



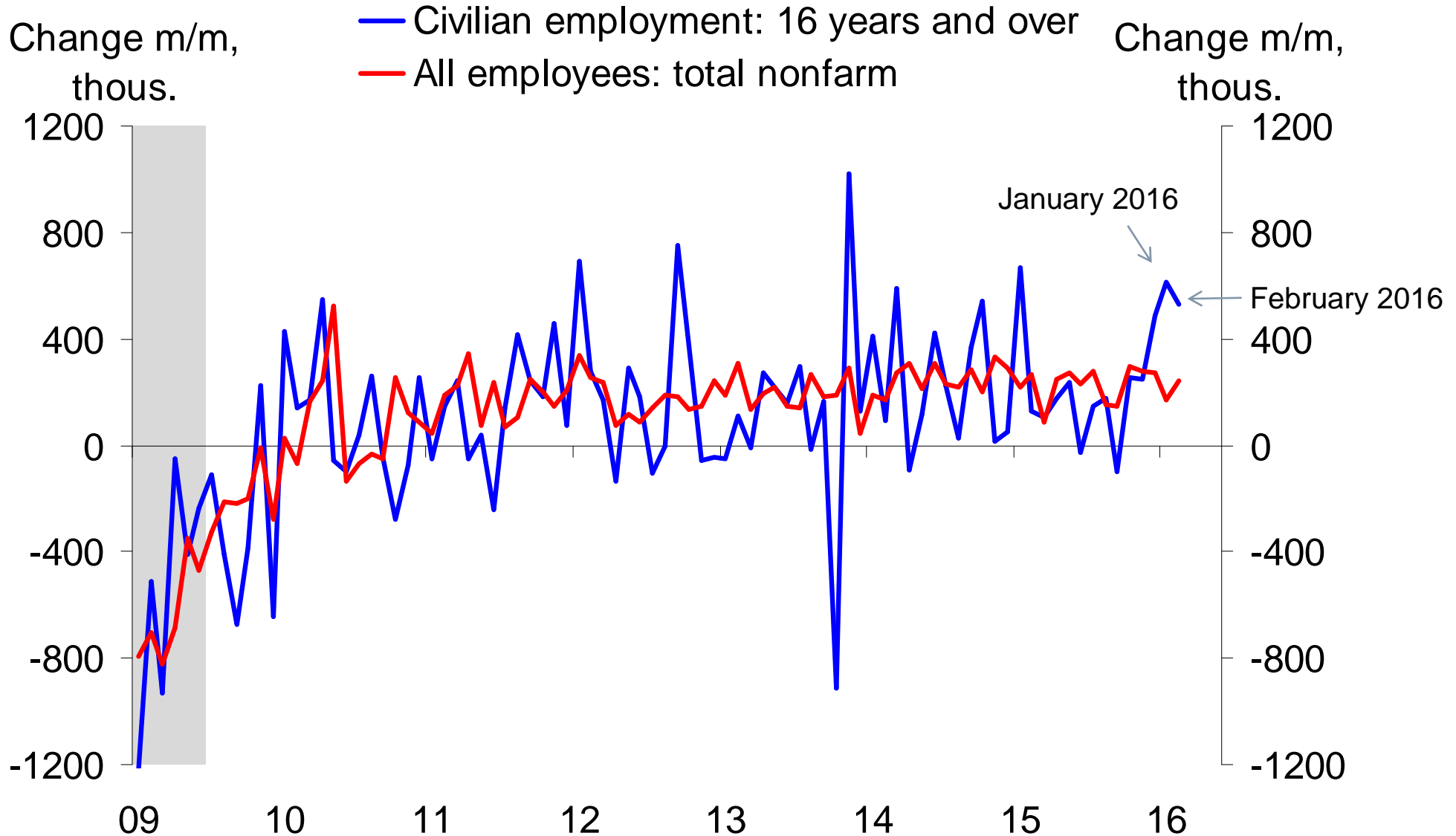
# Fed rate hikes coming

March 2016

*Passion to Perform*

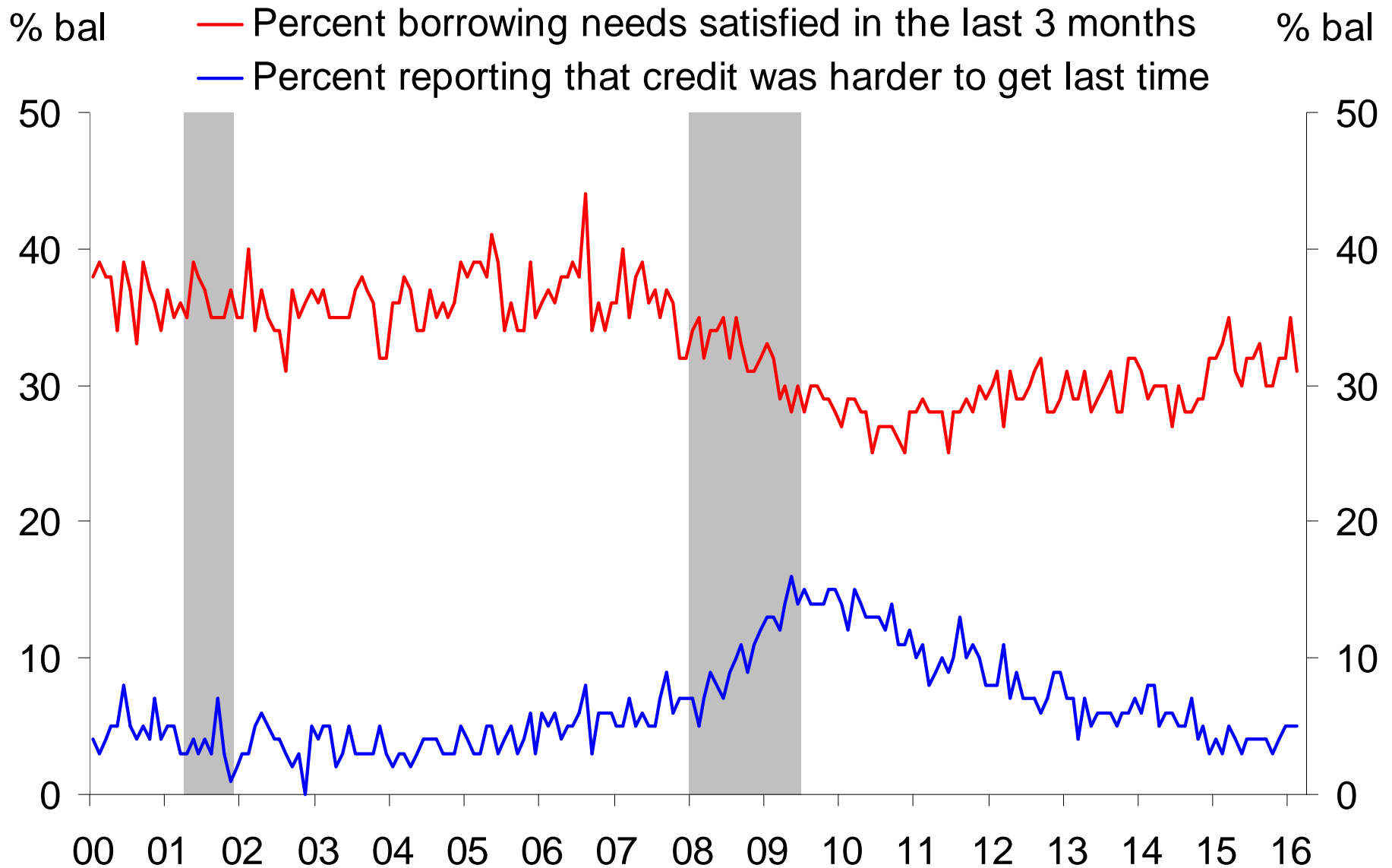
Torsten Slok, Ph.D.  
Chief International Economist  
Managing Director  
60 Wall Street  
New York, New York 10005  
Tel: 212 250 2155  
[Torsten.Slok@db.com](mailto:Torsten.Slok@db.com)

# Where is the slowdown?



Source: BLS, Haver Analytics, DB Global Markets Research

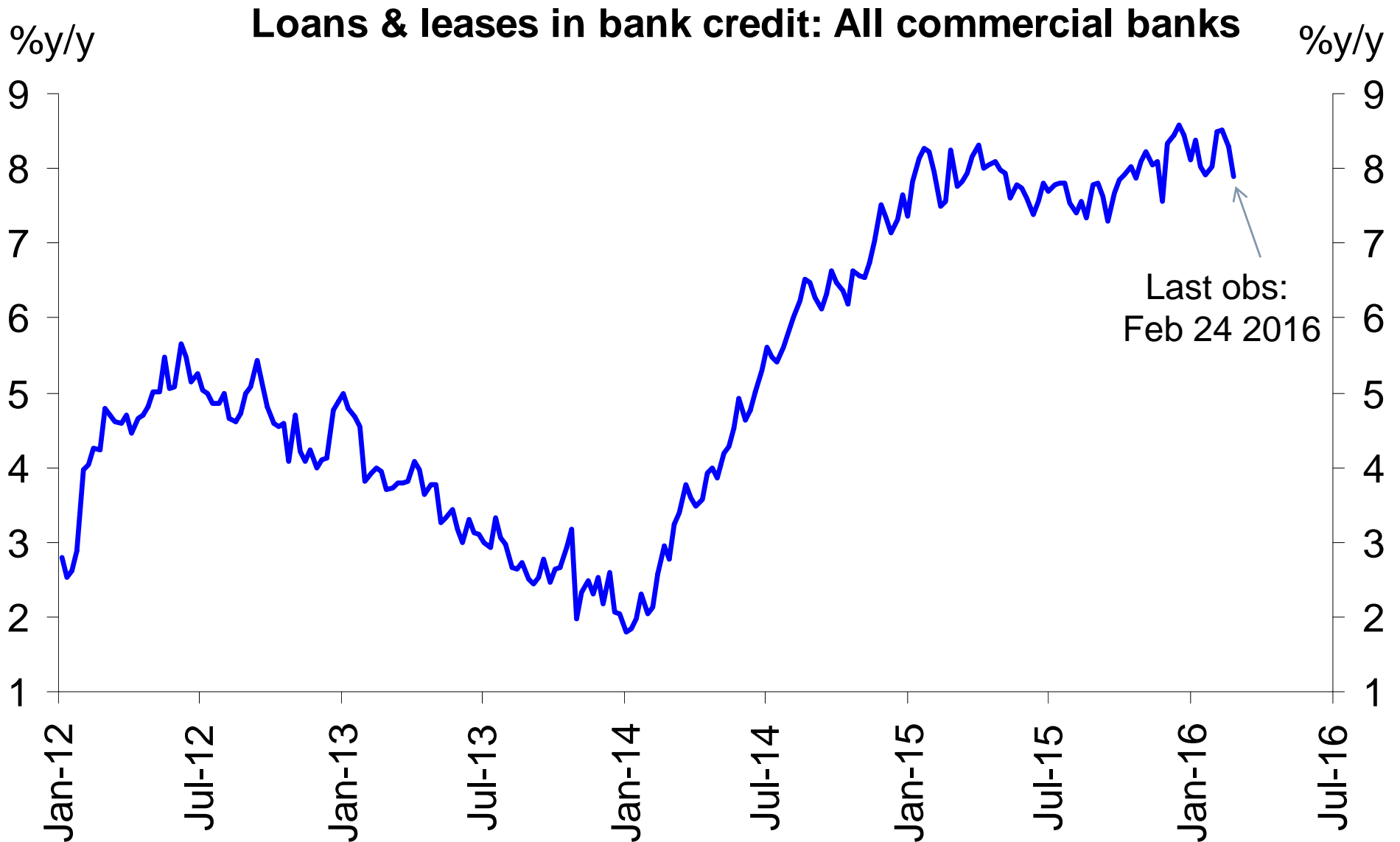
# No signs of a US credit crunch for small businesses



Note : Nationwide data

Source: NFIB, Haver Analytics, DB Global Markets Research

# Weekly data shows no signs of a US credit crunch

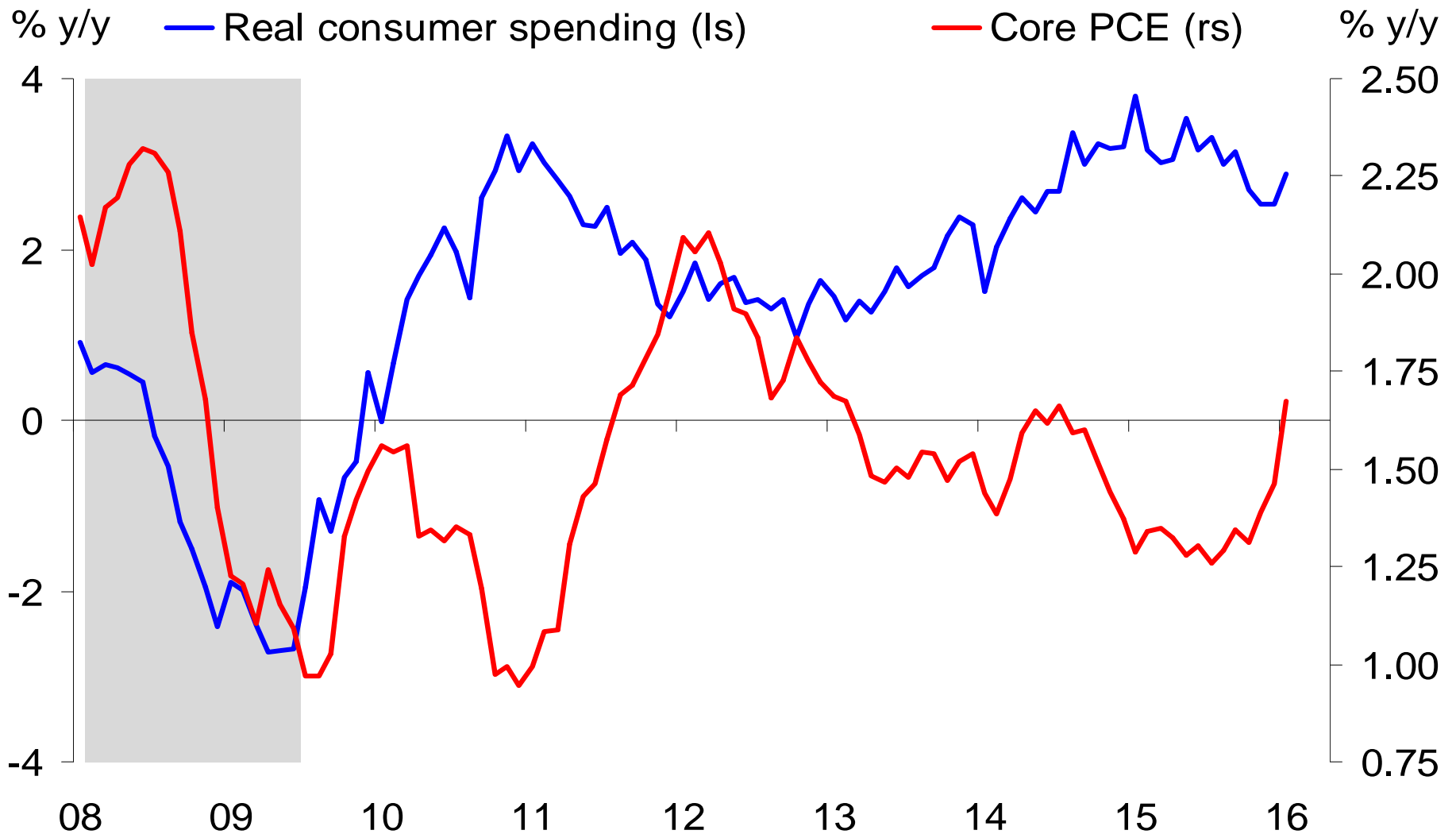


Source: FRB, Haver Analytics, DB Global Markets Research



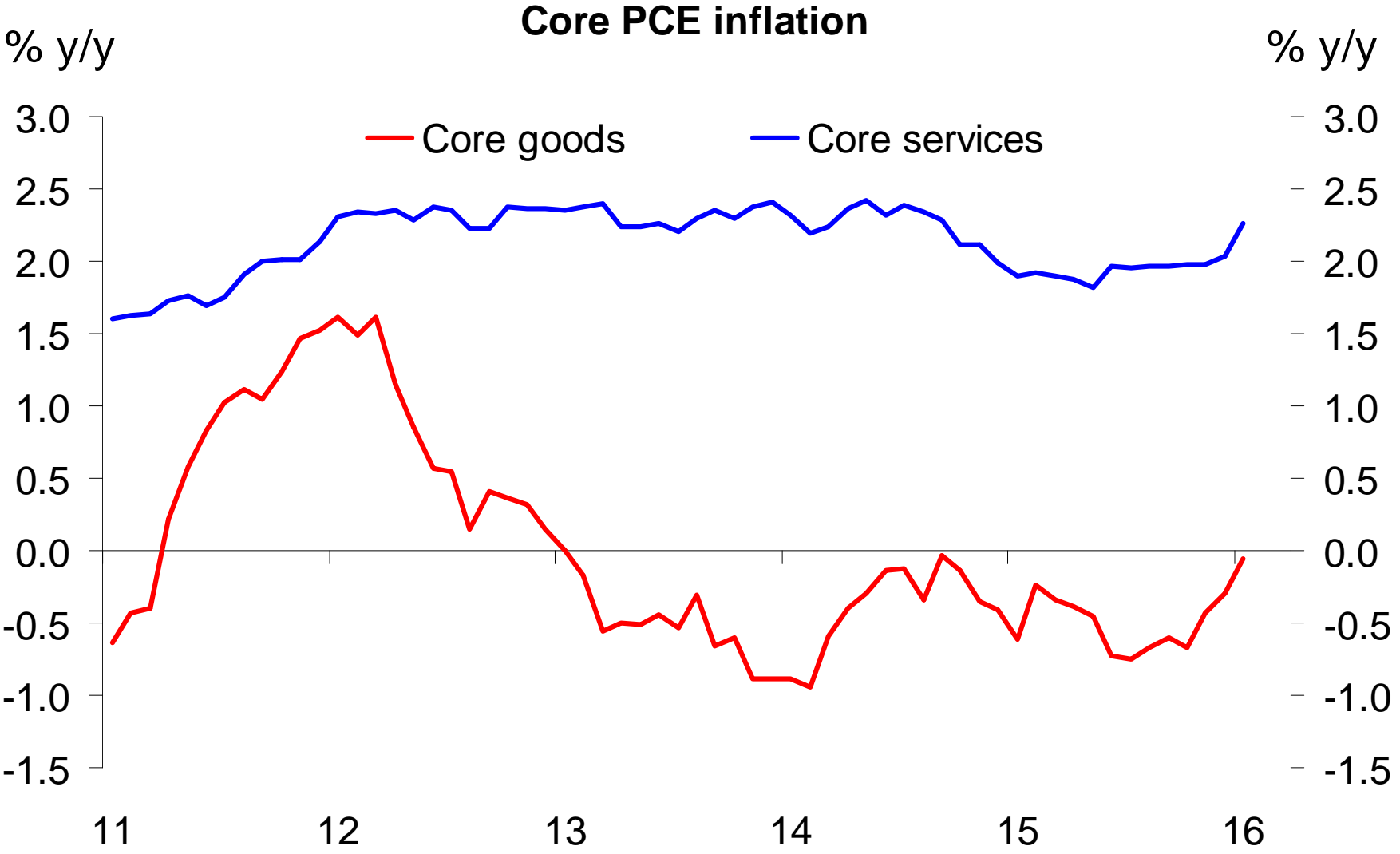
# US Overview: No signs of a recession

# Consumer spending and inflation accelerating



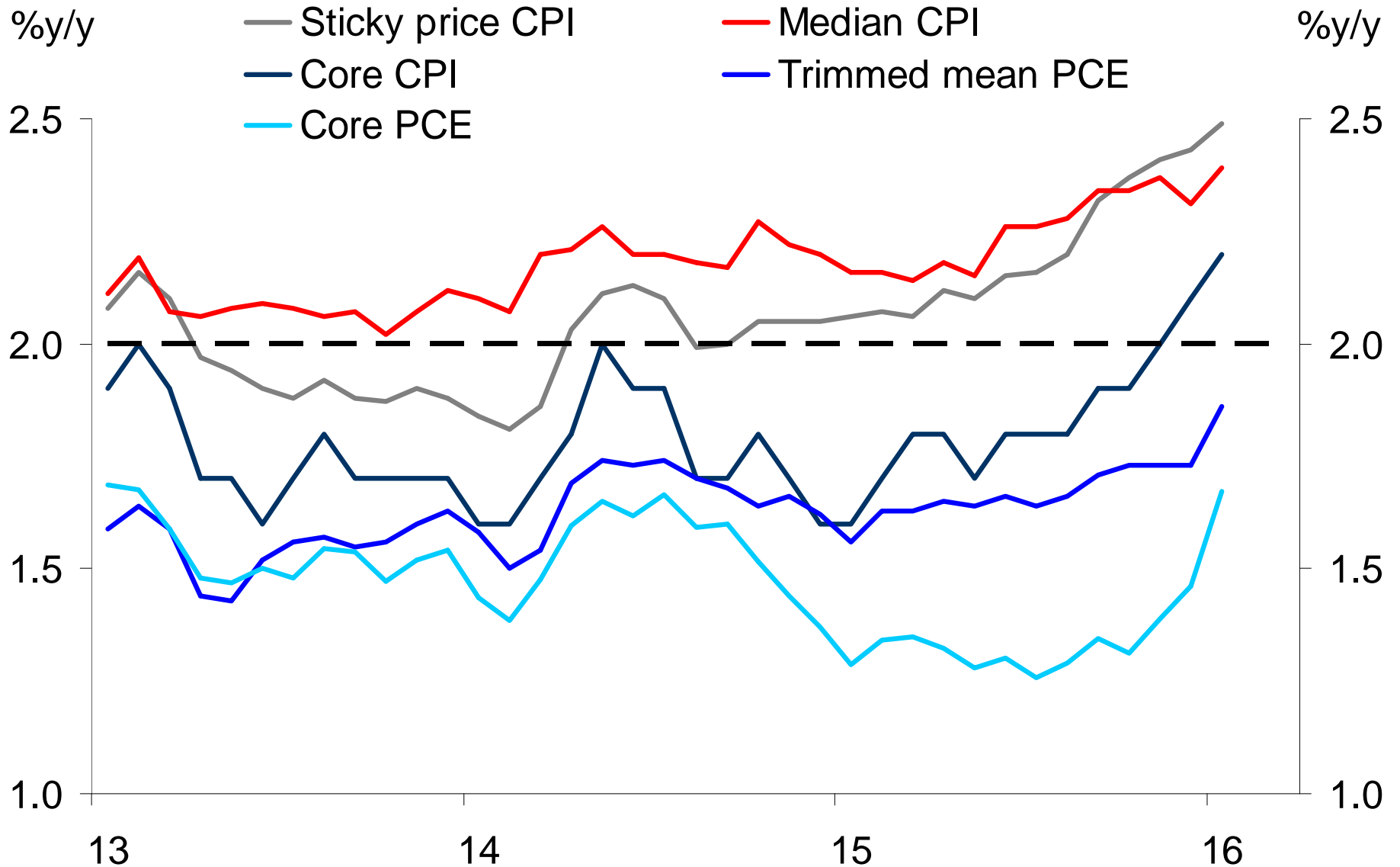
Source: BEA, Haver Analytics, DB Global Markets Research

# Inflation trending higher for both goods and services



Source: BEA, Haver Analytics, DB Global Markets Research

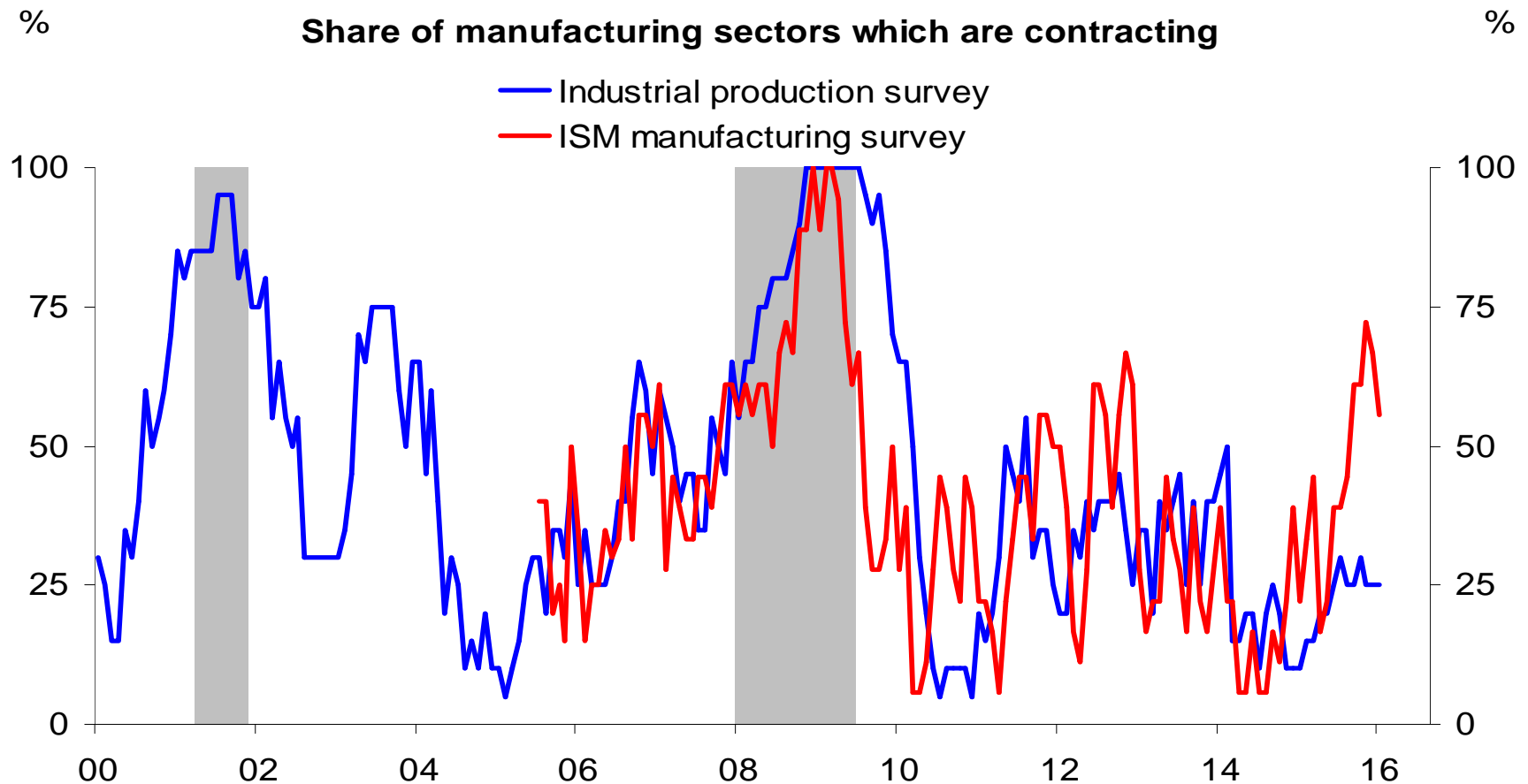
# US inflation trending higher



Source: FRBATL, FRBCLE, BLS, FRBDAL, BEA, Haver Analytics, DB Global Markets Research



# Share of manufacturing sectors in recession



**Sectors which are expanding:** Wood products; Nonmetallic mineral products; Computer and electronic products; Electrical eqpt, appliance & components; Motor vehicles & parts; Aerospace & other misc transportation eqpt; Furniture & related products; Miscellaneous; Food, beverage & tobacco products; Textile & product mills; Printing & related support activities; Chemical; Petroleum & coal products; Plastics & rubber products; Other manufacturing

**Sectors which are contracting:** Primary metal; Fabricated metal products; Machinery; Apparel & leather goods; Paper

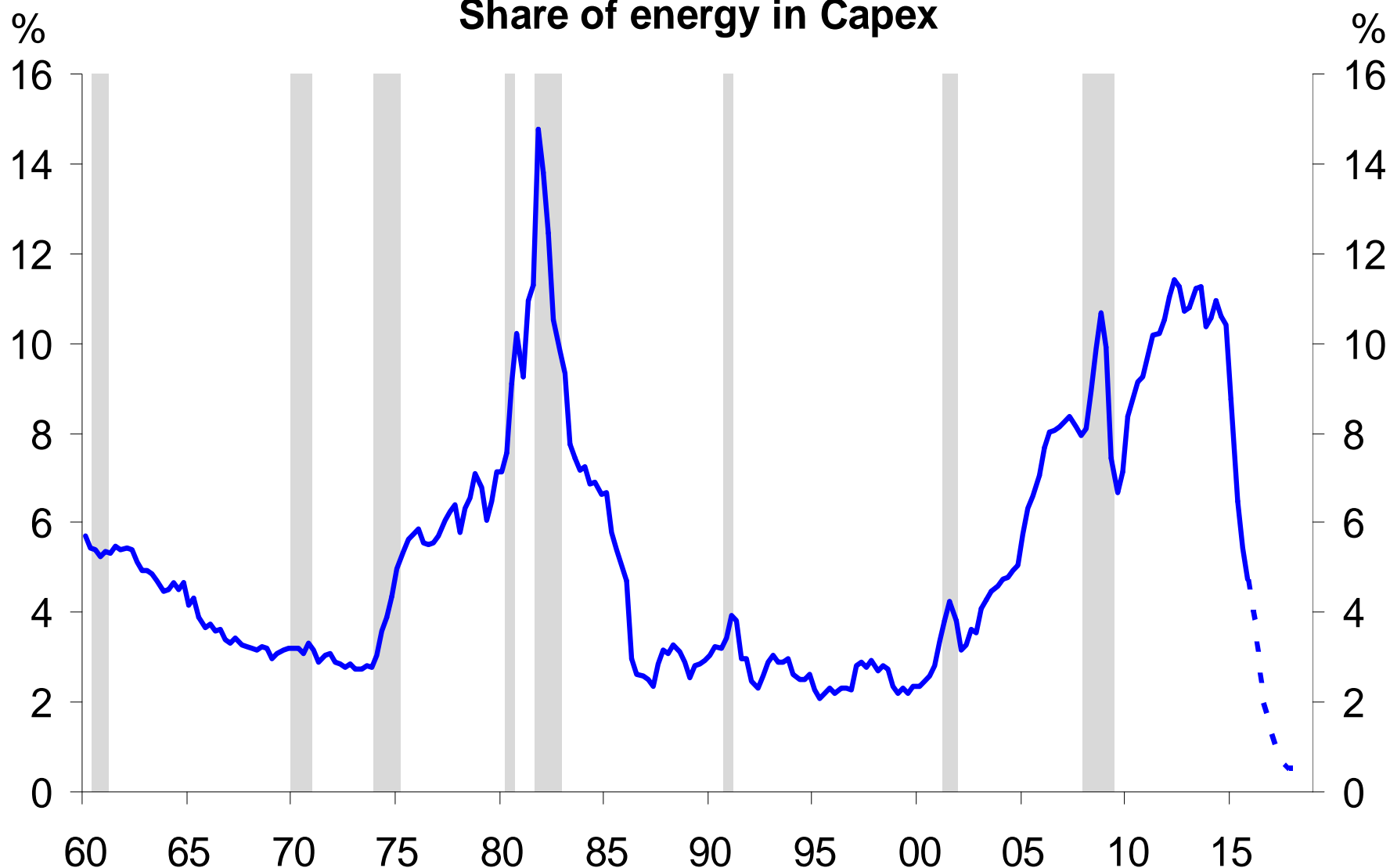
Note: Share of sectors contracting in ISM Survey = 100 – percent of industries reporting growth

Source: FRB, Haver Analytics, DB Global Markets Research

# Smaller and smaller negative impact on GDP growth from the energy sector



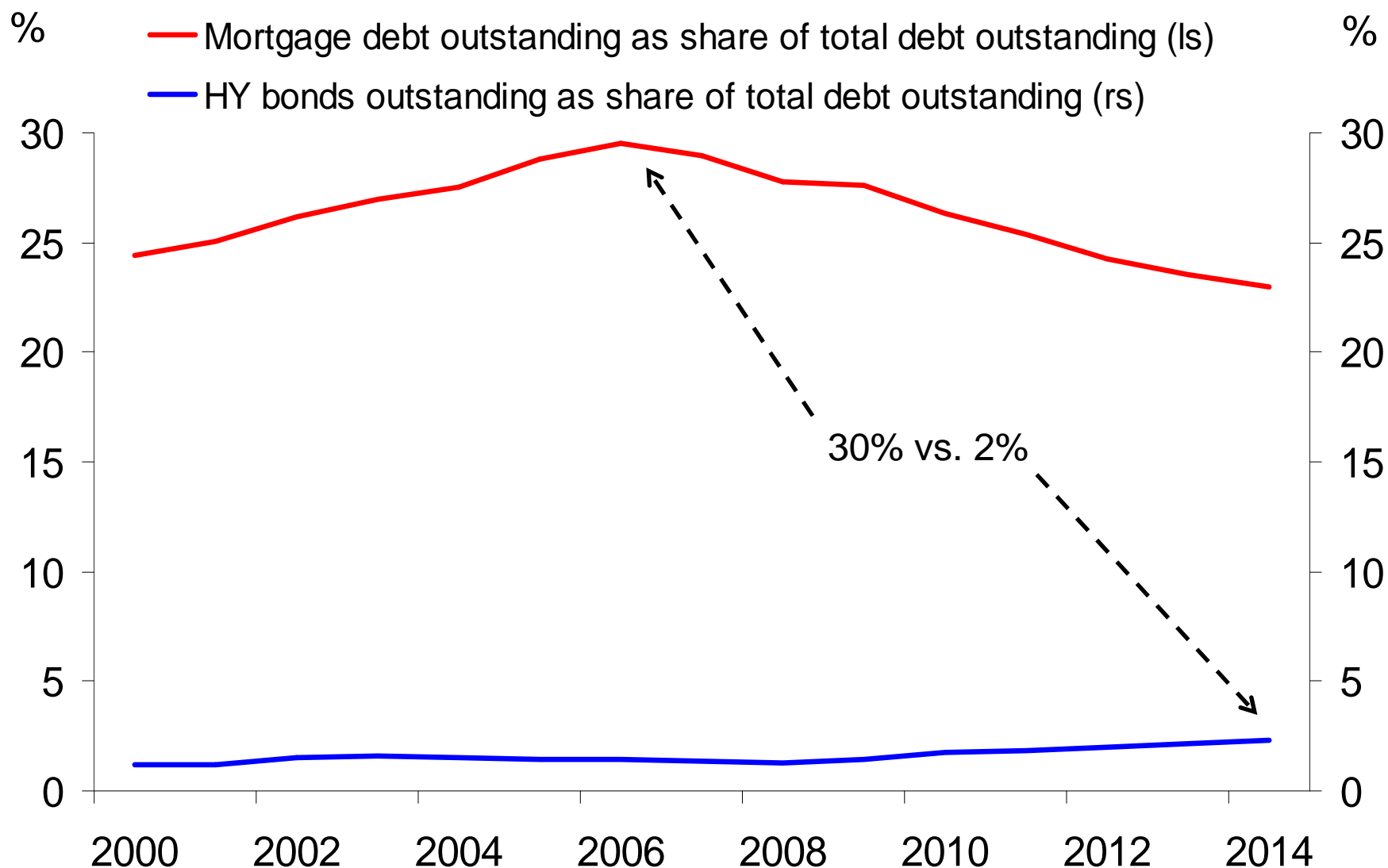
## Share of energy in Capex



Private fixed investments in petroleum and natural gas explore/wells and mining & oilfield machinery in total non residential fixed investments in equipments and structures

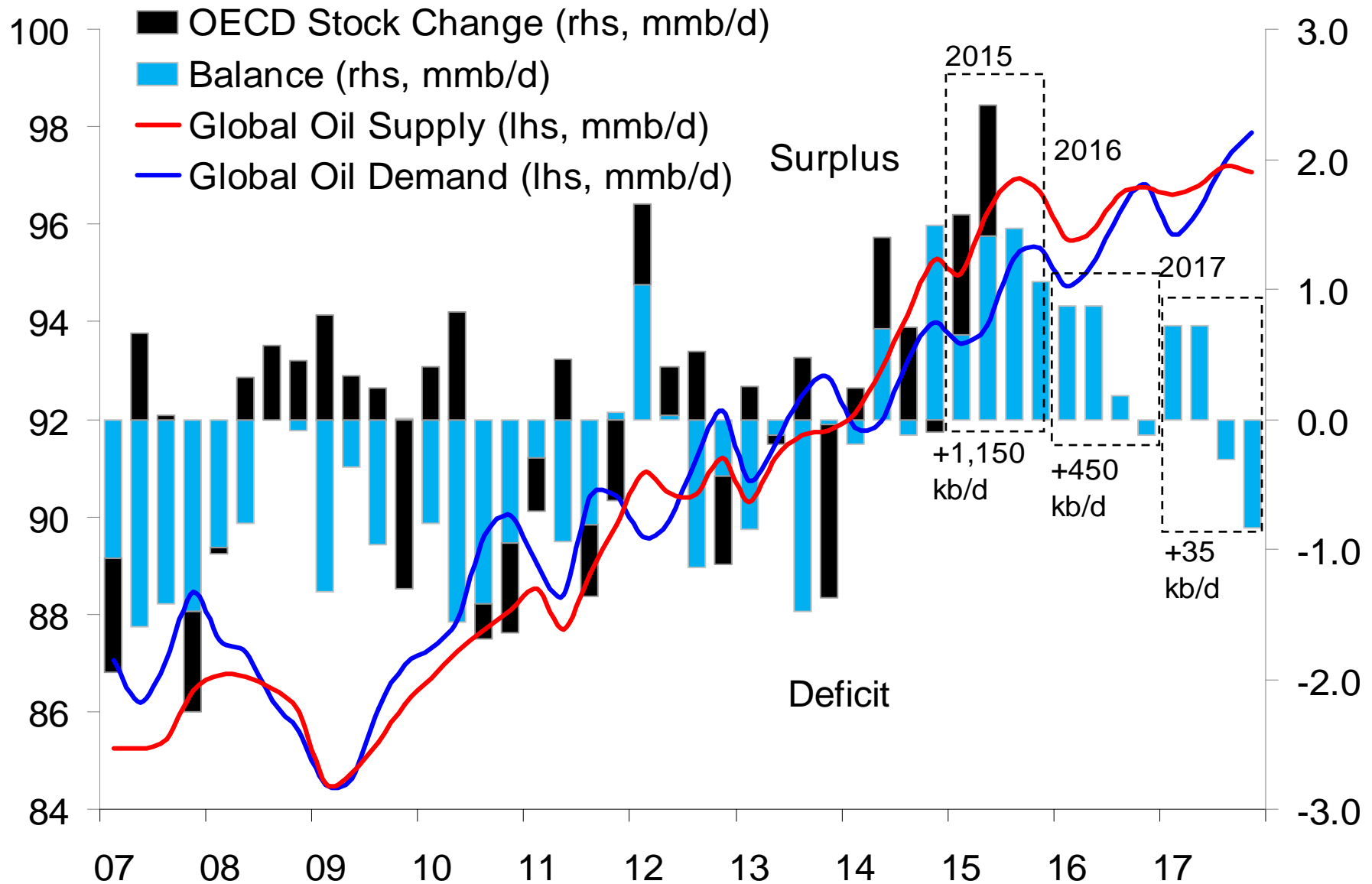
Source: BEA, Haver Analytics, DB Global Markets Research

# Today is very different from 2006



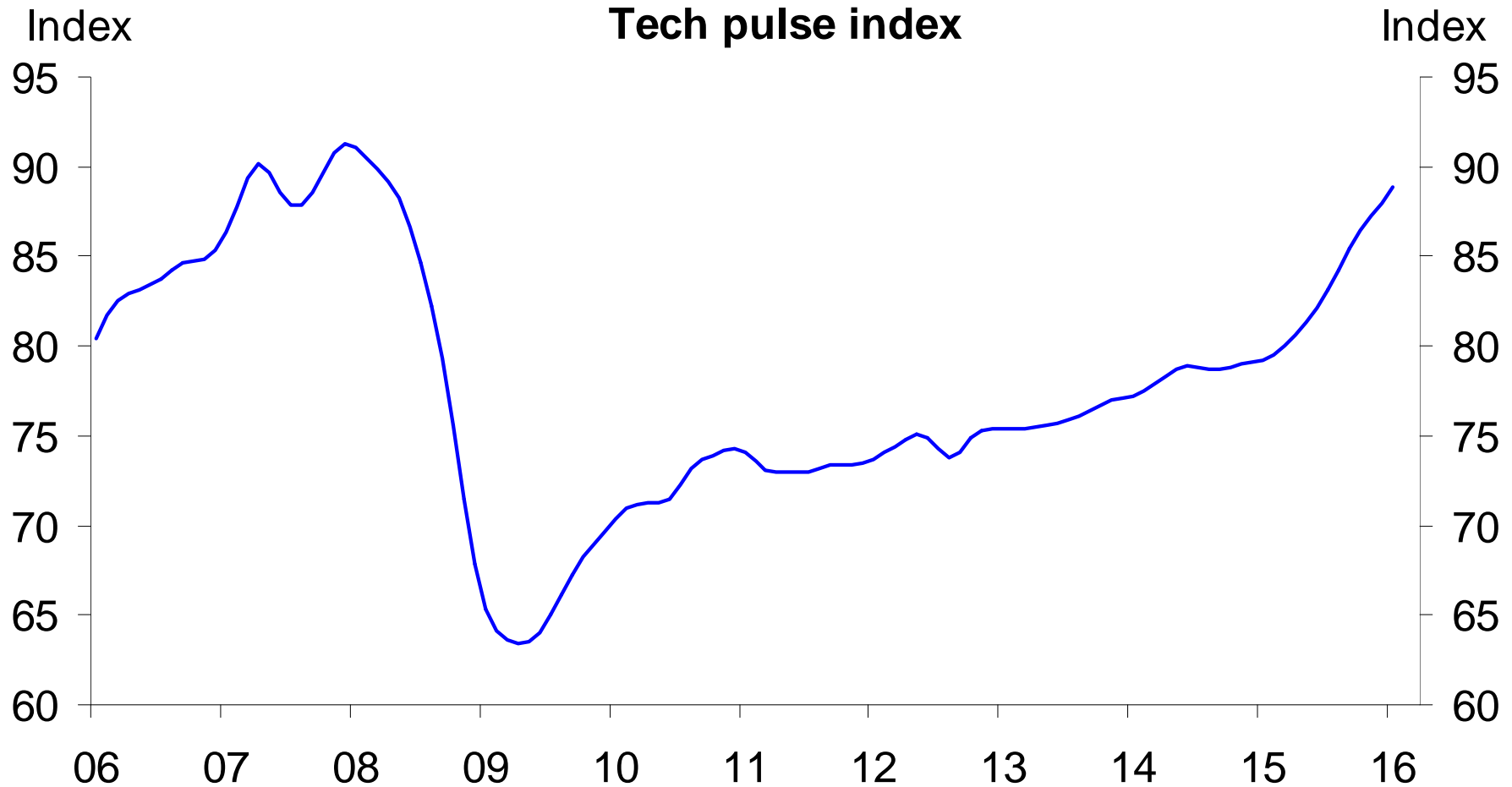
Source: FRB, DB US Credit Strategy, Haver Analytics, DB Global Markets Research

# Oil demand and supply imbalance will continue for most of 2016



Source: IEA, Michael Hsueh, DB Global Markets Research

# Tech sector doing well



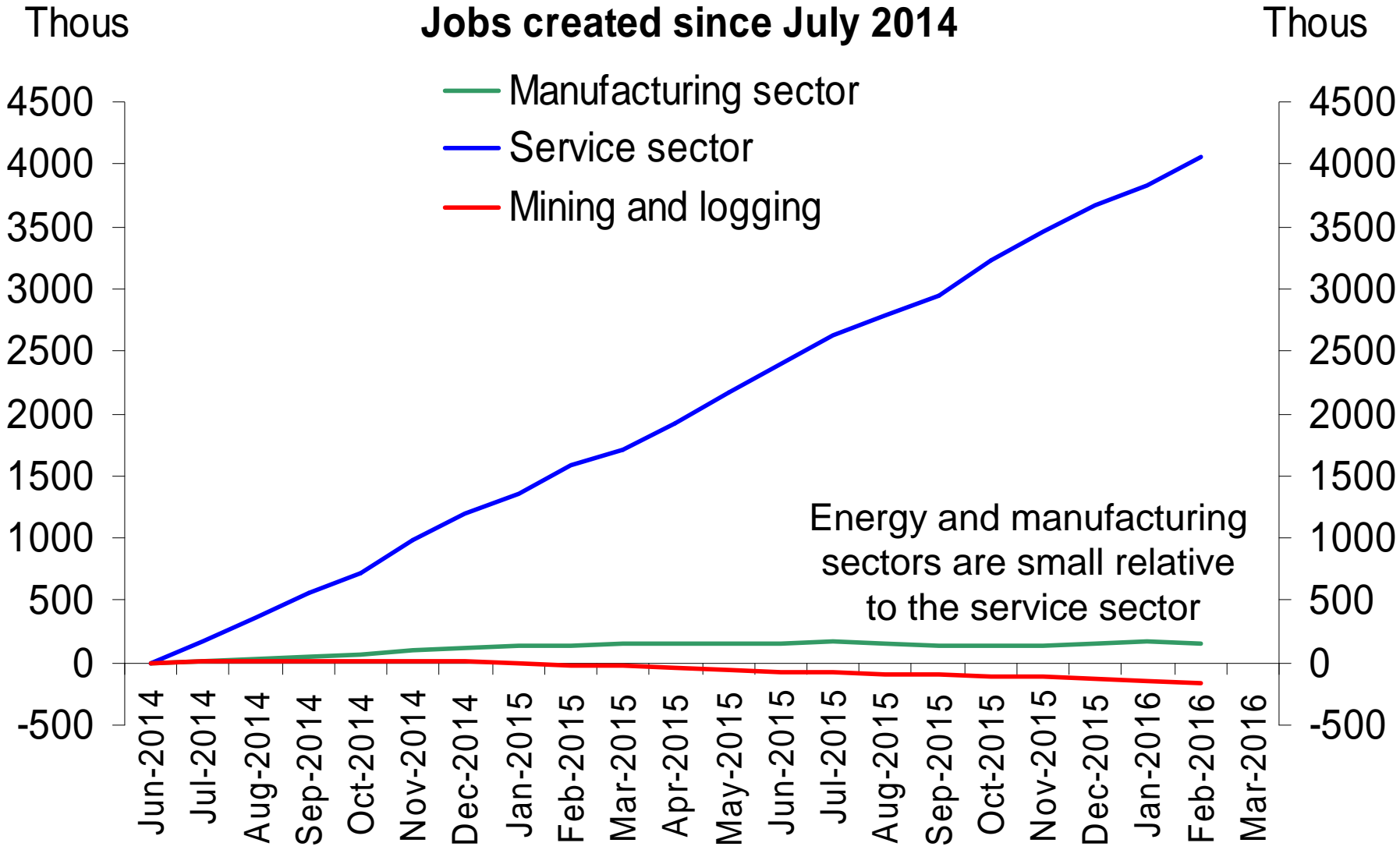
The Tech Pulse Index is an index of coincident indicators of activity in the U.S. information technology sector. It can be interpreted as a summary statistic that tracks the health of the tech sector in a timely manner. The indicators used to compute the index are investment in IT goods, consumption of personal computers and software, employment in the IT sector, as well as industrial production of and shipments by the technology sector. The index extracts the common trend that drives these series.

Source: FRBSF, Haver Analytics, DB Global Markets Research



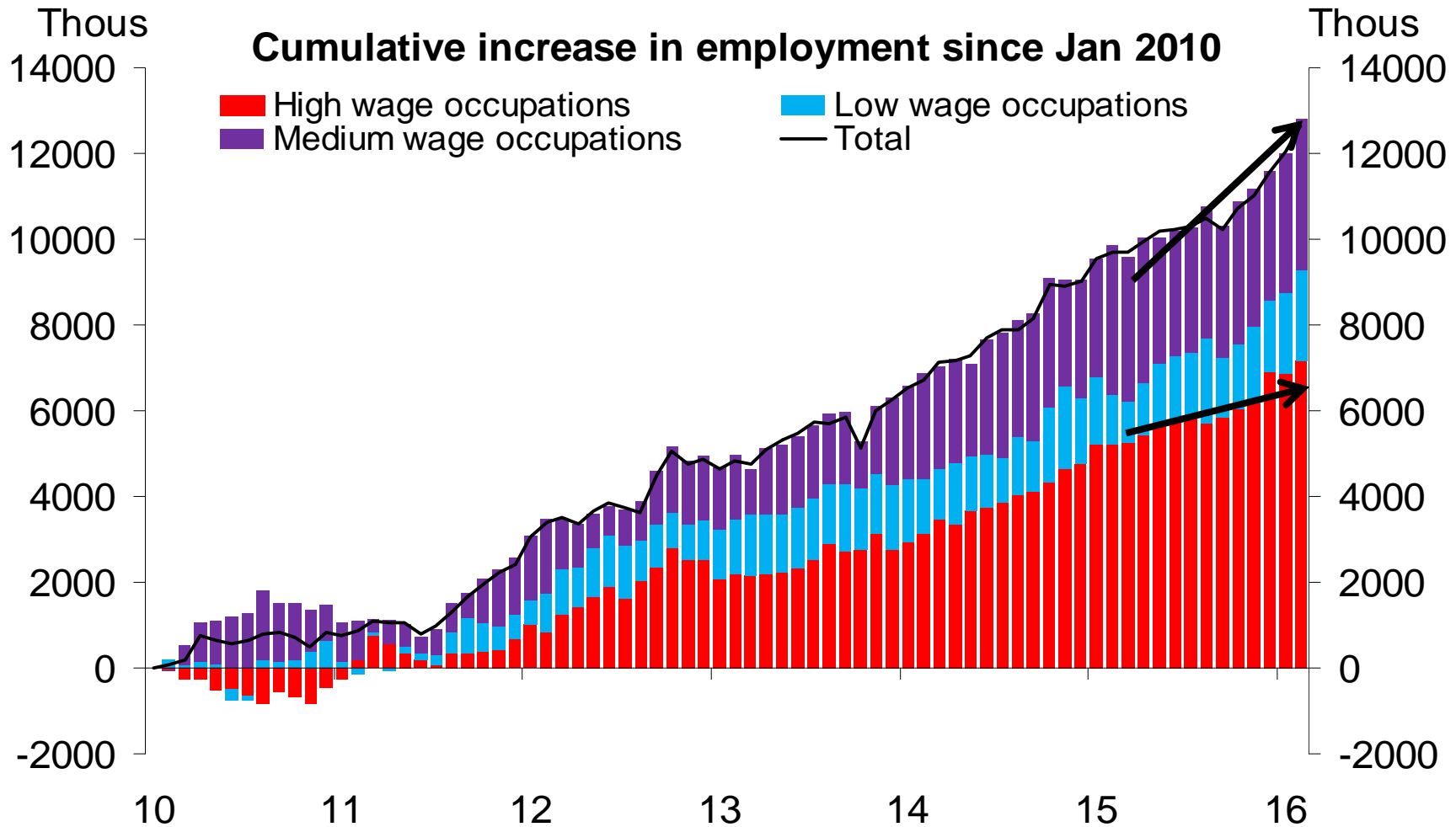
# US labor market

Job creation since the summer of 2014 when oil prices started falling, the dollar started rising, and credit spreads started widening



Source: BLS, Haver Analytics, Deutsche Bank Research

At first, this was a high wage/long education expansion. Now the expansion is broadening out to also benefit low and middle-income workers



High wage occupational categories are management, professional and related occupations. Medium wage categories are sales and office occupations; construction and extraction occupations; installation, maintenance and repair occupations; and production/transportation and material moving occupations. Low wage occupations are service occupations and farming, fishing, and forestry.

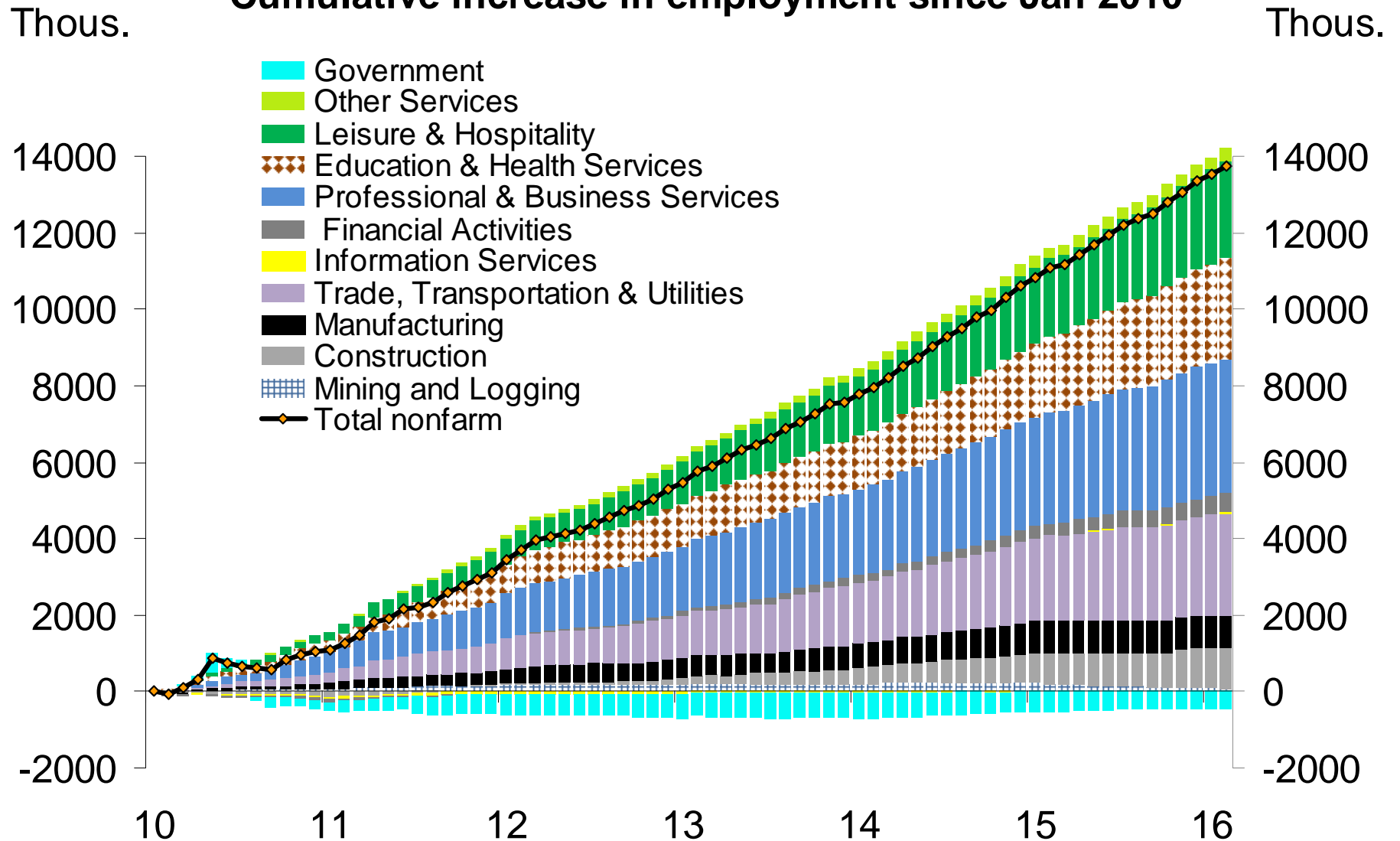
Source: BLS, Haver Analytics, DB Global Markets Research



# Employment growth during this recovery

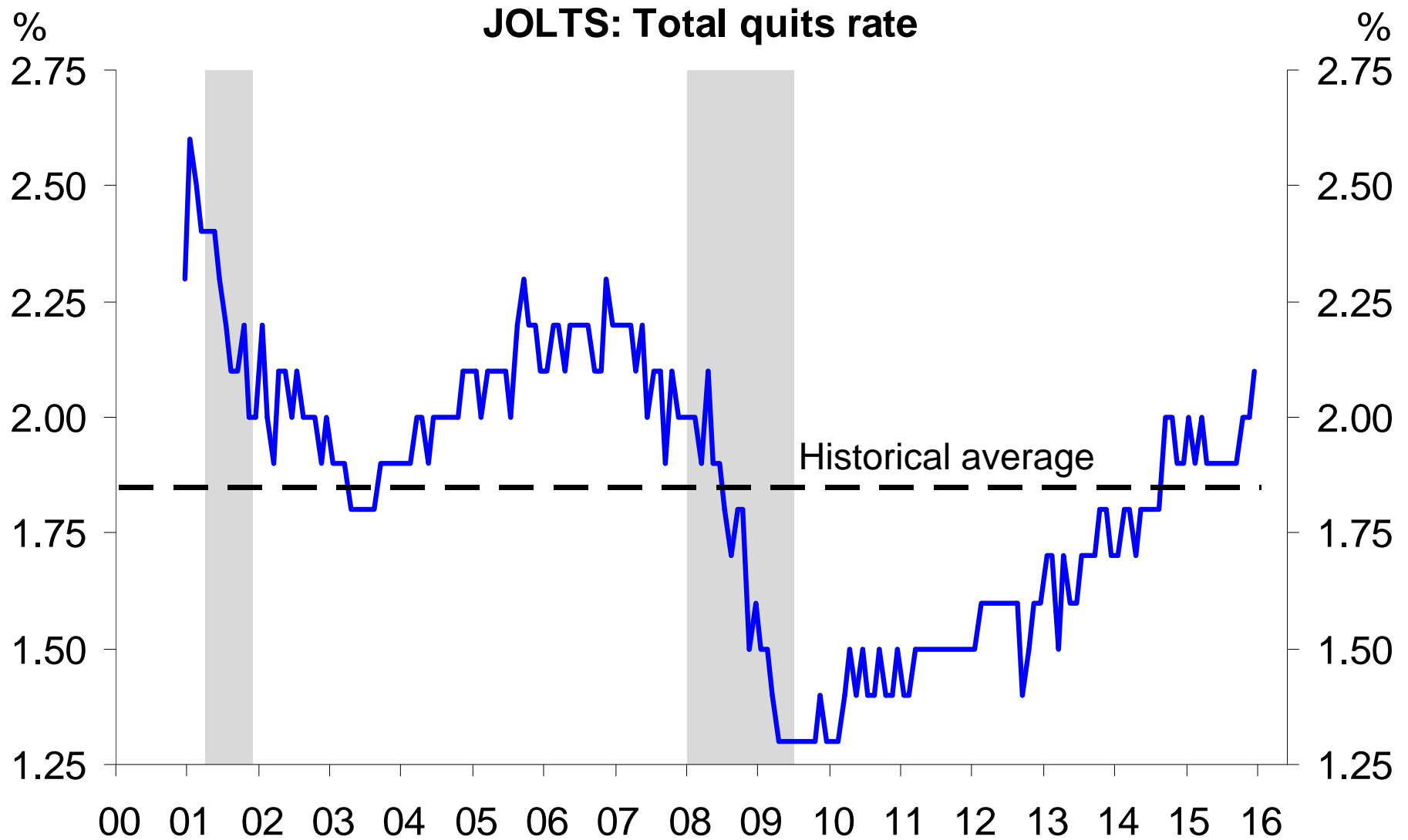


## Cumulative increase in employment since Jan 2010



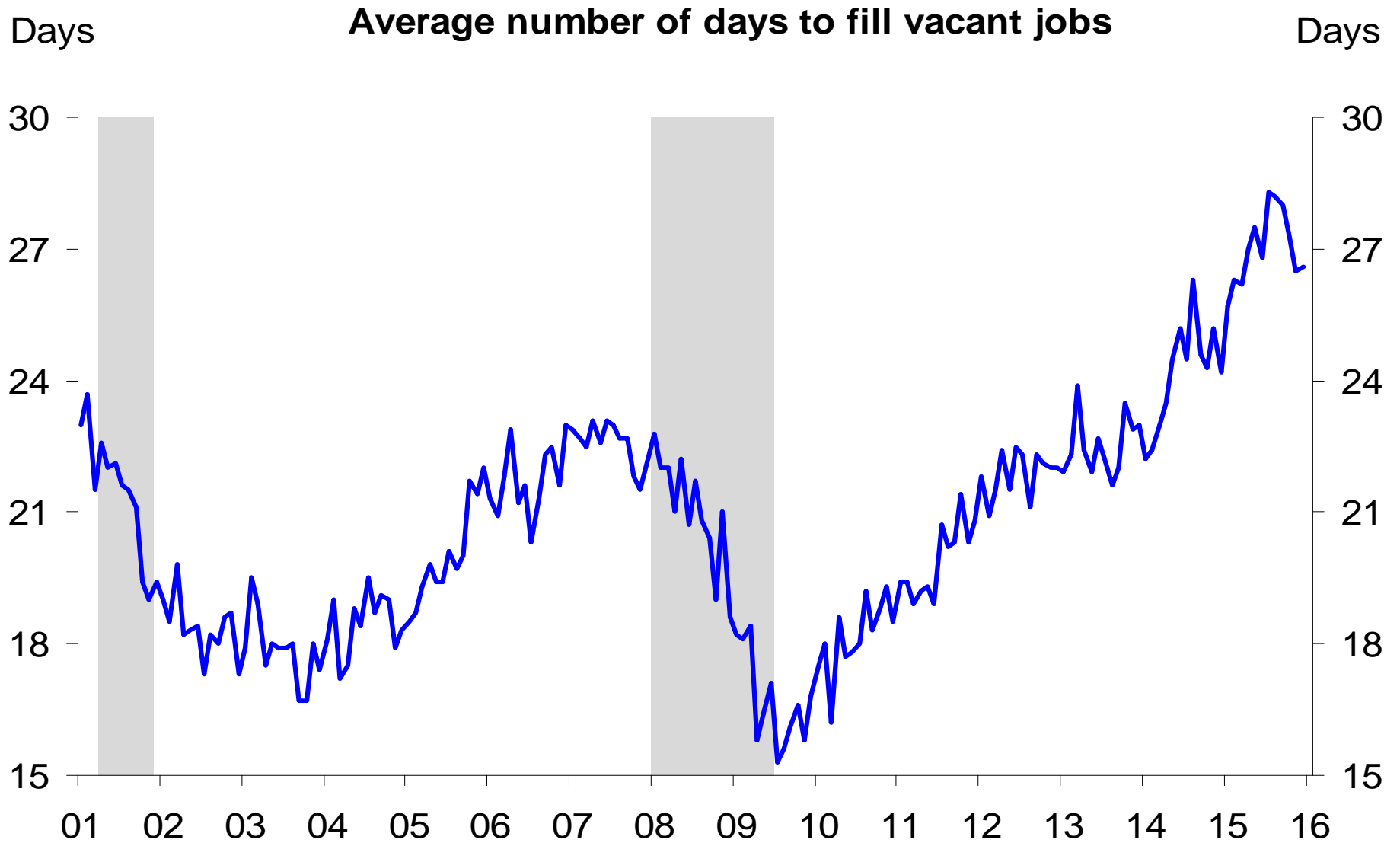
Source: BLS, Haver Analytics, DB Global Markets Research

# More and more workers are voluntarily quitting their jobs



Source: BLS, Haver Analytics, DB Global Markets Research

It currently takes 27 days to fill a vacant job, up from 23 days in 2006



Source: Dice Holdings, Haver Analytics, DB Global Markets Research

# Less slack in the labor market: Number of available people per job opening is now at 2006-2007 levels

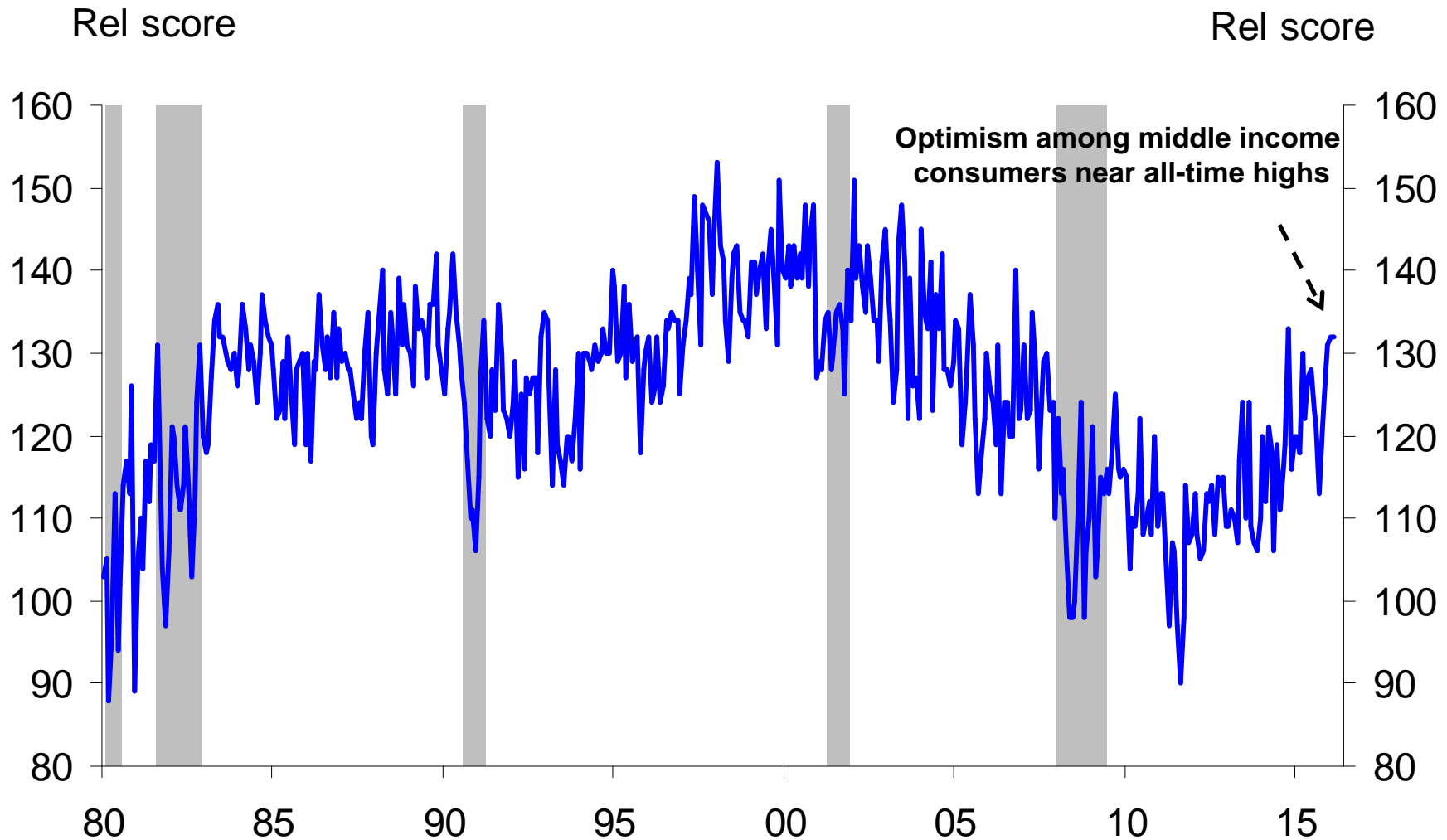


Source: BLS, JOLTS, Haver Analytics, DB Global Markets Research

# Lower gas, more jobs, higher minimum wages: Middle income groups more optimistic about the future than in 2005-2006

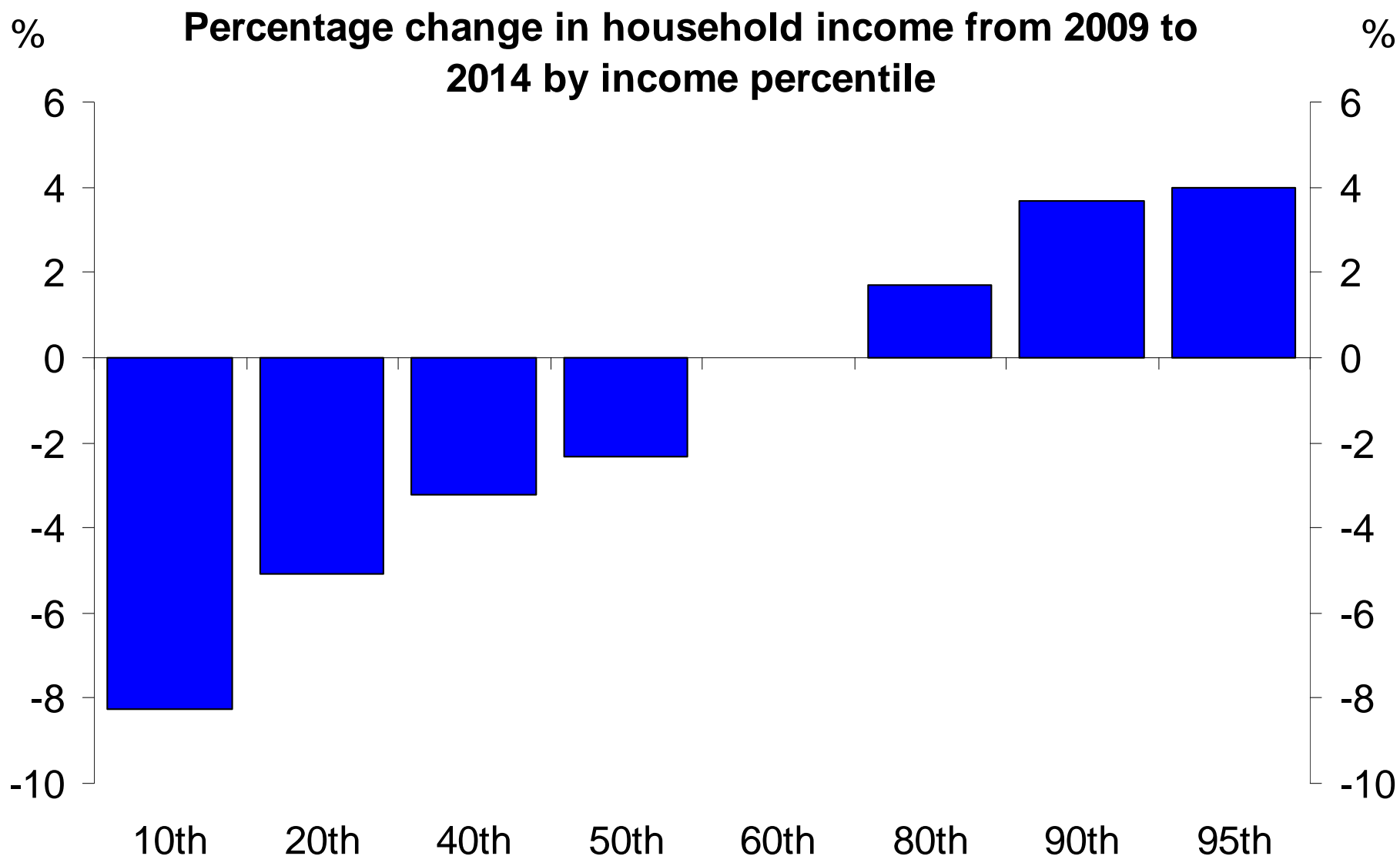


## Expected change in financial situation in a year for the middle 33% household income



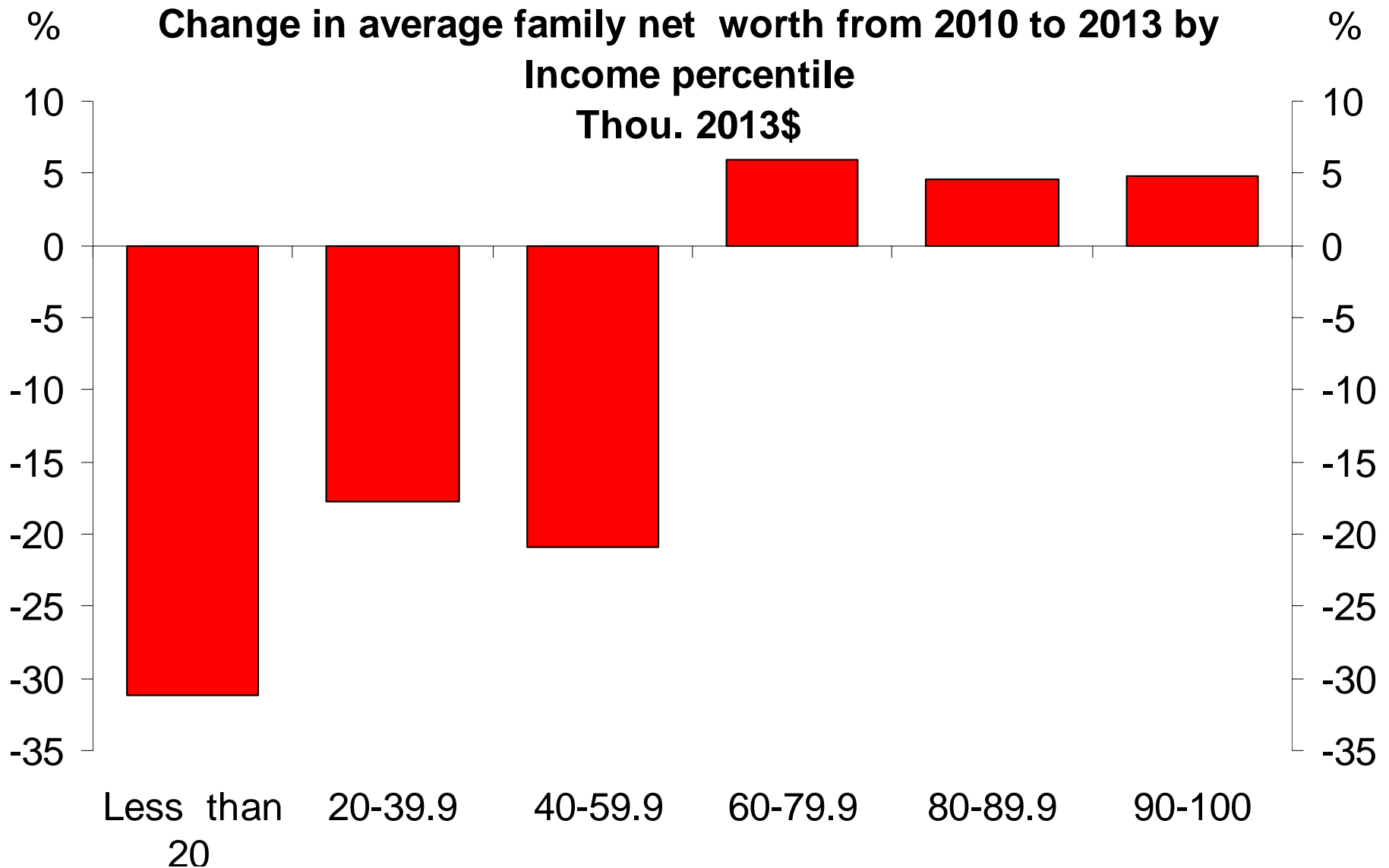
Source: University of Michigan, Haver Analytics, DB Global Markets Research

# Differences in income growth since the crisis...



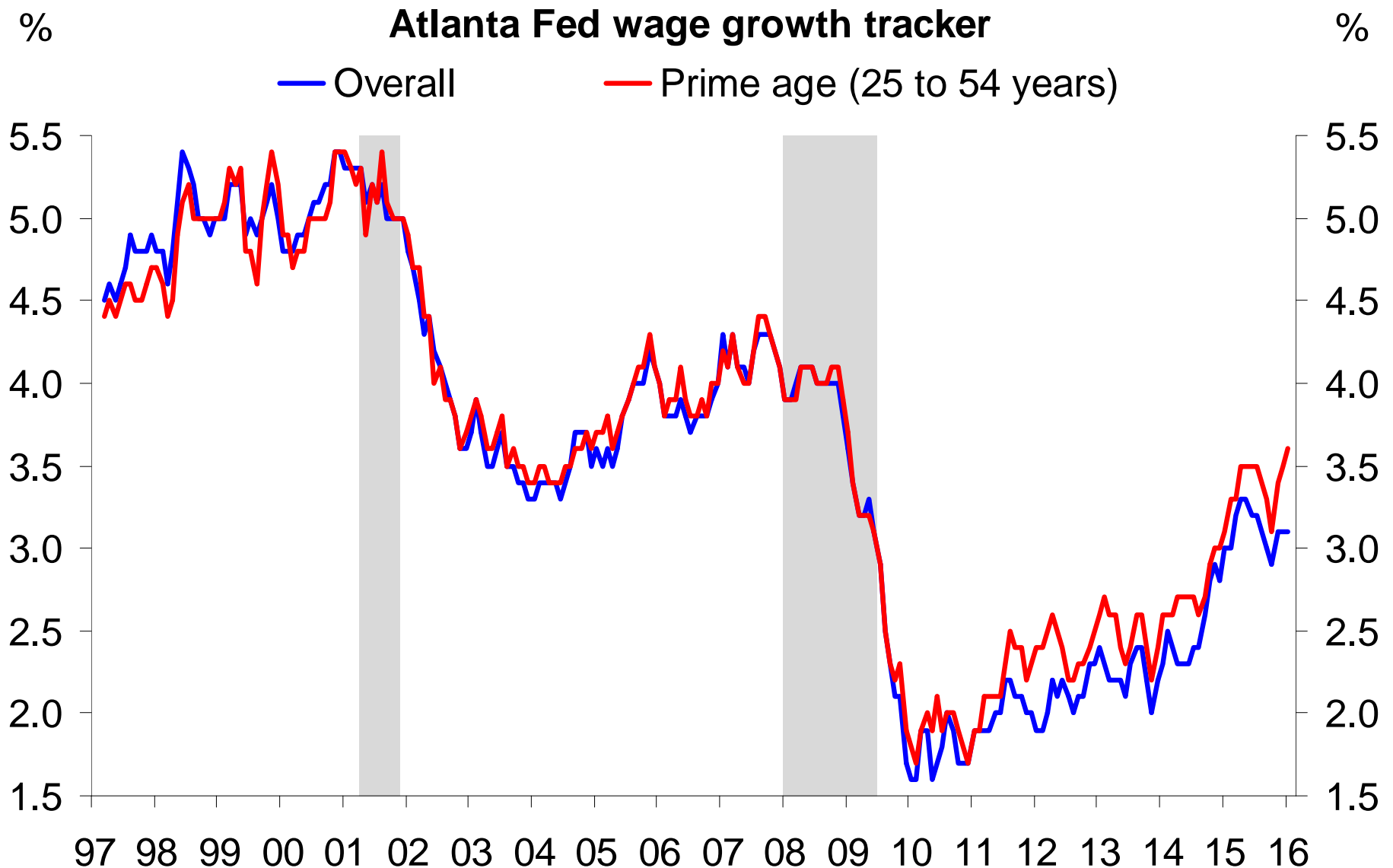
Source: US Census, DB Global Markets Research

# ...differences in wealth gains since the crisis



Source: FRB Survey of Consumer Finances, Haver Analytics, DB Global Markets Research

# Wage growth for prime age workers at highest level since crisis



Source: FRBATL, Haver Analytics, DB Global Markets Research





# US rates: Domestic forces vs global forces



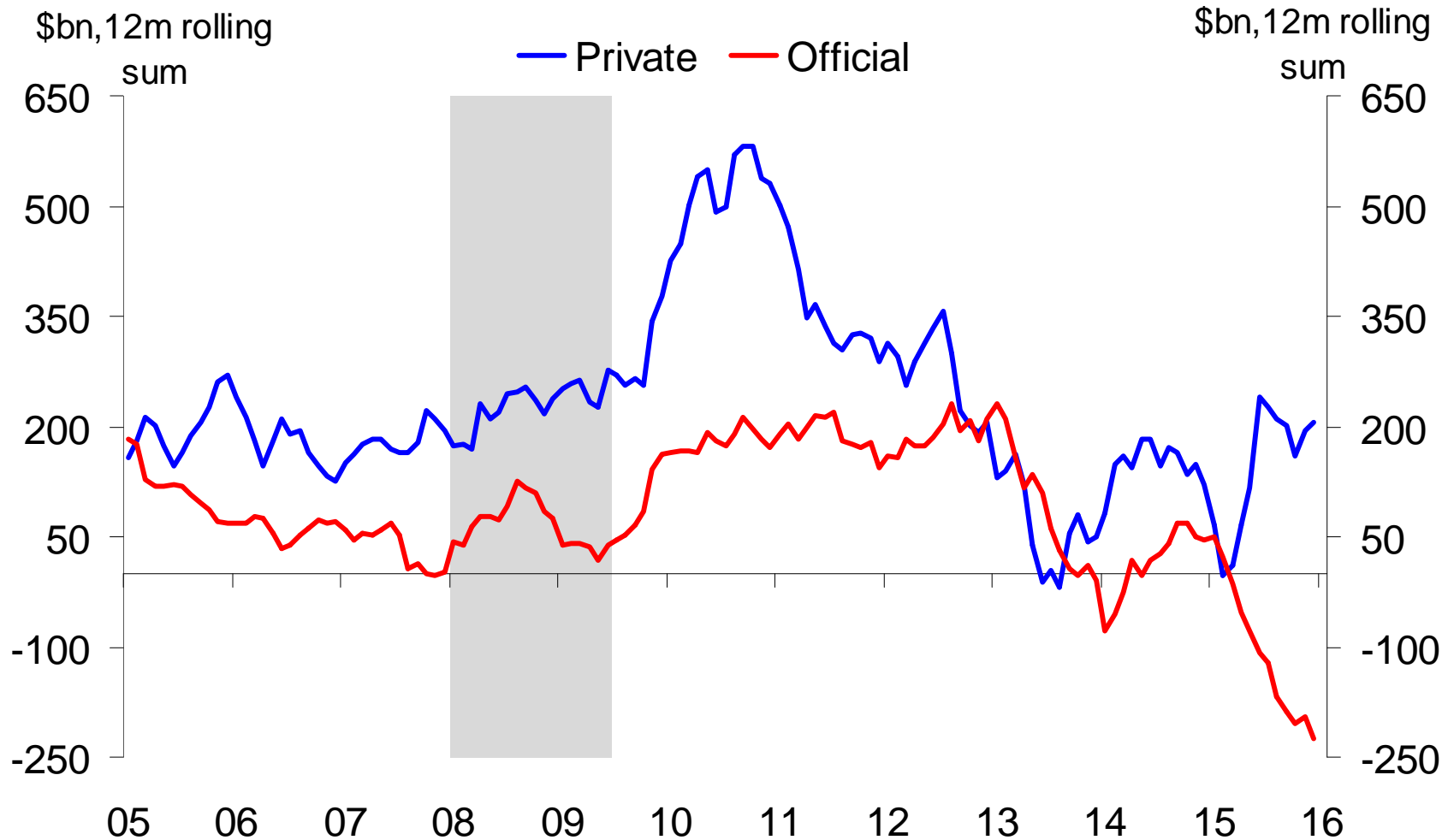
## **Forces driving rates at the moment**

- Fed expectations
- Quantitative tightening (pushing front-end rates up)
- Foreign private demand (pushing rates down)
- ECB and BoJ QE (pushing rates down)
- Fed hiking slowly (pushing long rates down)

# Foreign official sector became a net seller of Treasuries in March 2015



## Net foreign purchases: US Treasury bonds & notes

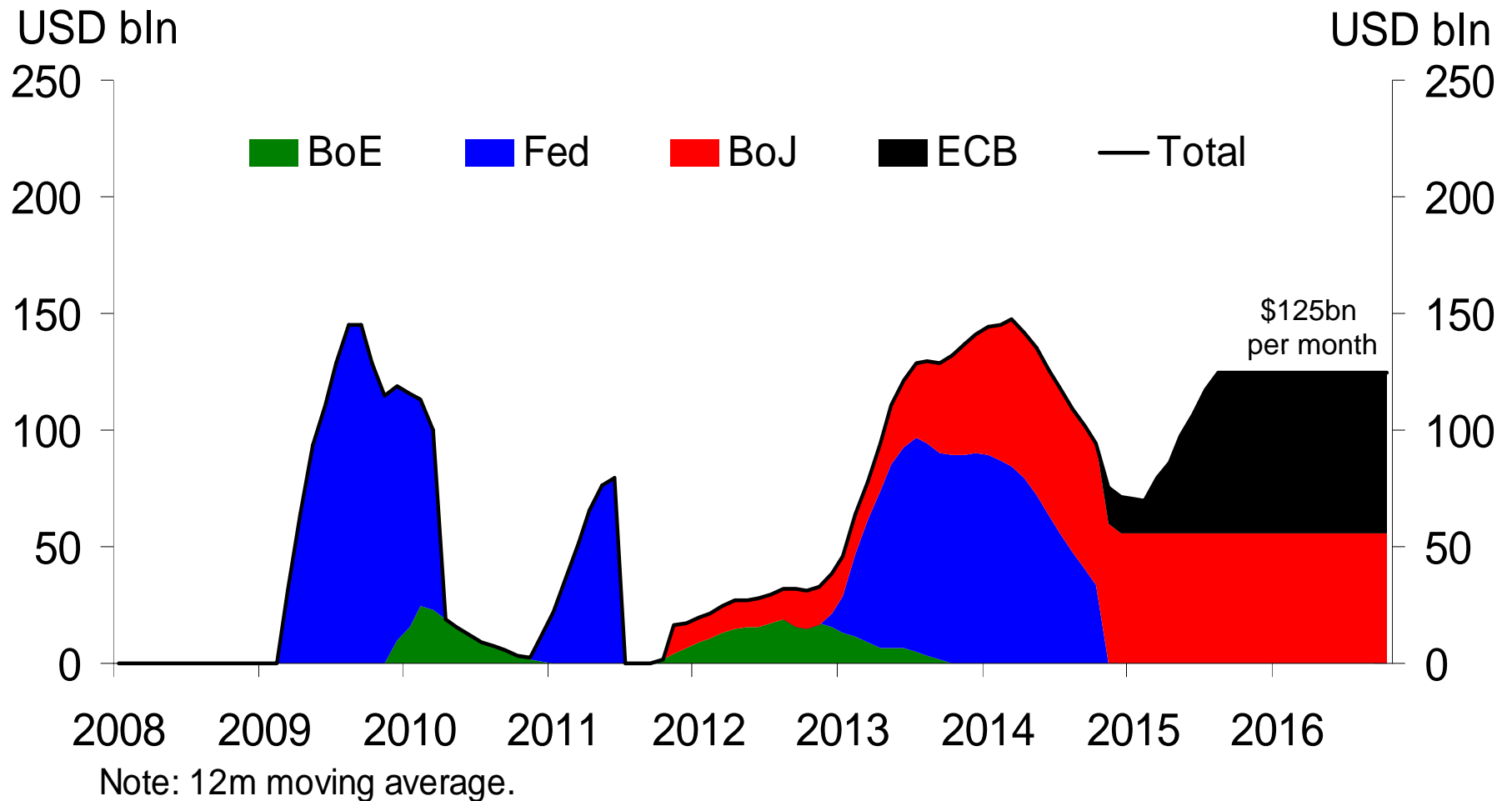


Source: Treasury, Haver Analytics, DB Global Markets Research

Still plenty of liquidity being added to markets:  
ECB and BoJ buying a combined \$125bn every month



### Monthly Fed, ECB, and BoJ asset purchases



Source : BoE, DB Global Markets Research

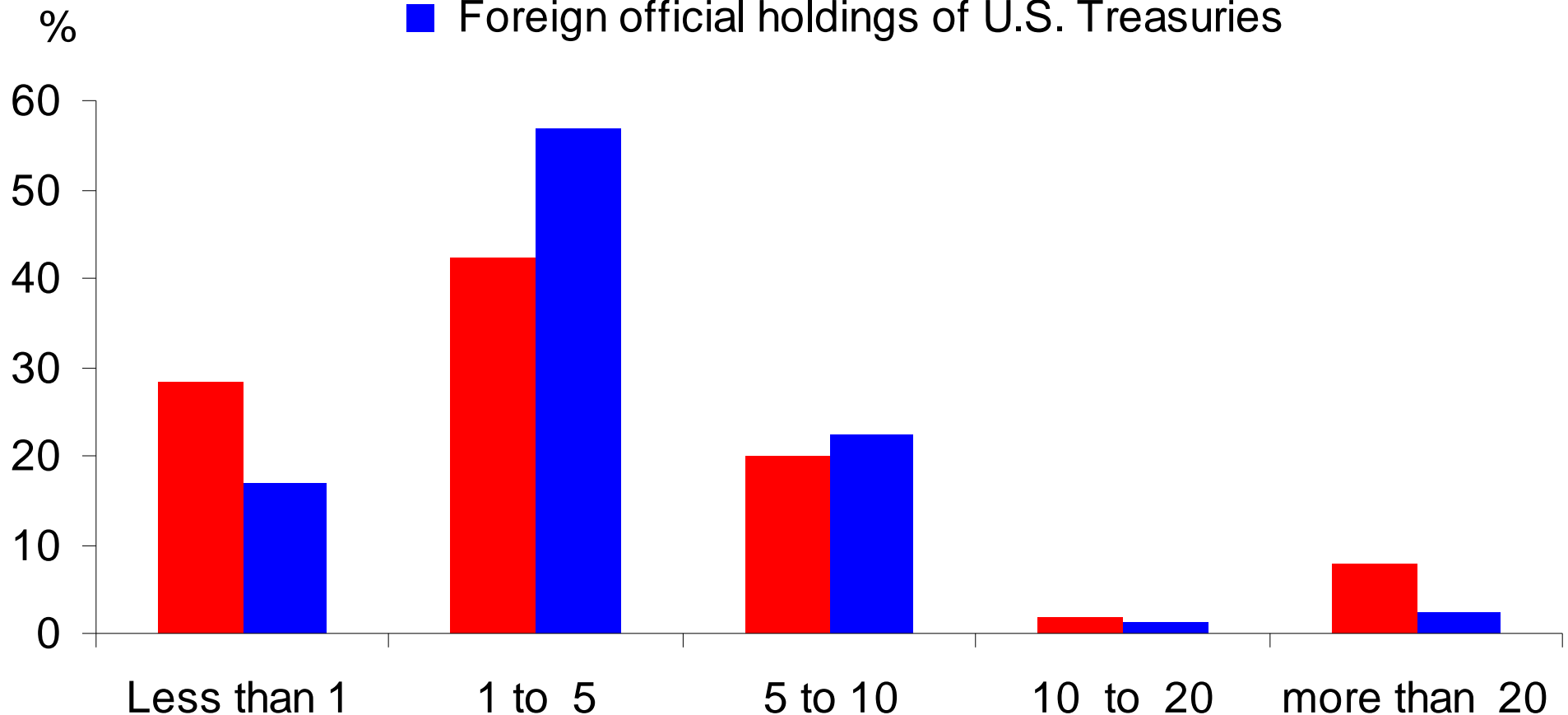
# Foreign central banks are overweight the belly of the Treasury curve



Maturity structure of:

■ Privately held marketable public debt

■ Foreign official holdings of U.S. Treasuries

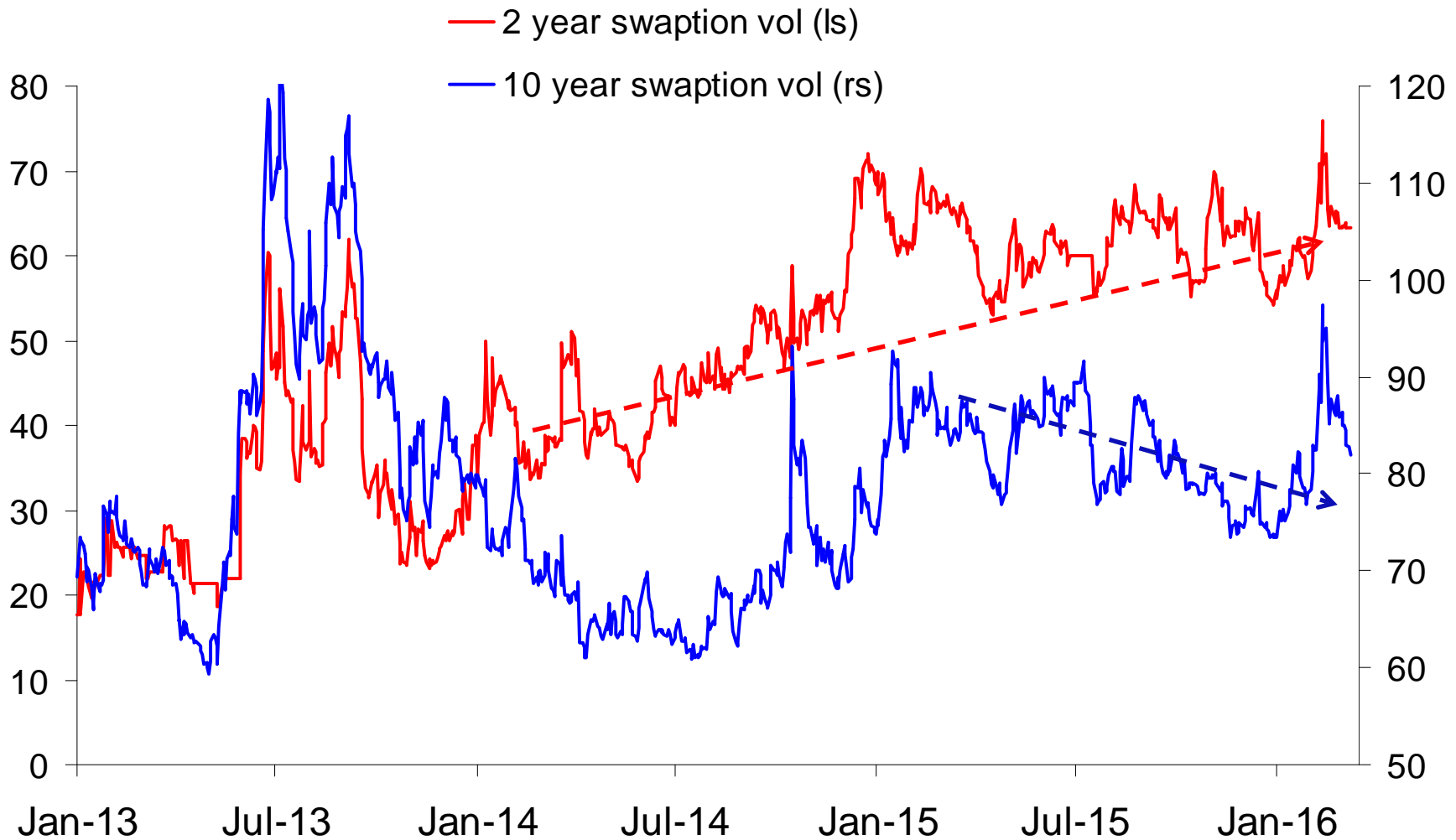


Source: U.S.. Treasury, Haver Analytics, Deutsche Bank Research

More uncertainty about front-end rates and the pace of rate hikes.  
Less uncertainty about long rates



### 3MoX2Yr and 3MoX10Yr swaption vol

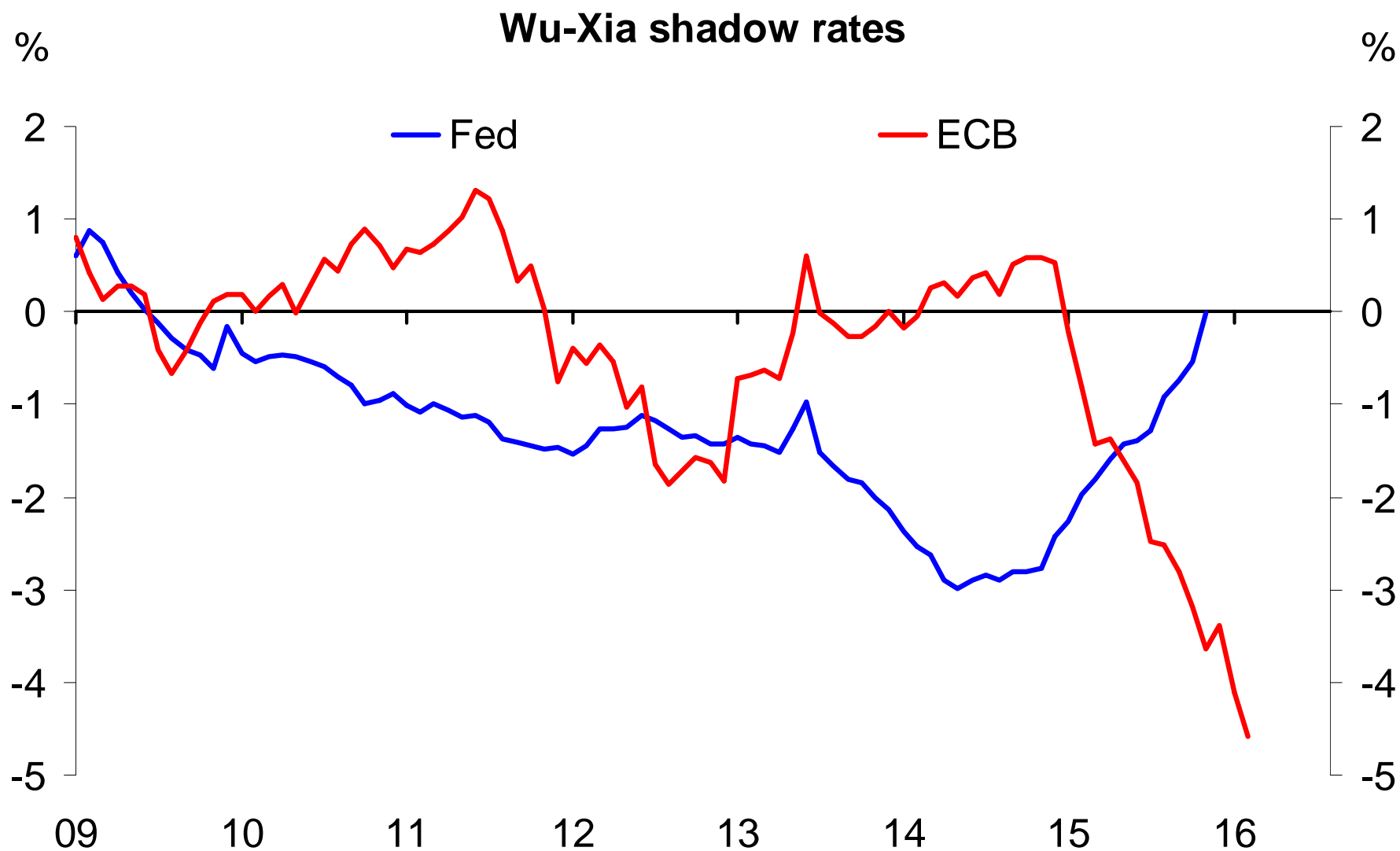


Source: Bloomberg (USSN0C2 Curncy and USSN0C10 Curncy), DB Global Markets Research



# Europe and China

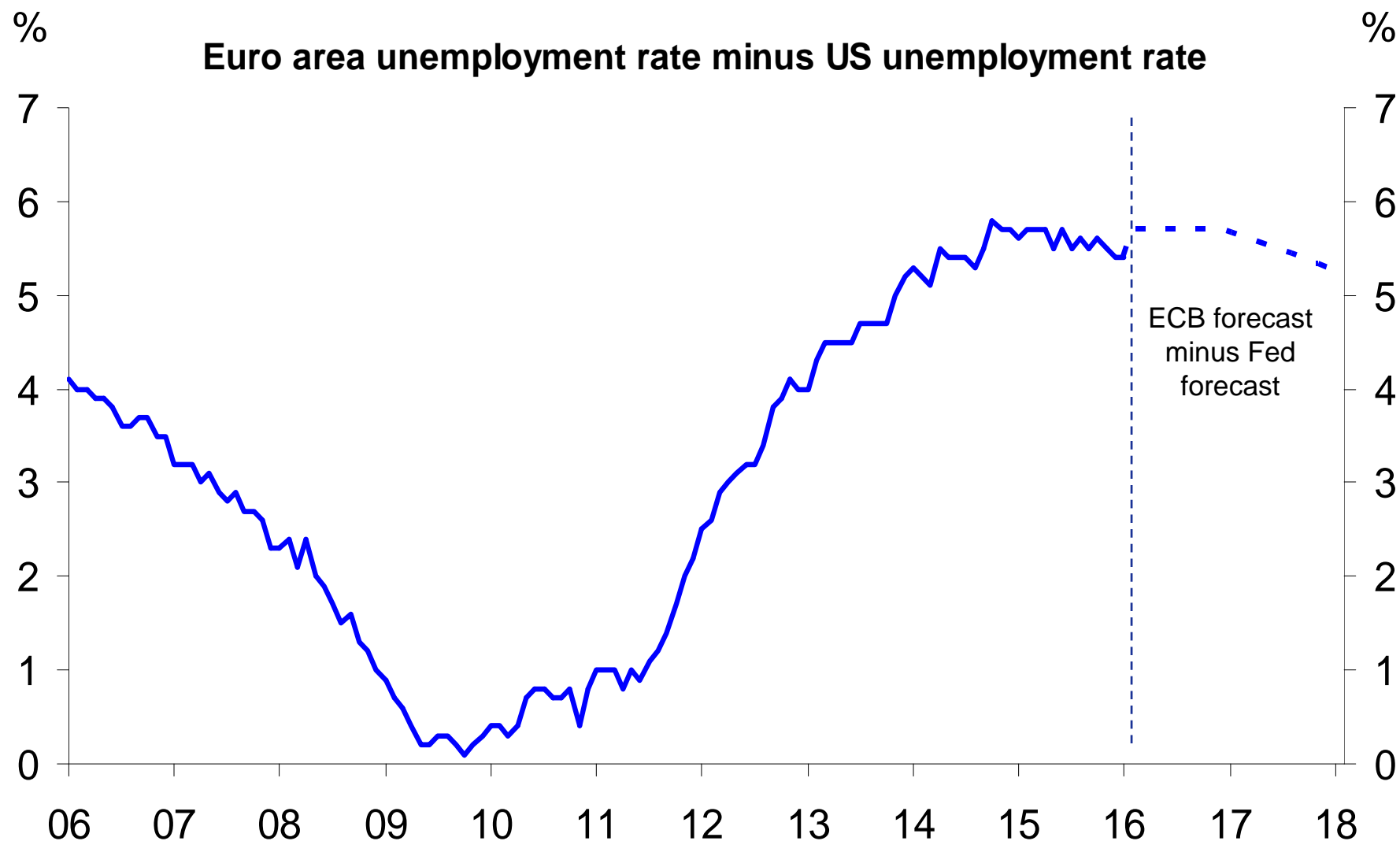
# Divergence between Fed and ECB



Source: FRB, Wu and Xia (2015), DB Global Markets Research

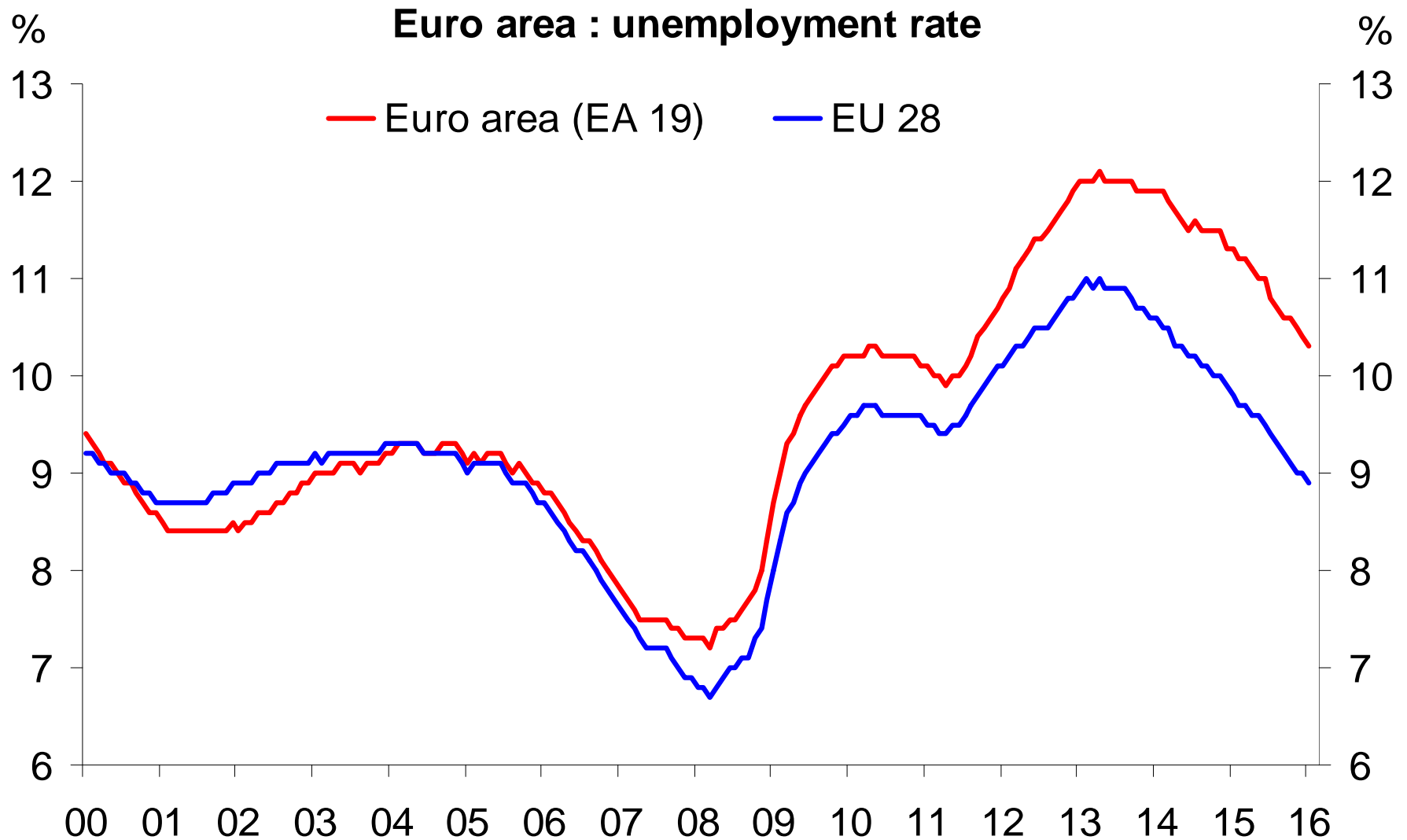


# Peak divergence between the Fed and the ECB has implications for European and US rates and EUR/USD



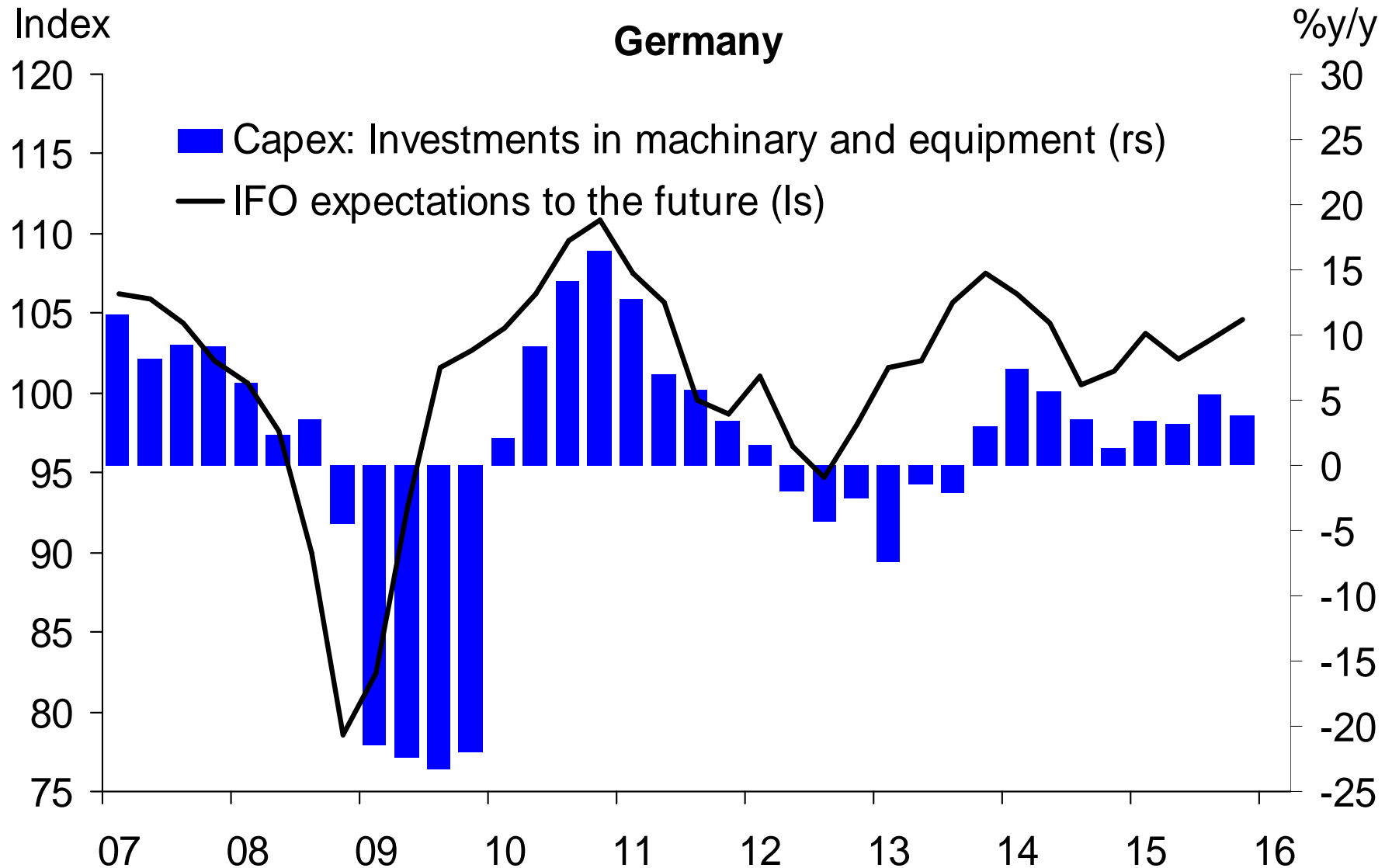
Source: EuroStat, BLS, EC, FRB, Haver Analytics, DB Research

# Unemployment rate coming down in Europe



Source: Eurostat, Haver Analytics, DB Global Markets Research

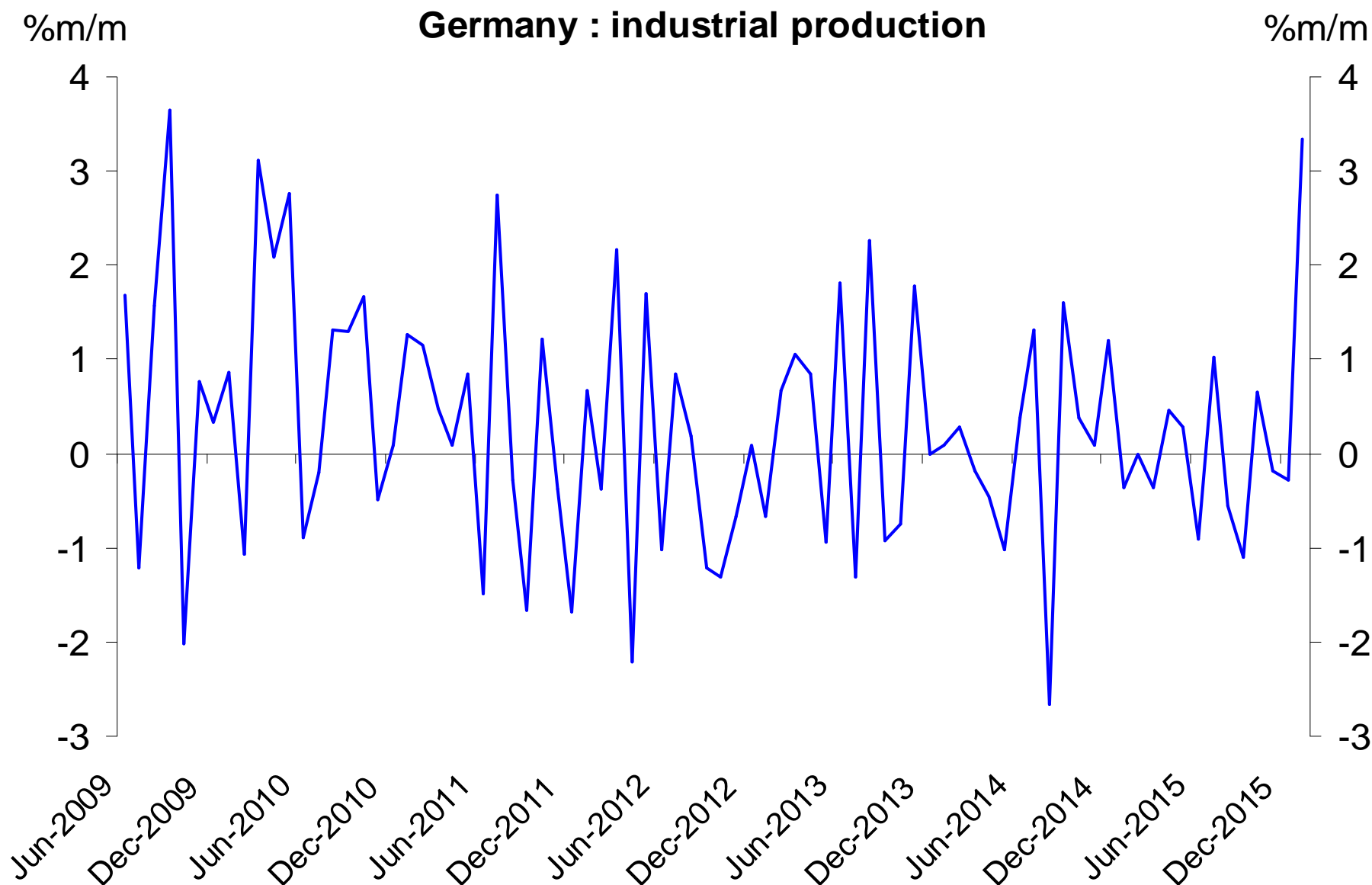
# Europe in better shape than market pricing suggests



Source: IFO Business survey, Federal Statistical Office, Haver Analytics, DB Research



# German industrial production strong



Source: BMWT, Haver Analytics, DB Global Markets Research

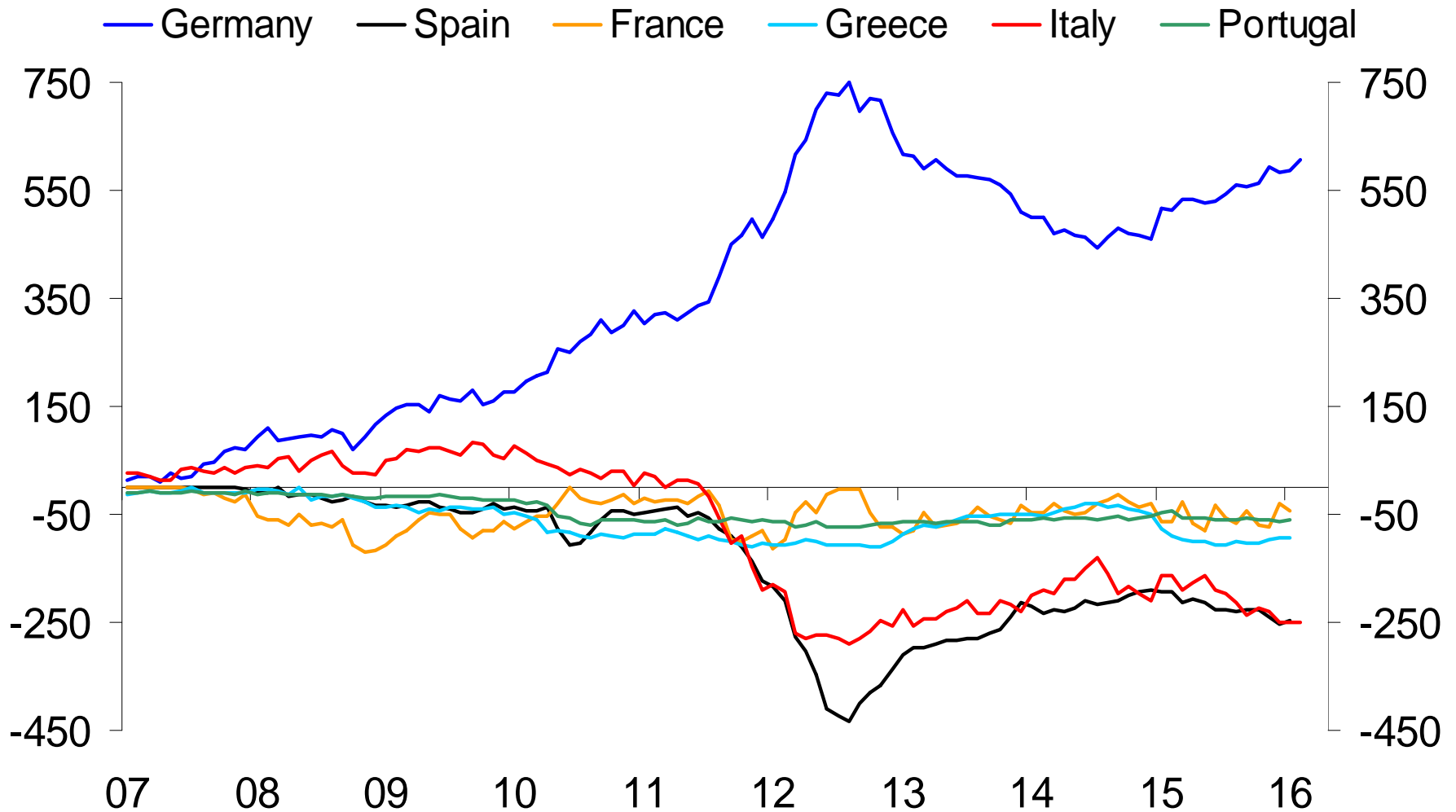
# Target 2 balances widening out again



bn Eur

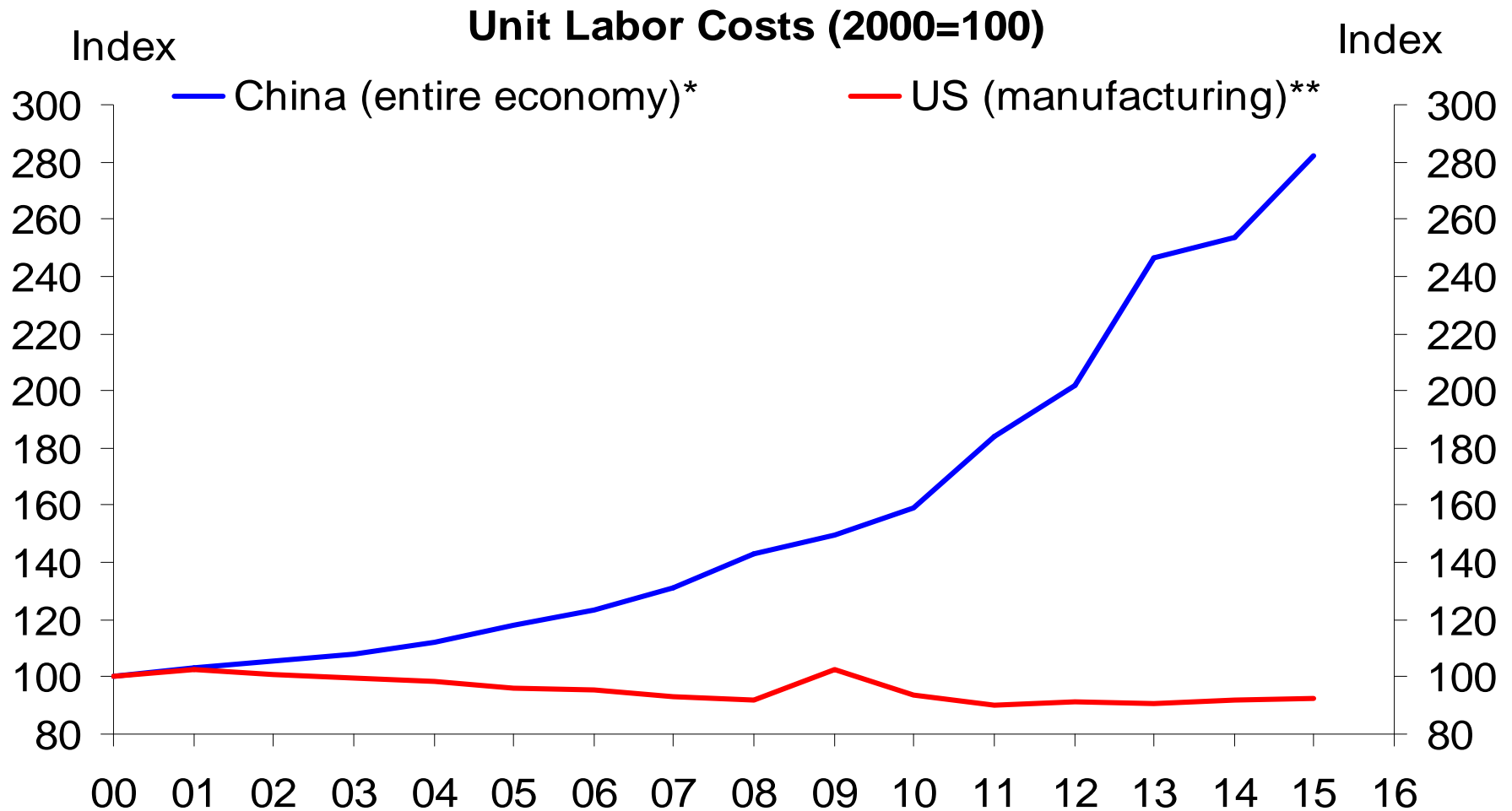
## Target2-Balances

bn Eur



Source: BBK, BdE, BdF, BoG, BdIt, BdP, Haver Analytics, DB Global Markets Research

# Labor costs have grown much faster in China than in the US



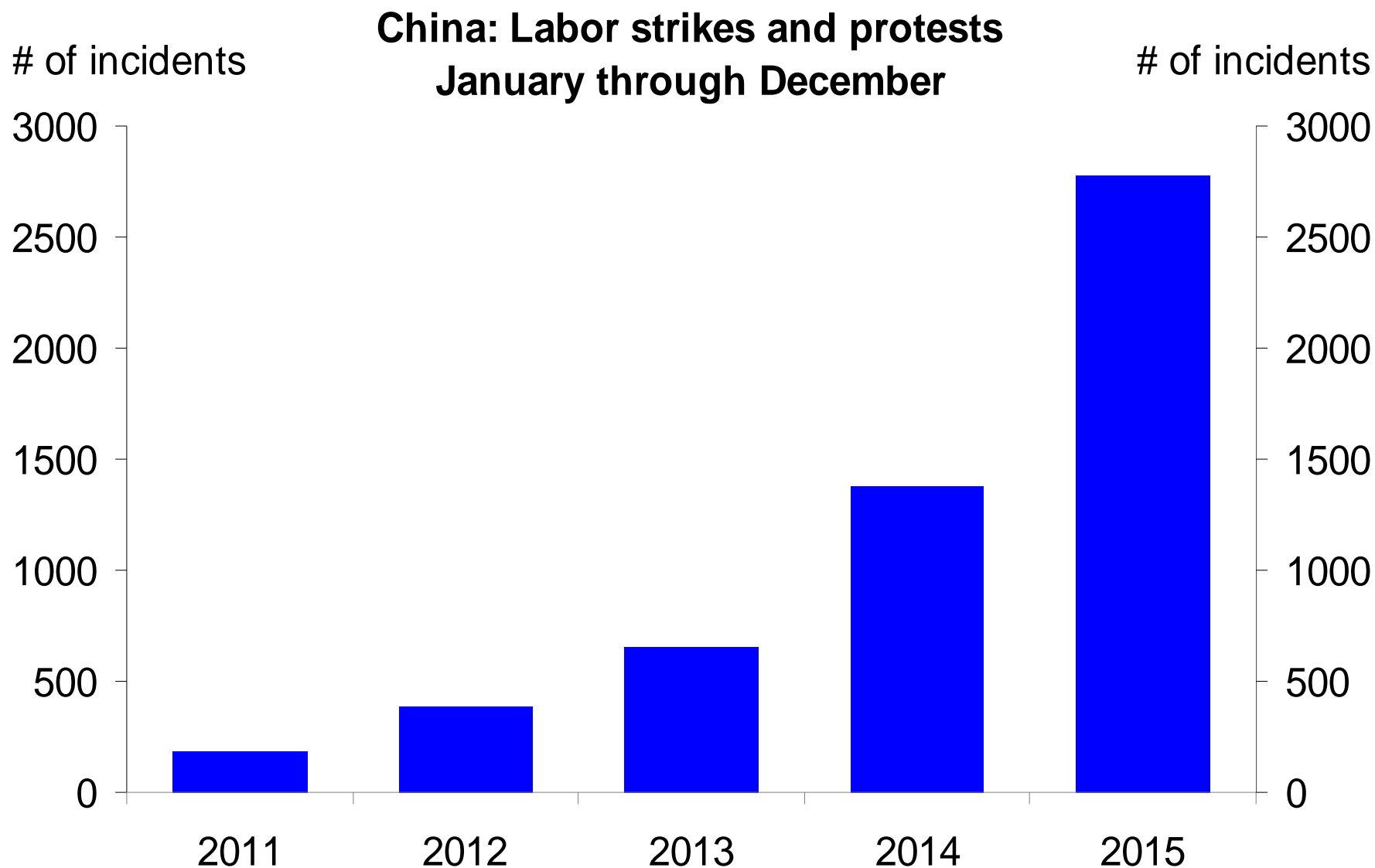
\* 2015 value for China has been calculated by taking the average growth rate of the past five years.

\*\* 2015 value for the US is the average of the first three quarters.

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



# Social unrest picking up in China



Source: China labor Bulletin, DB Global Markets Research



# China stimulus efforts increasing

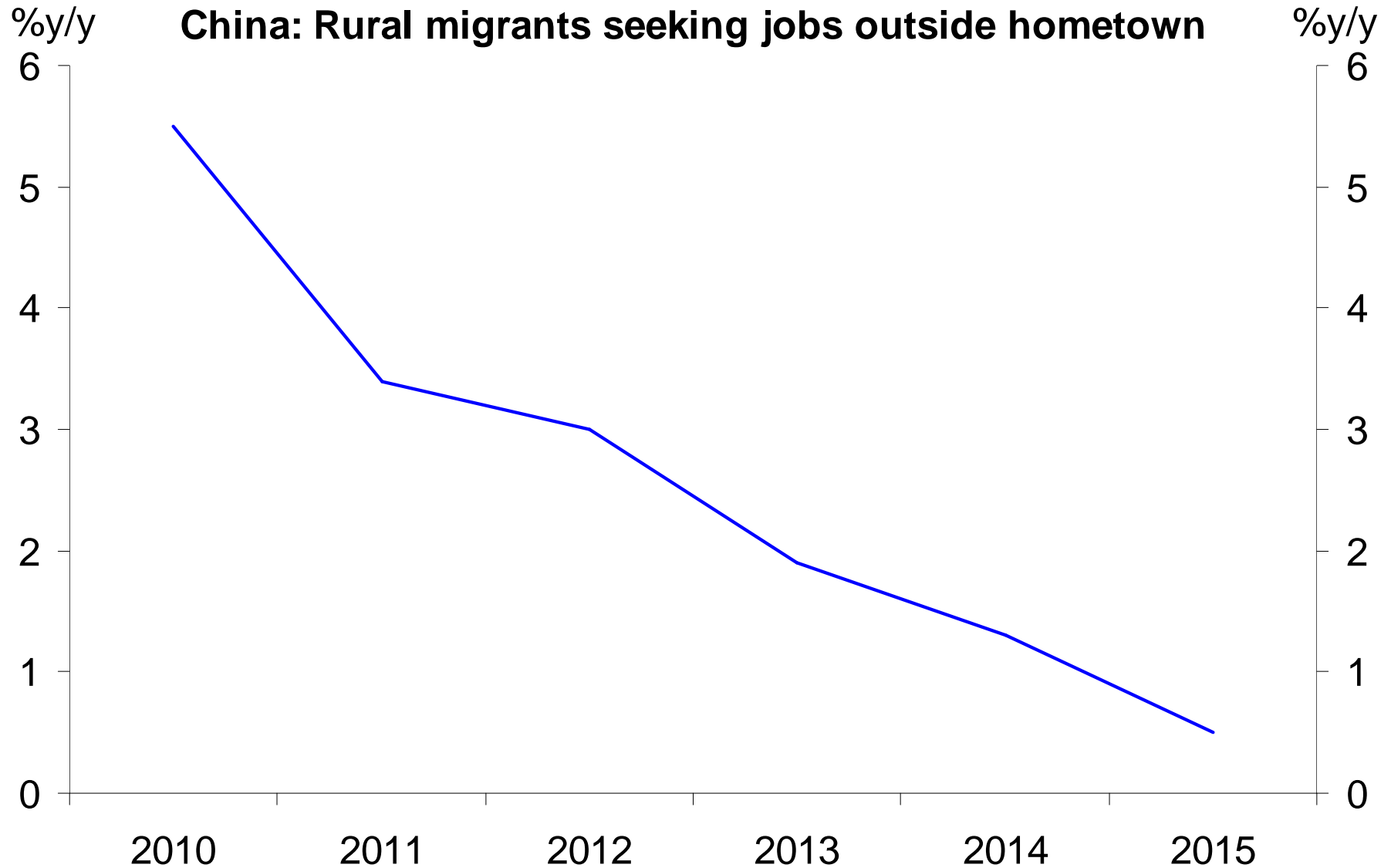
**China**  
**Rolling 12 month budget deficit % of GDP**



Source: PBoC, CNBS , Haver Analytics, DB Global Markets Research

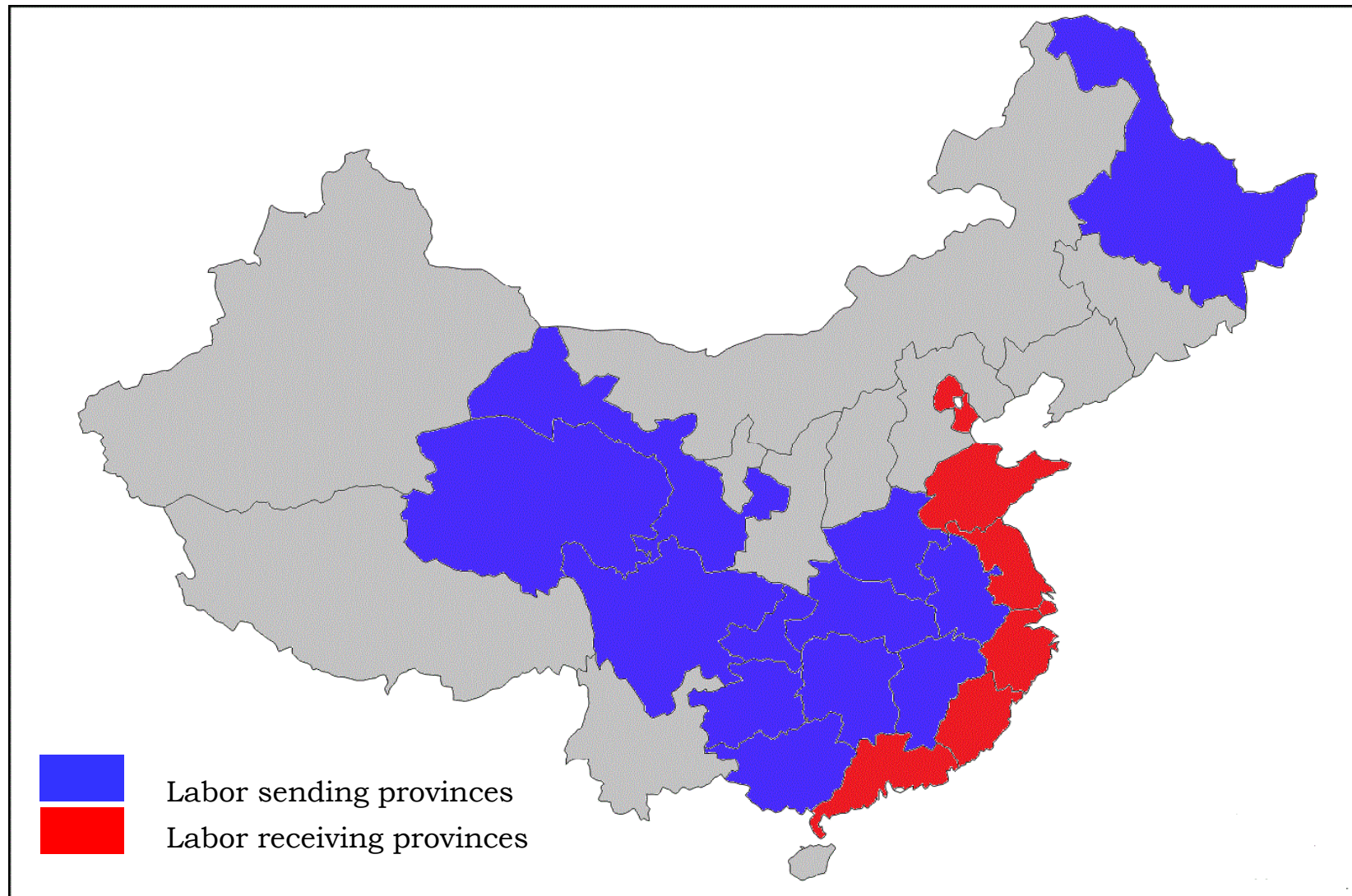


# China: Essentially no migration from rural to urban areas



Source: NBS, DB Global Markets Research

# China: Rural migrant labor sending and labor receiving areas



Source: NBS, DB Global Markets Research

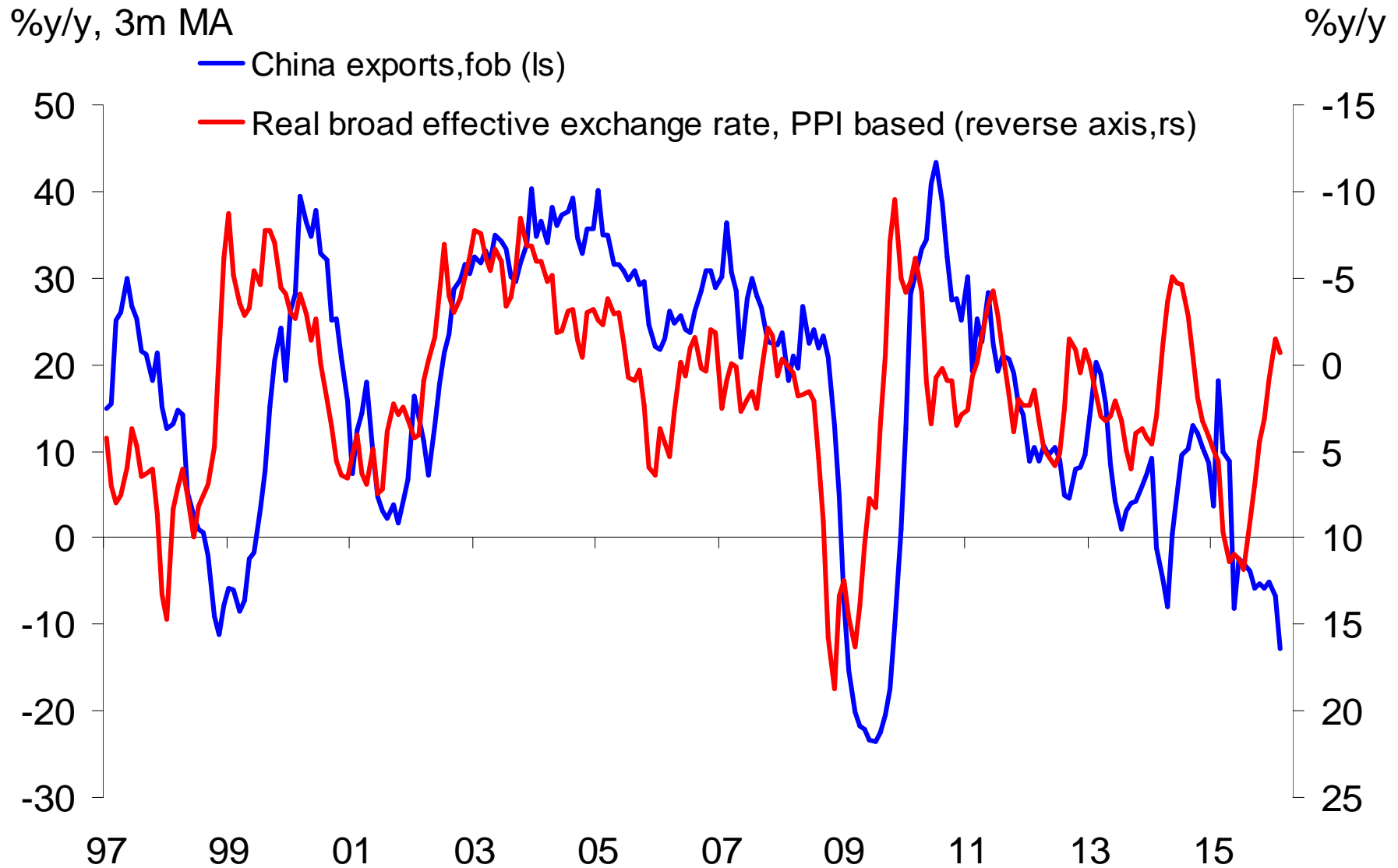
# China has been gaining market share



\*For 2015, we have aggregated the monthly data as annual figures for 2015 has not been published yet

Source: WTO, DB Global Markets Research

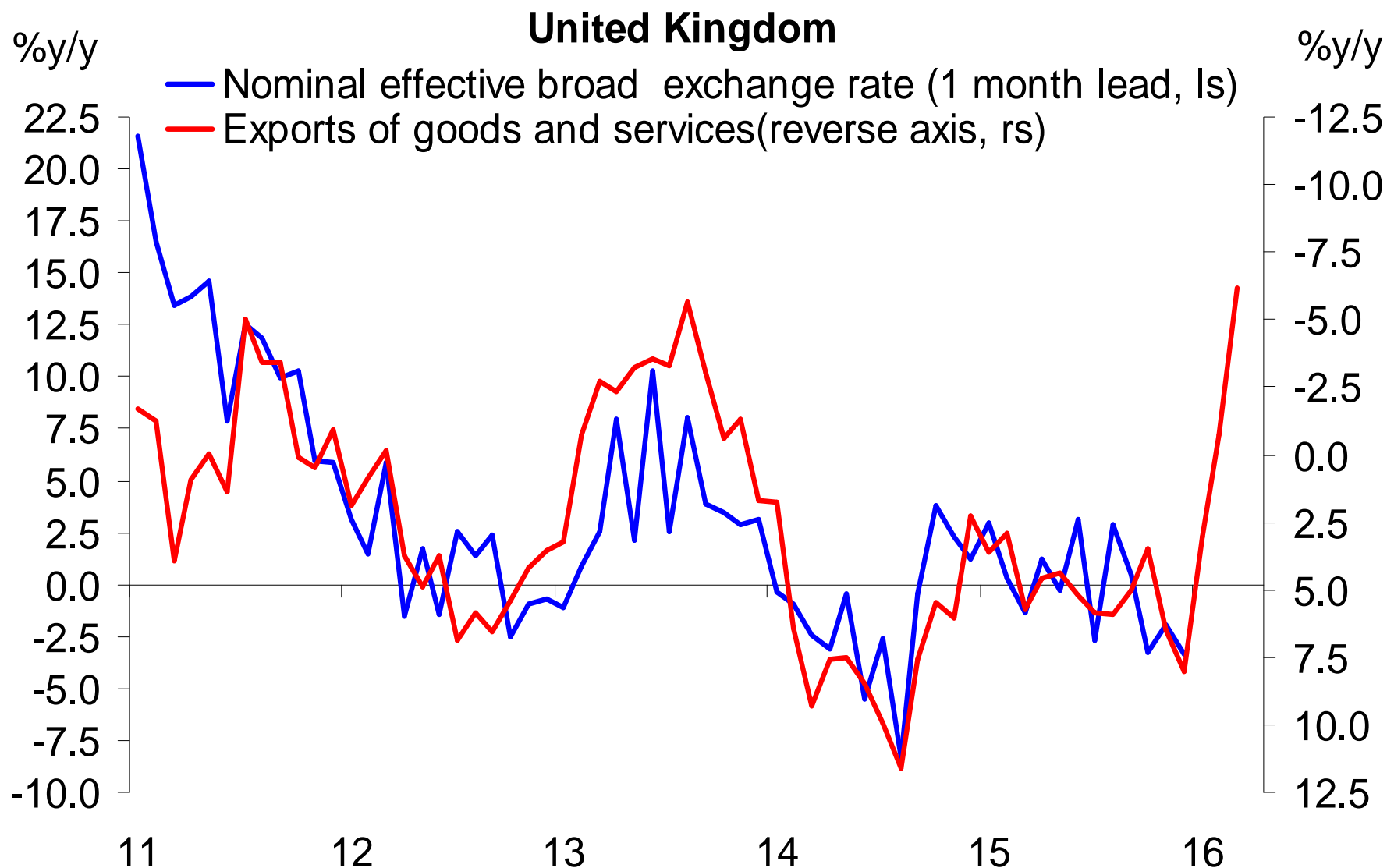
# Chinese exports will benefit from lower RMB



Source: CC, JPM, Haver Analytics, DB Global Markets Research

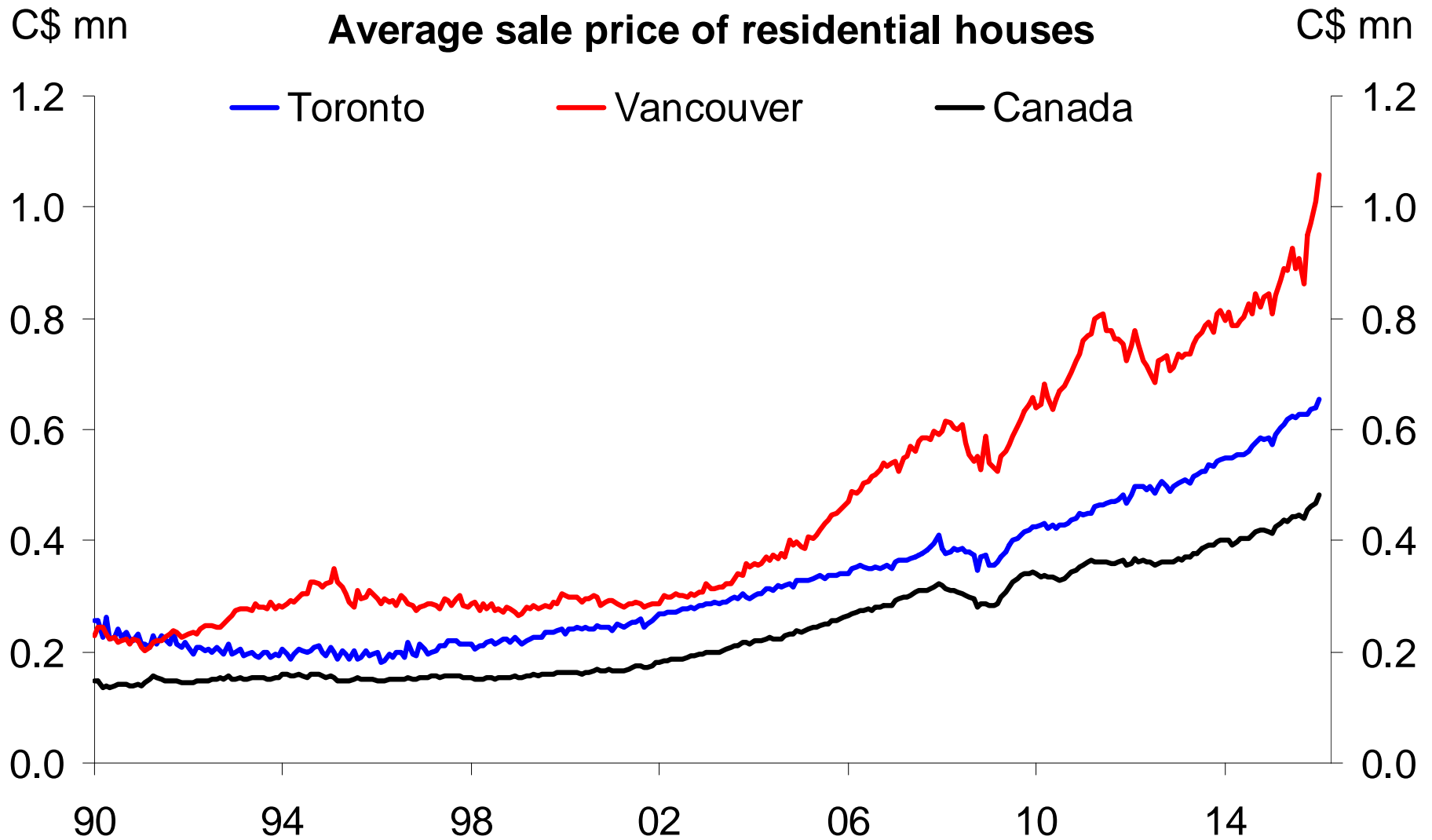


# GBP depreciation boosting UK growth



Source: BoE, ONS, Haver Analytics, DB Global Markets Research

# Canadian housing needs higher, not lower interest rates



Source: Canadian Real Estate Association, Haver Analytics, DB Global Markets Research

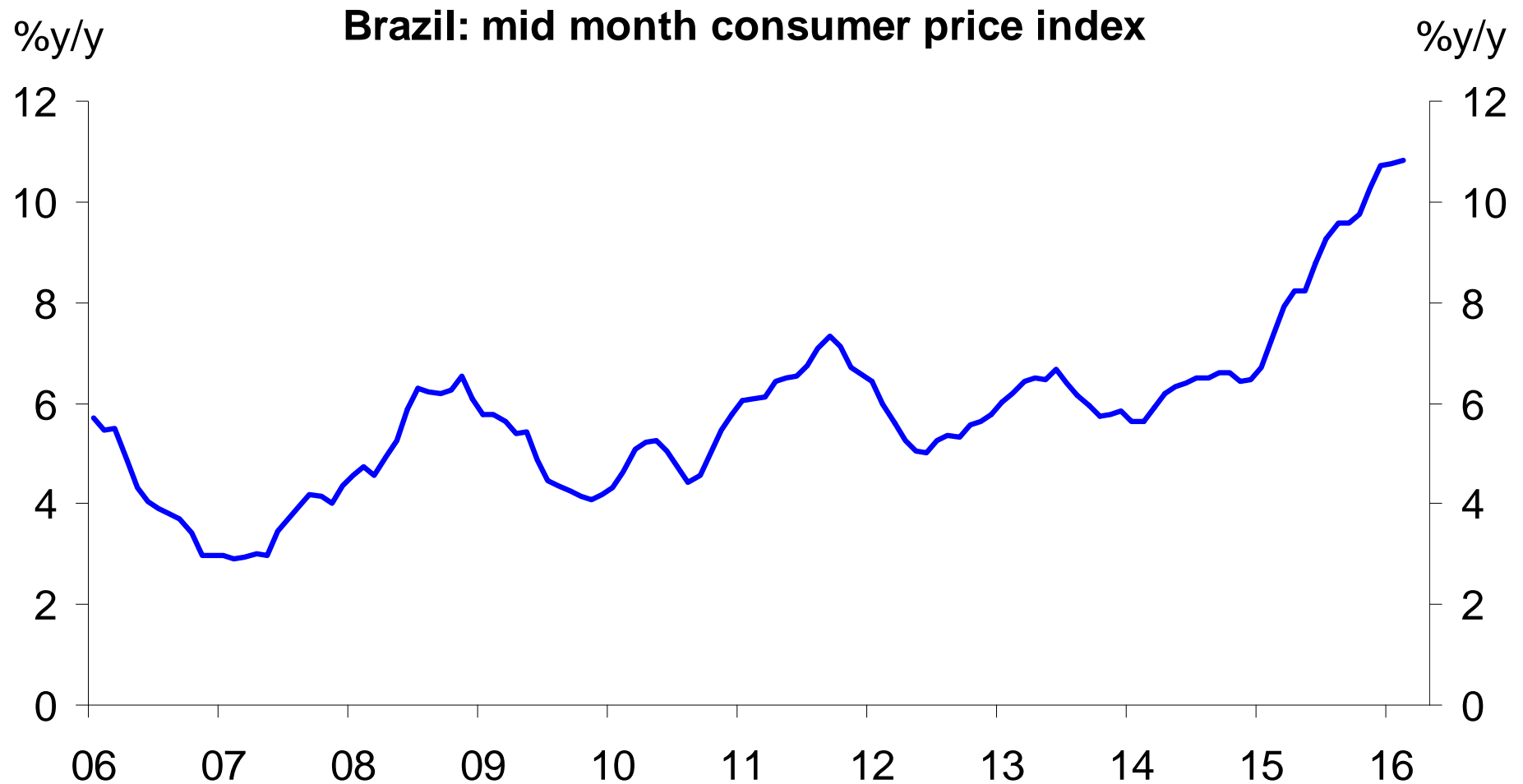
# How over/undervalued are home prices today relative to historical averages of home price/rent and home price/income?



<b>Country</b>	<b>1) Home price/income (% above historical average)</b>	<b>2) Home price/rent (% above historical average)</b>	<b>Current average over/undervaluation of home prices (=average of column 1) and 2) (%)</b>
<b>New Zealand</b>	<b>48</b>	<b>99</b>	<b>73</b>
<b>Canada</b>	<b>38</b>	<b>91</b>	<b>64</b>
<b>Sweden</b>	<b>50</b>	<b>67</b>	<b>59</b>
<b>Australia</b>	<b>47</b>	<b>70</b>	<b>59</b>
<b>Norway</b>	<b>25</b>	<b>69</b>	<b>47</b>
<b>Belgium</b>	<b>40</b>	<b>44</b>	<b>42</b>
<b>U.K</b>	<b>30</b>	<b>49</b>	<b>40</b>
<b>France</b>	<b>21</b>	<b>26</b>	<b>24</b>
<b>Denmark</b>	<b>15</b>	<b>26</b>	<b>21</b>
<b>Ireland</b>	<b>9</b>	<b>31</b>	<b>20</b>
<b>Spain</b>	<b>15</b>	<b>21</b>	<b>18</b>
<b>Finland</b>	<b>-4</b>	<b>29</b>	<b>13</b>
<b>Netherlands</b>	<b>15</b>	<b>4</b>	<b>10</b>
<b>Switzerland</b>	<b>-8</b>	<b>3</b>	<b>-2</b>
<b>U.S</b>	<b>-10</b>	<b>5</b>	<b>-2</b>
<b>Italy</b>	<b>0</b>	<b>-6</b>	<b>-3</b>
<b>Germany</b>	<b>-7</b>	<b>-5</b>	<b>-6</b>
<b>Greece</b>	<b>-2</b>	<b>-18</b>	<b>-10</b>
<b>Korea</b>	<b>-38</b>	<b>6</b>	<b>-16</b>
<b>Japan</b>	<b>-29</b>	<b>-22</b>	<b>-26</b>

Source: OECD, DB Global Markets Research

# Brazilian inflation above 10%



Note: The Extended National Consumer Price Index-15 (IPCA-15) has a collection period that goes approximately from the 15th day of the previous month to the 15th day of the reference month.

Source: IBGE, Haver Analytics, DB Global Markets Research



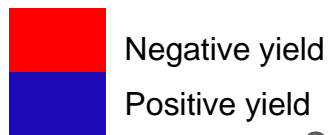
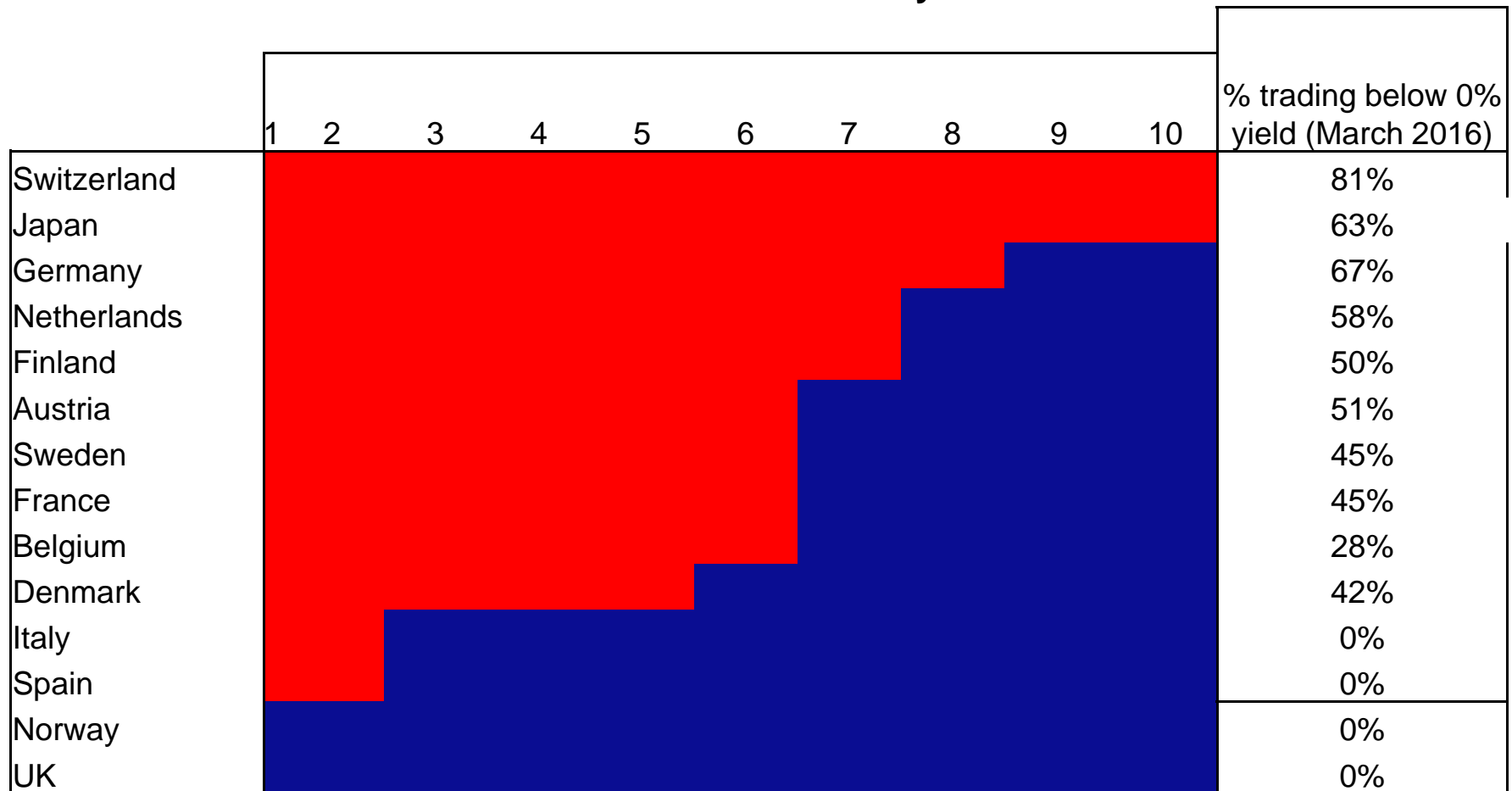


# Investment implications

# Getting harder and harder for fixed income investors

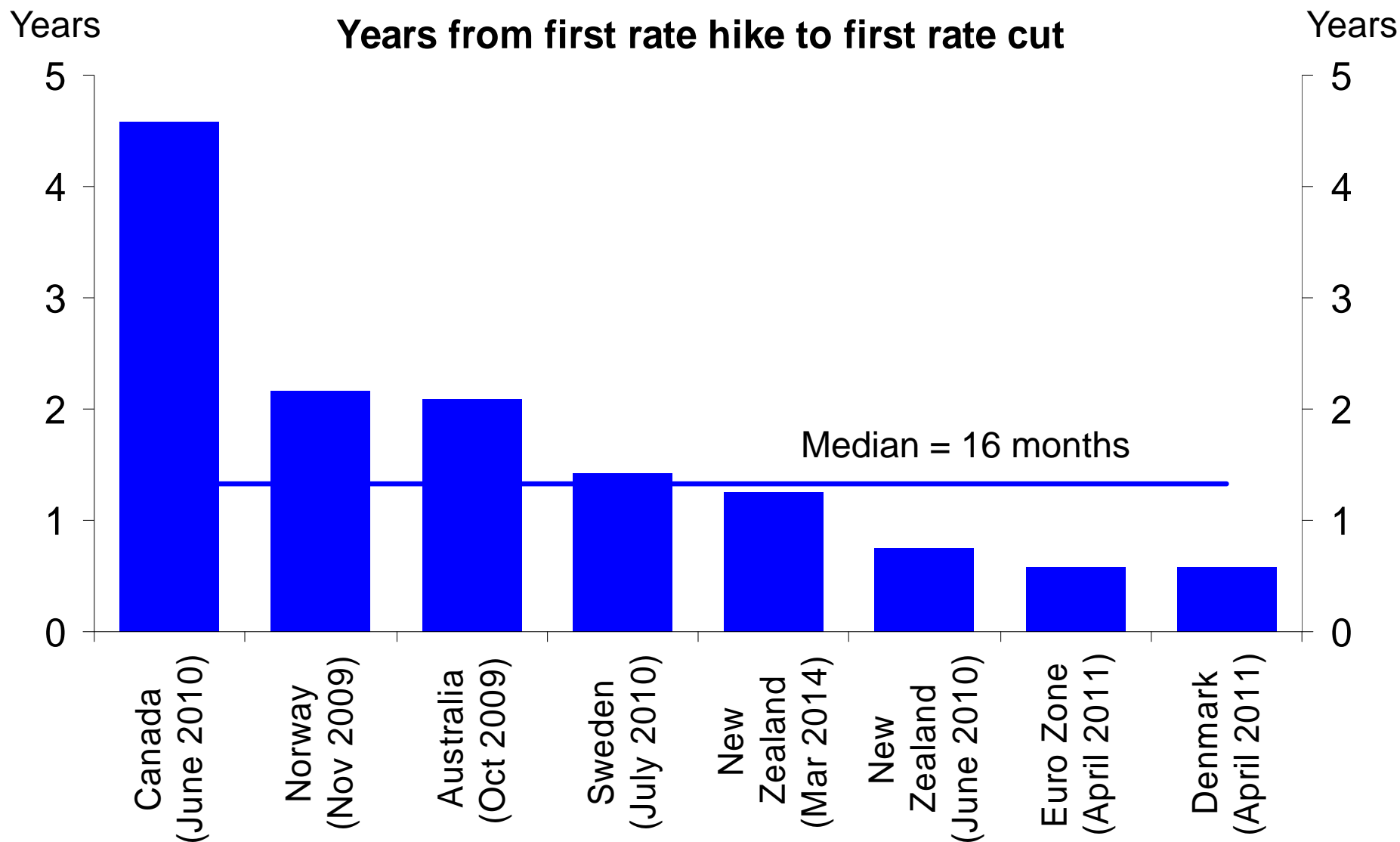


## Government bond yields



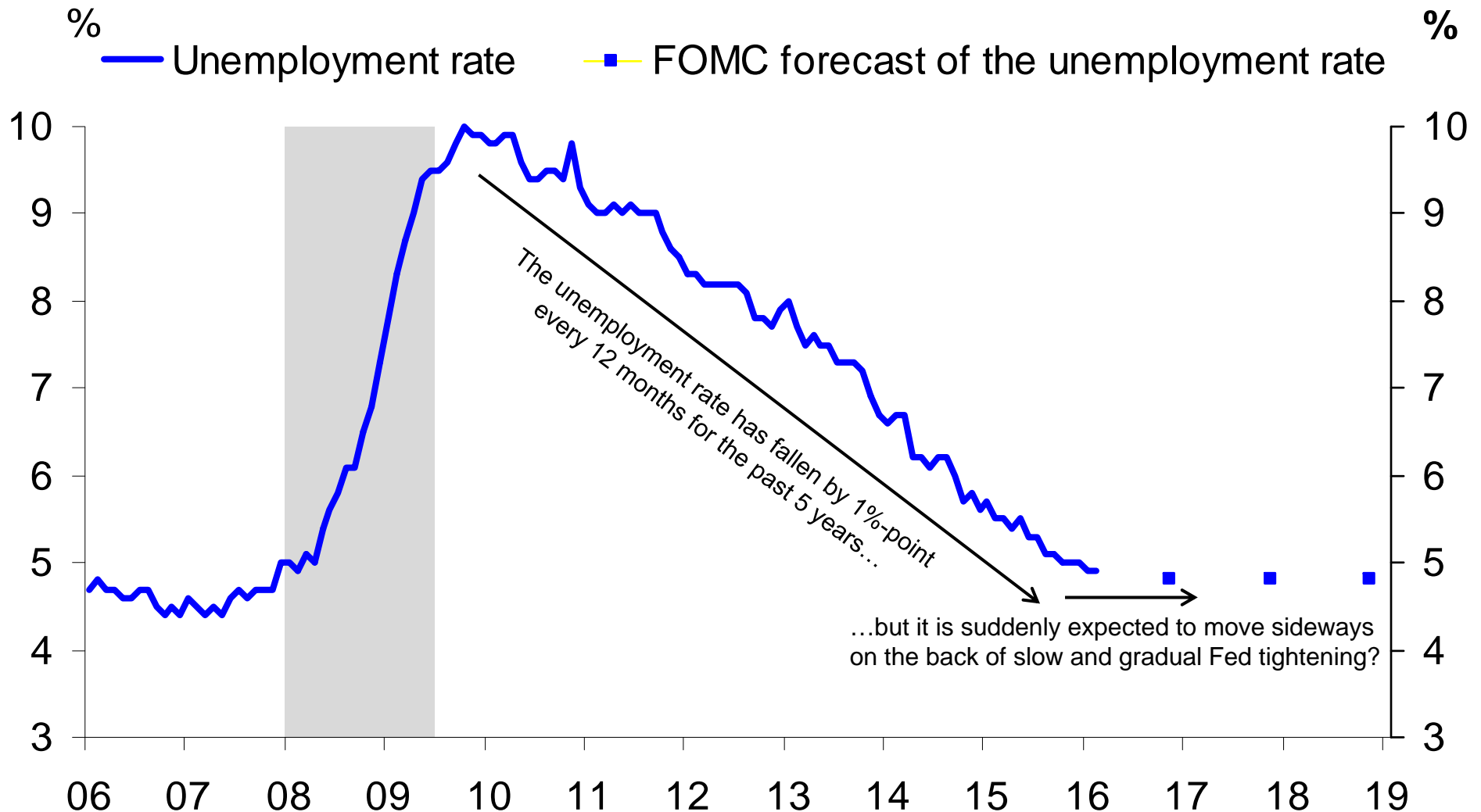
Source: Bloomberg Finance LP, DB Global Markets Research

If the Fed hikes in December and follows the pattern seen elsewhere they will have to ease in early 2017



Source: Bloomberg Finance LP, DB Global Markets Research

# What is the thinking behind the FOMC's forecast of the unemployment rate?



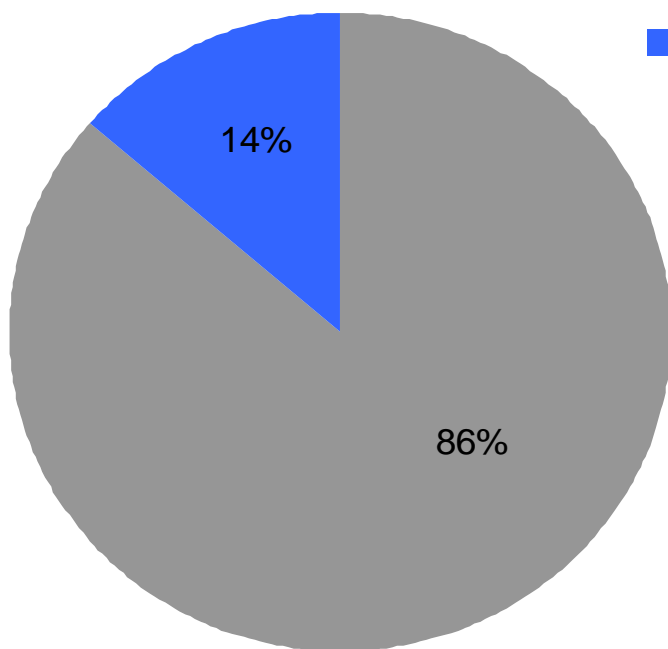
Note: Median forecast used. Source: BLS, Conference Board, Haver Analytics, Deutsche Bank Research

# Impact of higher dollar and lower energy prices much bigger on S&P500 than on GDP.



As a result, we are having a profit recession without an economic recession

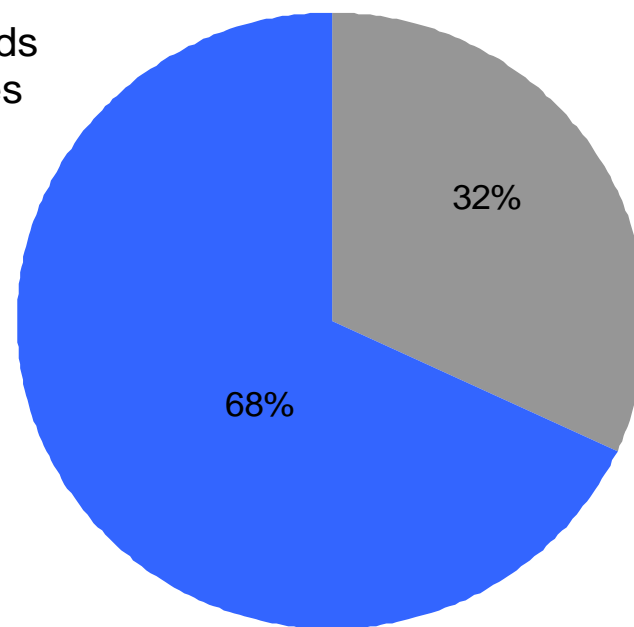
**Share of US employment in:**



**Share of earnings in S&P500 coming from:**

■ Service industries

■ Manufacturing/goods producing industries



Note: Service industries are: Financials, Multiline Retail, Specialty Retail, Internet & Catalog Retail, Diversified Consumer Services, Hotels, Restaurants & Leisure, IT Services, and Health Care Providers & Services. Source: David Bianco, Ju Wang, Winnie Nip.

# Investment implications summarized

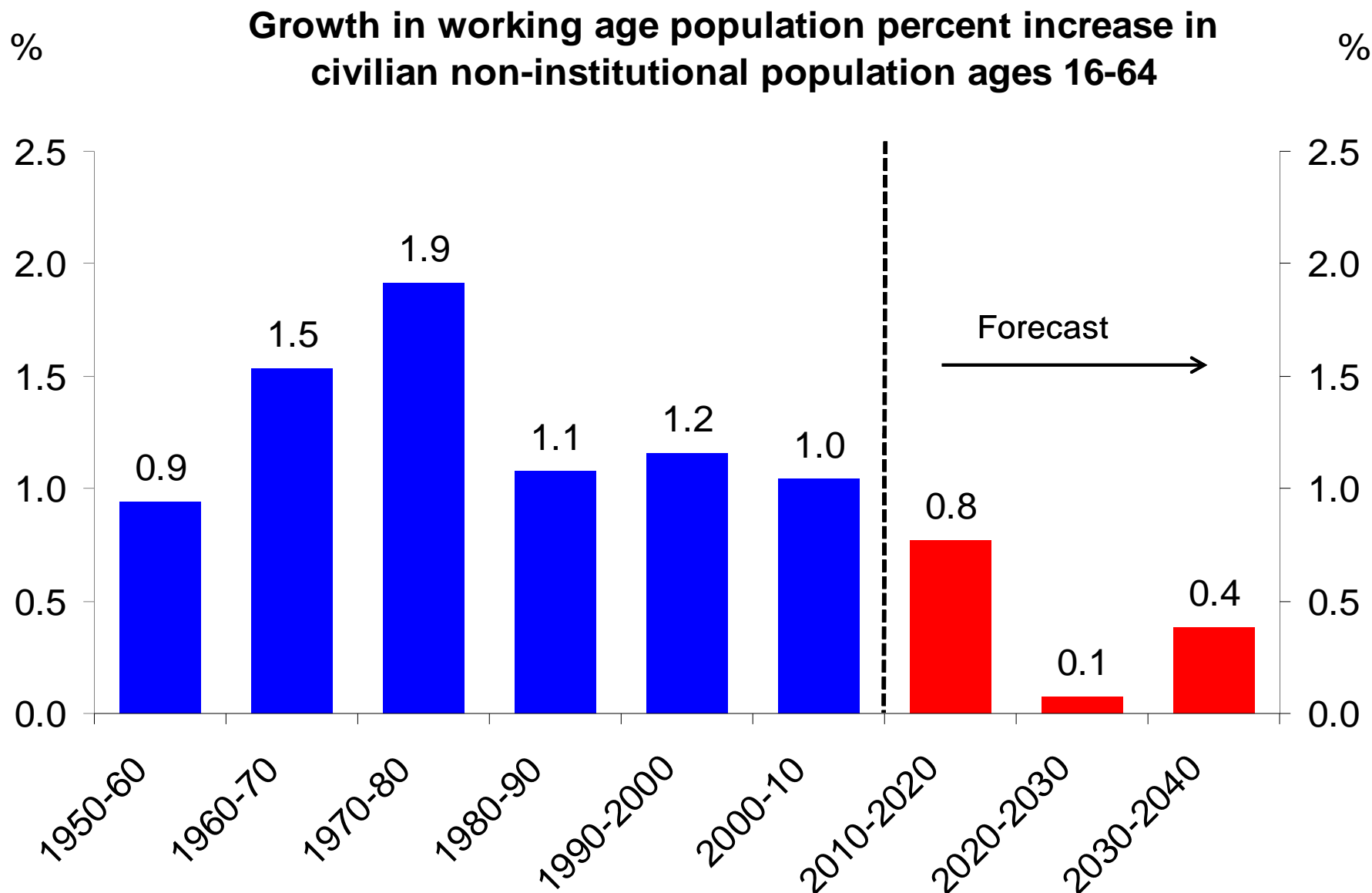


<p>Fed outlook – <b>Fed hikes coming</b></p>	<p>China and EM slowdown and higher dollar and wider credit spreads may be risks to the US economy but so far there are no signs of a broader slowdown in the domestic US economy.</p>
<p>Bond markets - <b>Rates modestly higher</b></p>	<p>ECB and BoJ QE holding US rates down. Foreign private buyers holding US rates down. Fed liftoff and quantitative tightening pushing rates up.</p>
<p>Stock markets - <b>Better private sector balance sheets</b></p>	<p>Corporate, household, and banking sector balance sheets continue to heal, macro momentum is solid, and the Fed continues to support risky assets. This all bodes well for equities.</p>
<p>FX - <b>USD lower?</b></p>	<p>Long USD trade feels very crowded and Europe benefiting from lower oil, lower euro, and solid US expansion. EUR/USD could rise in 2016.</p>
<p>Commodities - <b>Downside risks continue</b></p>	<p>Slowing Chinese growth likely to continue to put downward pressure on commodity prices. Falling commodity prices hitting Australia, Latam, and Canada.</p>
<p>Emerging markets - <b>Falling commodity prices a negative</b></p>	<p>Structural problems exposed in a number of emerging markets.</p>

Source: DB Global Markets Research



## US labor force growth over time



Source: BLS, Haver Analytics, UN Population Division, DB Global Markets Research



## 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 top-ranked by Institutional Investor in fixed income and equities for the past five 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.





# Appendix 1

## Important Disclosures

### Additional Information Available upon Request

Prices are current as of the end of the previous trading session unless otherwise indicated and are sourced from local exchanges via Reuters, Bloomberg and other vendors . Other information is sourced from Deutsche Bank, subject companies, and other sources. For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at <http://qm.db.com/qer/disclosure/DisclosureDirectory.eqsr>

#### Analyst Certification

The views expressed in this report accurately reflect the personal views of the undersigned lead analyst(s). In addition, the undersigned lead analyst(s) has not and will not receive any compensation for providing a specific recommendation or view in this report. Torsten Slok



## Regulatory Disclosures

### 1. Important Additional Conflict Disclosures

Aside from within this report, important conflict disclosures can also be found at <https://gm.db.com/equities> under the “Disclosures Lookup” and “Legal” tabs. Investors are strongly encouraged to review this information before investing.

### 2. Short-Term Trade Ideas

Deutsche Bank equity research analysts sometimes have shorter-term trade ideas (known as SOLAR ideas) that are consistent or inconsistent with Deutsche Bank’s existing longer term ratings. These trade ideas can be found at the SOLAR link at <http://gm.db.com>.



## Additional Information

The information and opinions in this report were prepared by Deutsche Bank AG or one of its affiliates (collectively "Deutsche Bank"). Though the information herein is believed to be reliable and has been obtained from public sources believed to be reliable, Deutsche Bank makes no representation as to its accuracy or completeness.

Deutsche Bank may consider this report in deciding to trade as principal. It may also engage in transactions, for its own account or with customers, in a manner inconsistent with the views taken in this research report. Others within Deutsche Bank, including strategists, sales staff and other analysts, may take views that are inconsistent with those taken in this research report. Deutsche Bank issues a variety of research products, including fundamental analysis, equity-linked analysis, quantitative analysis and trade ideas. Recommendations contained in one type of communication may differ from recommendations contained in others, whether as a result of differing time horizons, methodologies or otherwise. Deutsche Bank and/or its affiliates may also be holding debt securities of the issuers it writes on.

Analysts are paid in part based on the profitability of Deutsche Bank AG and its affiliates, which includes investment banking revenues.

Opinions, estimates and projections constitute the current judgment of the author as of the date of this report. They do not necessarily reflect the opinions of Deutsche Bank and are subject to change without notice. Deutsche Bank has no obligation to update, modify or amend this report or to otherwise notify a recipient thereof if any opinion, forecast or estimate contained herein changes or subsequently becomes inaccurate. This report is provided for informational purposes only. It is not an offer or a solicitation of an offer to buy or sell any financial instruments or to participate in any particular trading strategy. Target prices are inherently imprecise and a product of the analyst's judgment. The financial instruments discussed in this report may not be suitable for all investors and investors must make their own informed investment decisions. Prices and availability of financial instruments are subject to change without notice and investment transactions can lead to losses as a result of price fluctuations and other factors. If a financial instrument is denominated in a currency other than an investor's currency, a change in exchange rates may adversely affect the investment. Past performance is not necessarily indicative of future results. Unless otherwise indicated, prices are current as of the end of the previous trading session, and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Deutsche Bank, subject companies, and in some cases, other parties.

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 who 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 coupons 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.

Derivative transactions involve numerous risks including, among others, market, counterparty default and illiquidity risk. The appropriateness or otherwise of these products for use by investors is dependent on the investors' own circumstances including their tax position, their regulatory environment and the nature of their other assets and liabilities, and as such, investors should take expert legal and financial advice before entering into any transaction similar to or inspired by the contents of this publication. The risk of loss in futures trading and options, foreign or domestic, can be substantial. As a result of the high degree of leverage obtainable in futures and options trading, losses may be incurred that are greater than the amount of funds initially deposited. Trading in options involves risk and is not suitable for all investors. Prior to buying or selling an option investors must review the "Characteristics and Risks of Standardized Options", at <http://www.optionsclearing.com/about/publications/character-risks.jsp>. If you are unable to access the website please contact your Deutsche Bank representative for a copy of this important document.

Participants in foreign exchange transactions may incur risks arising from several factors, including the following: (i) exchange rates can be volatile and are subject to large fluctuations; (ii) the value of currencies may be affected by numerous market factors, including world and national economic, political and regulatory events, events in equity and debt markets and changes in interest rates; and (iii) currencies may be subject to devaluation or government imposed exchange controls which could affect the value of the currency. Investors in securities such as ADRs, whose values are affected by the currency of an underlying security, effectively assume currency risk.

Unless governing law provides otherwise, all transactions should be executed through the Deutsche Bank entity in the investor's home jurisdiction.



United States: Approved and/or distributed by Deutsche Bank Securities Incorporated, a member of FINRA, NFA and SIPC. Non-U.S. analysts may not be associated persons of Deutsche Bank Securities Incorporated and therefore may not be subject to FINRA regulations concerning communications with subject company, public appearances and securities held by the analysts.

Germany: Approved and/or distributed by Deutsche Bank AG, a joint stock corporation with limited liability incorporated in the Federal Republic of Germany with its principal office in Frankfurt am Main. Deutsche Bank AG is authorized under German Banking Law (competent authority: European Central Bank) and is subject to supervision by the European Central Bank and by BaFin, Germany's Federal Financial Supervisory Authority.

United Kingdom: Approved and/or distributed by Deutsche Bank AG acting through its London Branch at Winchester House, 1 Great Winchester Street, London EC2N 2DB. Deutsche Bank AG in the United Kingdom is authorised by the Prudential Regulation Authority and is subject to limited regulation by the Prudential Regulation Authority and Financial Conduct Authority. Details about the extent of our authorisation and regulation are available on request.

Hong Kong: Distributed by Deutsche Bank AG, Hong Kong Branch.

Korea: Distributed by Deutsche Securities Korea Co.

South Africa: Deutsche Bank AG Johannesburg is incorporated in the Federal Republic of Germany (Branch Register Number in South Africa: 1998/003298/10).

Singapore: by Deutsche Bank AG, Singapore Branch or Deutsche Securities Asia Limited, Singapore Branch (One Raffles Quay #18-00 South Tower Singapore 048583, +65 6423 8001), which may be contacted in respect of any matters arising from, or in connection with, this report. Where this report is issued or promulgated in Singapore to a person who is not an accredited investor, expert investor or institutional investor (as defined in the applicable Singapore laws and regulations), they accept legal responsibility to such person for its contents.

Japan: Approved and/or distributed by Deutsche Securities Inc.(DSI). Registration number - Registered as a financial instruments dealer by the Head of the Kanto Local Finance Bureau (Kinsho) No. 117. Member of associations: JSDA, Type II Financial Instruments Firms Association, The Financial Futures Association of Japan, and Japan Investment Advisers Association. Commissions and risks involved in stock transactions - for stock transactions, we charge stock commissions and consumption tax by multiplying the transaction amount by the commission rate agreed with each customer. Stock transactions can lead to losses as a result of share price fluctuations and other factors. Transactions in foreign stocks can lead to additional losses stemming from foreign exchange fluctuations. We may also charge commissions and fees for certain categories of investment advice, products and services. Recommended investment strategies, products and services carry the risk of losses to principal and other losses as a result of changes in market and/or economic trends, and/or fluctuations in market value. Before deciding on the purchase of financial products and/or services, customers should carefully read the relevant disclosures, prospectuses and other documentation. "Moody's", "Standard & Poor's", and "Fitch" mentioned in this report are not registered credit rating agencies in Japan unless Japan or "Nippon" is specifically designated in the name of the entity. Reports on Japanese listed companies not written by analysts of DSI are written by Deutsche Bank Group's analysts with the coverage companies specified by DSI. Some of the foreign securities stated on this report are not disclosed according to the Financial Instruments and Exchange Law of Japan.

Malaysia: Deutsche Bank AG and/or its affiliate(s) may maintain positions in the securities referred to herein and may from time to time offer those securities for purchase or may have an interest to purchase such securities. Deutsche Bank may engage in transactions in a manner inconsistent with the views discussed herein.

Qatar: Deutsche Bank AG in the Qatar Financial Centre (registered no. 00032) is regulated by the Qatar Financial Centre Regulatory Authority. Deutsche Bank AG - QFC Branch may only undertake the financial services activities that fall within the scope of its existing QFCRA license. Principal place of business in the QFC: Qatar Financial Centre, Tower, West Bay, Level 5, PO Box 14928, Doha, Qatar. This information has been distributed by Deutsche Bank AG. Related financial products or services are only available to Business Customers, as defined by the Qatar Financial Centre Regulatory Authority.

Russia: This information, interpretation and opinions submitted herein are not in the context of, and do not constitute, any appraisal or evaluation activity requiring a license in the Russian Federation.

Kingdom of Saudi Arabia: Deutsche Securities Saudi Arabia LLC Company, (registered no. 07073-37) is regulated by the Capital Market Authority. Deutsche Securities Saudi Arabia may only undertake the financial services activities that fall within the scope of its existing CMA license. Principal place of business in Saudi Arabia: King Fahad Road, Al Olaya District, P.O. Box 301809, Faisaliah Tower - 17th Floor, 11372 Riyadh, Saudi Arabia.

United Arab Emirates: Deutsche Bank AG in the Dubai International Financial Centre (registered no. 00045) is regulated by the Dubai Financial Services Authority. Deutsche Bank AG - DIFC Branch may only undertake the financial services activities that fall within the scope of its existing DFSA license. Principal place of business in the DIFC: Dubai International Financial Centre, The Gate Village, Building 5, PO Box 504902, Dubai, U.A.E. This information has been distributed by Deutsche Bank AG. Related financial products or services are only available to Professional Clients, as defined by the Dubai Financial Services Authority.

Australia: Retail clients should obtain a copy of a Product Disclosure Statement (PDS) relating to any financial product referred to in this report and consider the PDS before making any decision about whether to acquire the product. Please refer to Australian specific research disclosures and related information at <https://australia.db.com/australia/content/research-information.html>

Australia and New Zealand: This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act and New Zealand Financial Advisors Act respectively. Additional information relative to securities, other financial products or issuers discussed in this report is available upon request. This report may not be reproduced, distributed or published by any person for any purpose without Deutsche Bank's prior written consent. Please cite source when quoting.

Copyright © 2016 Deutsche Bank Securities Inc.