Tenth Annual

OECD/World Bank/IMF Bond Market Forum

Secondary Market Liquidity in Domestic Debt Markets

April 29–30, 2008

Washington, D.C. • IFC Auditorium

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Financial Assets, Cross-Border Flows, Investor Base, and Liquidity in Domestic Debt Markets

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10th Annual Global Bond Market Forum

Washington D.C., APRIL 29–30, 2008

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Index

Global Scenario

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Global Scenario

- World Financial Assets Growth
- Cross-Border Flows
- As a consequence…a decline in Home Bias

World Financial Assets Growth

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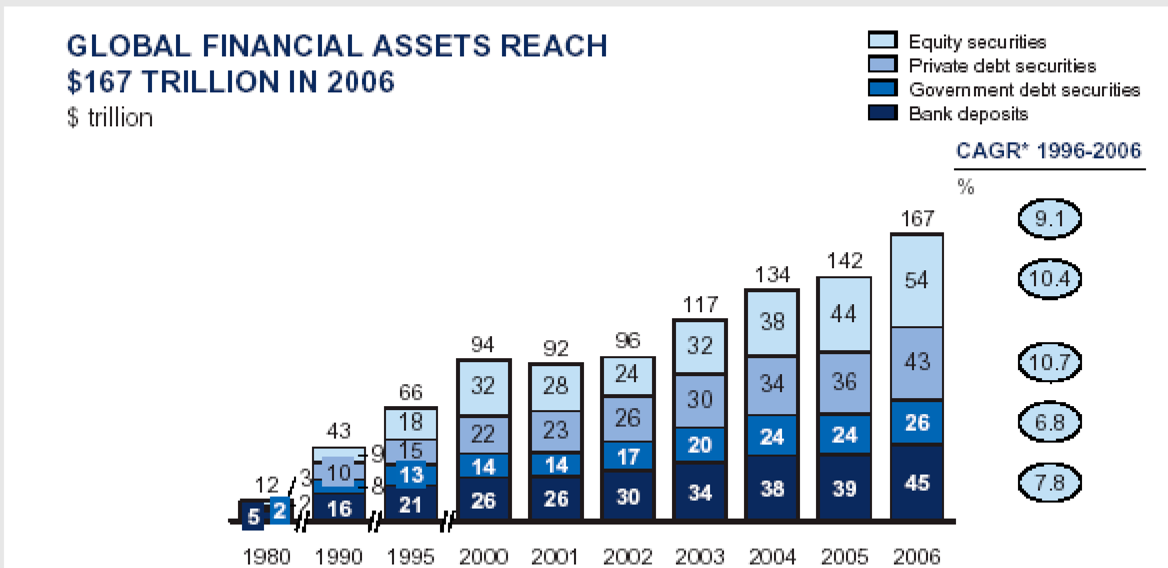
- The world's financial assets has been growing faster than the growth in global GDP. World financial depth (the ratio of total financial assets to global GDP) reached almost 350% in 2006.
- Debt securities share grew from 28% in 2000 to 41% in 2006, and private debt security exhibits the highest CAGR of 10.7%.



	1980	1990	1995	2000	2001	2002	2003	2004	2005	2006	CAGR* 1996-2006 %
Nominal GDP $ trillion	10.1	21.5	29.4	31.7	31.6	32.8	36.9	41.6	44.8	48.3	5.7
Financial depth % of GDP	109	201	223	294	290	292	318	323	317	346	

* Compound annual growth rate.

Note: See Technical Notes in the appendix for summary of revisions to data from 2005 and earlier years. Some numbers do not add up due to rounding.

Source: McKinsey Global Institute Global Financial Stock Database

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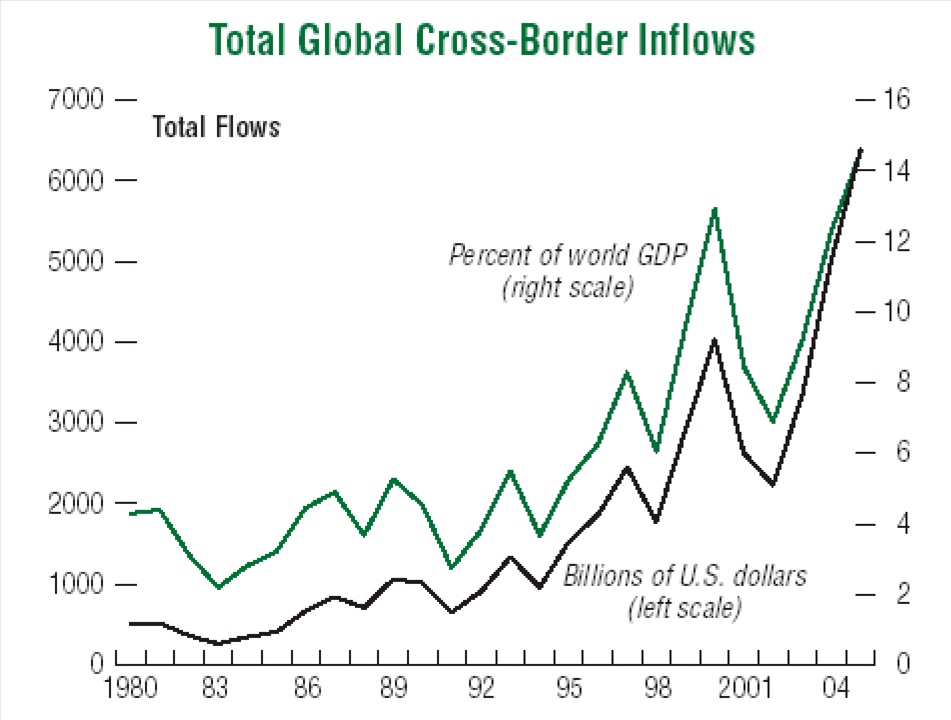
Cross-Border Flows

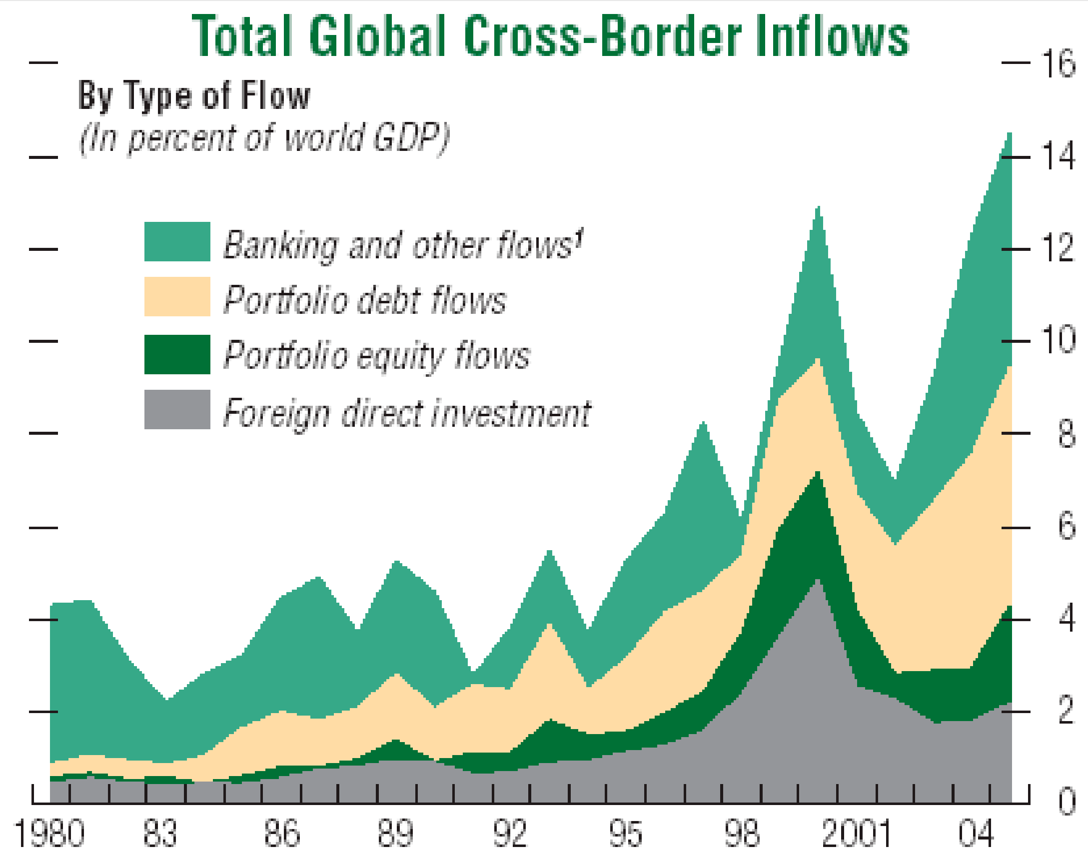
•Since 1995, the ratio between global cross-border capital flows and global GDP shows an upward trend departing from its previous behavior of mean reversion.



Source: IMF

Cross-Border Flows

- Albeit all financial assets have exhibited strong growth in international flows, the most significant has been in portfolio debt flows and in cross-border banking (accounting for over 70% of global capital flows).



Source: IMF

1.Other flows include derivative transactions.

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Cross-Border Flows

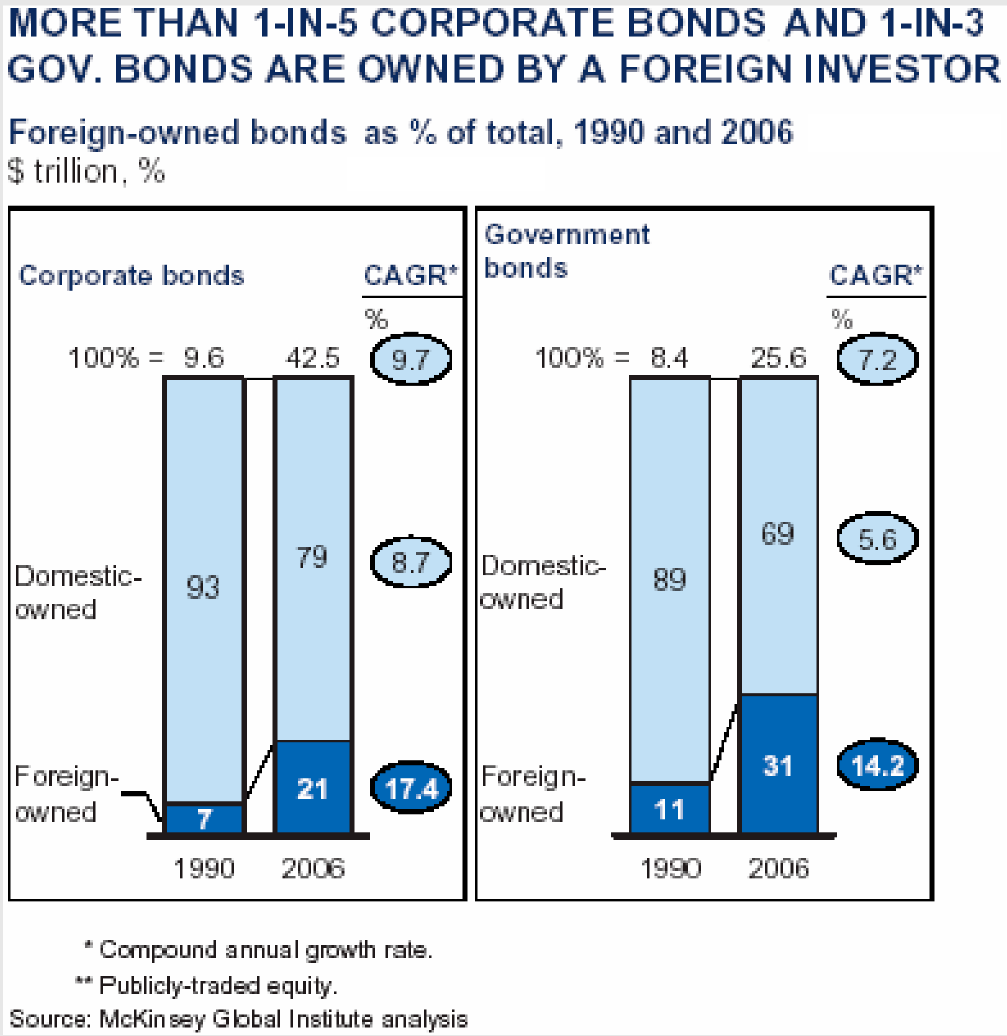
- There has been a mix of factors inducing cross border flows. Better economic fundamentals in emerging markets: improved fiscal, monetary, and foreign exchange policies, and convergence in regulatory frameworks including financial liberalization. In addition, higher commodities prices has allowed great gains to commodity producers that led to a sharp increase in foreign reserves and growth in their demand for financial instruments. These events happened in a context of excess liquidity in international markets which led to relatively low level of interest rates in developed economies. We must also recognize that the excess liquidity had relaxed the methodology for pricing risks which contributed to the reduction of spreads.

- These developments have been aided by technological advances that enabled the use of complex financial instruments (and re-allocation of risks), faster financial transactions, improvement in market efficiency which invited a wide range of agents to participate in world financial markets.

As a Consequence…decline of Home Bias

- As world financial markets grow, more money is flowing between frontiers seeking opportunities outside their home market. Both institutional and individual investors have been looking to increase their foreign asset allocations in the last years.
- Thus, the asset management industry has become more geographically diversified. Foreign ownership of government bonds increased from 11% in 1990 to 31% in 2006, and in corporate bonds from 7% to 21%.
- There is evidence that Home Bias (French and Poterba 1991) has been declining as International Capital Assets Pricing Models (CAPM) predicts: i.e., portfolios are well diversified internationally and capital flows to markets with the most favorable risk-return relationship (Solnik 1974).

As a Consequence…decline of Home Bias



Emerging Markets

Emerging Markets

- Emerging Markets Financial Assets Growth
- Increase allocation to EM assets
- EM net capital exporter
- Latin America
- Eastern Europe, Middle East and Africa
- Asia

Emerging Markets Financial Assets Growth

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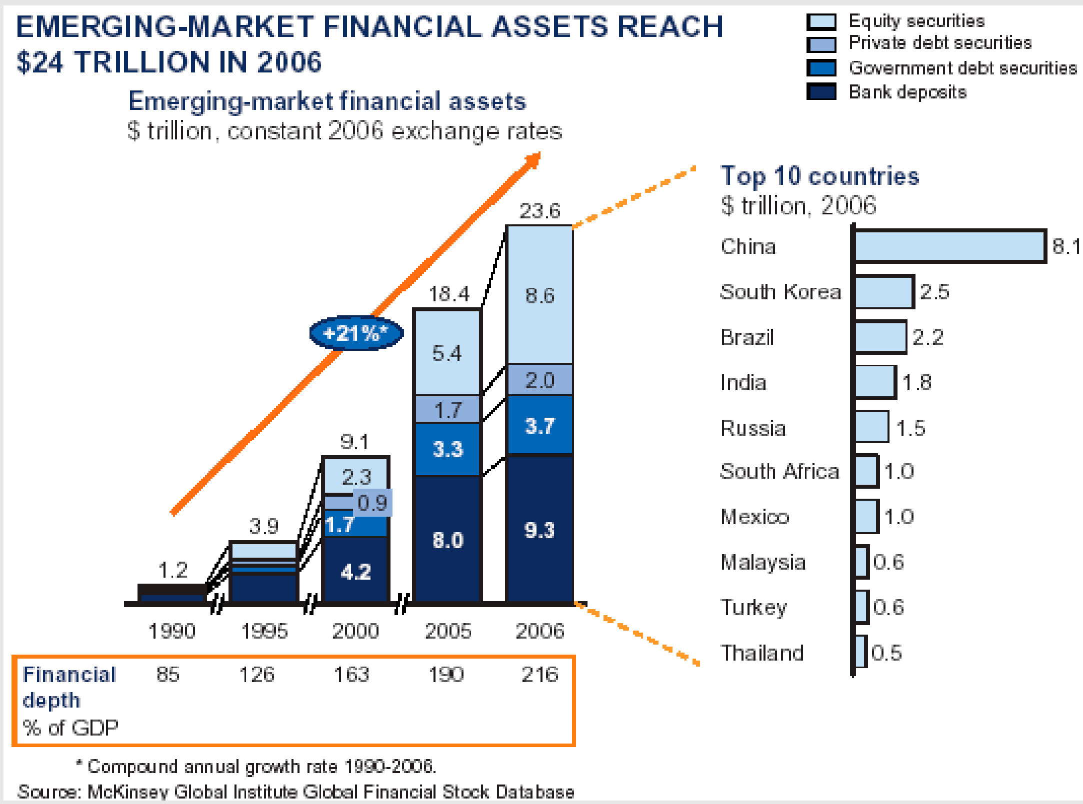
- EM accounted only for 14% of global financial assets at the end of 2006; while the top ten countries accounted for 84% of EM financial assets, and China alone represented 34%.
- EM financial assets grew at an annual compounded rate of more than twice the rate of growth of global financial assets. However, contrary to the global experience, the share of debt securities declined from 29% to 24% between 2000 and 2006



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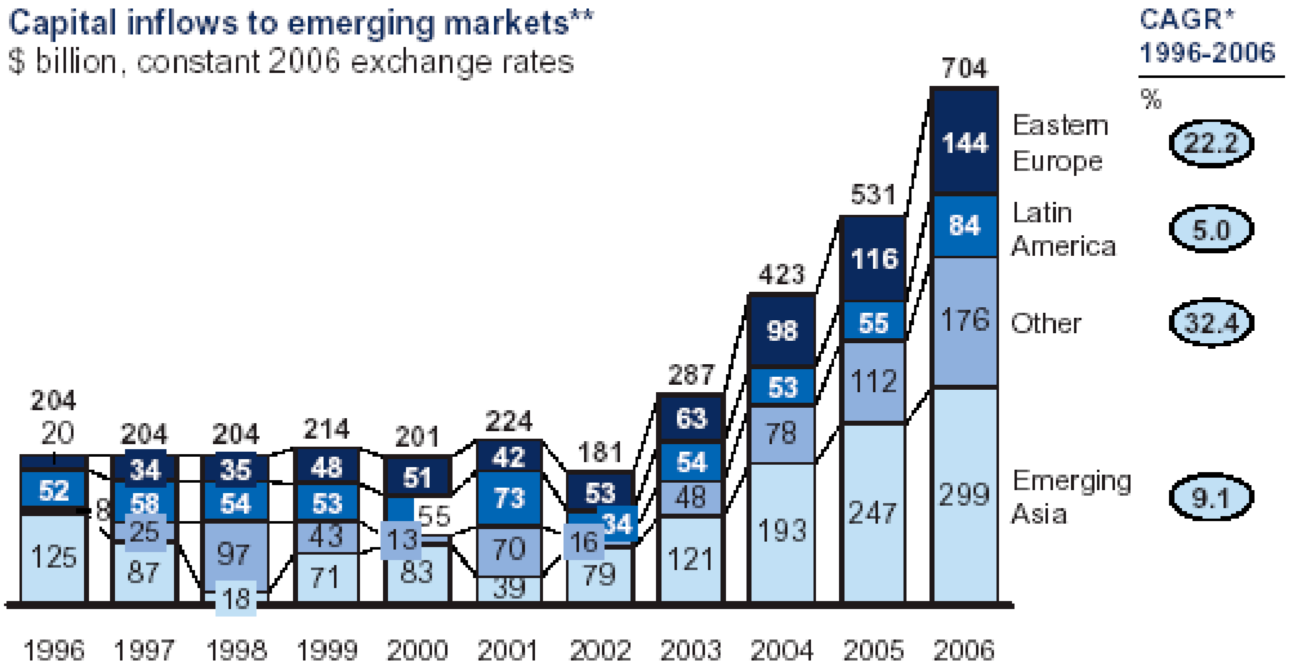
Increase allocation to EM assets

CAPITAL FLOWS TO EMERGING MARKETS REACH $700 BILLION IN 2006

Capital inflows to emerging markets**
$ billion, constant 2006 exchange rates



% of GDP	5.6	5.0	2.8	4.0	3.6	2.7	2.8	3.9	4.9	5.5	6.4

* Compound annual growth rate.

** Eastern Europe includes Bulgaria, Croatia, Czech Rep., Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Rep., Slovenia, and Ukraine. Latin America includes Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay and Venezuela. Emerging Asia includes China, India, Indonesia, South Korea, Malaysia, Philippines, Taiwan and Thailand. Some numbers do not add due to rounding.

Source: McKinsey Global Institute Capital Flows Database

EM net capital exporter

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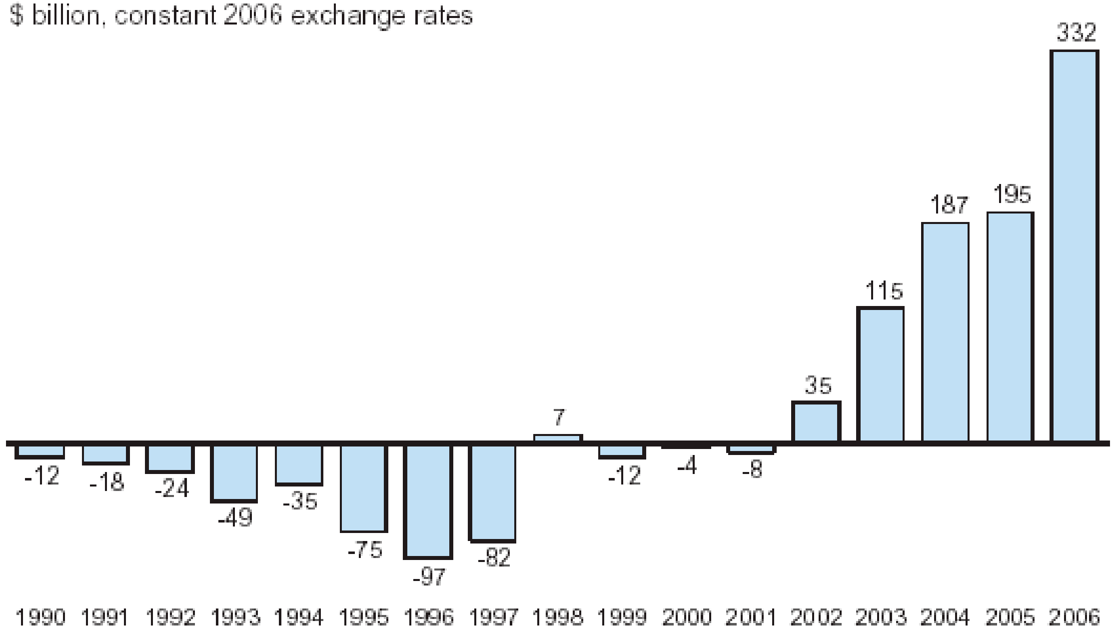
- Since 2002, capital outflows from EM exceed inflows, making them net capital providers to the rest of the world.

SINCE 2002, EMERGING MARKETS HAVE BEEN NET PROVIDERS OF CAPITAL TO THE WORLD

Emerging market* net capital flows (capital outflows minus capital inflows)
$ billion, constant 2006 exchange rates



* Includes 34 emerging markets.
Source: McKinsey Global Institute Capital Flows Database

EM: Latin America

- Most countries in the region are running current account surpluses, experiencing fiscal prudence, floating exchange rates, strong external balance sheets, and successful implementing inflation targeting regimes. They have also been implementing financial sector reforms.
- All of these have fostered the development of Latin American financial local markets (equity, bonds, derivatives).
- Thus, Latin America financial markets have experienced a major transformation during the last 15 years.
- Latin American governments continue to lean aggressively towards local funding instead of relying on external capital markets, which is also helping to deepen local markets.

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EM: Latin America

- Capital flows are taking place with a stronger financial systems and an increase in investor sophistication. There has been a shift from cross-border towards domestic financing allowing domestic capital markets more liquid and deeper and therefore becoming less dependent on banks.
- This increasing demand for Latin local market securities from international investors, help to bring interest rates lower and to extend yield curves: e.g., Brazil Global 2040, México UMS 33 (United Mexican States 2033).
- Besides, bond markets in local currency have become an alternative source of financing for local agents while inflation-linked bonds continue to gain liquidity and consolidate as another option for both domestic and foreign investors.
- This new financial structure makes capital flows less volatile than before and it has turned to local borrowers less exposed to suffer a possible currency mismatch.

EM: Latin America

- The growing institutional investor base in Latin America is adding to the growing foreign demand.
- In the region, Pension funds assets exceed US$430 billion, which represent about half of the total domestic public debt outstanding.
- On average, pension fund assets have grown 20% annually in local currency terms since 2000. This trend is likely to persist since many systems won't start to pay pensions until the next decade.

Latin America: Size of pension funds

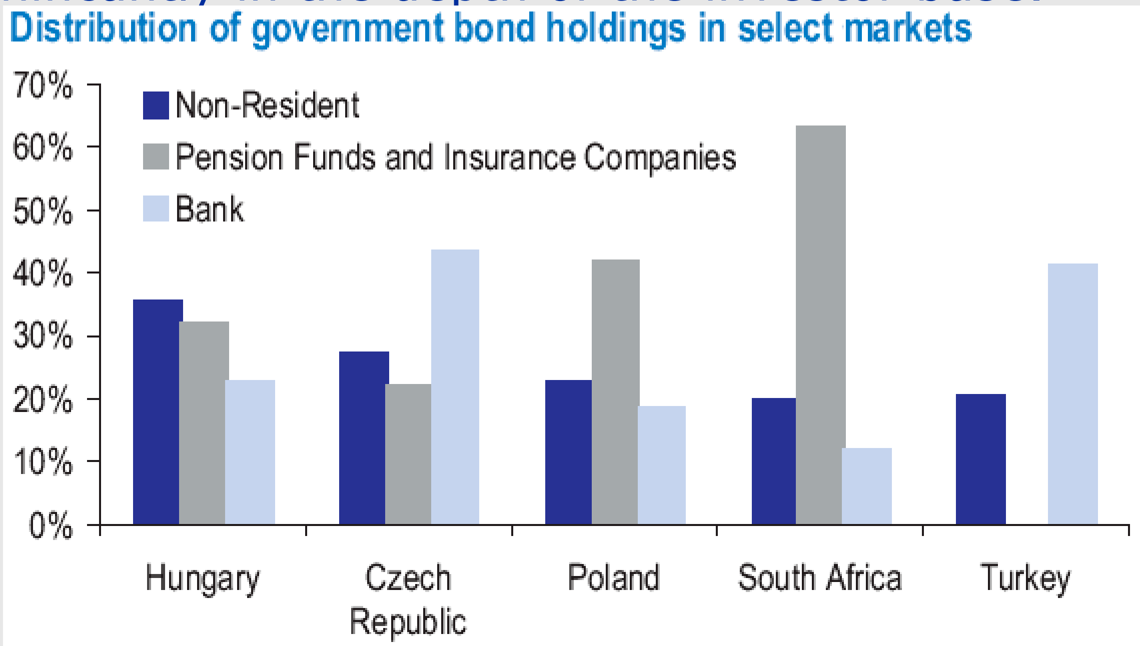
	2007P AUM US$ billion	AUM % GDP	Avg annual growth of AUM 2000-2007 (CAGR %)	Share of federal govt.debt in their portfolios (%)
Argentina	27.2	10.7%	22.7%	50.9%
Brazil	192.8	15.0%	13.9%	14.5%[1]
Chile	100.1	60.7%	14.1%	9.22%[2]
Colombia	21.4	12.6%	20.9%	46.6%
Mexico	72.6	8.3%	23.3%	70.0%
Peru	19.2	18.2%	29.6%	n.a.

1. Outright exposure in federal government debt. Including fixed-income investment funds containing government bonds, this ratio goes up to around 50%.
2. Excludes public-sector corporate bonds.

Sources: SAFJP (Argentina), SPC (Brazil), Superfinanciera (Colombia), Consar (Mexico), SBS (Peru), SVS (Chile) and JPMorgan.

EM: Eastern Europe, Middle East and Africa

- The domestic markets have developed not just in terms of the debt being issued, but more significantly in the depth of the investor base. One of the striking features of the region, and an indication of the development of the domestic economy, is the importance of pension funds and insurance companies.



Source: JPMorgan

- In Hungary and the Czech Republic, pension and insurance funds are as important as government bond holdings to non-resident investors. In Poland and South Africa, pension and insurance funds are significantly larger than foreign investors. In Turkey pension and insurance funds are practically nonexistent.

EM: Asia

- Financial markets have recovered since the 1997 financial crisis, and now they have the most developed financial systems within EM as a group.
- Moreover, the region has become a net exporter of capital to the world since the crisis. National saving rates are high (over 30% of GNP).
- The development of Asian debt local markets include higher depth and liquidity, and longer-maturing debt issues.
- China is by far the largest player among EM for both capital inflows and outflows. India, the other giant, represent just one-fourth the size of China in terms of financial assets.

EM: Asia

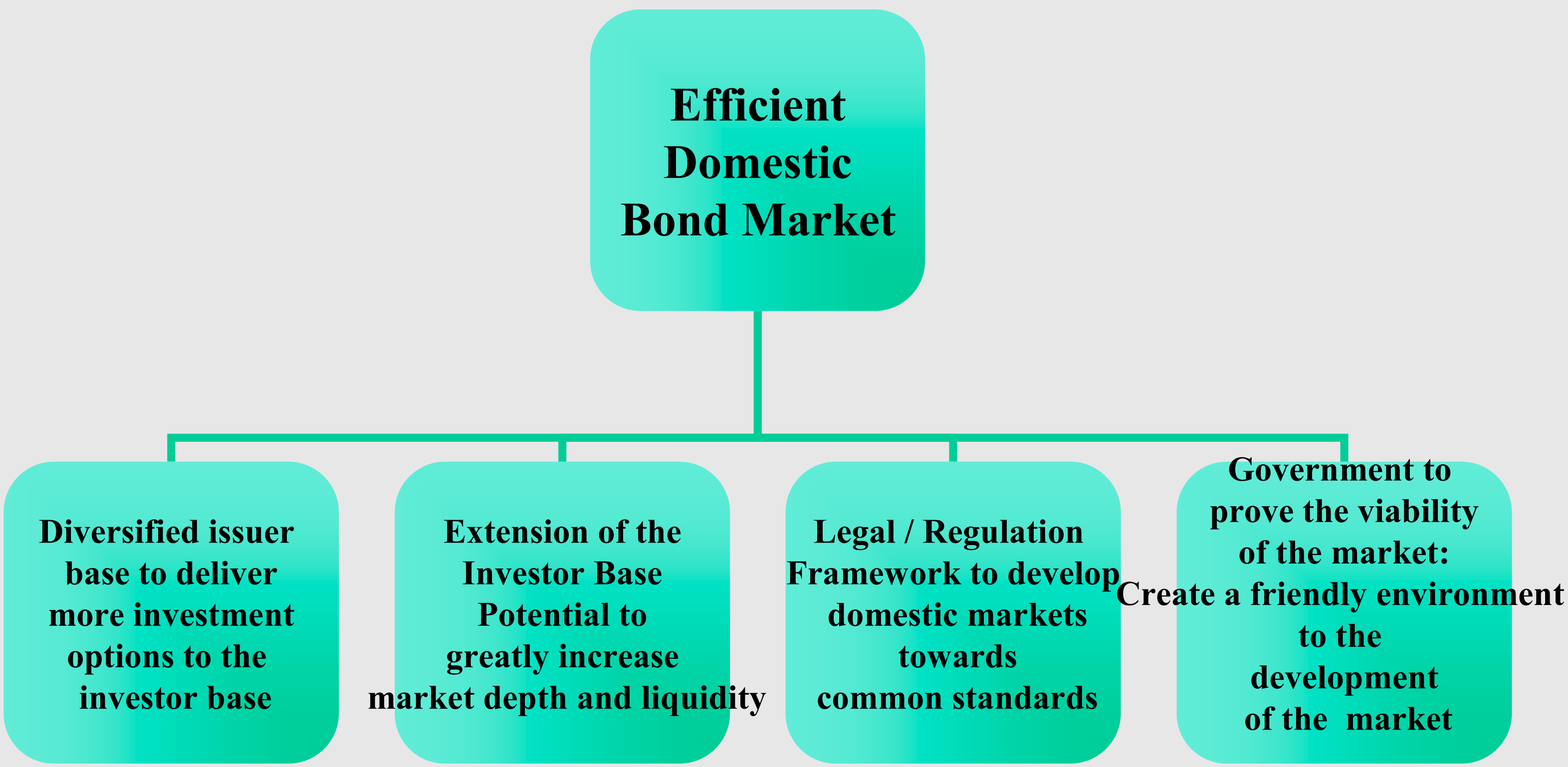
- Governments have chosen soft currency regimes to support export-led growth.
- A concerted effort by most governments of the region has been to broaden market participation. Actually, foreign investors enjoy the access to nearly all local currency bond markets. However, in many markets several impediments remain: in China, India, and Taiwan, foreign investors must obtain licenses, and Thailand still maintains important investment restrictions.

The Importance of the Investor Base

- The Importance of the Investor Base
  - How the investor base is changing?
    - Players: Institutional Investors
      - Players: Pension Funds
      - Players: Hedge Funds
    - Players: SWF & Central Banks
  - How these changes impact on Bonds Markets liquidity?

The importance of the Investor Base

- Investor base is one of the prerequisites of all efficient bond market.
- Ceteris paribus, a wide investor base gives more depth and liquidity to market which improve the trading of debt instruments between investors.



The importance of the Investor Base

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- *Liquidity is essential for limiting the financial distortions that increase systemic vulnerability. If a bond markets become illiquid during some periods, the market may demand a large liquidity premium.*
- *One corollary might be that debt issuance tends to become concentrated in short maturities.*
- *In this way, a narrow investor base can make a market illiquid by increasing the markets' vulnerability.*
- *In addition, an illiquid bond market can adversely affect financial stability by reducing both agents' capacity to manage risk and the authorities' ability to monitor risk. In particular, lack of liquidity and high transaction costs could prevent market participants from smoothly rebalancing their portfolio against anticipated shocks.*
- *In the opposite, liquid markets with a diversified investor base are less likely to witness one-way price bets than markets that are relatively illiquid.*
- *There is a key role of a diversified investor base, particularly institutional investors, in promoting market liquidity because of its positive effect on market competition, innovation and sophistication.*

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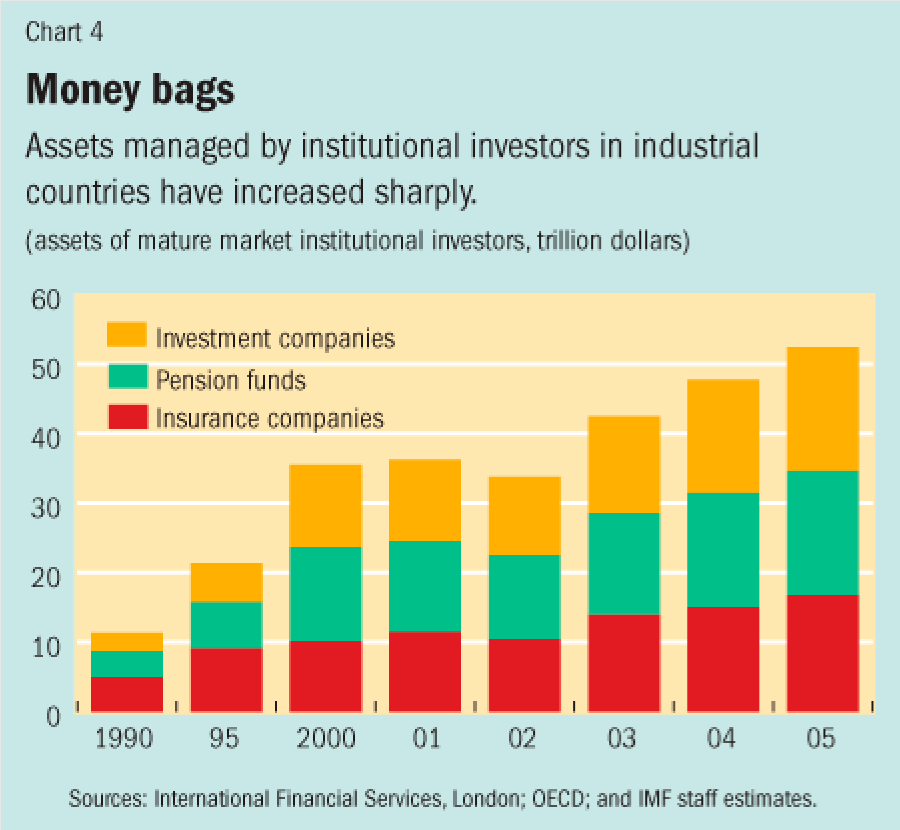
How the investor base is changing?

- Furthermore, the rapid growth in cross-border flows has been accompanied by changes in the investor base as follows:

1. Growth of assets under management of institutional investors (pension funds, insurance companies, mutual funds)
2. Rapid growth of hedge funds
3. Rise of EM central banks reserves
4. Growing activism of sovereign wealth funds.

Players: Institutional Investors

•There has been a sharp increase in assets under management of traditional mature market institutional investors…



Players: Pension Funds

•Increased assets under management combined with the relaxation of regulatory restrictions and technological advances have made it possible for more pension funds to diversify their portfolios internationally.

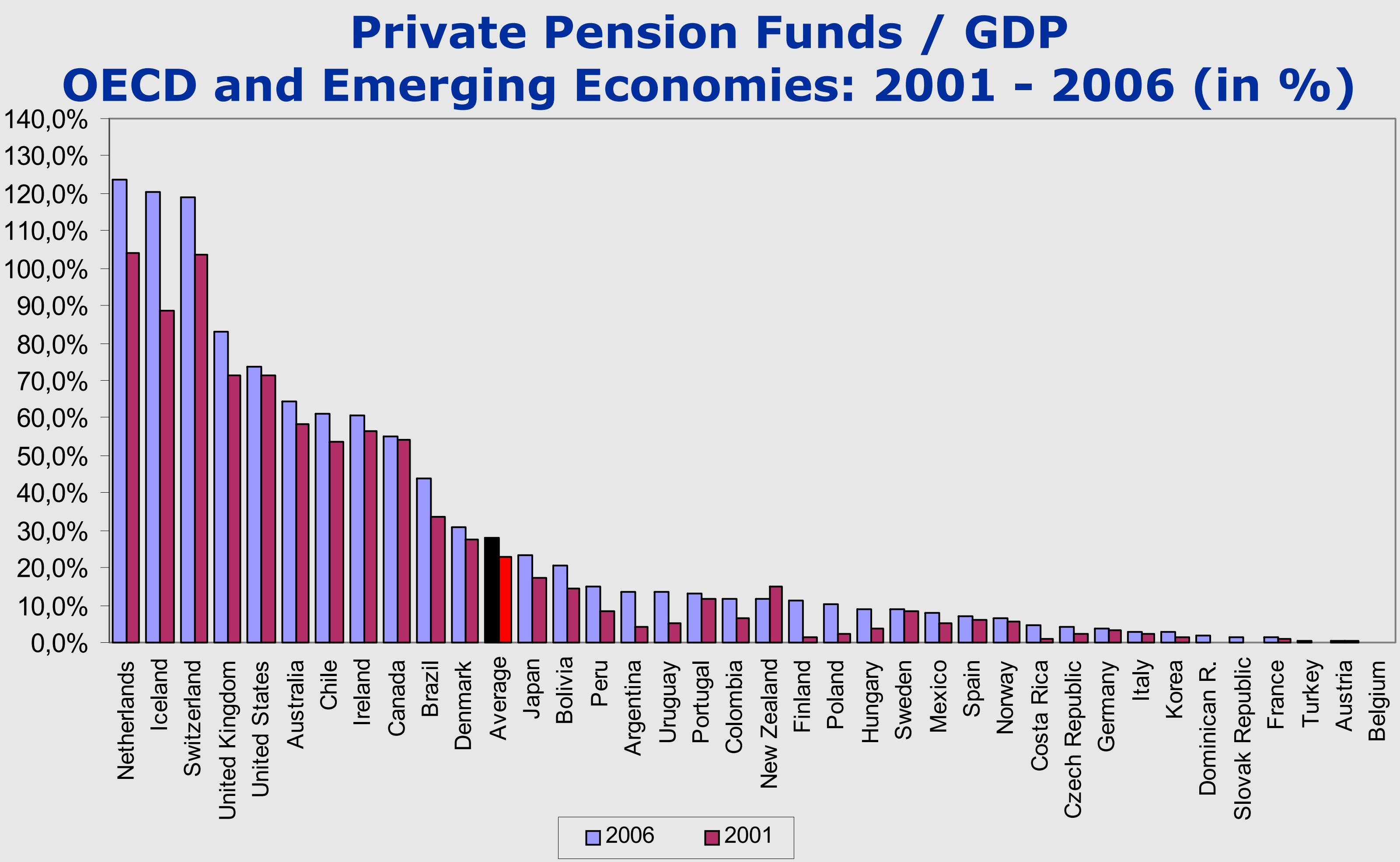
Pension Fund Asset Allocation in Selected Countries

(In percent of pension fund portfolios)

	Equities		Bonds		
	Domestic	International	Domestic	International	Other
United States					
1994	41	7	42	1	9
1999	55	10	27	1	7
2005	48	15	32	1	4
Japan					
1994	24	6	55	6	9
1999	40	19	32	7	2
2005	30	18	24	13	15
United Kingdom					
1994	54	23	9	4	10
1999	51	24	13	4	8
2005	34	32	22	3	9
Netherlands					
1994	10	13	62	4	11
1999	12	38	22	19	9
2005	6	43	5	33	13
Australia					
1994	35	12	30	3	20
1999	39	16	22	3	20
2005	32	27	14	5	22
Canada[1]					
1994	32	13	48		7
1999	34	17	45		14
2004	30	26	36		8
Spain[1]					
1994	4	1	57	3	35
1999	11	14	40	13	22
2004	6	16	18	28	32

Source: IMF

Players: Pension Funds



Note: data for France 2003 and 2005; Iceland 2005; Japon 2005; Korea 2002; UK 2005 and Brazil 2004.
SOURCE: OECD, Pension Markets in Focus (December, 2005), AIOS, IFS and country sources.

Players: Pension Funds

Share of Foreign Assets in Private Pension Funds Portfolios in High-Income OECD Countries, 2003-2004 (in %)

Country and Year	Share of Foreign Equities	Share of Foreign Bonds	Total Share of Foreign Assets
Australia 2003	19.7	0.0	19.7
Canada 2003	29.3	0.5	29.8
Japan 2004	16.0	11.0	27.0
Switzerland 2003	14.0	10.0	24.0
UK 2003	18.2	4.2	22.4
US 2004	13.0	1.0	14.0

Source: Hu (2006).

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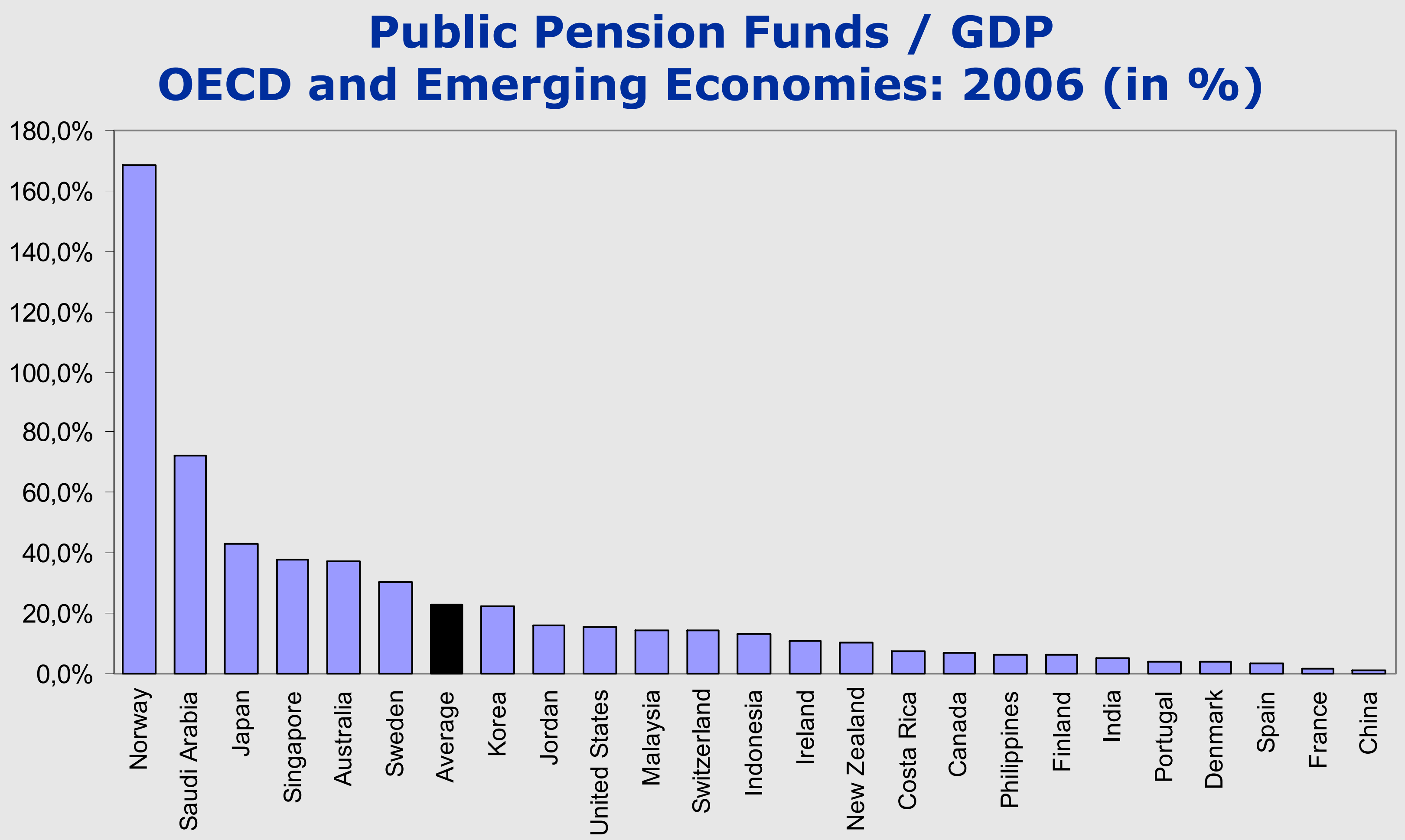
Players: Public Pension Funds



Note: data for China 2004; Australia, Norway and Switzerland 2007; Indonesia 2005 and Saudi Arabia 2003.
SOURCE: Alberto R. Musalem and Ricardo Bebczuk databse on Public Pension Funds and Stephen Jen presentation at CEF.

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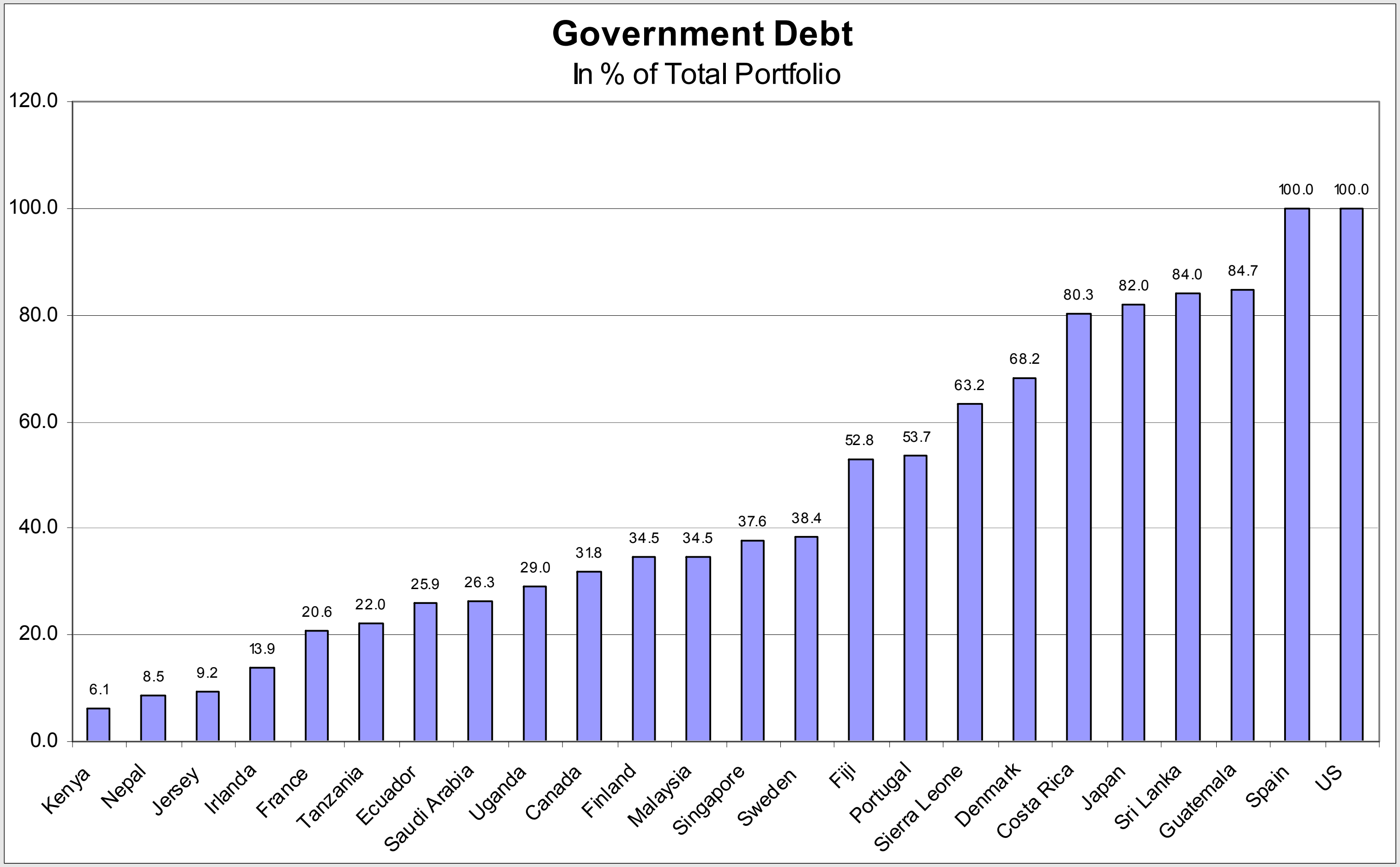
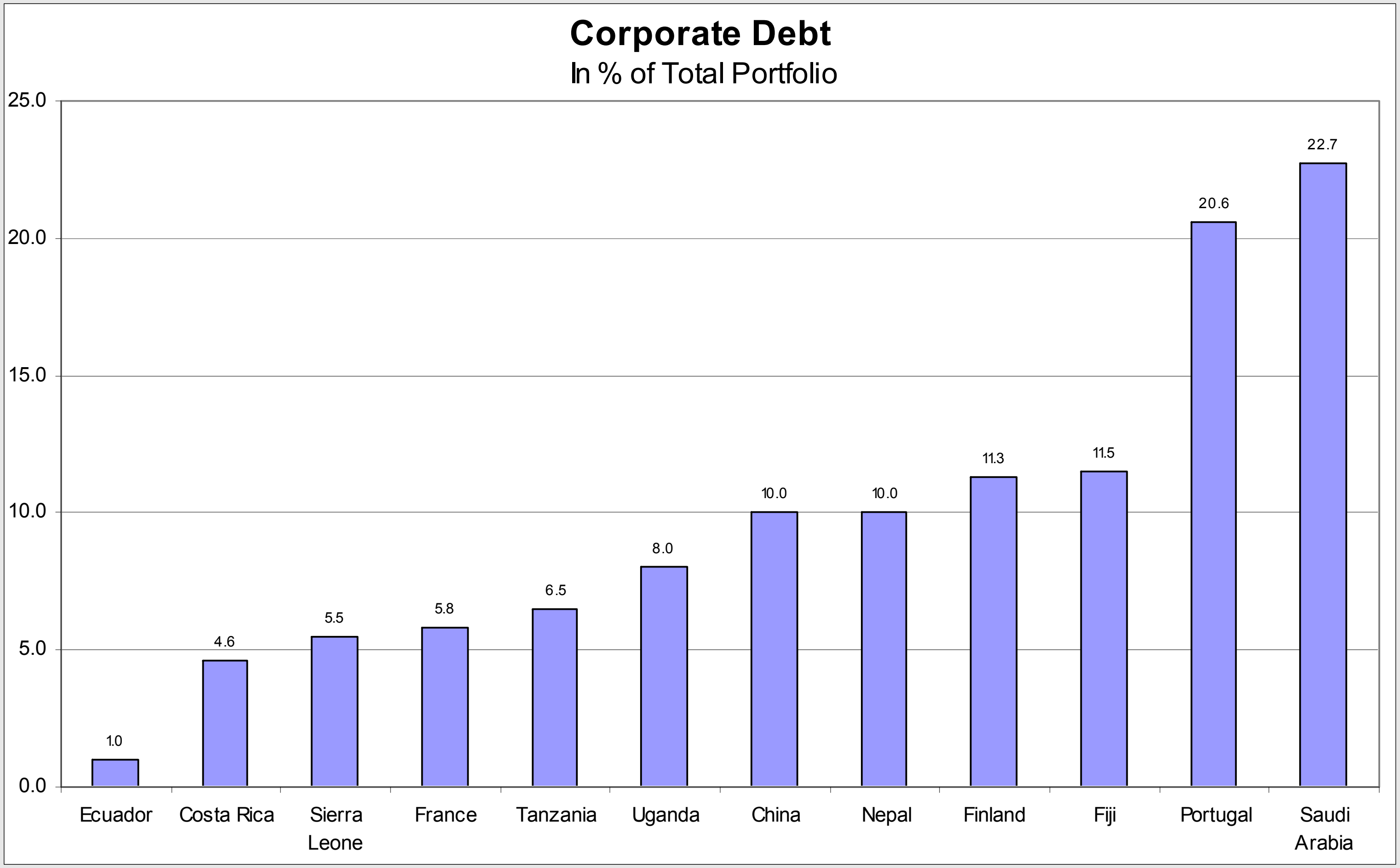
Players: Public Pension Funds



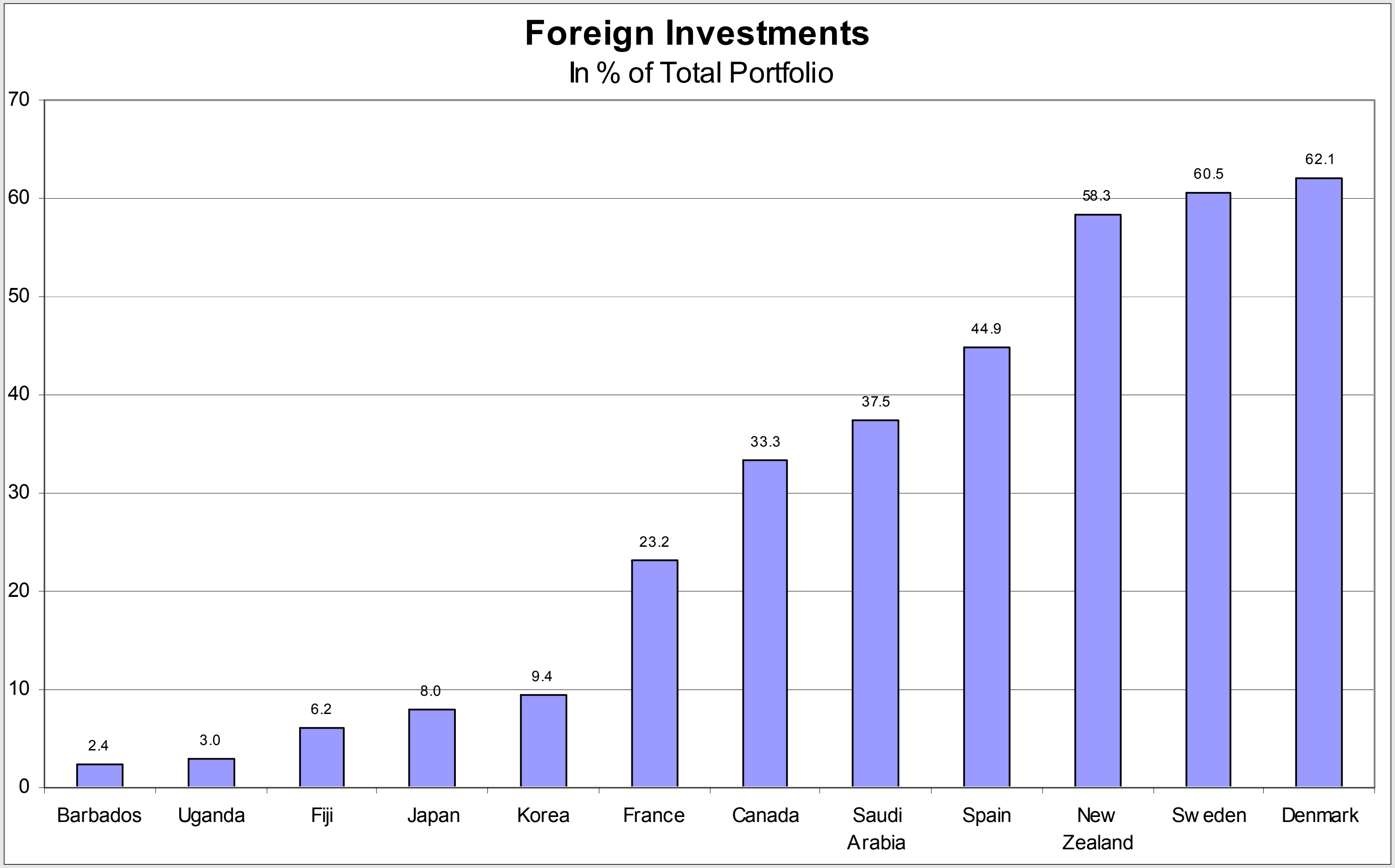
SOURCE: Alberto R. Musalem and Ricardo Bebczuk (2008).

Players: Public Pension Funds



SOURCE: Alberto R. Musalem and Ricardo Bebczuk (2008).

Players: Public Pension Funds



SOURCE: Alberto R. Musalem and Ricardo Bebczuk (2008).

Players: Hedge Funds

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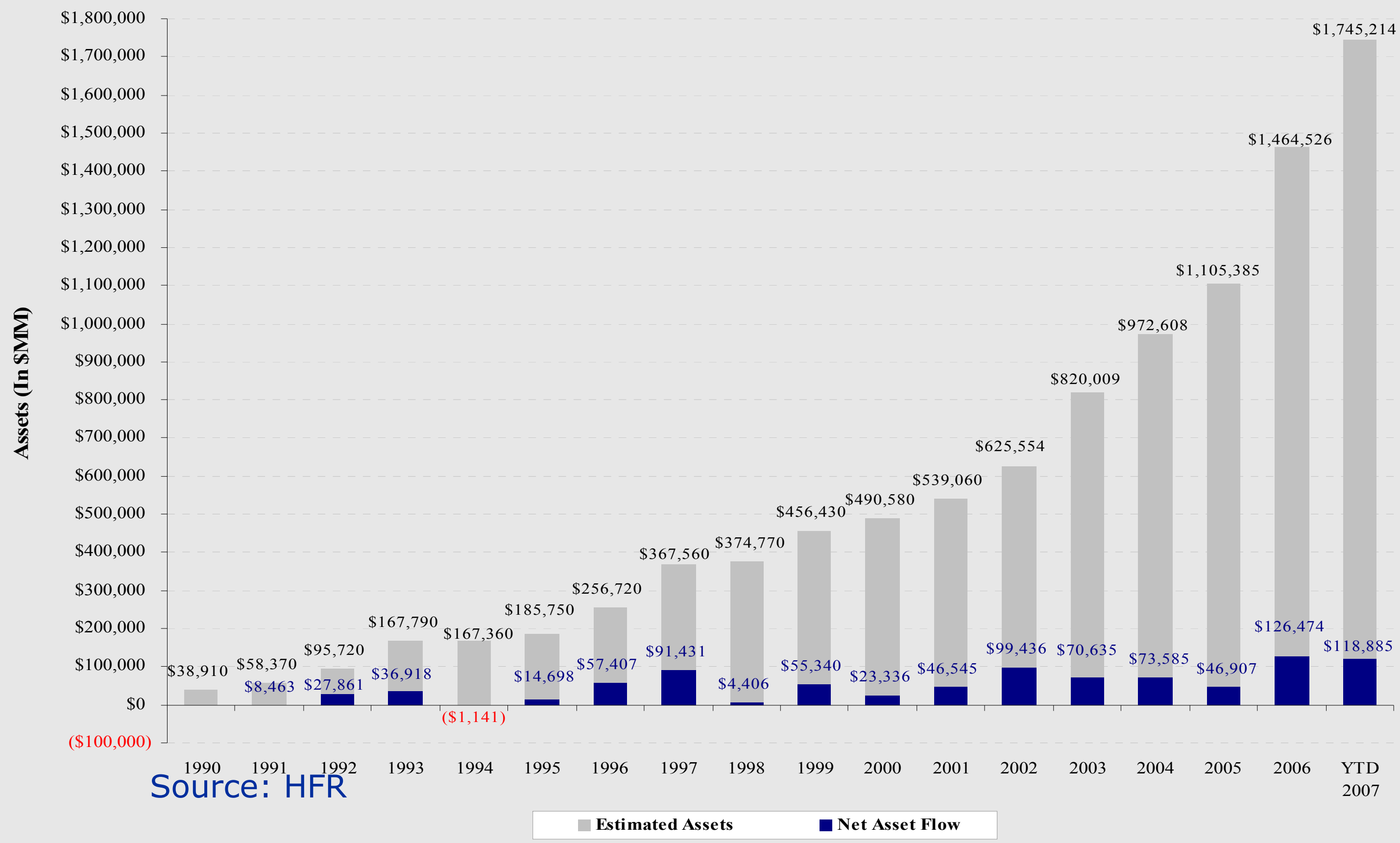
- Assets under management of the hedge fund industry grew from $39 billion in 1990 to more than $1.7 trillion as of Q2-2007. While investment in EM assets represented 0.36% of assets under management in 1990, it reached 4.33% in Q2 2007.

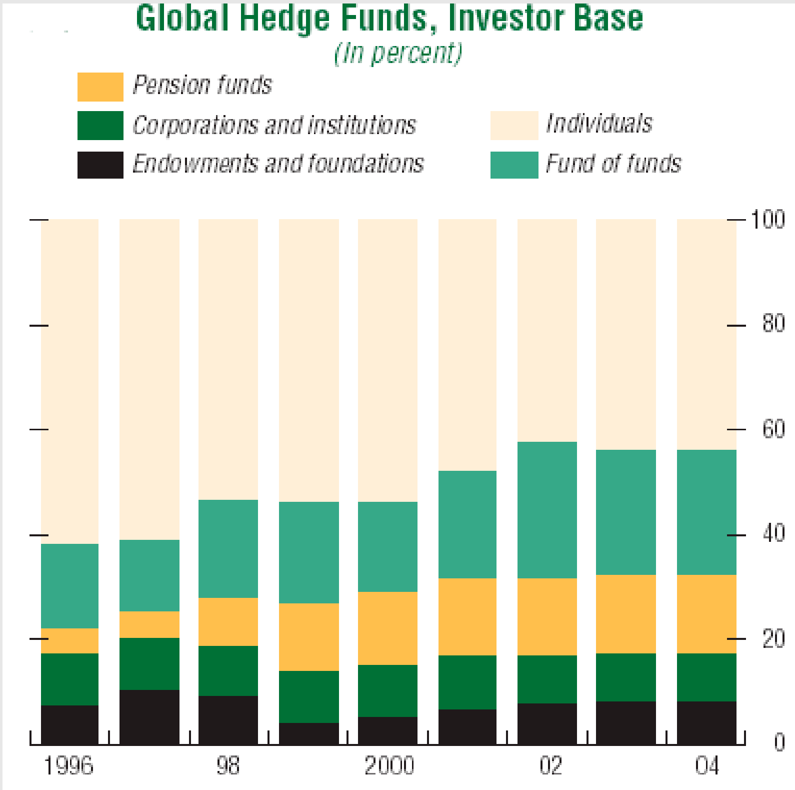
Estimated Growth of Assets / Net Asset Flow
Hedge Fund Industry 1990 – YTD Q2 2007



Source: HFR

Players: Hedge Funds

•The weights of the investor base have changed against individuals. A growing number of pension funds are relying on hedge funds as a vehicle to achieve higher risk-adjusted returns and international exposures.



Source: IMF

Players: Sovereign Wealth Funds and Central Banks

- Sovereign funds existed since the 1950s, but their total size worldwide has increased dramatically over the past 10–15 years. In 1990, sovereign funds held $500 billion. At September 2007, they reached around $3 trillion and, based on the likely trajectory of current accounts, could reach $12 trillion by 2015.
- In EM, central banks and sovereign wealth funds have become key players in the cross-border allocation of capital, with U.S. financial markets a major focus. Nevertheless, diversification might induce them into investment grade EM debt.

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Players: Sovereign Wealth Funds and Central Banks

- The holdings of Sovereign Wealth Funds remain quite concentrated, with the top five sovereign funds accounting for about 70% of total. Over half of these assets are in the hands of countries that export significant amounts of oil and gas.

Country	Fund Name	Assets (Mlns US$s)	Inception year	Source of funds
Total		**2,939,456**		
UAE	ADIA 1/	875,000	1976	Oil
Norway	Government Pension Fund - Global	341,200	1996	Oil
Singapore	GIC 1/	330,000	1981	Other
Saudi Arabia	Saudi Arabian funds of various types 1/	300,000	N/A	Oil
Kuwait	Reserve Fund for Future Generation	250,000	1953	Oil
China	State FX Investment Corp. + Hueijing Co. 2/	200,000	2007	Other
Singapore	Temasek Holdings 1/	159,210	1974	Other
Russia	Stabilisation Fund 3/	133,000	2003	Oil
Libya	Oil Reserve Fund	50,000	2005	Oil
Algeria	Fond de régulation des recettes	42,600	2000	Oil
Qatar	Qatar Investment Authority	40,000	N/A	Oil, gas
US (Alaska)	Permanent Reserve Fund	38,000	1976	Oil
Brunei	Brunei Investment Authority	30,000	1983	Oil
Malaysia	Khazanah Nasional BHD	25,700	1993	Other
Korea	KIC (Korea Investment Corporation)	20,000	2006	Other
Chile	A new SWF based on the Copper Fund 4/	17,820	1985	Copper
Kazakhstan	National Fund	17,600	2000	Oil, gas
ROC (Taiwan)	National Stabilisation Fund *	15,000	N/A	Other
Canada	Alberta Heritage TF	15,500	1976	Oil
Iran	Oil Stabilisation Fund	15,000	1999	Oil
Nigeria	Excess Crude Account	11,000	2003	Oil
Botswana	Pula Fund	6,800	1966	Diamonds
Oman	State General RF	2,000	1980	Oil, gas
Azerbaijan	State Oil Fund	1,500	1999	Oil
Venezuela	FIEM	756	1998	Oil
Canada	Fond des générations (Québec)	560	2006	Electricity
Trinidad & Tob.	Revenue SF	460	2000	Oil
Kiribati	Revenue Equliz. Fund	400	1956	Phosphates
Uganda	Poverty Action Fund	350	1998	Aid
	Oil & gas-related funds	2,163,616		
	Non-oil related funds	775,840		

1/ My guesstimates as of September 2007.
2/ Not yet finalised. Will be launched in September 2007.
3/ Will be launched in February 2008.
4/ The Pension Reserve Fund, FRP, and the ESSF and FEES.

Source: Morgan Stanley Research

Players: Sovereign Wealth Funds and Central Banks

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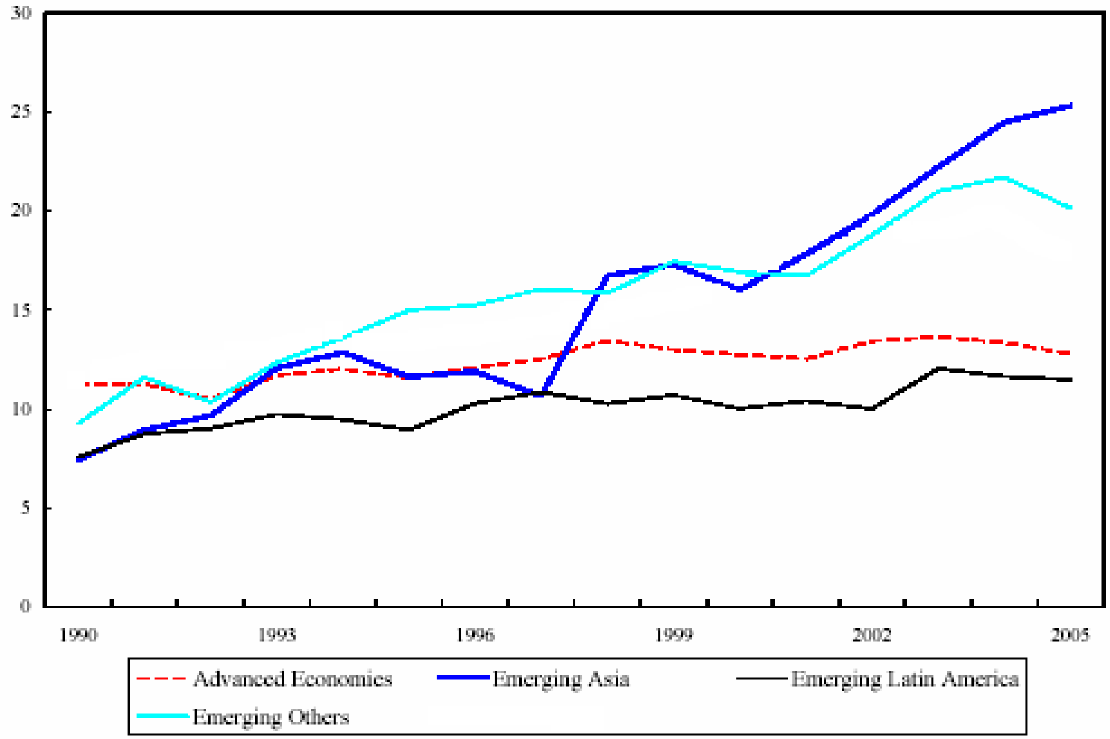
International Reserves as a Share of GDP (In percentage points)



Sources: IMF, *International Financial Statistics* and *World Economic Outlook* (WEO) and World Bank, *World Development Indicators*.
Note: Data for 2005 refer to the end of the second quarter for the stocks of reserves, and to *WEO* projections for GDP. "Emerging Others" includes emerging economies in Eastern Europe, the Middle East and Africa. For each country group, the data refer to unweighted cross-country averages.

- In the last years, there has been an increase in international reserves in emerging economies, especially in Asia.
- Undoubtedly, this accumulation contributes to increase the cross-border flows, and it has transformed EM as net capital providers to the rest of the world.

How these changes impact on bonds possessions?

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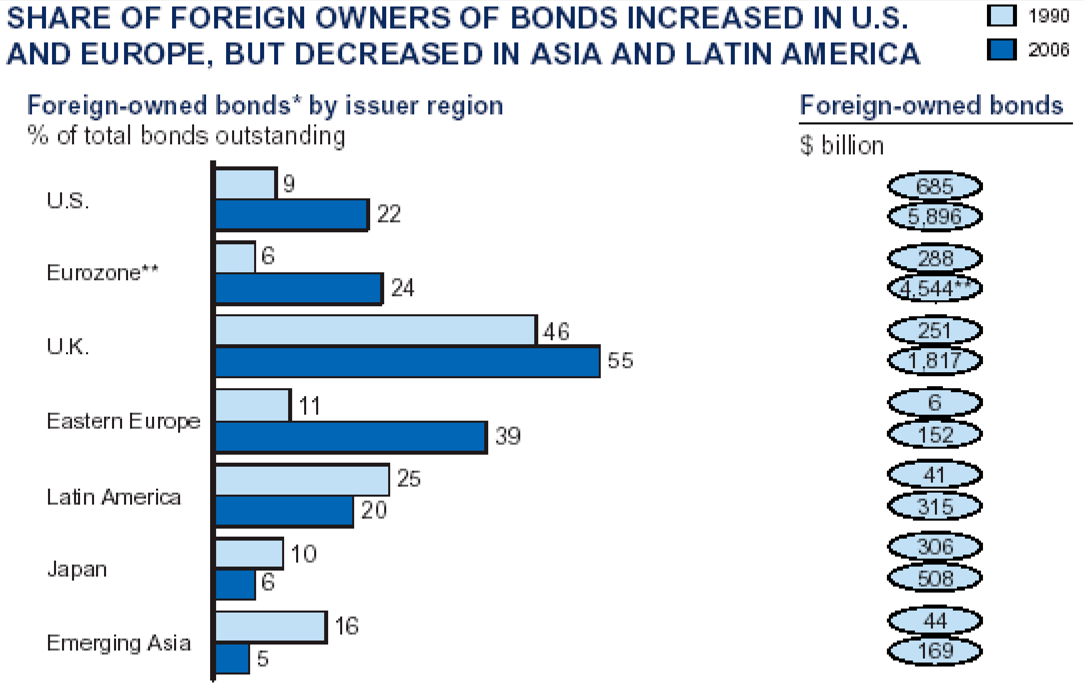
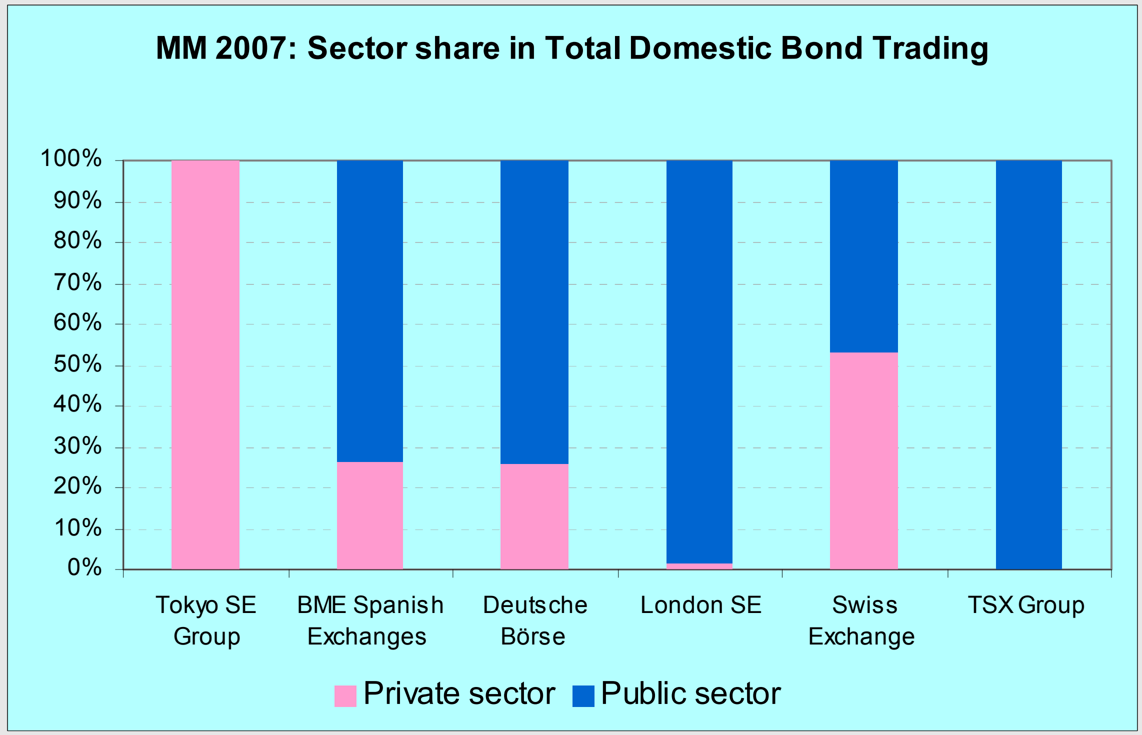
- The share of foreign owners of bonds has increased in most regions. The exceptions are Japan, emerging Asia, and Latin America, although their absolute holdings are larger than in 1990. This may reflects growth in the domestic investor base for bonds in these regions.



* Includes debt securities issued by corporations and financial institutions, asset-backed securities, and government debt securities.
** Only investors from outside the eurozone. In 2006, cross-border investors within the eurozone owned $3,737, or 20%, of total debt securities.
Source: McKinsey Global Institute analysis

How these changes impact on Bonds Markets liquidity?

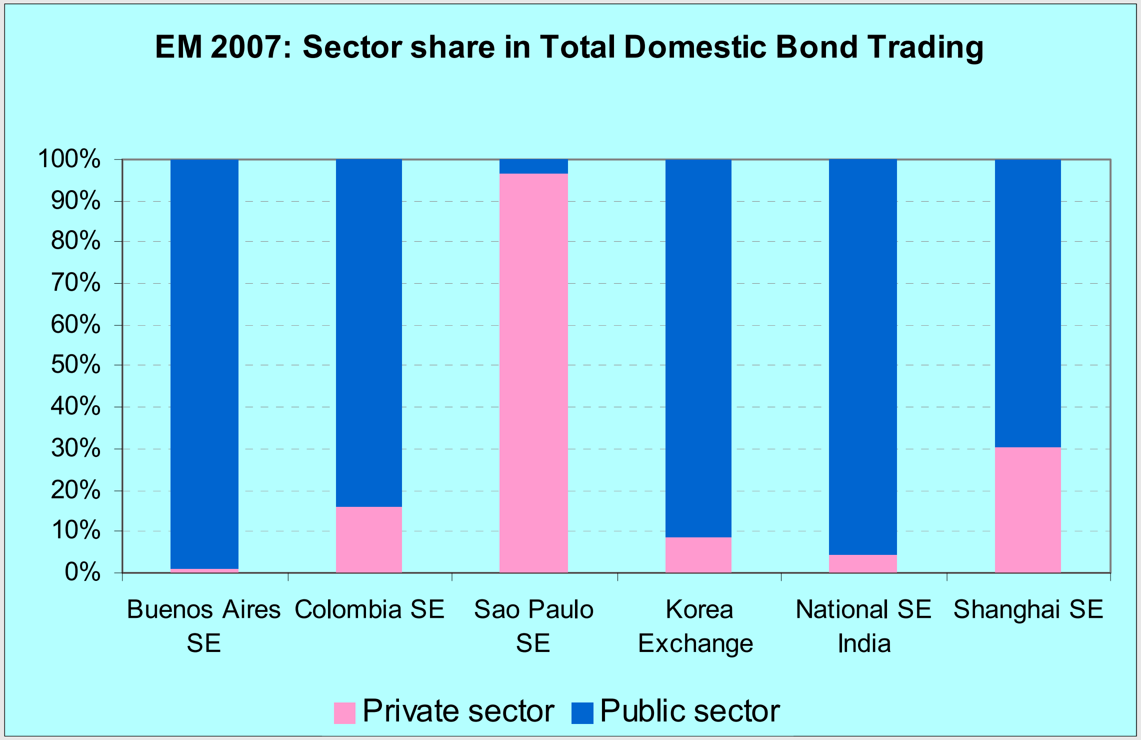
- Inside of each bonds market, we explore the composition of the liquidity…
- Except for Tokyo and Switzerland, the dominant amount of trading is with the domestic public sector bonds.



Source: WFE

How these changes impact on Bonds Markets liquidity?

- While Sao Pablo trading is dominated by private bonds, the opposite is true in the other markets, particularly, at Buenos Aires.



Source: WFE

How these changes impact on Bonds Markets liquidity?

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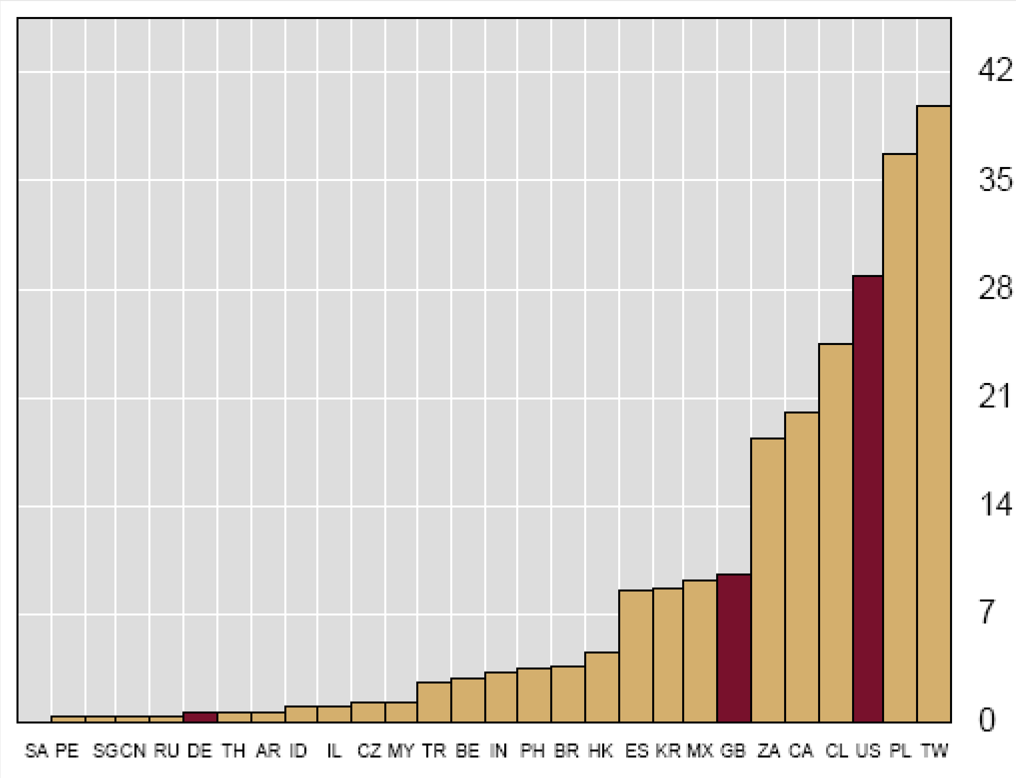
•Liquidity in the government bond market, 2005: Central government bonds and notes.

Turnover over previous year's outstanding stock.



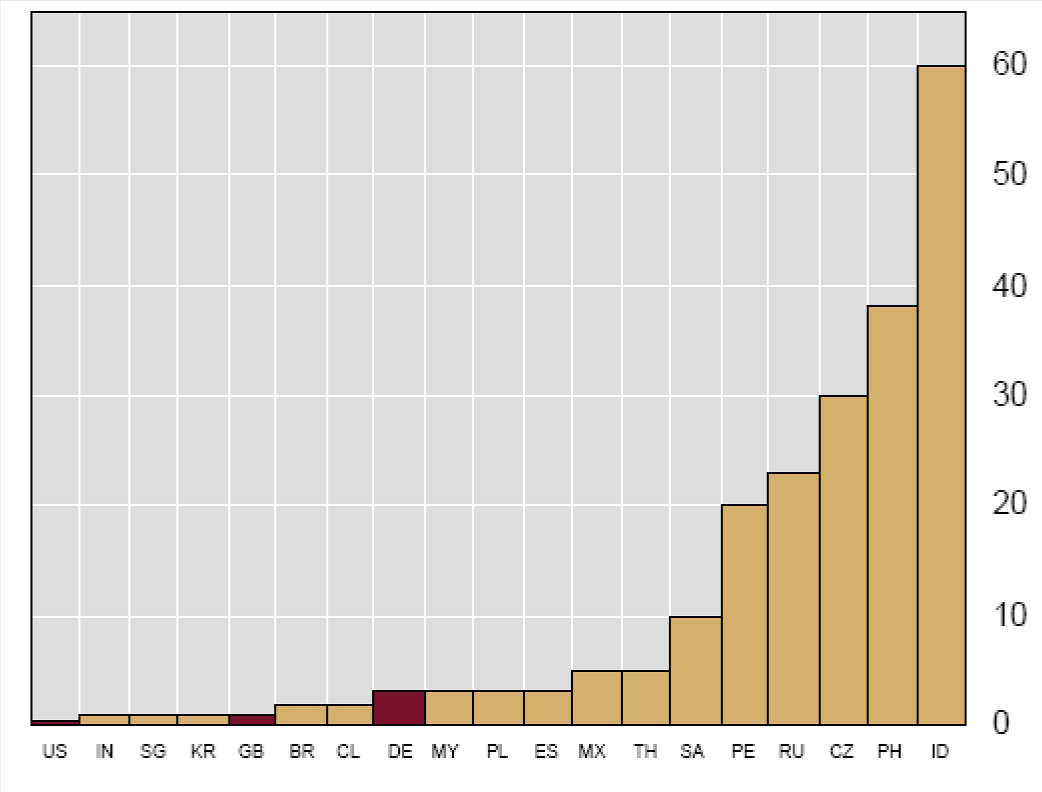
AR = Argentina; BE = Belgium; BR = Brazil; CA = Canada; CL = Chile; CN = China; CO = Colombia; CZ = the Czech Republic; DE = Germany; ES = Spain; GB = the United Kingdom; HK = Hong Kong SAR; ID = Indonesia; IL = Israel; IN = India; KR = Korea; MX = Mexico; MY = Malaysia; PE = Peru; PH = the Philippines; PL = Poland; RU = Russia; SA = Saudi Arabia; SG = Singapore; TH = Thailand; TR = Turkey; TW = Taiwan (China); US = the United States; ZA = South Africa.

Sources: Bloomberg; Working Group survey of central banks; BIS.

How these changes impact on Bonds Markets liquidity?

•Liquidity in the government bond market, 2005: Central government bonds and notes.

Bid-ask spreads



AR = Argentina; BE = Belgium; BR = Brazil; CA = Canada; CL = Chile; CN = China; CO = Colombia; CZ = the

Czech Republic; DE = Germany; ES = Spain; GB = the United Kingdom; HK = Hong Kong SAR; ID = Indonesia;

IL = Israel; IN = India; KR = Korea; MX = Mexico; MY = Malaysia; PE = Peru; PH = the Philippines; PL = Poland;

RU = Russia; SA = Saudi Arabia; SG = Singapore; TH = Thailand; TR = Turkey; TW = Taiwan (China); US = the

United States; ZA = South Africa.

Sources: Bloomberg; Working Group survey of central banks; BIS.

Conclusions

- The world's financial assets has been growing faster than the growth in global GDP. World financial depth (the ratio of total financial assets to global GDP) reached almost 350% in 2006.

- EM accounted only for 14% of global financial assets at the end of 2006; while the top ten countries accounted for 84% of EM financial assets, and China alone represented 34%.

- EM financial assets grew at an annual compounded rate of more than twice the rate of growth of global financial assets.

- Global debt securities share of financial assets grew from 28% in 2000 to 41% in 2006; while it declined for EM from 29% to 24%.

- The asset management industry has become more geographically diversified with evidence of decline in home bias phenomena.

- All financial assets have exhibited strong growth in international flows but the most significant has been in portfolio debt flows.

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Conclusions

- The rapid growth in cross-border flows has been accompanied by changes in the investor base as follows:
- Growth of assets under management of institutional investors (pension funds, insurance companies, mutual funds)
- Rapid growth of hedge funds
- Rise of EM central banks reserves
- Growing activism of sovereign wealth funds

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Conclusions

- In this context, analyzing changes in the international investor base and investment allocation behavior is fundamental to understanding the build up of strengths and weaknesses in international financial markets…
- Within the principals stylized facts it is useful to remark that the share of foreign owners of bonds has increased in most regions. The exceptions are Japan, emerging Asia, and Latin America, although their absolute holdings are larger than in 1990. This may reflect growth in the domestic investor base for bonds in these regions.
- Liquidity in government bond markets differs according to the metric used:
  - In term of turnover ratio, the most liquid markets in 2005 were: Taiwan, Poland, United States, Chile, Canada, and South Africa.
  - In terms of bid-ask spreads they were: United States, India, Singapore, Korea, Great Britain, Brazil, Chile, Germany, Malaysia, Poland, Spain, Mexico, and Thailand.

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Liquidity in Domestic Debt Market and Investor Base

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OECD
ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

INTERNATIONAL MONETARY FUND

10th Annual Global Bond Market Forum

Washington D.C., APRIL 29–30, 2008

The Importance of the Investor Base

- The Importance of the Investor Base
  - How the investor base is changing?
    - Players: Institutional Investors
      - Players: Pension Funds
      - Players: Hedge Funds
    - Players: SWF & Central Banks
  - How these changes impact on Bonds Markets liquidity?

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The importance of the Investor Base

- Investor base is one of the prerequisites of all efficient bond market.
- Ceteris paribus, a wide investor base gives more liquidity to market which improve the trading of debt instruments between investors.

Efficient Domestic Bond Market

- **Diversified issuer base to deliver more investment options to the investor base**
- **Extension of the Investor Base Potential to greatly increase market liquidity**
- **Legal / Regulation Framework to develop domestic markets towards common standards**
- **Government to prove the viability of the market: Create a friendly environment to the development of the market**

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How the investor base is changing?

- Furthermore, the rapid growth in cross-border flows has been accompanied by changes in the investor base as follows:

1. Growth of assets under management of institutional investors (pension funds, insurance companies, mutual funds)
2. Rapid growth of hedge funds
3. Rise of EM central banks reserves
4. Growing activism of sovereign wealth funds.

Players: Institutional Investors

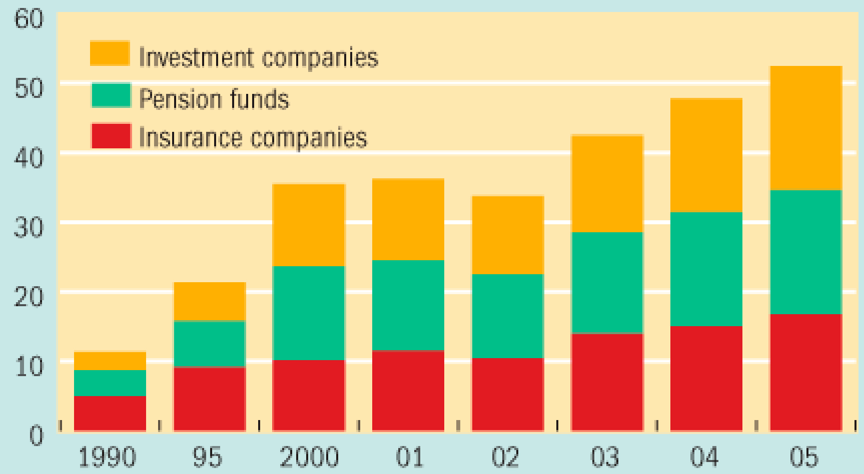
- There has been a sharp increase in assets under management of traditional mature market institutional investors…

Chart 4

Money bags

Assets managed by institutional investors in industrial countries have increased sharply.

(assets of mature market institutional investors, trillion dollars)



Sources: International Financial Services, London; OECD; and IMF staff estimates.

Players: Pension Funds

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• Increased assets under management combined with the relaxation of regulatory restrictions and technological advances have made it possible for more pension funds to diversify their portfolios internationally.

Pension Fund Asset Allocation in Selected Countries
(In percent of pension fund portfolios)

	Equities		Bonds		
	Domestic	International	Domestic	International	Other
United States					
1994	41	7	42	1	9
1999	55	10	27	1	7
2005	48	15	32	1	4
Japan					
1994	24	6	55	6	9
1999	40	19	32	7	2
2005	30	18	24	13	15
United Kingdom					
1994	54	23	9	4	10
1999	51	24	13	4	8
2005	34	32	22	3	9
Netherlands					
1994	10	13	62	4	11
1999	12	38	22	19	9
2005	6	43	5	33	13
Australia					
1994	35	12	30	3	20
1999	39	16	22	3	20
2005	32	27	14	5	22
Canada[1]					
1994	32	13	48		7
1999	34	17	45		14
2004	30	26	36		8
Spain[1]					
1994	4	1	57	3	35
1999	11	14	40	13	22
2004	6	16	18	28	32

Source: IMF

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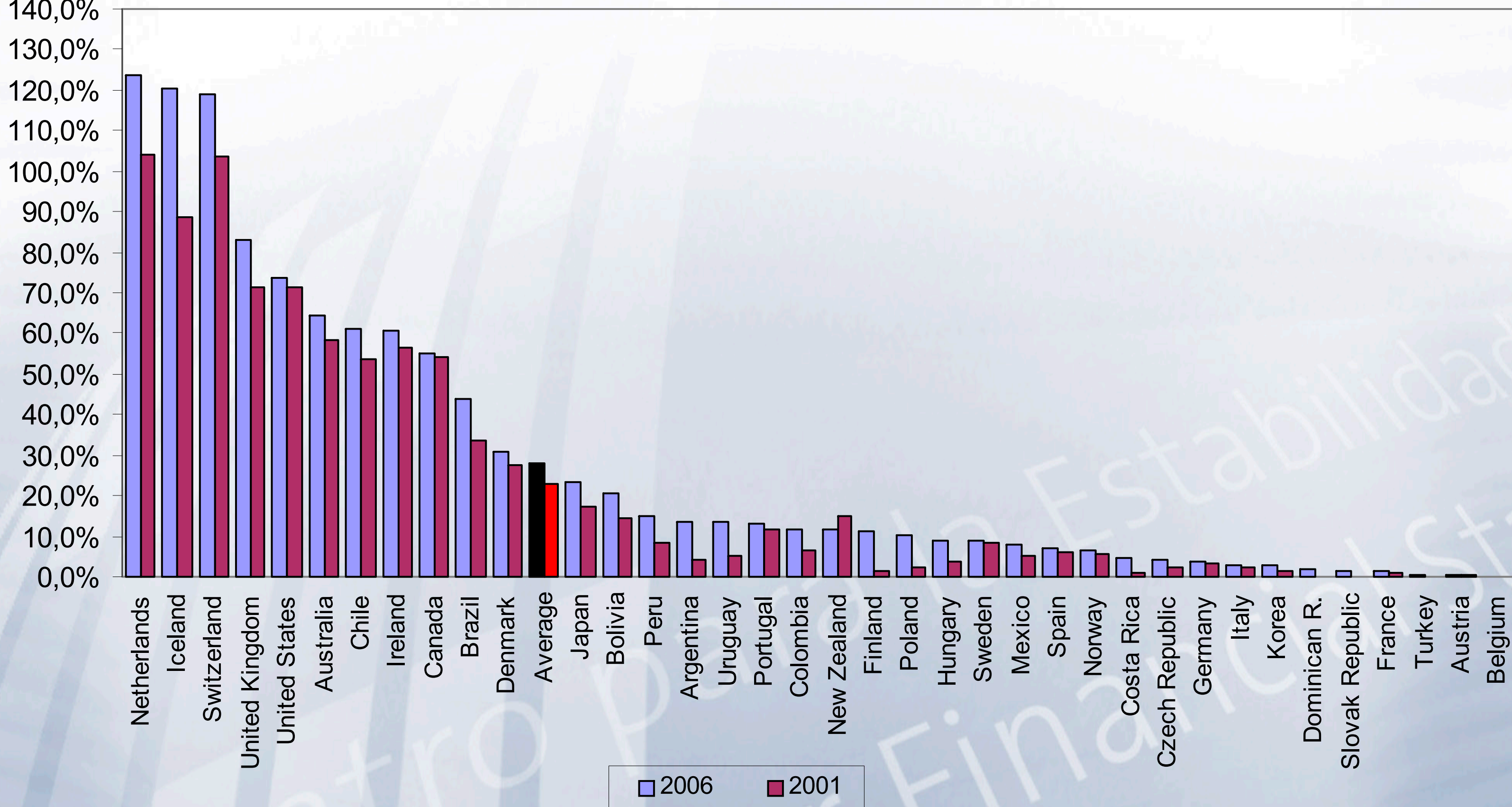
Players: Pension Funds

Private Pension Funds / GDP
OECD and Emerging Economies: 2001 - 2006 (in %)



Note: data for France 2003 and 2005; Iceland 2005; Japon 2005; Korea 2002; UK 2005 and Brazil 2004.
SOURCE: OECD, Pension Markets in Focus (December, 2005), AIOS, IFS and country sources.

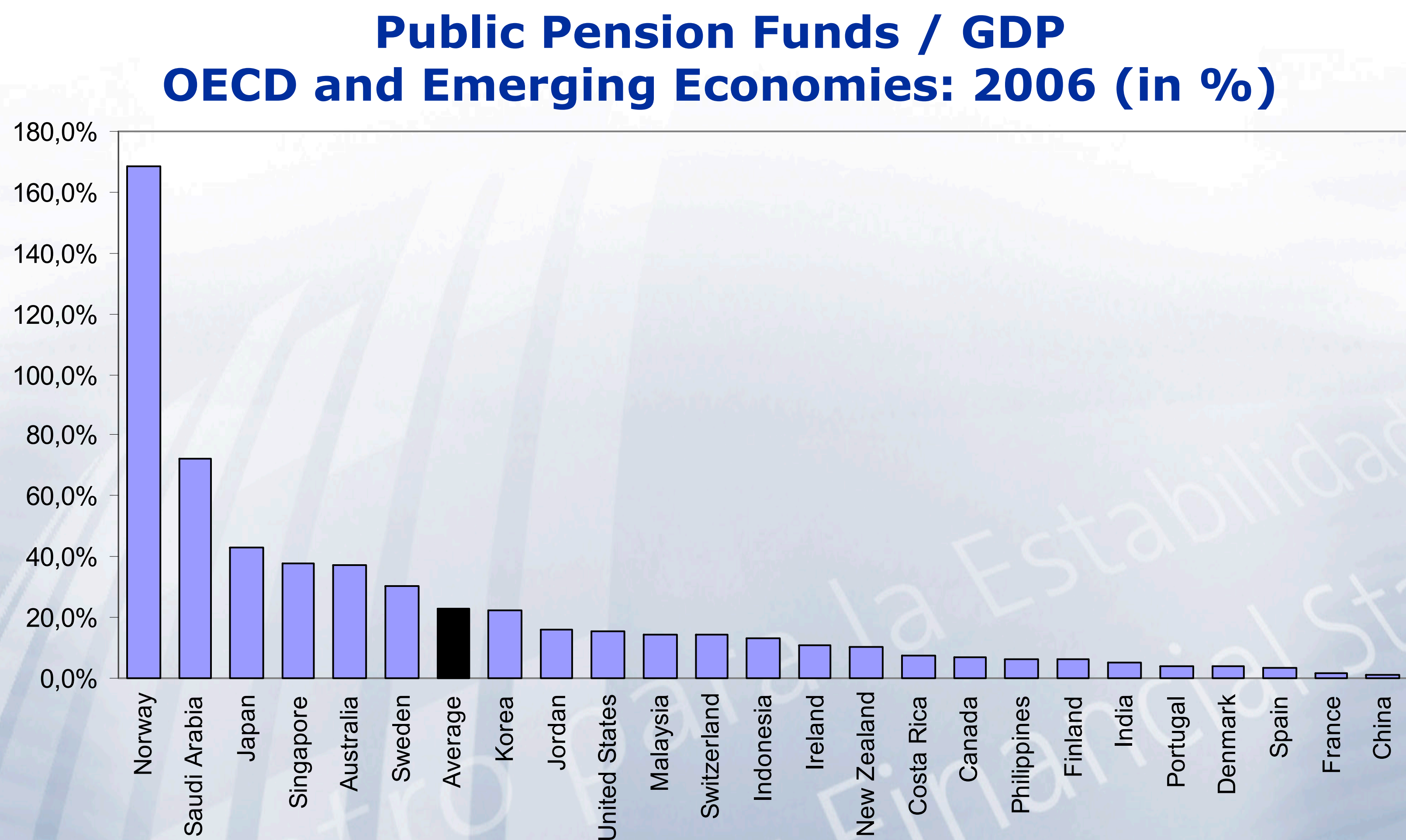
Players: Pension Funds

Share of Foreign Assets in Private Pension Funds Portfolios in High-Income OECD Countries, 2003-2004 (in %)

Country and Year	Share of Foreign Equities	Share of Foreign Bonds	Total Share of Foreign Assets
Australia 2003	19.7	0.0	19.7
Canada 2003	29.3	0.5	29.8
Japan 2004	16.0	11.0	27.0
Switzerland 2003	14.0	10.0	24.0
UK 2003	18.2	4.2	22.4
US 2004	13.0	1.0	14.0

Source: Hu (2006).

Players: Pension Funds



Note: data for China 2004; Australia, Norway and Switzerland 2007; Indonesia 2005 and Saudi Arabia 2003.
SOURCE: Alberto R. Musalem and Ricardo Bebczuk databse on Public Pension Funds and Stephen Jen presentation at CEF.

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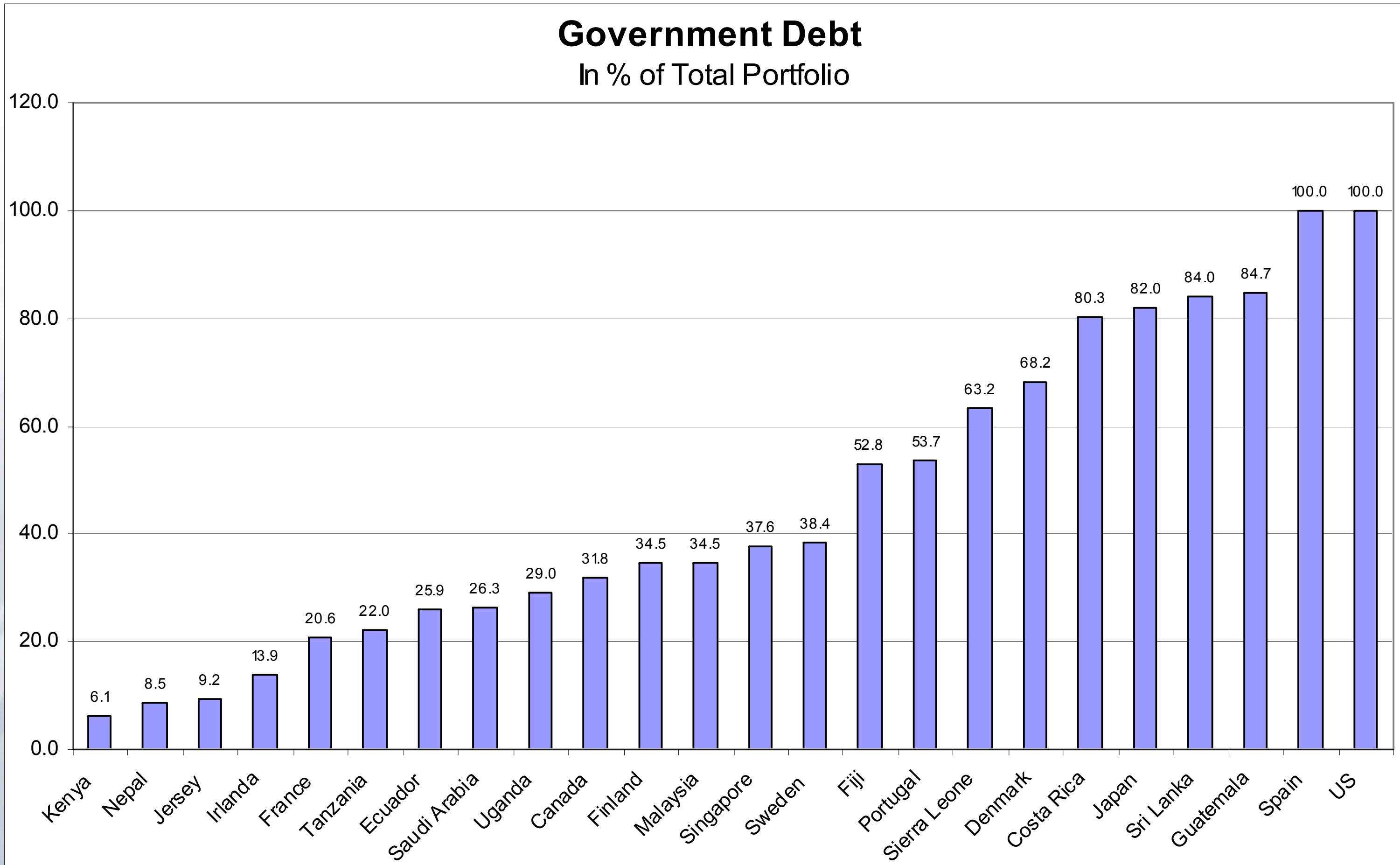
Players: Public Pension Funds



SOURCE: Alberto R. Musalem and Ricardo Bebczuk (2008).

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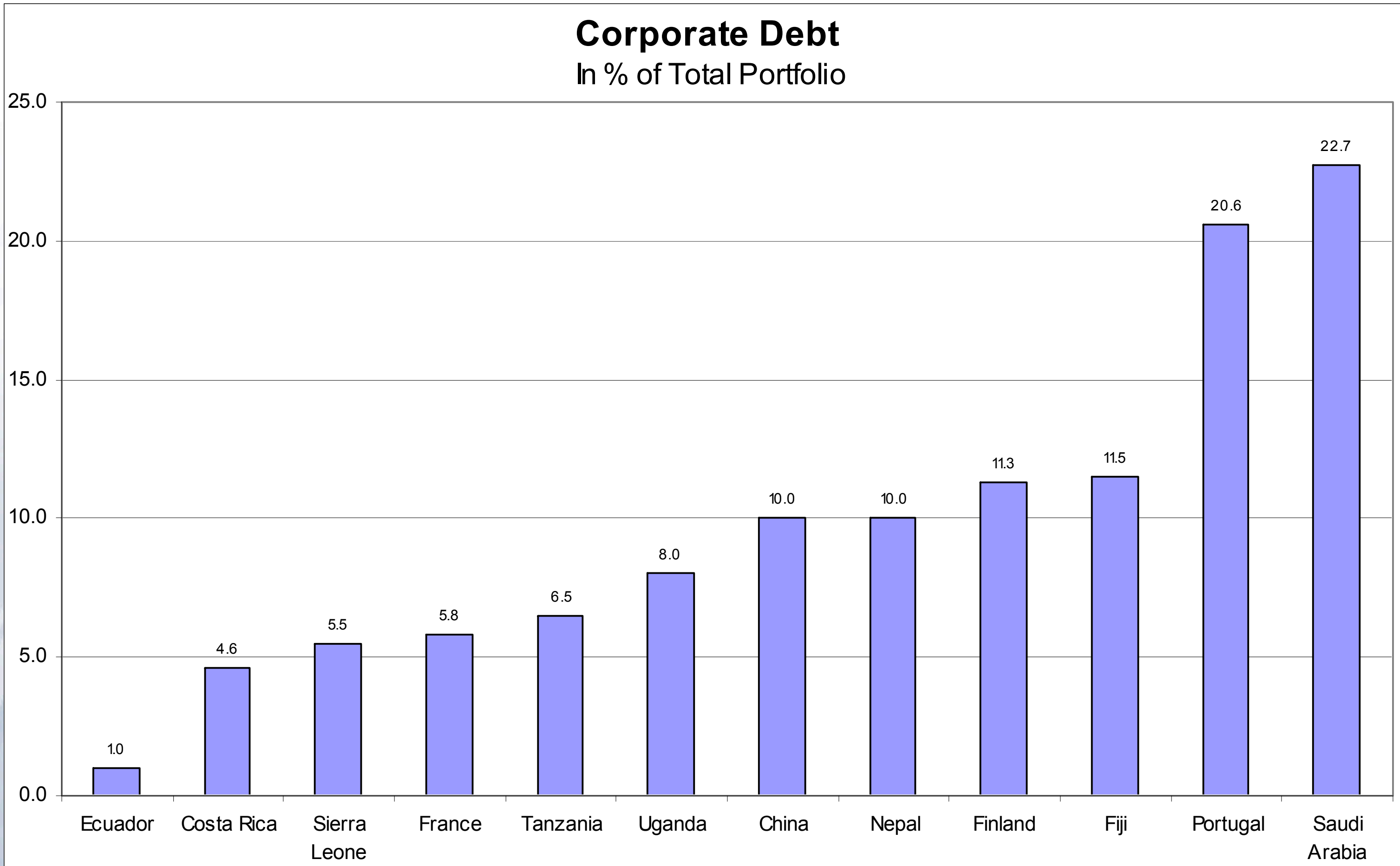
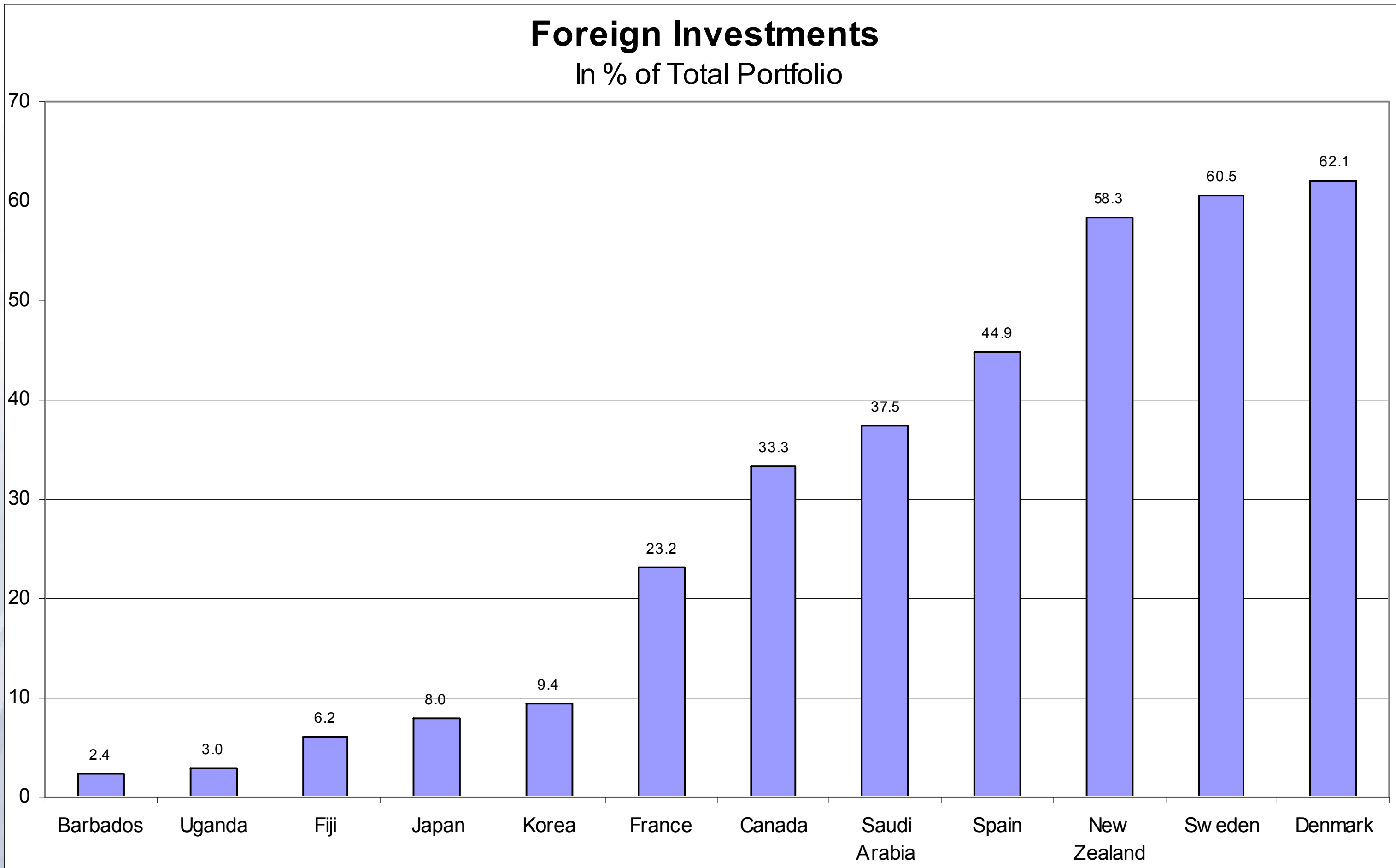
Players: Public Pension Funds



SOURCE: Alberto R. Musalem and Ricardo Bebczuk (2008).

Players: Public Pension Funds



SOURCE: Alberto R. Musalem and Ricardo Bebczuk (2008).

Players: Hedge Funds

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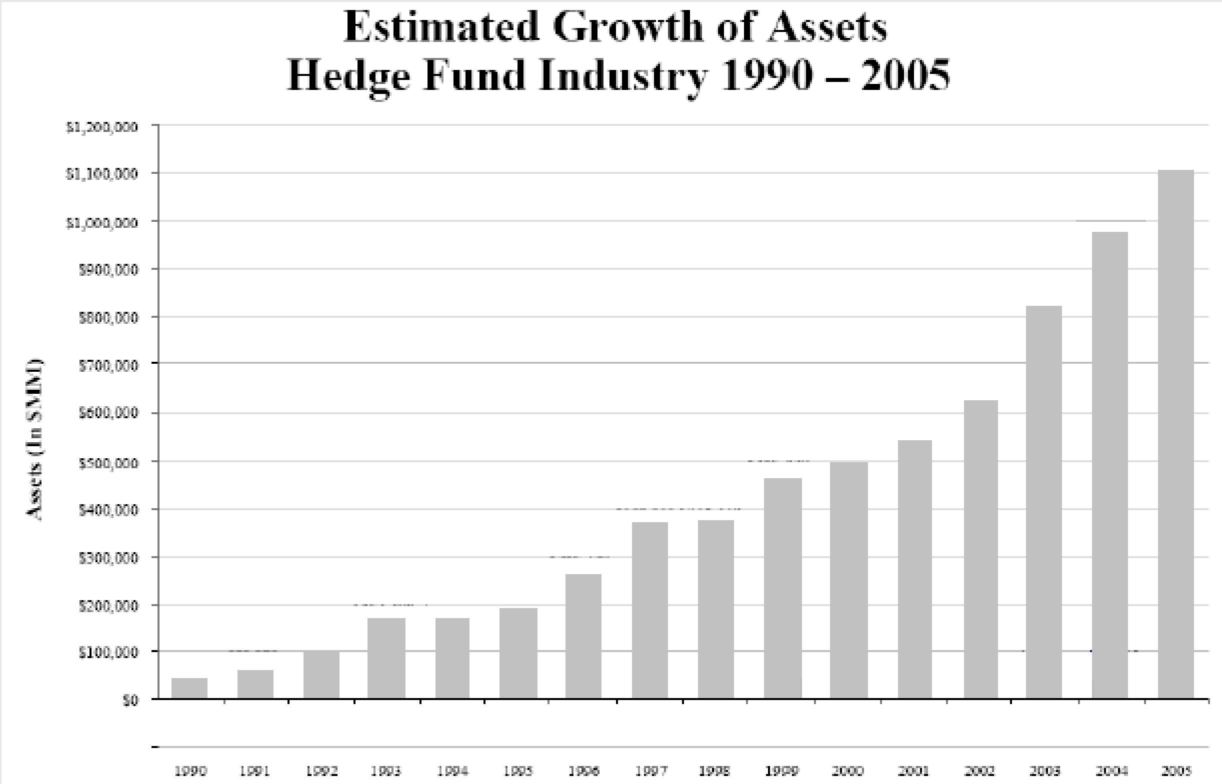
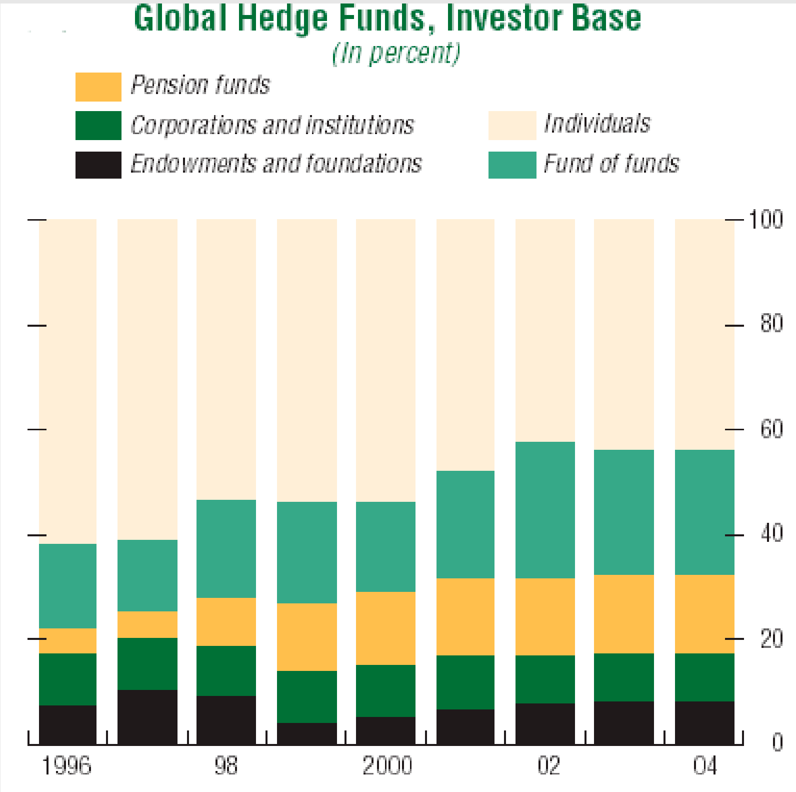
•Assets under management of the hedge fund industry grew from $30 billion in 1990 to more than $1.1 trillion as of end-2005. Inflows to EM reached 6.3% of total flows in 2006.



Source: HFR

Players: Hedge Funds

•The weights of the investor base have changed against individuals. A growing number of pension funds are relying on hedge funds as a vehicle to achieve higher risk-adjusted returns and international exposures.



Source: IMF

Players: Sovereign Wealth Funds and Central Banks

- Sovereign funds existed since the 1950s, but their total size worldwide has increased dramatically over the past 10–15 years. In 1990, sovereign funds held $500 billion. At September 2007, they reached around $3 trillion and, based on the likely trajectory of current accounts, could reach $12 trillion by 2015.
- In EM, central banks and sovereign wealth funds have become key players in the cross-border allocation of capital, with U.S. financial markets a major focus. Nevertheless, diversification might induce them into investment grade EM debt.

Players: Sovereign Wealth Funds and Central Banks

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- The holdings of Sovereign Wealth Funds remain quite concentrated, with the top five sovereign funds accounting for about 70% of total. Over half of these assets are in the hands of countries that export significant amounts of oil and gas.

Country	Fund Name	Assets (Mlns US$s)	Inception year	Source of funds
Total		**2,939,456**		
UAE	ADIA 1/	875,000	1976	Oil
Norway	Government Pension Fund - Global	341,200	1996	Oil
Singapore	GIC 1/	330,000	1981	Other
Saudi Arabia	Saudi Arabian funds of various types 1/	300,000	N/A	Oil
Kuwait	Reserve Fund for Future Generation	250,000	1953	Oil
China	State FX Investment Corp. + Hueijing Co. 2/	200,000	2007	Other
Singapore	Temasek Holdings 1/	159,210	1974	Other
Russia	Stabilisation Fund 3/	133,000	2003	Oil
Libya	Oil Reserve Fund	50,000	2005	Oil
Algeria	Fond de régulation des recettes	42,600	2000	Oil
Qatar	Qatar Investment Authority	40,000	N/A	Oil, gas
US (Alaska)	Permanent Reserve Fund	38,000	1976	Oil
Brunei	Brunei Investment Authority	30,000	1983	Oil
Malaysia	Khazanah Nasional BHD	25,700	1993	Other
Korea	KIC (Korea Investment Corporation)	20,000	2006	Other
Chile	A new SWF based on the Copper Fund 4/	17,820	1985	Copper
Kazakhstan	National Fund	17,600	2000	Oil, gas
ROC (Taiwan)	National Stabilisation Fund *	15,000	N/A	Other
Canada	Alberta Heritage TF	15,500	1976	Oil
Iran	Oil Stabilisation Fund	15,000	1999	Oil
Nigeria	Excess Crude Account	11,000	2003	Oil
Botswana	Pula Fund	6,800	1966	Diamonds
Oman	State General RF	2,000	1980	Oil, gas
Azerbaijan	State Oil Fund	1,500	1999	Oil
Venezuela	FIEM	756	1998	Oil
Canada	Fond des générations (Québec)	560	2006	Electricity
Trinidad & Tob.	Revenue SF	460	2000	Oil
Kiribati	Revenue Equliz. Fund	400	1956	Phosphates
Uganda	Poverty Action Fund	350	1998	Aid
	Oil & gas-related funds	2,163,616		
	Non-oil related funds	775,840		

1/ My guesstimates as of September 2007.
2/ Not yet finalised. Will be launched in September 2007.
3/ Will be launched in February 2008.
4/ The Pension Reserve Fund, FRP, and the ESSF and FEES.

Source: Morgan Stanley Research

Players: Sovereign Wealth Funds and Central Banks

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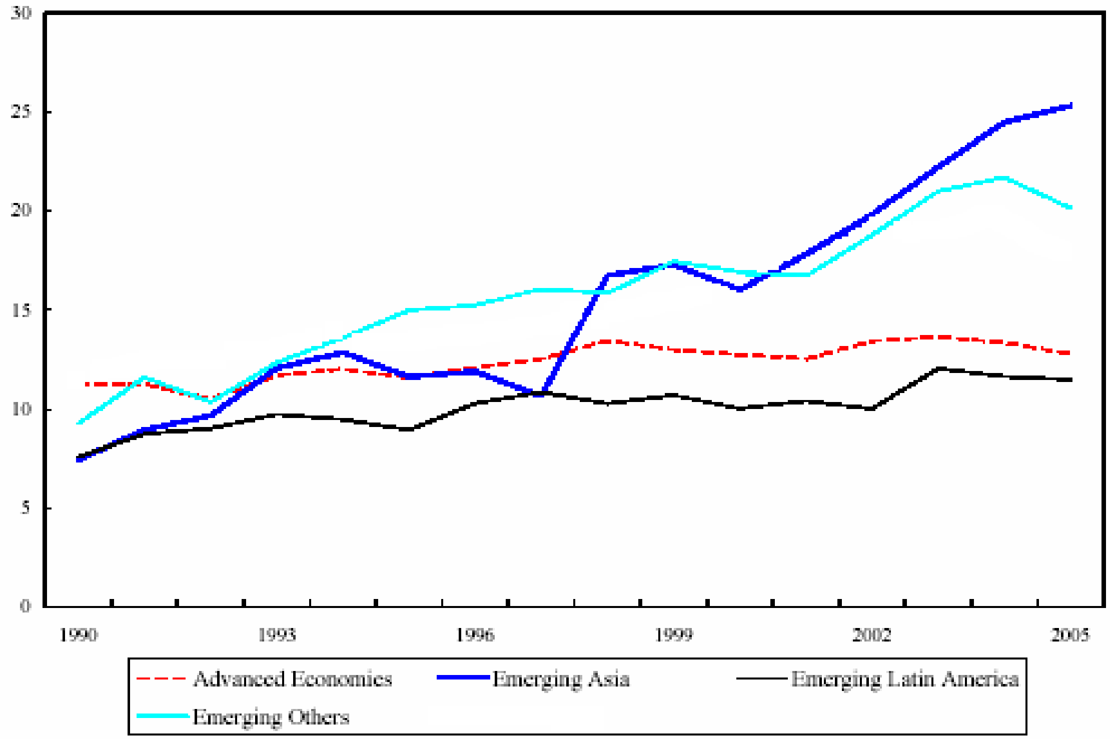
International Reserves as a Share of GDP (In percentage points)



Sources: IMF, *International Financial Statistics* and *World Economic Outlook* (WEO) and World Bank, *World Development Indicators*.
Note: Data for 2005 refer to the end of the second quarter for the stocks of reserves, and to *WEO* projections for GDP. "Emerging Others" includes emerging economies in Eastern Europe, the Middle East and Africa. For each country group, the data refer to unweighted cross-country averages.

- In the last years, there has been an increase in international reserves in emerging economies, especially in Asia.
- Undoubtedly, this accumulation contributes to increase the cross-border flows, and it has transformed EM as net capital providers to the rest of the world.

How these changes impact on bonds possessions?

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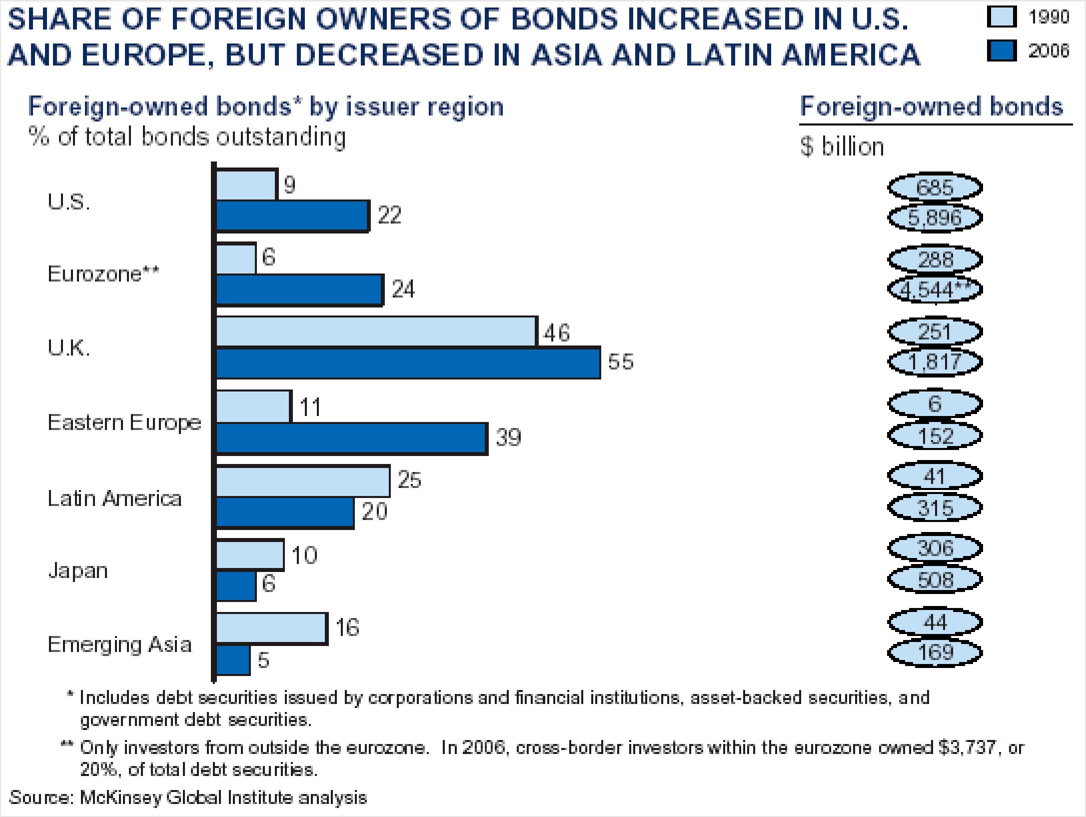
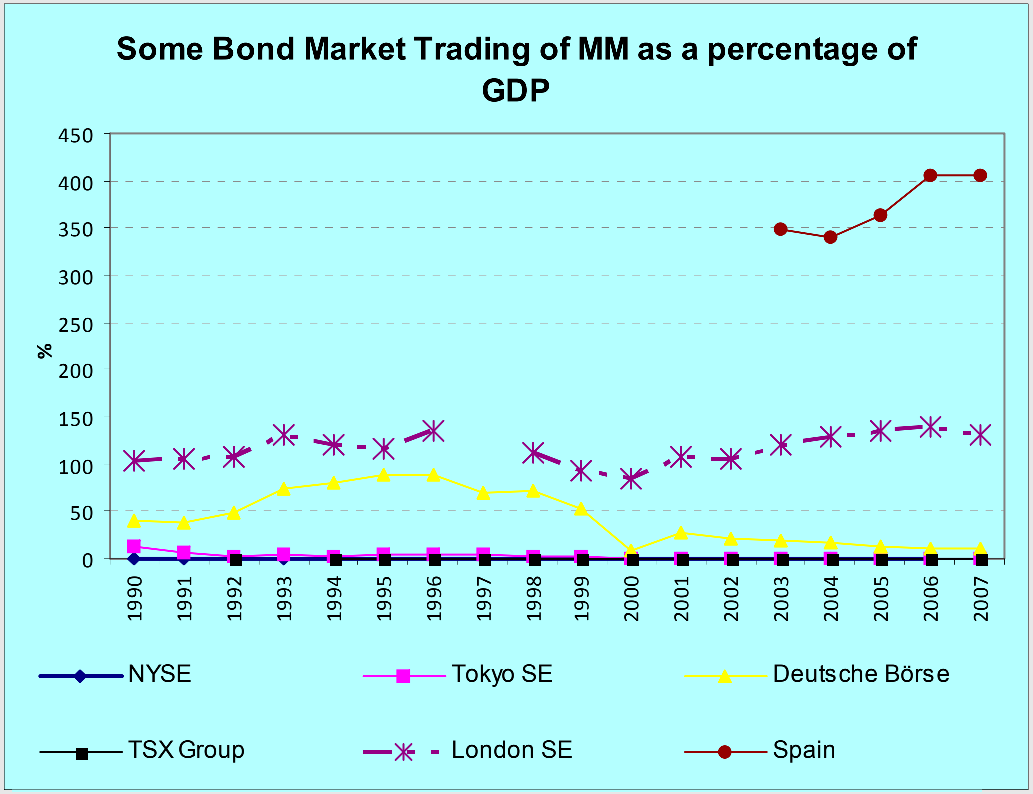
• The share of foreign owners of bonds has increased in most regions. The exceptions are Japan, emerging Asia, and Latin America, although their absolute holdings are larger than in 1990. This may reflects growth in the domestic investor base for bonds in these regions.



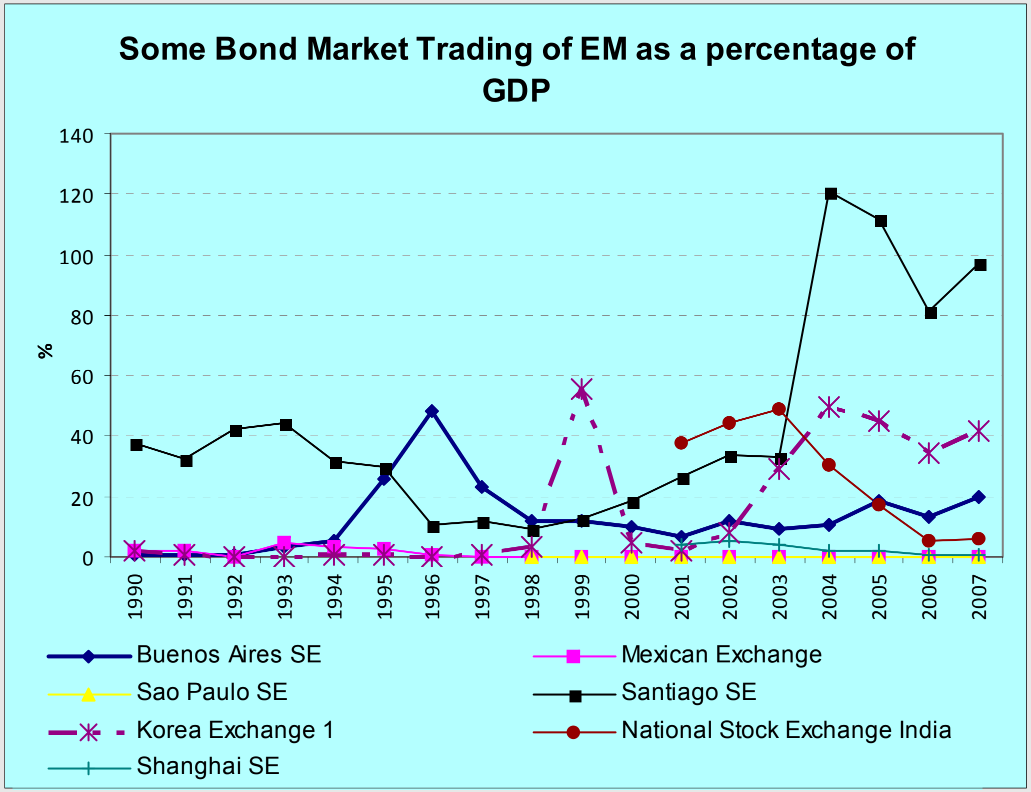
How these changes impact on Bonds Markets liquidity?



Source: WFE

- In some mature bonds markets as London and Spain, there has been an improvement in liquidity.
- In the opposite side, German bond market has been losing volume.
- Others markets as NYSE, Tokyo and Toronto, the bond market volume is not significant in relation to GDP.

How these changes impact on Bonds Markets liquidity?

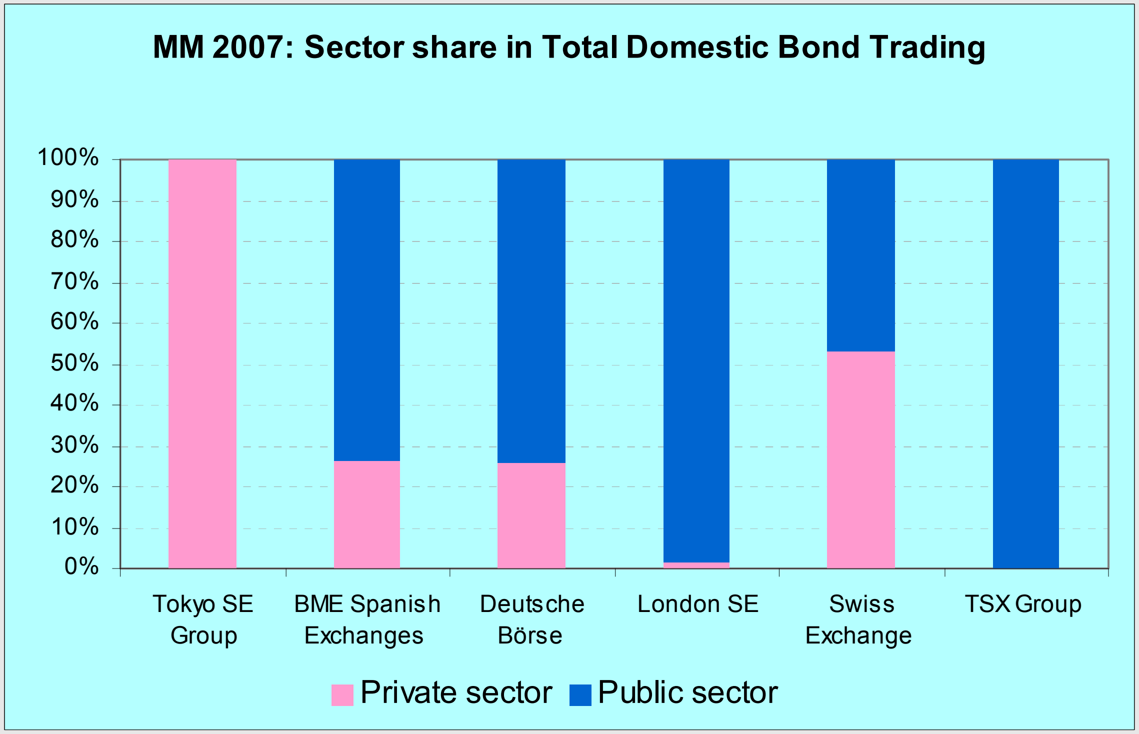


Source: WFE

•We observe that the bonds markets of Santiago de Chile, Korea, Buenos Aires, and India are relatively liquid.

How these changes impact on Bonds Markets liquidity?

- Inside of each bonds market, we explore the composition of the liquidity…
- Except for Tokyo and Switzerland, the dominant amount of trading is with the domestic public sector bonds.



Source: WFE

How these changes impact on Bonds Markets liquidity?

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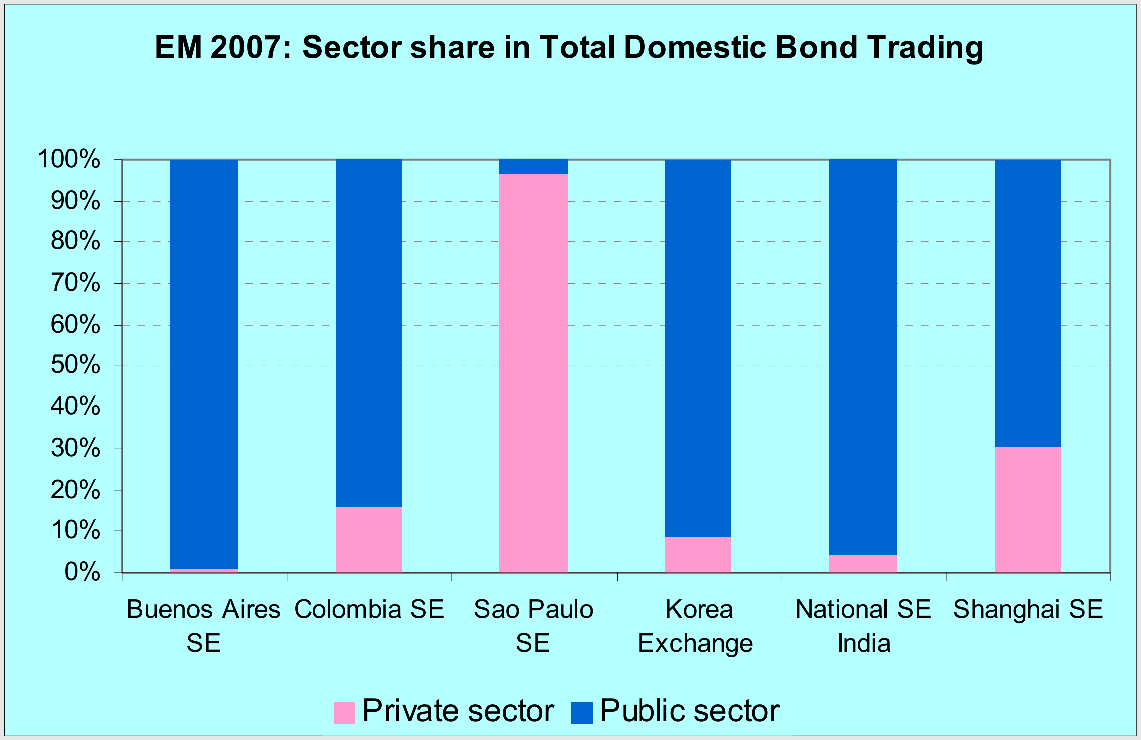
- While Sao Pablo trading is dominated by private bonds, the opposite is true in the other markets, particularly, at Buenos Aires.



Source: WFE

Conclusions

Growth of assets under management of institutional investors (pension funds, insurance companies, mutual funds)

- Rapid growth of hedge funds
- Rise of EM central banks reserves
- Growing activism of sovereign wealth funds

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- In this context, analyzing changes in the international investor base and investment allocation behavior is fundamental to understanding the build up of strengths and weaknesses in international financial markets…
- Within the principals stylized facts it is useful to remark that the share of foreign owners of bonds has increased in most regions. The exceptions are Japan, emerging Asia, and Latin America, although their absolute holdings are larger than in 1990. This may reflect growth in the domestic investor base for bonds in these regions.
- In some mature bonds markets as London and Spain, there has been an improvement in liquidity.
- Except for India and China, countries with high GDP growth, we observe some increase in the trading volume of others bonds markets such as Buenos Aires, Santiago de Chile, and Korea.

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