Is the US economy vulnerable to a volatility shock?

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Outline

Vulnerability of US Economy to Volatility Shock

- **Possible near-term shocks: Fed liftoff and Grexit most likely.**
- **How financial conditions and the economy have reacted to previous crises/tantrums.**
- **Could reduced market liquidity exacerbate a tantrum/crisis?**
- **Why economy may be relatively resilient to vol shocks in the near term.**

Source: DB Global Markets Research

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What could spark a crisis in the next year

Possible near-term volatility shocks:

- Fed liftoff: high probability, low-medium vol
- Euro crisis—Grexit: medium-low, probability, high vol
- China crash: low probability, high vol
- EM crisis: Brazil
- Geopolitical:
  - Middle East
  - Russia/Ukraine
  - N. Korea
- Unknown

Source: DB Global Markets Research

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Fed guidance on liftoff

"The Committee anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term."

-- FOMC Press Release March 18, 2015

Source: DB Global Markets Research

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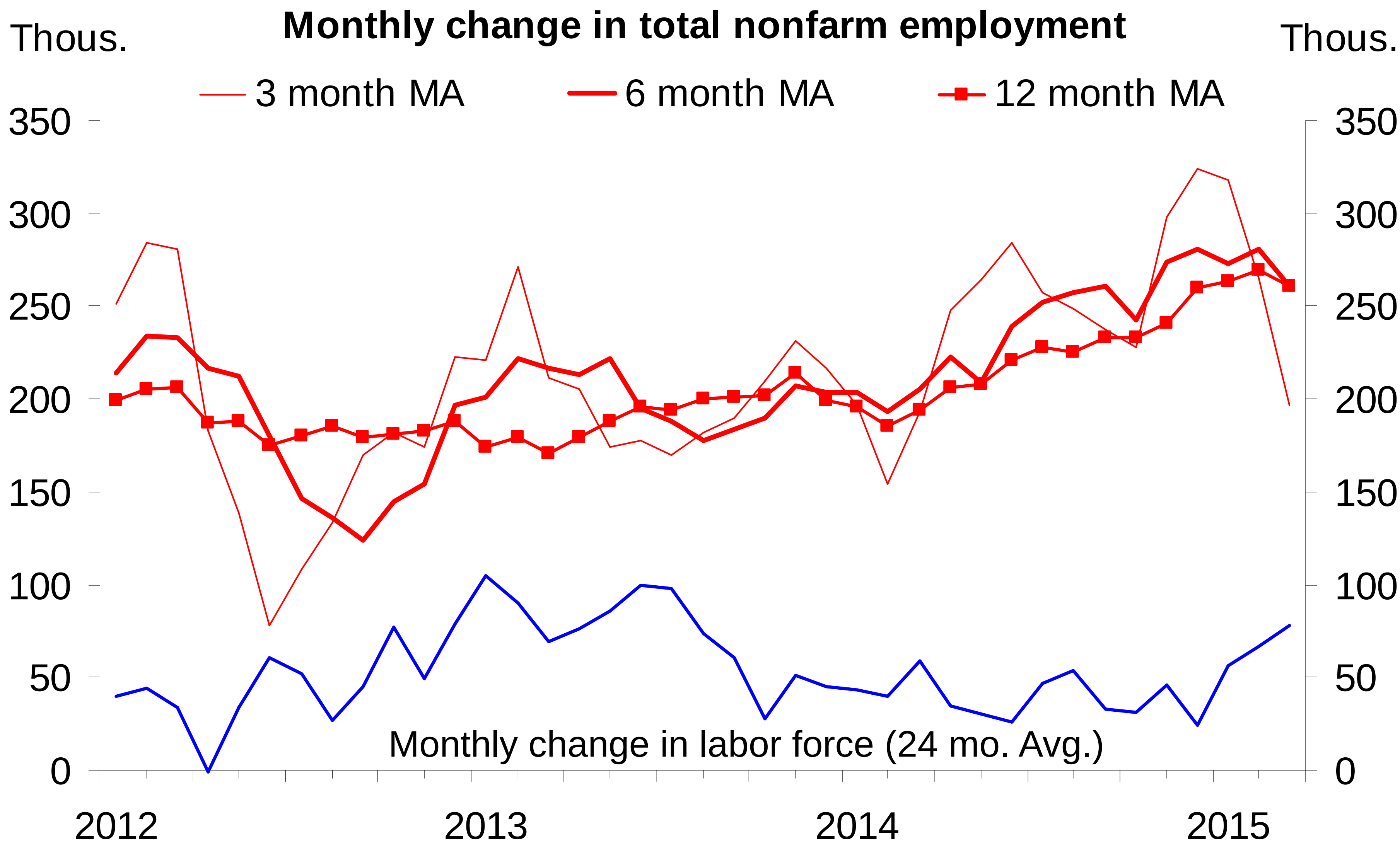
Employment growing robustly



Source: BLS, Deutsche Bank Research

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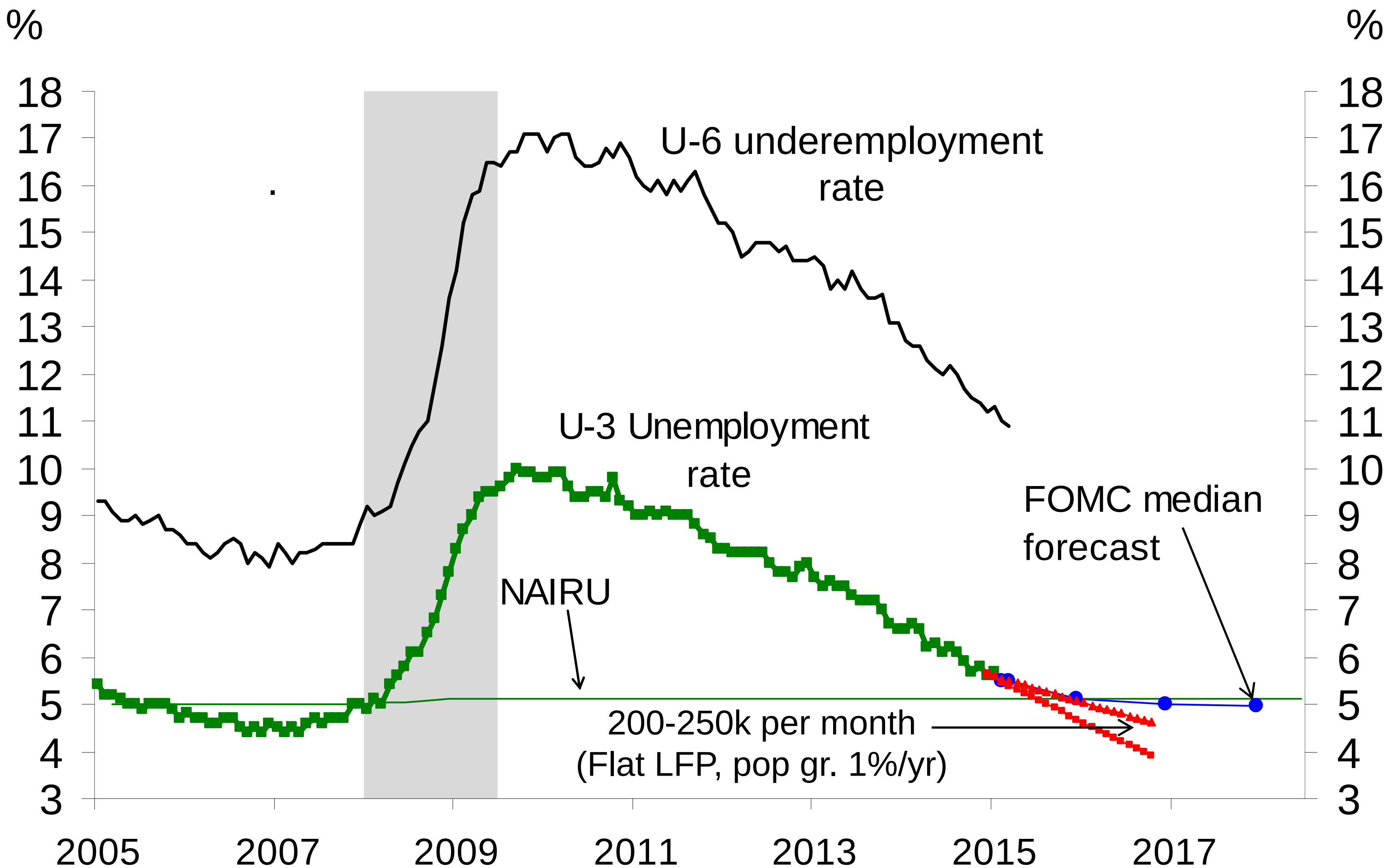
Labor market tightening



Sources: FOMC, BLS, Haver Analytics, DB Global Markets Research

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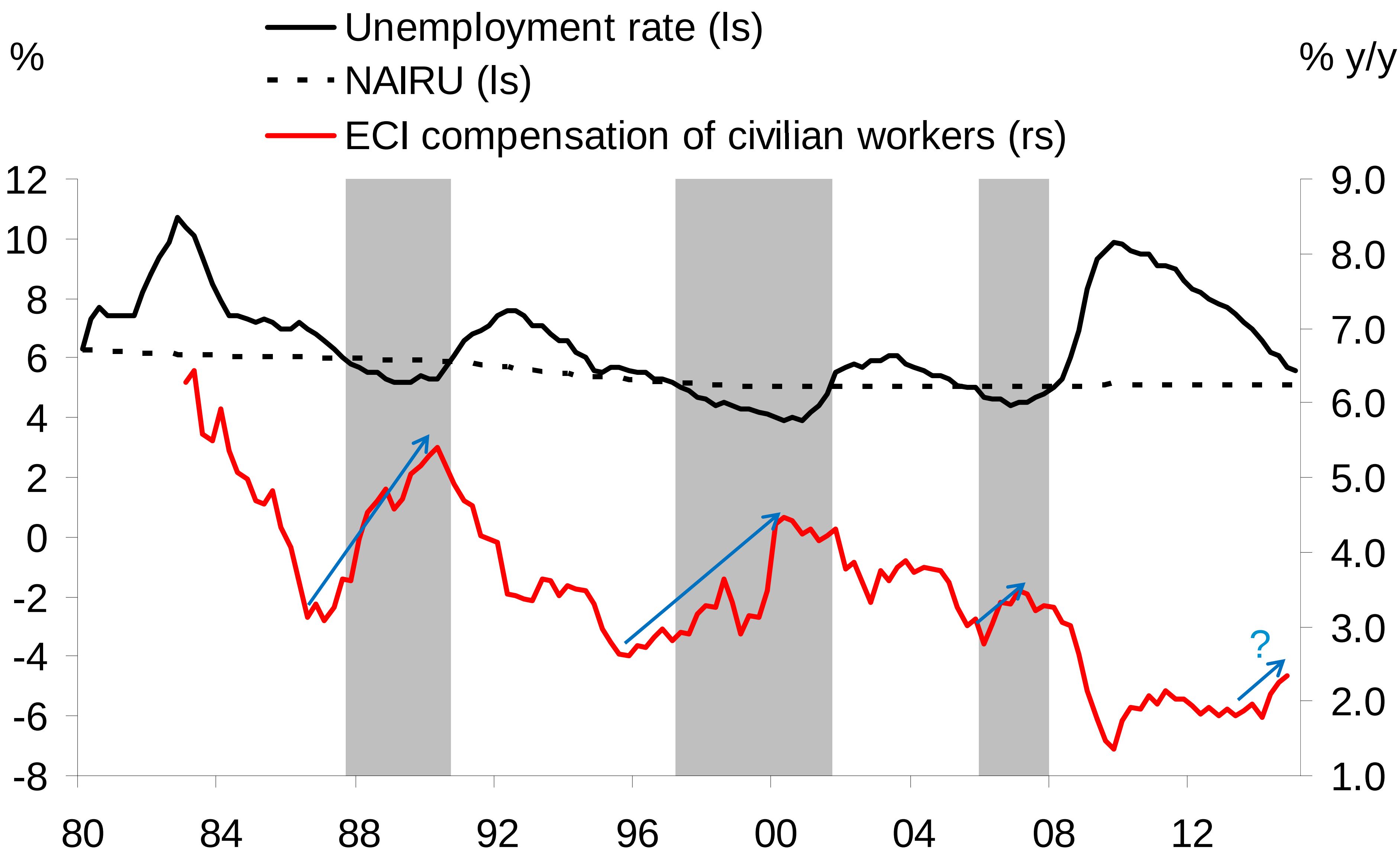
Wage inflation rises as unemployment nears NAIRU



Sources: BLS, CBO, Haver Analytics, DB Global Markets Research

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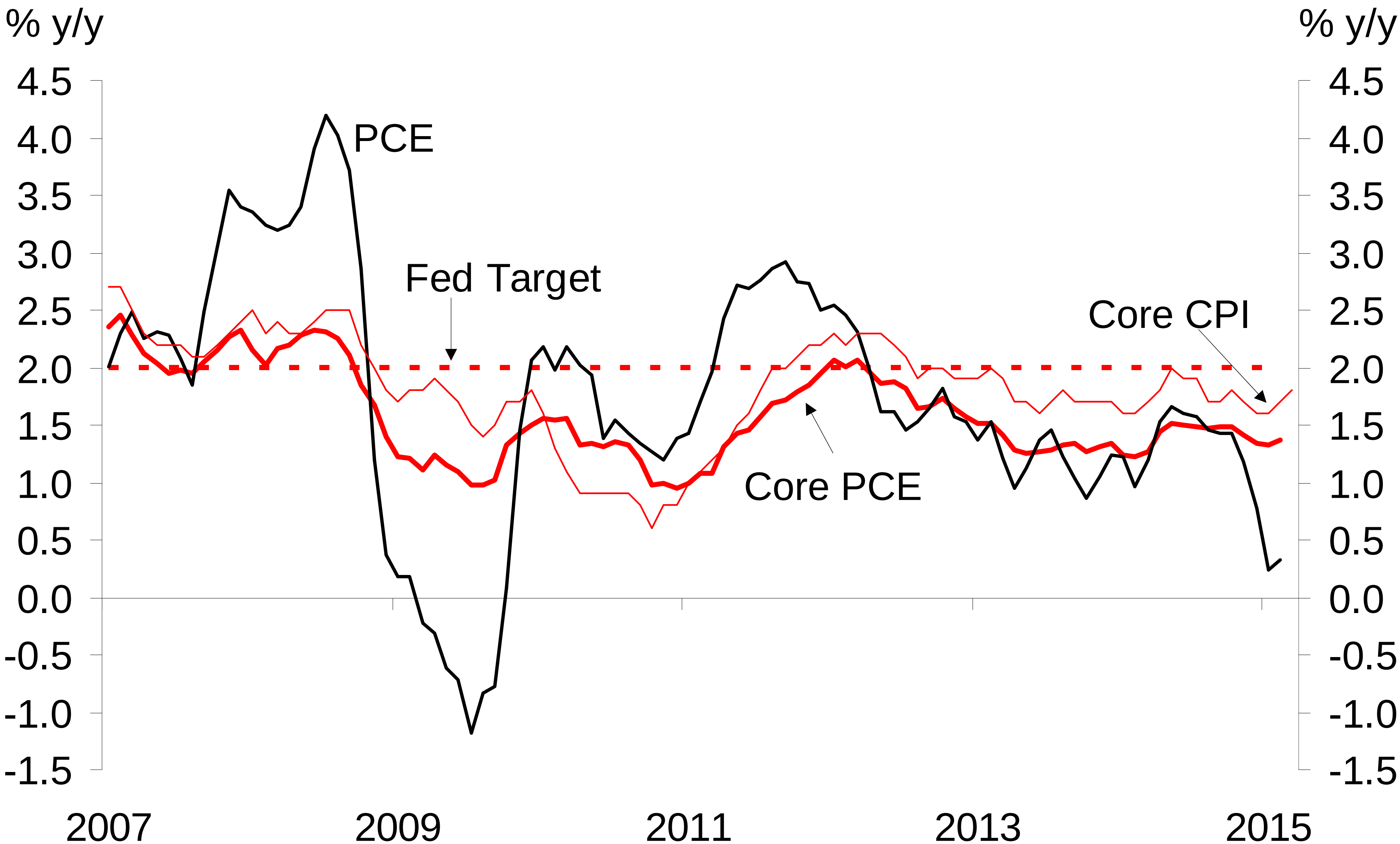
Core consumer price inflation turning up already?



Sources: BEA, BLS, Haver Analytics, DB Global Markets Research

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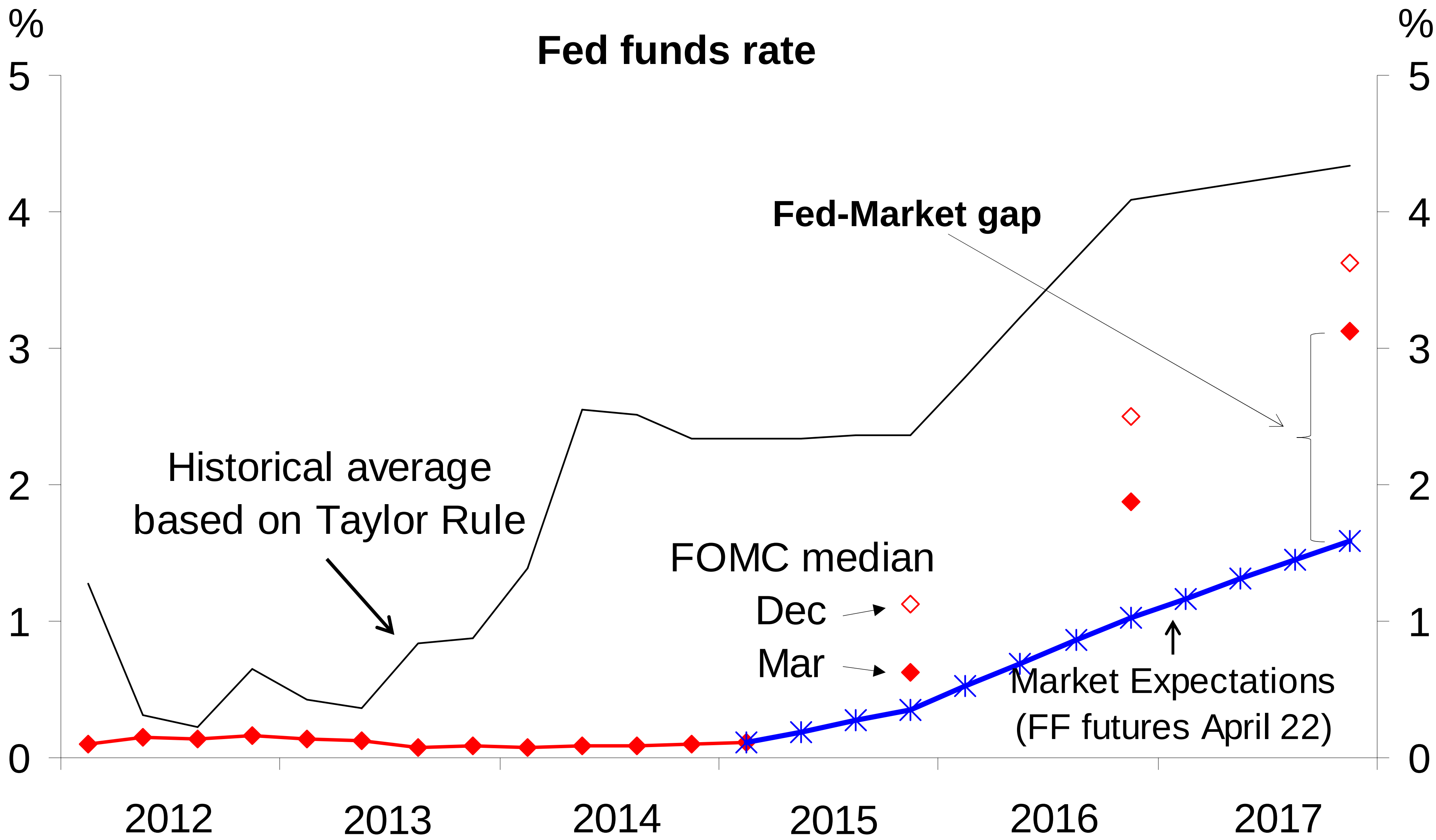
Fed-Market expectations gap: exit tantrum risk



Sources: Bloomberg Finance LP, FOMC, Haver Analytics, Deutsche Bank Research

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Prospects for another euro crisis

- Grexit: Neither Greece nor the EA/Troika wants it
  - Greece: Funding cut off, huge drop in currency and standard of living
  - EA: Sets precedent that turns common currency into fixed exchange rate regime; redenomination risk spreads widen; geopolitical risks rise
- Greece/Syriza wants a new deal
  - Radical new government with mandate to end austerity, reject “failed” Troika policies, gain more autonomy
- Rest of Europe sees things very differently.
  - No sympathy for Greece/Syriza in core.
  - No sympathy in periphery either
  - Giving in to Greek demands sets dangerous precedent

Source: DB Global Markets Research

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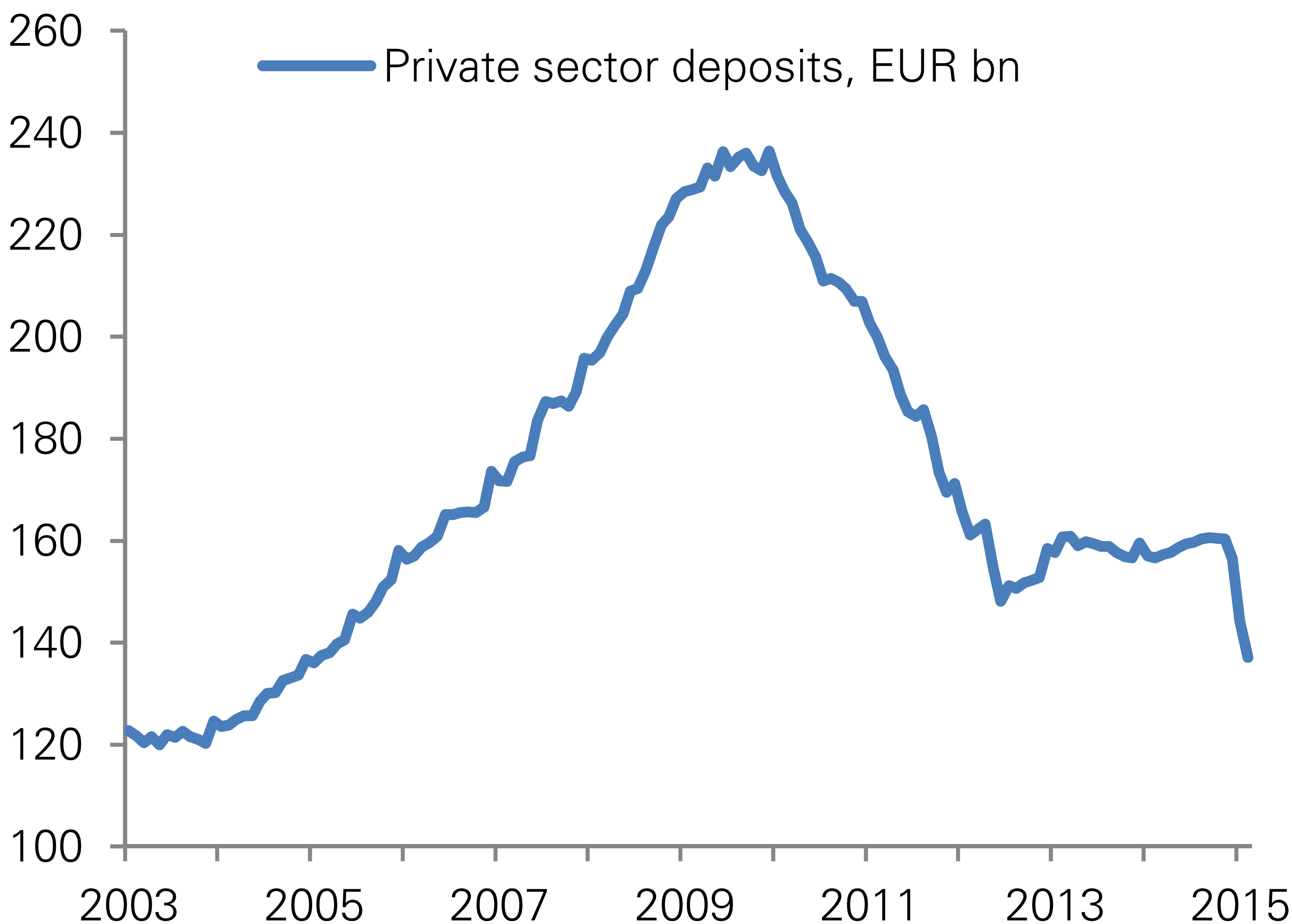
Greek bank deposits are being drained



Source: FT, Haver Analytics, DB Global Markets Research

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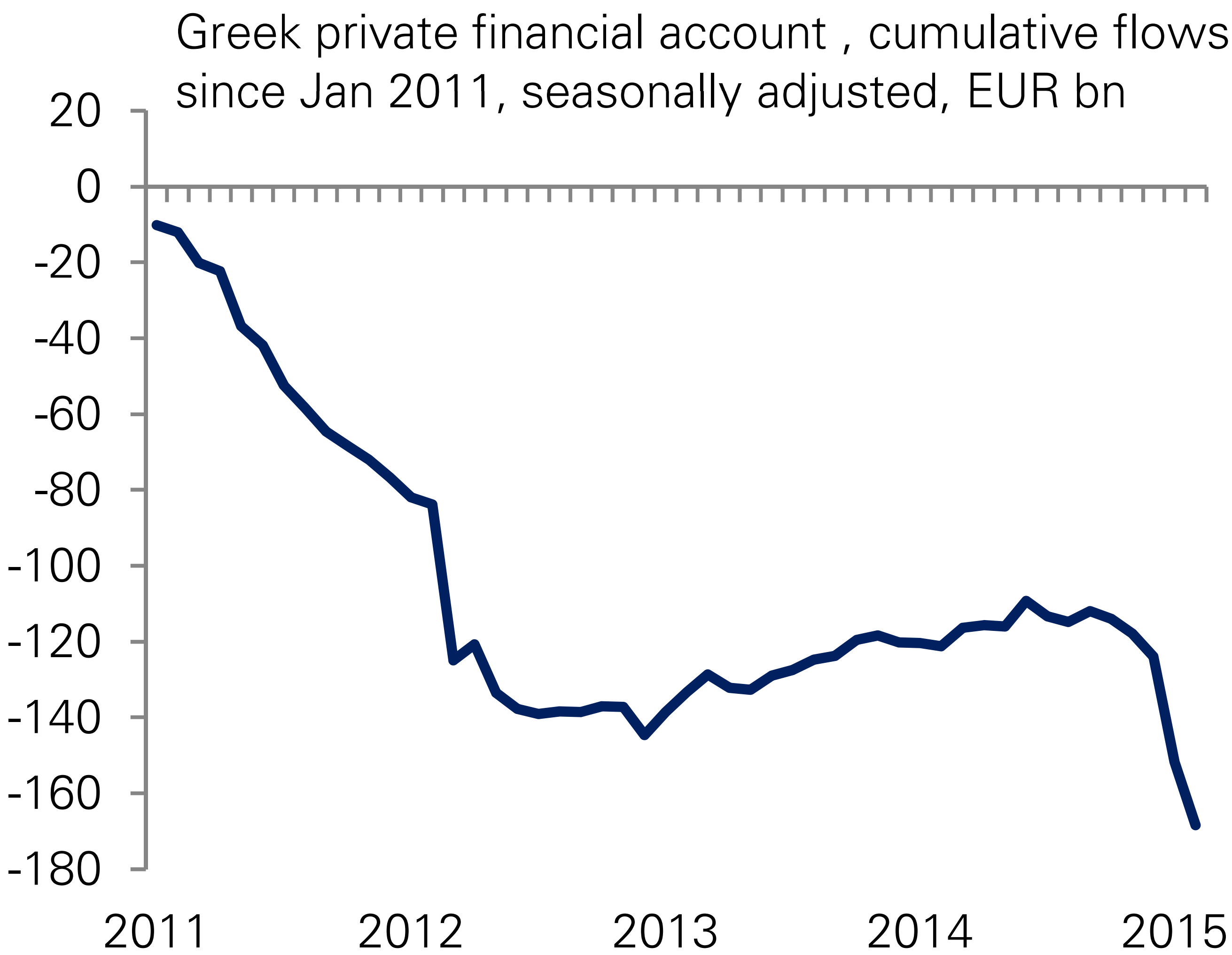
Private funds are flowing out of the country



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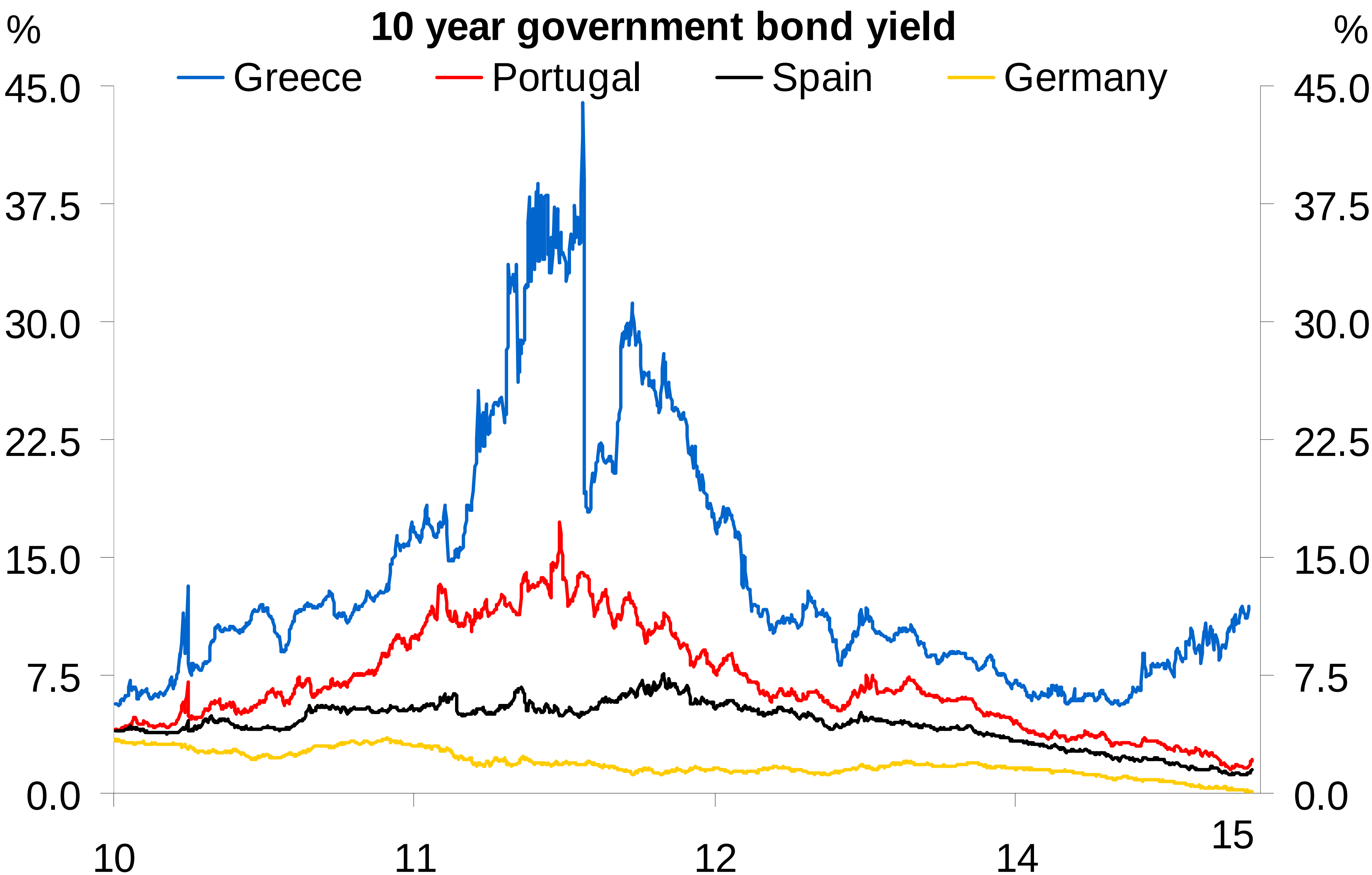
Greek bond spreads widening



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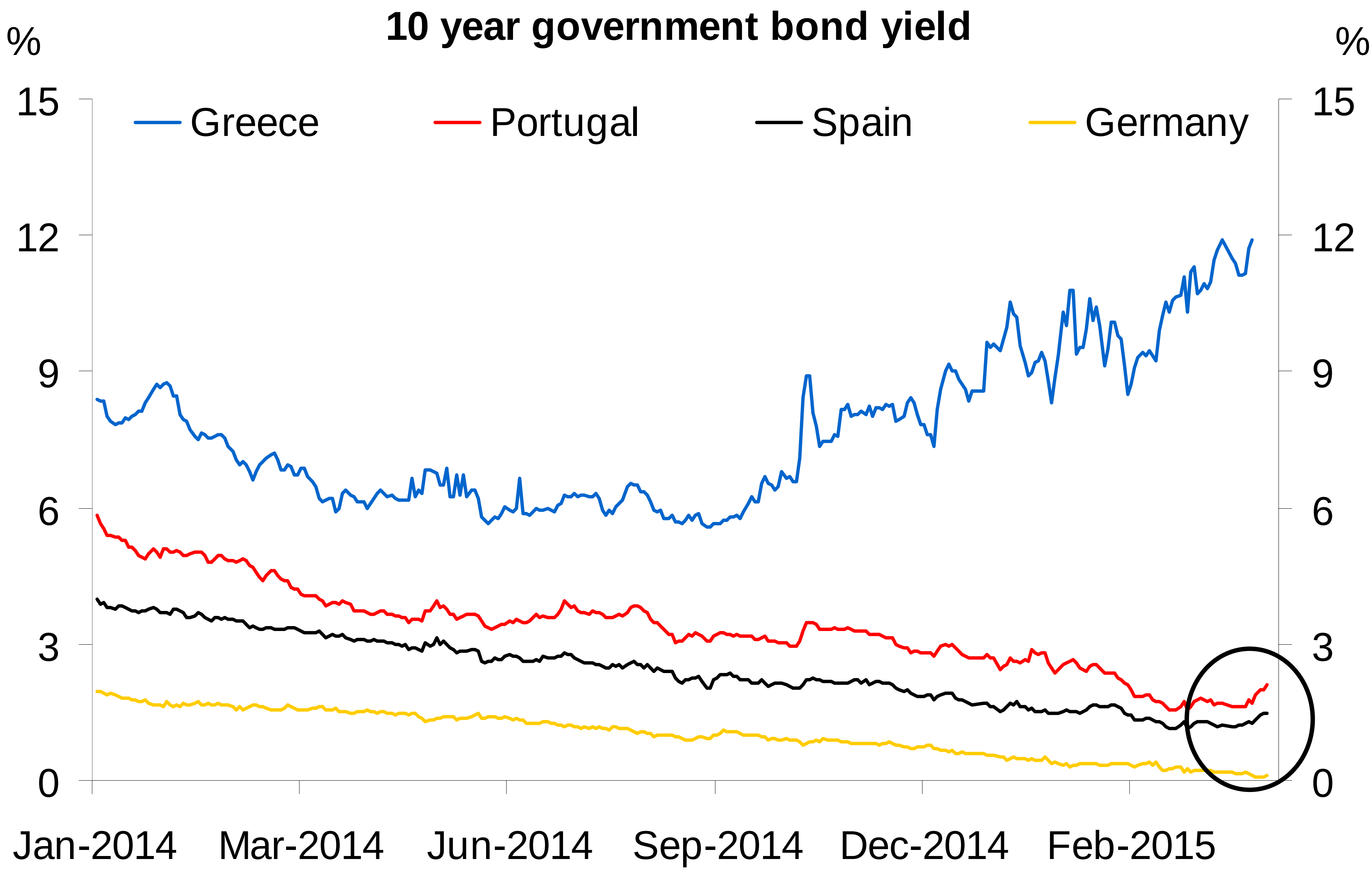
Other periphery premiums beginning to rise



Source: FT, Haver Analytics, DB Global Markets Research

The likely way(s) forward for Greece

- More market pressure needed to bring the two parties together
  - o Greek government and parliament must commit to a program with reforms. Will most likely require either:
    - — Restructuring of current government, and/or
    - — Referendum, or
    - — New elections.
  - o This will take time and pressure from the markets
- Funding issues will come to a head by end-June if not sooner
  - o Greek government default could be a vol shock
- ECB could cap emergency liquidity assistance (ELA) for Greek banks
  - o Closing Greek banks and reopening with capital controls also a shock
- Grexit not a tail event

Source: DB Global Markets Research

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How financial conditions and the economy have moved around previous crisis events

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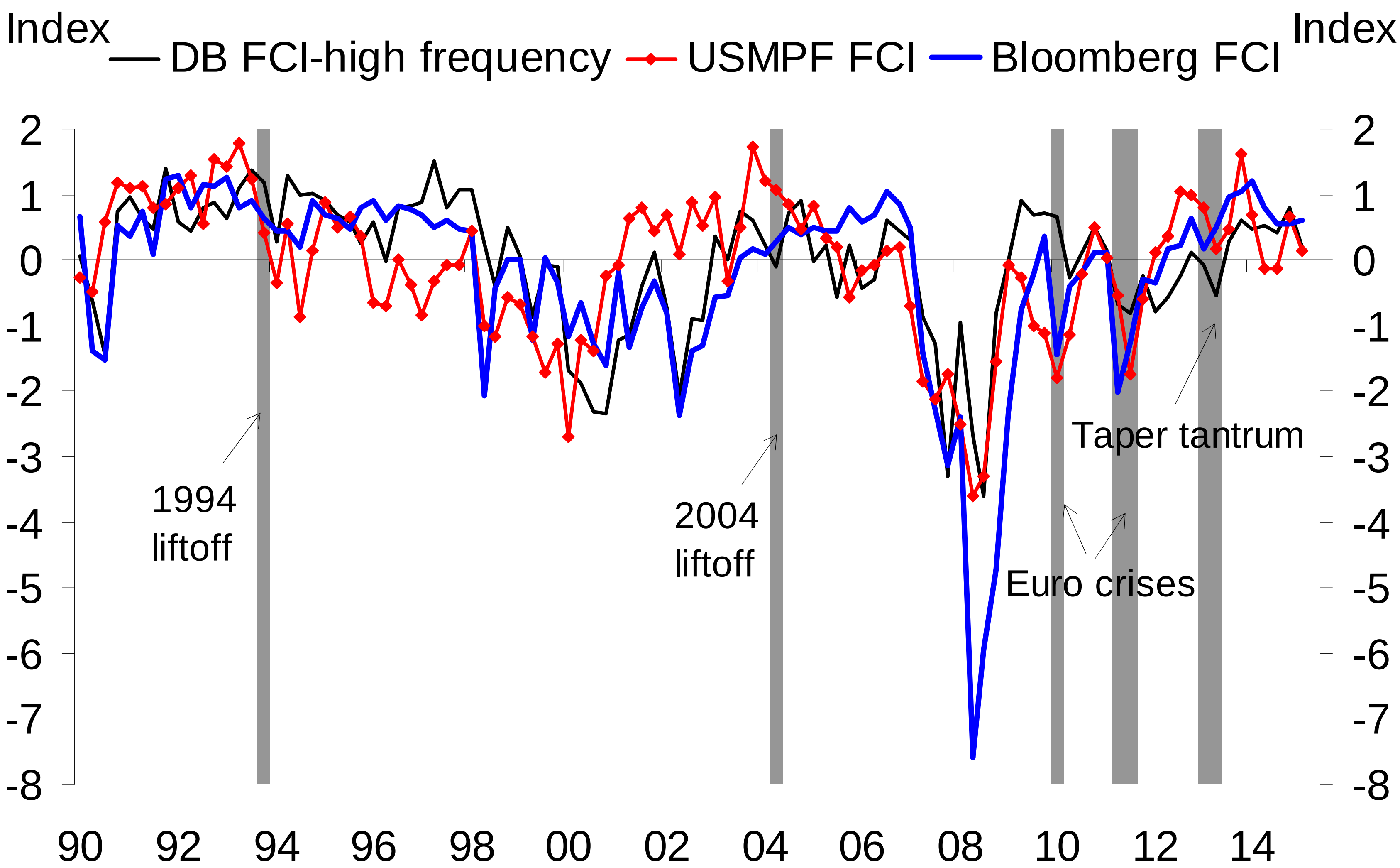
FCIs around previous liftoffs and euro crises



Sources: USMPF (2010), Bloomberg Finance LP, Deutsche Bank Research

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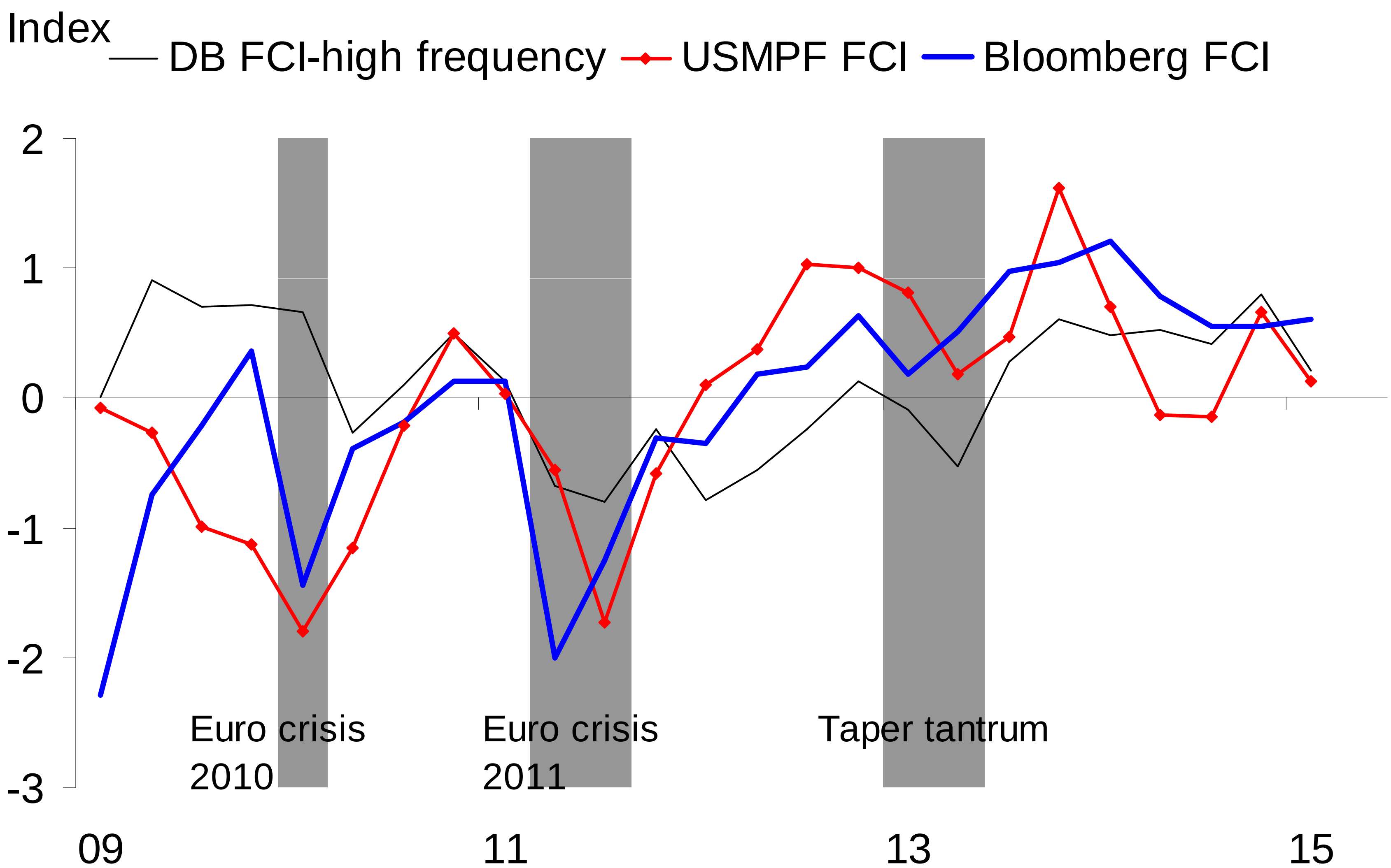
FCIs around previous euro crises and taper tantrum



Sources: USMPF (2010), Bloomberg Finance LP, Deutsche Bank Research

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Impact on employment growth mixed

Sources: BLS, Haver Analytics, Deutsche Bank Research

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Could reduced market liquidity exacerbate a crisis?

"There already is far less liquidity in the general marketplace...Recent activity in the /Treasury markets and the currency markets is a warning shot across the bow."

-- Jamie Dimon, April 2015

"Markets could be increasingly susceptible to episodes in which liquidity suddenly vanishes and volatility spikes"

-- IMF Global Financial Stability Report, April 2015

"…sharp intraday price moves (may) become more common"

-- Simon Potter, head of the Markets Group FRBNY, April 2015

Source: DB Global Markets Research

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Factors reducing liquidity

Supply and demand shifts

- US budget deficit has dropped
- Fed and other “price insensitive” investors holding larger share of Treasuries

Regulatory changes:

- Heightened capital and liquidity requirements have encouraged balance sheet contraction

Structural changes in the market

- Increases in electronic and automated trading by firms that do not carry balance sheet with its shock absorbing capacity.

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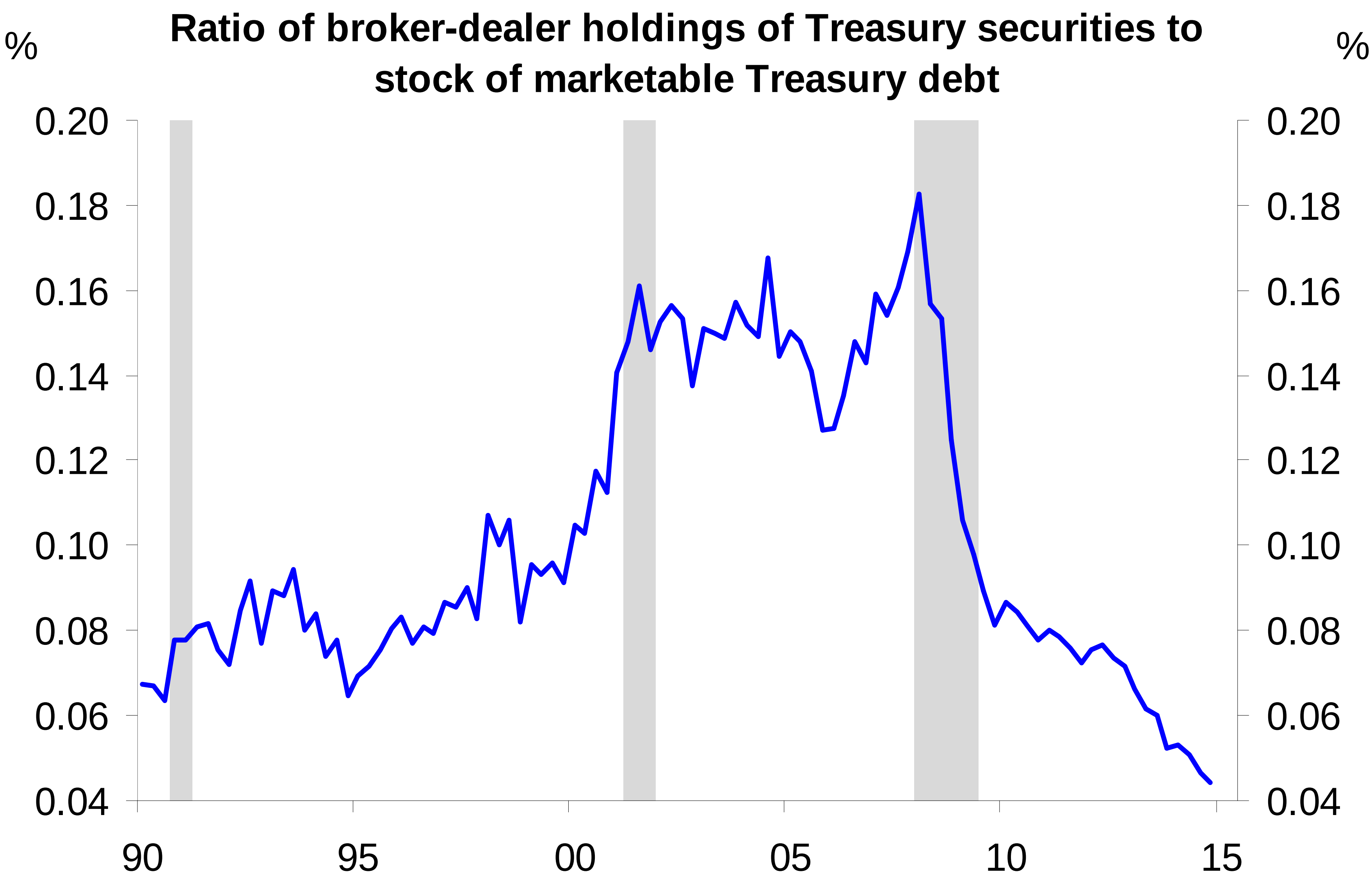
Share of Treasury securities held on balance sheets of broker dealers has dropped



Source: FRB, U.S. Treasury, Haver Analytics, DB Global Markets Research

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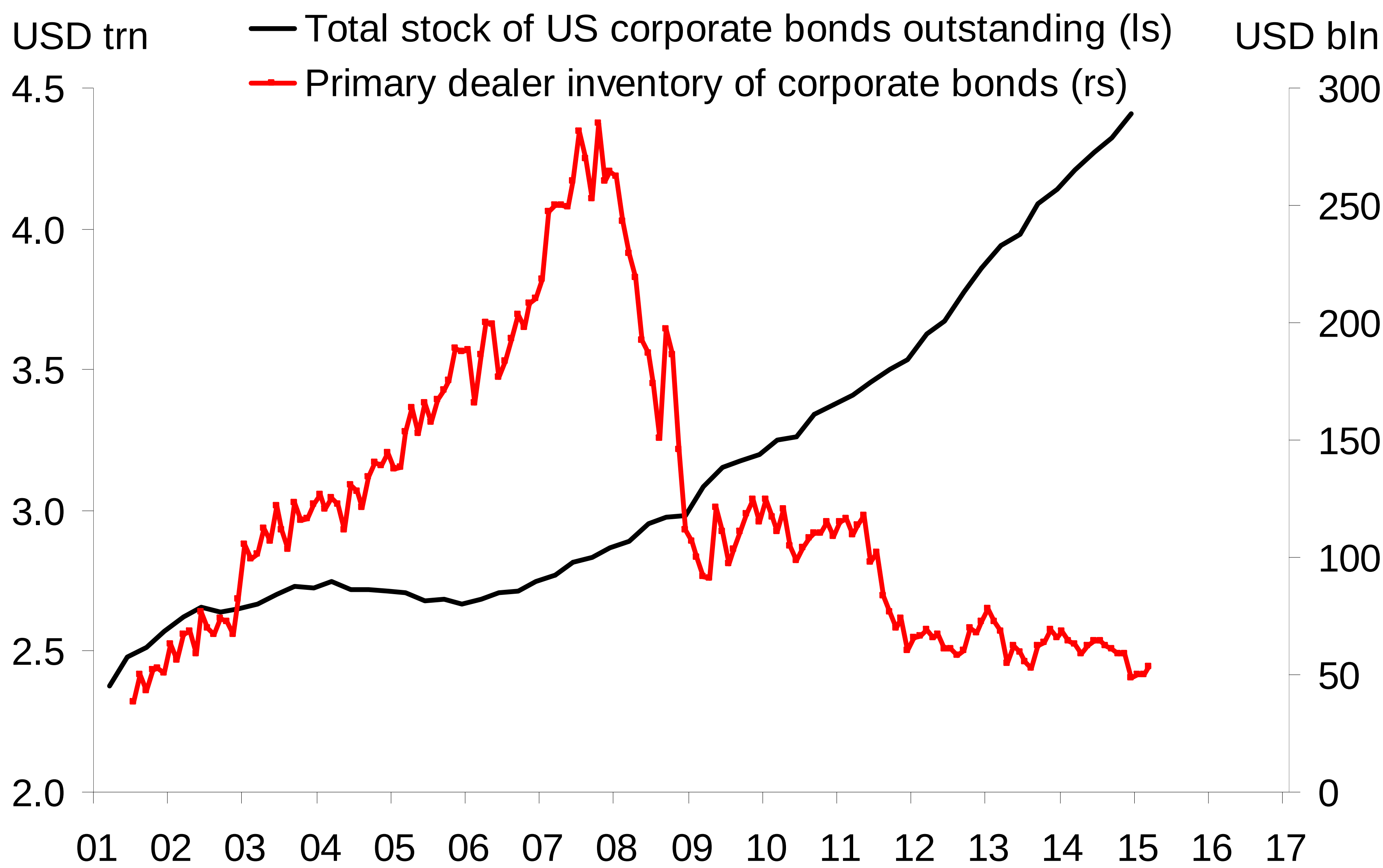
Primary dealer inventories of corporate bonds have dropped as bond market volume has risen



Source: FRB, Haver Analytics, DB Global Markets Research

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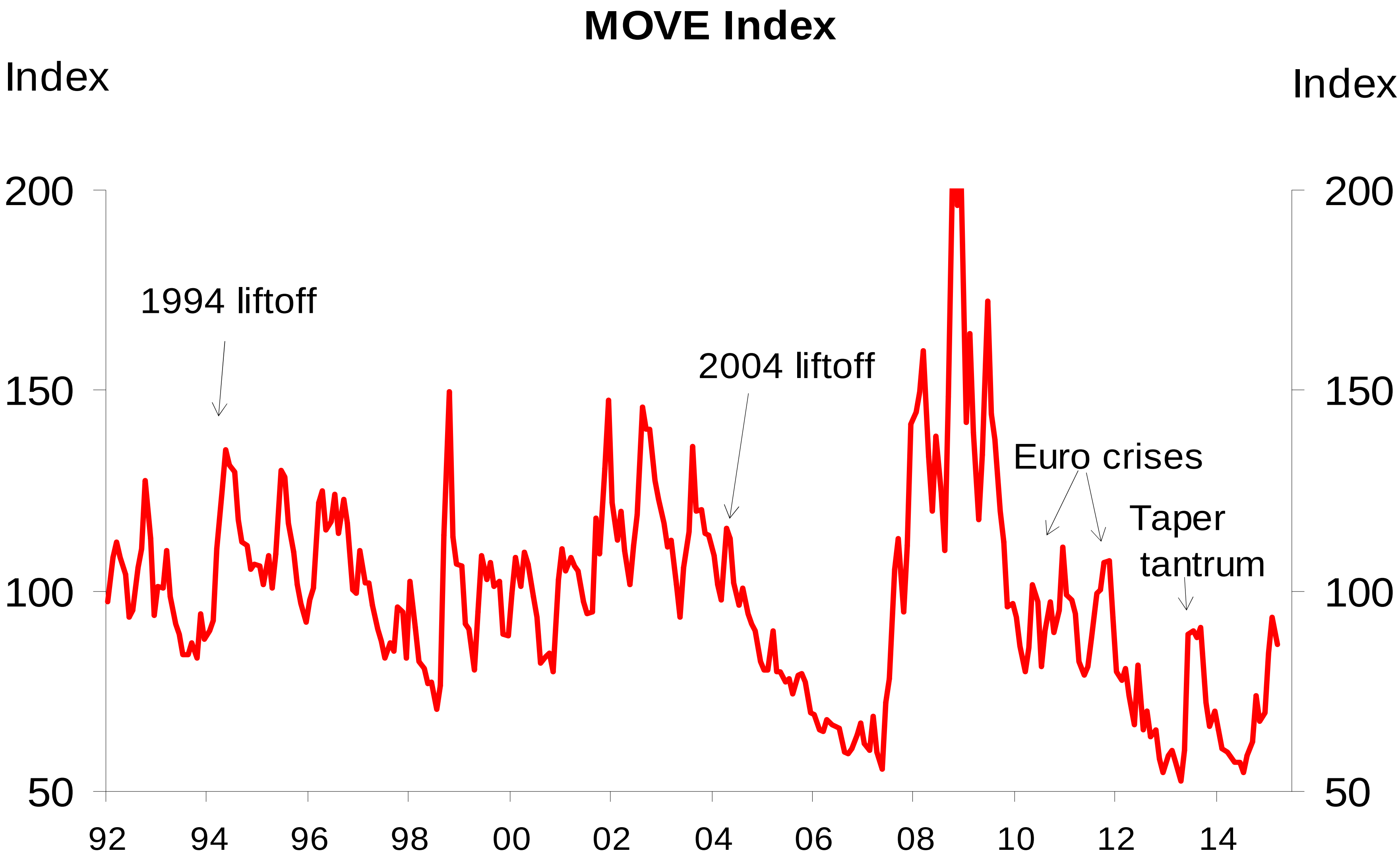
Fixed income vol back to tantrum levels



Note : 1-month MOVE, monthly data

Sources: Haver Analytics, BoAML, Deutsche Bank Research

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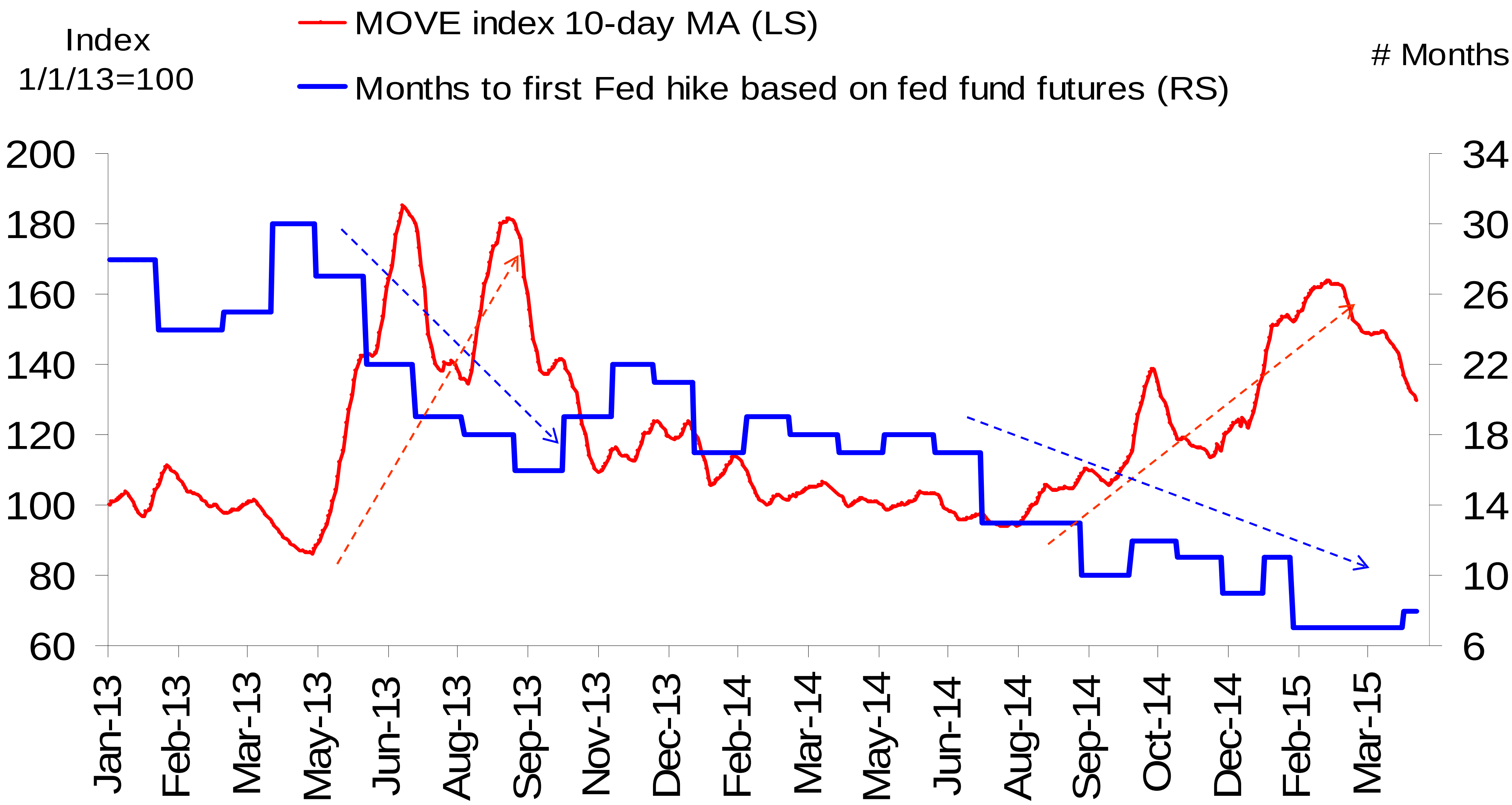
Approaching Fed liftoff may be pushing vol up



Source: Bloomberg Finance LP, DB Global Markets Research

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Why the US economy should be relatively resilient to vol shocks this year

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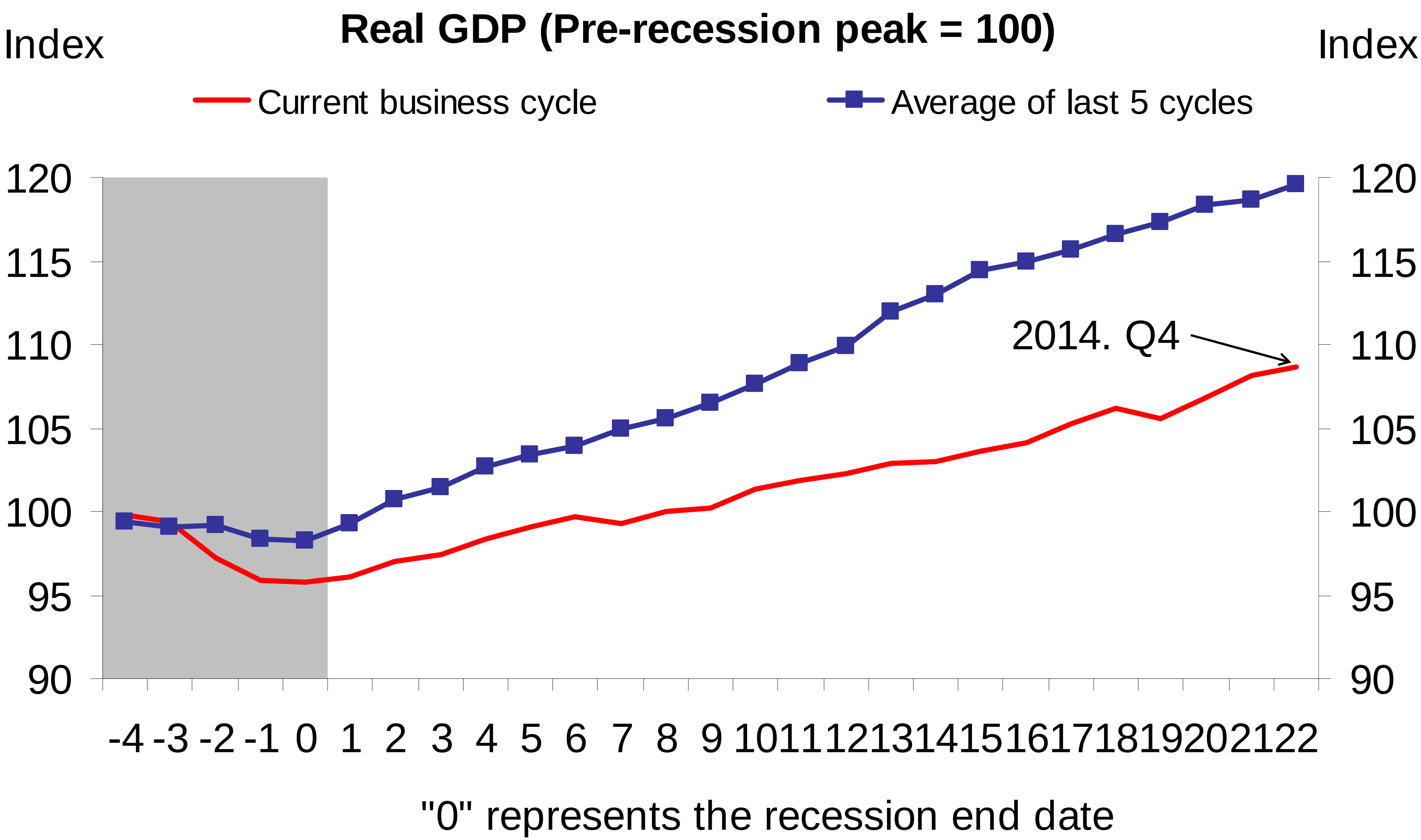
It's been an unusually long and slow recovery



Source: BEA, Haver Analytics, DB Global Markets Research

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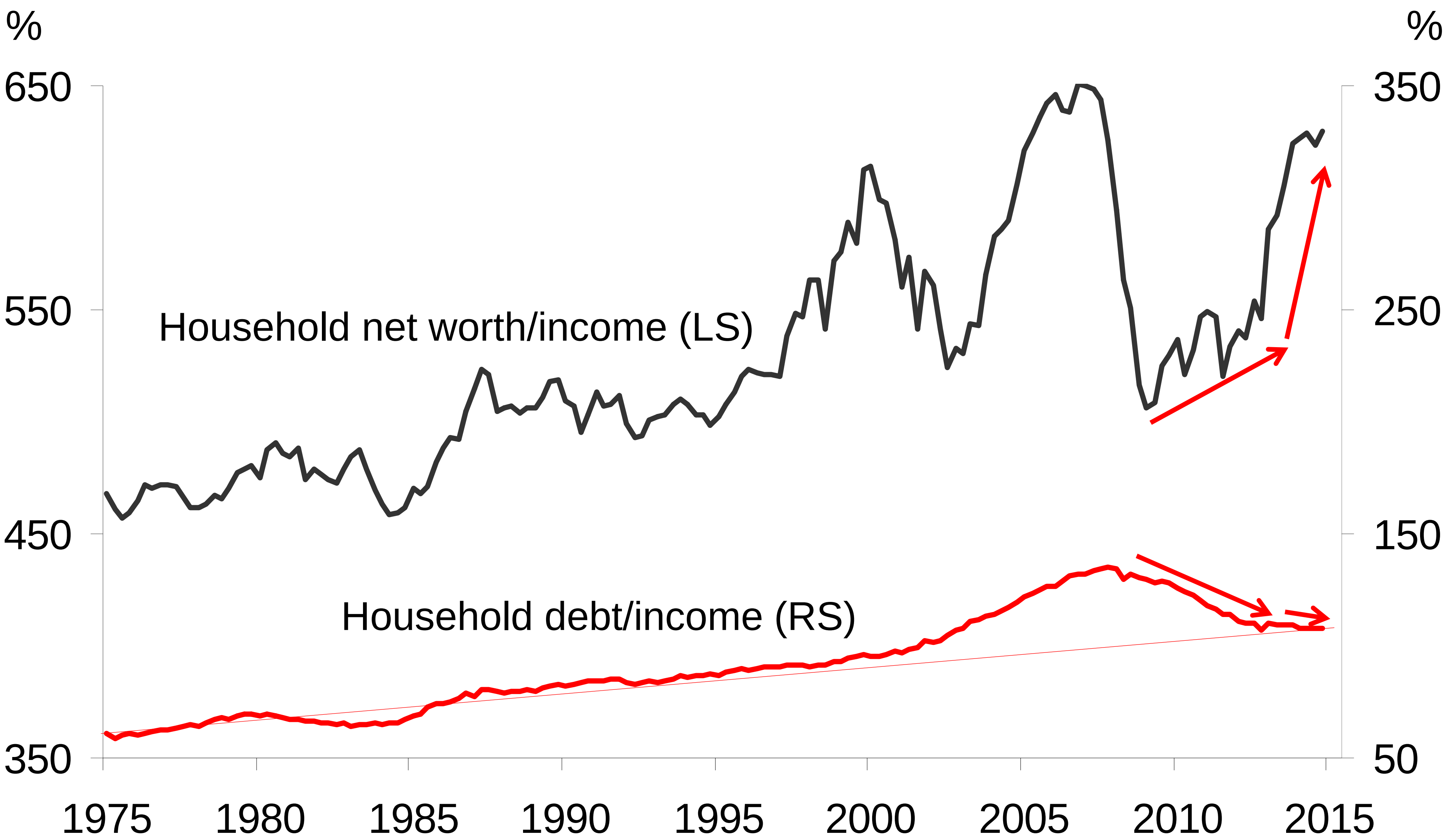
Ample time to strengthen balance sheets



Source: FRB, Haver Analytics, DB Global Markets Research

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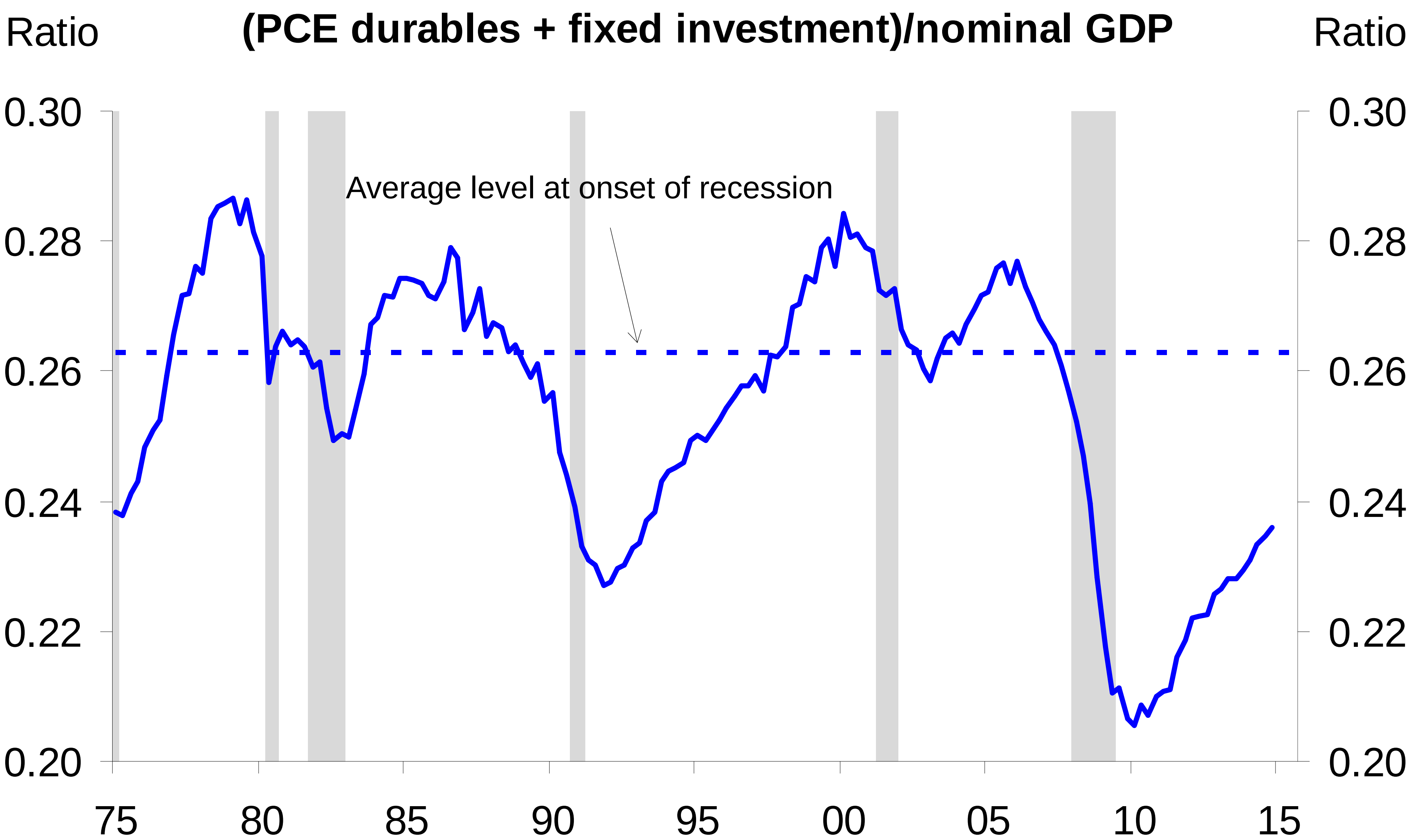
Spending on durables and structures still cyclically low



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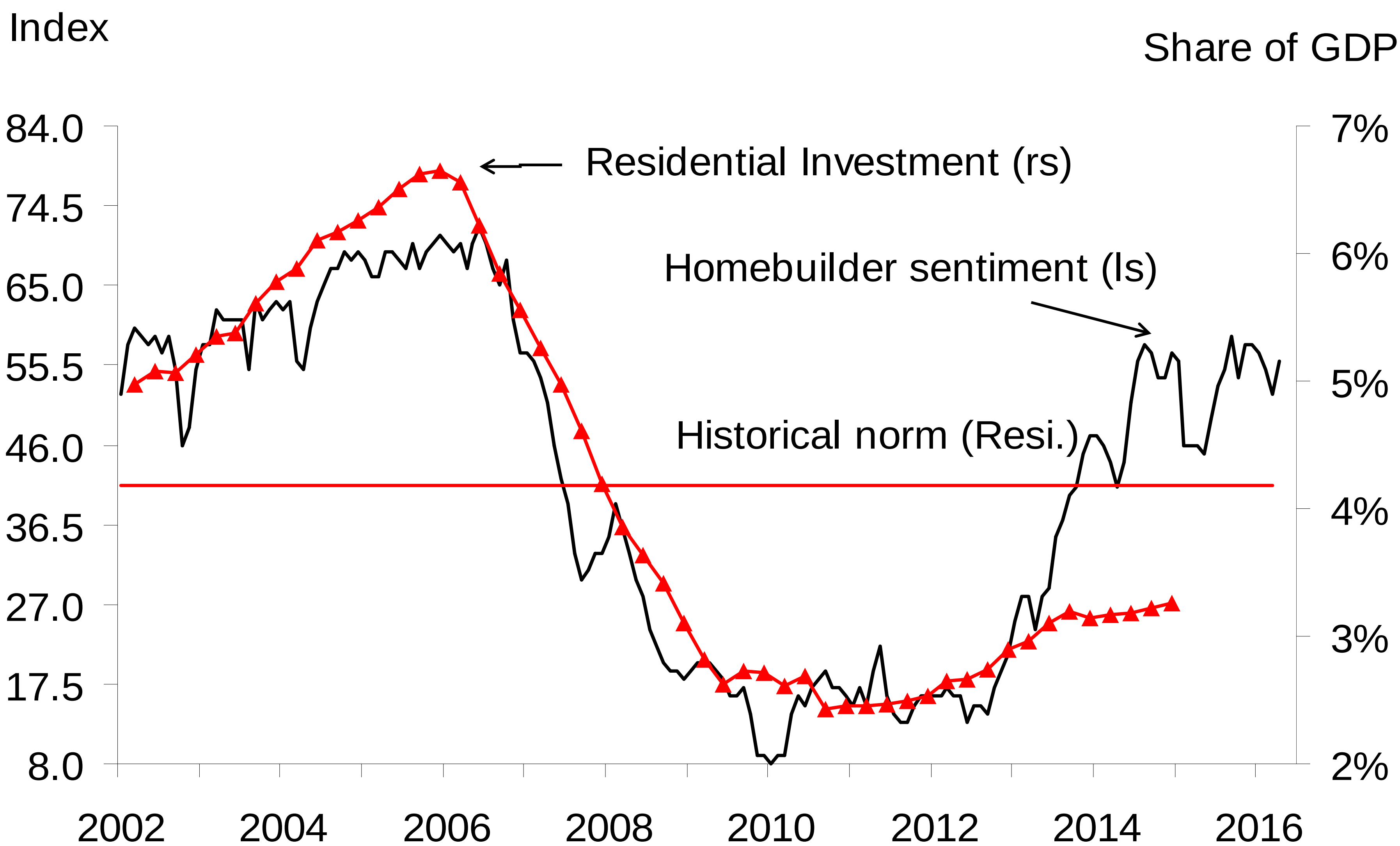
Home building running well below norm



Sources: NAHB, BEA, Haver Analytics, DB Global Markets Research

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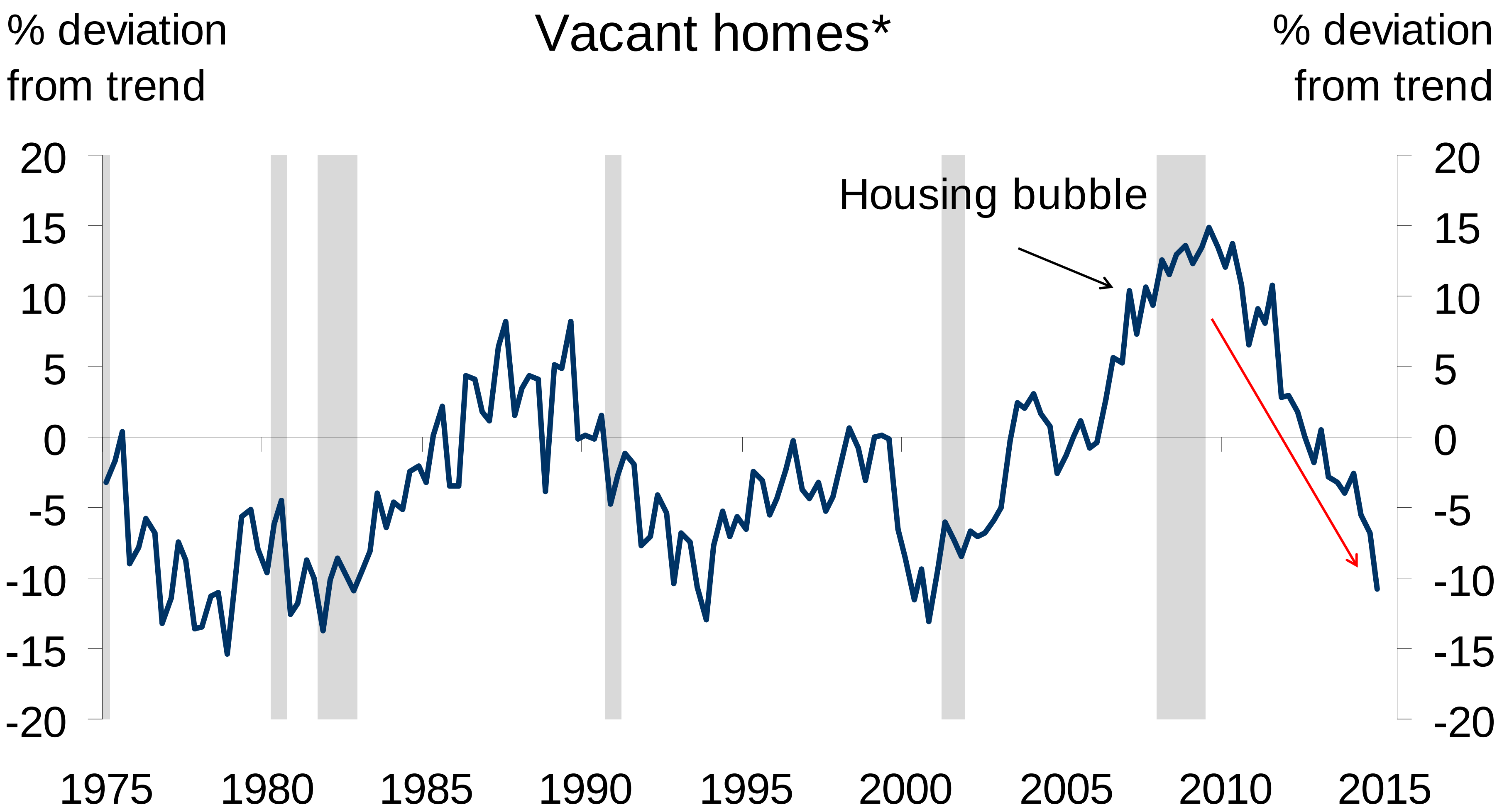
Housing market tightening: vacancies well below trend



*Includes homes for sale, homes for rent, and homes held off the market for other reasons; excludes seasonal homes and second homes not used as primary residence.

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

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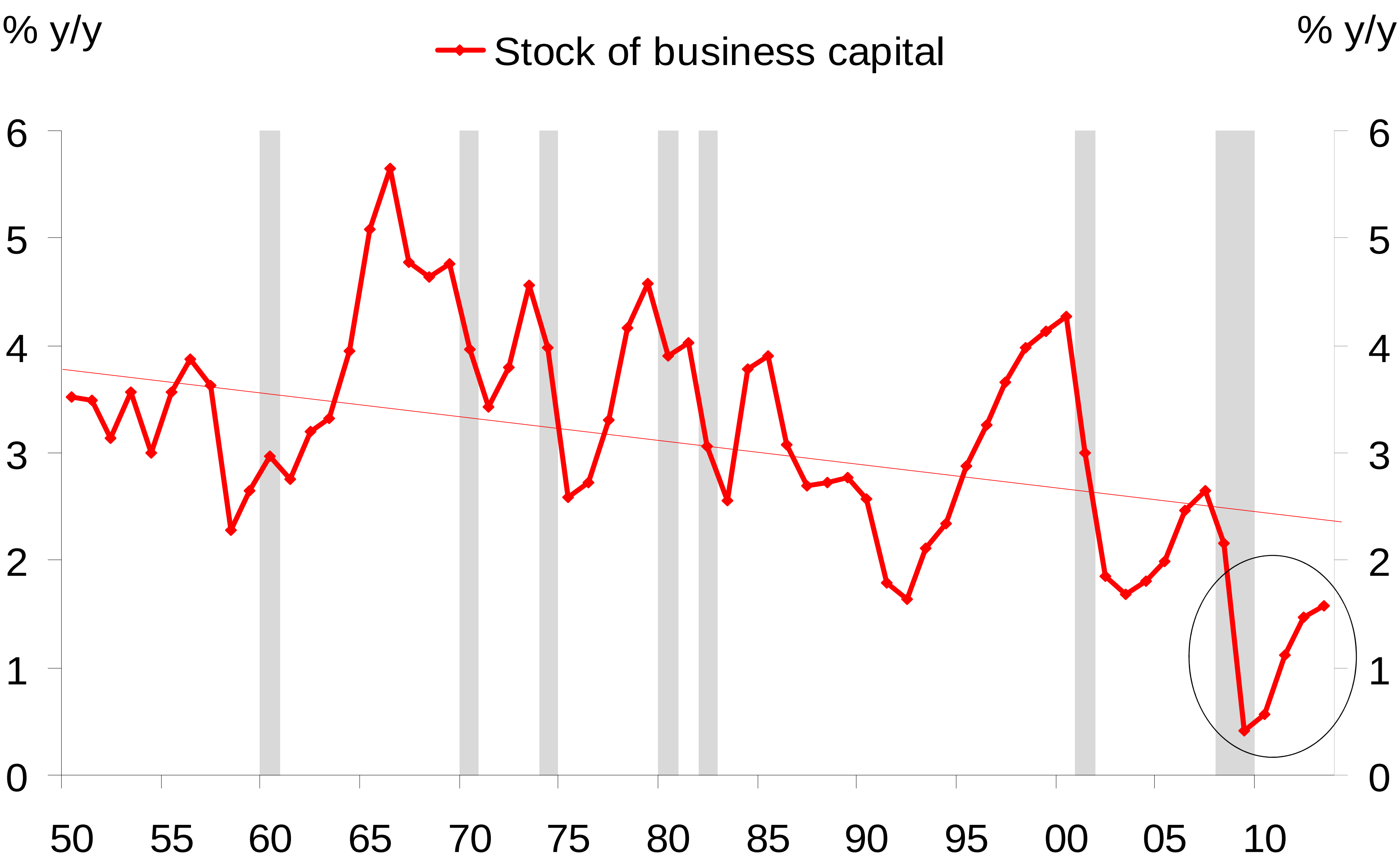
Business capital stock growth still depressed



Source: BEA, Haver Analytics, Deutsche Bank Research

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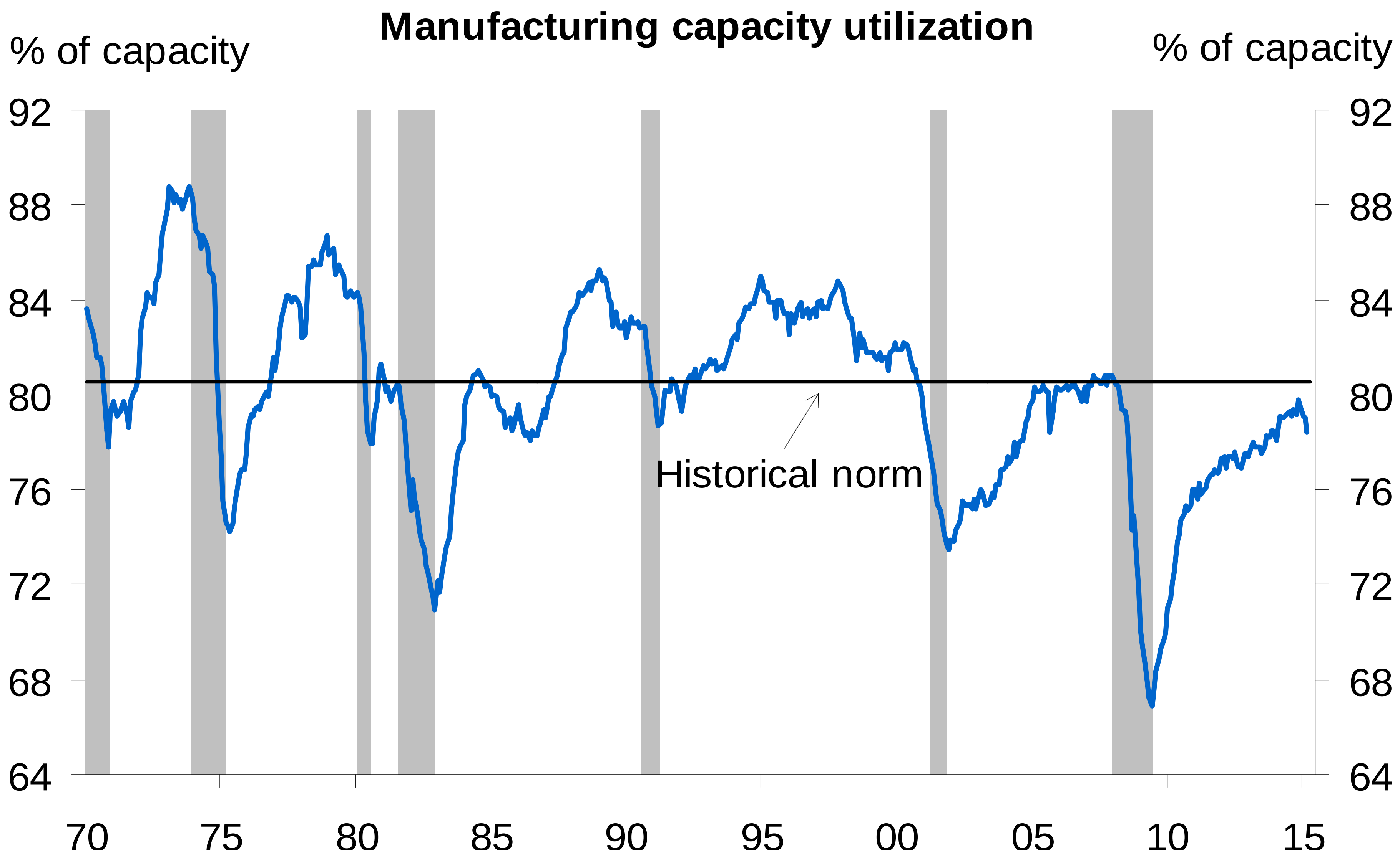
Capacity utilization near historical norm



Source: FRB , Haver Analytics, Deutsche Bank Research

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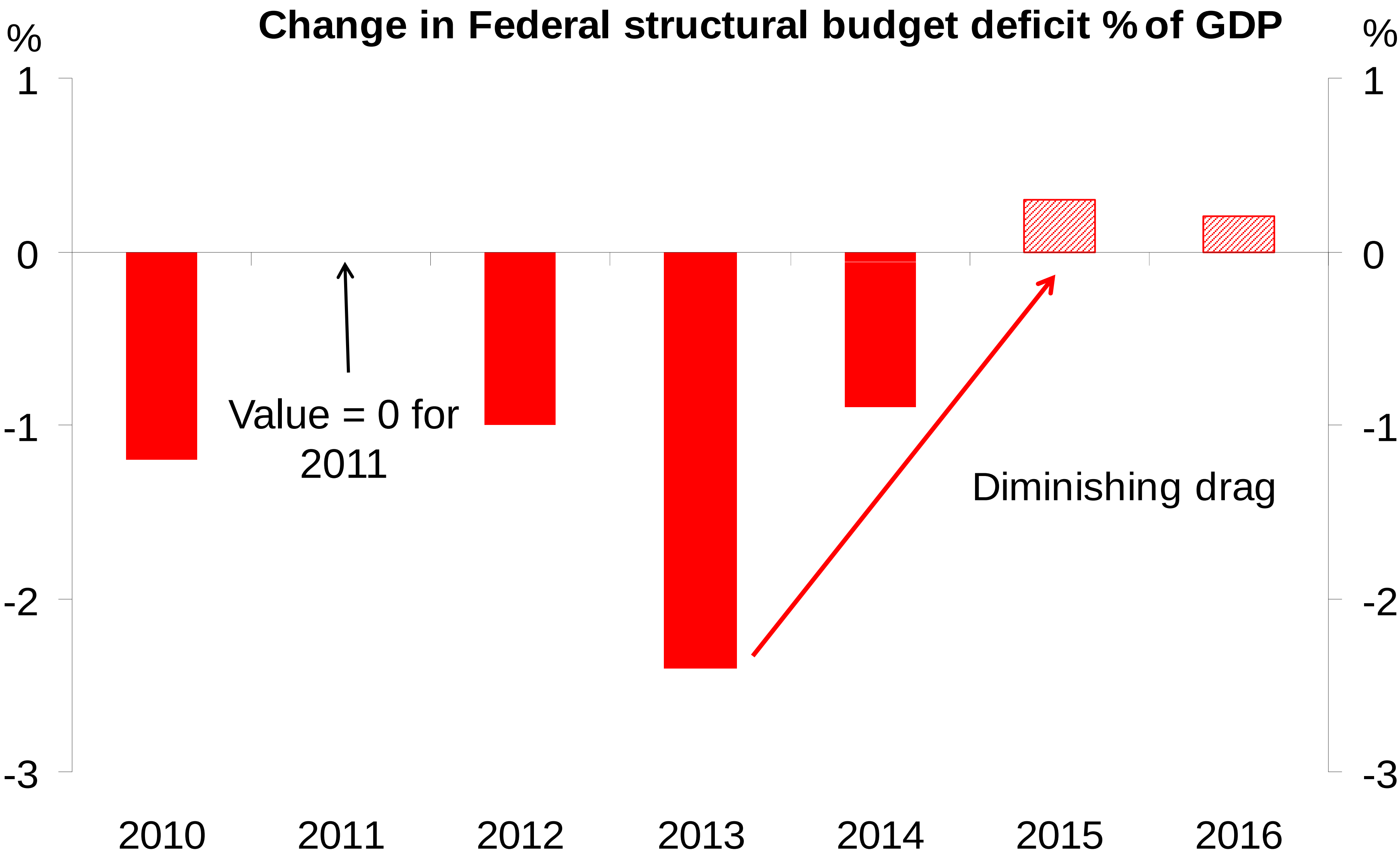
US fiscal drag gone for now



Source: CBO, Haver Analytics, DB Global Markets Research

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Conclusions

Of the many potential triggers for volatility shocks this year, two stand out as relatively likely—Fed liftoff (very likely) and a euro shock (moderately likely).

In the past, euro crises have had a larger negative effect on US financial conditions and real activity, not surprising since Fed liftoff is associated with a soundly recovering US economy.

Market liquidity conditions may have shifted in a direction that could exacerbate vol shocks ahead, though more convincing empirical evidence of this effect is needed.

The vulnerability of the US economy to a volatility shock is not high at this juncture because the current recovery is still relatively "young"—capital stock overhang has not yet developed, in fact, more investment is needed.

Source: DB Global Markets Research

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- **Peter Hooper** joined Deutsche Bank Securities in 1999 as Chief US Economist. He became Chief Economist and co-head of global economics in 2006. Prior to joining Deutsche Bank, Hooper enjoyed a distinguished 26-year career at the Federal Reserve Board in Washington, D.C. While rising to senior levels of the Fed staff, he held numerous positions, including as an economist on the FOMC. Hooper and his team produce weekly and quarterly publications for Deutsche Bank with a focus on US and global economic developments and Fed policy; he also comments on US and global economic and financial developments in the news media.
- Hooper currently serves as a member of the Economic Advisory Panel of the Federal Reserve Bank of New York, a member and former chairman of the Economic Advisory Committee of the American Bankers Association, a founding member of the US Monetary Policy Forum, a member of the Economic Leadership Council for the University of Michigan, and a member of the Forecasters' Club of New York. Hooper earned a BA in Economics (cum laude) from Princeton University and an MA and Ph.D. in Economics from University of Michigan. He has published numerous books, journal articles, and reviews on economics and policy analysis.

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