

Deutsche Bank



Who is buying Treasuries, Mortgages, Credit, and Munis?

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Passion to Perform

DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1. MICA(P) 114/04/2014.

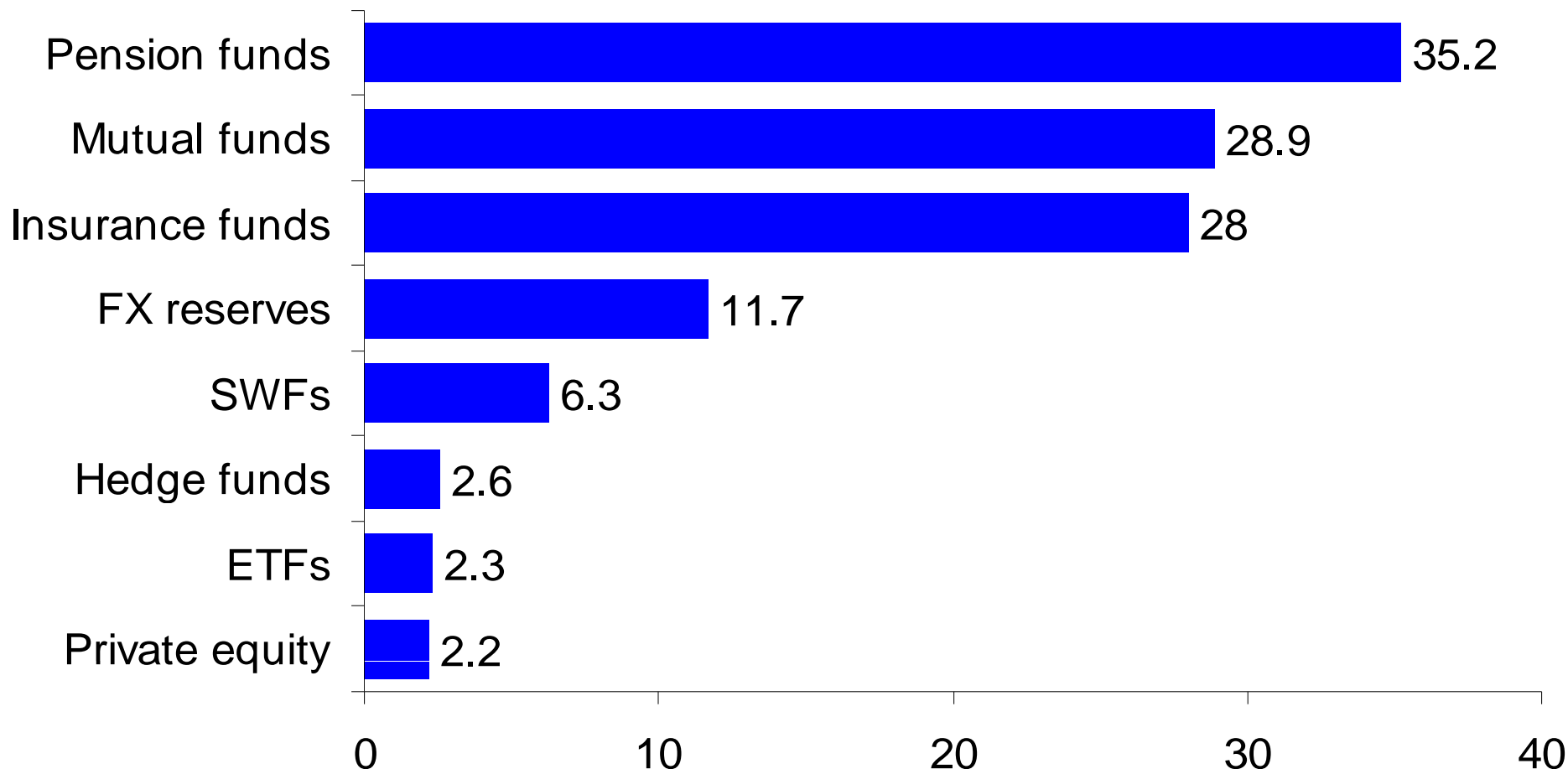


US Overview

Total global AUM is around \$117 trn



Assets under management in USD trillion, 2013 Estimates

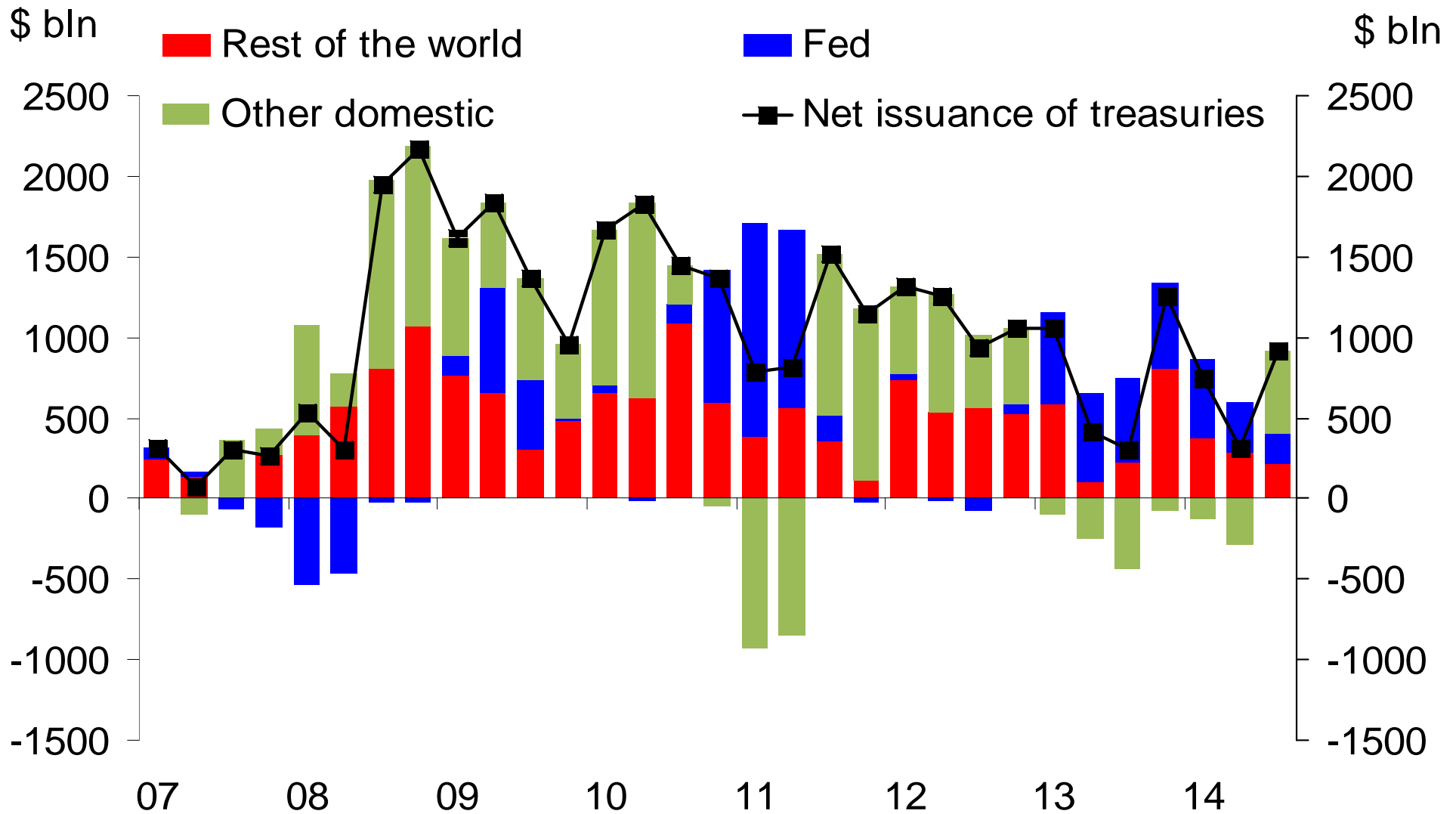


NOTE: An average growth trend has been assumed for Private Equity, Insurance Funds and Pension Funds

Source: DB estimates, Hedge Fund Research, The City UK, SWF Institute, ICI. DB Global Markets Research

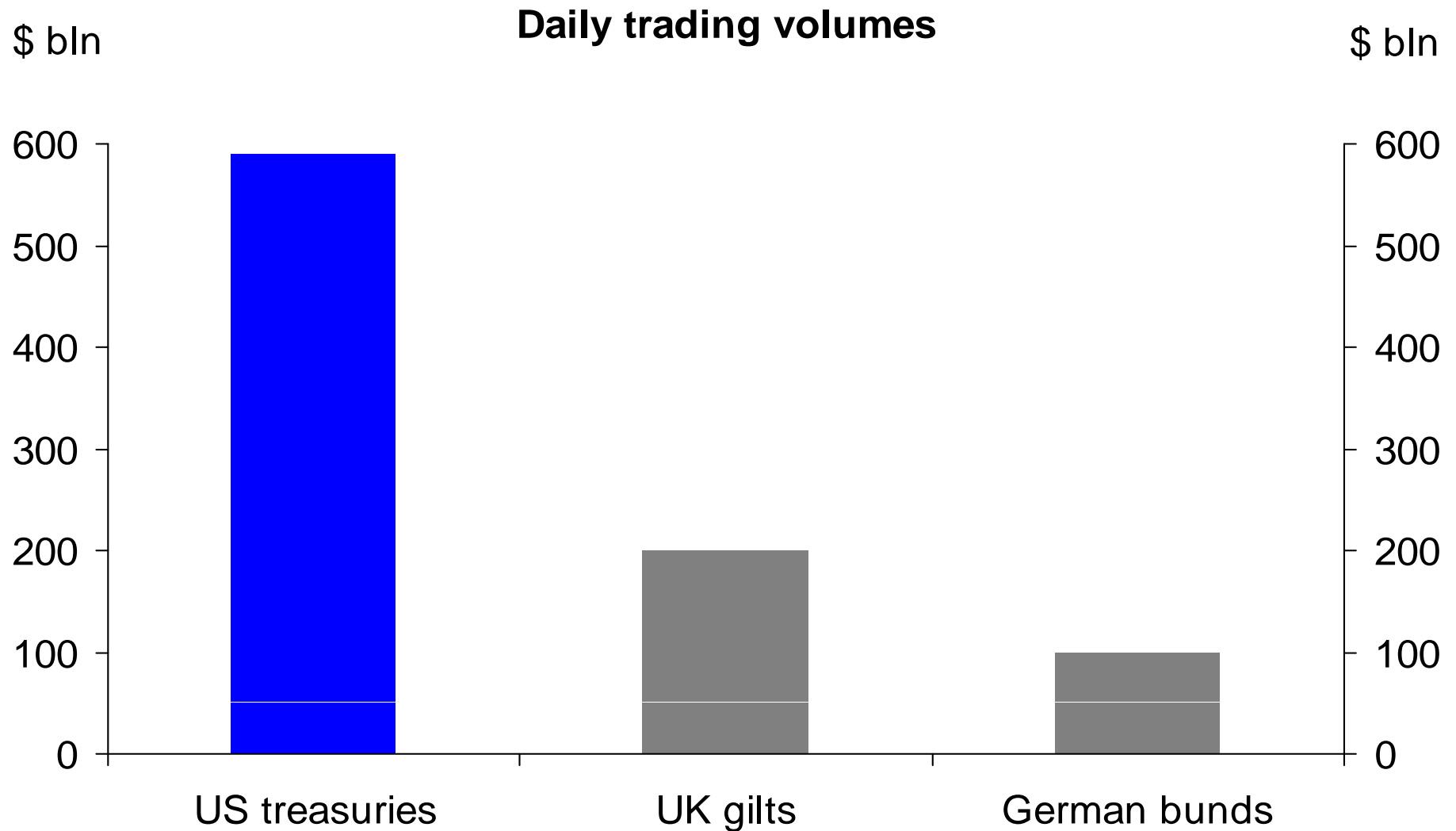


Who is funding the US budget deficit?



Source: FRB, Haver Analytics, DB Global Markets Research

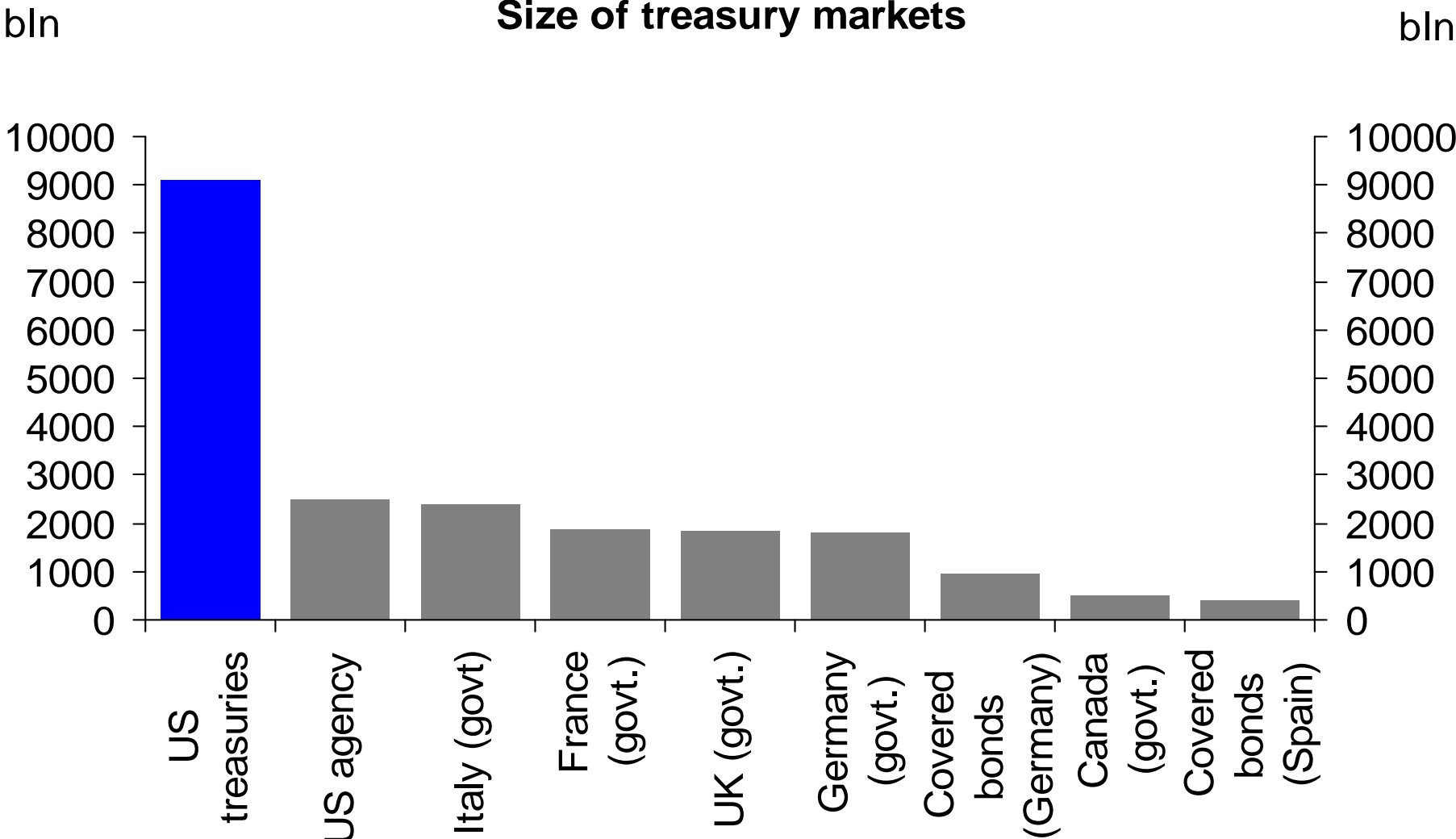
Trading volumes: US government bond market dominates



Source: Fitch, DB Global Markets Research



US fixed income markets much bigger in size

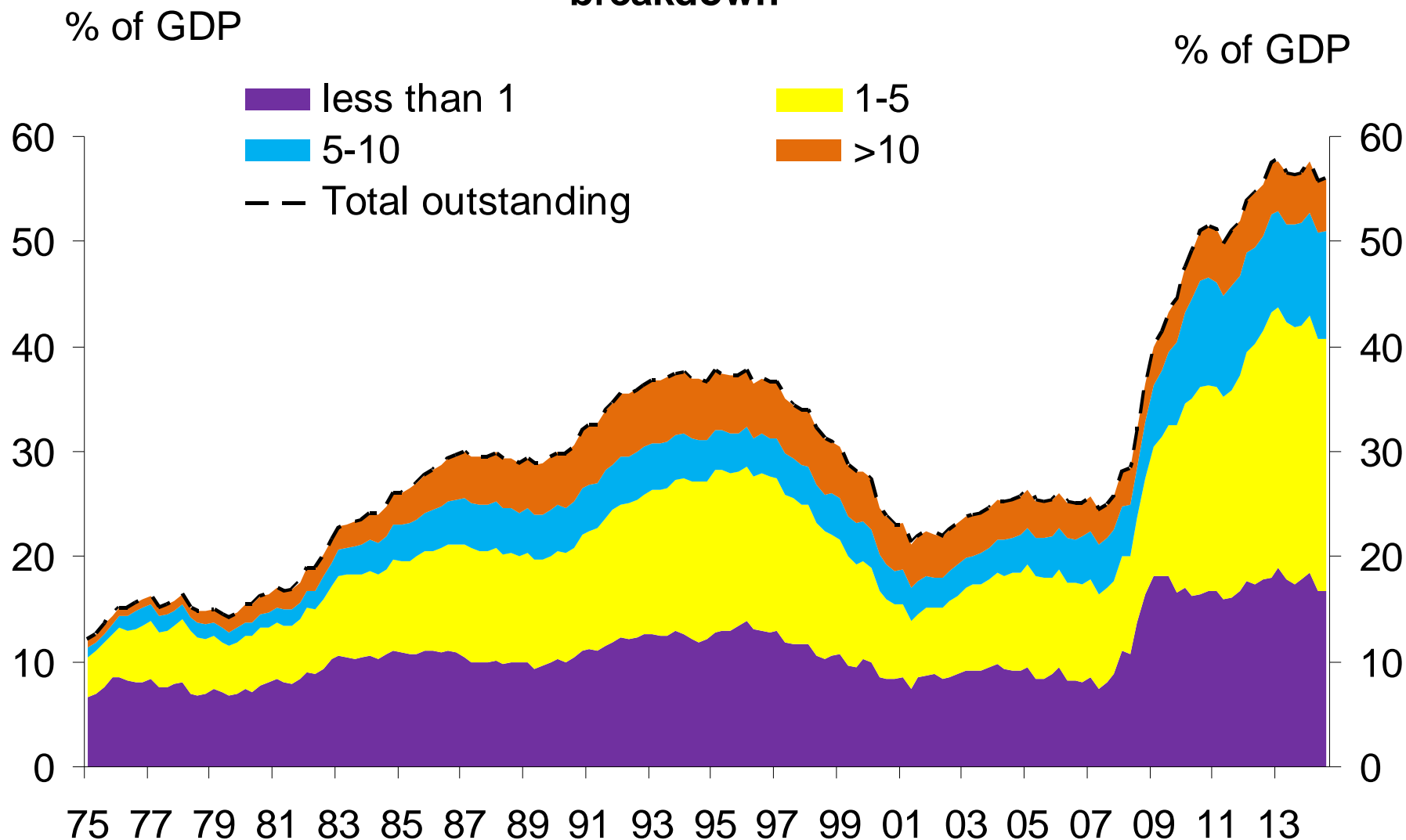


Source: Fitch Ratings, US Treasury, SIFMA, US debt management office, Agency France Tresor, Bundesrepublik Deutschland, European Covered Bond Council, DB Global Markets Research

Non-Fed sector mainly holding <5yr Treasuries = foreigners and US private sector vulnerable to changes in Fed speak

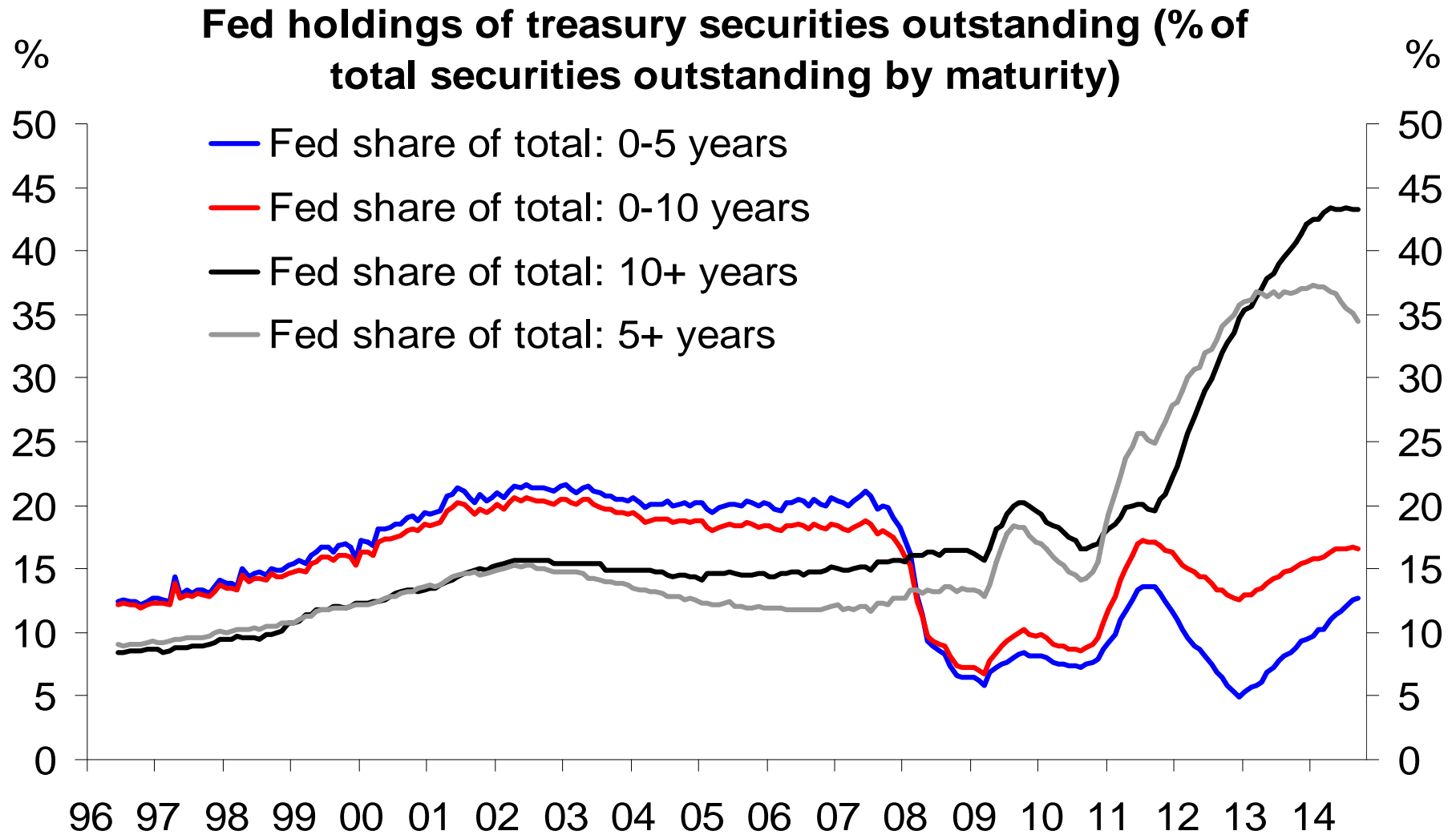


Marketable debt held outside the Fed Reserve: maturity breakdown



Source: Treasury, BEA, Haver Analytics, DB Global Markets Research

The Fed holds +40% of long Treasuries



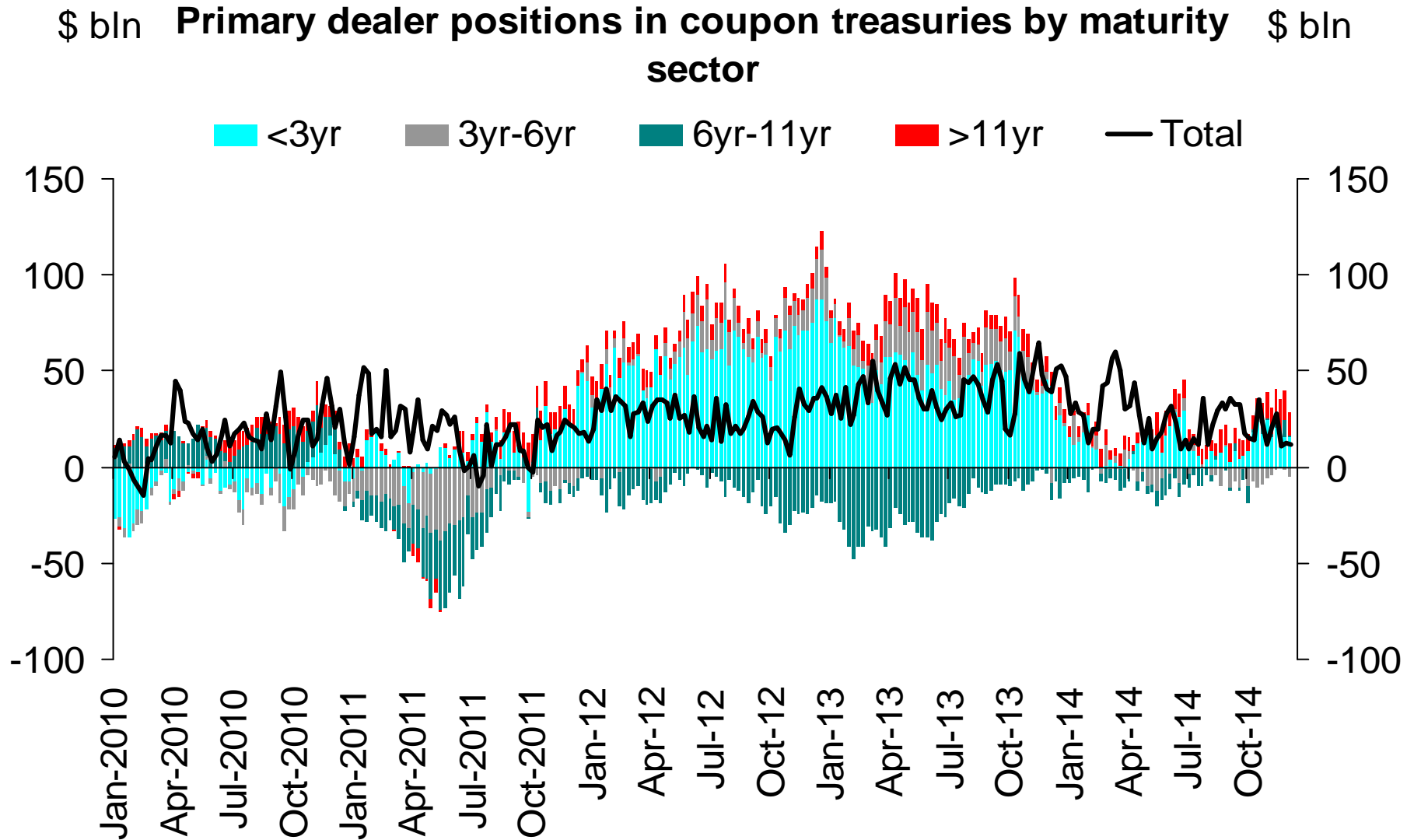
Source: FRB, Haver Analytics, DB Global Markets Research



Auction outcomes



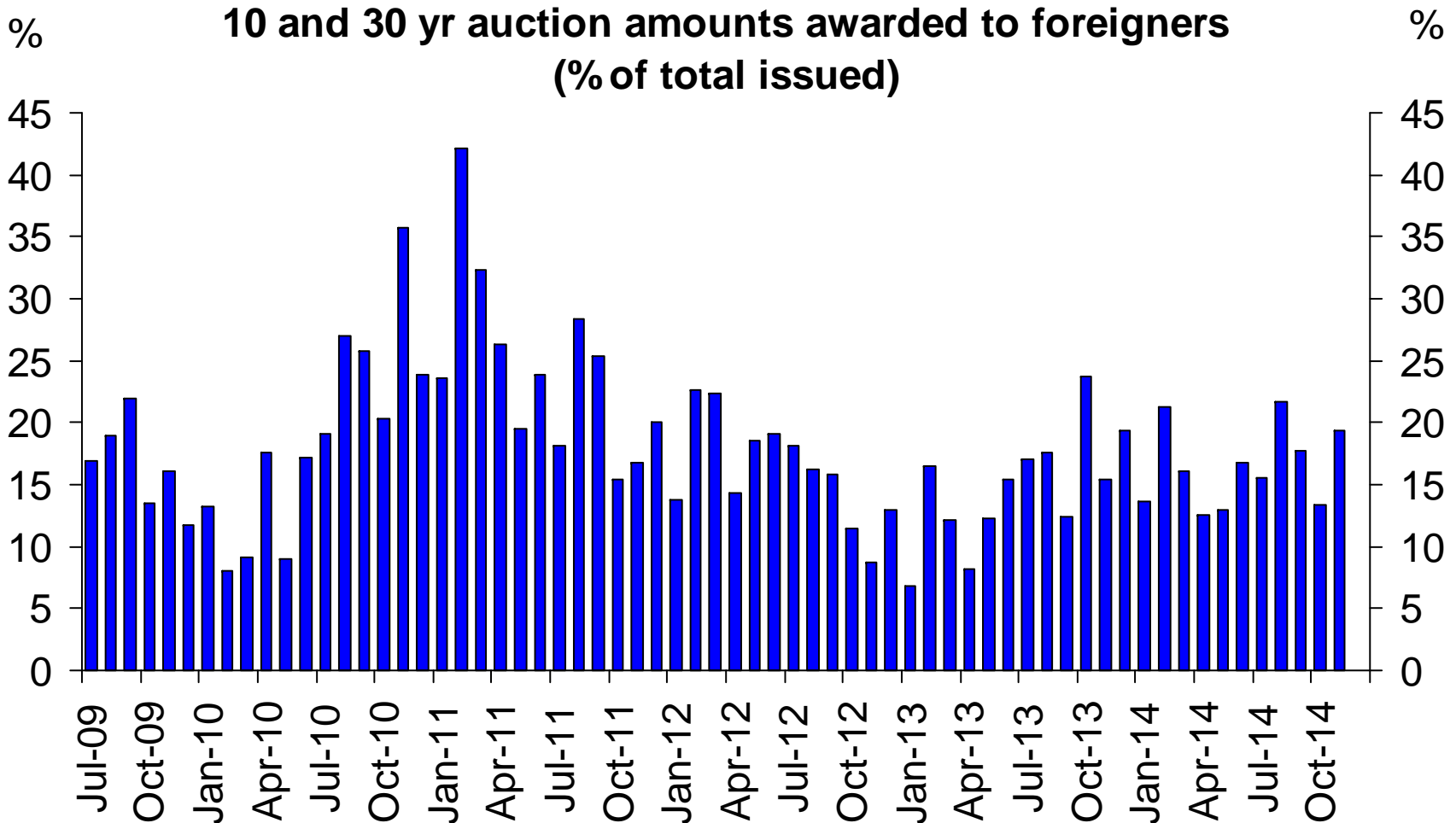
Primary dealers mainly holding < 3yr coupons



Source: FRB, Haver Analytics, DB Global Markets Research



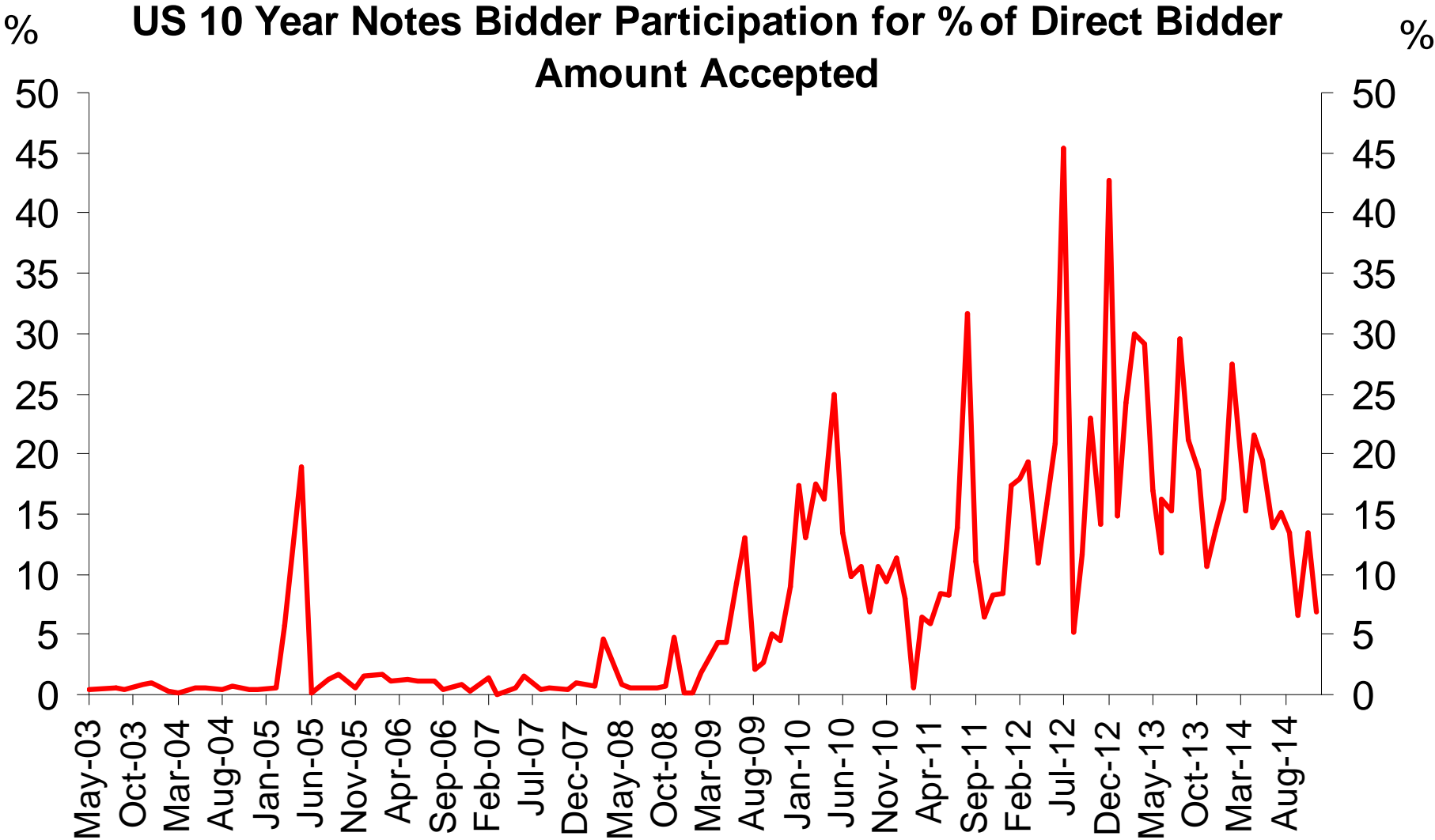
Foreign participation in 10y and 30y auctions stable



Source: ODM, Haver Analytics, DB Global Markets Research



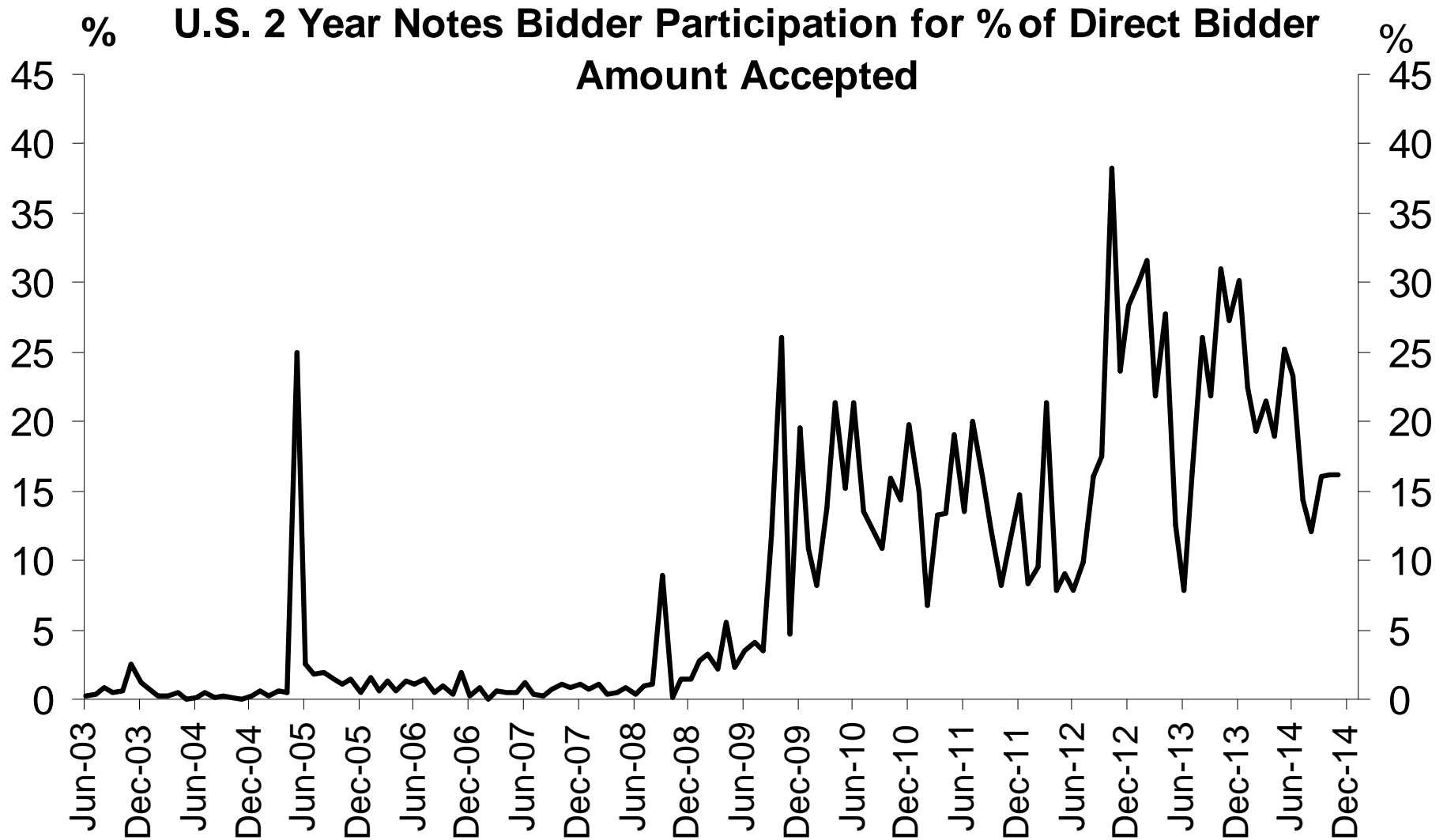
Direct bidding trending down for 10s...



Source: Treasury, Bloomberg Finance LP, DB Global Markets Research



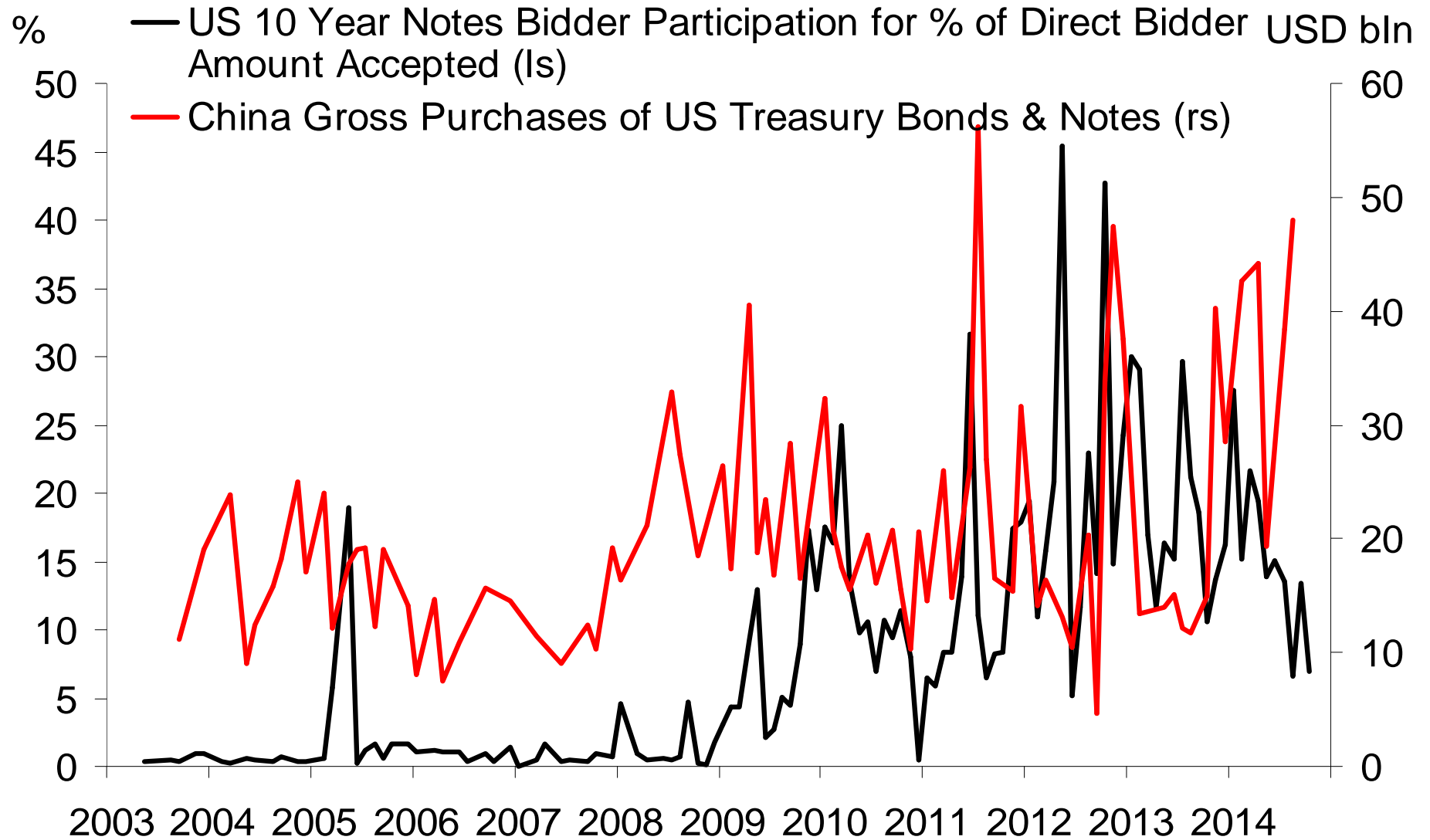
...and direct bidding for 2s also lower...



Source: Treasury, Bloomberg Finance LP, DB Global Markets Research



...is China behind direct bidding on 10s?

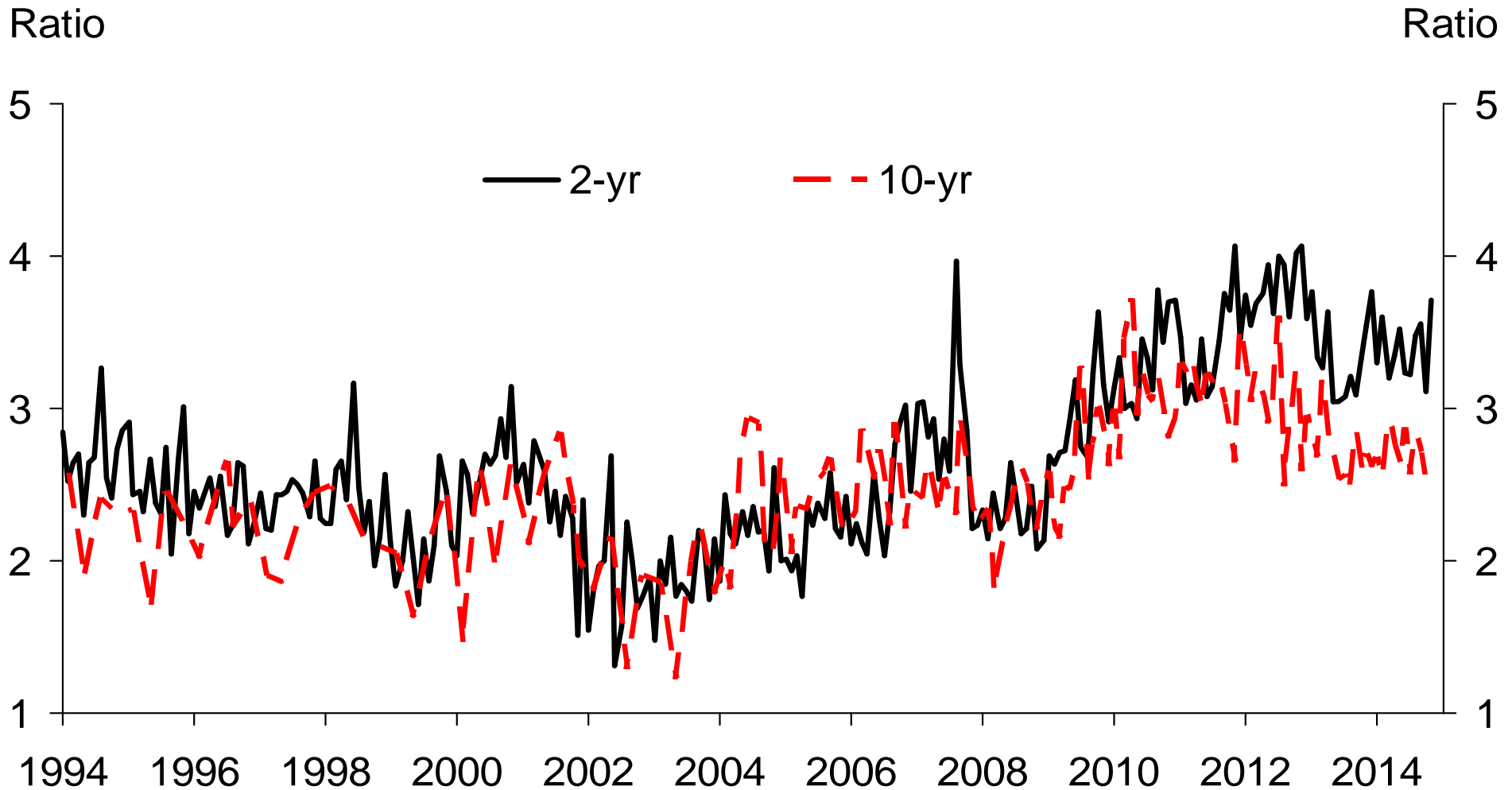


Source: Treasury, Bloomberg Finance LP, DB Global Markets Research

Bid-to-cover ratios up for 2s and down for 10s



Treasury auction results: bid-to-cover ratio

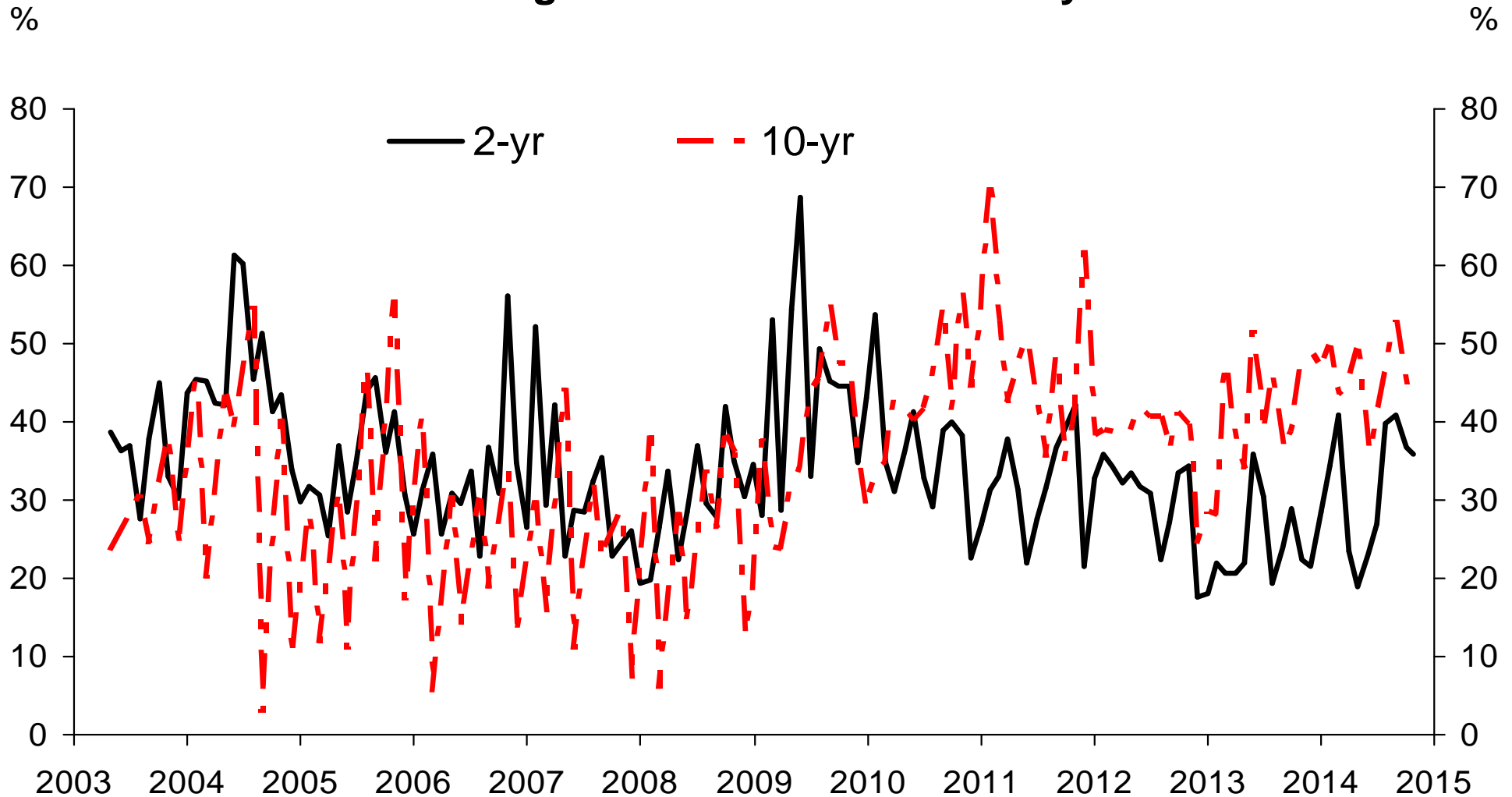


Source: U.S. Treasury, Bloomberg finance LP, DB Global Markets Research



...and indirect bidding stable for 2s and 10s

Indirect bidding for Treasuries at Treasury auctions

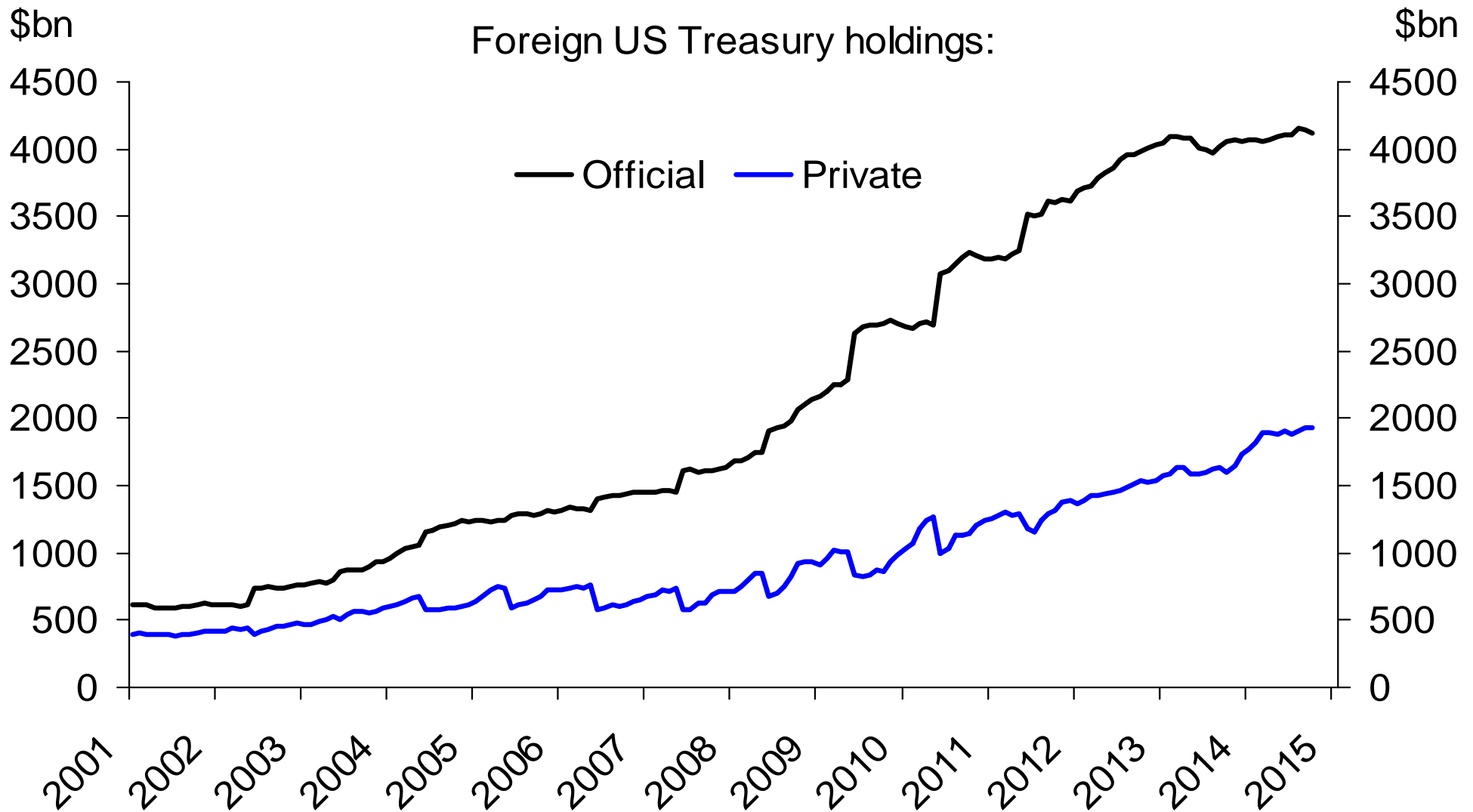


Source: U.S. Treasury, Bloomberg Finance LP, DB Global Markets Research



What are foreign central banks doing?

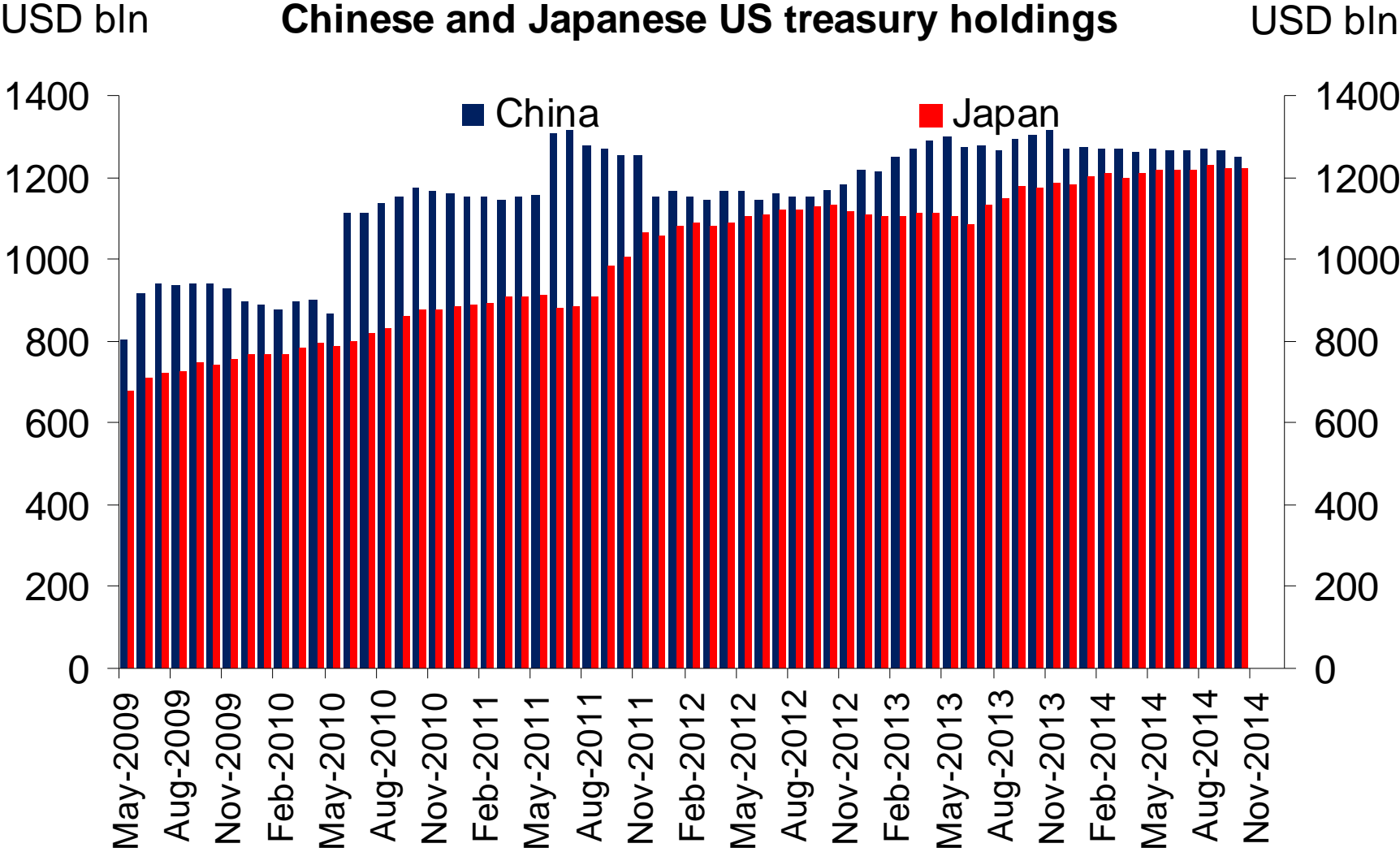
Foreign official holdings of Treasuries moving sideways...



Source: Treasury, Haver Analytics, DB Global Markets Research



...and Japan has stepped up purchases recently...



Source: Treasury, Haver Analytics, DB Global Markets Research

China's foreign reserves have started falling...



Source: PBC, SAFE, Haver Analytics, DB Global Markets Research

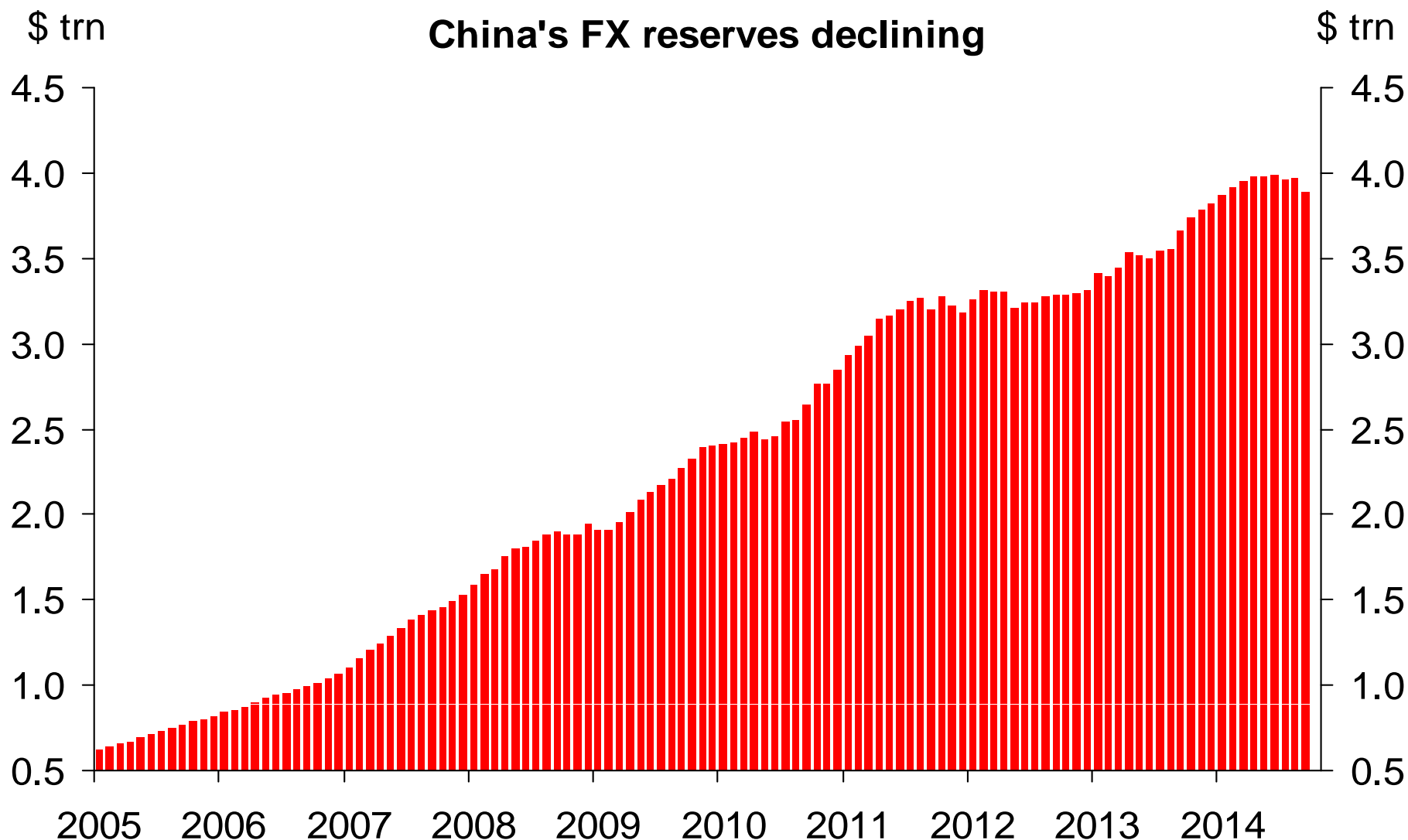


...despite a record-high trade balance surplus



Source: IMF, Haver Analytics, DB Global Markets Research

...and the monthly data shows that
China's FX reserves are now around \$3.8trn



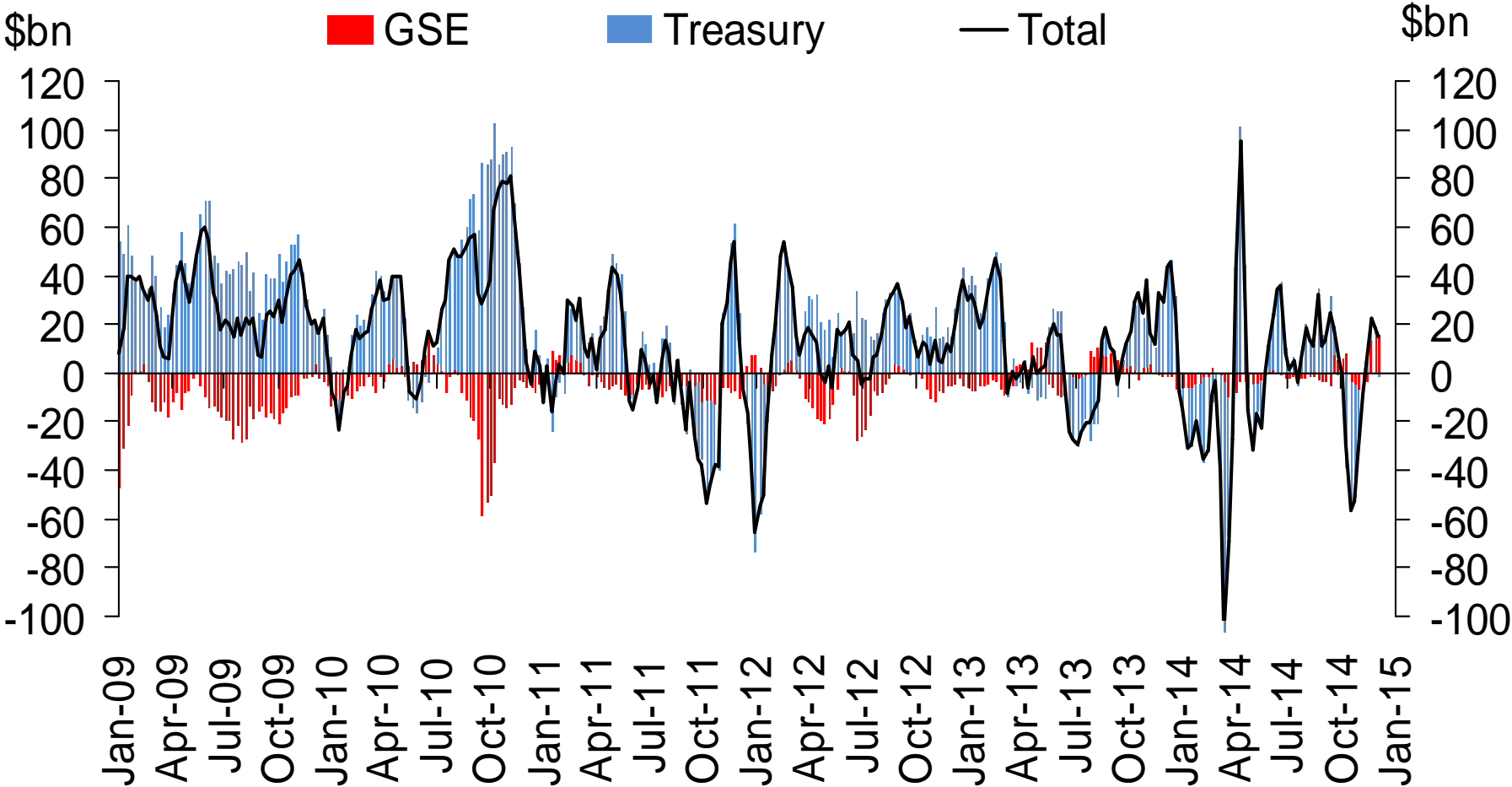
Note: data for Jan and Feb 2014 was not available in PBC

Source: PBC, Haver Analytics, DB Global Markets Research



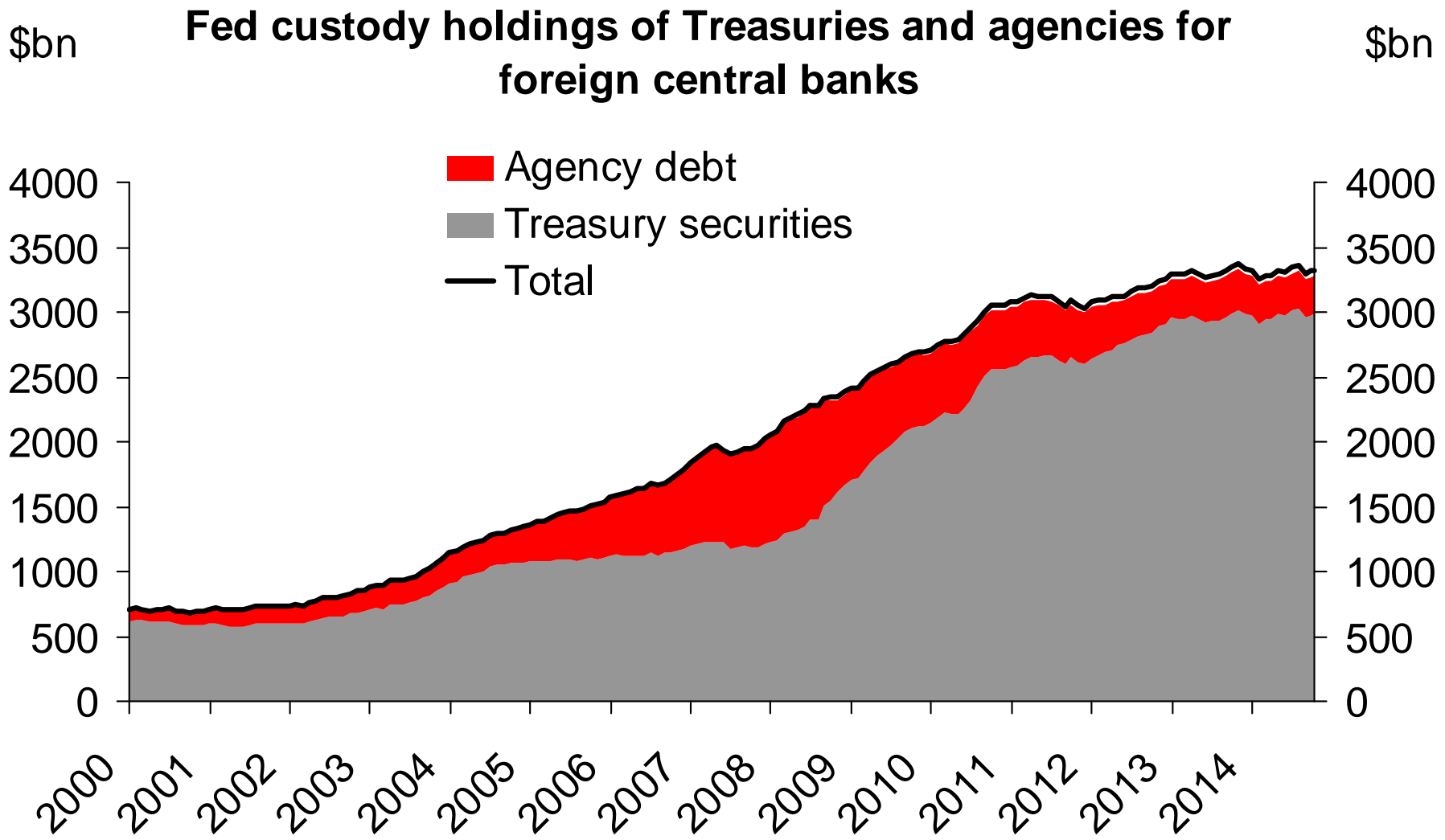
Custody holdings fell a lot in October...

Rolling 4 week change in Fed custody holdings



Source: Bloomberg Finance LP, DB Global Markets Research

...and overall Fed custody holdings moving sideways



Source: FRB, Bloomberg Finance LP, DB Global Markets Research

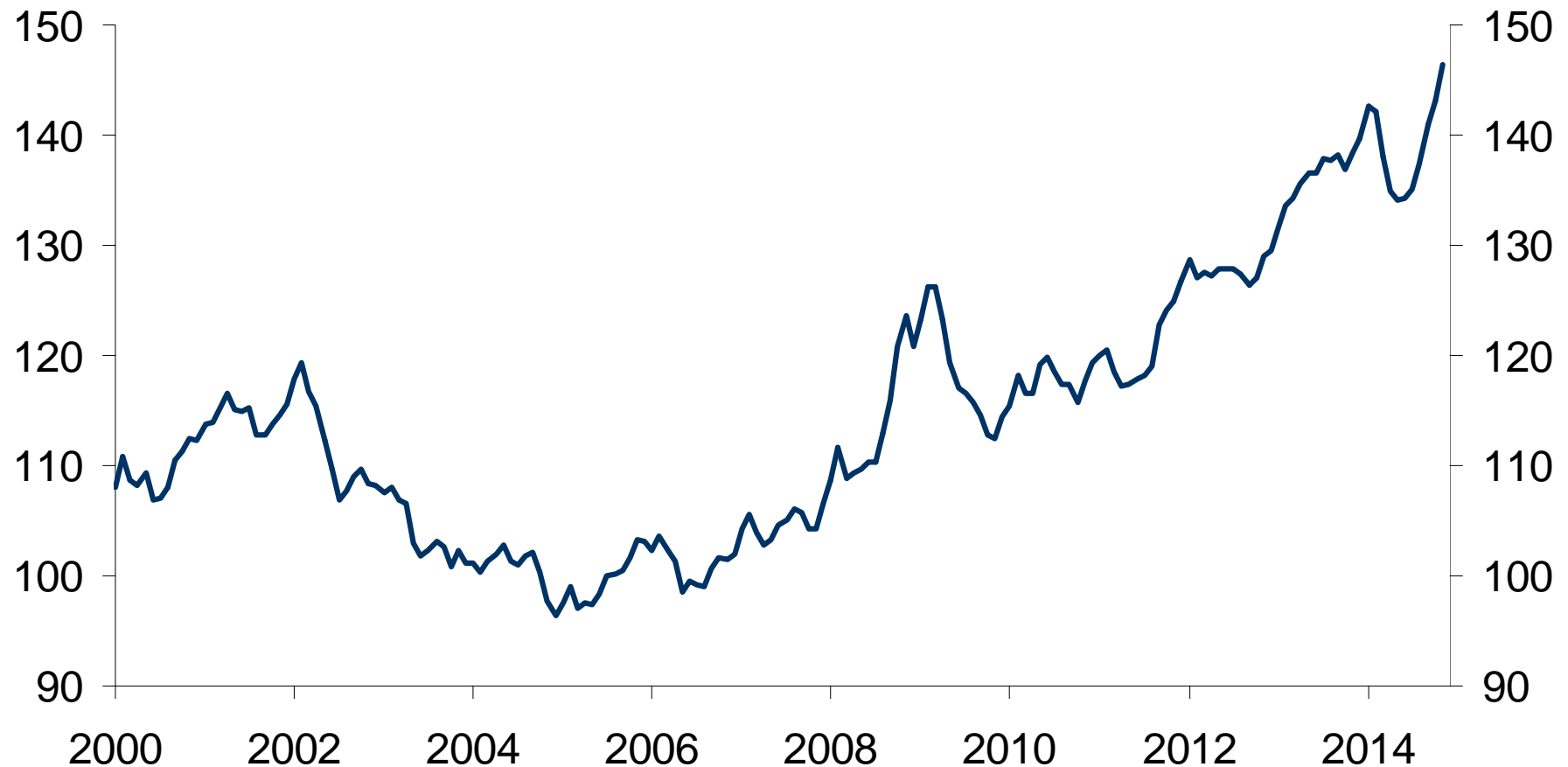
In real effective terms the Chinese Yuan is well above where it was in 2002



July 2005=100

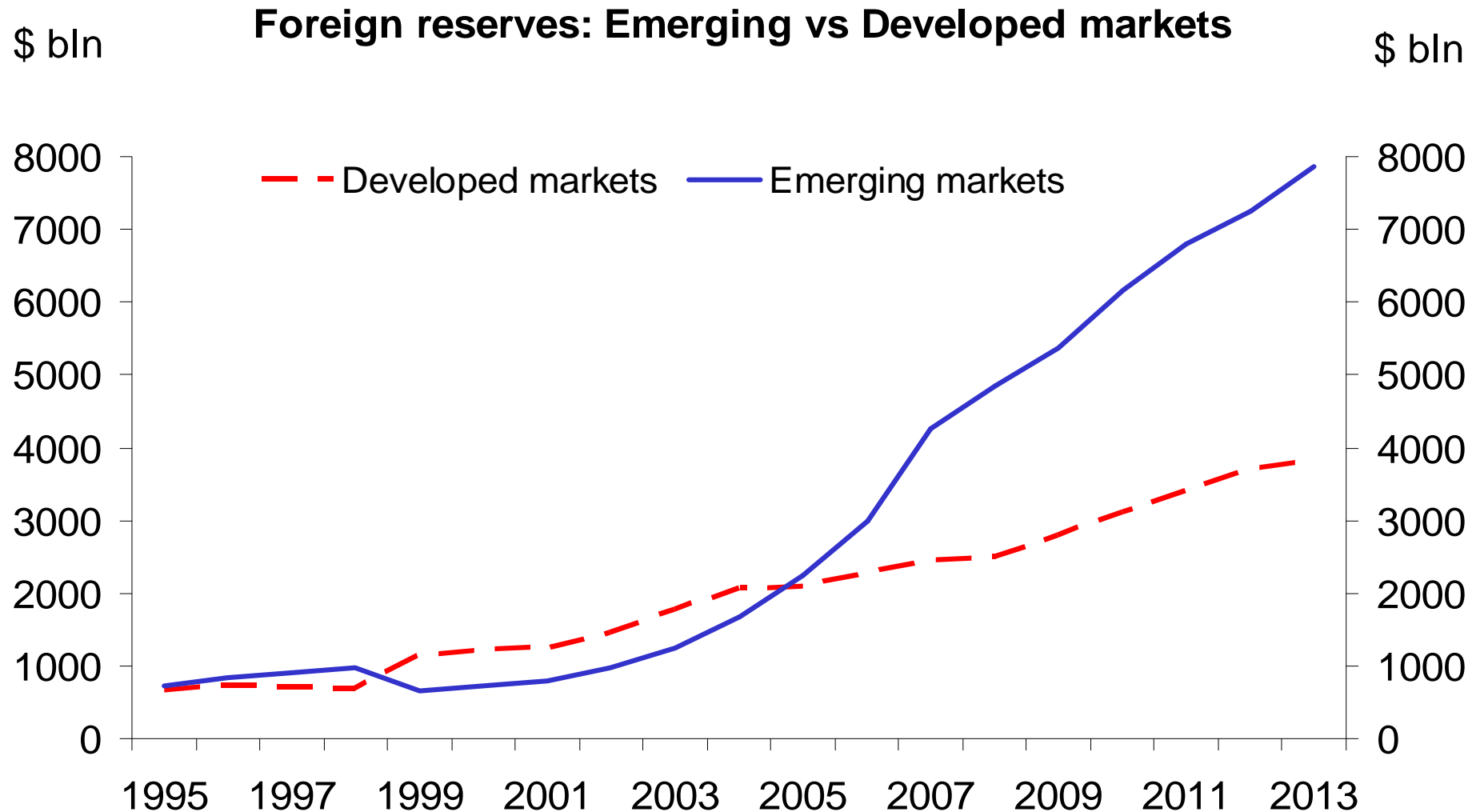
July 2005=100

Real effective exchange rate of Yuan vs. a basket of 58 currencies



Source: BIS, Haver Analytics, DB Global Markets Research

FX reserves: \$8trn in EM and \$4trn in DM...

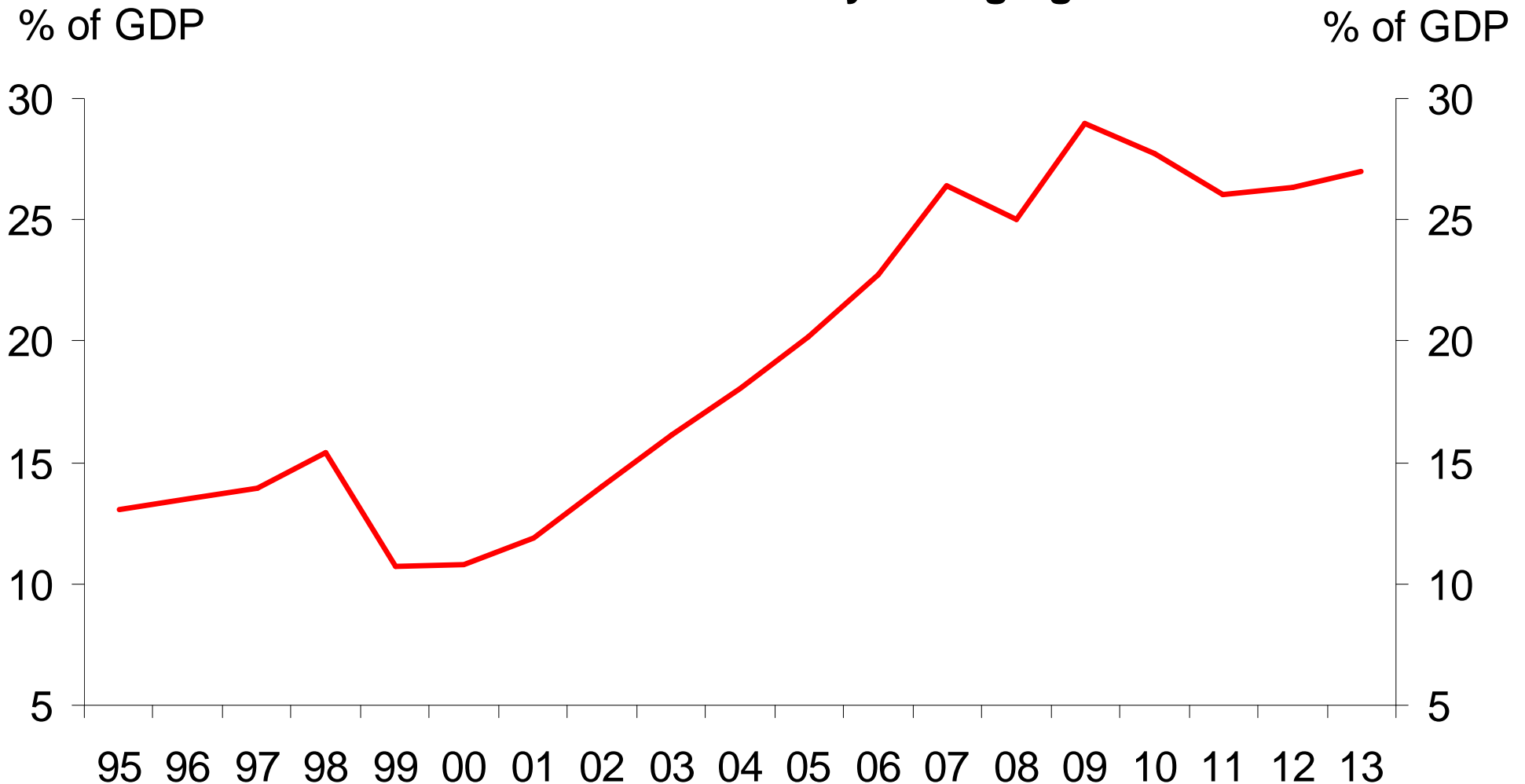


Source: IMF COFER, Haver Analytics, DB Global Markets Research

...and as a share of GDP emerging markets holding what corresponds to 27% of EM GDP in reserves



International reserves held by Emerging Markets



Source: IMF COFER , Haver Analytics, DB Global Markets Research

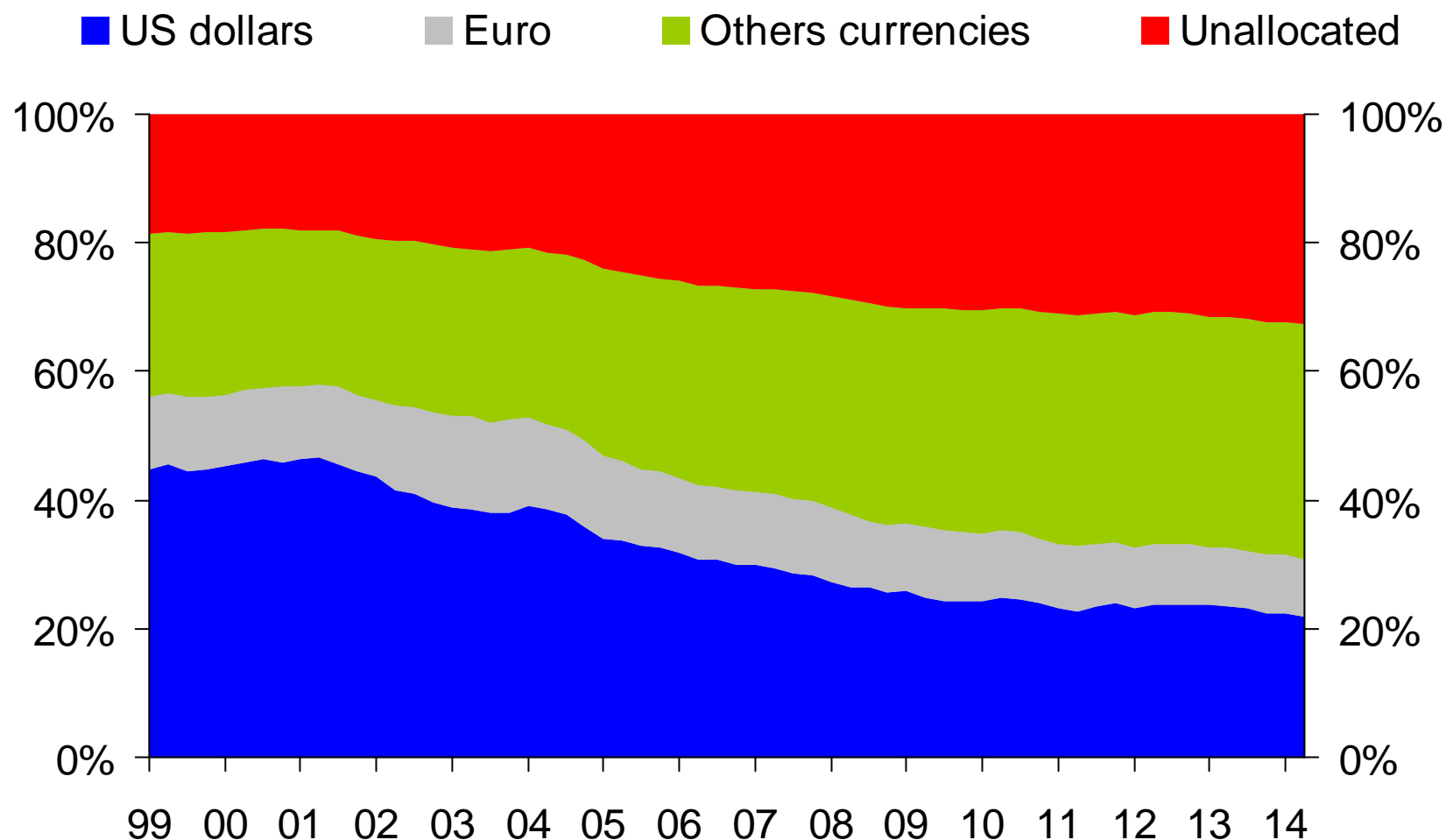


China's reserves as a share of reserves held by:

	2000M12	2004M12	2010M12	2011M6	2012M9	2013M9	2013M12
All countries	9%	16%	31%	31%	29%	32.0%	32.7%
Advanced economies	14%	30%	92%	96%	83%	97.3%	100%
Emerging/ Developing economies	23%	36%	46%	47%	45%	47.7%	48.6%

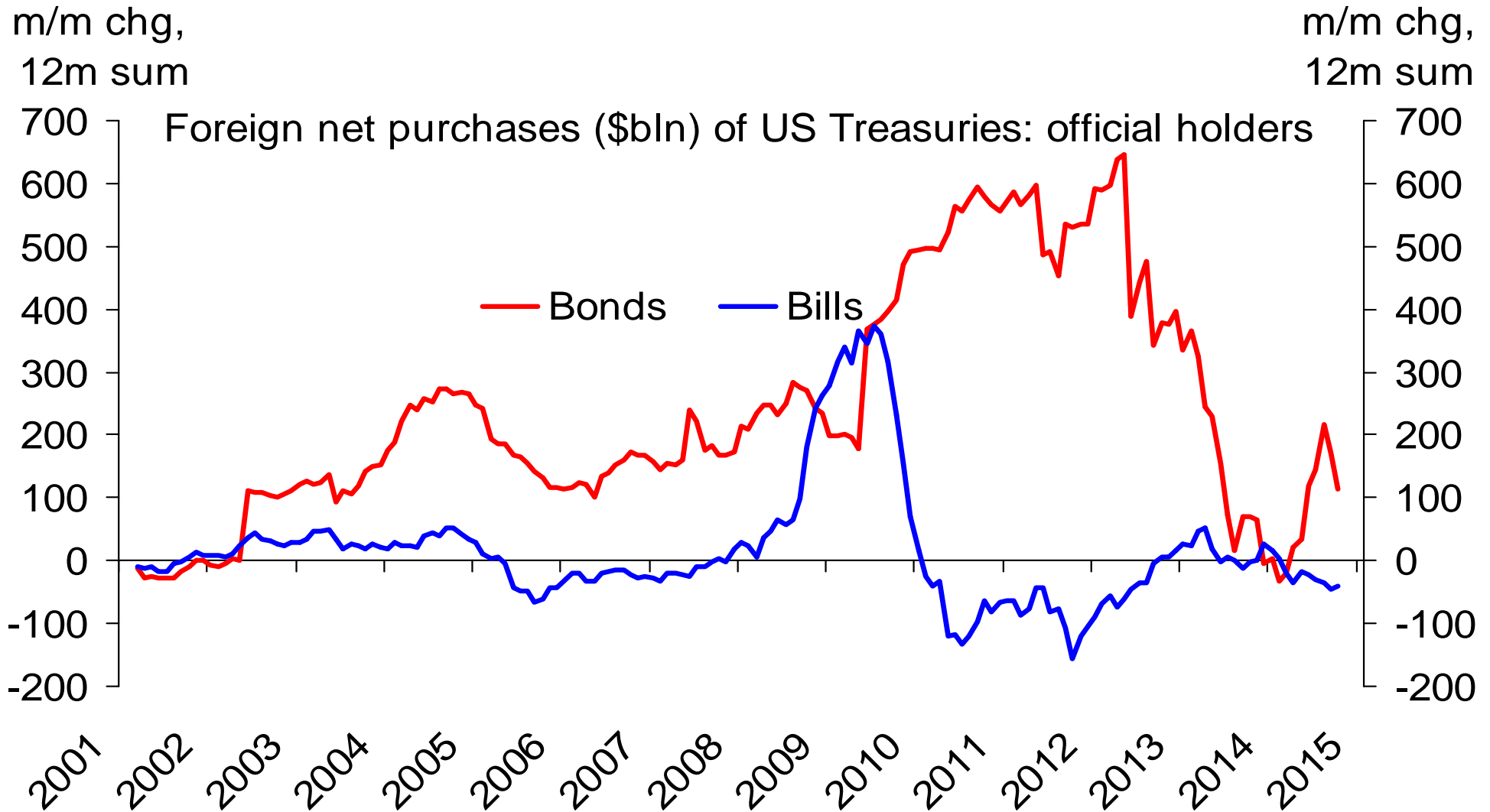
Source: IMF, PBC, Haver Analytics, DB Global Markets Research

Unallocated (meaning undisclosed) share of total world reserves rising



Source: IMF COFER, Haver Analytics, DB Global Markets Research

Central bank appetite for US bonds much lower than in 2009-2013

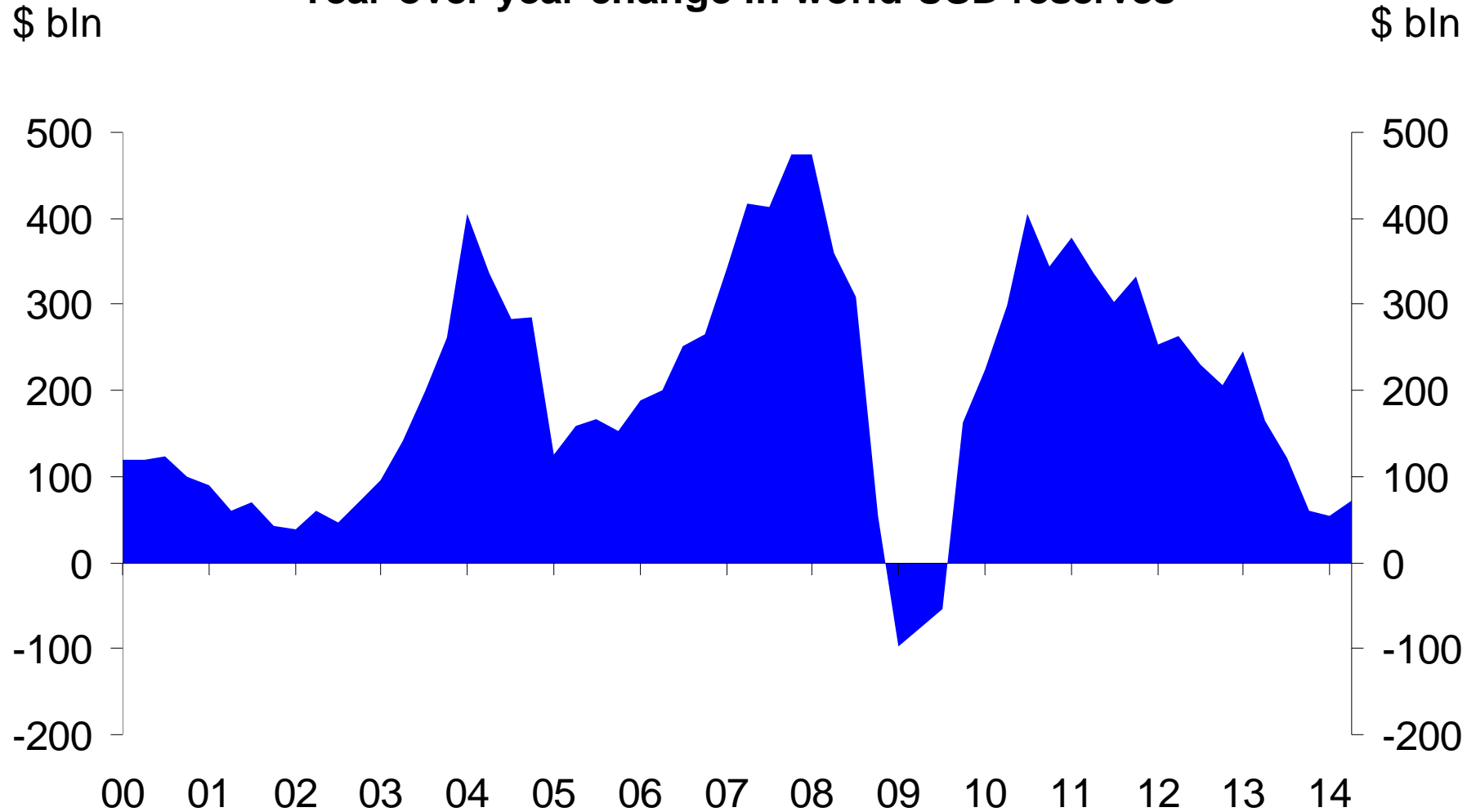


Source: Treasury, Haver Analytics, DB Global Markets Research



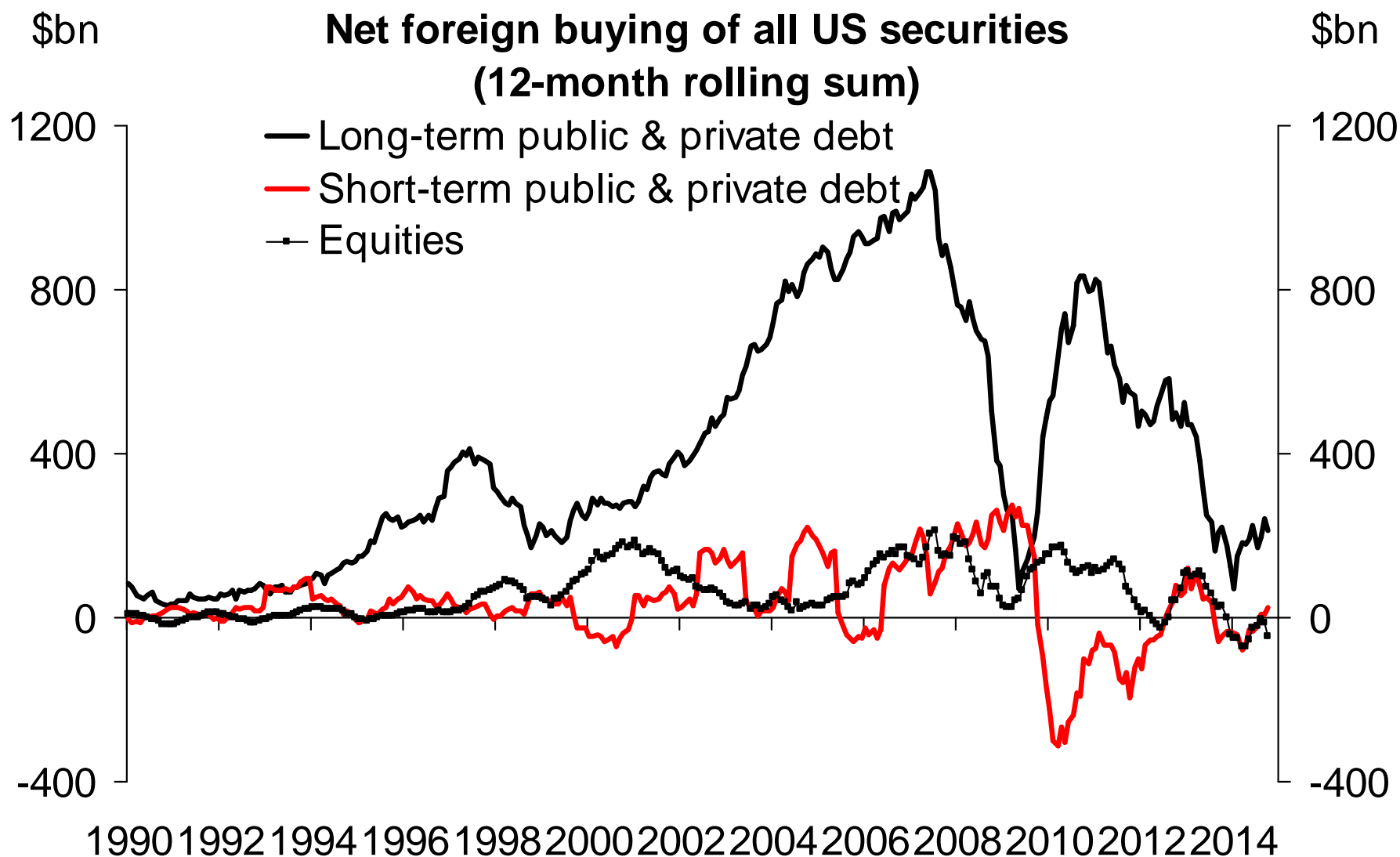
On a yoy basis central banks
are buying fewer dollar assets...

Year-over-year change in world USD reserves



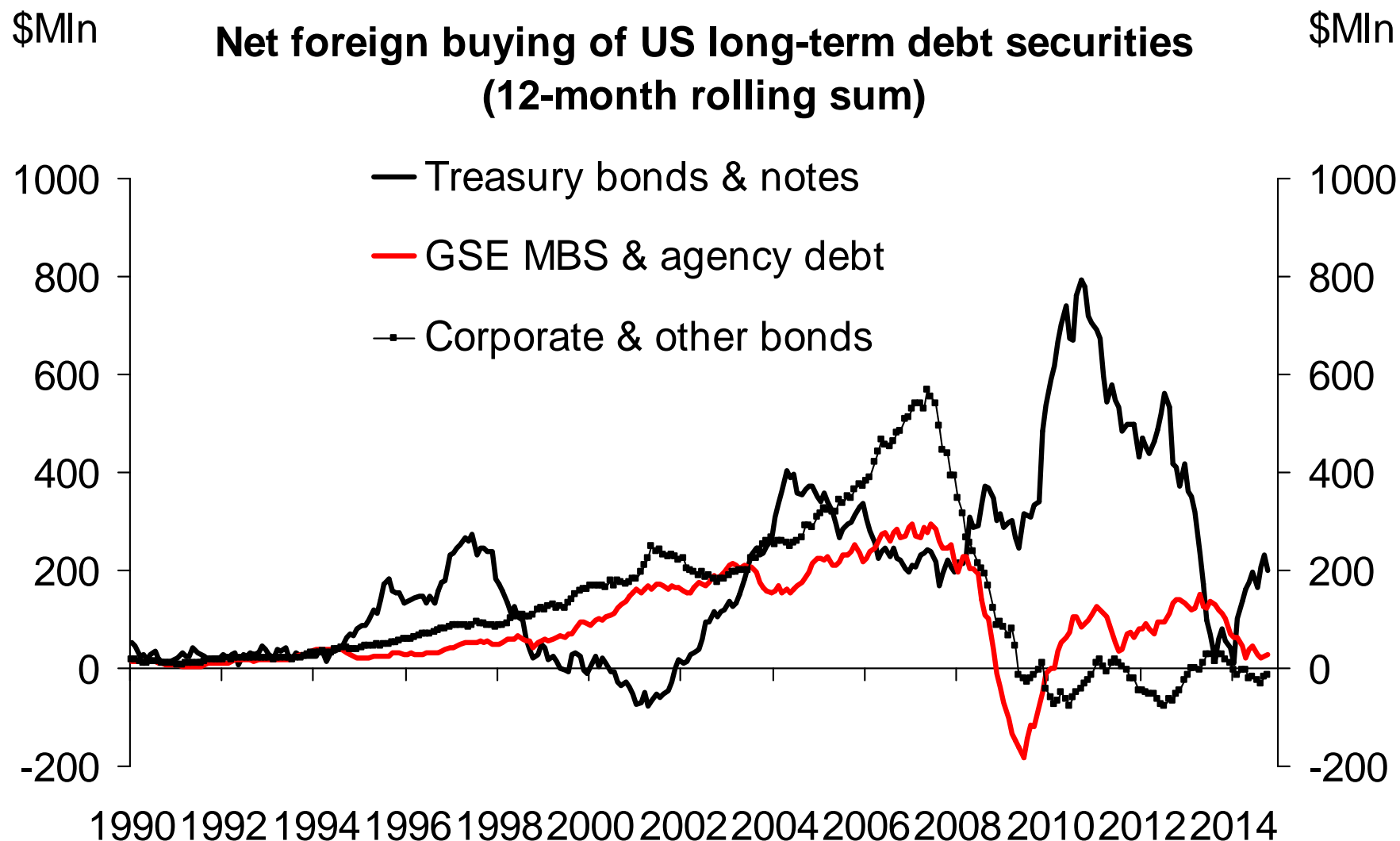
Source: IMF COFER, Haver Analytics, DB Global Markets Research

...and foreigners more broadly have less appetite for all US assets...



Source: Treasury, Haver Analytics, DB Global Markets Research

...with the level of purchases lower for
Treasuries, MBS, and Credit...



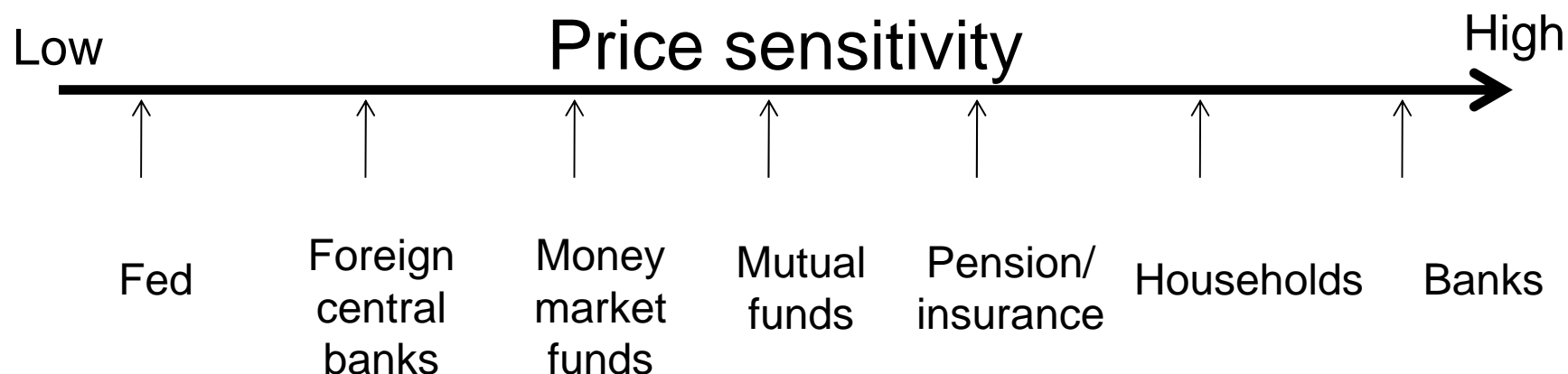
Source: Treasury, Haver Analytics, DB Global Markets Research



Who is buying Treasuries?

Framework for thinking about demand for fixed income

-The key driver of rates is the economy. But different buyers have different price sensitivities:



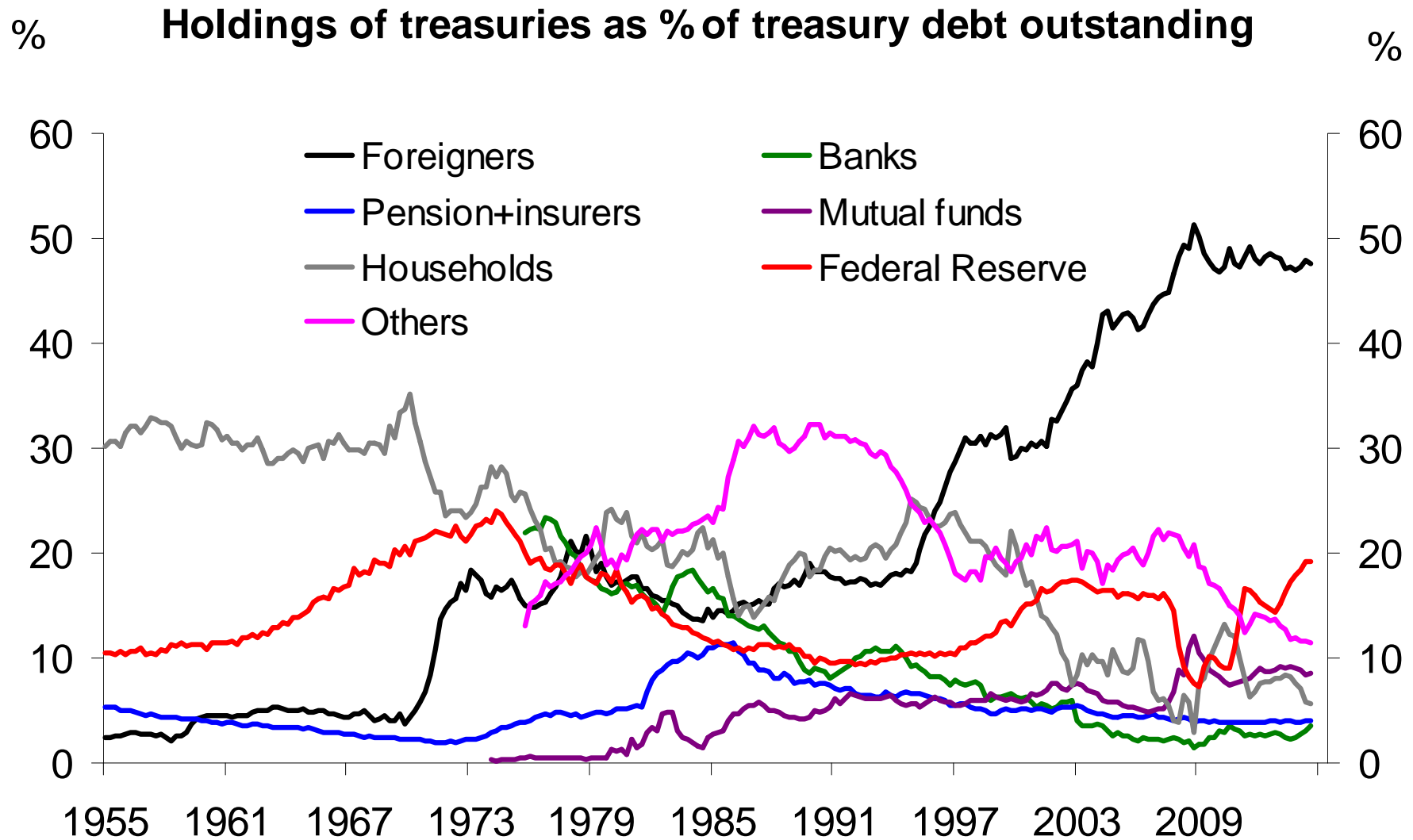
Foreigners, Fed, and mutual funds have increased their holdings of Treasuries



Holders of Treasury debt securities	Q3 2014	Q1 2007	Q1 2003
Rest of world	47.7%	44.3%	36%
Fed	19.2%	15.6%	17.5%
Mutual funds	8.6%	5.2%	7.6%
Households/Hedge funds	5.7%	6.1%	8.4%
Government retirement funds	3.5%	4.7%	5.9%
Private pension funds	2.6%	2.8%	3.0%
Commercial banks	3.5%	2.2%	4.0%
Insurance companies	2.2%	3.7%	4.5%
Investment banks	0.4%	-0.8%	0.5%
GSEs	0.5%	0.3%	0.7%
ABS issuers	0.2%	1.3%	0.0%
Others	5.9%	13.5%	12.3%

Source: FRB, Haver Analytics, DB Global Markets Research

Fed buying Treasuries has been eating into share of Treasuries held by others

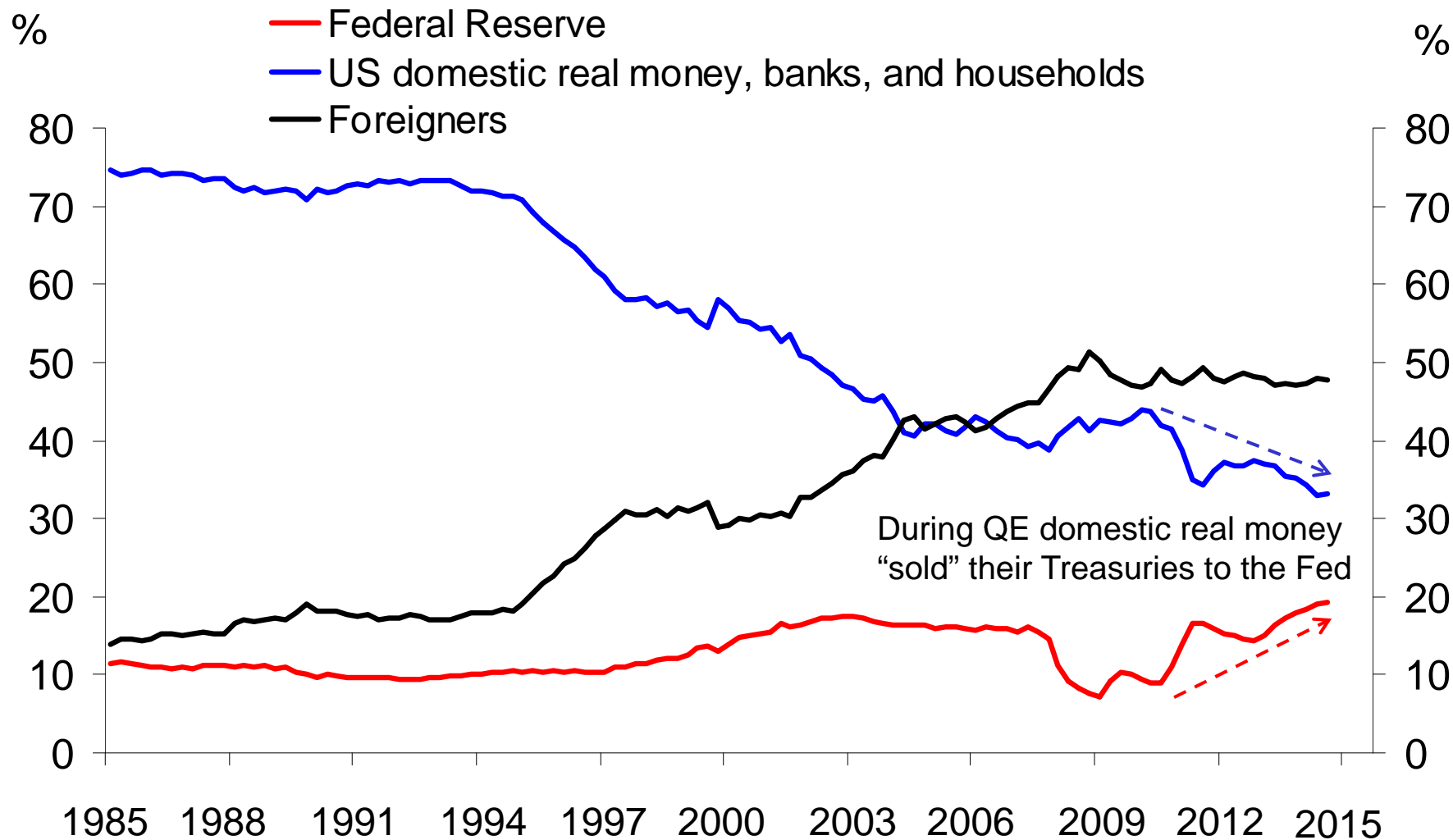


Source: FRB, Haver Analytics, DB Global Markets Research

70% of Treasuries are held by foreigners and the Fed



Holdings of treasuries as % of treasury debt outstanding

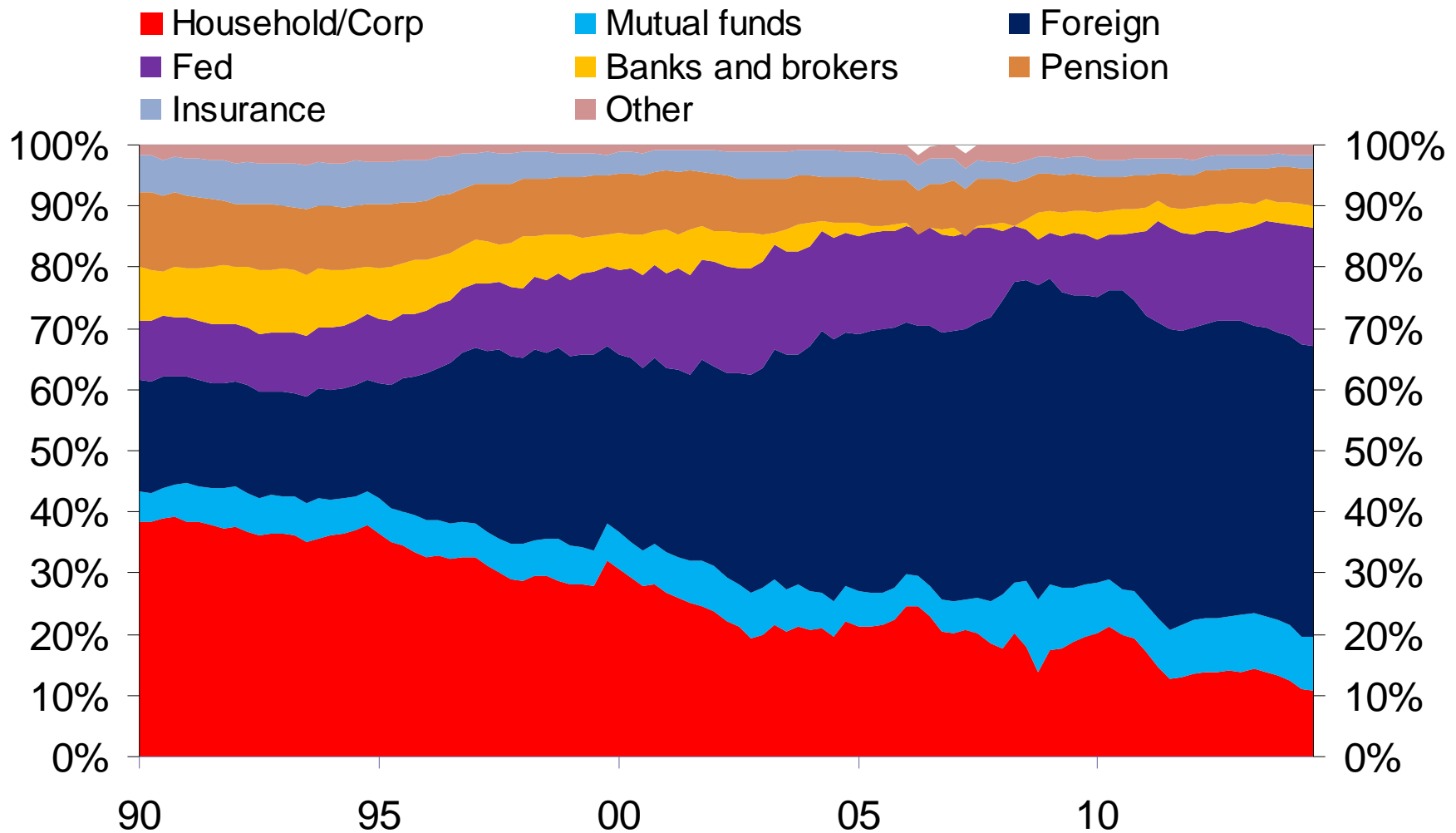


Source: FRB, Haver Analytics, DB Global Markets Research



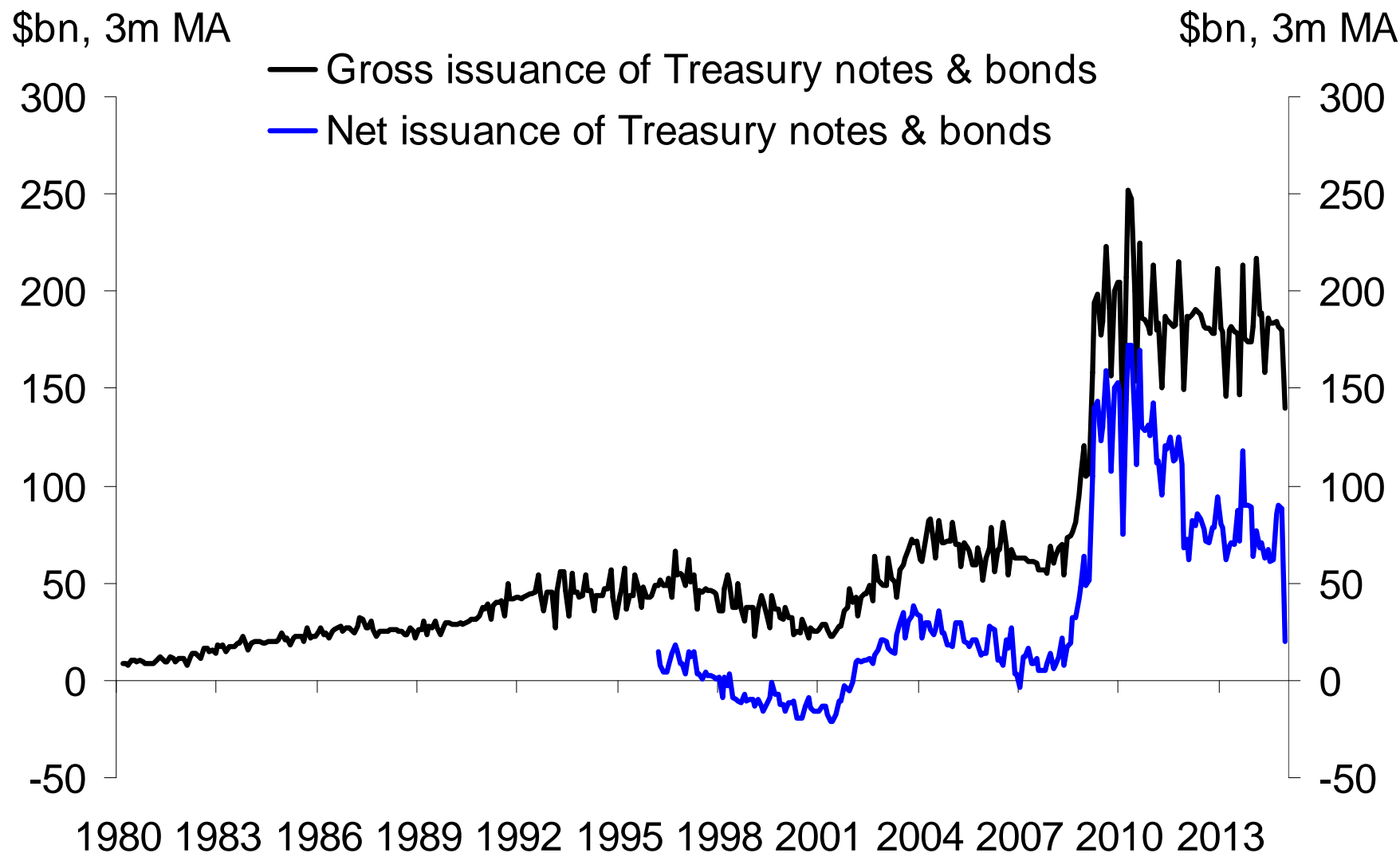
Most Treasuries held by foreigners

Holder of US Treasuries, % outstanding



Source: FRB, Haver Analytics, DB Global Markets Research

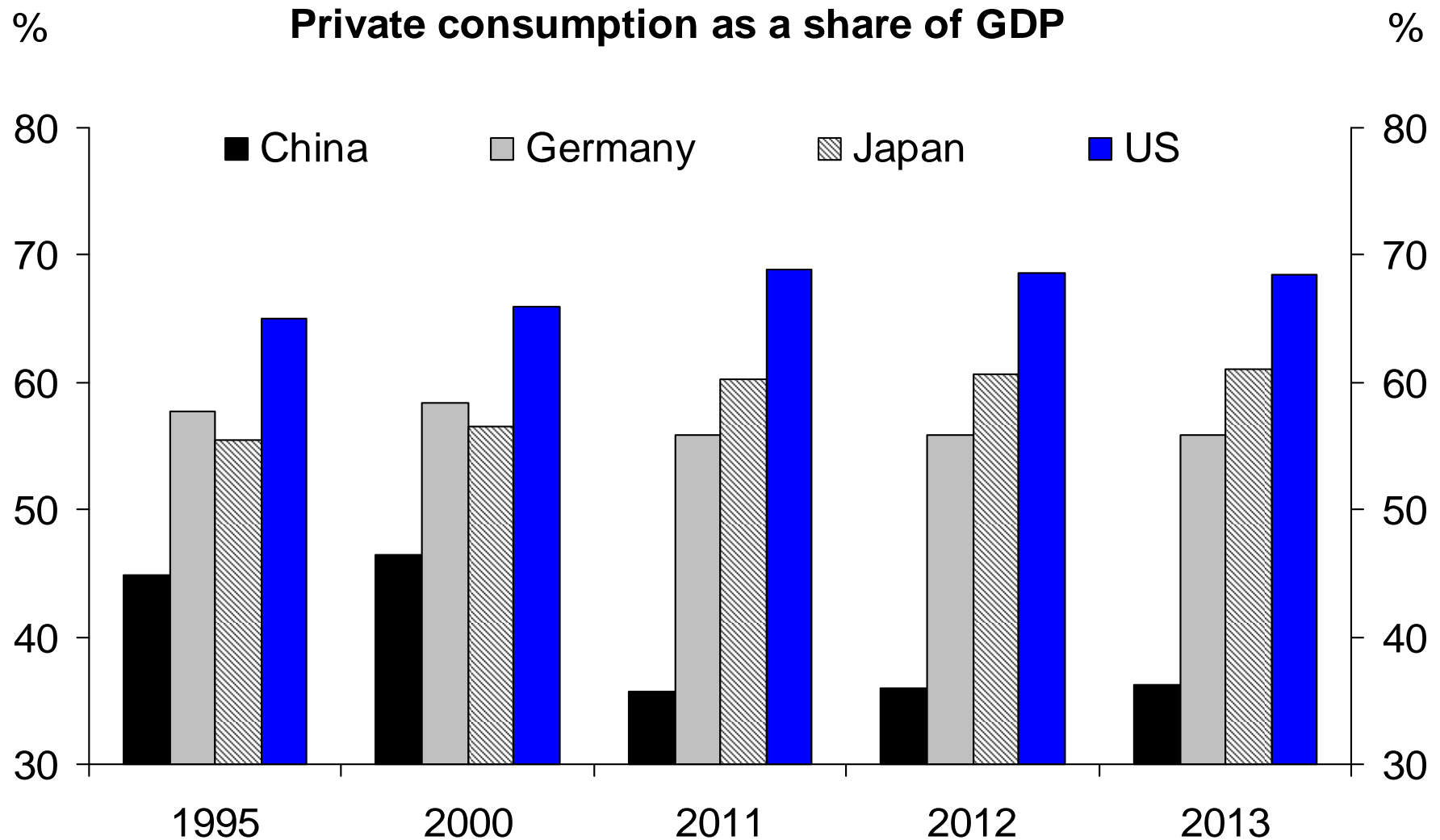
Treasury net issuance down recently



Source: Bureau of Public Debt, Haver Analytics, DB Global Markets Research

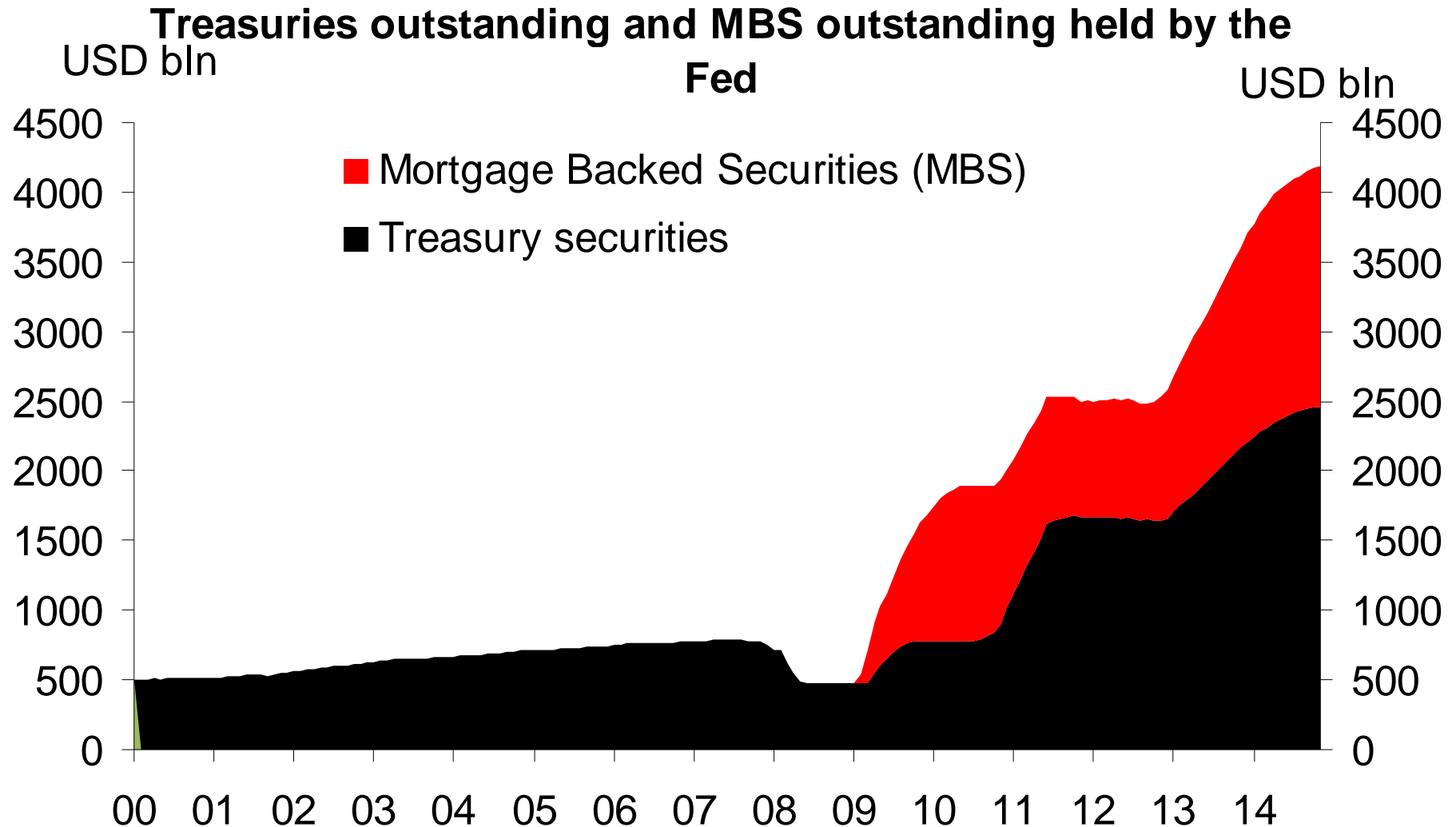
Global rebalancing is needed – China needs more consumption and the US less imports.

This process will take many years



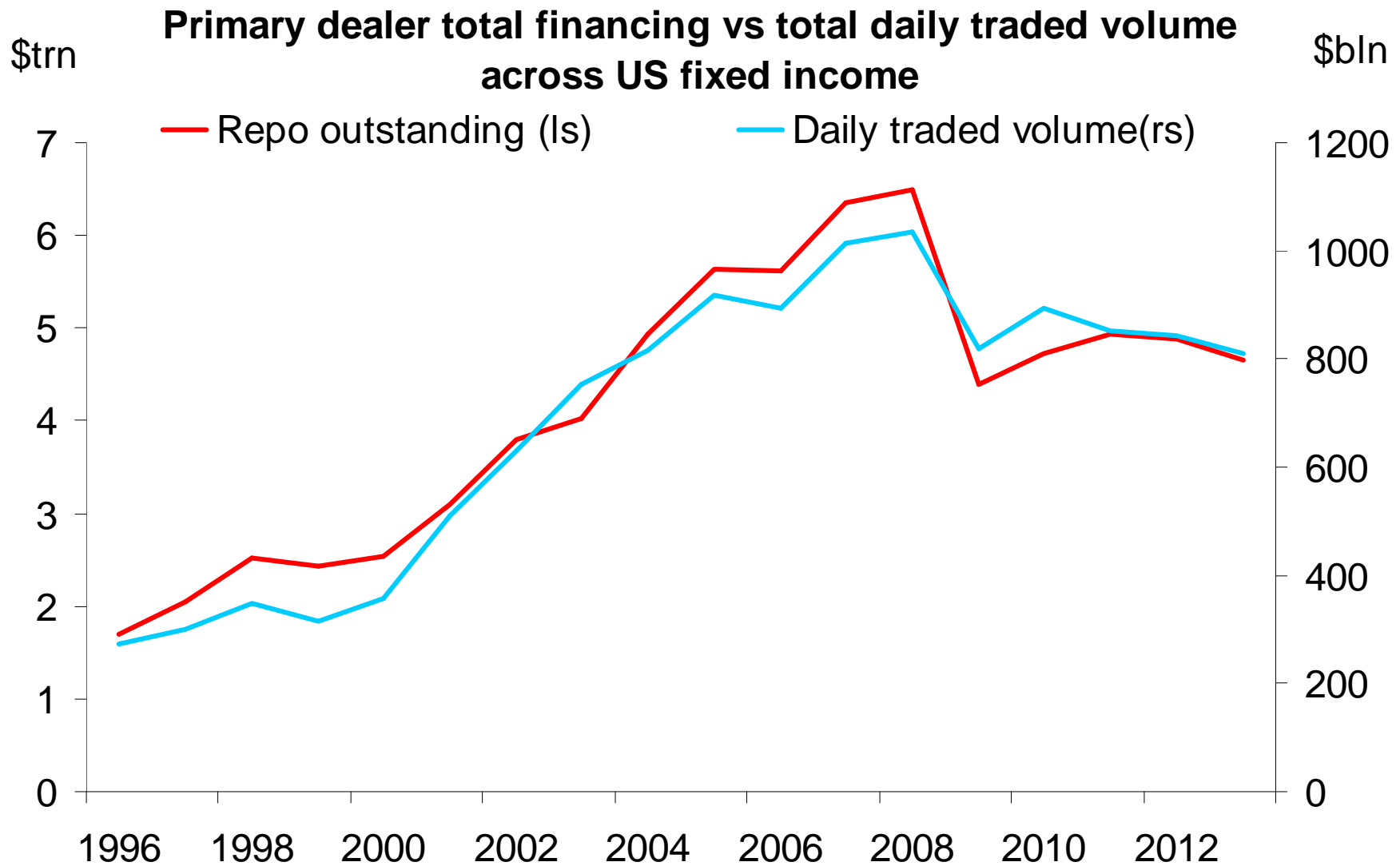
Source: CAO, EUROSTAT, BEA, CNBS , Haver Analytics, DB Global Markets Research

Fed holdings of MBS and Treasuries



Source: FRB, Haver Analytics, DB Global Markets Research

Repo outstanding highly correlated with US fixed income daily traded volume



Source: SIFMA, DB Global Markets Research



Who is buying GSE MBS and agency debt?

Fed holds 22% of all outstanding agency and GSE-backed debt securities

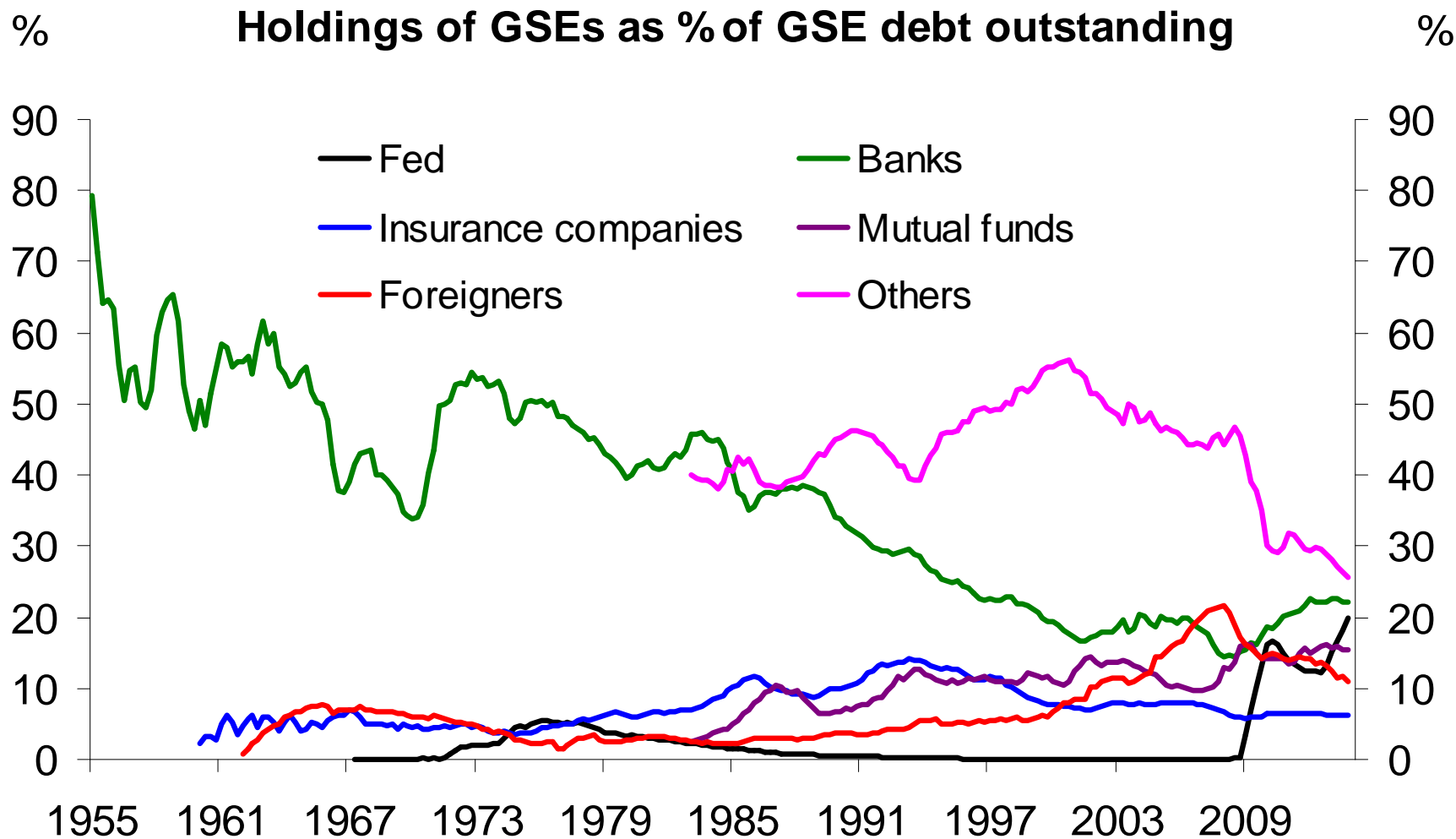


Holders of agency and GSE-backed debt securities	Q3 2014	Q1 2007	Q1 2003
Commercial banks	22.4%	18.3%	18.6%
Fed	22.2%	0.0%	0.0%
Rest of world	11.4%	20.1%	11.4%
Mutual funds	14.9%	9.7%	13.6%
Insurance companies	5.7%	7.6%	8.0%
GSEs	3.7%	10.5%	20.8%
Government retirement funds	3.0%	3.0%	3.6%
Private pension funds	2.9%	3.1%	3.4%
Households	0.1%	9.7%	3.0%
Investment banks	1.4%	2.2%	2.3%
ABS issuers	0.0%	5.0%	5.6%
Others	12.3%	10.4%	9.7%

* Agency and GSE-backed debt securities consists of GSE debt and Agency and GSE-backed mortgage pools.

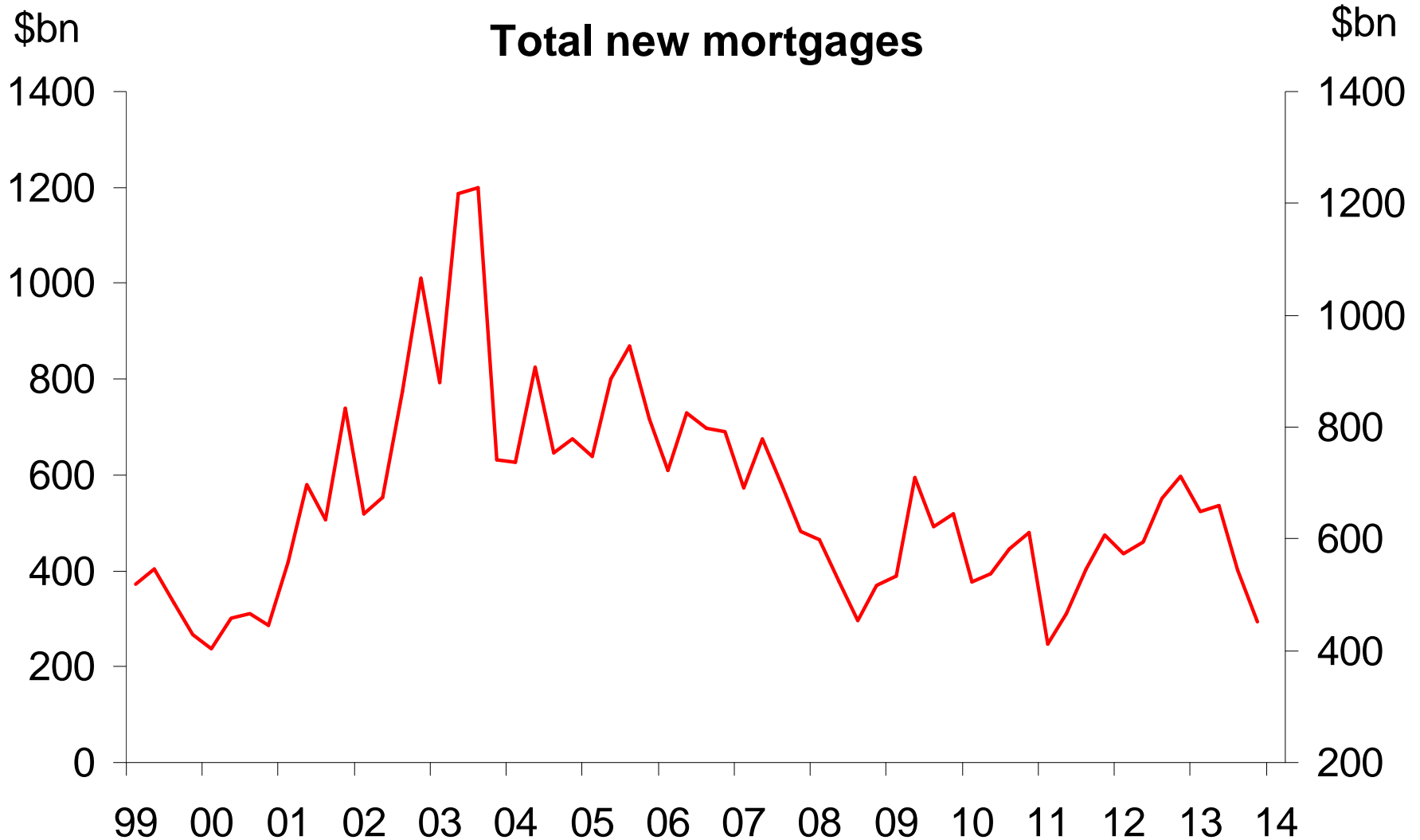
Source: FRB, Haver Analytics , DB Global Markets Research

Fed holds 20% of mortgages



Source: FRB, Haver Analytics, DB Global Markets Research

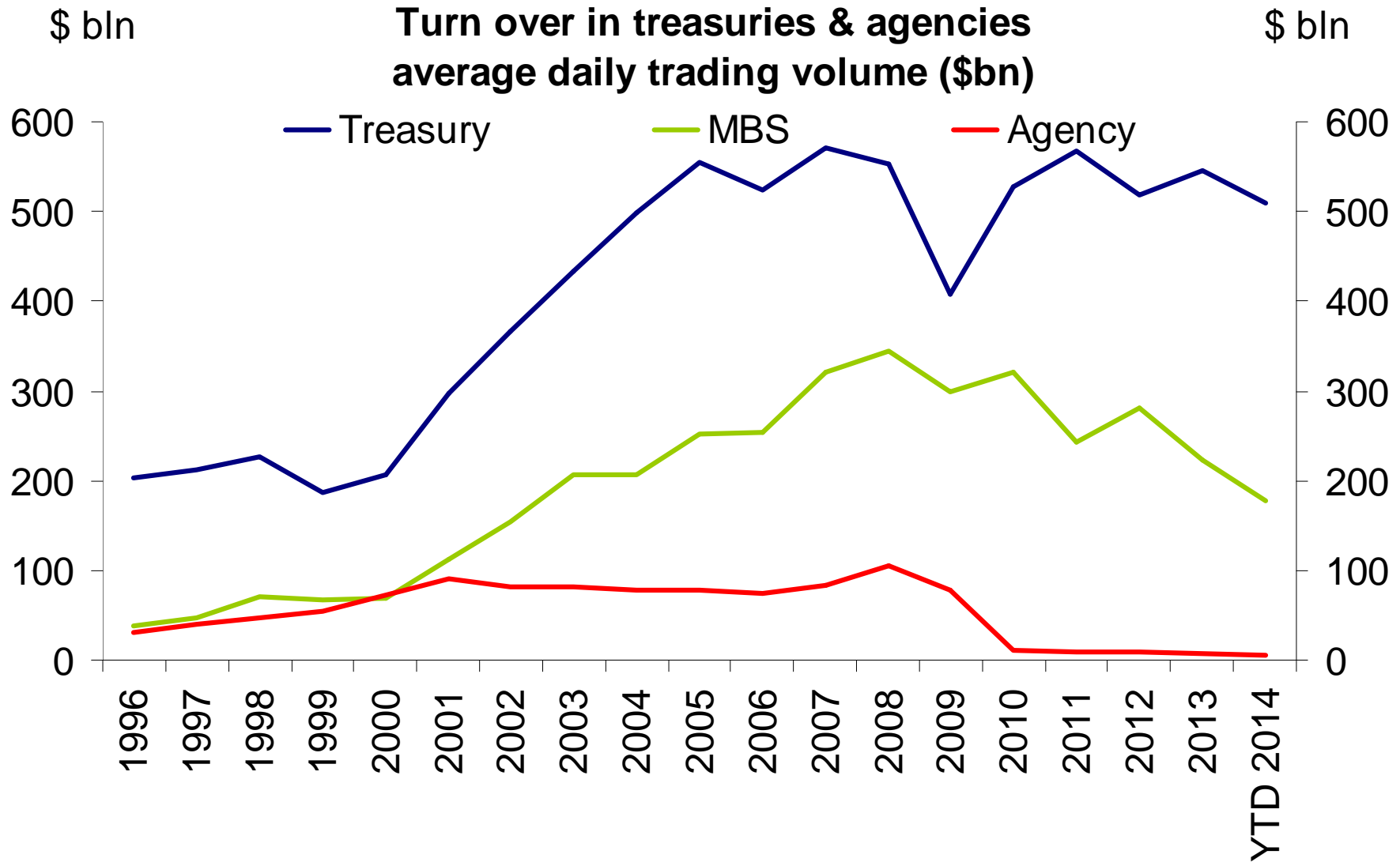
Mortgage originations moving down recently



Source: MBA, Haver Analytics, DB Global Markets Research



Trading volumes in MBS declining, steady for Treasuries



* As of March 2014

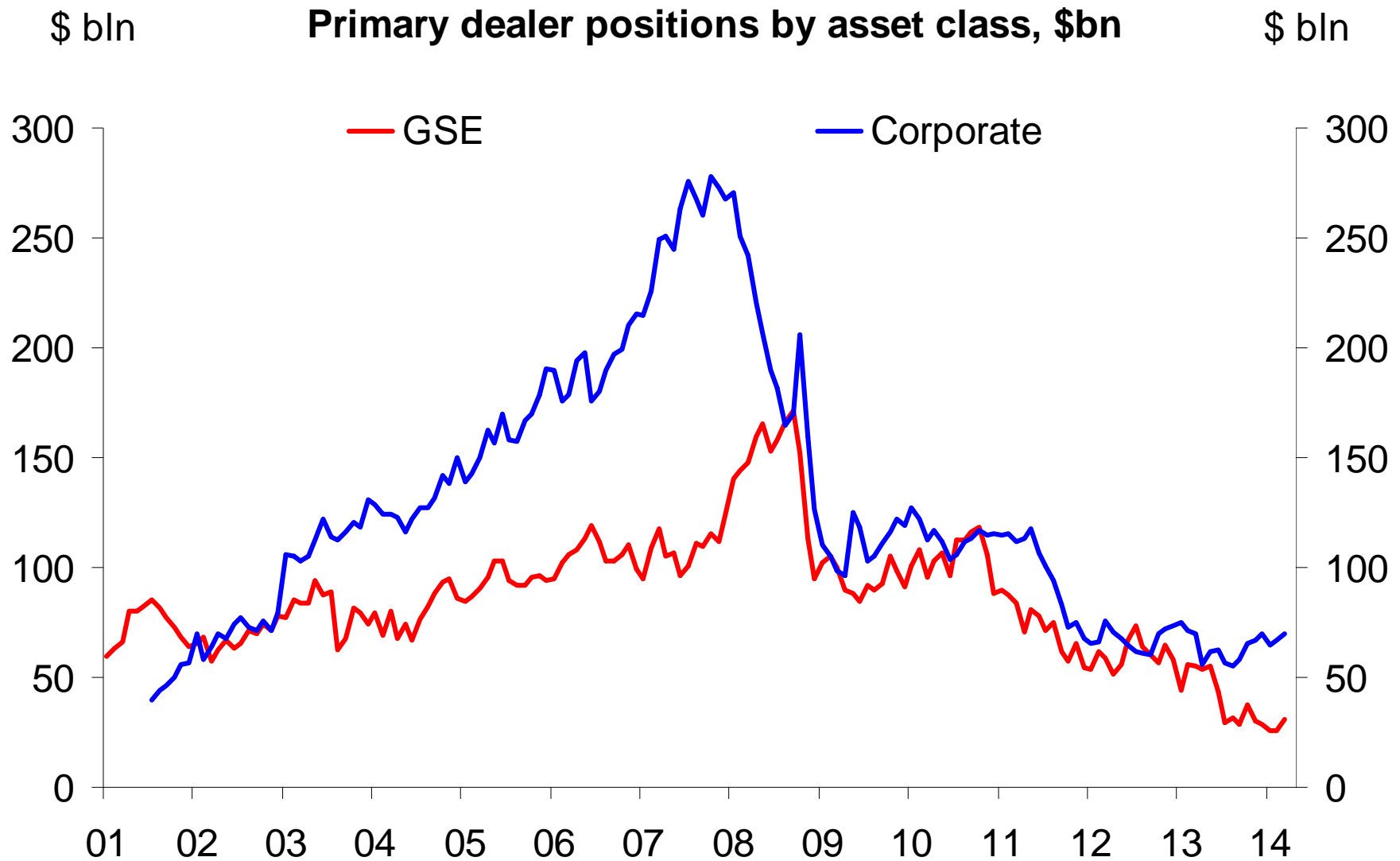
Source: SIFMA, DB Global Markets Research

Primary dealer inventory of IG and high yield bonds currently 20% of what it was in 2007



Source: FRB, Haver Analytics, DB Global Markets Research

Primary dealer inventory of spread product currently 20% of what it was in 2007



Source: FRB, Haver Analytics, DB Global Markets Research



Who is buying Corporate and Foreign Bonds?



Holders of HY and HG credit

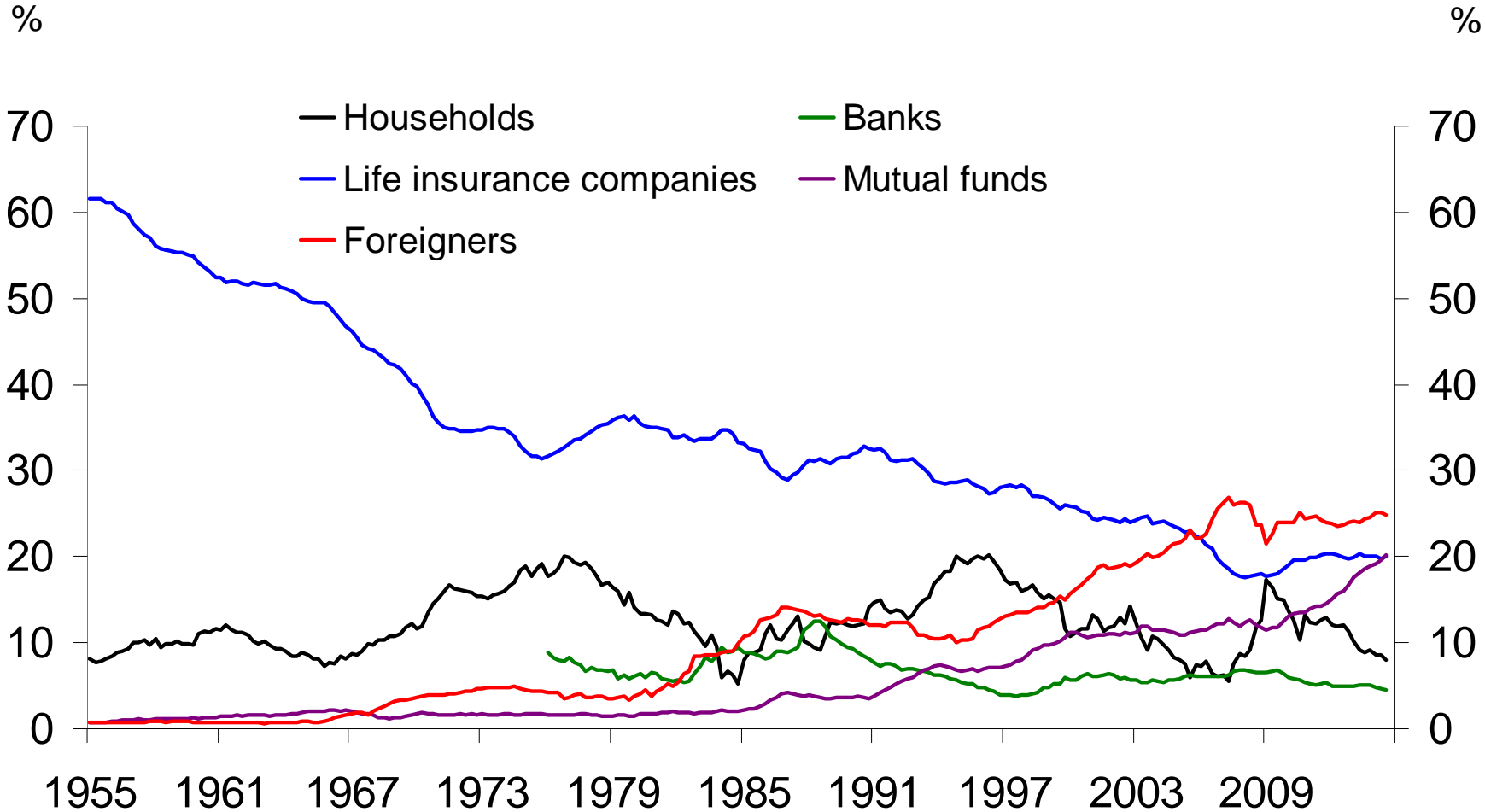
Holders of corporate and foreign bonds	Q3 2014	Q1 2007	Q1 2003
Rest of world	24.90%	23.70%	17.90%
Life insurance companies	20.10%	17.30%	22.80%
Mutual funds	19.50%	7.50%	7.20%
Other	15.00%	22.30%	21.70%
Households/Hedge funds	8.00%	15.10%	17.90%
Commercial banks	6.70%	8.70%	8.20%
Private pension funds	5.10%	3.40%	3.90%
Funding corporations	0.70%	0.70%	1.10%

Source: FRB, Haver Analytics, DB Global Markets Research



Mutual funds buying more credit in recent years

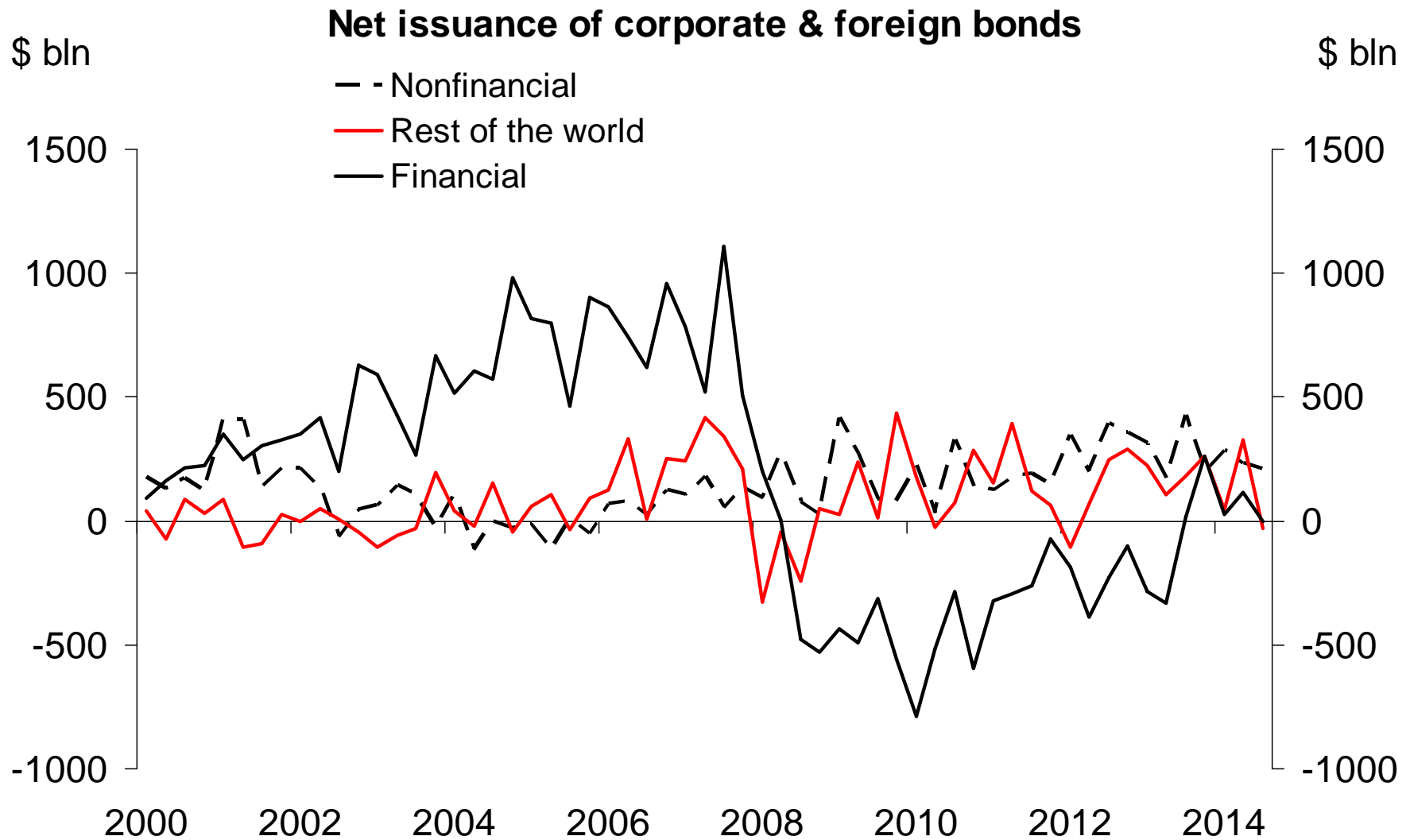
Holdings of Corporate bonds as % of corporate bonds outstanding



Banks include US chartered depository institutes, foreign banking offices in US, bank holding companies, and Banks in U.S. Possessions

Source: FRB, Haver Analytics, DB Global Markets Research

Net issuance of corporate and foreign bonds

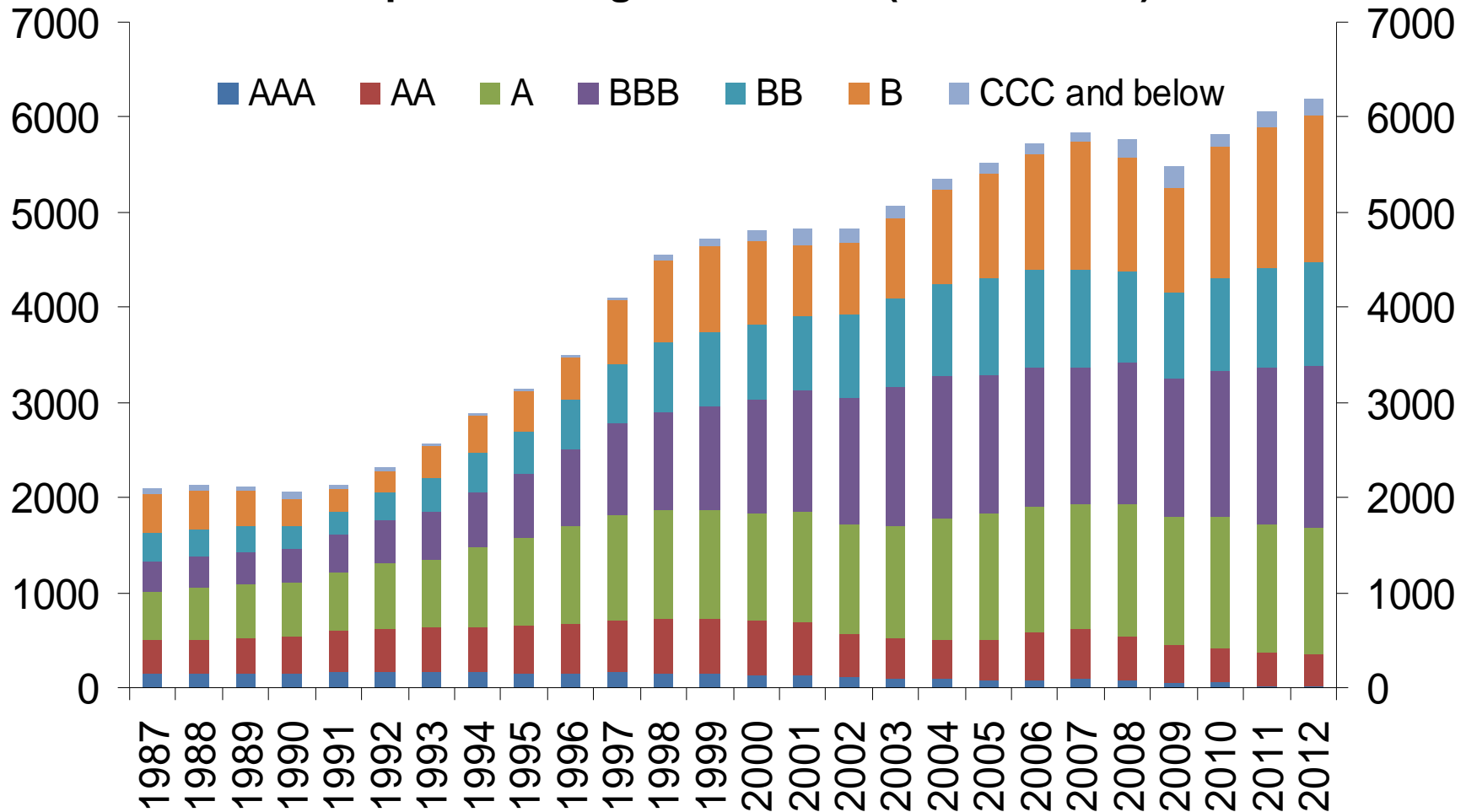


Source: FRB, Haver Analytics, DB Global Markets Research



Distribution of corporate credit ratings

Global corporate rating distribution (issuer count)



Source: S&P and DB Global Markets Research



Who is buying municipal securities and loans?



Holders of munis

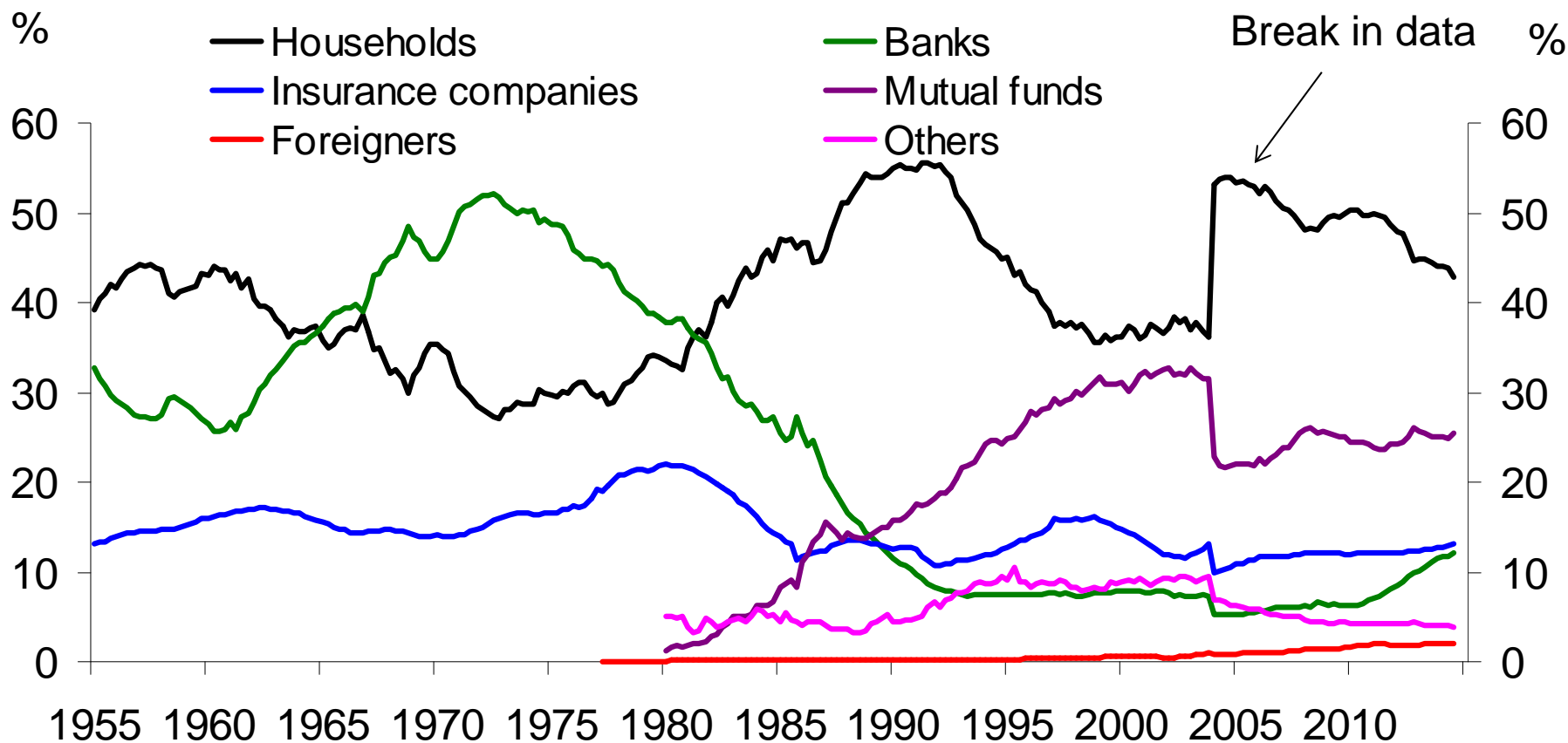
Holders of Municipal securities and loans	Q4 2013	Q1 2007	Q1 2003
 Households/Hedge funds	 42.9%	 50.5%	 37.0%
 Mutual funds	 25.5%	 23.9%	 32.8%
 Insurance companies	 13.1%	 11.7%	 11.9%
 Commercial banks	 12.2%	 6.1%	 7.2%
 Rest of world	 2.0%	 1.1%	 0.7%
 Security brokers and dealers	 0.4%	 1.5%	 1.1%
 Other	 3.9%	 5.1%	 9.3%

Source: FRB, Haver Analytics, DB Global Markets Research

Munis mainly held by households/mutual funds but banks have been buying more recently

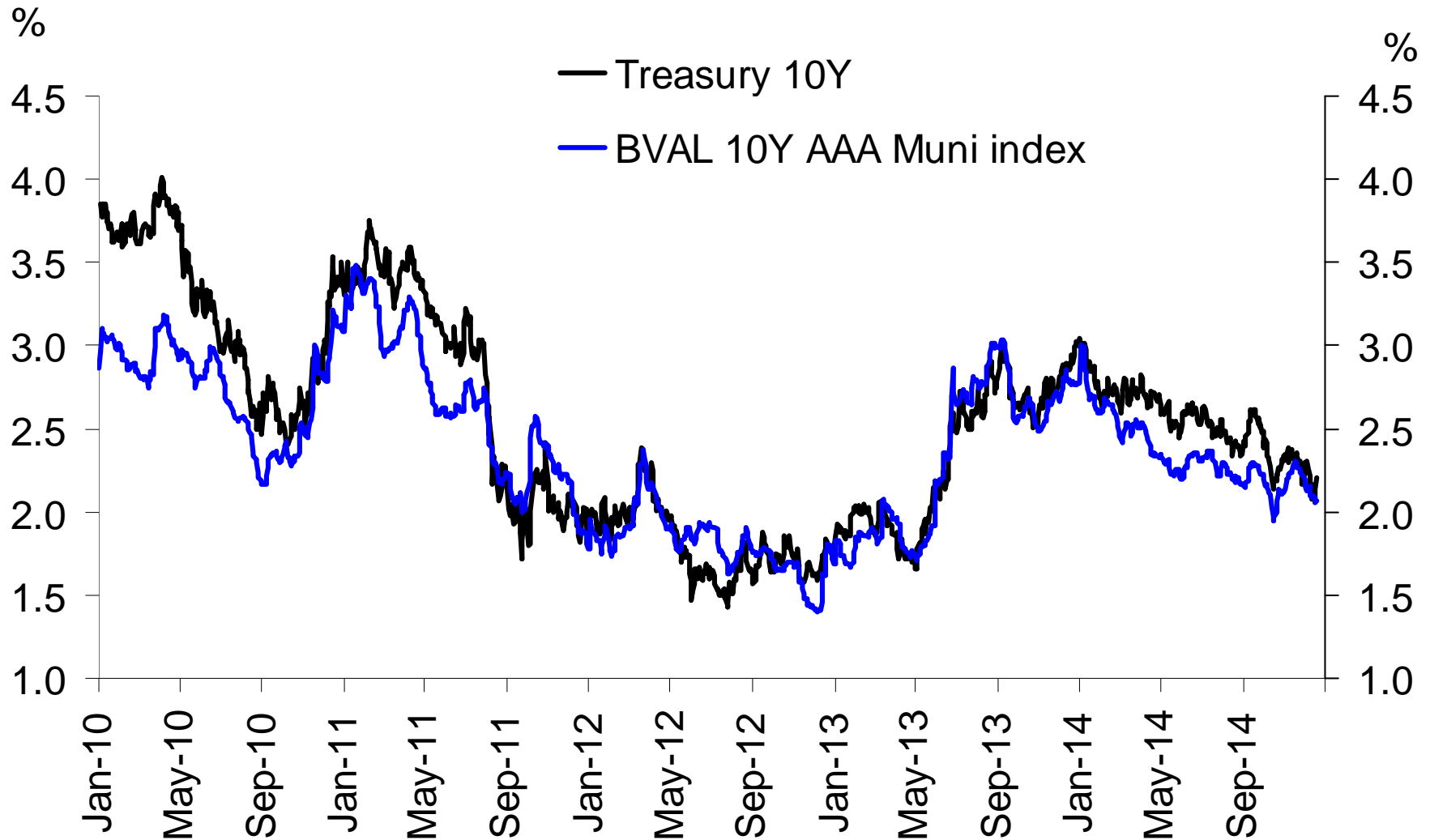


Holdings of Municipal securities by agent as % of municipal securities outstanding



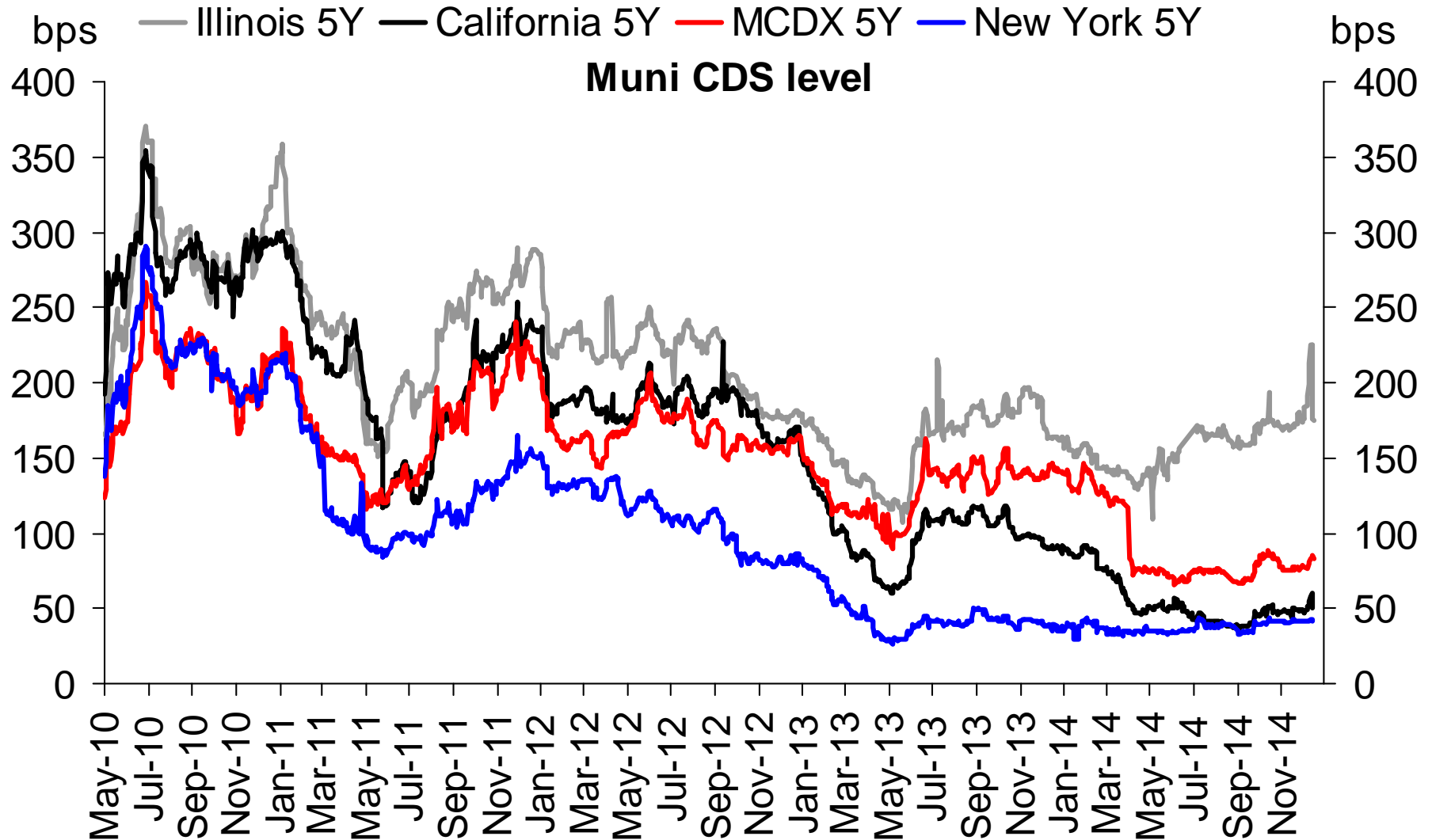
Source: FRB, Haver Analytics, DB Global Markets Research

Market not worried about muni situation



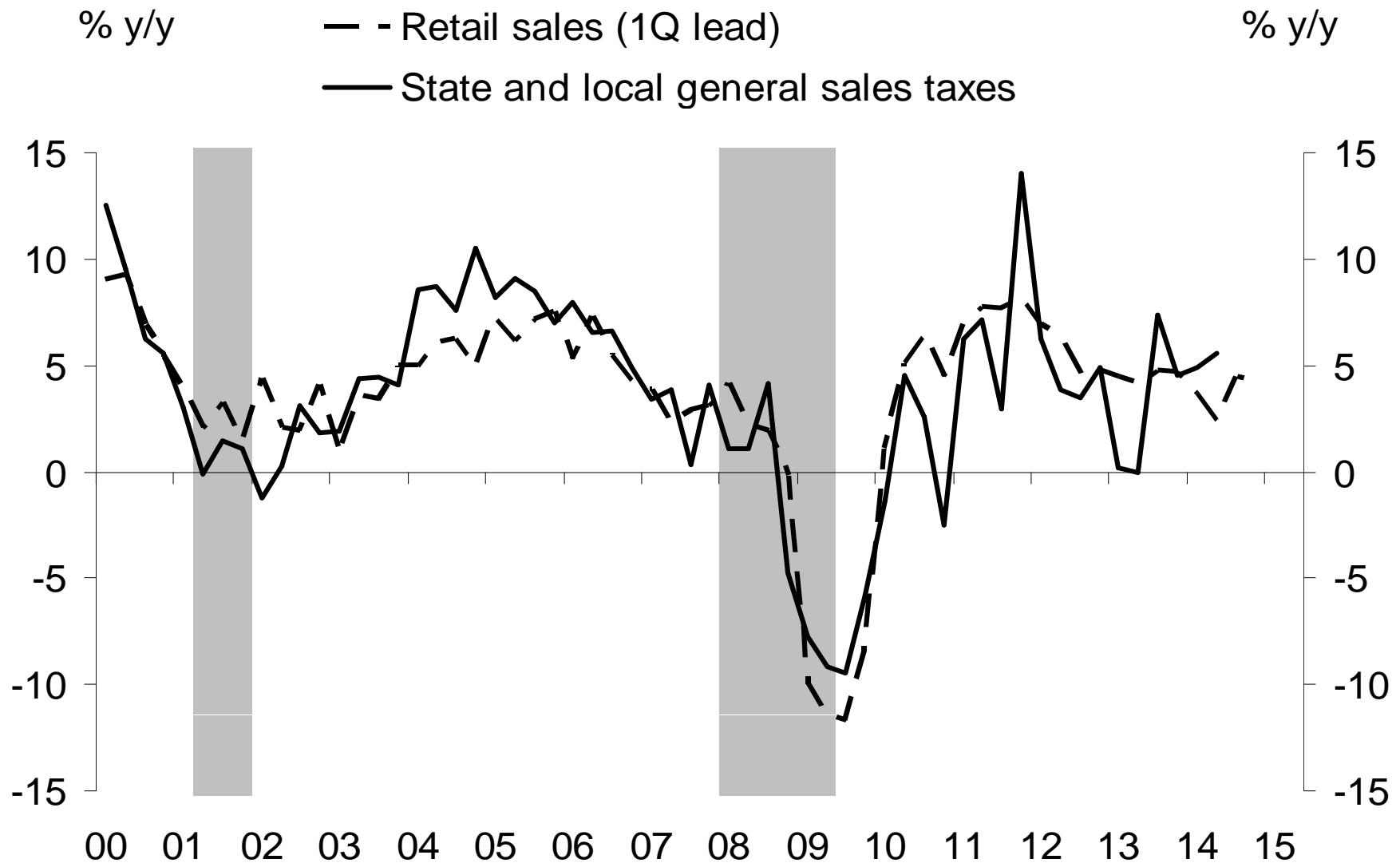
Source: Bloomberg Finance LP, FRB, Haver Analytics, DB Global Markets Research

Muni CDS not showing signs of distress



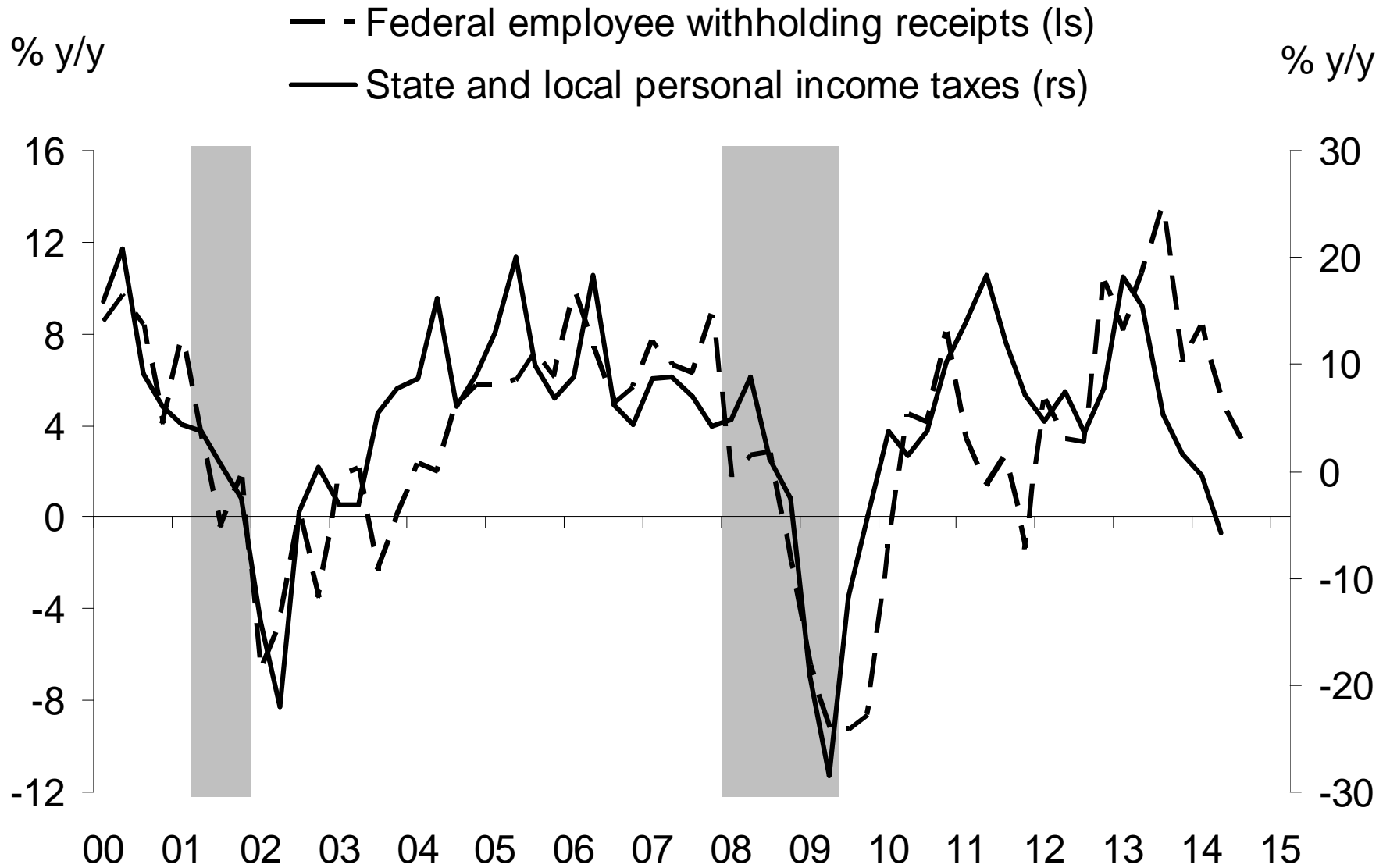
Source: Bloomberg Finance LP, DB Global Markets Research

State and local government problems closely linked to the overall macro outlook



Source: Census, Haver Analytics, DB Global Markets Research

Improving macro picture helping state & local govt

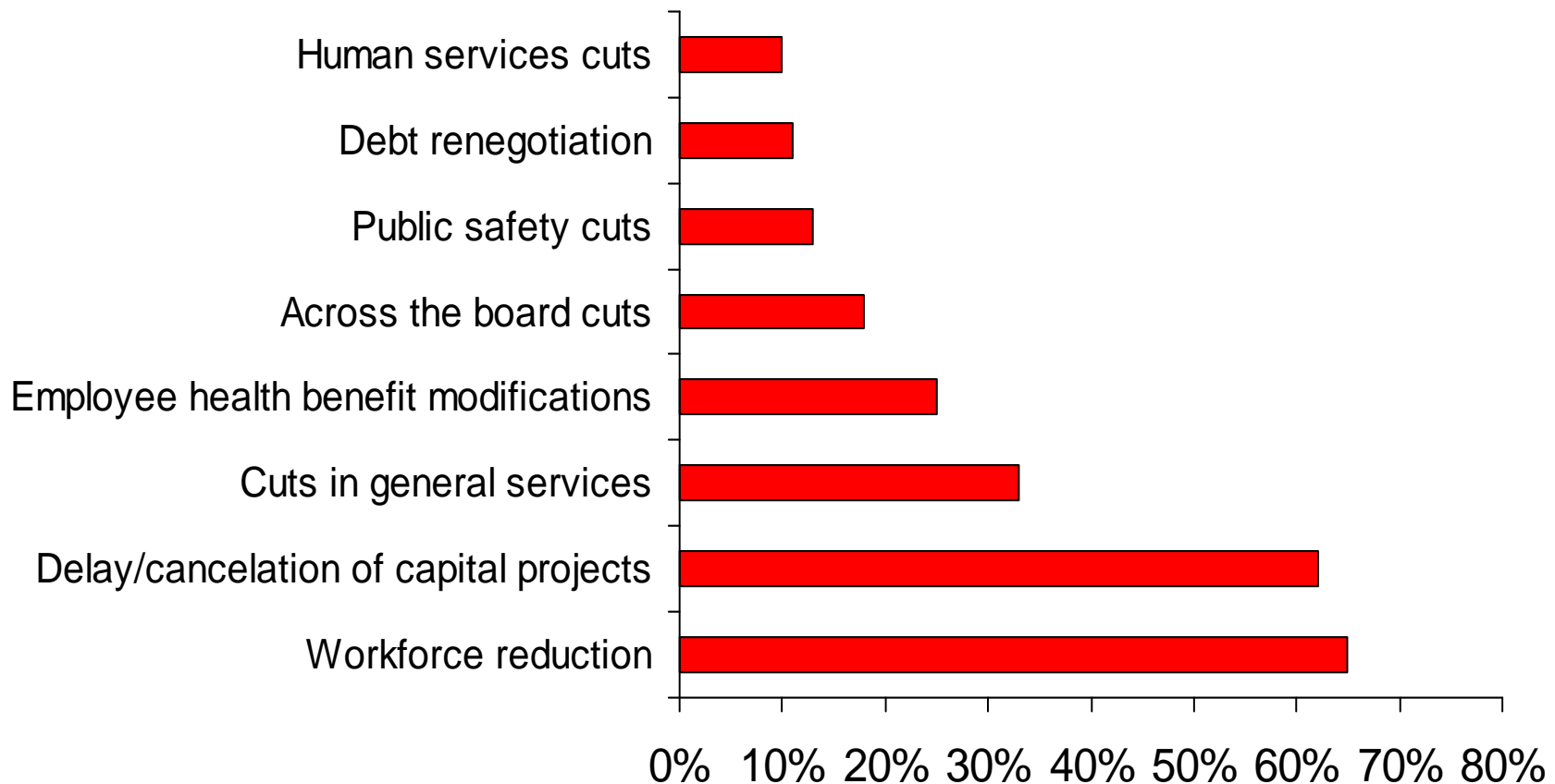


Source: Census, Haver Analytics, Treasury, DB Global Markets Research

State and local govt problems mainly dealt with via workforce reduction



Surveyed cities response to their fiscal crisis in various ways

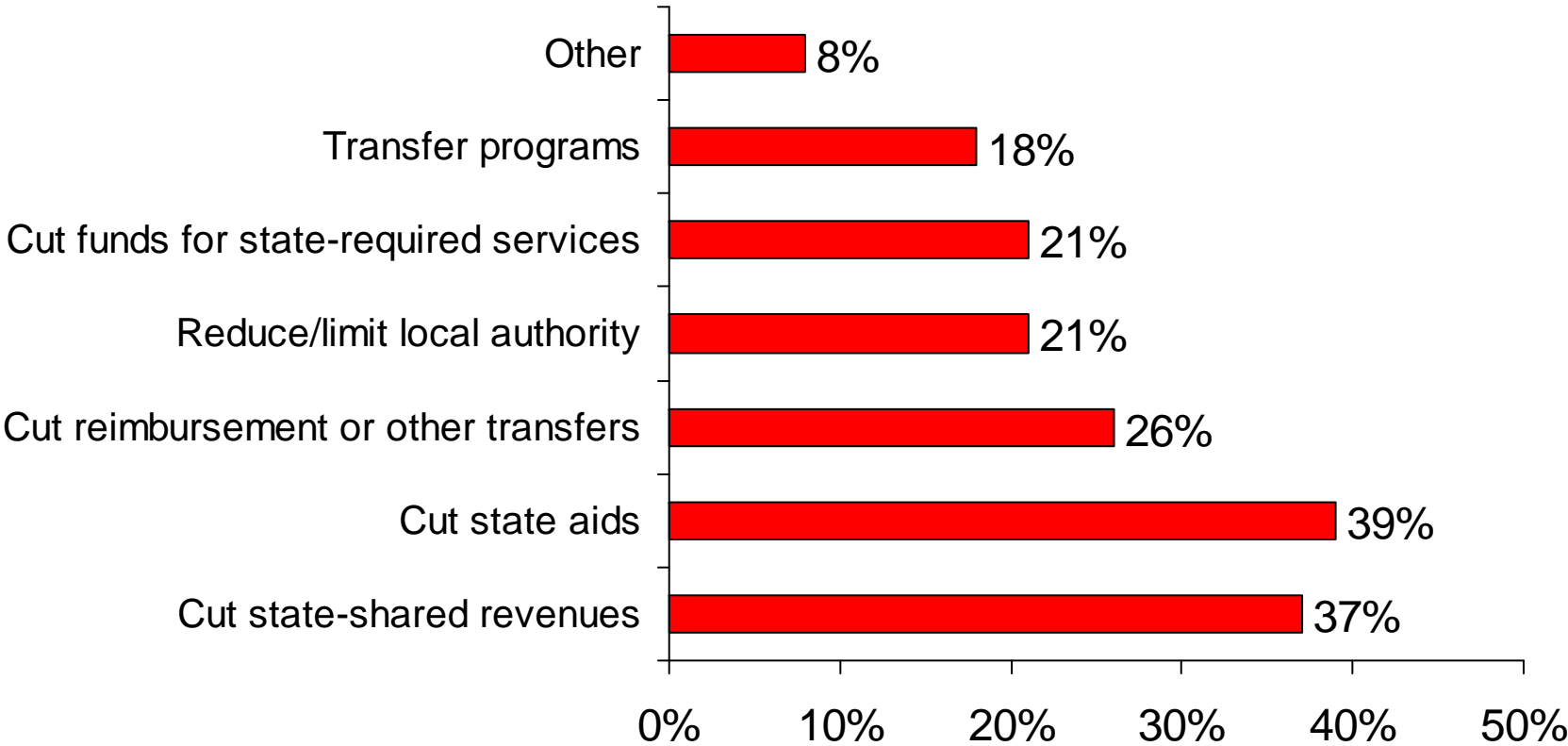


Source: NLC, DB Global Markets Research



State budget is mainly confronted with the problem of cuts in state-aid

State Actions Since FY 2010



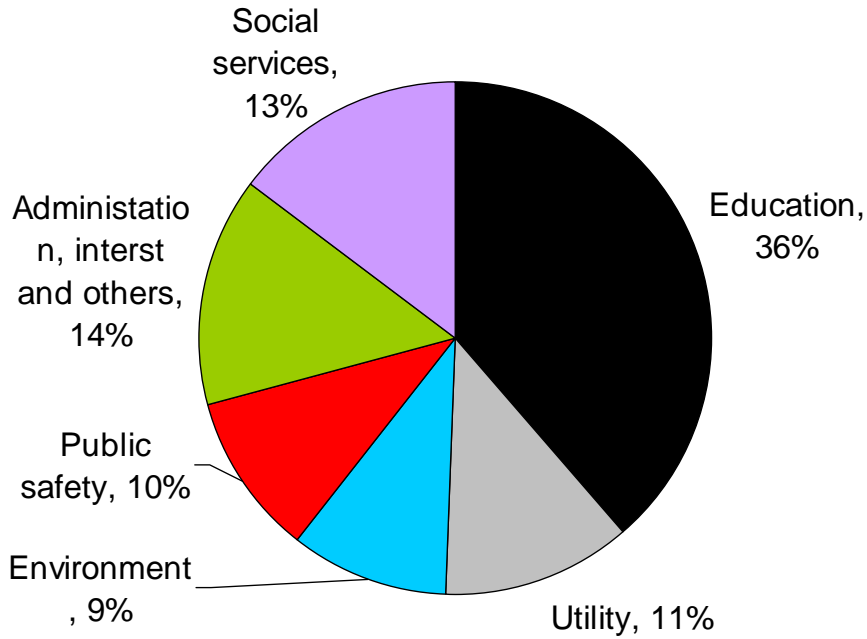
Source: NLC report "City Fiscal Conditions in 2013", DB Global Markets Research



Local government expenditures and revenues

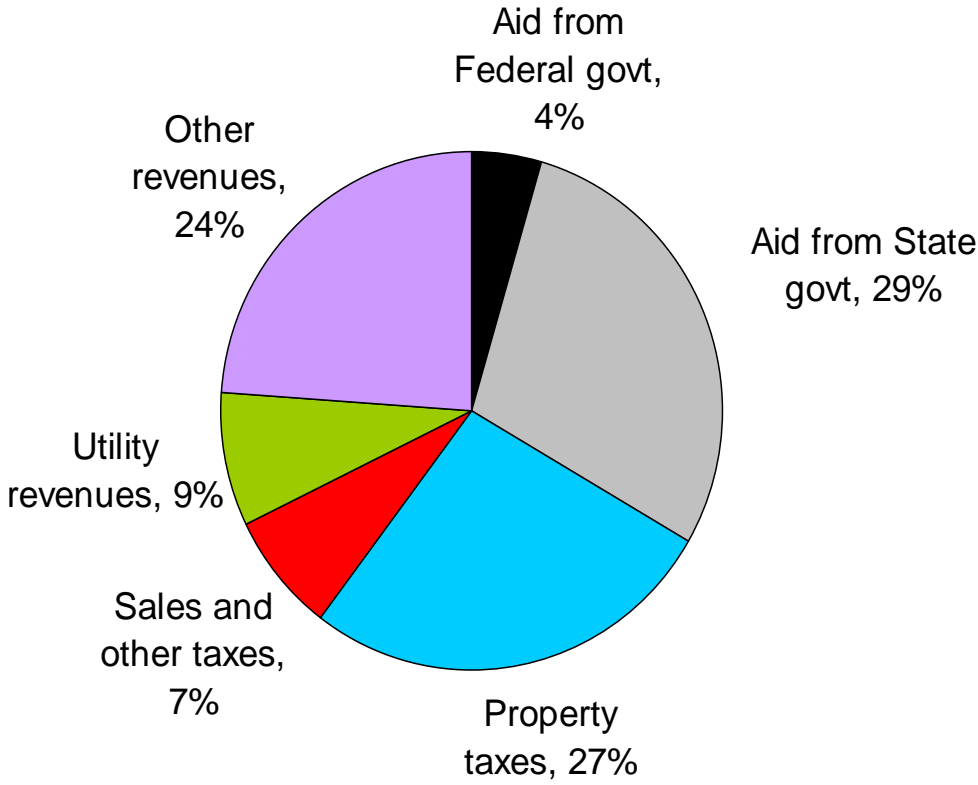
Expenditures

Types of spending by local governments, 2012



Revenues

Sources of revenues for local governments, 2012



Source: Census, Haver Analytics, DB Global Markets Research



In which states does Govt rely mostly on property taxes?

Fiscal Year 2010

State	Fraction of tax revenue coming from property taxes
New Hampshire	64.6%
N.J.	48.4%
Vermont	45.8%
Rhode Island	45.6%
Texas	45.2%
Illinois	43.6%
Florida	42.9%
Wyoming	42.5%
Connecticut	42.0%

Note: Includes residential and commercial real estate (mostly local revenue) as well as personal property taxes on cars, boats, etc. (mostly state revenue).

Source: Tax foundation calculations based on Census Bureau's data, DB Global Markets Research



State and Local Property Tax Collections Per Capita, Top 15 FY2010		
State	Collections Per Capita	Rank
New Jersey	\$2,819	1
Wyoming	\$2,633	2
Connecticut	\$2,522	3
New Hampshire	\$2,463	4
New Jersey	\$2,280	5
Vermont	\$2,166	6
Rhode Island	\$2,083	7
Massachusetts	\$1,986	8
Alaska	\$1,865	9
Illinois	\$1,827	10
Maine	\$1,786	11
Wisconsin	\$1,698	12
Colorado	\$1,601	13
Texas	\$1,562	14
Florida	\$1,507	15

Source: U.S. Census Bureau, Tax Foundation, DB Global Markets Research

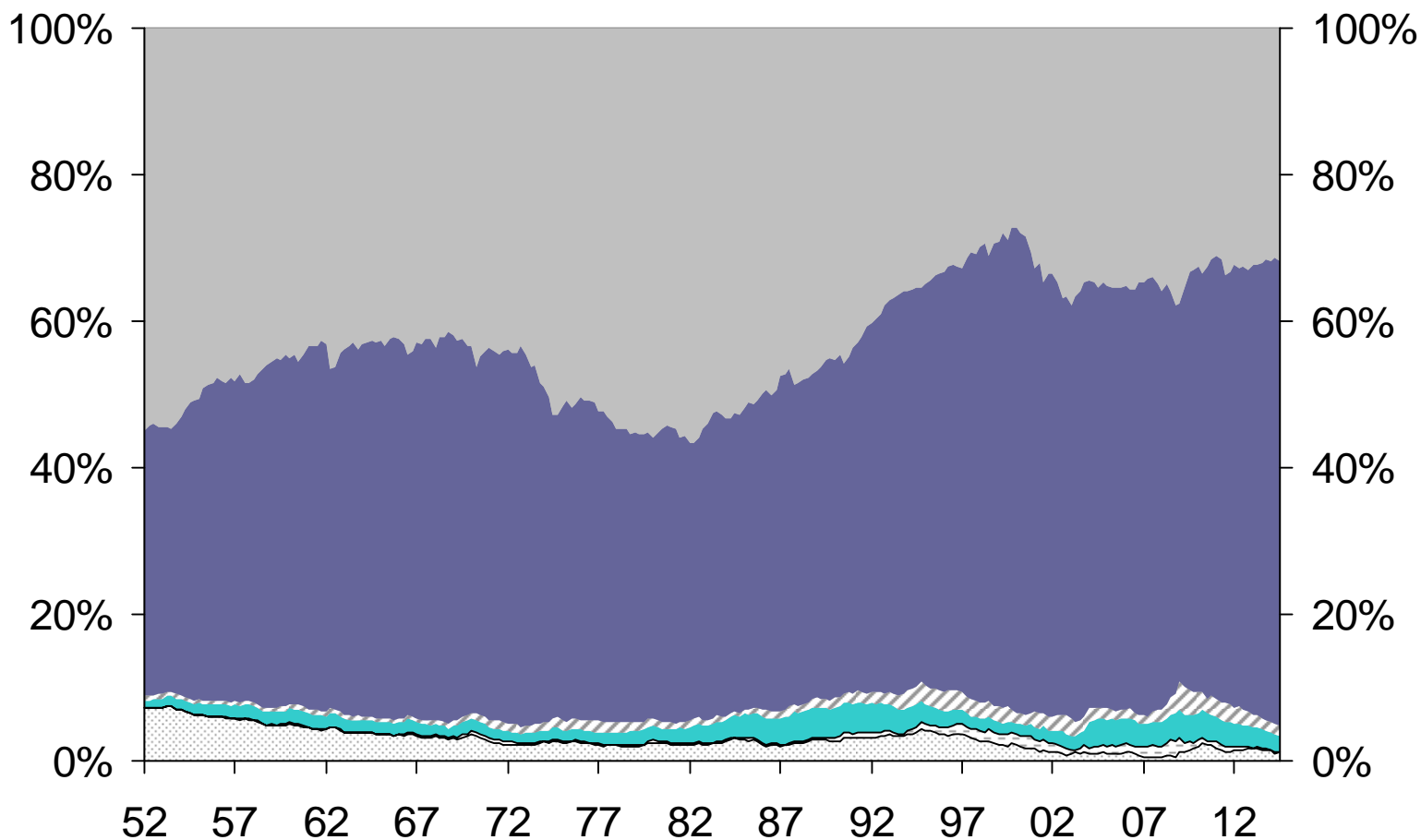


Asset allocation for Households/Hedge funds, Institutional Investors, and Foreigners

Households'/hedge funds' asset allocation



Treasury
 Agency & GSEs
 Munis
 Credit*
 Equity**
 Other



*Credit includes corporate & foreign bonds

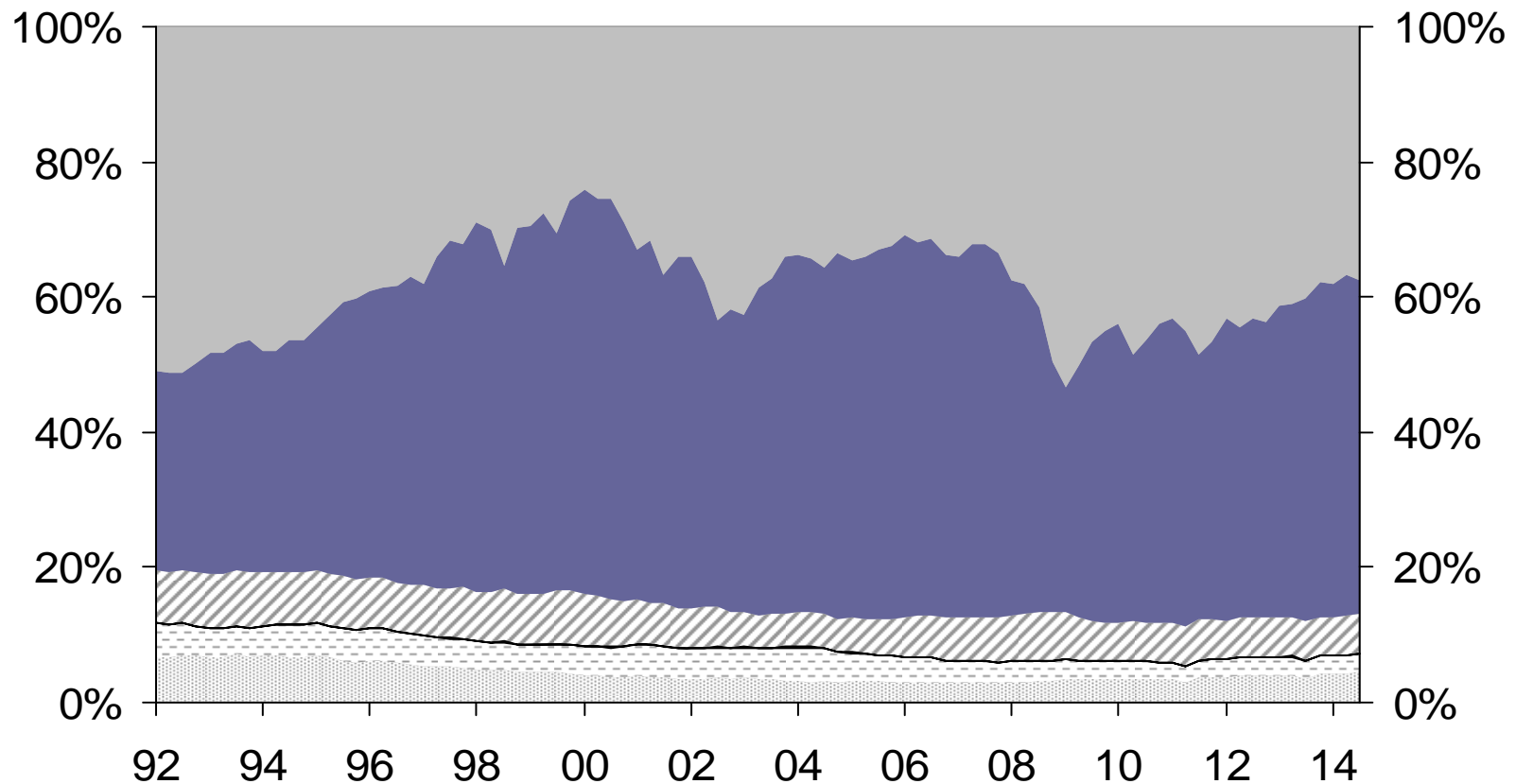
**Equities includes corporate equities, mutual fund shares, life insurance reserves and pension funds reserves

Source: FRB, Haver Analytics, DB Global Markets Research

Pension funds' asset allocation



Treasury
 Agency & GSEs
 Munis
 Credit*
 Equity**
 Other



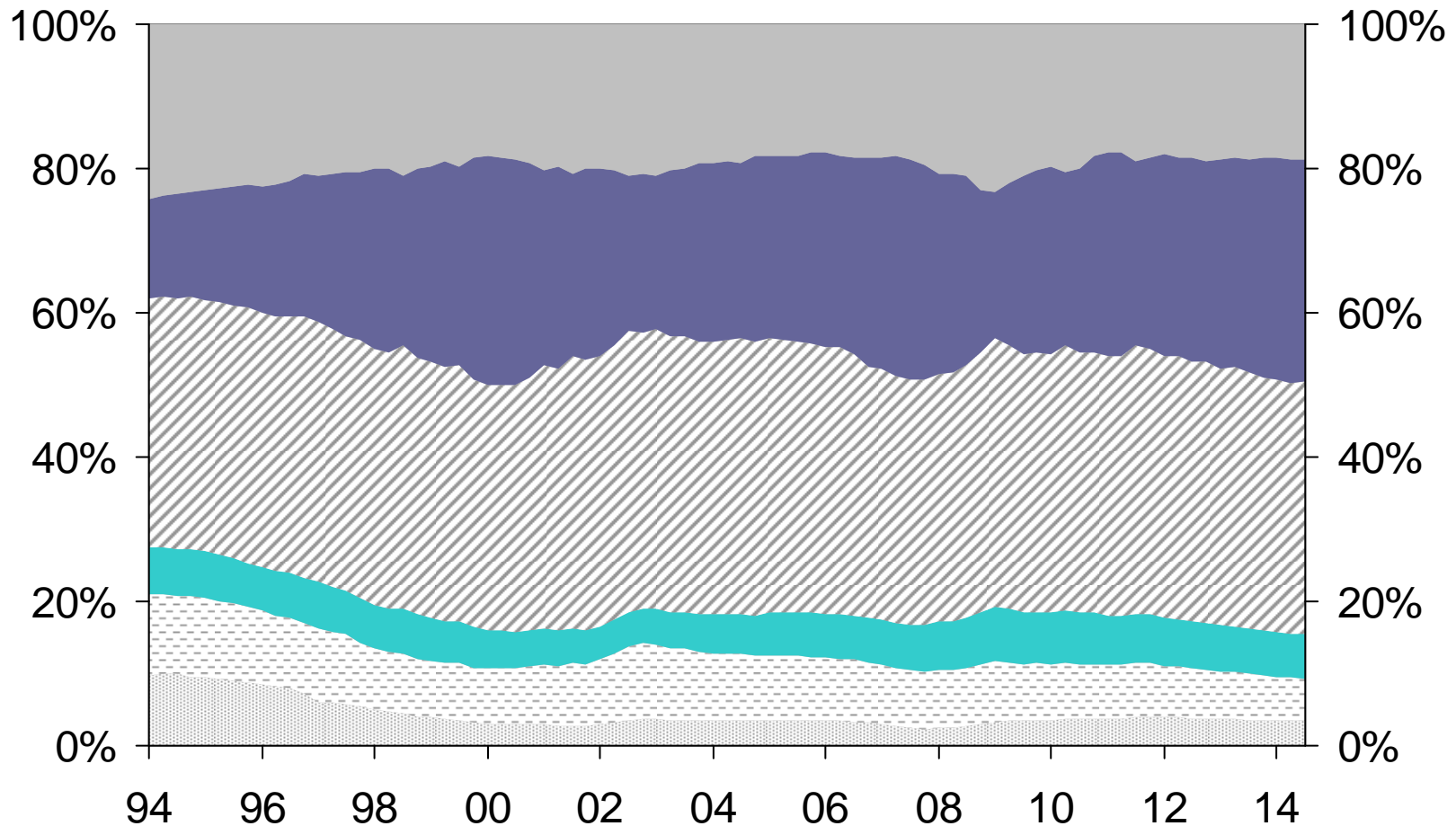
Pension funds incl. Private, State & local gov't. retirement and Federal gov't. retirement funds
 Credit includes corporate and foreign bonds
 Equities includes corporate equities and mutual fund shares

Source: FRB, Haver Analytics, DB Global Markets Research

Insurance companies' asset allocation



Treasury
 Agency and GSEs
 Munis
 Credit*
 Equity**
 Other

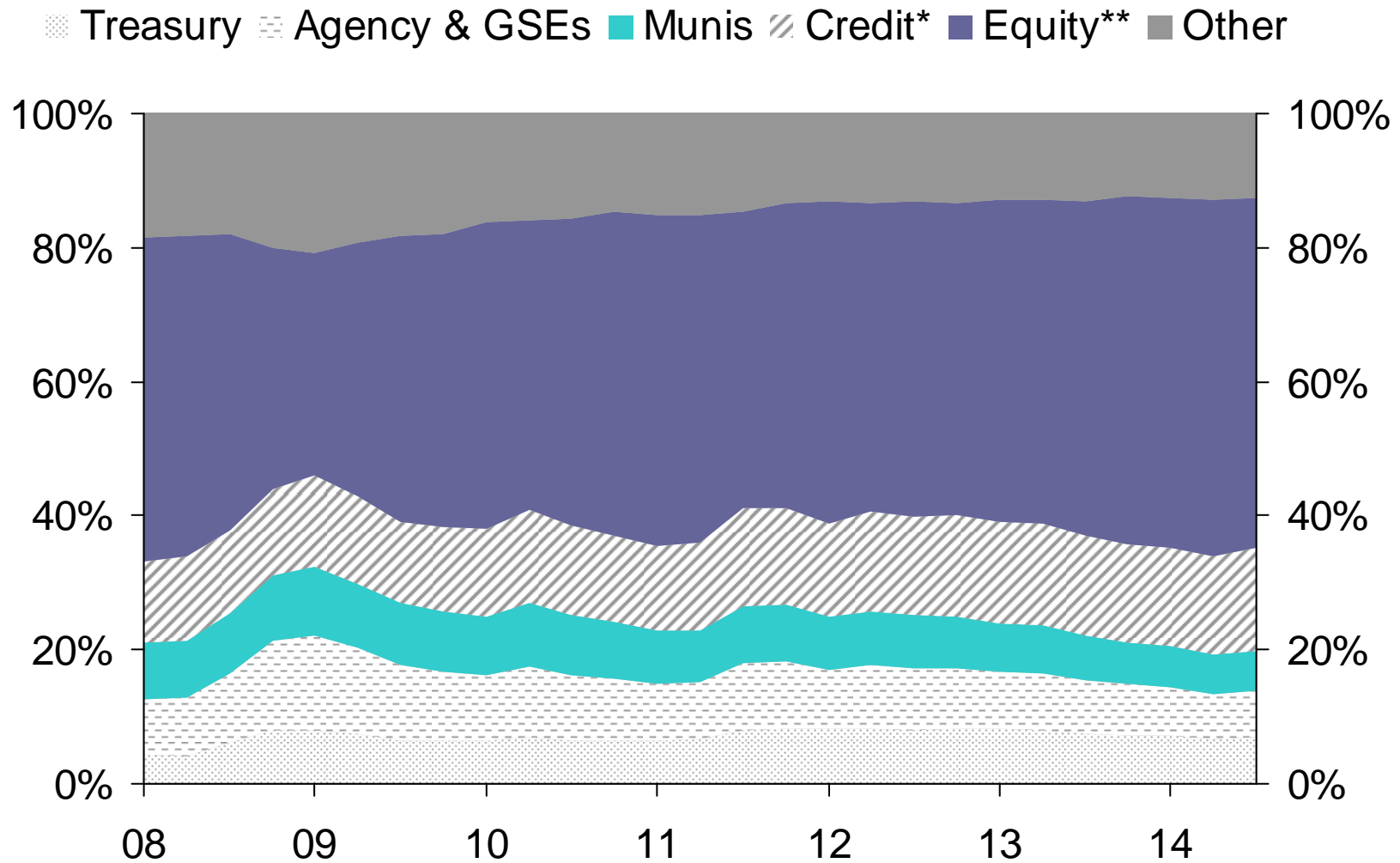


Insurance sector includes both life and non-life insurance

*Credit includes foreign and corporate bonds; **Equities include mutual fund shares and corporate equities

Source: FRB, Haver Analytics, DB Global Markets Research

Mutual funds' asset allocation



Mutual funds incl. traditional mutual funds, money mkt. MFs, exchange traded MFs & open ended MFs

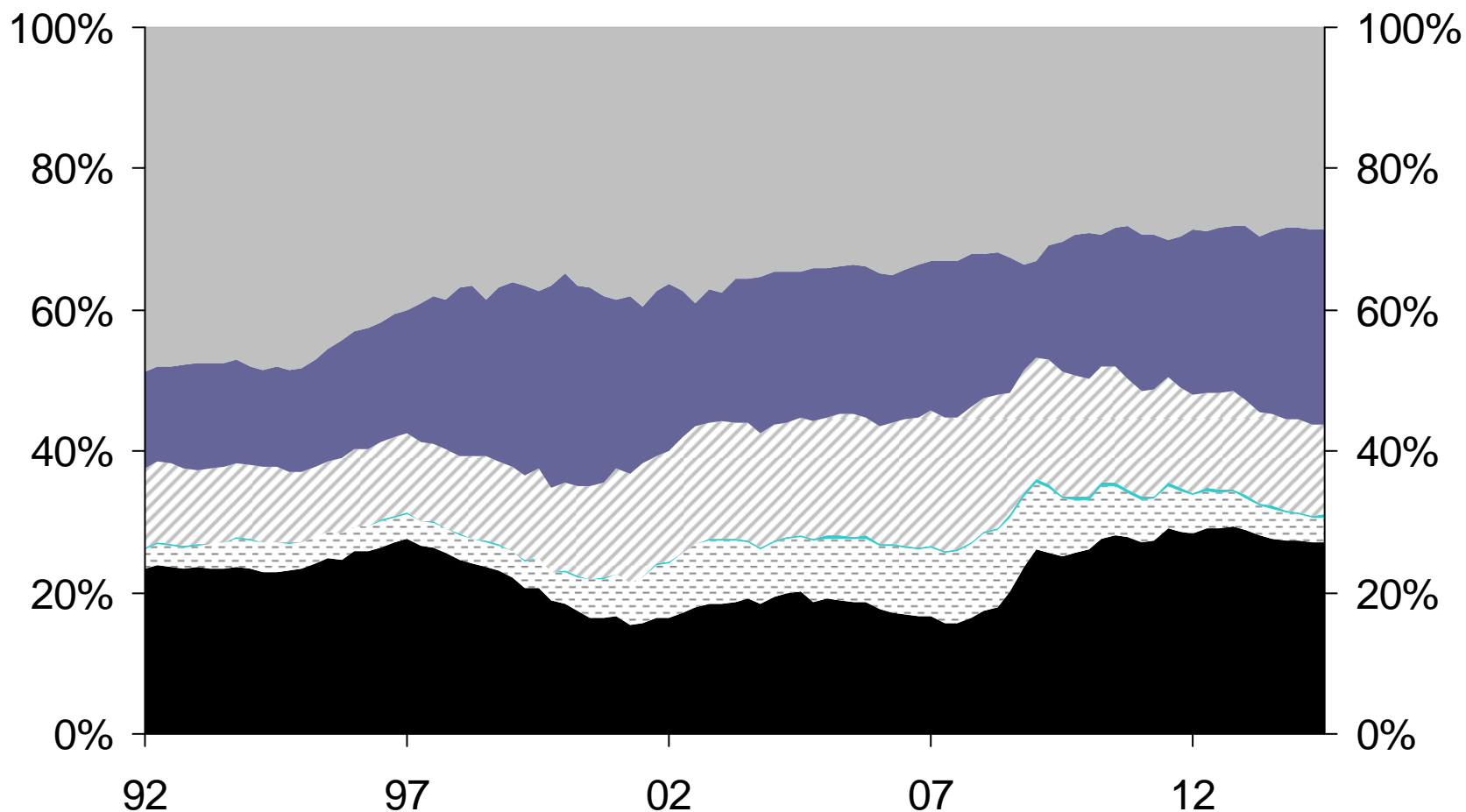
*Credit includes corporate and foreign bonds; **Equity includes corporate equities and mutual fund shares

Source: FRB, Haver Analytics, DB Global Markets Research

Asset allocation of foreigners in US assets



Treasury
 Agency & GSEs
 Munis
 Credit*
 Equities**
 Other



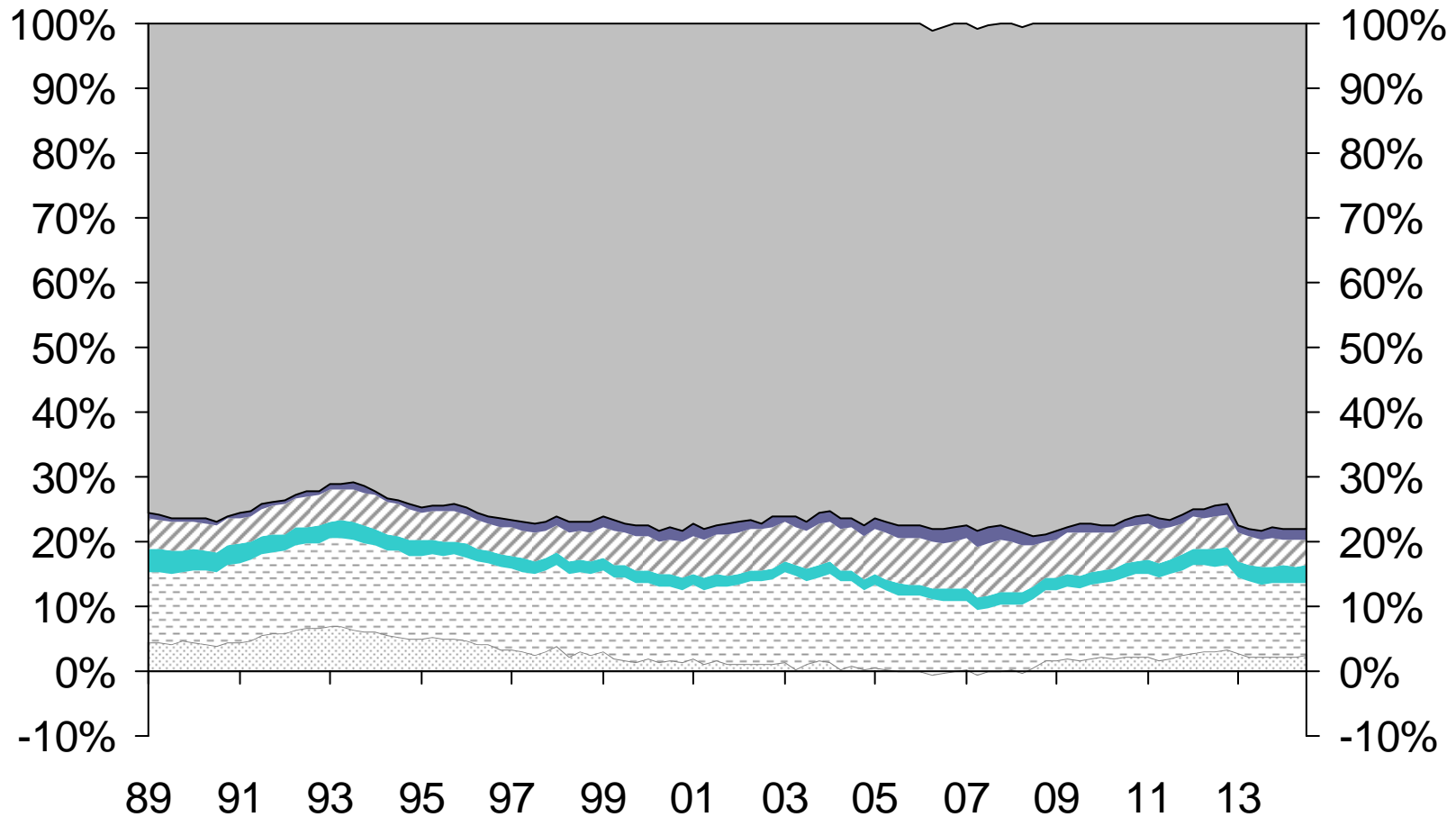
*Credit is Corporate bonds held by Foreign sector; **Equities is calculated as sum of corporate equities and mutual fund shares

Source: FRB, Haver Analytics, DB Global Markets Research

Banks' asset allocation



Treasury
 Agency & GSEs
 Munis
 Credit*
 Equity**
 Other



Banks incl. all US chartered depository institutions and brokers and dealers

*Credit includes corporate and foreign bonds; **Equities includes corporate equities and mutual fund shares

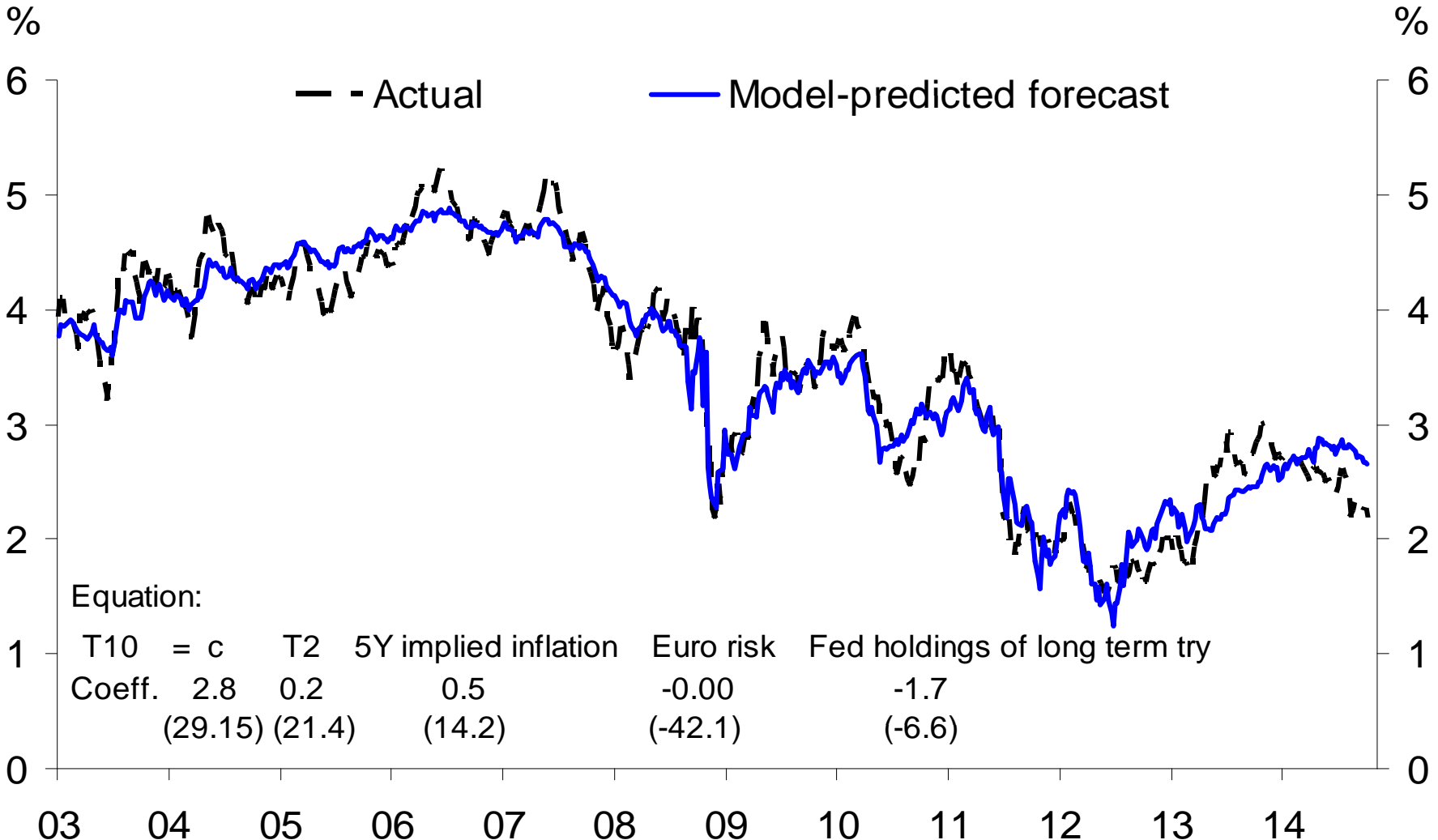
Source: FRB, Haver Analytics, DB Global Markets Research



Outlook

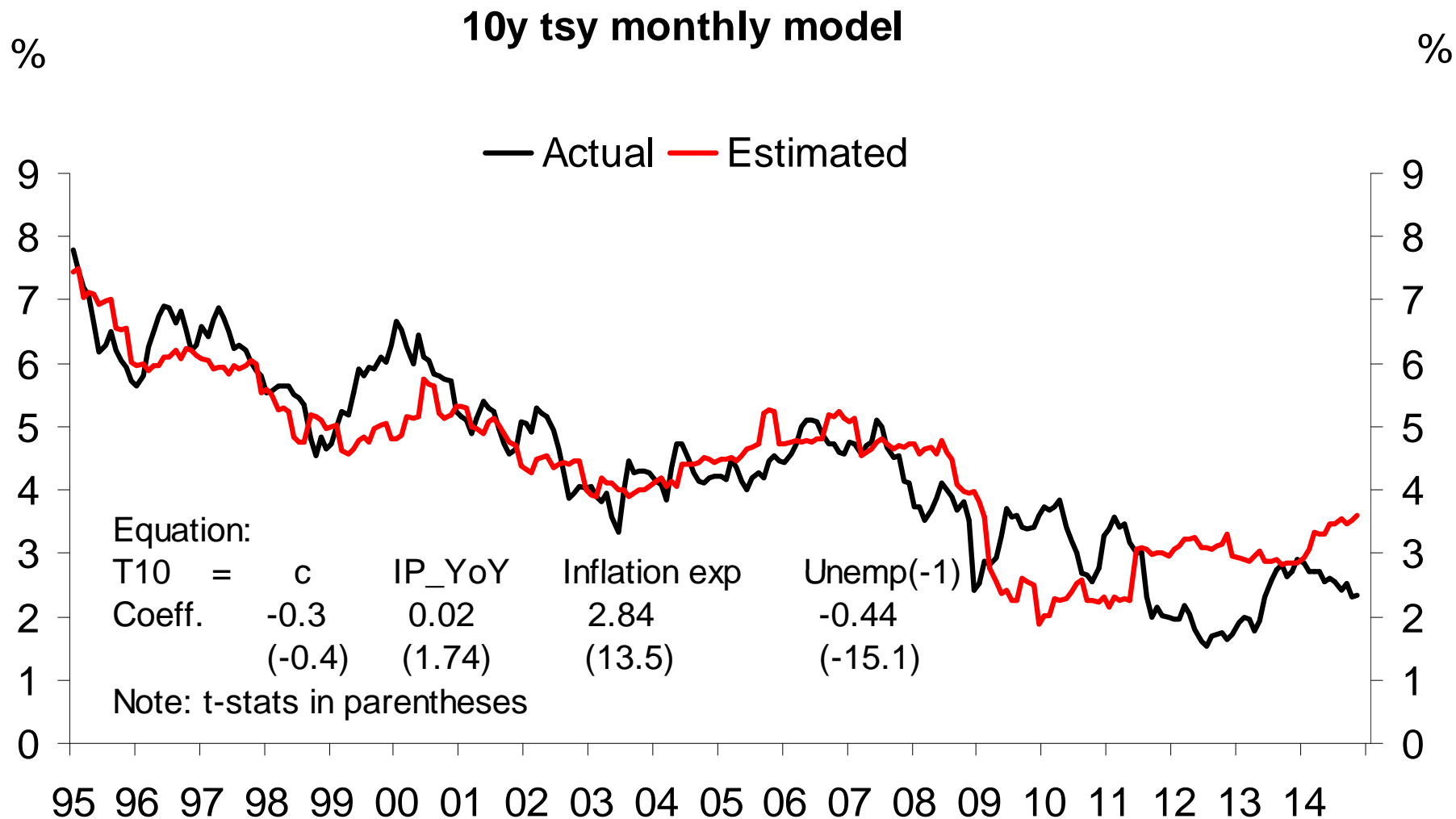


US 10y fair value is currently 2.7% in the weekly model



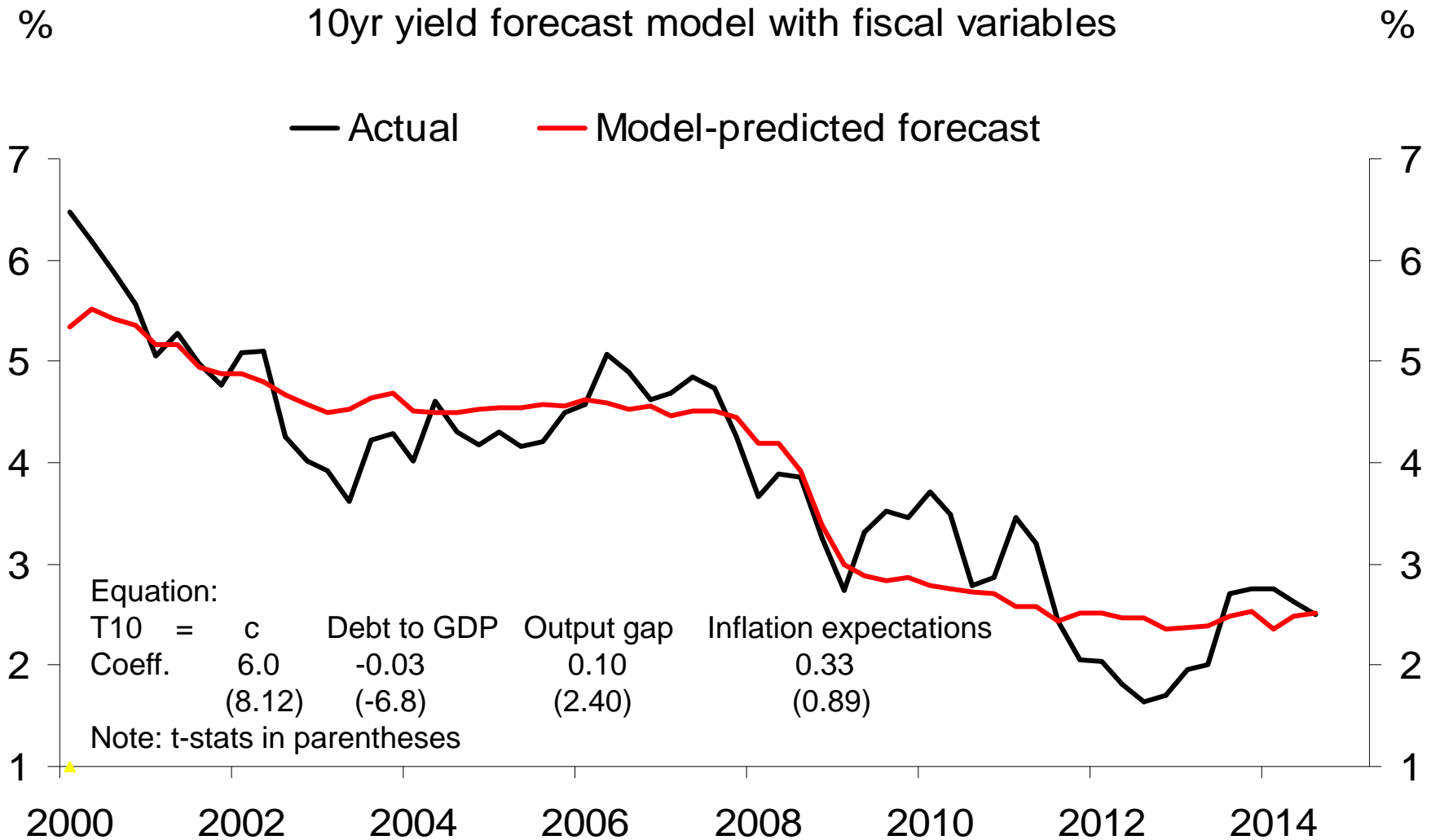
Source: FRB, BDI, BDE, Bbk, Haver Analytics, DB Global Markets Research

Monthly model suggests 10y rates should be 3.6%



Source: FRB, BLS, Haver Analytics, DB Global Markets Research

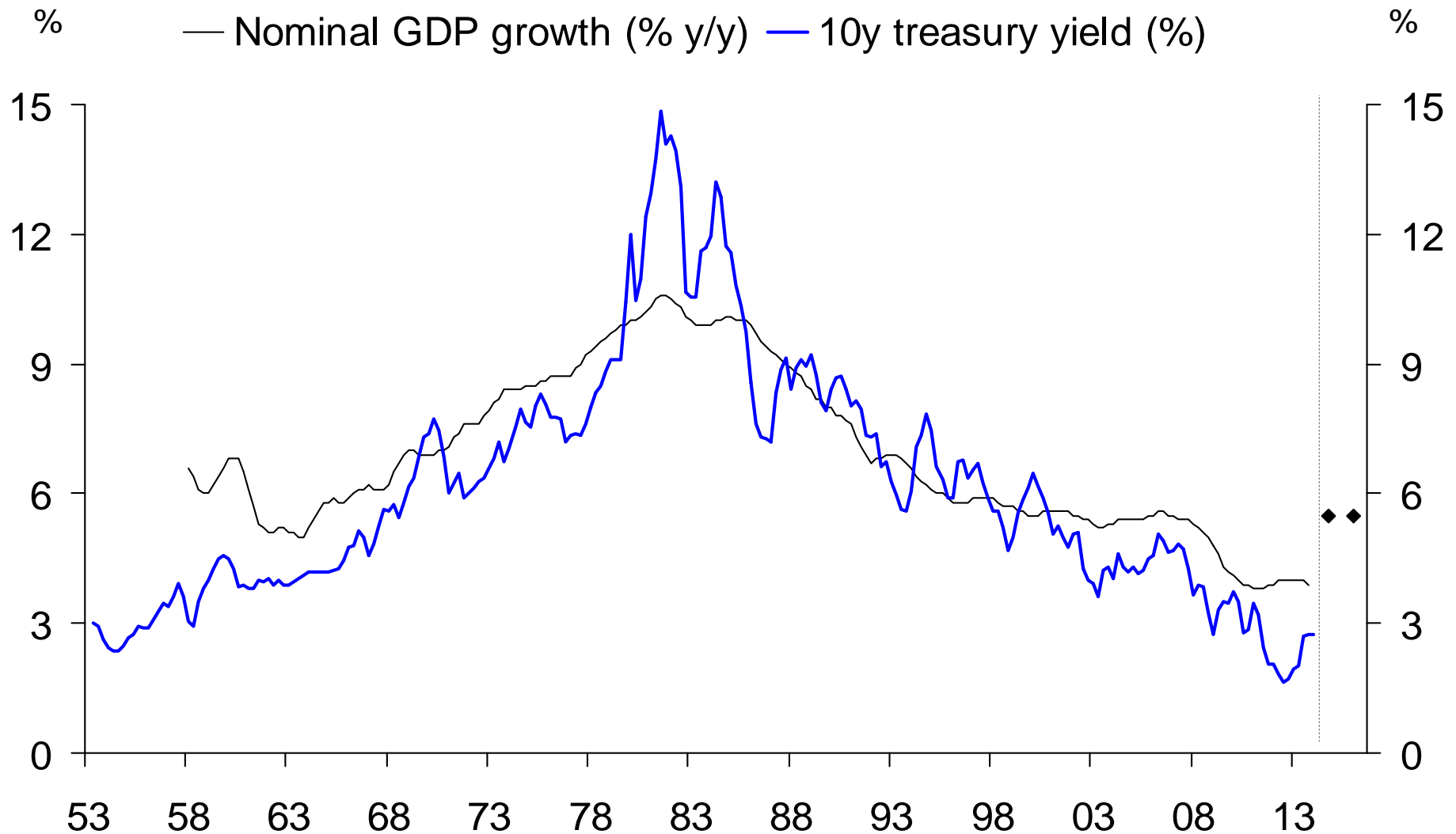
The quarterly model suggests 10y fair value is 2.4%



Source: FRB, BEA, Haver Analytics, DB Global Markets Research



GDP forecast suggests 10y rates in the US are too low

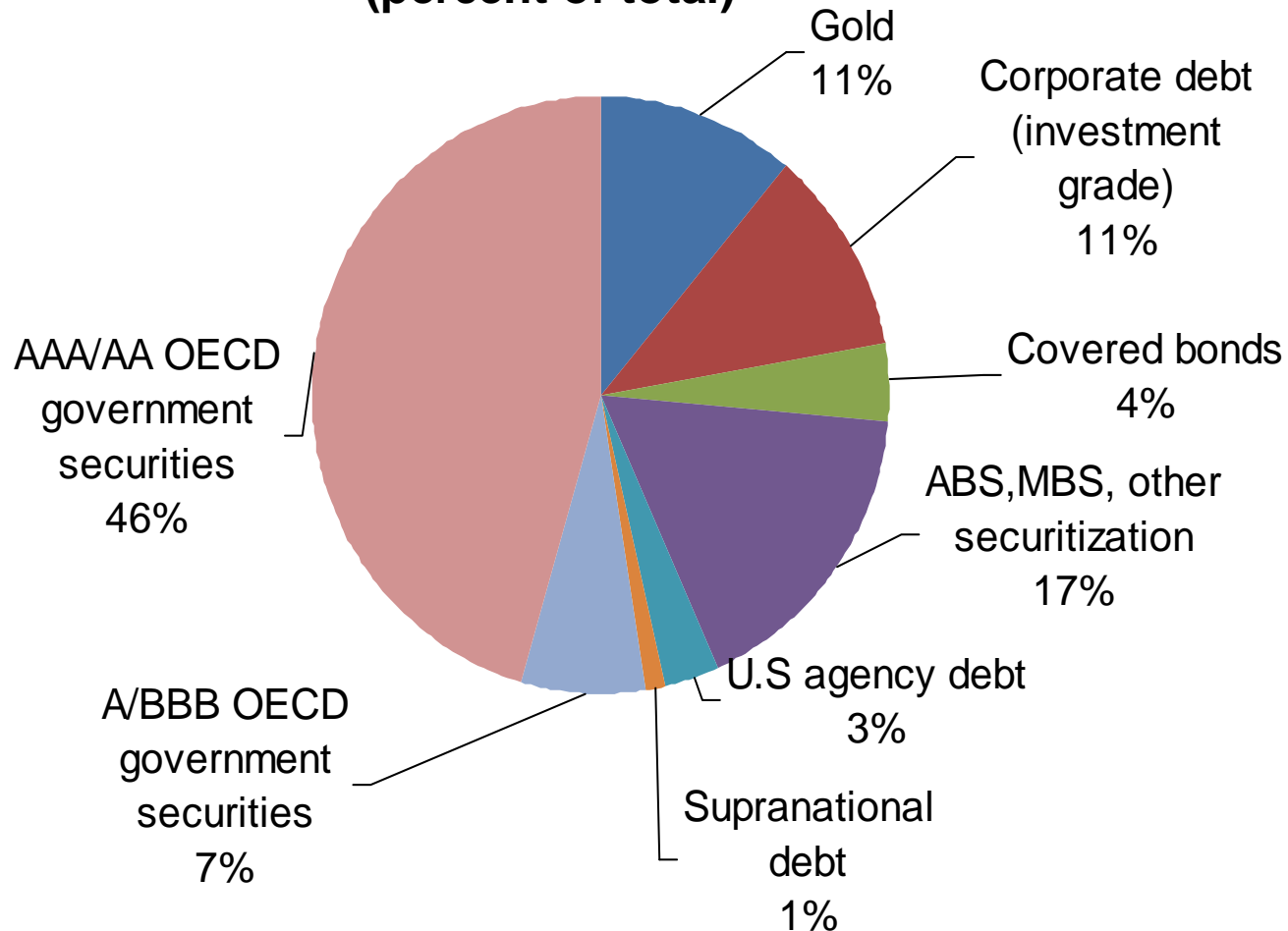


Source: BEA, FRB , DB Global Markets Research

Outstanding amount of risk-free assets globally



Outstanding amounts of marketable potentially safe assets (percent of total)



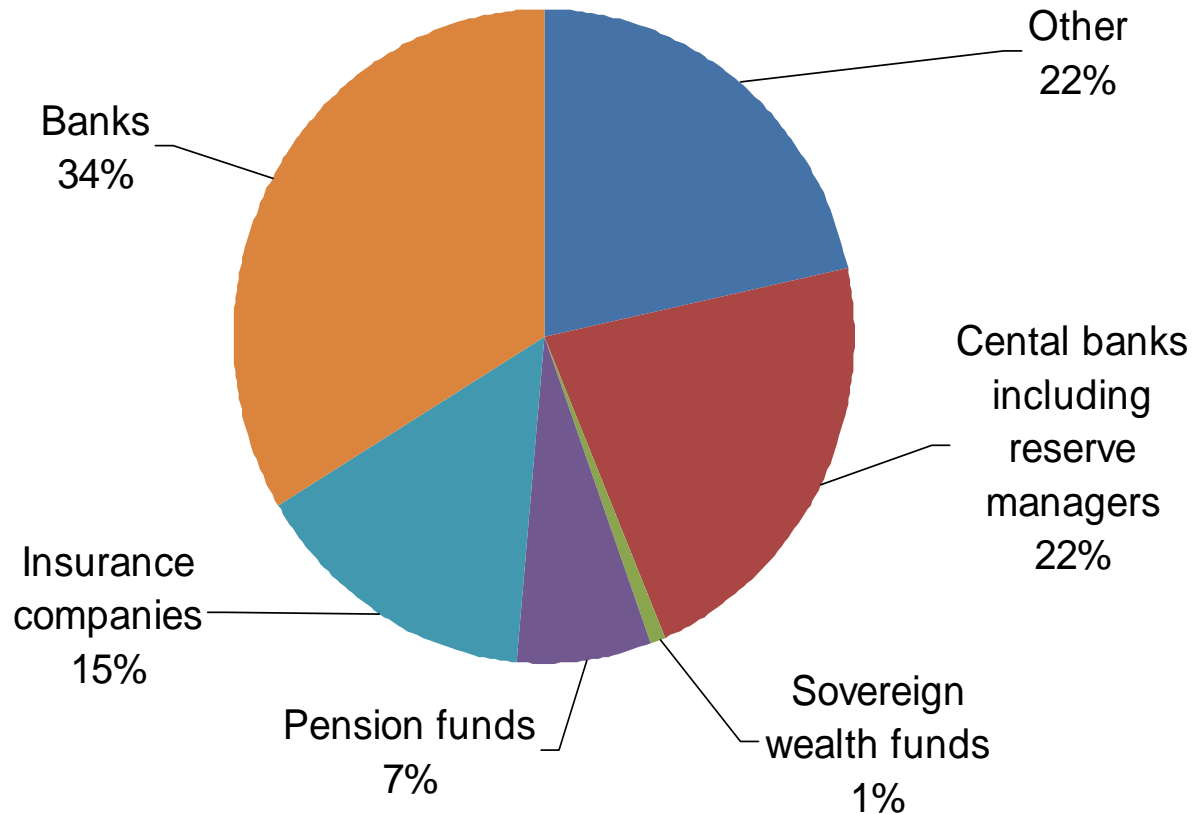
Data for government and corporate debt are as of 2011:Q2; supranational debt, covered bonds, and gold, as of end-2010; and U.S. agency debt and securitization, as of 2011:Q3. ABS = asset-backed securities; MBS = mortgage-backed securities; OECD = Organization for Economic Cooperation and Development.

Source: IMF, DB Global Markets Research

Holders of risk-free assets globally



Holdings of government securities worldwide, by investor type, end 2010



Note: Banks include commercial, investment, and development banks; data for pension funds include only direct holdings; SWF holdings are an IMF staff estimate; reserve manager holdings are an IMF staff estimate based on a representative allocation of total official reserves to government securities and own government bond holdings by the Federal Reserve, Bank of England, and Bank of Japan. "Other" is estimated as a remainder based on BIS data on total outstanding government securities worldwide.

Source: IMF, DB Global Markets Research

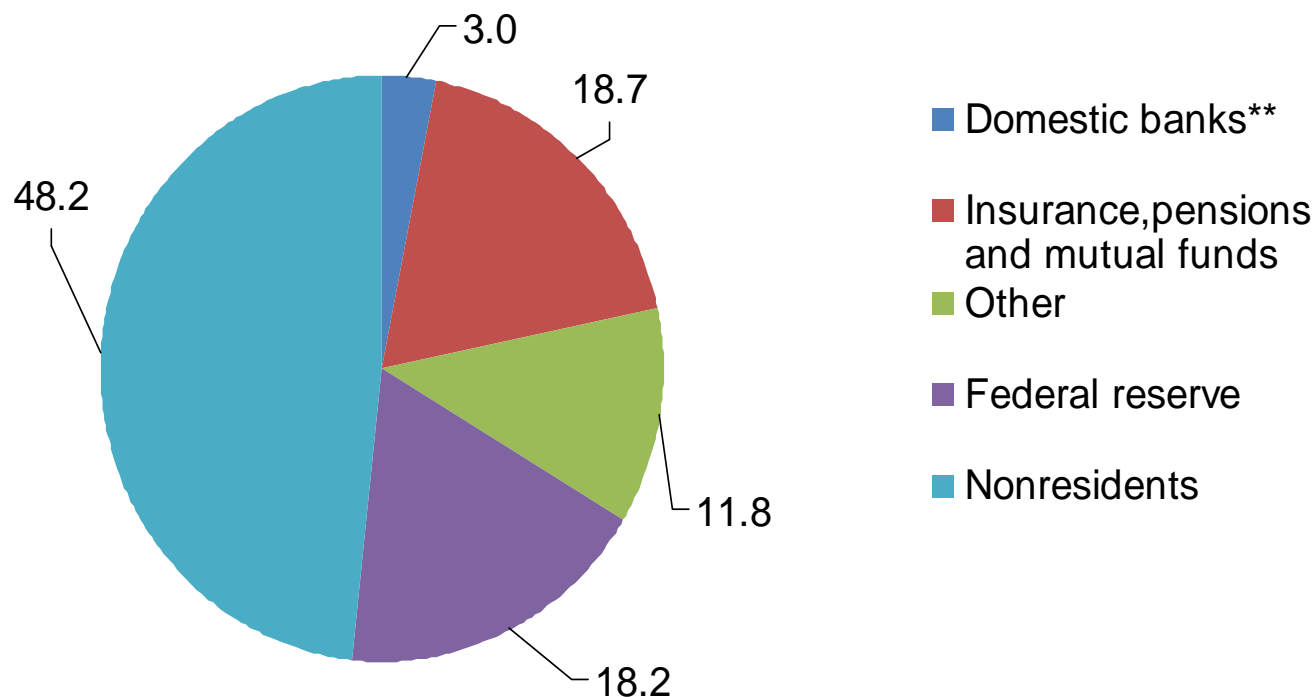
US government debt mainly held by foreigners



**Sovereign debt holdings, by type and location of investor
(In percent of total, June 2011)**

United States

Total outstanding marketable debt *= \$ 9.3 trillion



*Excludes \$5 trillion of nonmarketable public debt securities held mostly in intragovernmental accounts.

**Domestic depository institutions.

Source: IMF, DB Global Markets Research

Fewer sovereign risk-free assets outstanding...



Historical Overview of S&P Sovereign Debt ratings of Selected OECD Countries, 1970-January 2012

Country	Year of First Rating	1970	1975	1980	1985	1990	1995	2000	2005	2010	2011	2012
Austria	1975	NR	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+
Belgium	1988	NR	NR	NR	NR	AA+	AA+	AA+	AA+	AA+	AA	AA
Canada	1949	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AAA	AAA	AAA	AAA
Denmark	1981	NR	NR	NR	AA+	AA	AA+	AA+	AAA	AAA	AAA	AAA
Finland	1972	NR	AAA	AAA	AAA	AAA	AA-	AA+	AAA	AAA	AAA	AAA
France	1975	NR	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+
Germany	1983	NR	NR	NR	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
Greece	1988	NR	NR	NR	NR	BBB-	BBB-	A-	A	BB+	CC	CC
Iceland	1989	NR	NR	NR	NR	A	A	A+	AA-	BBB-	BBB-	BBB-
Ireland	1988	NR	NR	NR	NR	AA-	AA	AA+	AAA	A	BBB+	BBB+
Italy	1988	NR	NR	NR	NR	AA+	AA	AA	AA-	A+	A	BBB+
Japan	1959	NR ¹	AAA	AAA	AAA	AAA	AAA	AAA	AA-	AA	AA-	AA-
Luxembourg	1994	NR	NR	NR	NR	NR	AAA	AAA	AAA	AAA	AAA	AAA
Netherlands	1988	NR	NR	NR	NR	AAA	AAA	AAA	AAA	AAA	AAA	AAA
Norway	1958	NR ¹	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
Portugal	1988	NR	NR	NR	NR	A	AA-	AA	AA-	A-	BBB-	BB
Spain	1988	NR	NR	NR	NR	AA	AA	AA+	AAA	AA	AA-	A
Sweden	1977	NR	NR	AAA	AAA	AAA	AA+	AA+	AAA	AAA	AAA	AAA
Switzerland	1988	NR	NR	NR	NR	AAA	AAA	AAA	AAA	AAA	AAA	AAA
Turkey	1992	NR	NR	NR	NR	NR	B+	B+	BB-	BB	BB	BB
United Kingdom	1978	NR	NR	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
United States	1941	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+

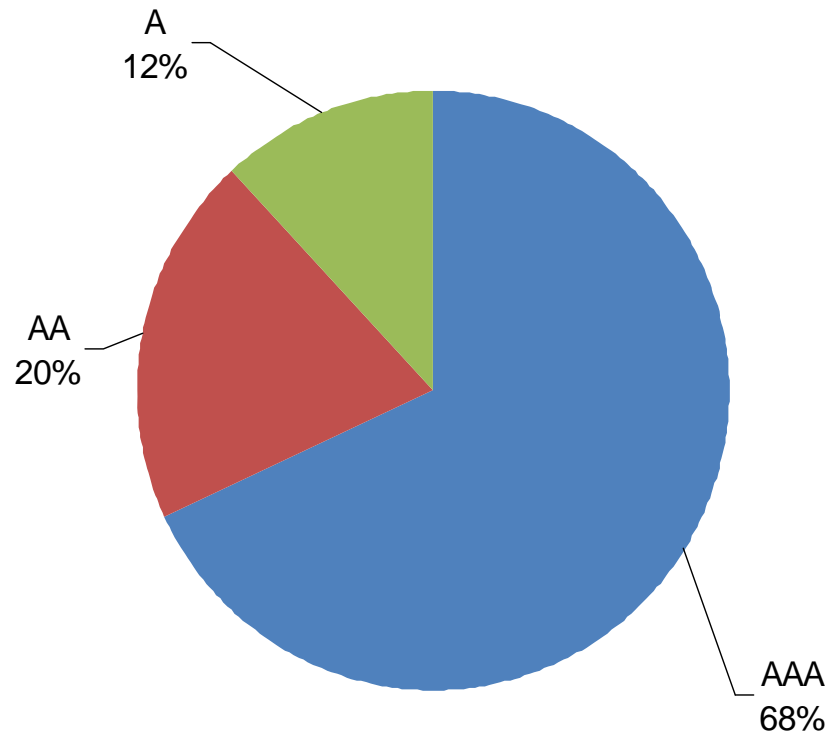
AAA
 AA
 A
 BBB
 Noninvestment grade

Source: S&P , IMF, DB Global Markets Research

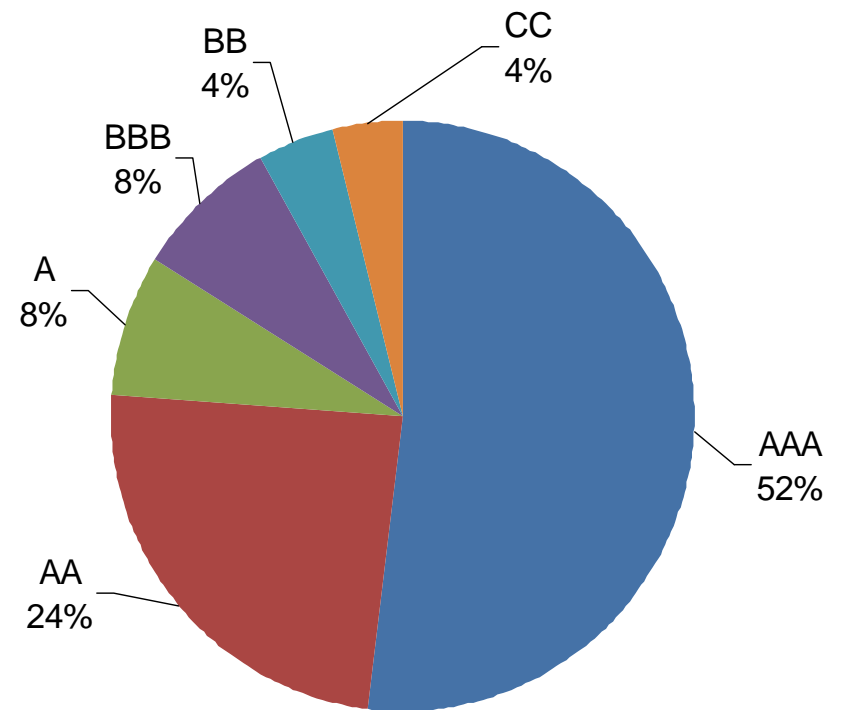


...and fewer risk-free assets outstanding more generally

Distribution of Sovereign Debt Ratings for OECD countries, Before crisis

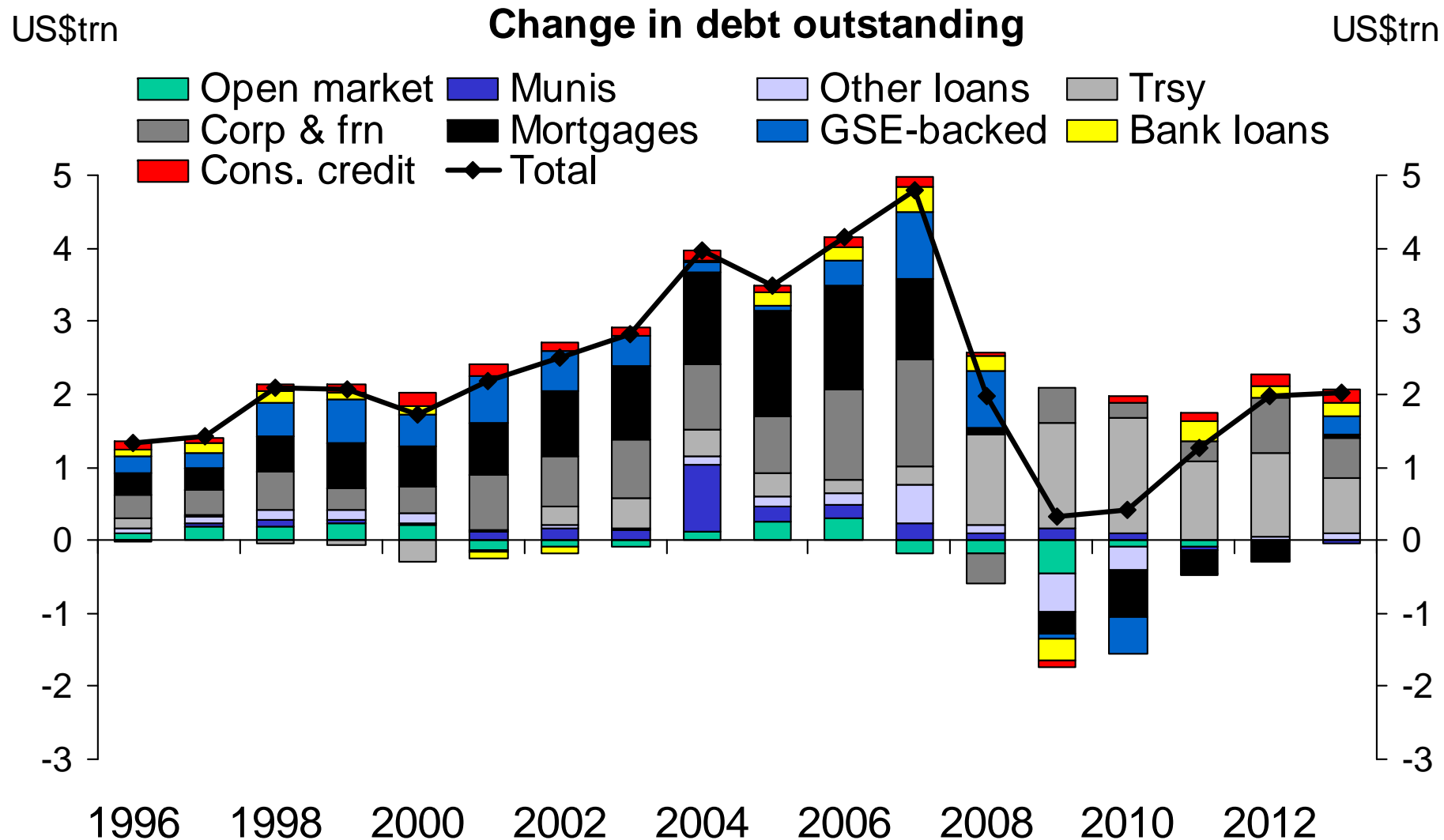


Distribution of Sovereign Debt Ratings for OECD countries, Today



Source: IMF, DB Global Markets Research

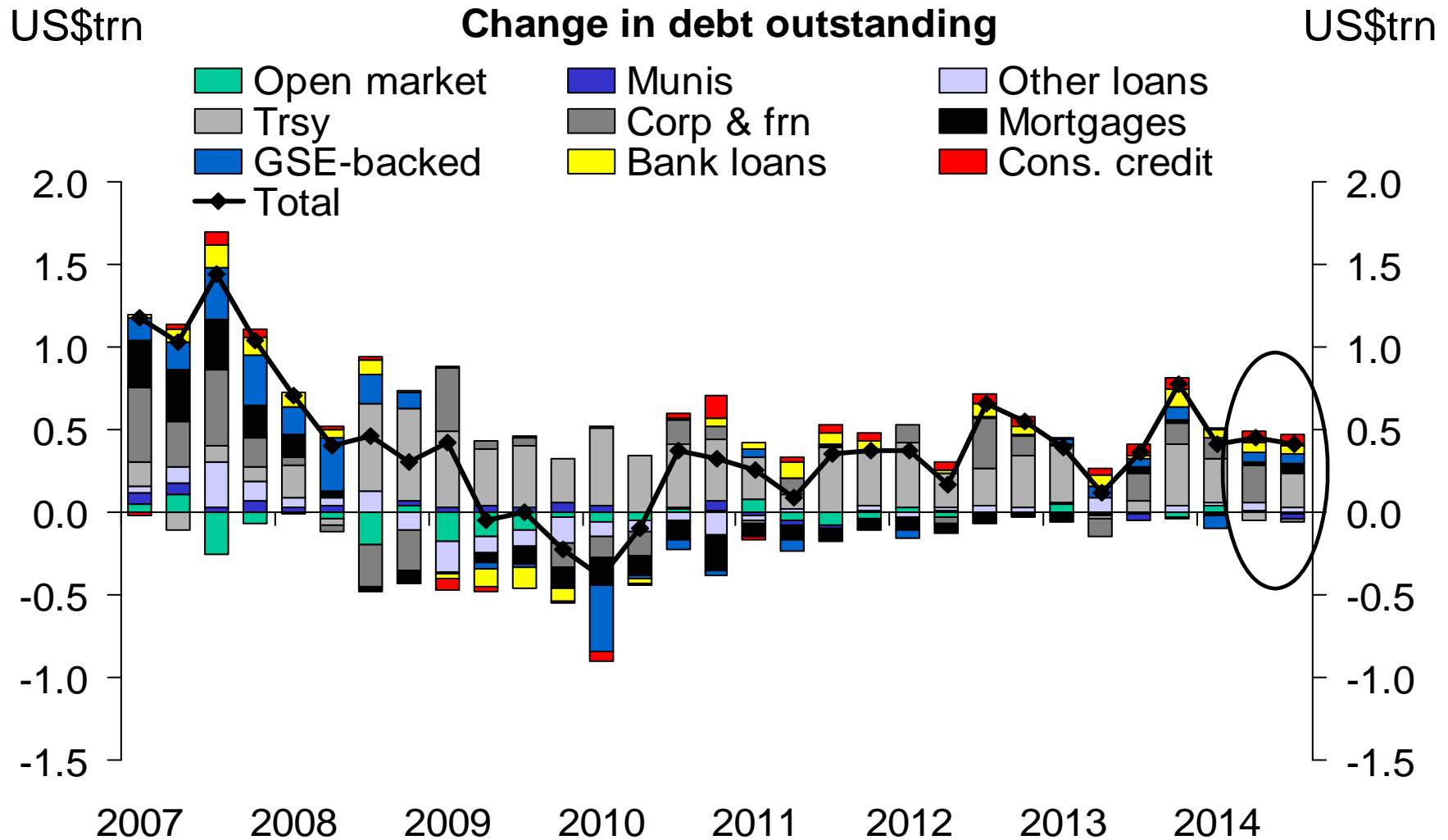
Treasury issuance down as a share of total fixed income issuance



Source: FRB, Haver Analytics, DB Global Markets Research



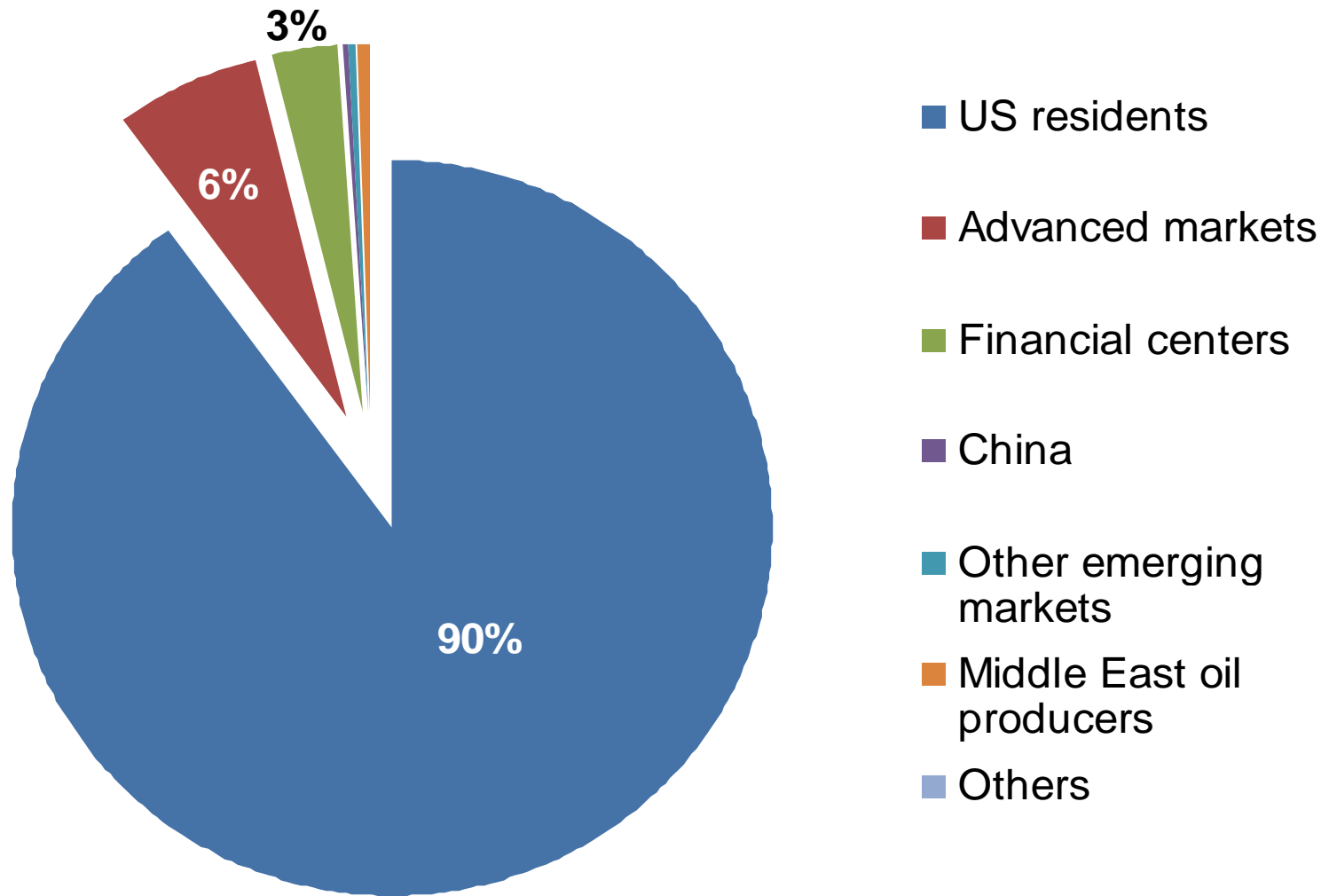
The composition of fixed income issuance has changed recently: More spread product, fewer treasuries



Source: FRB, Haver Analytics, DB Global Markets Research



Holders of U.S. equities

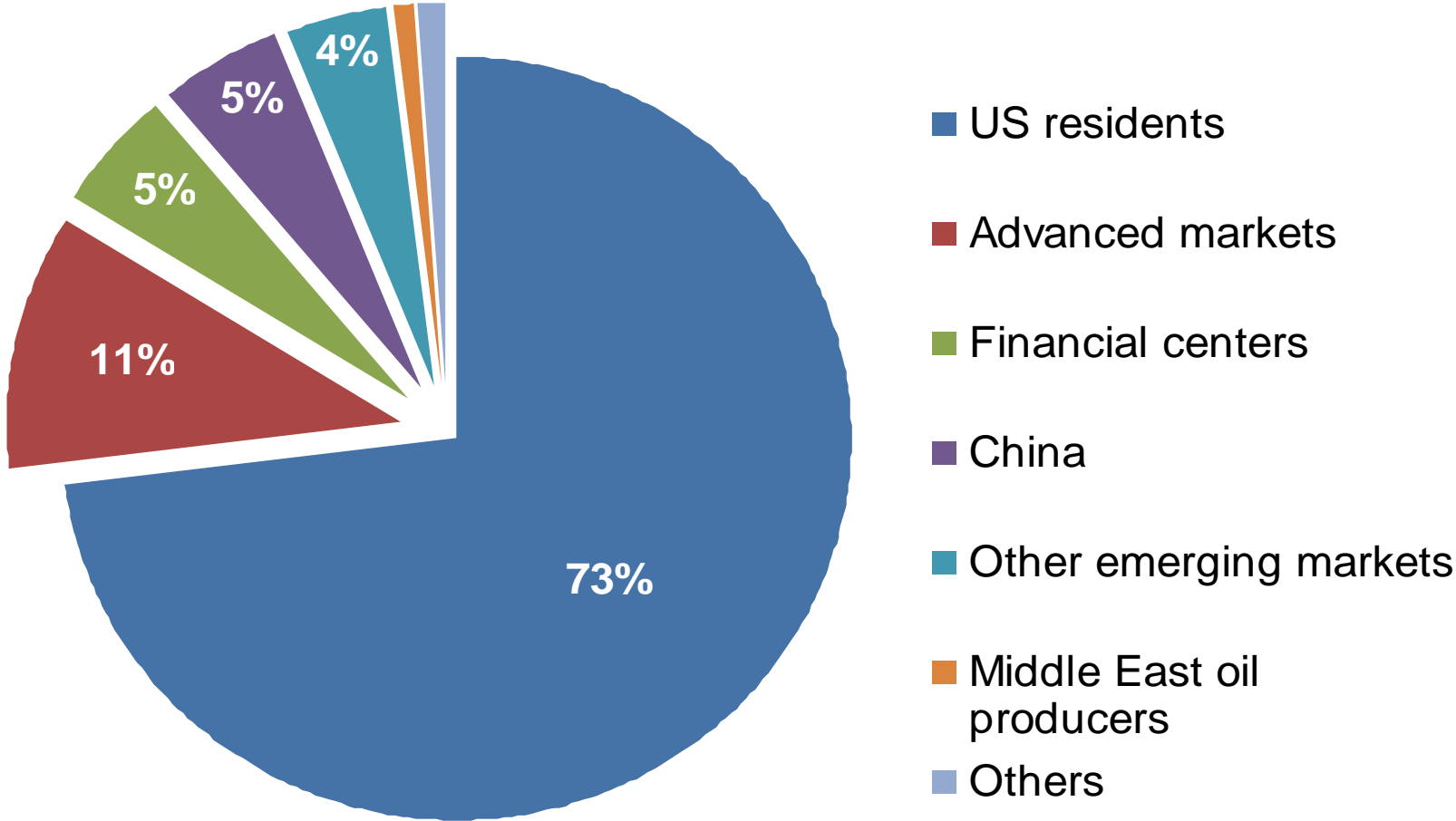


Note: Data for 2009.

Source: TIC and IMF, DB Global Markets Research

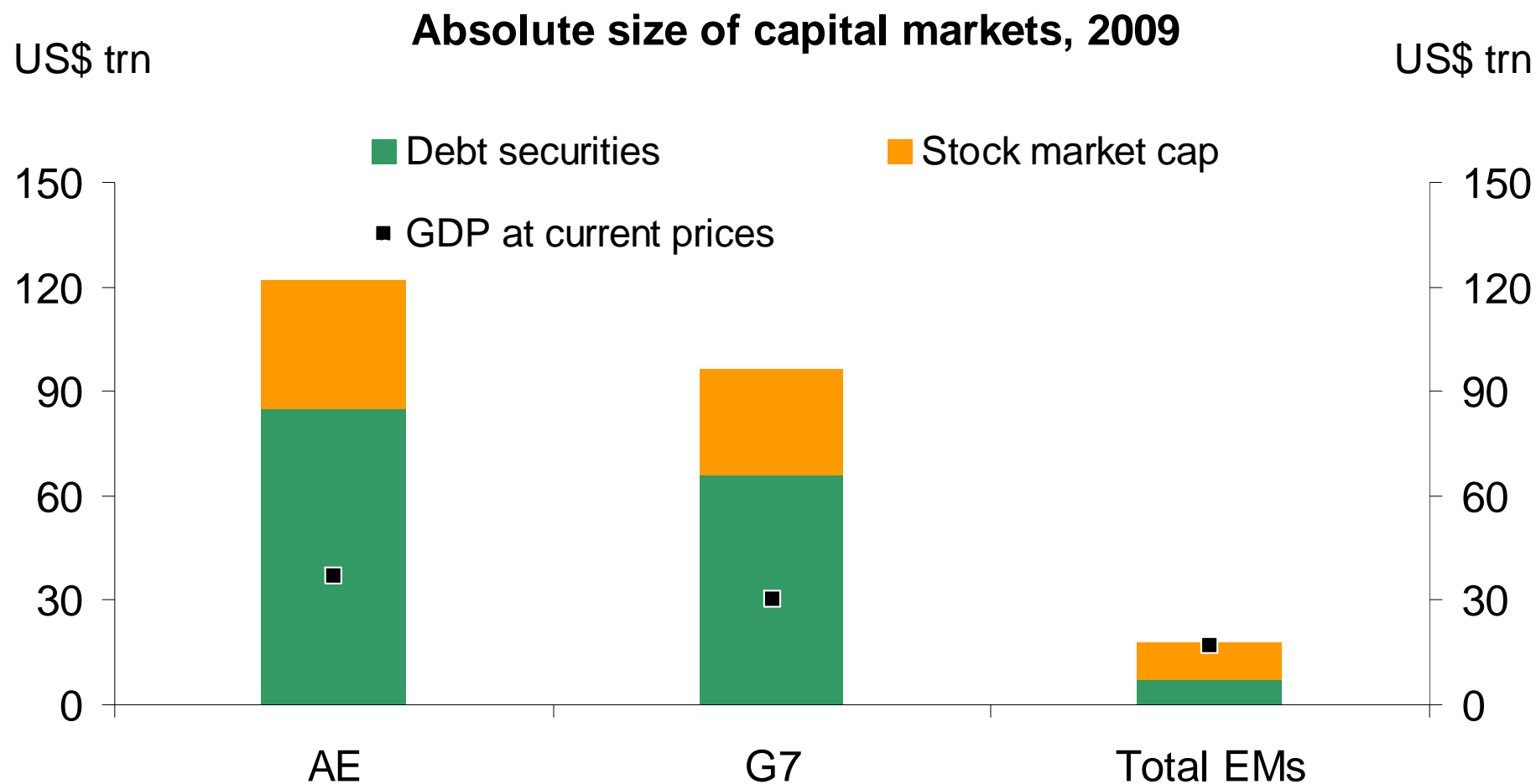


Holders of U.S. debt



Data for 2009. Source: TIC and IMF, DB Global Markets Research

Financial markets in advanced economies are six times bigger than in emerging markets



Note: AE equals G7 plus other AE.

** Total Ems is the sum of EM in LatAm, MENA, Africa and Europe

Source: Adapted from IMF, DB Global Markets Research



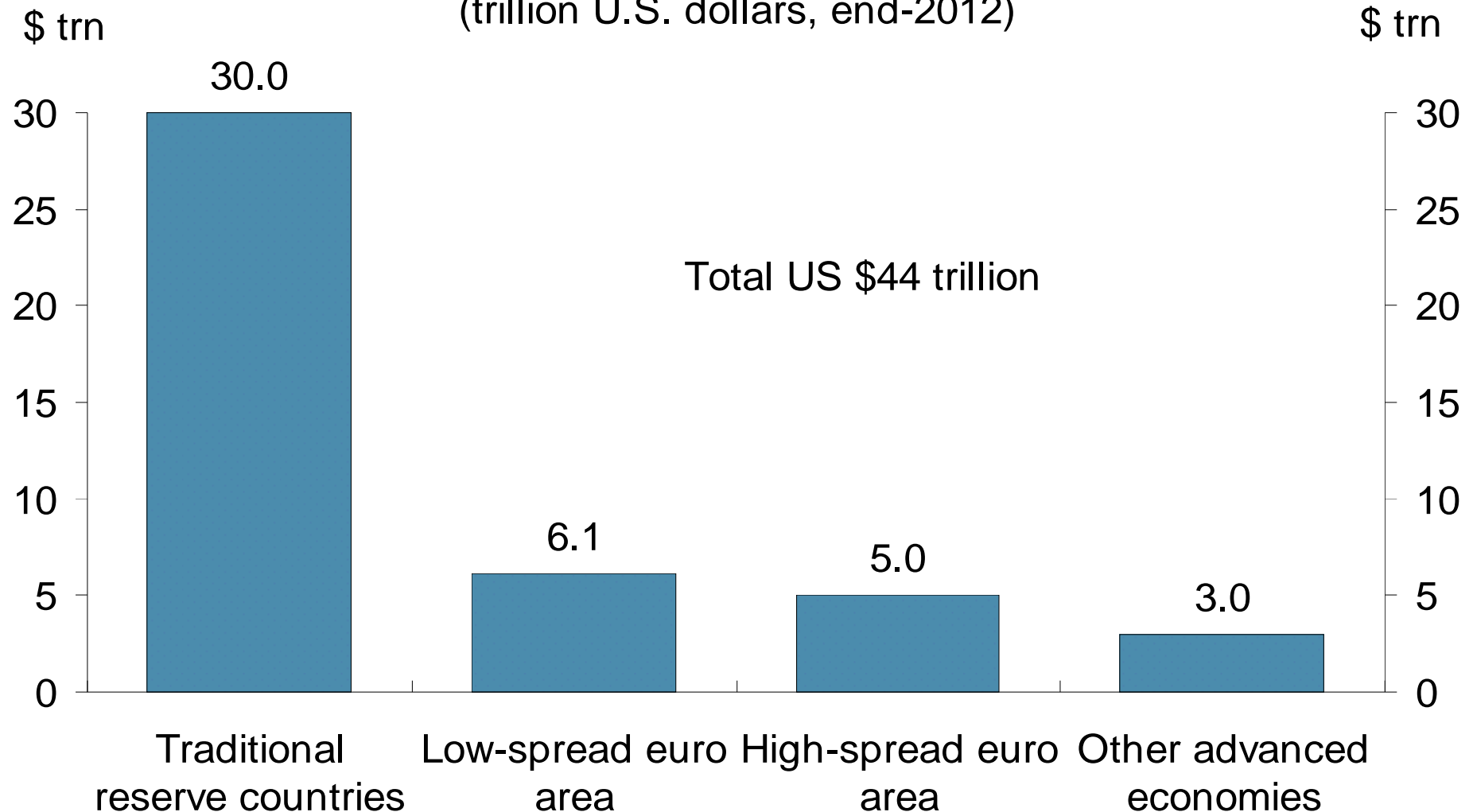
Recent developments in ownership of government debt

High spread euro area constitutes 11% of the advanced economy government debt universe. Traditional reserve currencies (US, Japan, UK, and Switzerland) make up 68%.



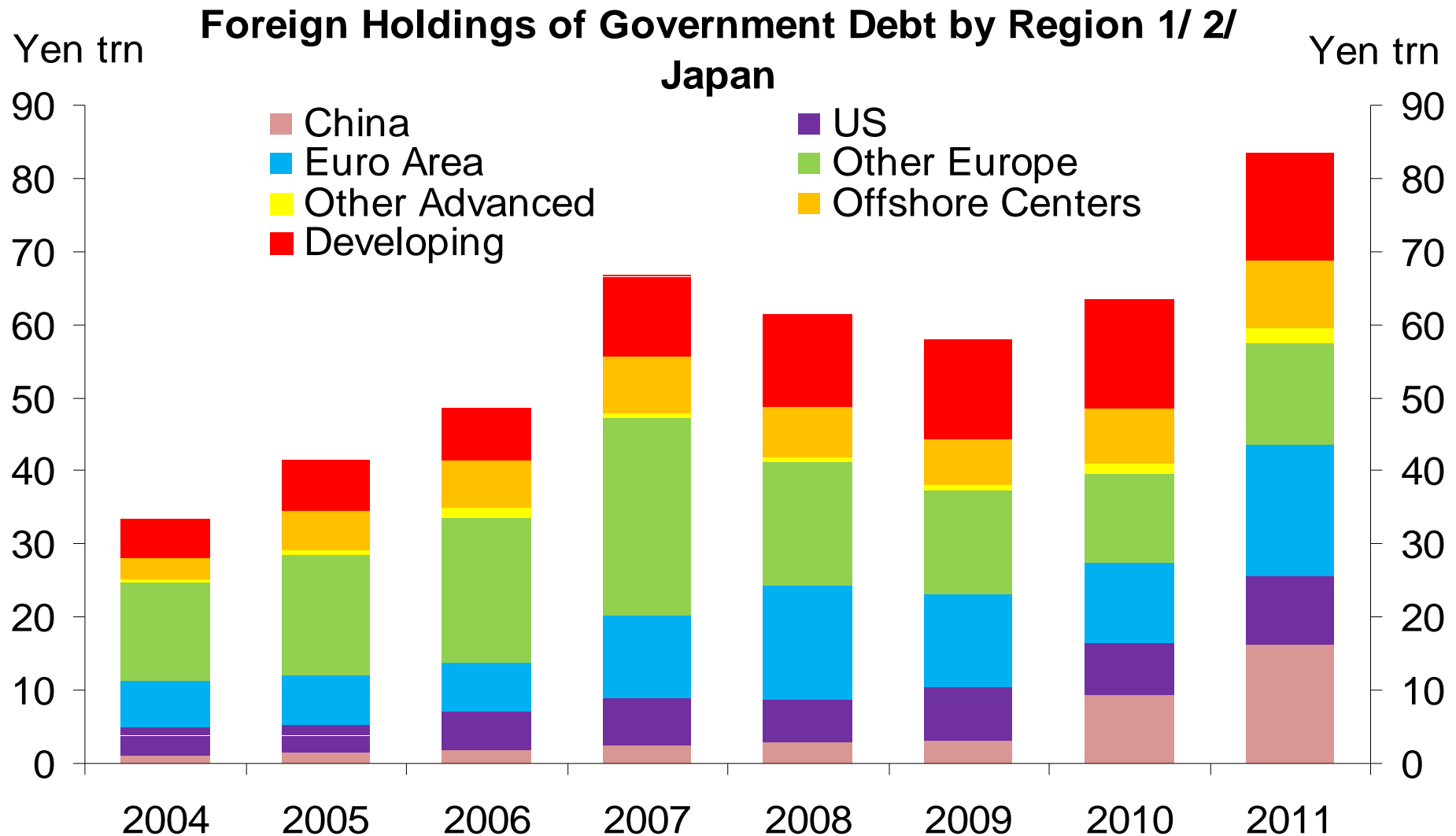
Advanced Economy Sovereign Debt Universe

(trillion U.S. dollars, end-2012)



Source: Sovereign investor base estimates by Arslanalp and Tsuda (2012), DB Global Markets Research

China is the biggest foreign holder of Japanese JGBs



1 / Excluding foreign official loans and SMP holdings of foreign central banks.

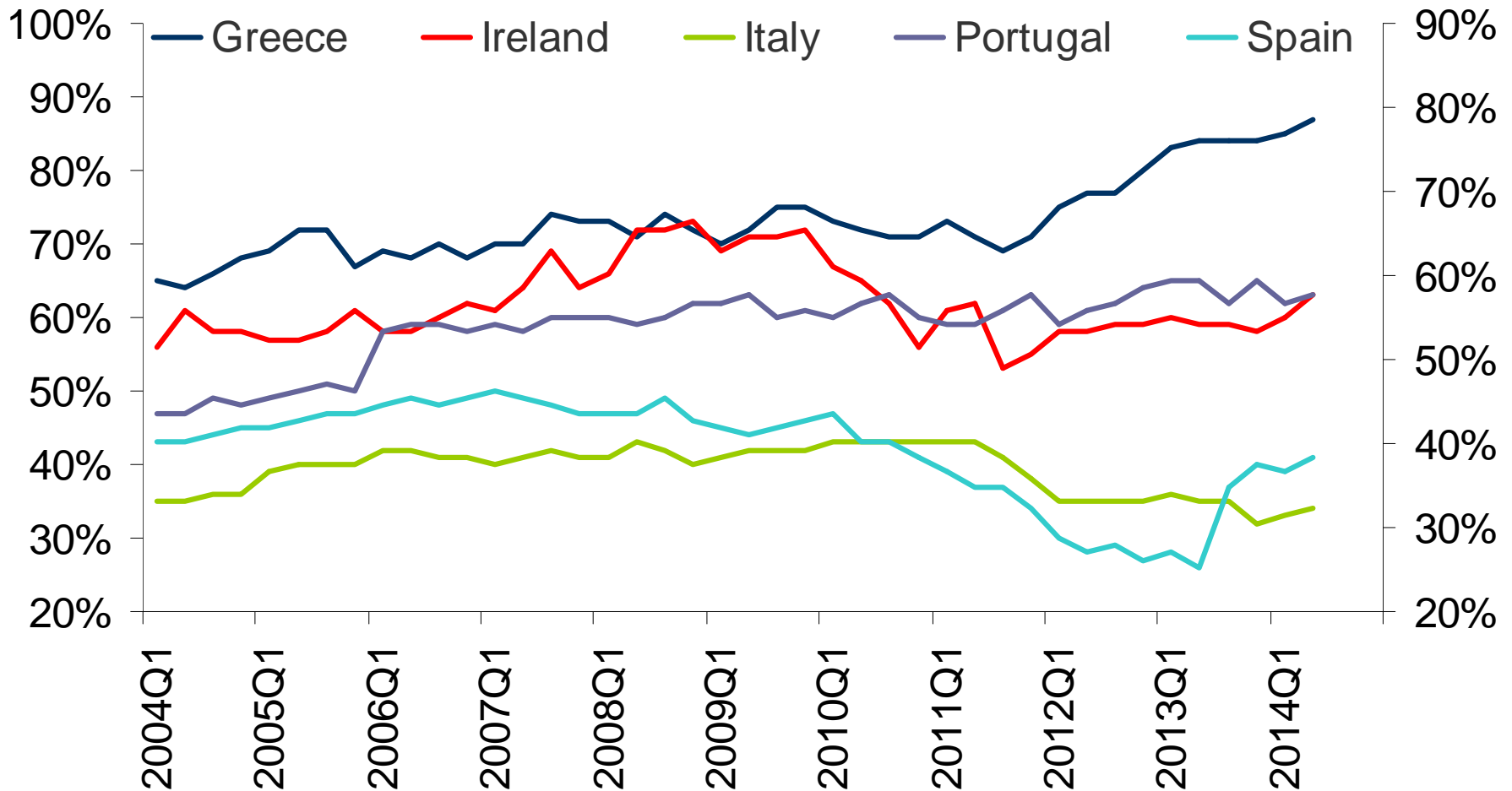
2/ Regional groups are based on country classifications of BIS international banking statistics.

Source: Sovereign investor base estimates by Arslanalp and Tsuda (2012), DB Global Markets Research



Foreign holdings of high spread euro area government debt rising

Foreign Holdings of Advanced Economy Sovereign Debt, 2004-2014 Q2, High spread euro area

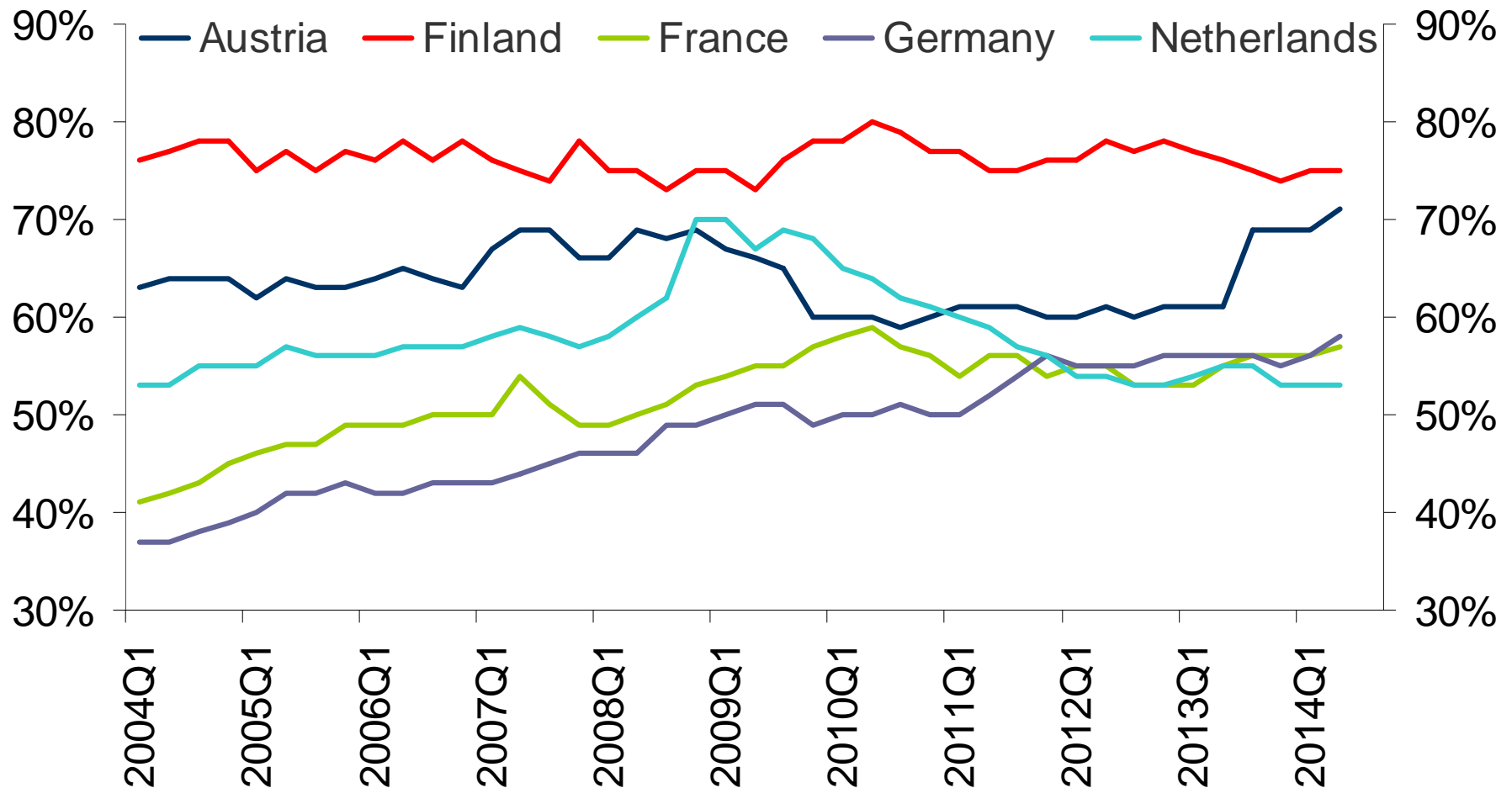


Source: Sovereign investor base estimates by Arslanalp and Tsuda (2012), DB Global Markets Research



Foreign holdings of low spread euro area government debt rising in Germany

Foreign Holdings of Advanced Economy Sovereign Debt, 2004-2014 Q2, Low spread euro area

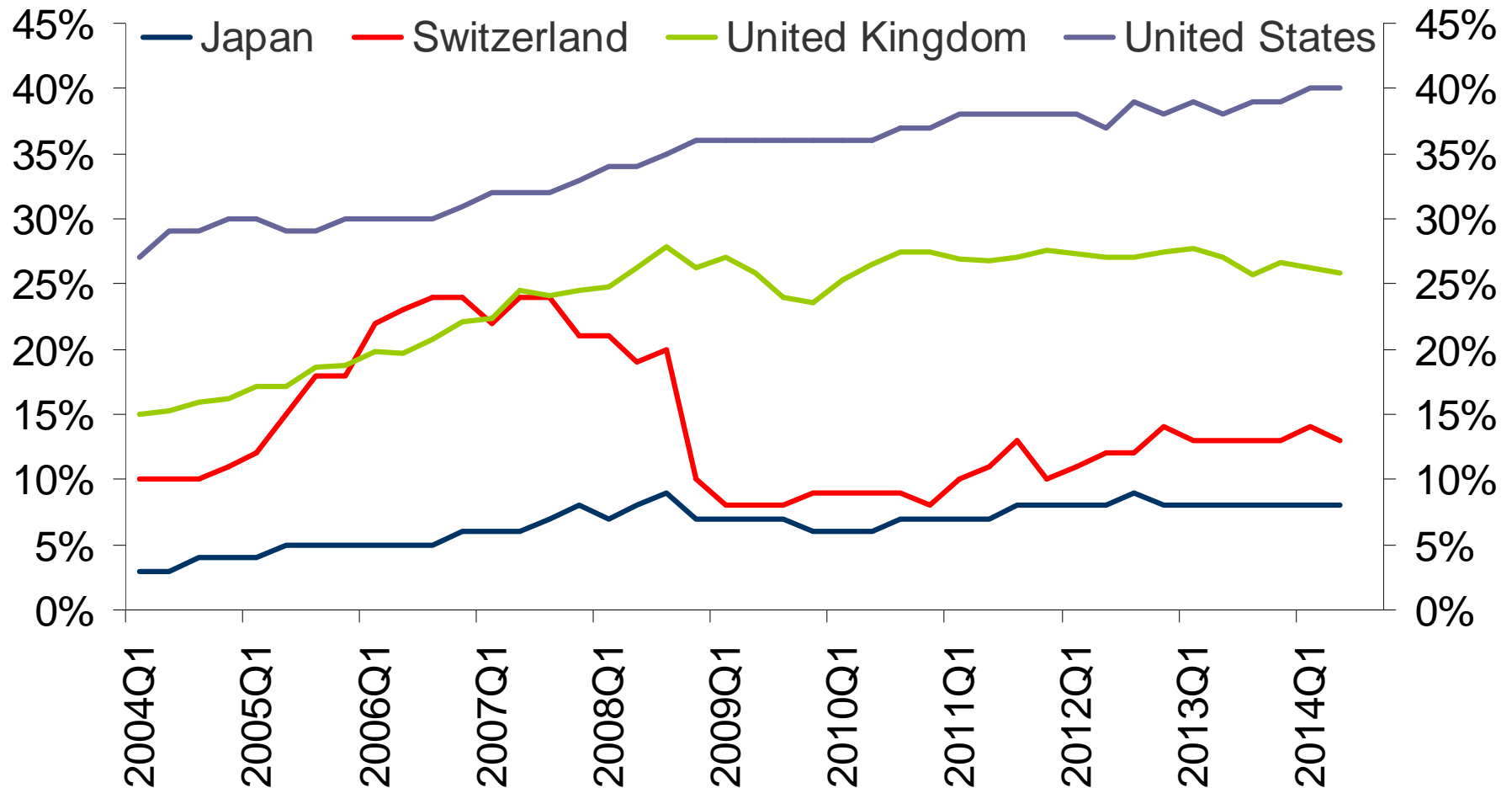


Source: Sovereign investor base estimates by Arslanalp and Tsuda (2012), DB Global Markets Research



Foreign holdings of traditional reserve countries government debt rising in United States

Foreign Holdings of Advanced Economy Sovereign Debt, 2004-2014 Q2, Traditional reserve countries

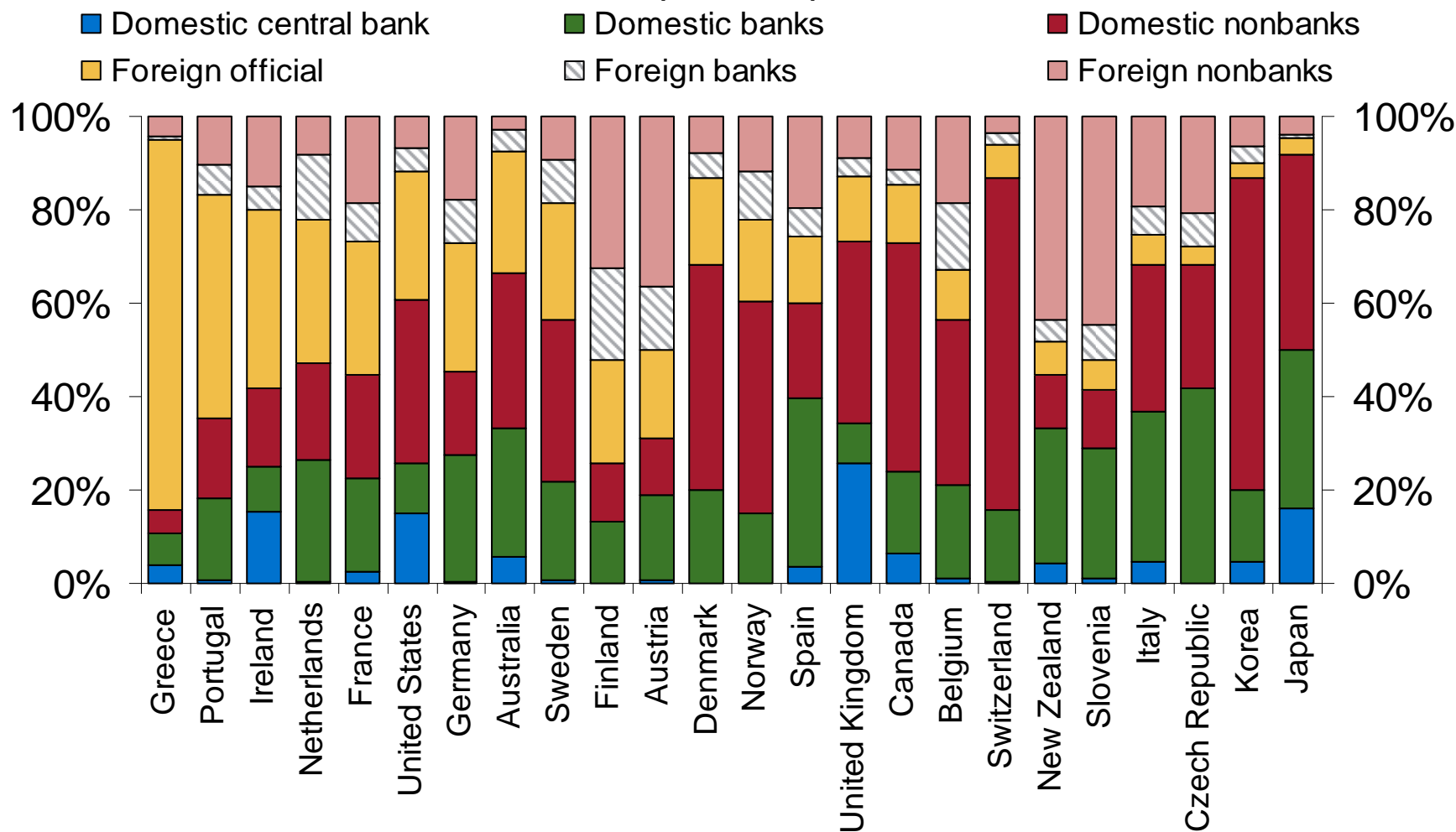


Source: Sovereign investor base estimates by Arslanalp and Tsuda (2012), DB Global Markets Research

Who owns different countries' government debt?



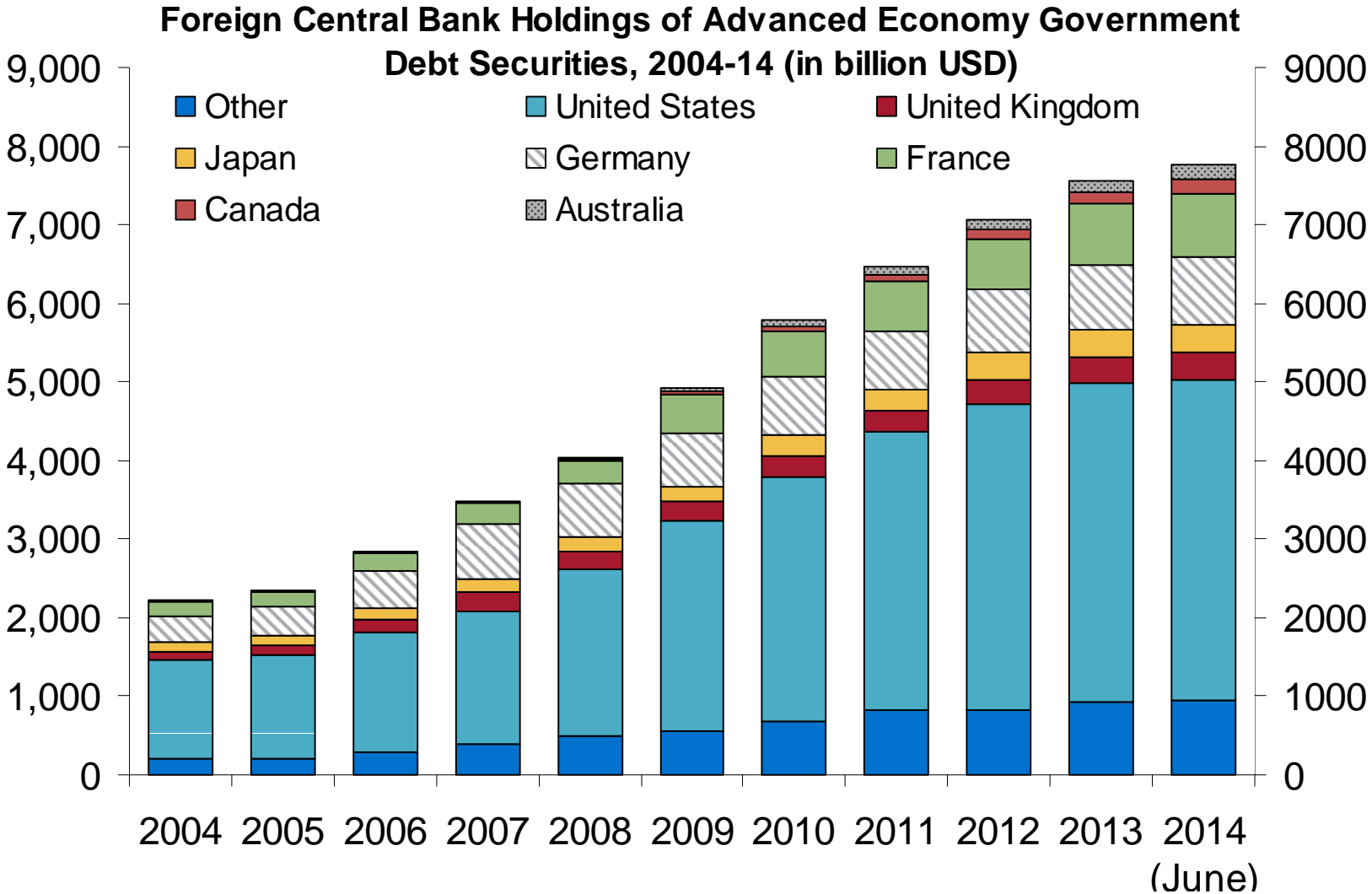
Investorbase of Advanced Economy Government Debt at end-2013
(% of total)



Source: Sovereign investor base estimates by Arslanalp and Tsuda, DB Global Markets Research



Half of foreign central bank holdings of government bonds are Treasuries



Source: Sovereign investor base estimates by Arslanalp and Tsuda (2012), DB Global Markets Research



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Torsten Slok, Ph.D.

Chief International Economist, Managing Director

Deutsche Bank Securities, Inc.

- Torsten Slok joined Deutsche Bank Securities in the fall of 2005.
- Mr. Slok's Economics team has been ranked Top 3 by Institutional Investor for the past three years. Slok currently serves as a member of the Economic Club of New York
- Prior to joining the firm, Mr. Slok worked at the OECD in Paris in the Money and Finance Division and the Structural Policy Analysis Division. Before joining the OECD he worked for four years at the IMF in the Division responsible for writing the World Economic Outlook and the Division responsible for China, Hong Kong, and Mongolia.
- Mr. Slok studied at University of Copenhagen and Princeton University. He has published numerous journal articles and reviews on economics and policy analysis, including in Journal of International Economics, Journal of International Money and Finance, and The Econometric Journal.



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Appendix 1

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Risks to Fixed Income Positions

Macroeconomic fluctuations often account for most of the risks associated with exposures to instruments that promise to pay fixed or variable interest rates. For an investor that is long fixed rate instruments (thus receiving these cash flows), increases in interest rates naturally lift the discount factors applied to the expected cash flows and thus cause a loss. The longer the maturity of a certain cash flow and the higher the move in the discount factor, the higher will be the loss. Upside surprises in inflation, fiscal funding needs, and FX depreciation rates are among the most common adverse macroeconomic shocks to receivers. But counterparty exposure, issuer creditworthiness, client segmentation, regulation (including changes in assets holding limits for different types of investors), changes in tax policies, currency convertibility (which may constrain currency conversion, repatriation of profits and/or the liquidation of positions), and settlement issues related to local clearing houses are also important risk factors to be considered. The sensitivity of fixed income instruments to macroeconomic shocks may be mitigated by indexing the contracted cash flows to inflation, to FX depreciation, or to specified interest rates – these are common in emerging markets. It is important to note that the index fixings may -- by construction -- lag or mis-measure the actual move in the underlying variables they are intended to track. The choice of the proper fixing (or metric) is particularly important in swaps markets, where floating coupon rates (i.e., coupons indexed to a typically short-dated interest rate reference index) are exchanged for fixed coupons. It is also important to acknowledge that funding in a currency that differs from the currency in which the coupons to be received are denominated carries FX risk. Naturally, options on swaps (swaptions) also bear the risks typical to options in addition to the risks related to rates movements.



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