves represent on average of 30% of household wealth for OECD countries.

Changes in the value of these funds during the last financial crisis highlighted the relevance of managing financial risks.

This is important, in particular for Defined Contribution (DC) pension plans, where risks are mainly borne by members.

Autonomous pension funds have a substantial share of their assets invested in shares and other equity (AF5) as well as in securities other than shares, except financial derivatives (AF33).
The composition of assets differs across OECD countries: Austria, Belgium, Estonia, Switzerland, Chile, the Netherlands and the United States have large amounts invested in shares.

In contrast, Czech Republic, Mexico and Israel hold a larger percentage in securities other than shares.
I. Pension Funds in OECD countries: stock markets behaviour

- When stock market prices (S&P500) fell, a high volatility was observed (VIX) as a consequence of investors portfolio reallocation.
Periods of financial turmoil lead investors to re-allocate their portfolios towards less risky instruments.

Investors tend to sell equity shares and buy fixed income securities, in particular, bonds issued by relatively high credit quality governments.

This change can be measured by the variations in stocks of assets, as available in the Institutional Investors’ Assets dataset:

\[
\frac{S_t - S_{t-1}}{S_{t-1}}
\]
I. Pension Funds in OECD countries: asset re-allocation of the portfolios

- There is evidence for all OECD countries that their shares portfolio reduced in 2008 and increased in 2009.
- For securities other than shares, in contrast, neither an increase in 2008 nor a decrease in 2009 was observed for most of the countries.

* Securities other than shares, except financial derivatives. ** Shares and other equity.
I. Pension Funds in OECD countries: asset re-allocation of the portfolios

• However, it is necessary to separate transactions from changes in the value of assets for a more specific analysis on the asset re-allocation.

• Financial Accounts and Financial Balance Sheets databases record financial transactions and financial stocks, for the joint sector insurance corporations and pension funds (S125).

• Revaluations ($R_t$) can be inferred from the differences between stocks and transactions.

• These are calculated as a percentage of the initial stock, as proxy of the nominal returns: $R_t = \frac{(S_t - S_{t-1}) - T_t}{S_{t-1}}$.
I. Pension Funds in OECD countries: evidence of asset re-allocation

- The decrease in shares held by sector S125 during 2008 appears to have been mainly caused by the fall in stock prices, but transactions were smaller in comparison with other years.

- In 2009, the majority of the sector S125 in OECD countries acquired shares and benefited from nominal holding gains.

* Shares and other equity.
II. The Pension System in Chile and Japan

• In Chile, retirement savings are mandatory and accumulated in individual accounts of a Defined Contribution (DC) type scheme

• In Japan, the social security pension system (first and second pillar) that accounts for 60% of total financial assets on the entire pension system, is operated on a PAYG basis

• Autonomous pension funds in Japan (third pillar) used to completely follow a Defined Benefits (DB) scheme, but since 2001 DC plans were introduced
II. The Pension System in Chile: pension funds

• In 1981 a funded pension scheme was introduced, which is based on the accumulation of funds in individual accounts managed by private pension funds.

• Individual accounts are of a DC type.

• Pension funds reserves account for almost half of total household financial assets in 2010: the highest ratio among OECD countries.

• Financial assets of pension funds represented 30% of total financial assets for all financial corporations in 2010: the highest ratio among OECD countries.
II. The Pension System in Chile: the structure of the DC scheme

- The pension system in Chile follows a life cycle strategy through a multi-fund scheme, which main differences concerns the exposure to shares:

  i) Fund A: the riskiest (40% to 80% in shares);
  ii) Fund B: risky (25% to 60%);
  iii) Fund C: intermediate (15% to 40%);
  iv) Fund D: conservative (5% to 20%) and
  v) Fund E: the most conservative (0% to 5%)

- Members can choose a fund; otherwise they are assigned to one of them by default according to age

- Ten years before retirement members cannot choose Fund-A and retired people cannot choose Fund B either
II. The Pension System in Chile: membership, default vs. option

- Option for more conservative Funds (D and E) increased in the second half of 2008 and of 2011
- There is still a great proportion of the members who do not opt for a fund and are assigned by default (60%)
• The value of the assets under management declined substantially after Lehman Brother’s bankruptcy, specially for foreign shares portfolio

• In the following years foreign fixed income increased, as well as domestic fixed income, specially in the second half of 2011
II. The Pension System in Japan: three pillars

• National Pension or *Kokumin Nenkin* (KN)
  – **Two-thirds of the benefits come from PAYG** program and one third is financed from the central government budget

• Employees’ Pension Insurance or *Kosei Nenkin Hoken* (KNH), and four types of Mutual Aid Pensions (*Kyosai Nenkin*)
  – Operates as a **PAYG defined benefit** (DB) program

• Welfare Pension Funds, *Kosei Nenkin Kikin* (KNK) and *Kakutei Kyufu Kigyou Nenkin* (KKKN)
  – Operates under a **funded scheme**, and mostly consist of **DB programmes**
  – **DC programmes** were introduced in 2001
II. The Pension System in Japan: asset allocation of corporate pension funds under DB programs

- The weight of domestic equities increased after the deregulation of 1997, but declined since 2000 when the percentage of safe assets increased, in particular domestic bonds (since 2005)
II. The Pension System in Japan: introduction of DC pension plans in the third pillar

• The share of the DC schemes assets in the total pension fund remained limited (2% in 2011)

• The asset portfolio of DC pension plans is more oriented to safe assets. As of 2010 the portfolio shares of major DC pension plans is as follows:

  ✓ Banks (deposits), 41.6%;
  ✓ Assets entrusted to life insurance companies, 20.9%;
  ✓ Investment funds, 37.1% (of which 9% are bonds; 16% shares; 11% diversified type and 1% is money market); and
  ✓ Others, 0.3%
Regarding the portfolio re-allocation of OECD countries, the analysis reveals that, irrespectively of the initial allocation of assets and the type of pension plans in the country, almost all showed a decrease in the amount of shares and other equity in 2008.

This was driven mostly by the fall in their market value, but also by lower amounts of net purchases.

Transactions of shares increased again in 2009, and also their market value, in line with the good performance of stock markets.

For most countries, neither an increase in securities other than shares in 2008 nor a decrease in 2009 was observed.
Conclusions on the Pension System in Chile and Japan

- In Chile, after Lehman Brothers’ bankruptcy, investments in fixed income instruments gradually increased.
- This tendency was also observed in Japan’s DB pension funds.
- In Chile, financing of pensions on a PAYG basis is small and expected to end by 2050. In Japan, the PAYG-system still plays an important role, but as the society ages, the financial basis tends to become fragile.
- In this context, the role of private pension funds in Japan becomes more important. DC pension plans have not been implemented in a way that can resolve the potential problems from demographic changes, their importance within the system is still small.
Conclusions on databases

- For a better assessment of the impact of financial turmoil on pension funds, a future goal will be the collection of financial accounts, changes in the volume of asset accounts and revaluation accounts for Insurance Corporations and Pension Funds separately.

- It is desirable the extension of the Institutional Investors’ Assets database to include data on liabilities of Pension Funds and to distinguish between Defined Benefits (DB) and Defined Contribution (DC) pension plans.