

The Global Economic and Financial System: Challenges and Prospects

Dr. Jacob A. Frenkel

Chairman, JPMorgan Chase International
Chairman of the Board of Trustees,
Group of Thirty (G30)

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J.P.Morgan Chase

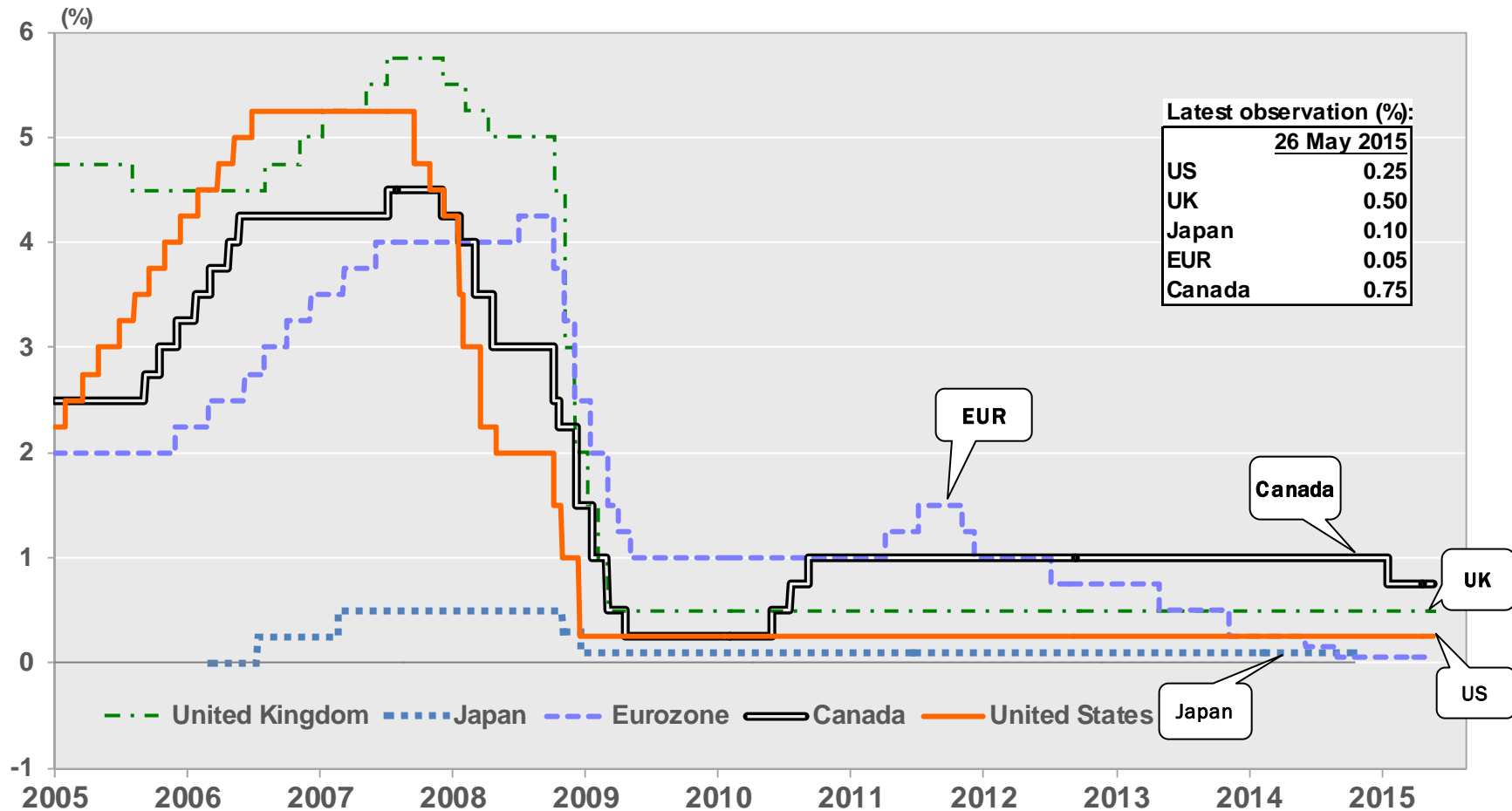
Is the World Economy Ready for Normalization of U.S. Monetary Policy?

- **Monetary Policies, Leverage & Debt**
- **Global Economic Growth & Trade**
- **Labor Market Conditions**
- **Long-Term Demographic Trends**

Monetary Policies, Leverage & Debt

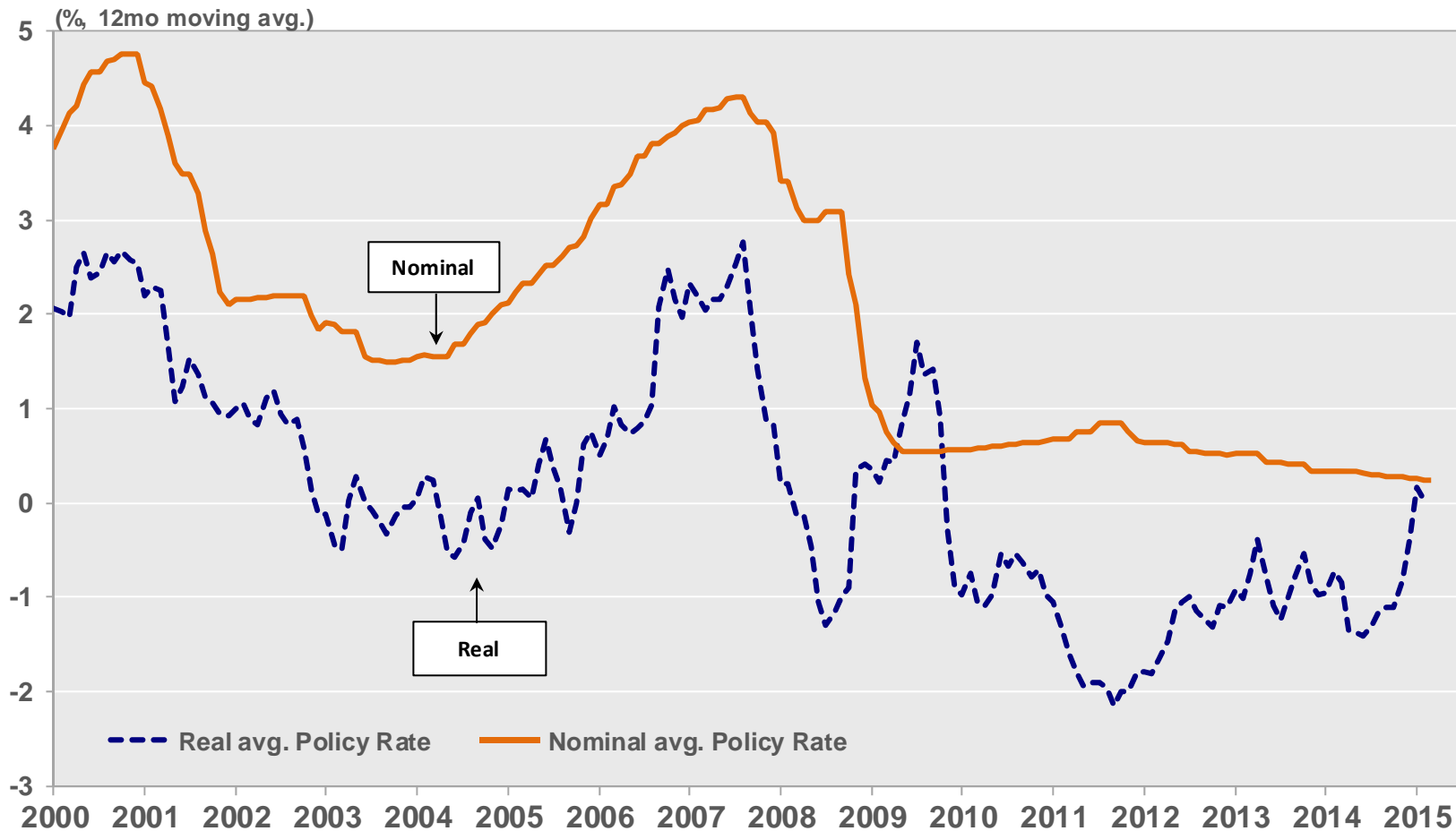
- **Global Policy Rates Near Zero**
- **Central Bank Balance Sheets Expand**
- **Leverage and Deleverage Diverge**
- **Spreads in Eurozone Decline but Some Fragmentation Remains**

Central Bank Policy Interest Rate



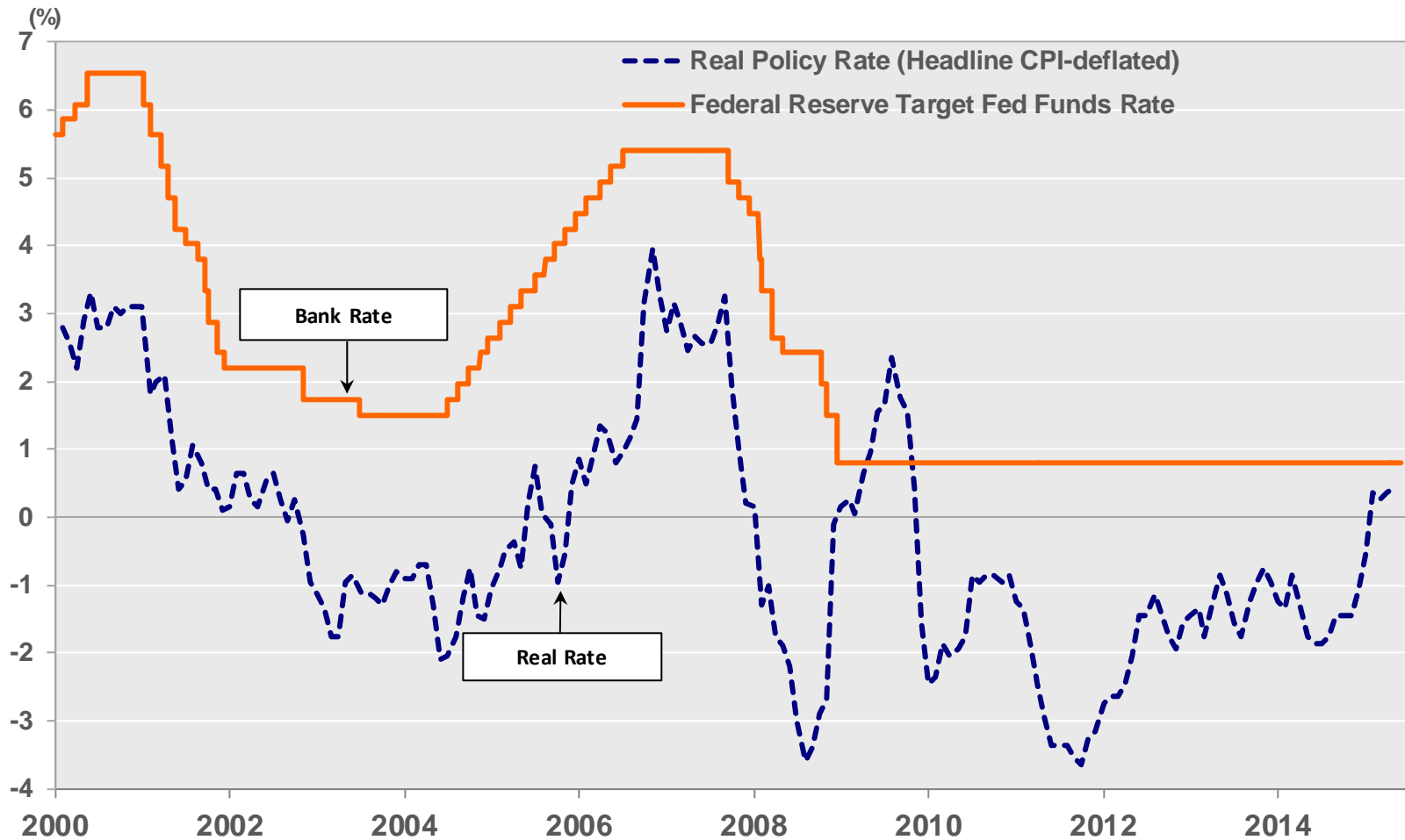
Source: Bloomberg Market Data, Last observation: 26 May, 2015

Global Policy Rates: Developed Markets



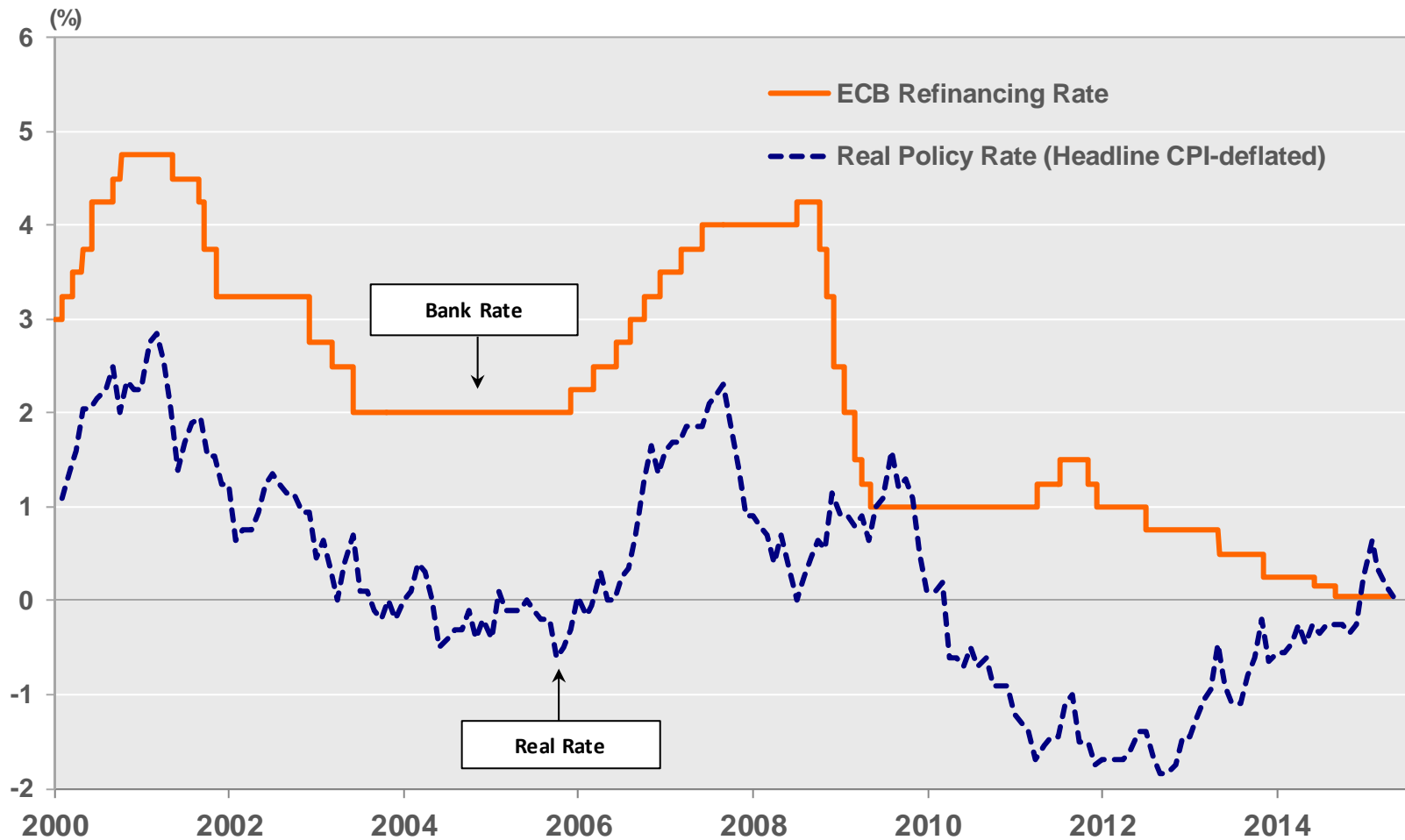
Source: JPMorgan Chase, National Statistical Institutes, Last Observation: Nominal - March 2015; Real - February 2015

U.S. Monetary Policy Rates



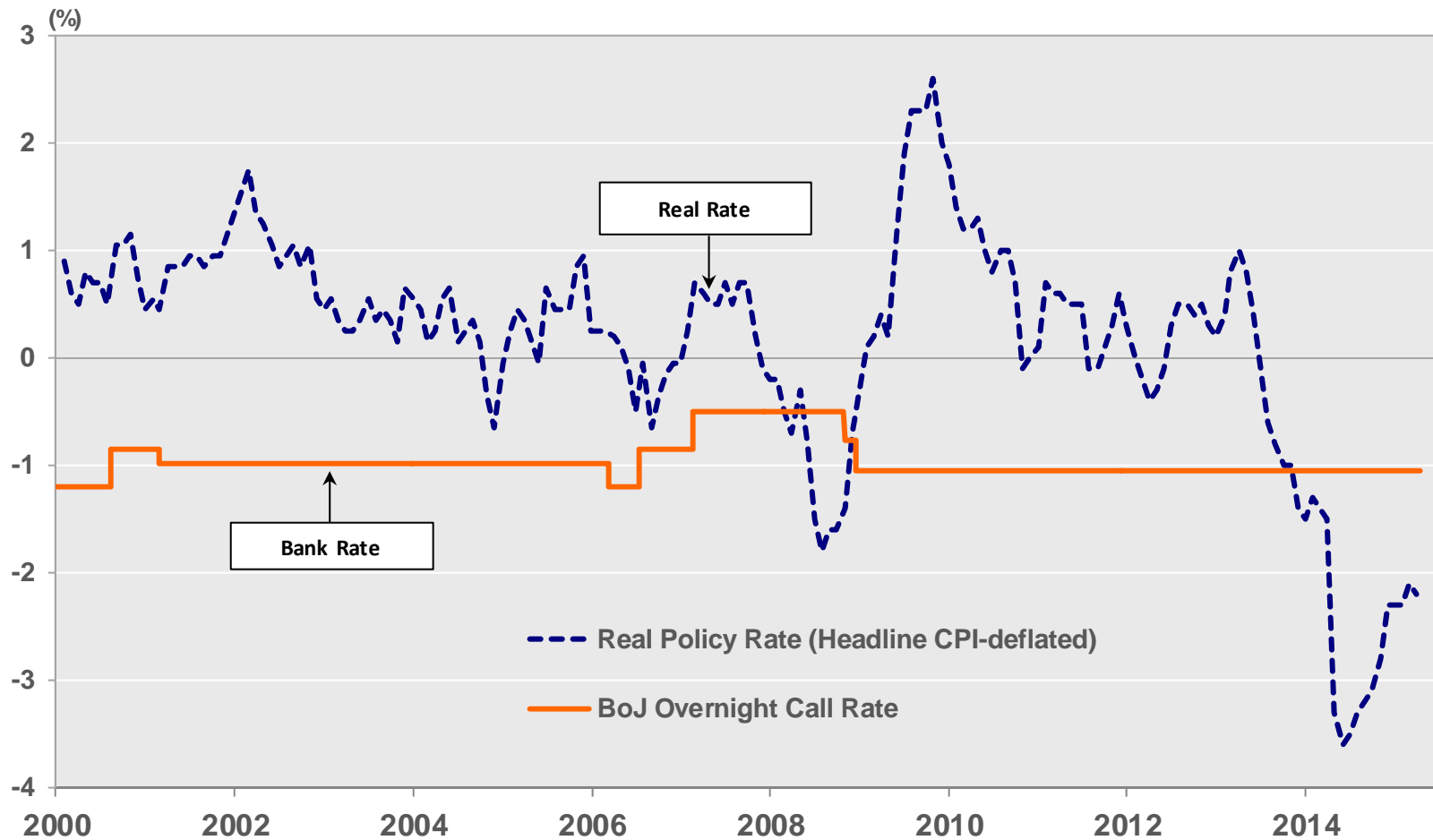
Source: Fed; Last Observation: Main Policy Rate - 26 May, 2015; Real Rate - Apr 2015

Euro area Monetary Policy Rates



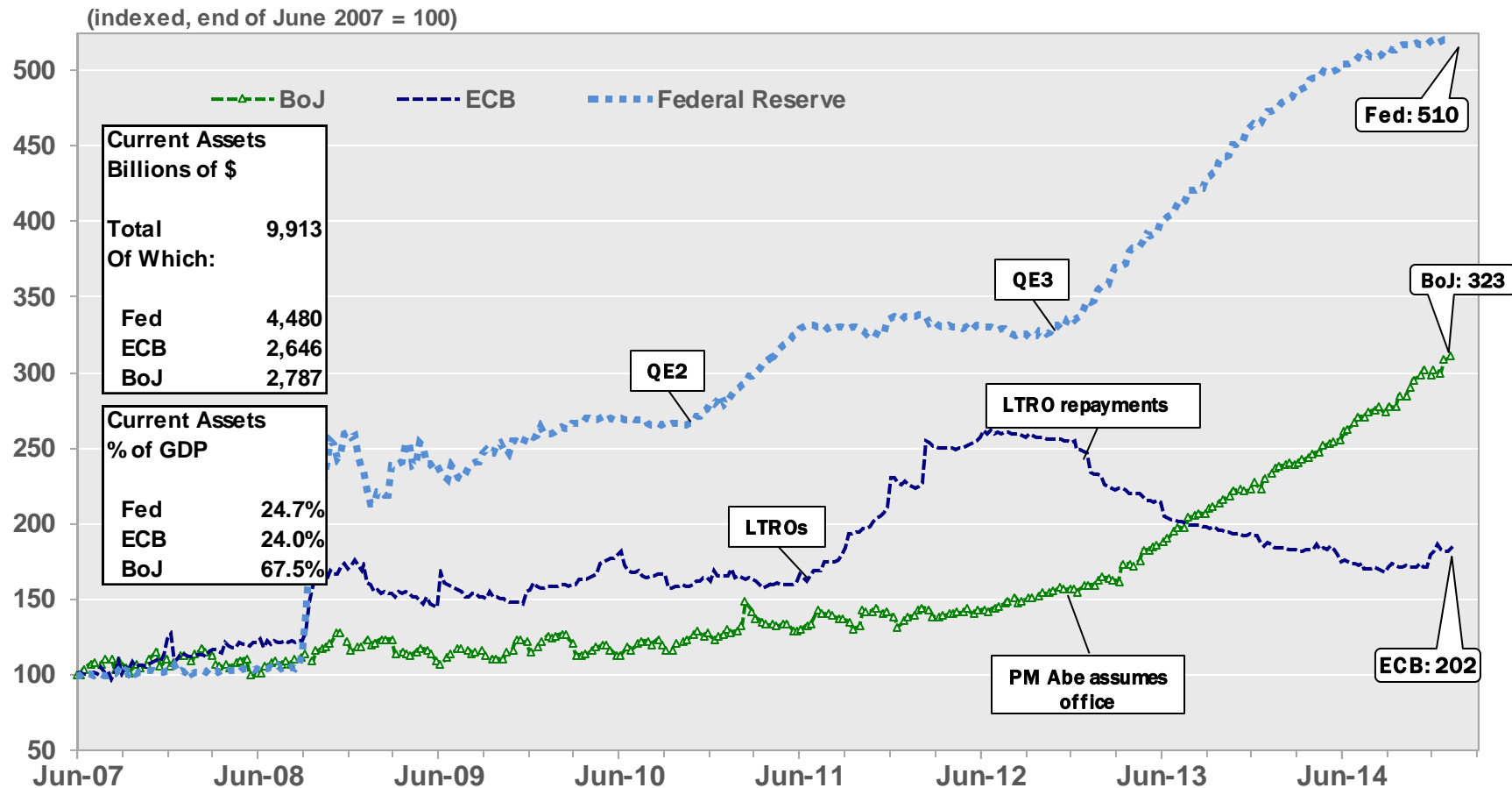
Source: ECB; Last Observation: Main Policy Rate - 26 May, 2015; Real Rate - Apr 2015

Japan Monetary Policy Rates



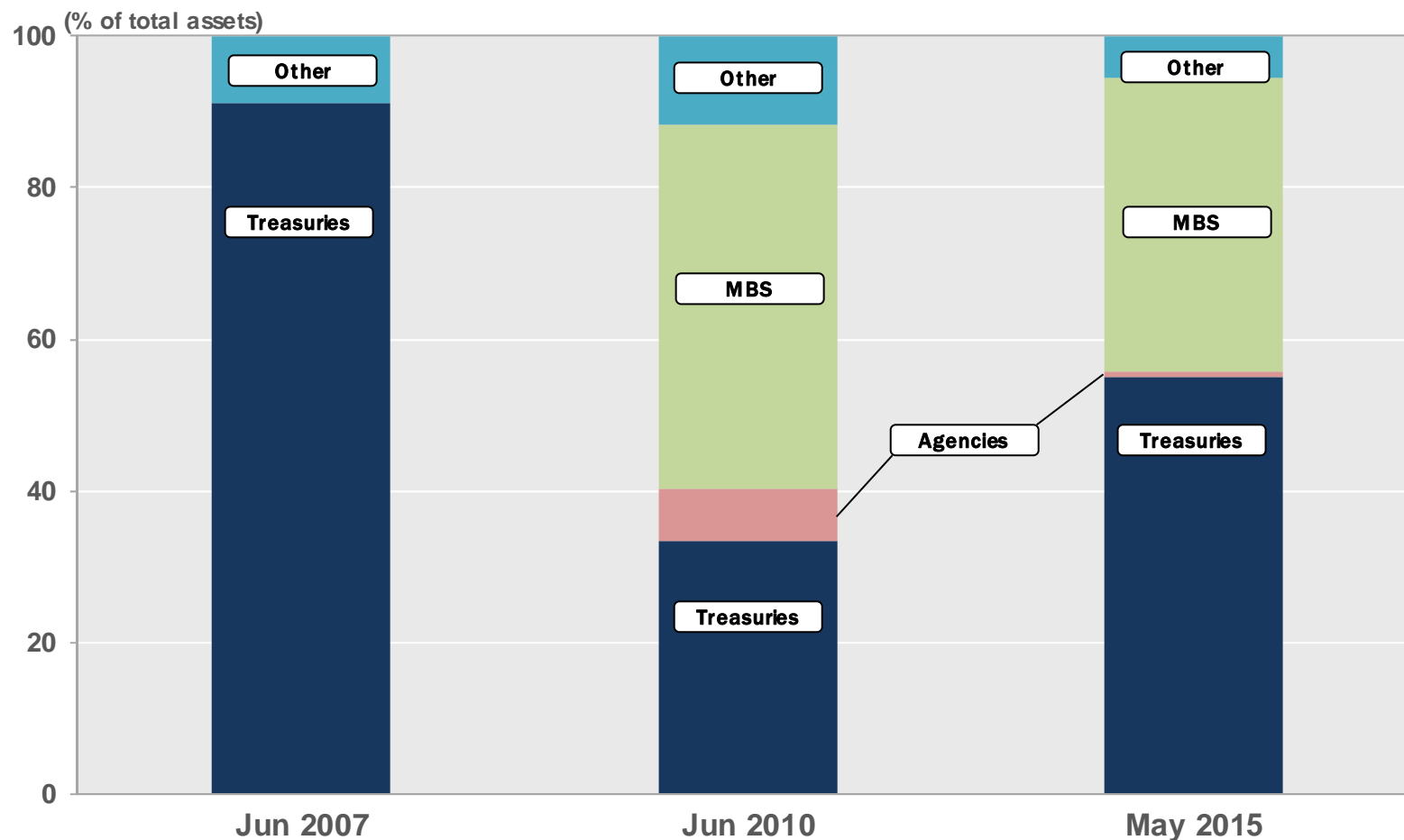
Source: BoJ; Last Observation: Main Policy Rate - May 26 2015; Real Rate - Mar 2015

Total Assets of Key Central Banks (indexed levels)



Source: Bloomberg; Last Observation: Fed: May 20, 2015; ECB: May 22, 2015; BoJ: May 20, 2015.

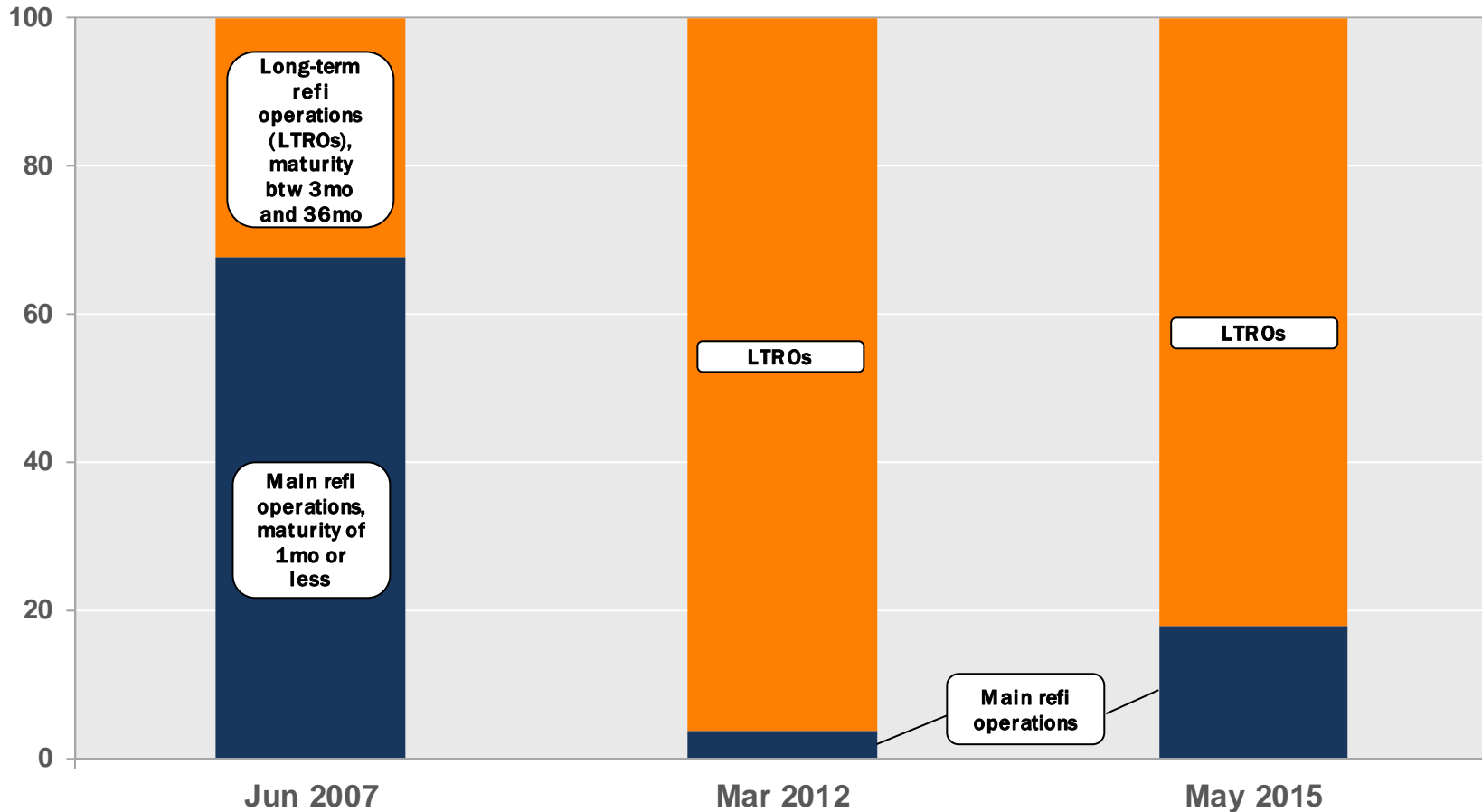
Composition of Federal Reserve Assets



Source: Federal Reserve, Bloomberg, Last Observation: May 20, 2015.

Composition of ECB Liquidity Facilities

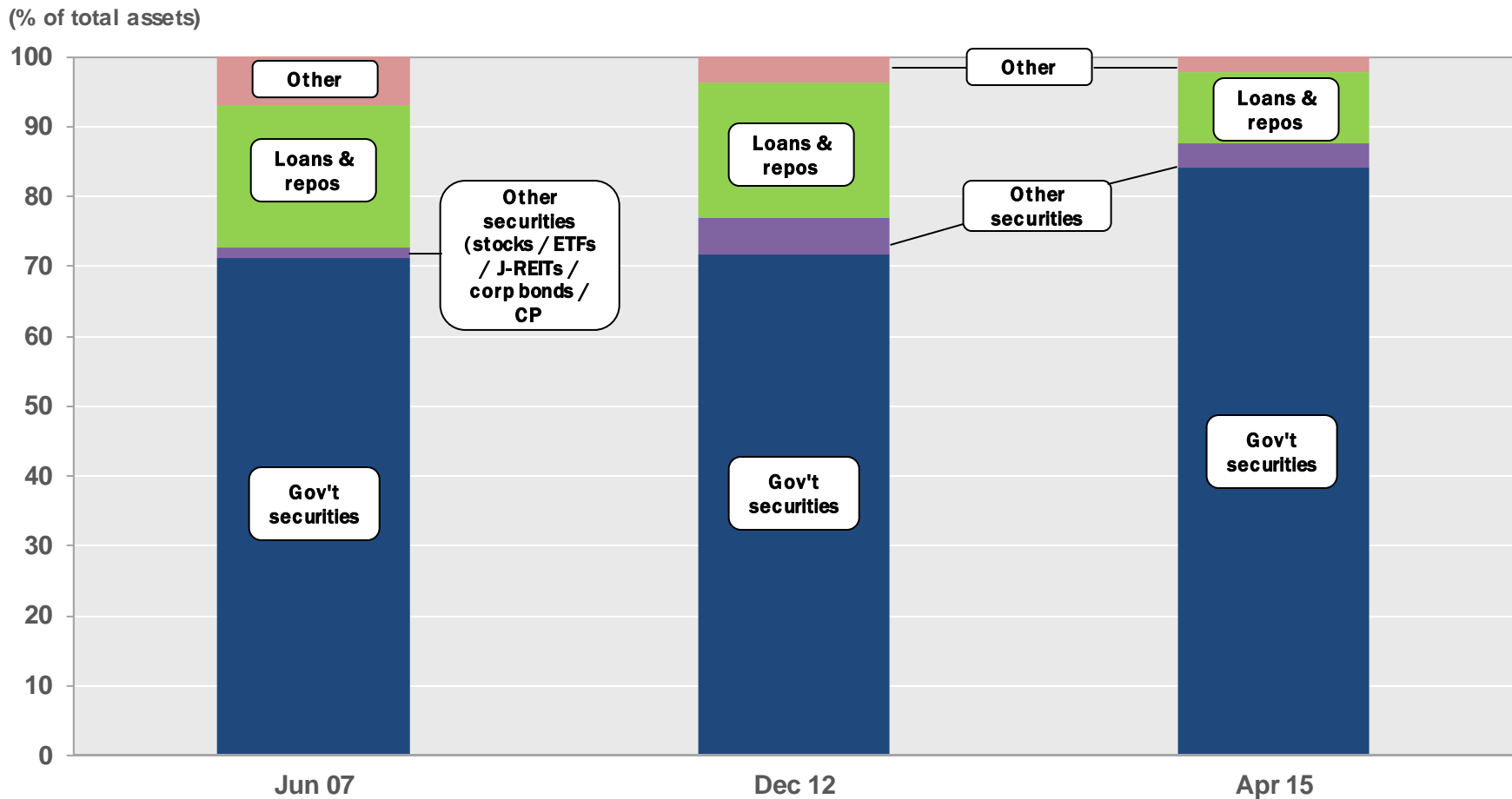
(% of total liquidity measures)



Note: March 2012 follows two rounds of 36-month LTRO auctions that occurred December 21, 2011 and February 29, 2012.

Source: ECB, Last Observation: May 22, 2015

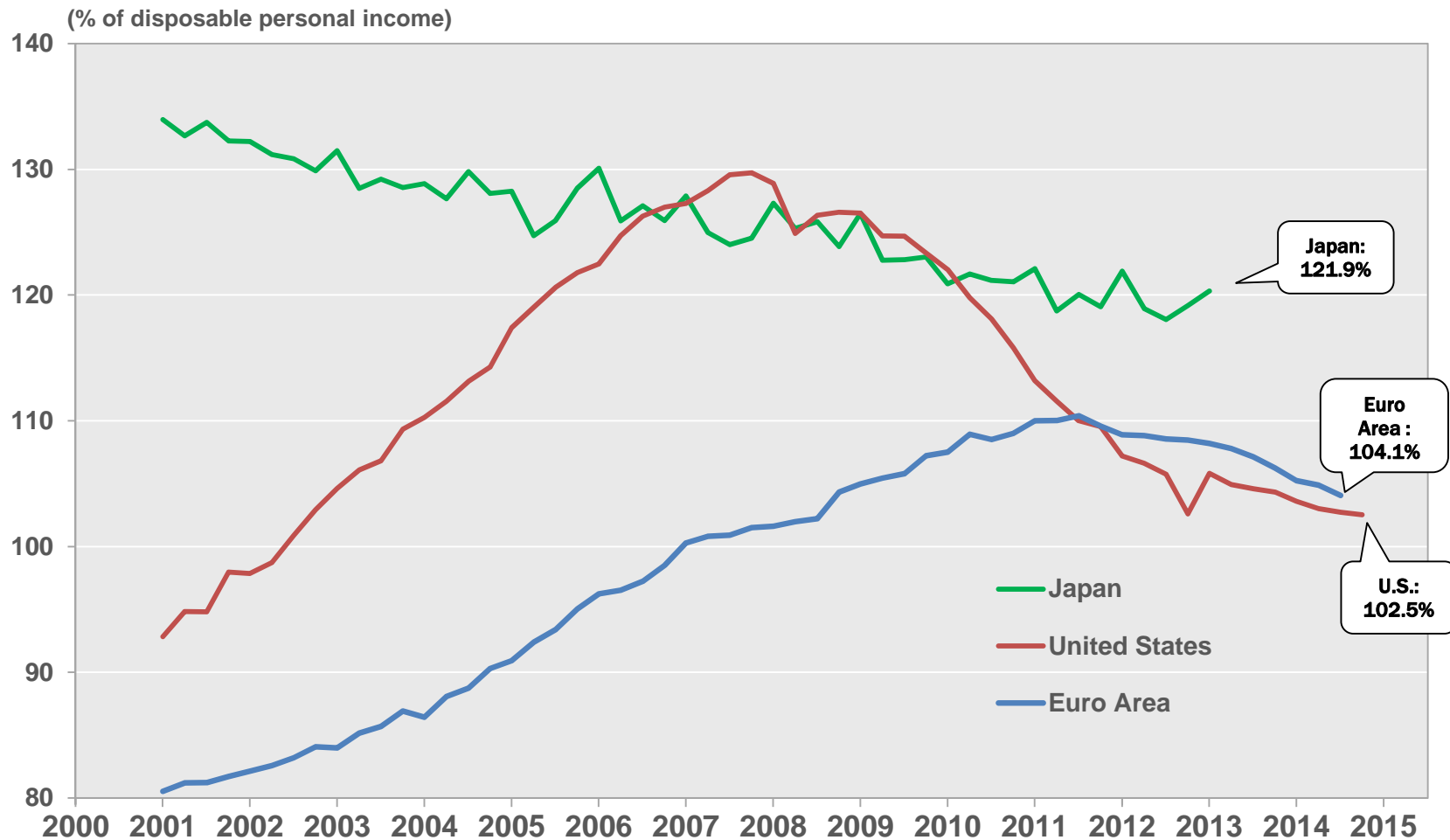
Composition of BoJ Assets



Note: Prime Minister Abe assumed office in December 2012

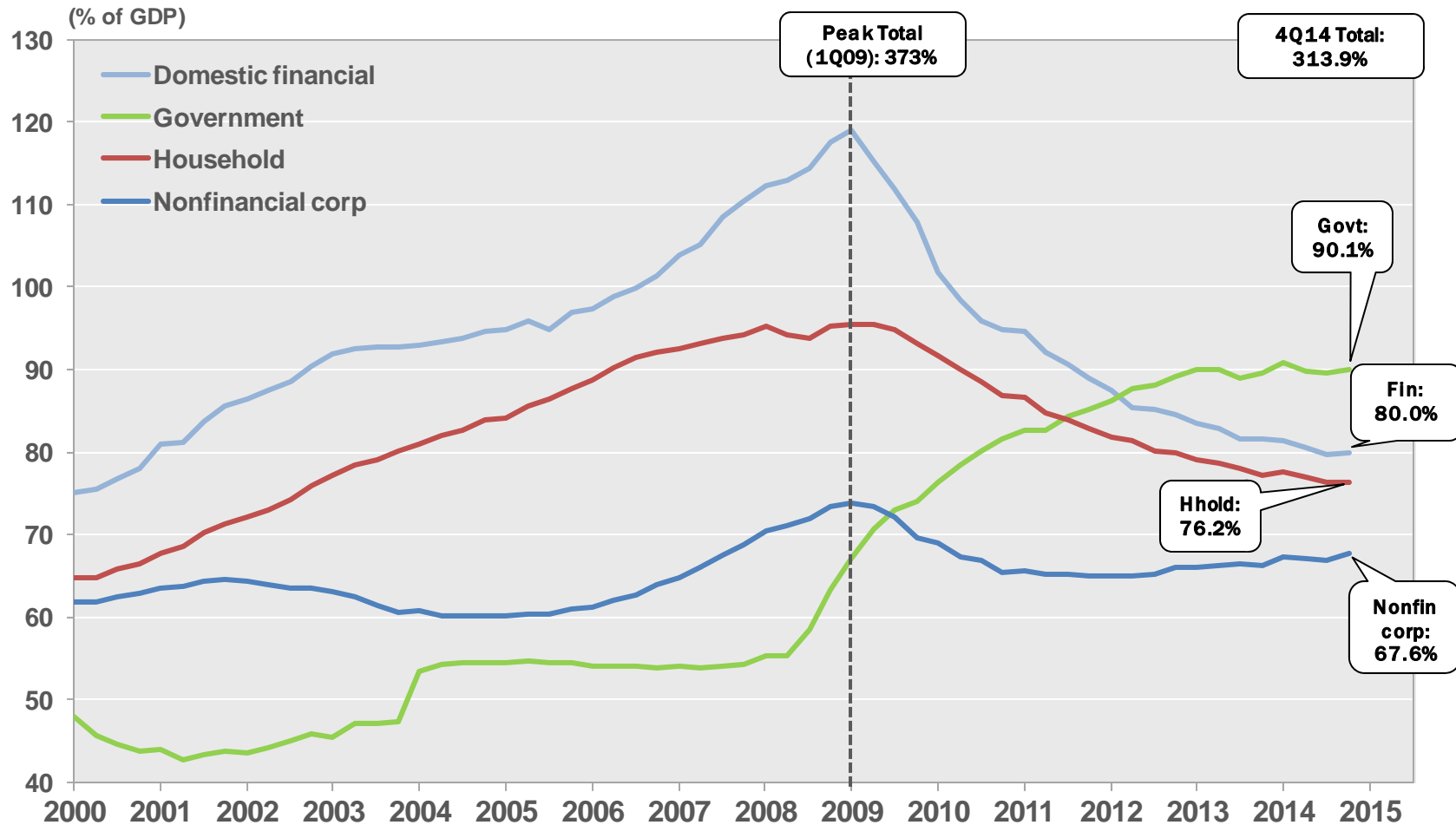
Source: BoJ, Last Observation: April 2015

Household Debt to Disposable Income



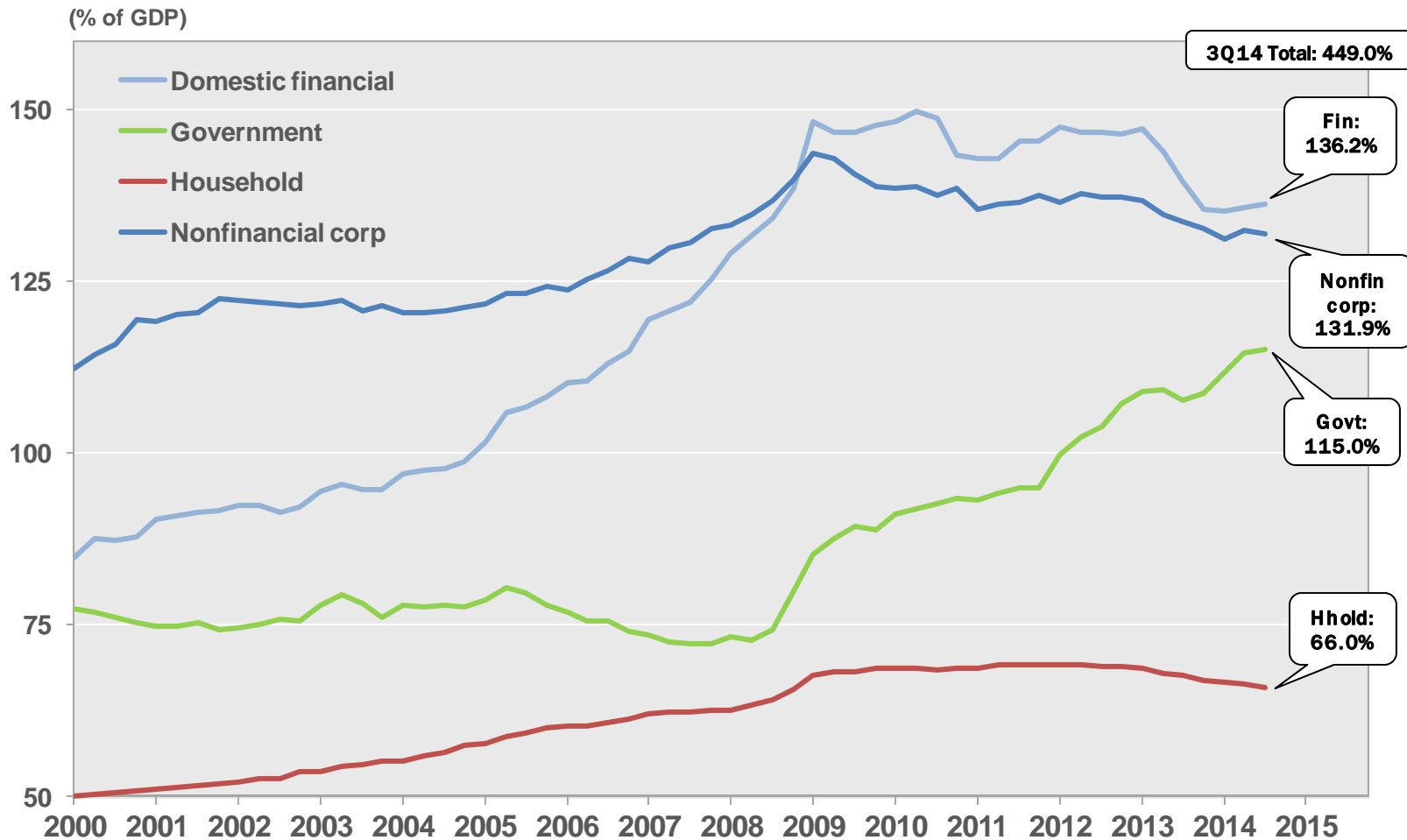
Source: Haver analytics; last observation Q4 2014 (US), Q3 2014 (Euro area), Q4 2013 (Japan).

U.S.: Gross Debt Outstanding by Sector



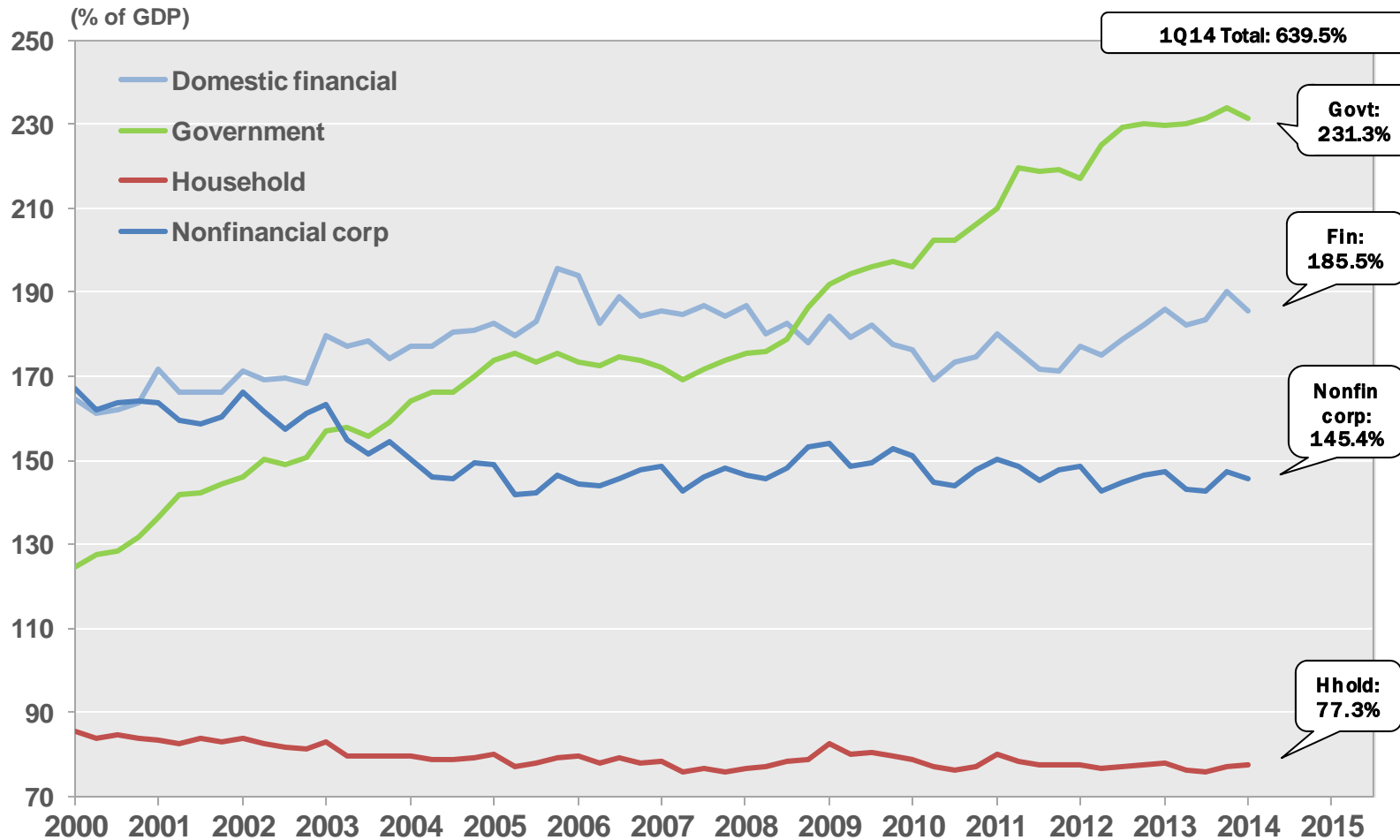
Source: Haver analytics; last observation Q4 2014.

Euro Area: Gross Debt Outstanding by Sector



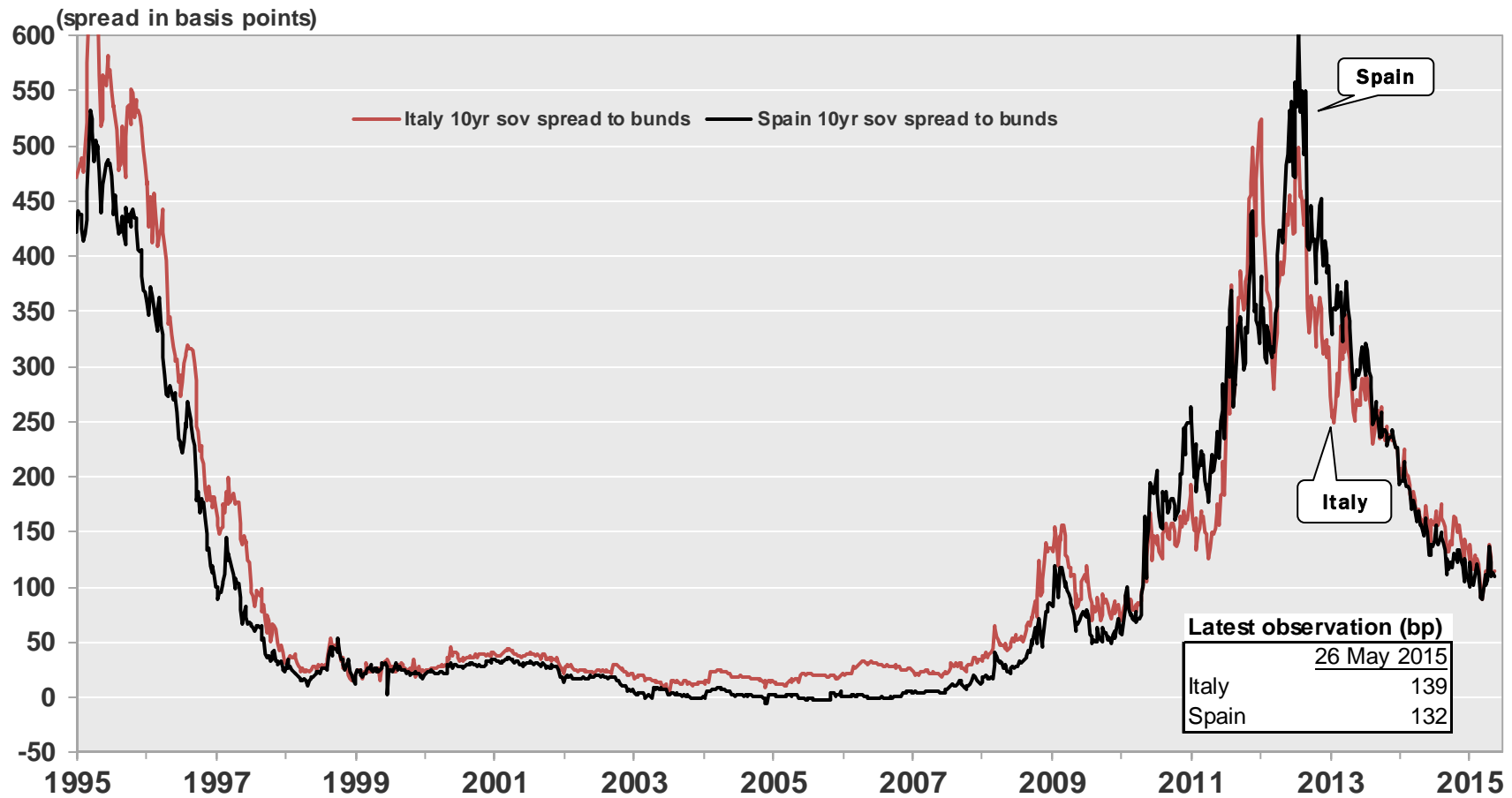
Source: Eurostat; last observation Q3 2014.

Japan: Gross Debt Outstanding by Sector



Source: Haver analytics; last observation Q1 2014.

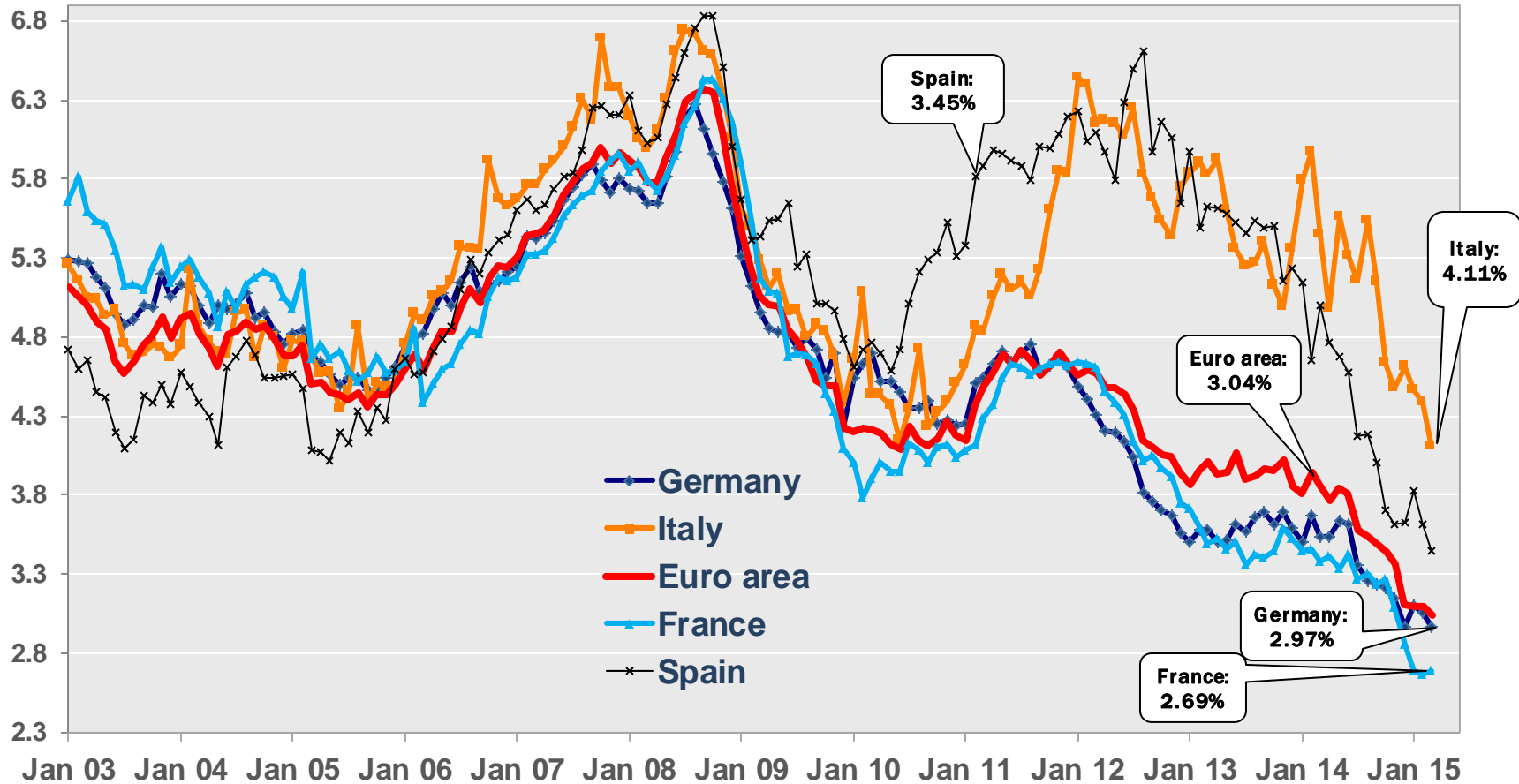
10yr Sovereign Bond Spreads



Source: Bloomberg, Reuters, last update 26 May, 2015

Fragmentation in Euro Area Borrowing Rates

(%ar, non-financial corporate borrowers; loan maturity between 1 and 5 years, <1 mn euros)



Source: Eurostat, last observation March 2015

Evolution of Fed Forward Guidance

August 12, 2003

“the Committee believes that policy accommodation can be maintained for a considerable period.”

December 16, 2008

“the Committee anticipates that weak economic conditions are likely to warrant exceptionally low levels of the federal funds rate for some time.”

March 18, 2009

“The Committee will maintain the target range for the federal funds rate and anticipates that economic conditions are likely to warrant exceptionally low levels of the federal funds rate for an extended period.”

December 12, 2012

“the Committee...currently anticipates that this exceptionally low range for the federal funds rate will be appropriate at least as long as the unemployment rate remains above 6-1/2 percent, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee’s 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored.”

January 28, 2015

“Based on its current assessment, the Committee judges that it can be patient in beginning to normalize the stance of monetary policy. However, if incoming information indicates faster progress toward the Committee’s employment and inflation objectives than the Committee now expects, then increases in the target range for the federal funds rate are likely to occur sooner than currently.”

April 29, 2015

appro“In determining how long to maintain this target range, the Committee will assess progress--both realized and expected--toward its objectives of maximum employment and 2 percent inflation.....The Committee anticipates that it will be priate 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.”

Bank of England's Forward Guidance

“The MPC sets policy to achieve the 2% inflation target, and, subject to that, to support the Government’s economic policies, including those for growth and employment. Despite the sharp fall in unemployment, there remains scope to absorb spare capacity further before raising Bank Rate. When Bank Rate does begin to rise, the appropriate path so as to eliminate slack over the next two to three years and keep inflation close to the target is expected to be gradual.”

-Minutes of the MPC meeting 6 February 2015, released February 19, 2015

“The Committee set monetary policy to meet the 2% inflation target in the medium term, and in a way that helped to sustain growth and employment...given the likely persistence of headwinds weighing on the economy, when Bank Rate did begin to rise it was expected to do so only gradually, and more slowly than in previous cycles...all Committee members agreed that it was appropriate to leave the stance of monetary policy unchanged at this meeting...There was a range of views over the most likely future path of Bank Rate, but all members agreed that it was more likely than not that Bank Rate would rise over the three-year forecast period. ”

-Minutes of the MPC meeting 8 April 2015, released April 22, 2015

ECB's and BoJ's Forward Guidance

ECB

“...Purchases are intended to run until the end of September 2016 and, in any case, until we see a sustained adjustment in the path of inflation that is consistent with our aim of achieving inflation rates below, but close to, 2% over the medium term... Looking ahead, our focus will be on the full implementation of our monetary policy measures. Through these measures, we will contribute to a further improvement in the economic outlook, a reduction in economic slack and a recovery in money and credit growth...”

-ECB President Mario Draghi, Introductory statement, April 15, 2015

BOJ

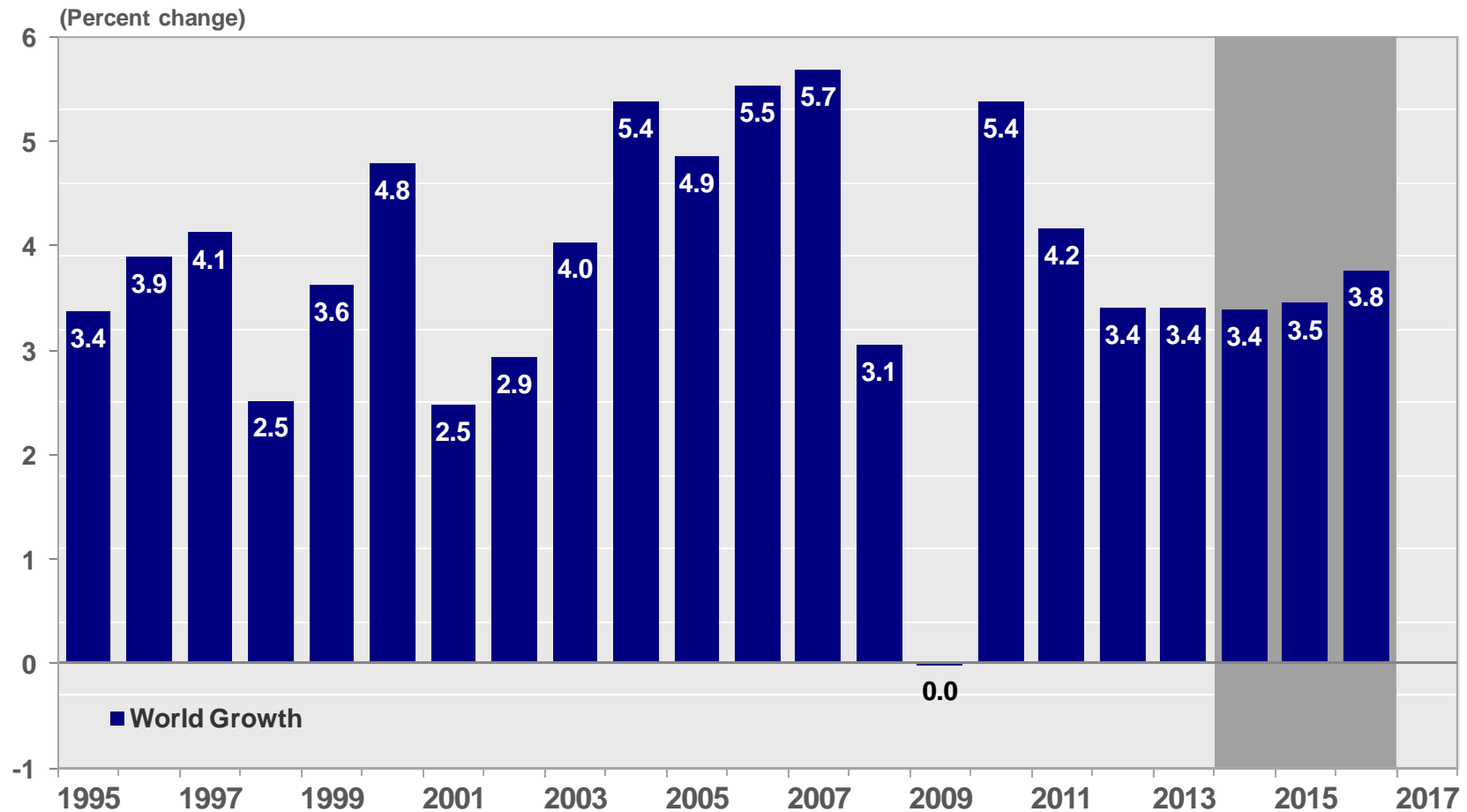
“The Bank will purchase Japanese government bonds (JGBs) so that their amount outstanding will increase at an annual pace of about 80 trillion yen...the Bank will conduct purchases in a flexible manner in accordance with financial market conditions...Quantitative and qualitative monetary easing (QQE) has been exerting its intended effects, and the Bank will continue with QQE, aiming to achieve the price stability target of 2 percent, as long as it is necessary for maintaining that target in a stable manner.”

-Statement of Monetary Policy, April 8, 2015

Global Economic Growth & Trade

- **Growth in the Global Economy & the Rise of Developing Countries**
- **International Trade and the Role of China**
- **Dynamism of the Patterns of Trade**
- **Evolving Current Account Imbalances**

Global GDP Growth



Source: IMF, last update Apr 14 2015, WEO (2014, 2015, & 2016 Forecast)

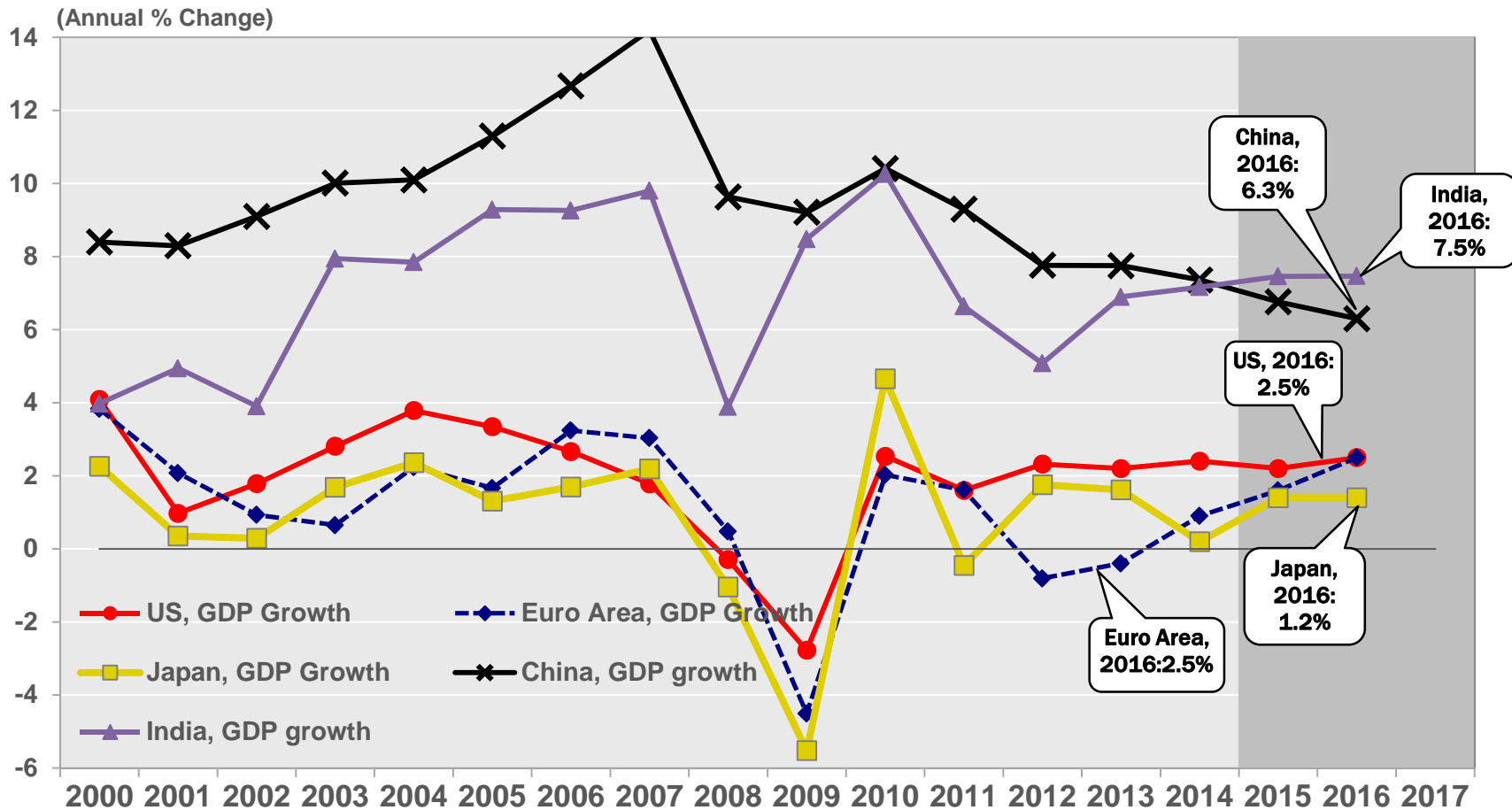
Real GDP Growth, World Economy

GDP Growth (Avg Annual Growth Rate, Constant Prices)

| Country | 2005 | 2010 | 2015 | 2016 |
|-----------------------------|------|------|------|------|
| <i>World</i> | 4.9 | 5.4 | 3.5 | 3.8 |
| <i>Industrial Countries</i> | 2.7 | 3.1 | 2.4 | 2.4 |
| <i>Developing Countries</i> | 7.2 | 7.4 | 4.3 | 4.7 |

Source: IMF, av. Annual growth rates, last update Apr 14 2015, WEO (2015 & 2016 forecast).

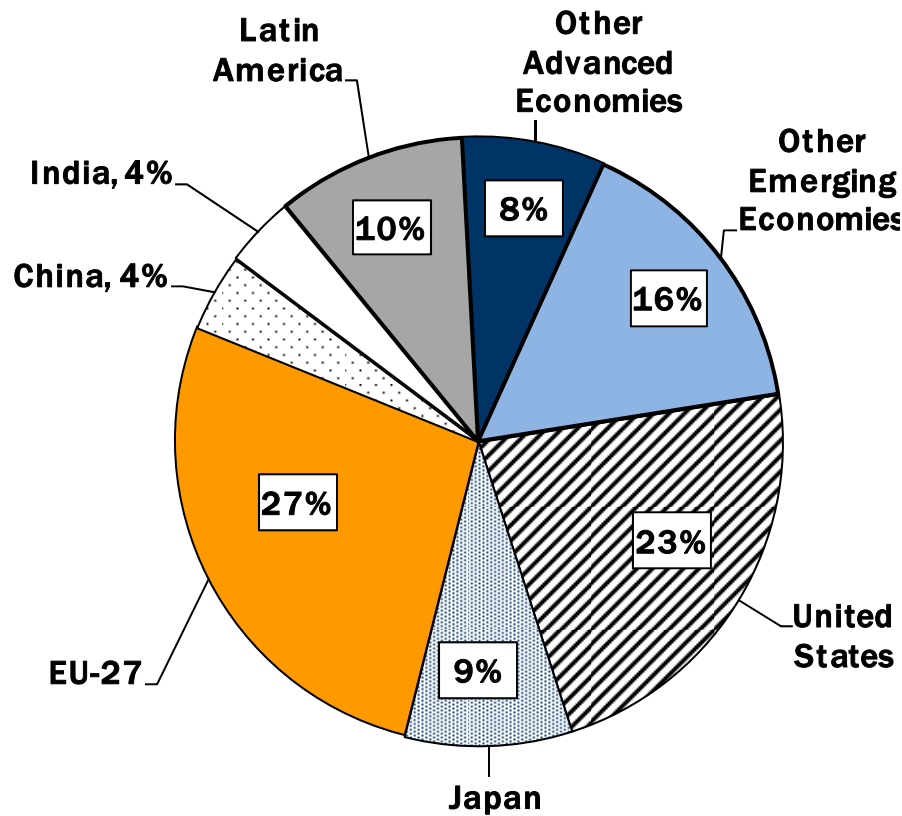
Real GDP Growth, Select Countries



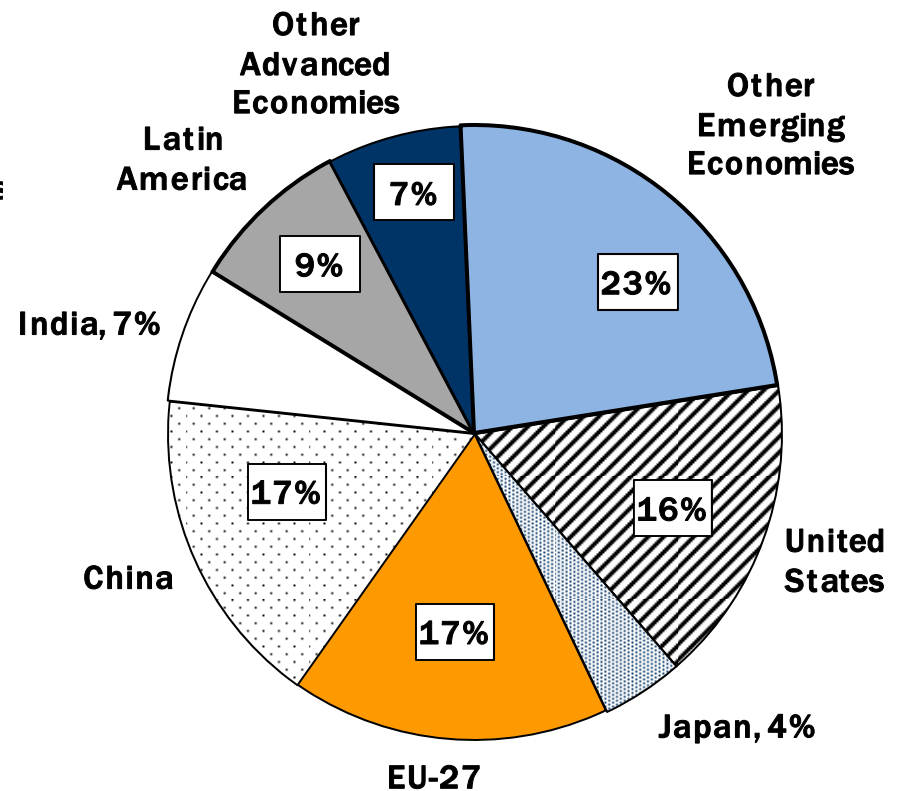
Source: IMF, last update Apr 14 2015, WEO (2015 & 2016 forecast); For US and Euro area, 2015 & 2016 are JPM forecast, last update May 22, 2015.

Global GDP Shares

1990

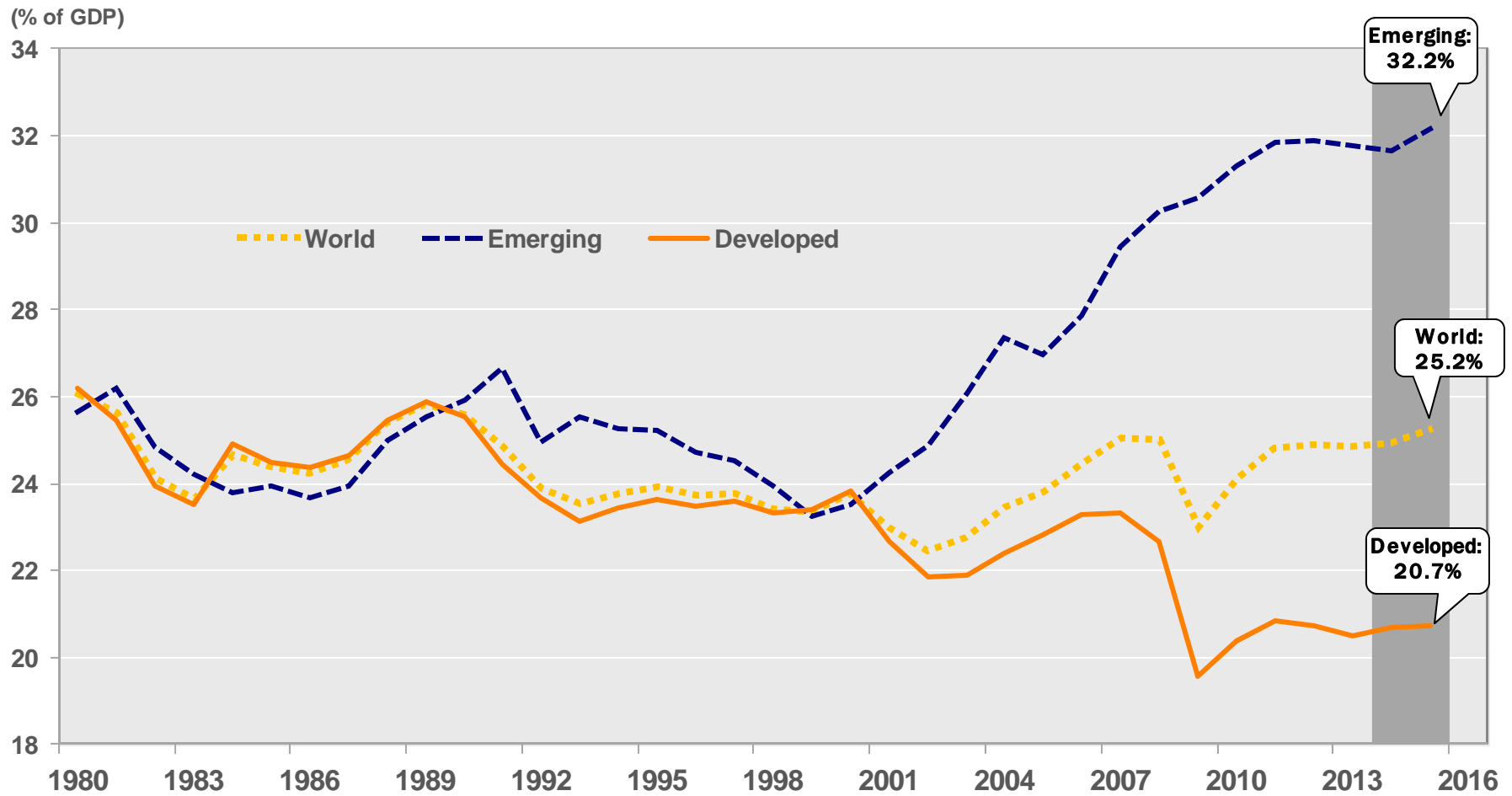


2015 IMF Forecast



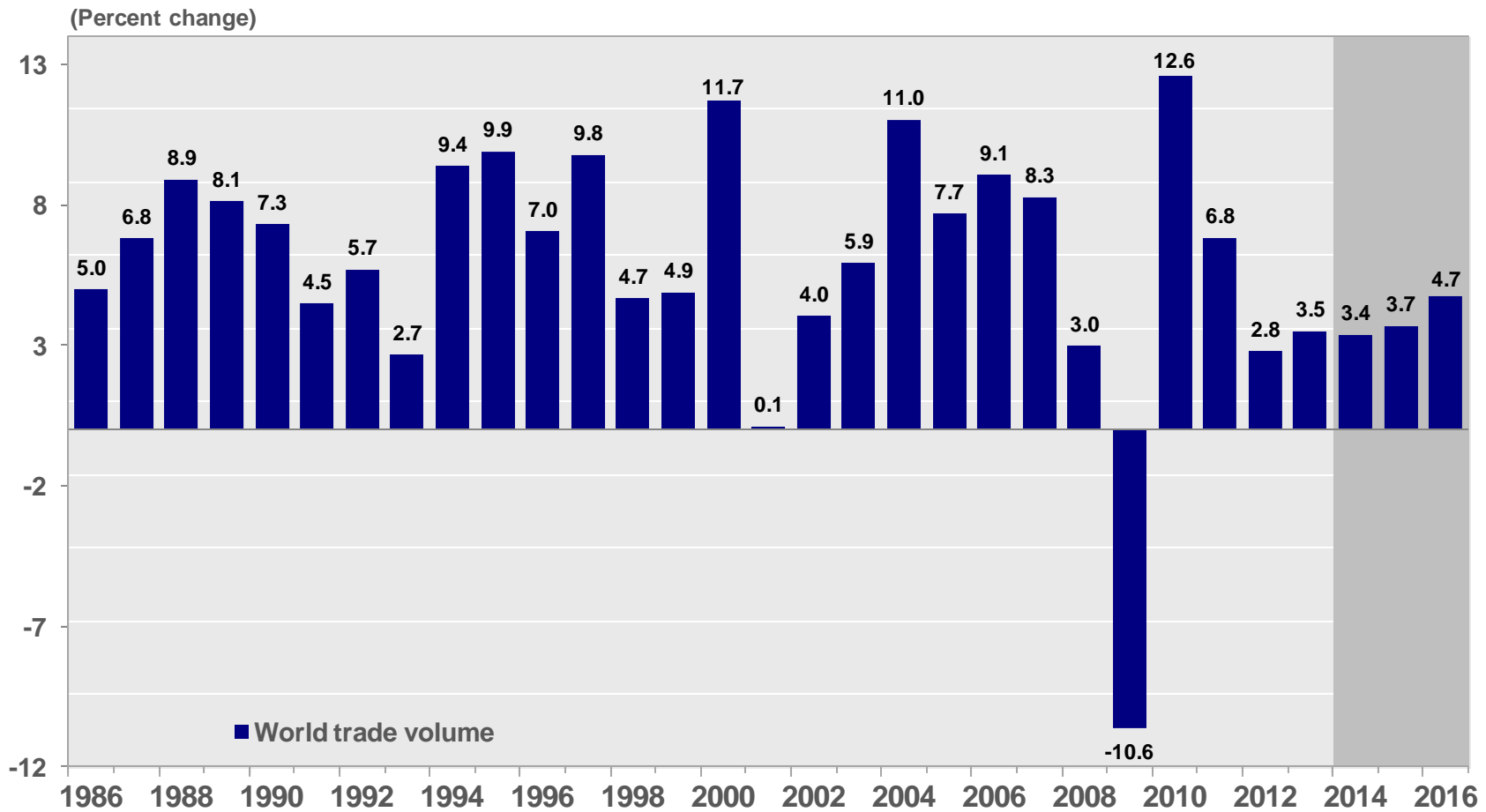
Source: IMF, WEO Database, last update Apr 14 2015, WEO

Investment as a Share of GDP



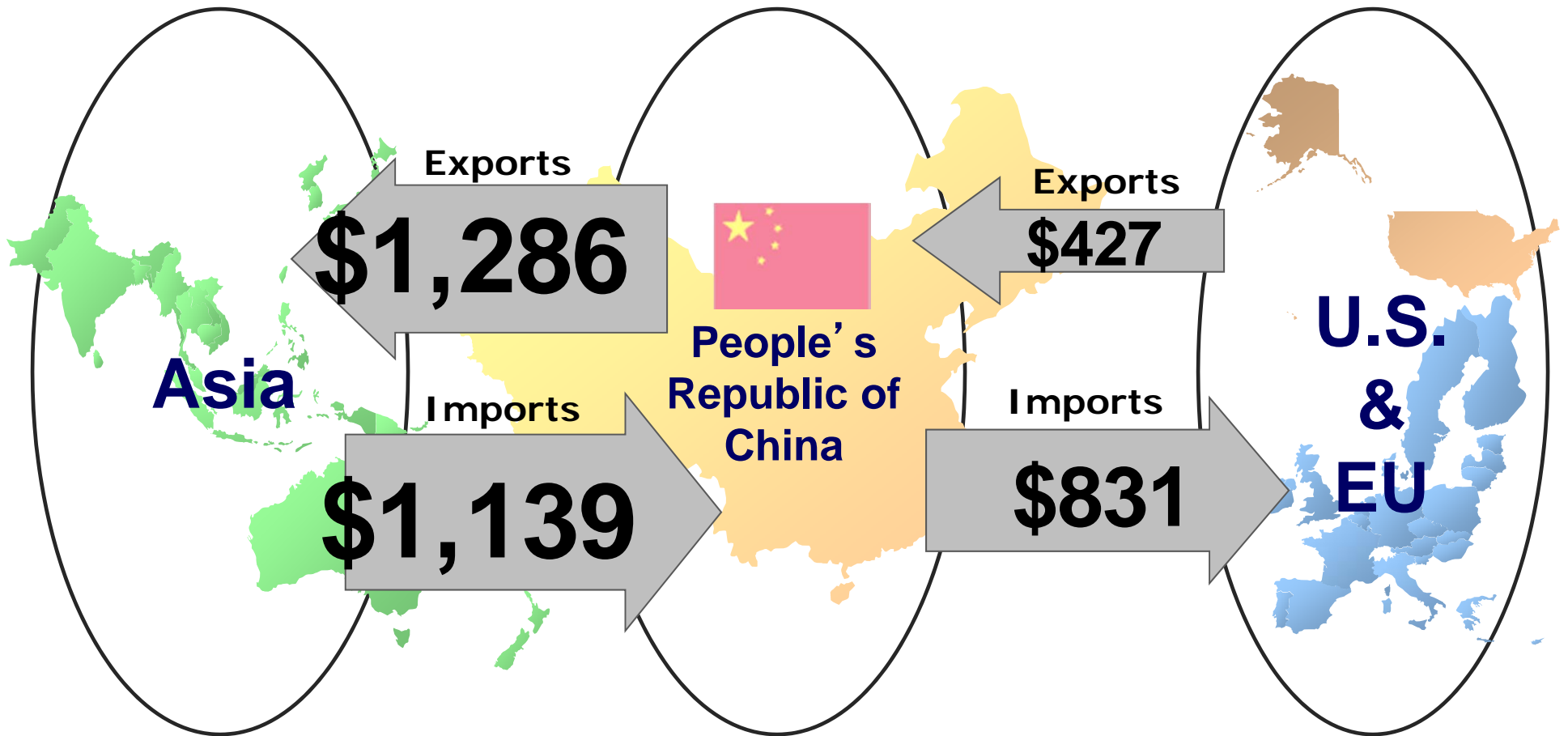
Source: IMF, last update Apr 14 2015, WEO (2014, 2015, & 2016 forecast).

World Trade Volume



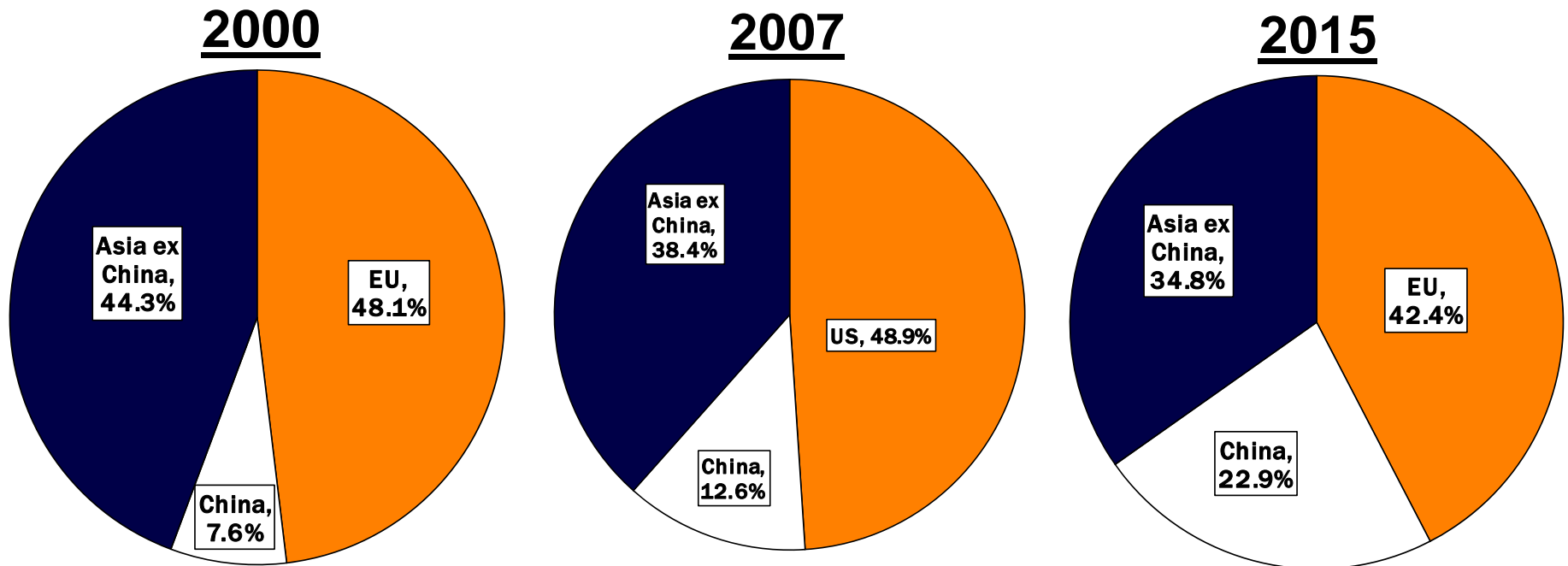
Source: IMF, av. Annual growth rates, last update Apr 14 2015, WEO (2014 & 2015 forecast).

China's Role in Global Trade (bill. Usd)



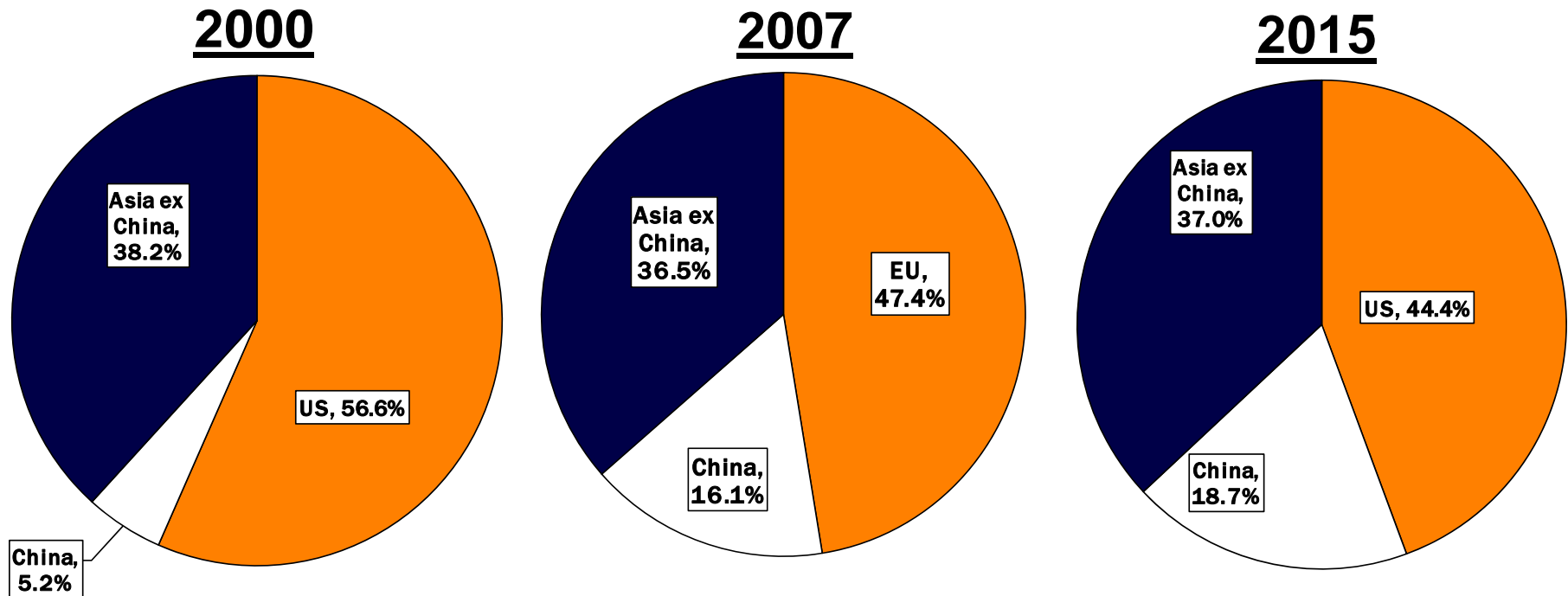
Source: National Bureau of Statistics of China, 12-months through March 2015

U.S. Exports by Destination



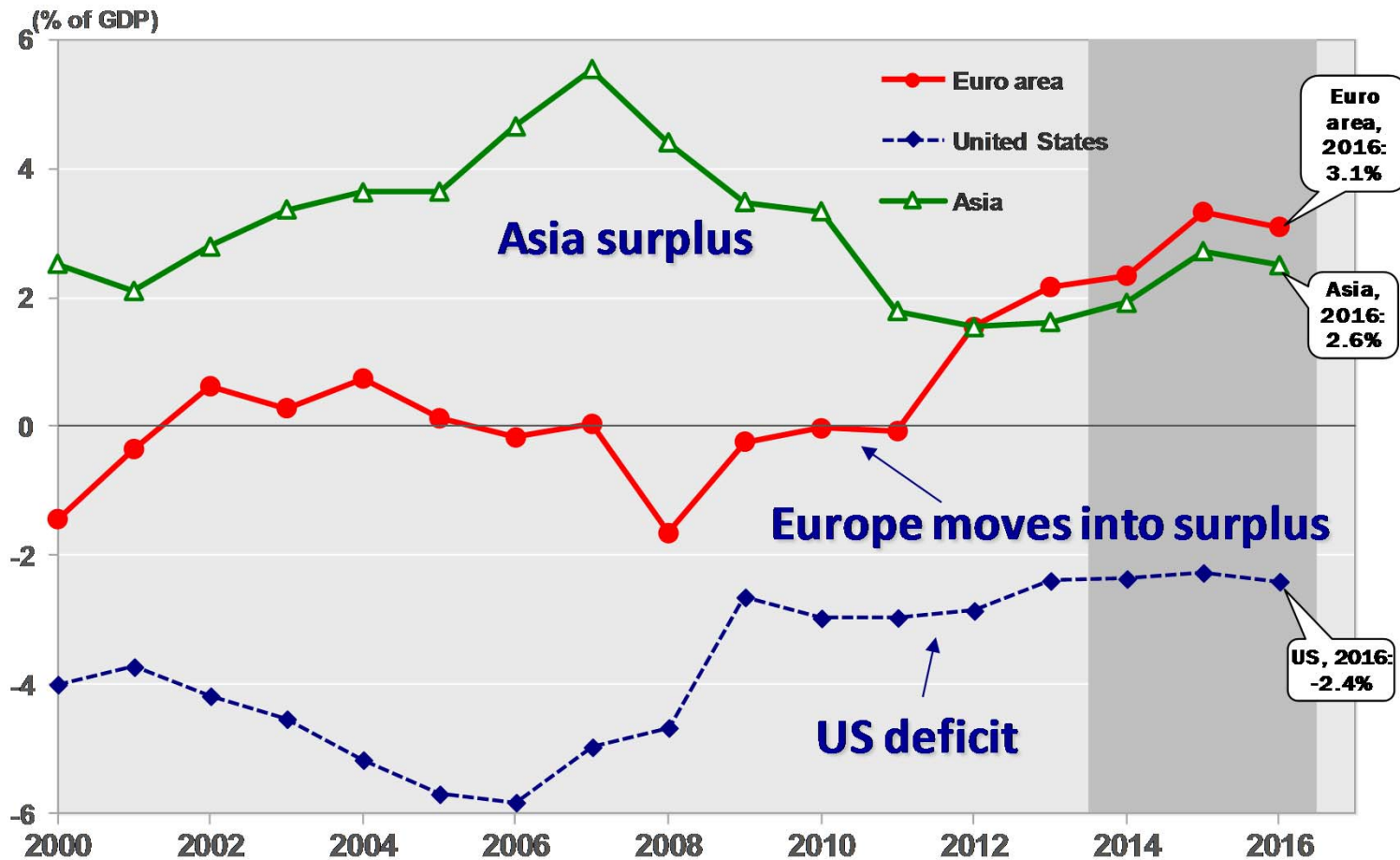
Source: US Department of Commerce, Last Observation: Mar 2015

European Union Exports by Destination



Source: Eurostat, Last Observation: Feb 2015

Current Account of Balance of Payments

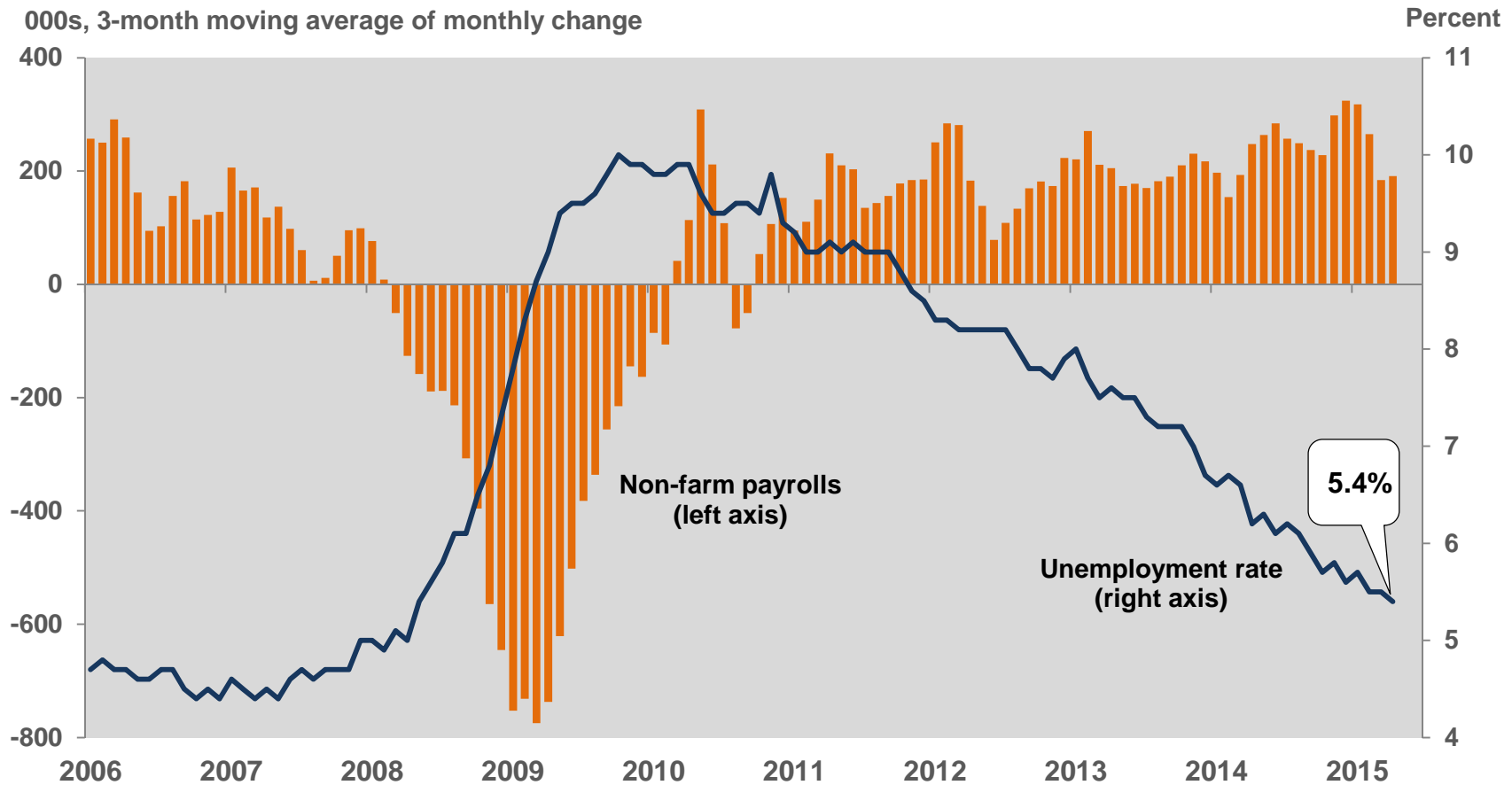


Source: IMF, last update Apr 14 2015, WEO (2014, 2015, & 2016 forecast).

U.S. Labor Markets Improves

- **Unemployment Rate Declines**
- **Job Creation Expands**
- **Long-Term Unemployed Rate Declines**
- **Participation Rate Falls to a Low Level**
- **Low U.S. Wage & Price Inflation**

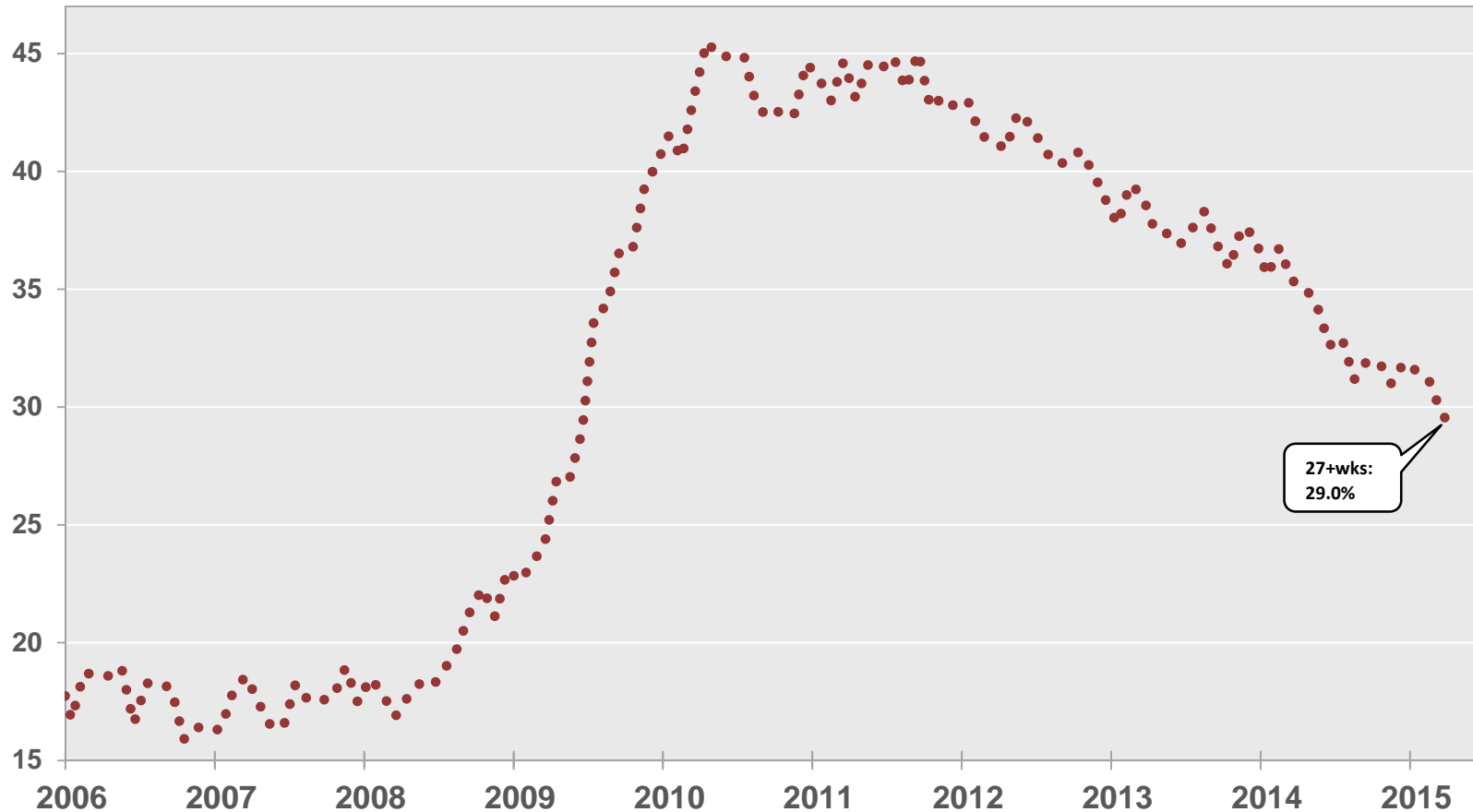
U.S. Payrolls and the Unemployment Rate



Source: Bureau of Labor Statistics. Last Observation April 2015

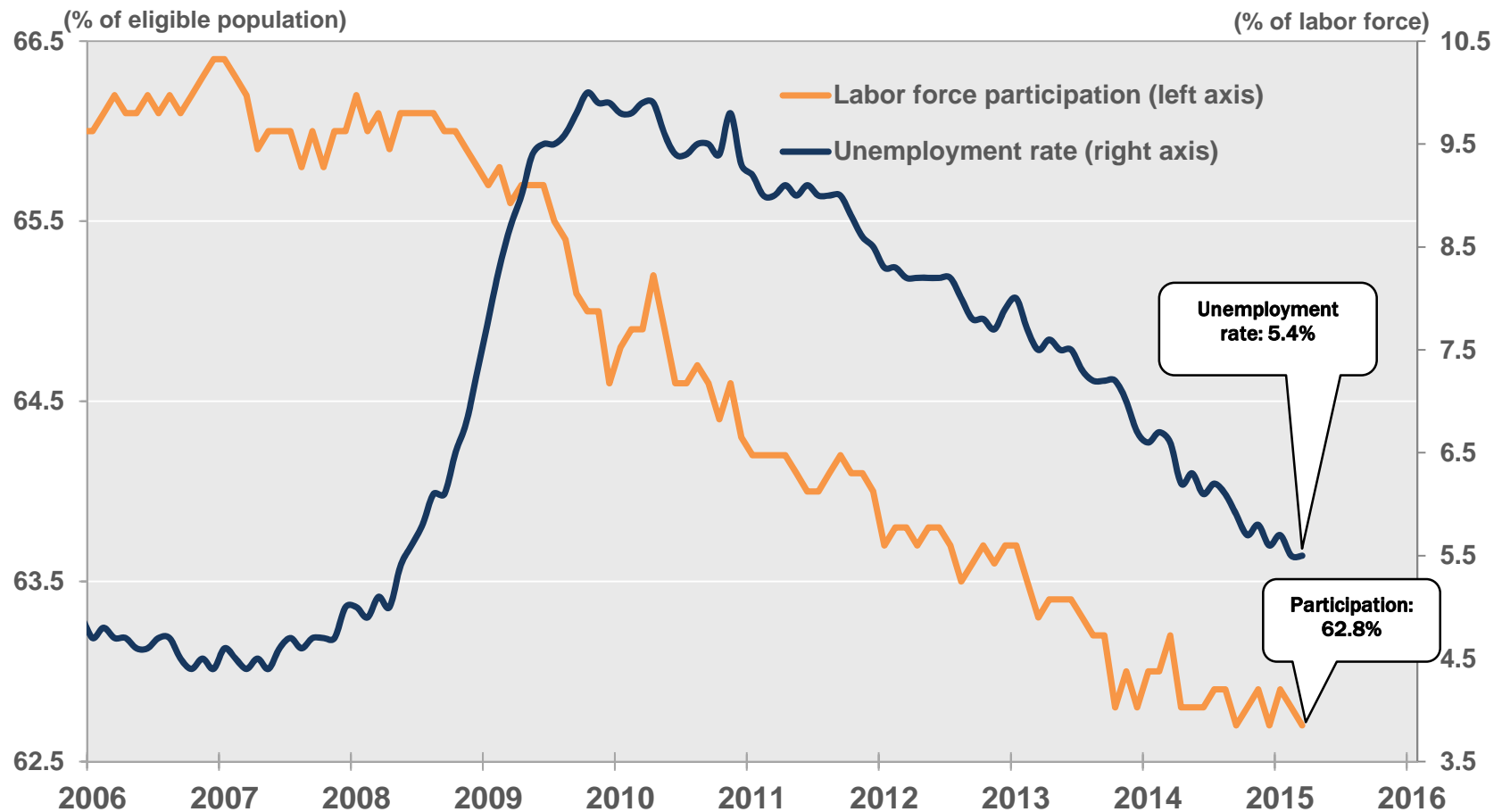
U.S. Long-Term Unemployed Rate

(Share of total unemployed)



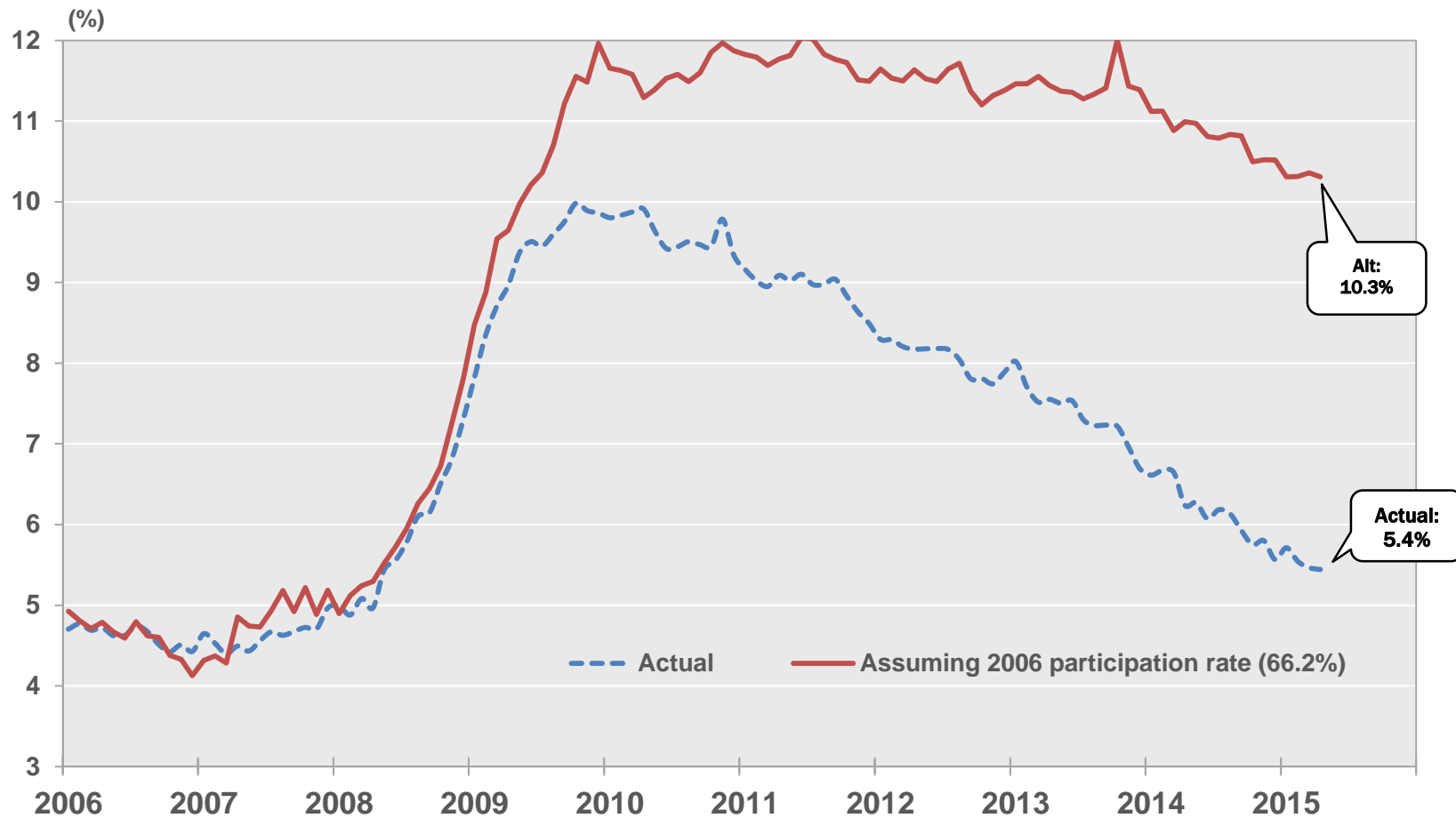
Source: Bureau of Labor Statistics, Last Observation: April 2015

U.S. Participation Rate & Unemployment



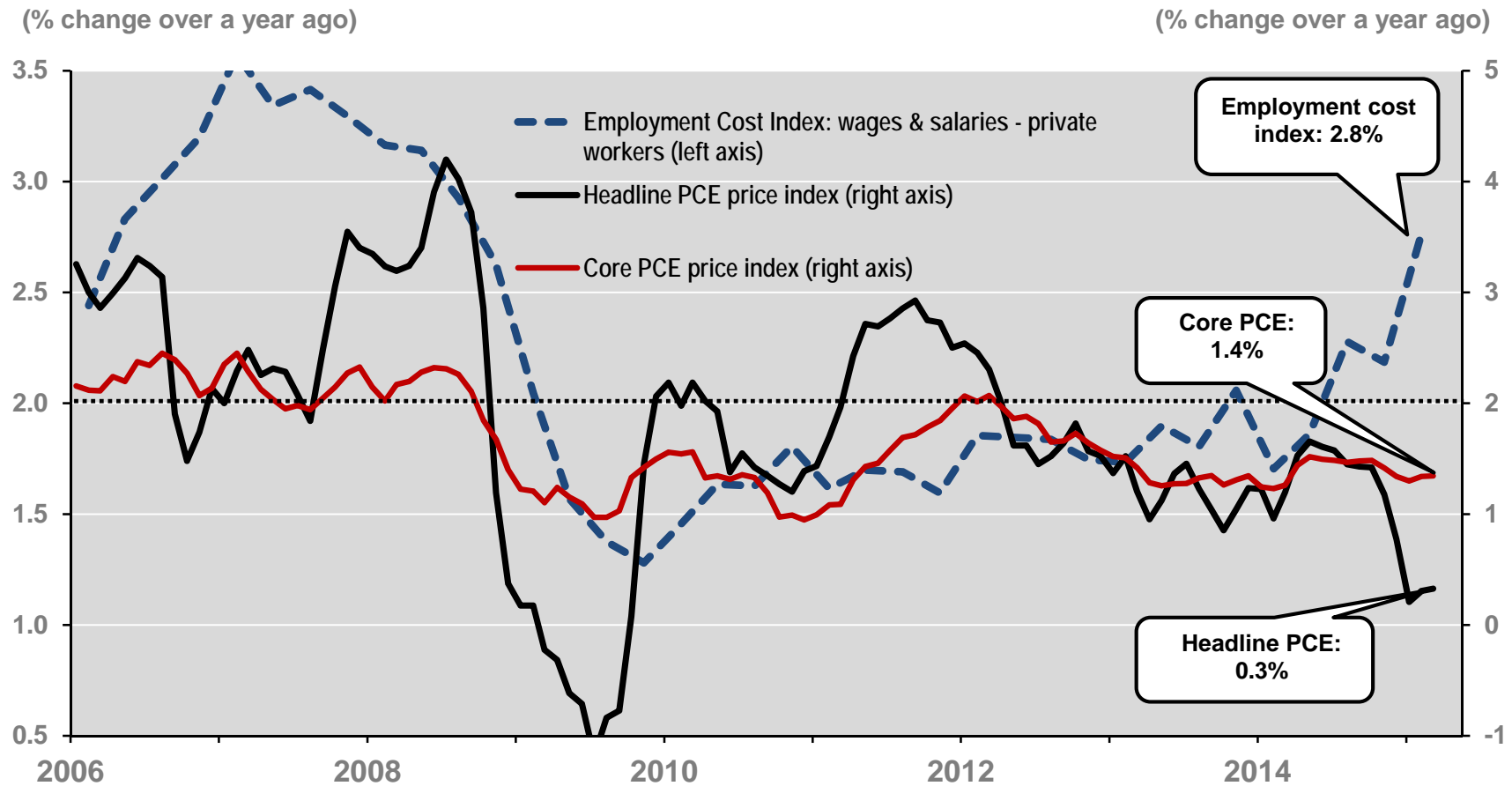
Source: Bureau of Labor Statistics, Last Observation: April 2015

U.S. Unemployment: Actual & Hypothetical



Source: Bureau of Labor Statistics, Last Observation: April 2015

U.S. Price and Wage Inflation

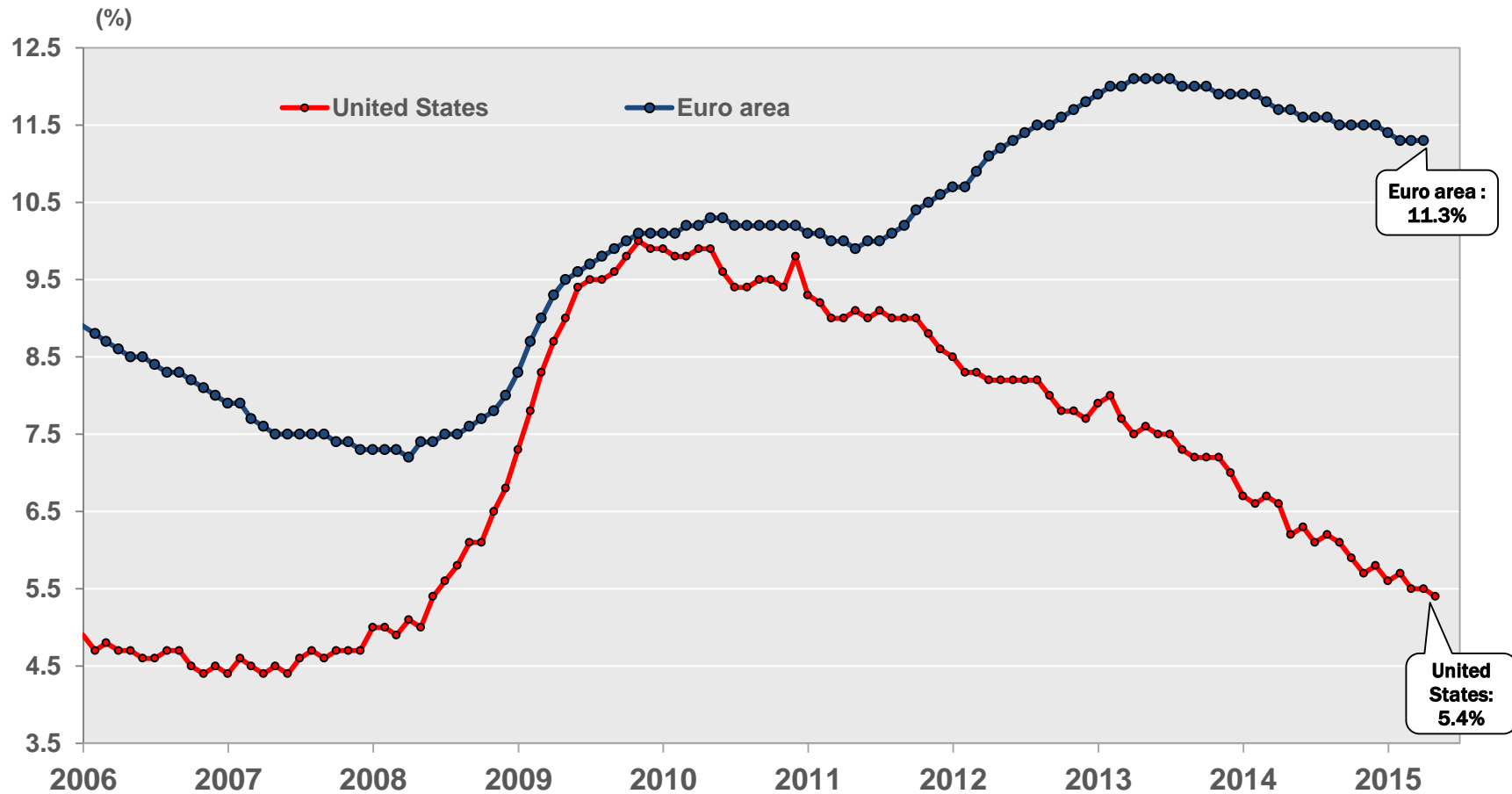


Source: Bureau of Economic Analysis, Bureau of Labor Statistics. Last Observation: PCE headline and core, March 2015. Employment Cost Index, 2015Q1

US & Euro area Labor Markets Diverge

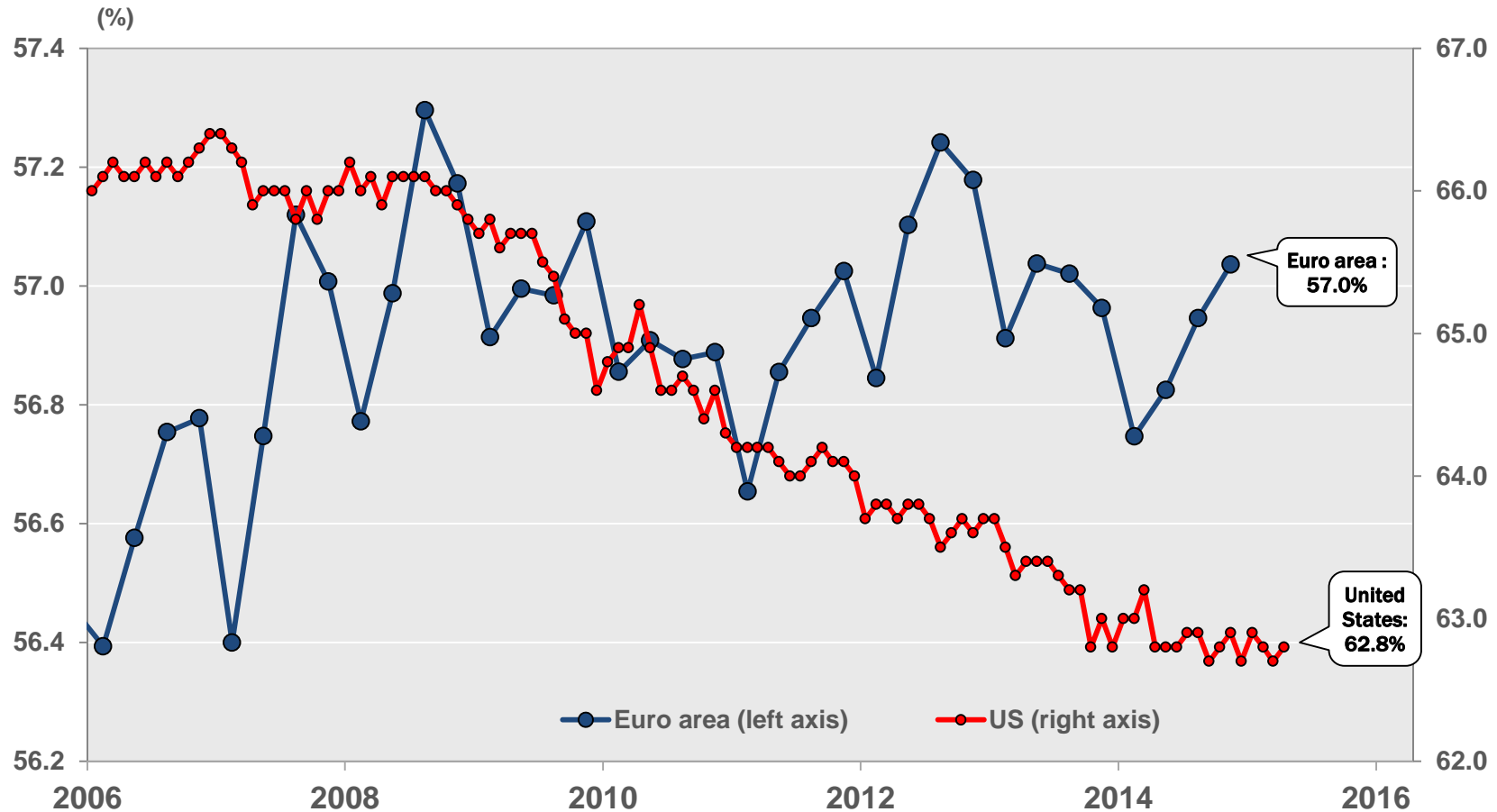
- **Diverging Unemployment Rates**
- **Diverging Participation Rates**
- **Diverging Long-Term Unemployment**
- **Education and Unemployment**

Unemployment Rate: U.S. & Euro Area



Source: Eurostat and BLS; Last observation for Euro area March 2015, For US, April 2015

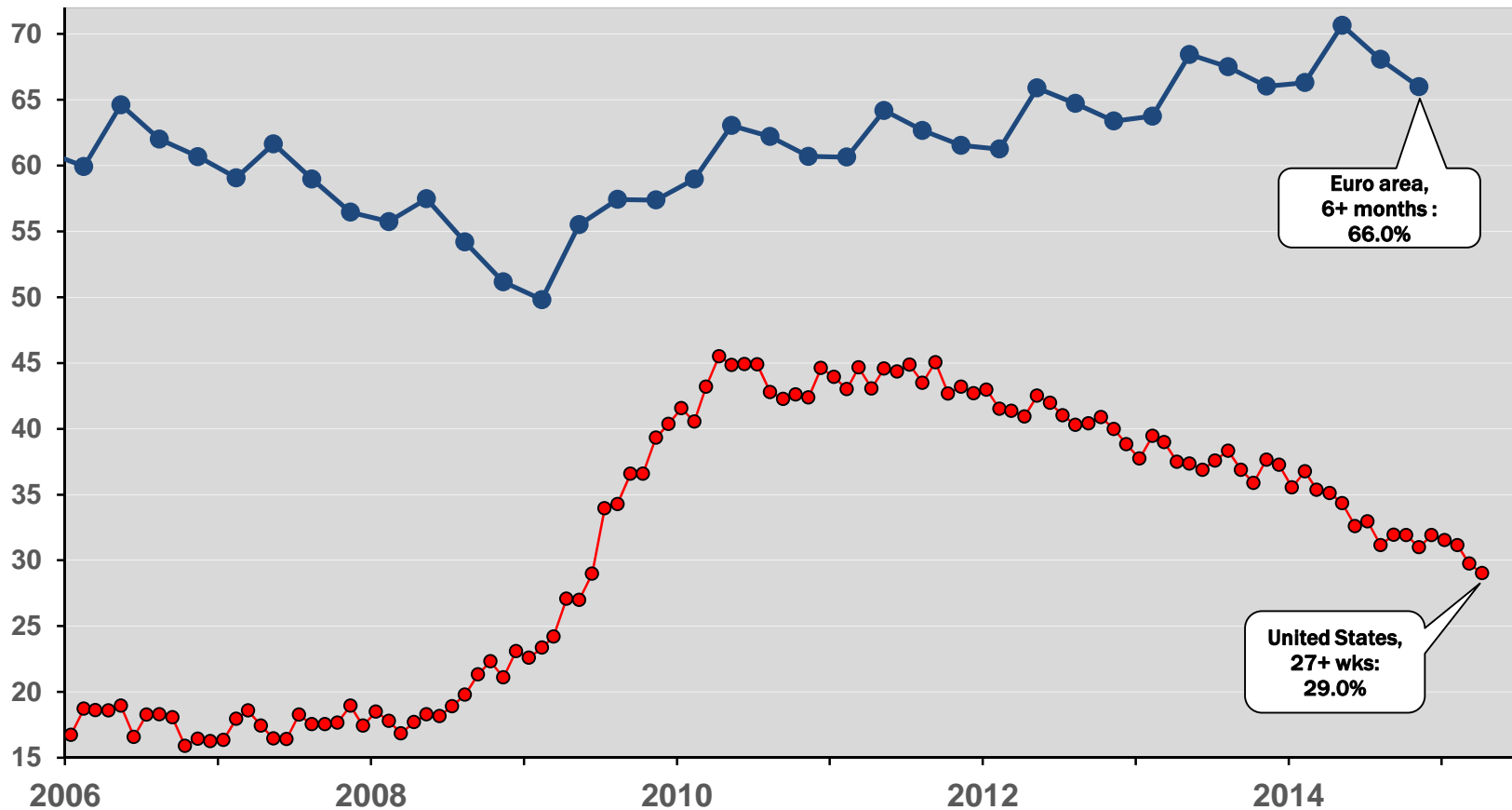
Labor Force Participation: U.S. & Euro Area



Source: Eurostat and BLS; Last observation for Euro area Q4 2014, For US, April 2015

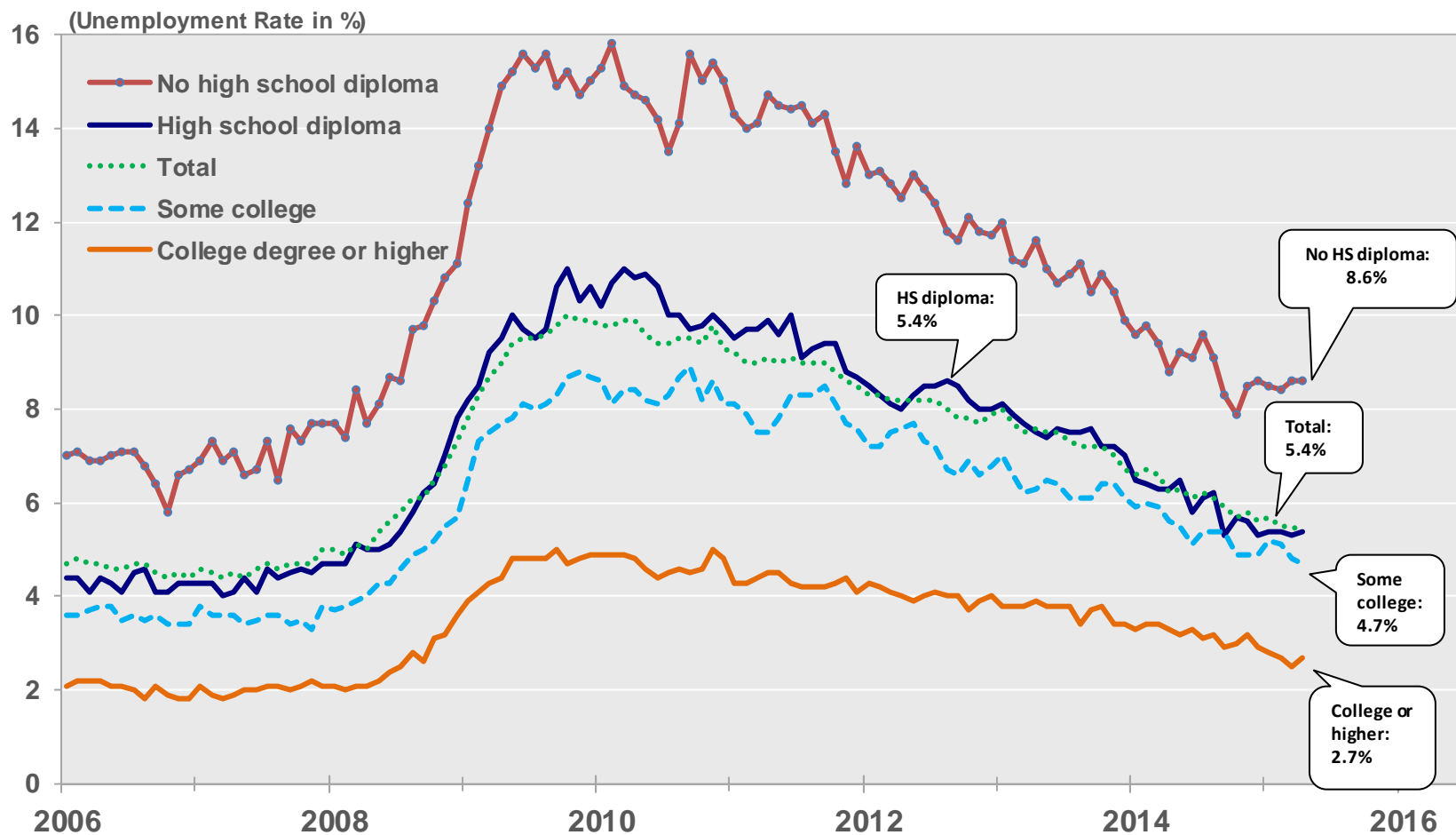
Long-Term Unemployment: U.S. & Euro Area

(Share of total unemployed)



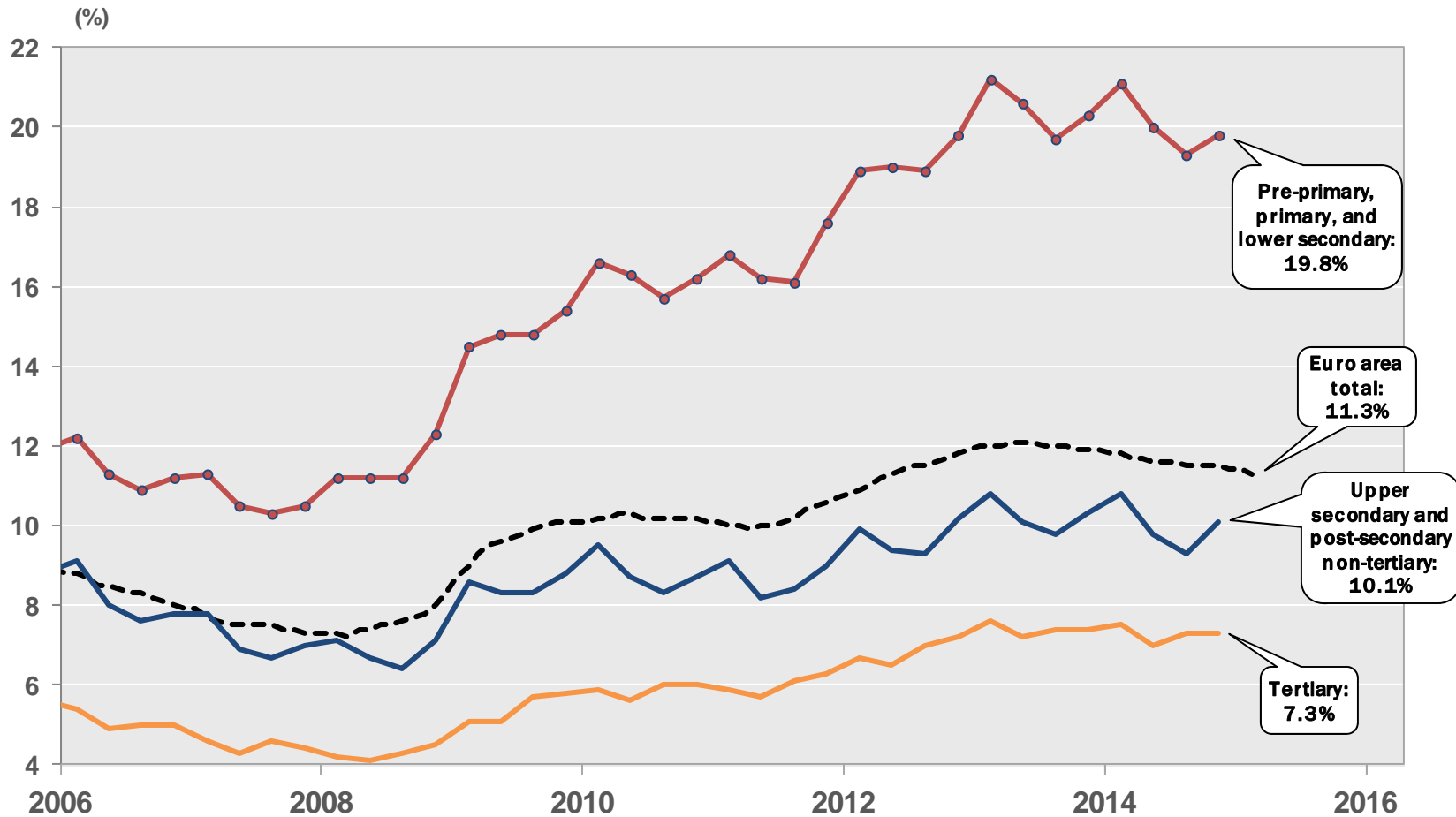
Source: Bureau of Labor Statistics, Last Observation April 2015. Eurostat, Last Observation 2014Q4.

U.S. Unemployment, by Level of Education



Source: Bureau of Labor Statistics, Last Observation: April 2015

Euro Area Unemployment by Level of Education



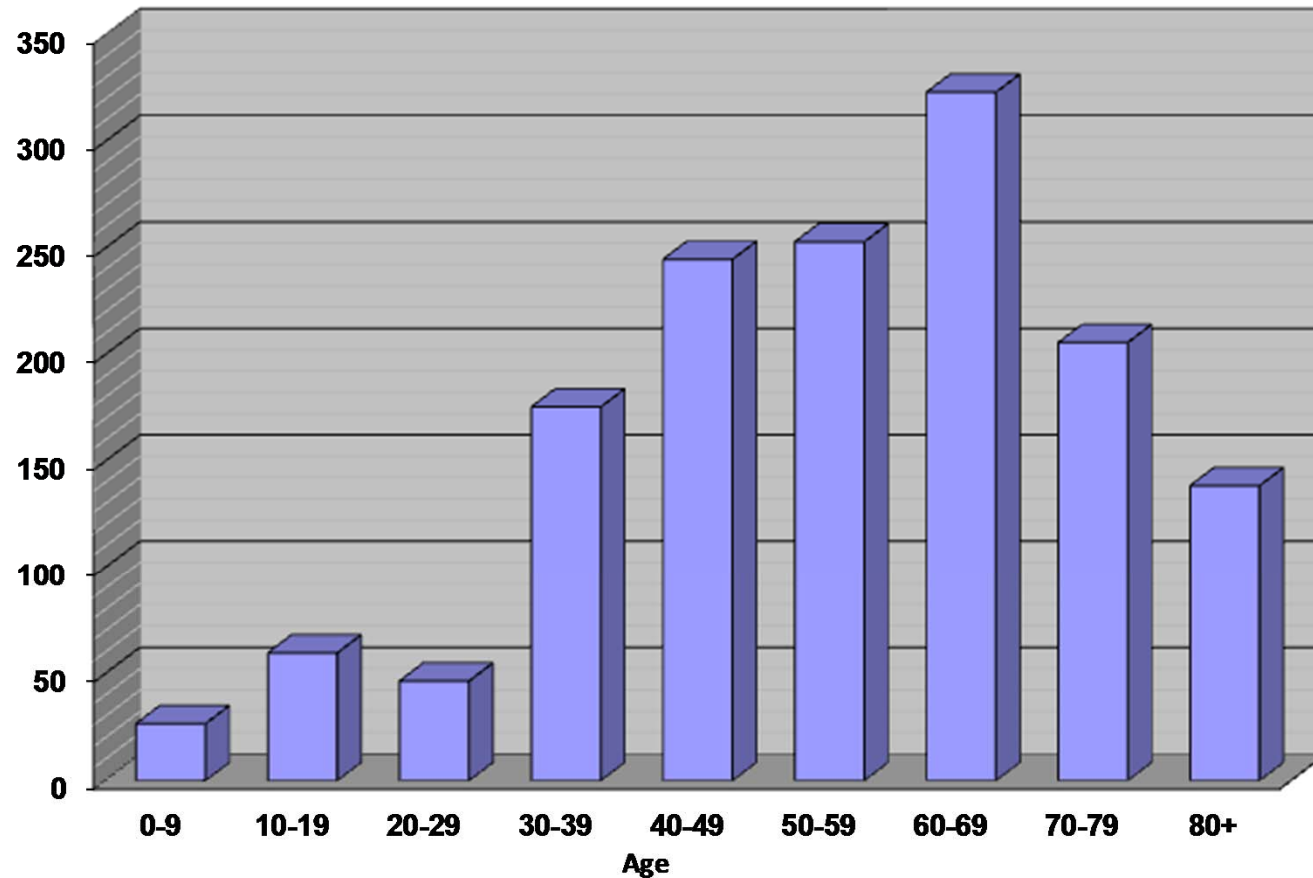
Source: Eurostat, Last observation Q4 2014

Long-Term Demographic Trends

- **Growing Population in Developing Countries**
- **Aging Population in Developed Countries**
- **Long-Term Budgetary Challenges**

World's Demography

Change in population, 2010-2030 (millions)



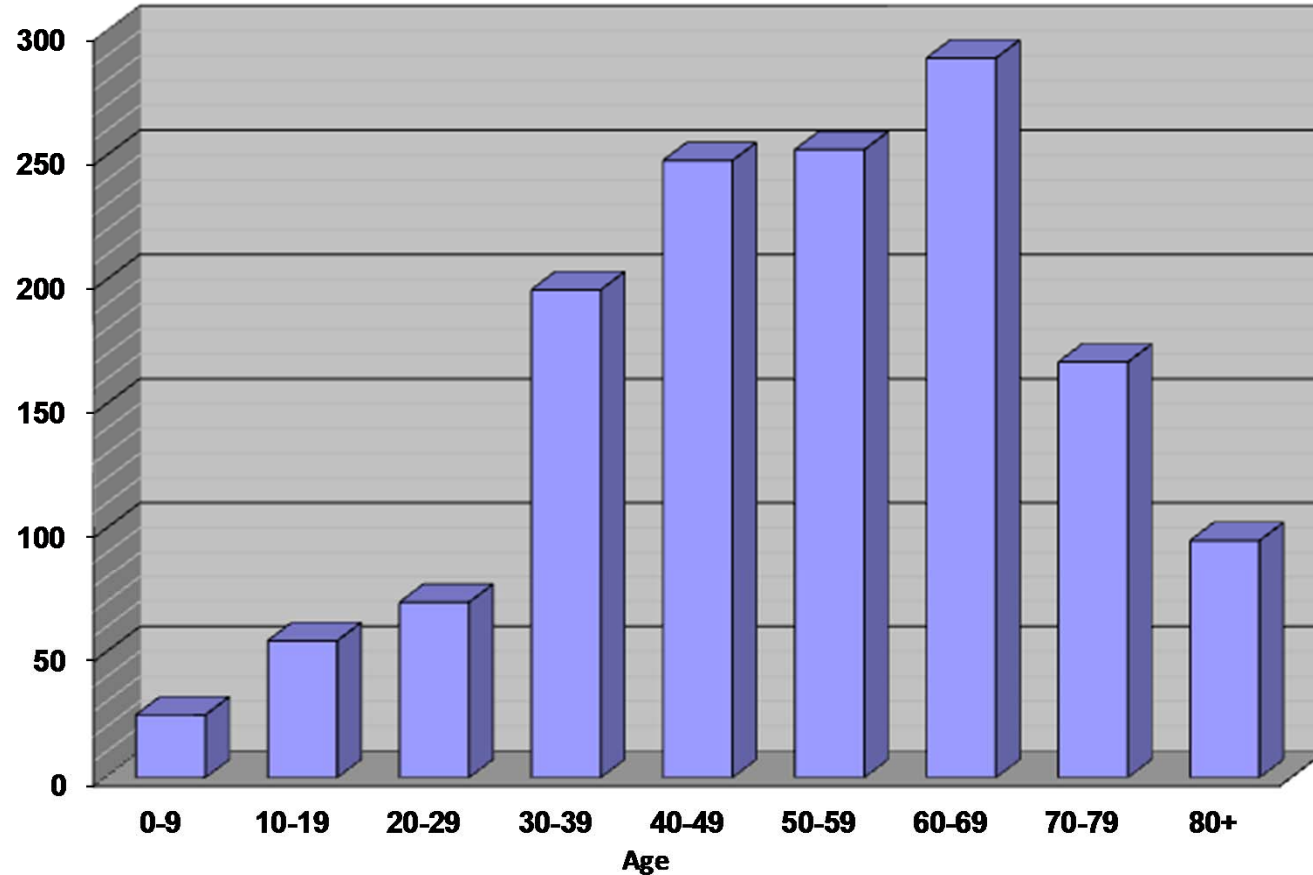
Source: UN Populations Division, last update 2010

Projected change in population
from 2010 - 2030: **1516M**

2010: **7001M**
2030: **8517M**

Developing Countries' Demography

Change in population, 2010-2030 (millions)



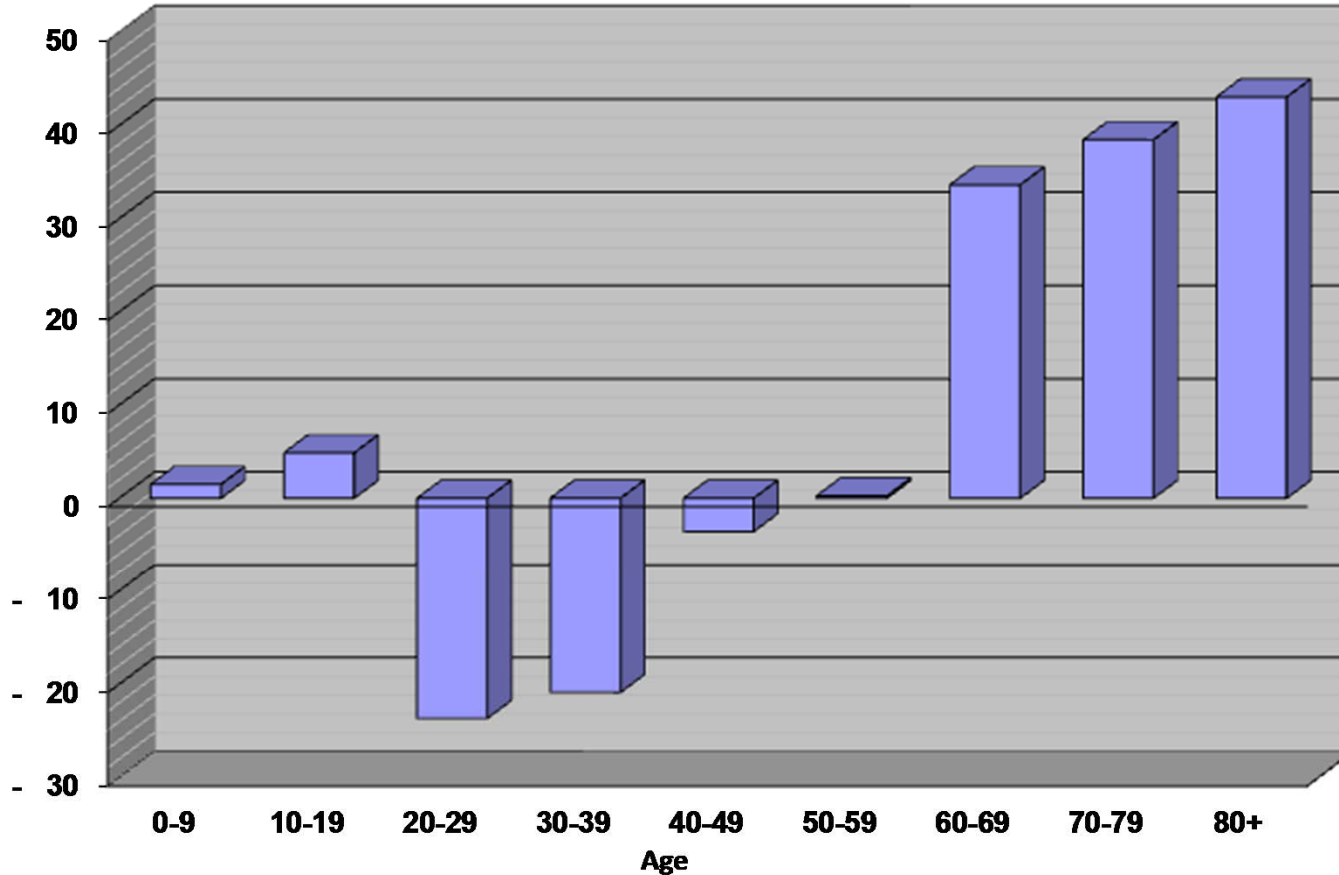
Source: UN Populations Division, last update 2010

Projected change in population
from 2010 - 2030: **1426M**

2010: **5712M**
2030: **7138M**

Developed Countries' Demography

Change in population, 2010-2030 (millions)



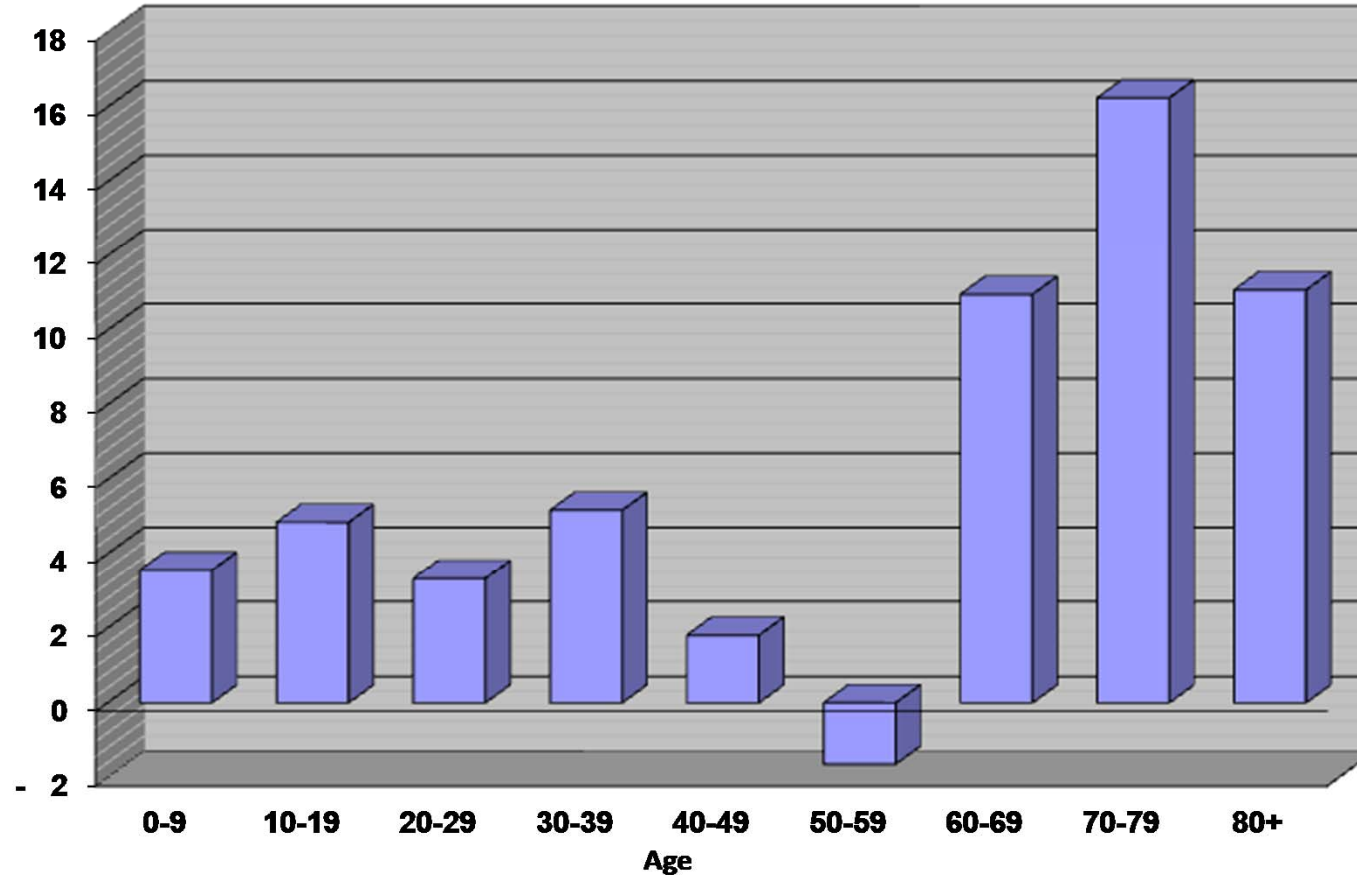
Source: UN Populations Division, last update 2010

Projected change in population
from 2010 - 2030: **90M**

2010: **1289M**
2030: **1379M**

U.S. Demography

Change in population, 2010-2030 (millions)



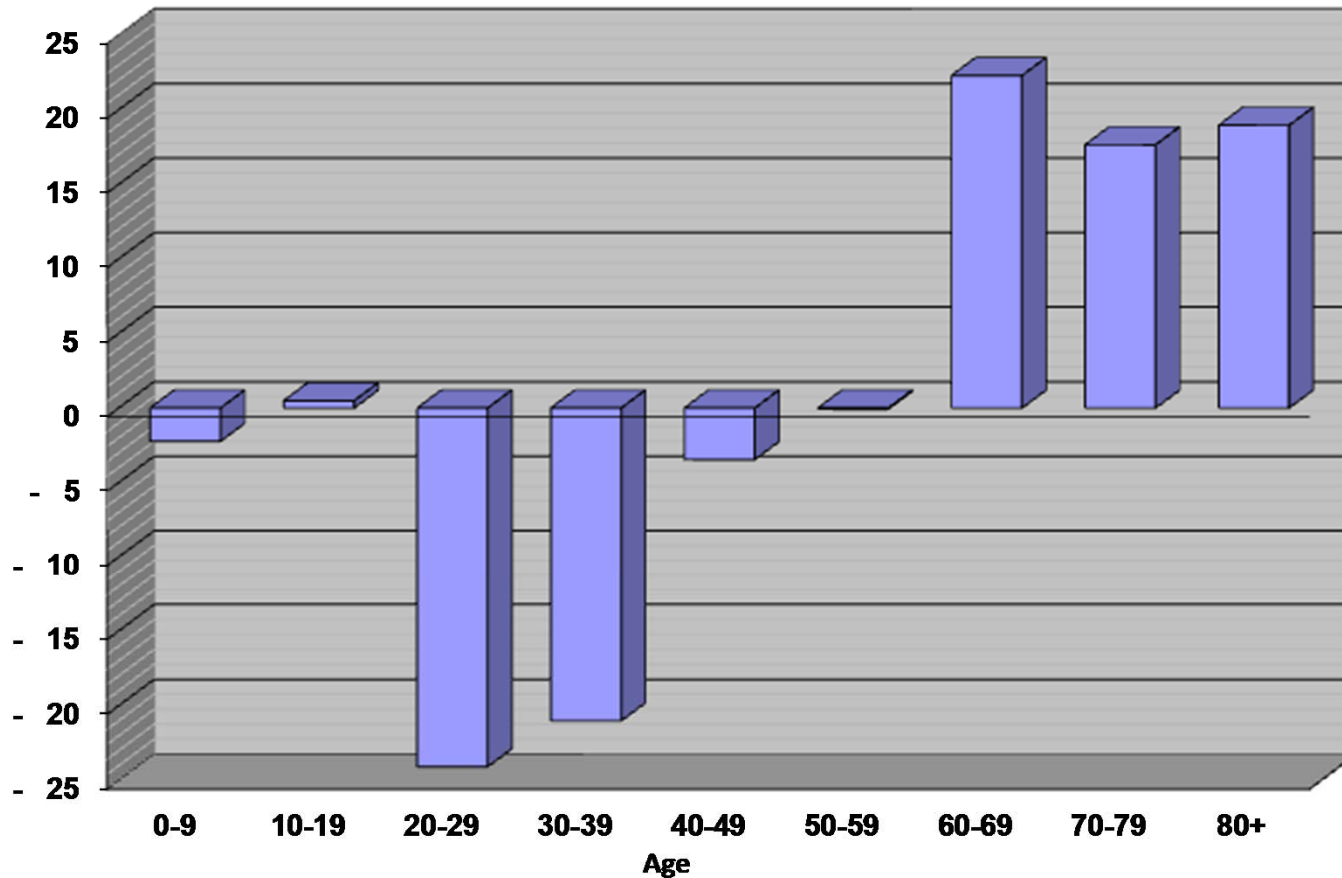
Source: UN Populations Division, last update 2010

Projected change in population
from 2010 - 2030: **58M**

2010: **322M**
2030: **381M**

Europe's Demography

Change in population, 2010-2030 (millions)



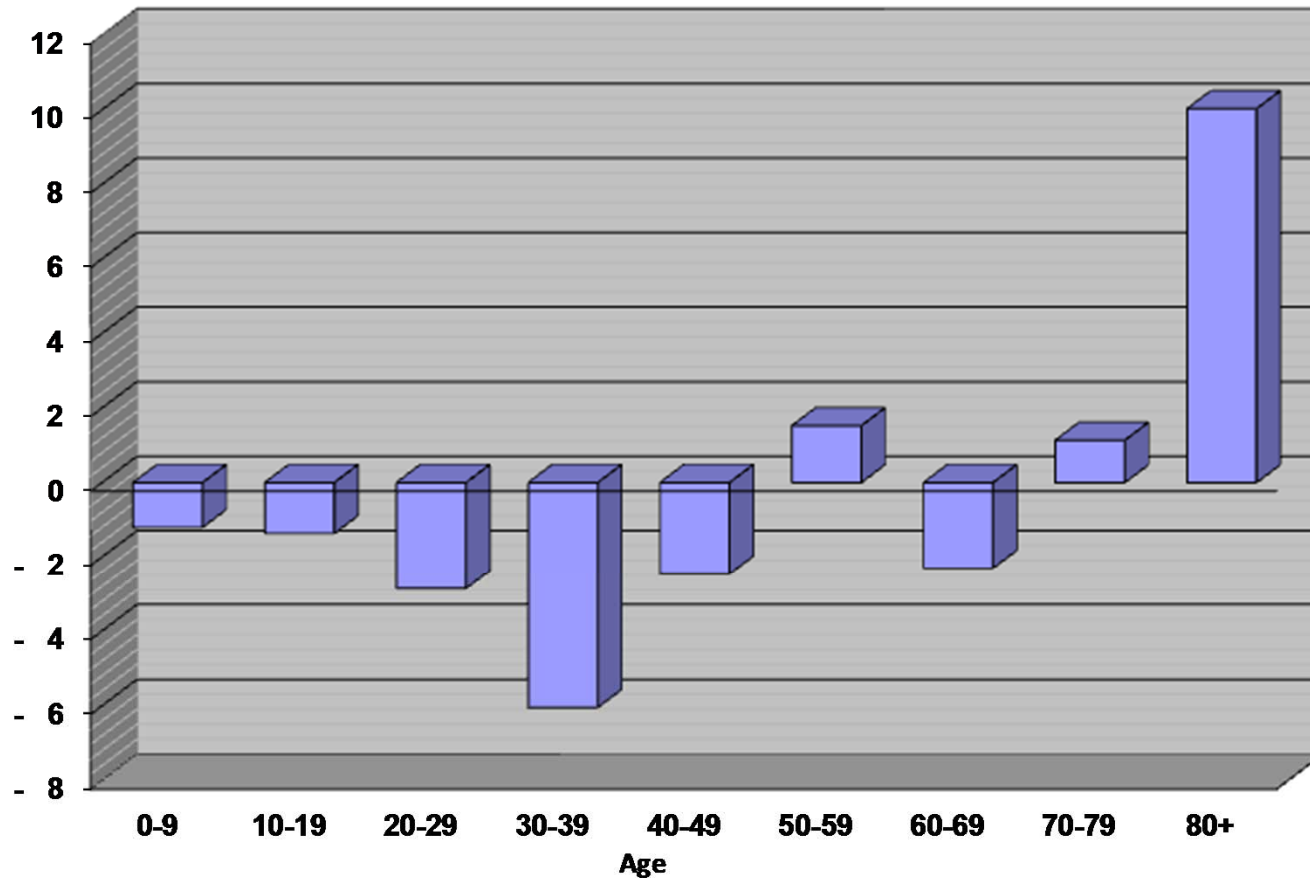
Source: UN Populations Division, last update 2010

Projected change in population
from 2010 - 2030: **16M**

2010: **769M**
2030: **786M**

Japan's Demography

Change in population, 2010-2030 (millions)

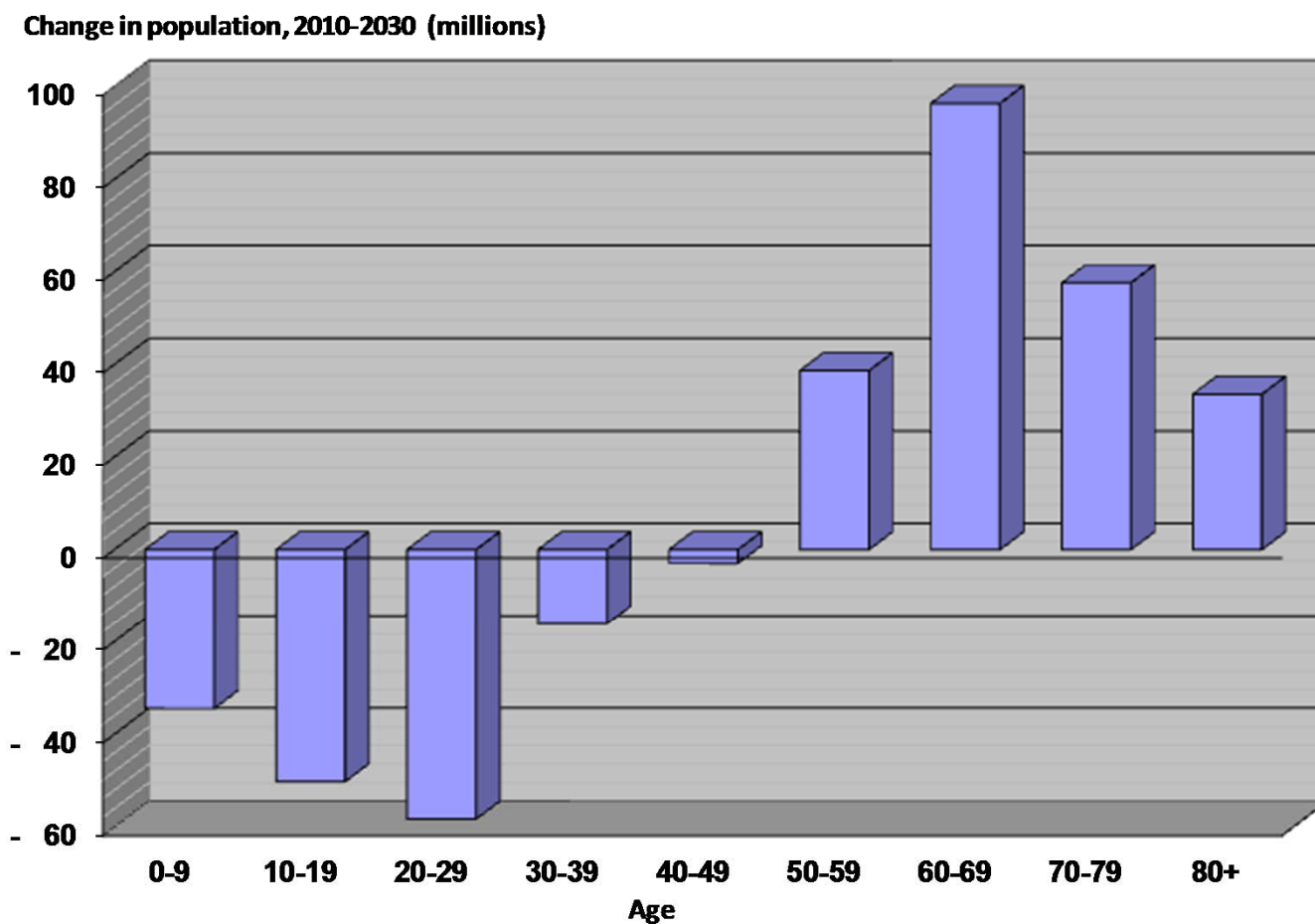


Source: UN Populations Division, last update 2010

Projected change in population
from 2010 - 2030: **1M**

2010: **135M**
2030: **135M**

China's Demography



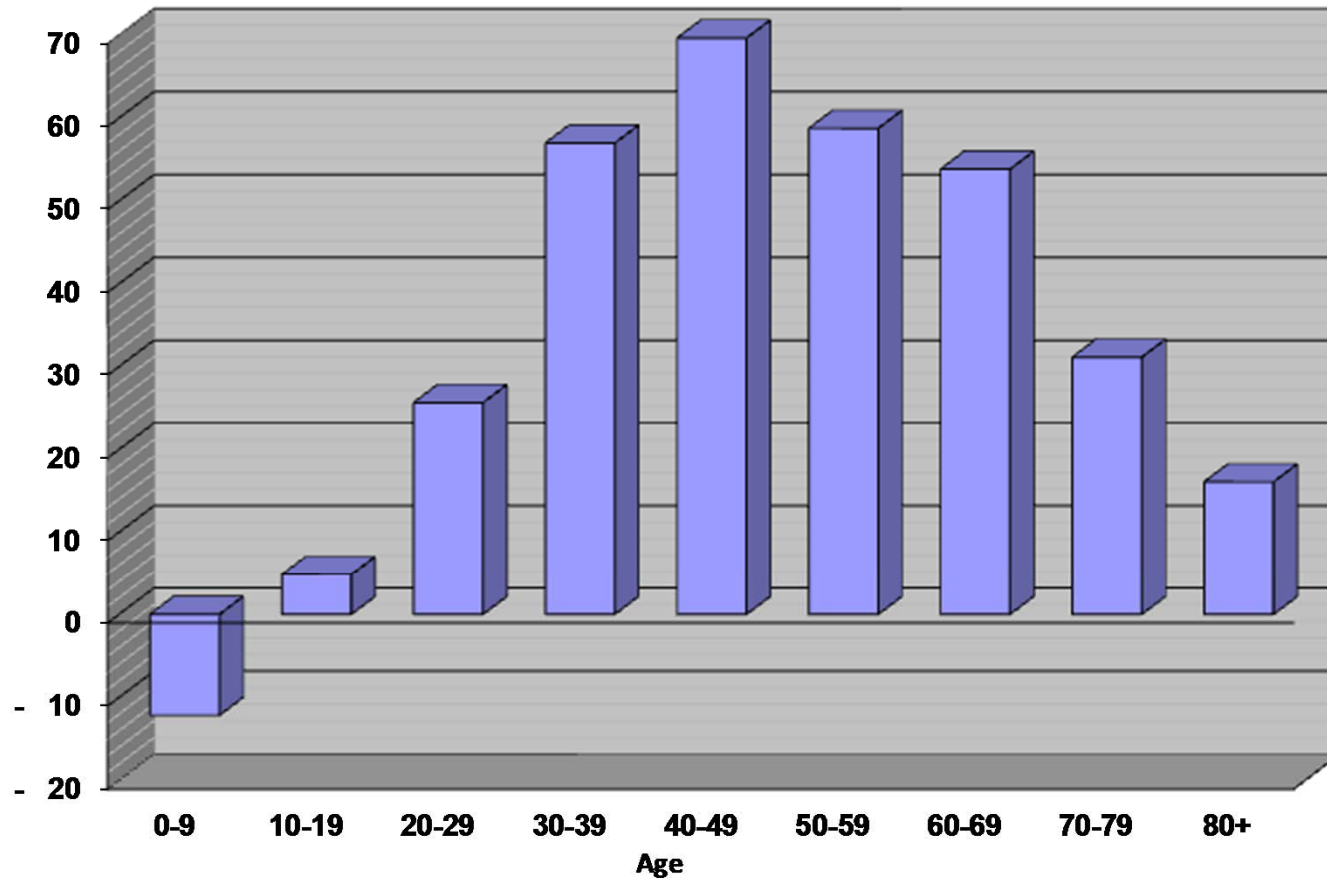
Source: UN Populations Division, last update 2010

Projected change in population
from 2010 - 2030: **73M**

2010: **1360M**
2030: **1432M**

India's Demography

Change in population, 2010-2030 (millions)



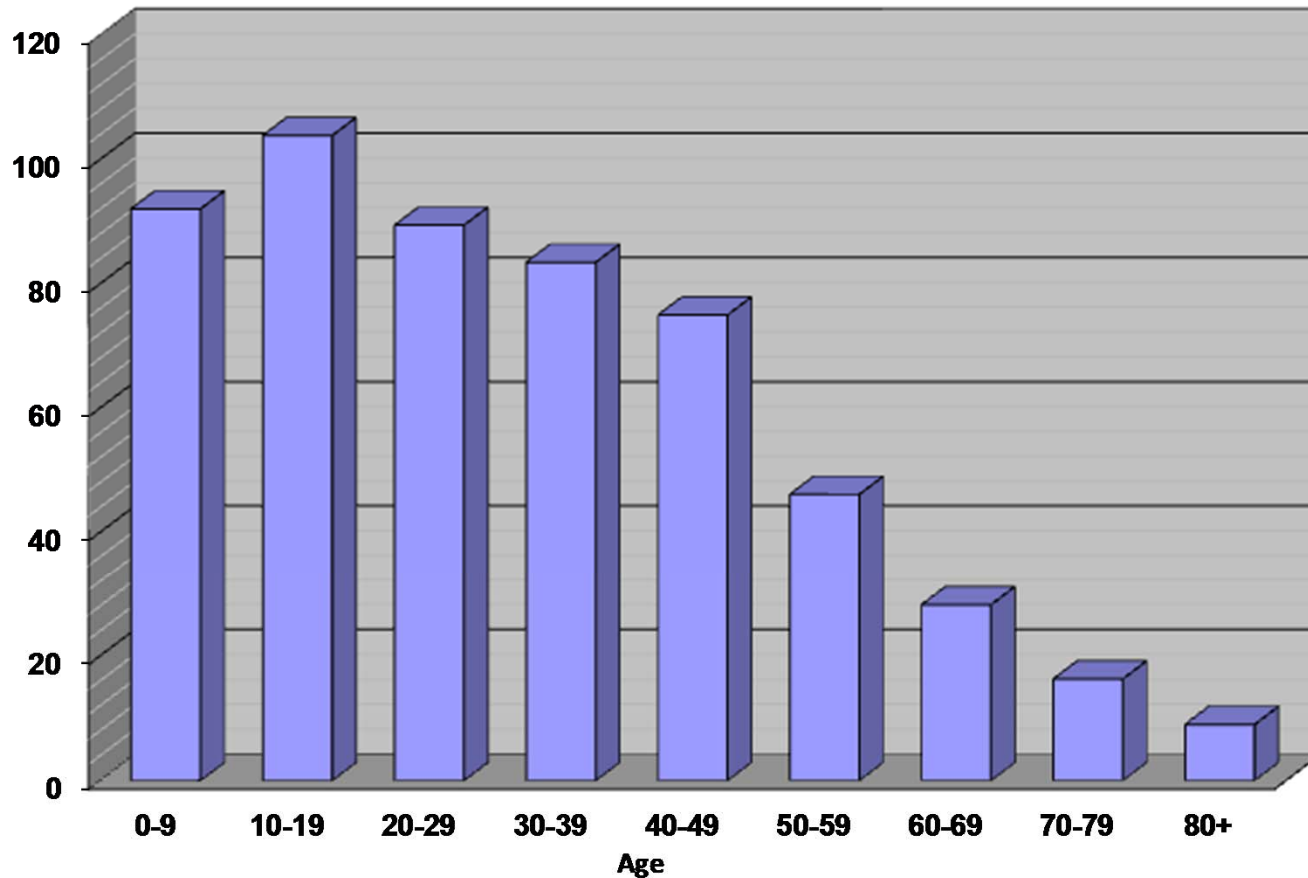
Source: UN Populations Division, last update 2010

Projected change in population
from 2010 - 2030: **309M**

2010: **1233M**
2030: **1542M**

Africa's Demography

Change in population, 2010-2030 (millions)



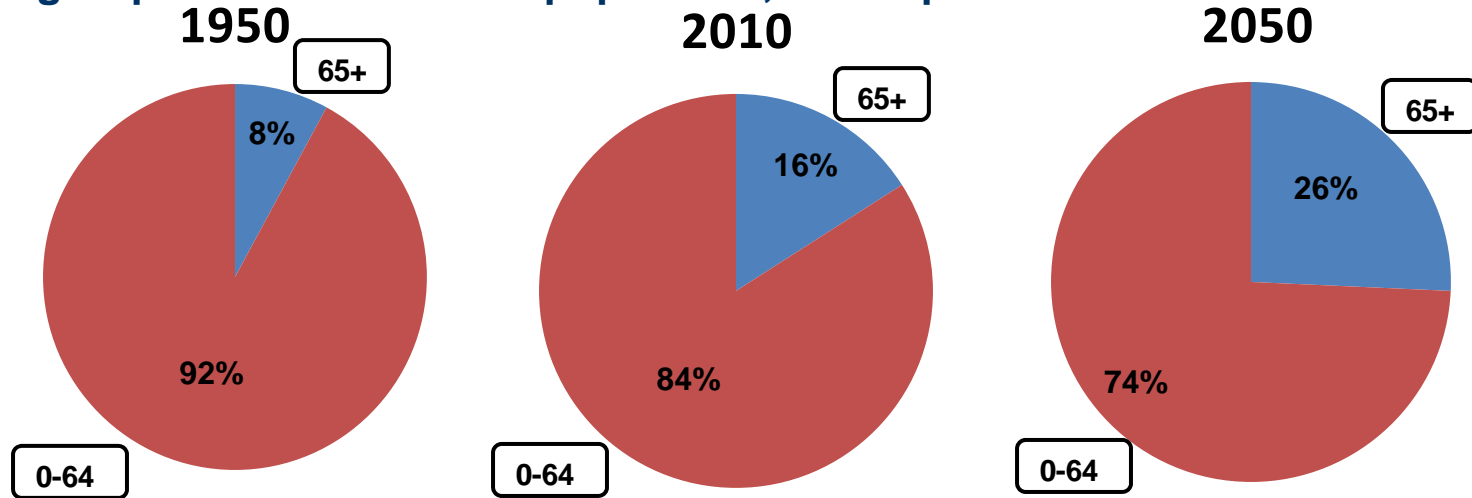
Source: UN Populations Division, last update 2010

Projected change in population
from 2010 - 2030: **545M**

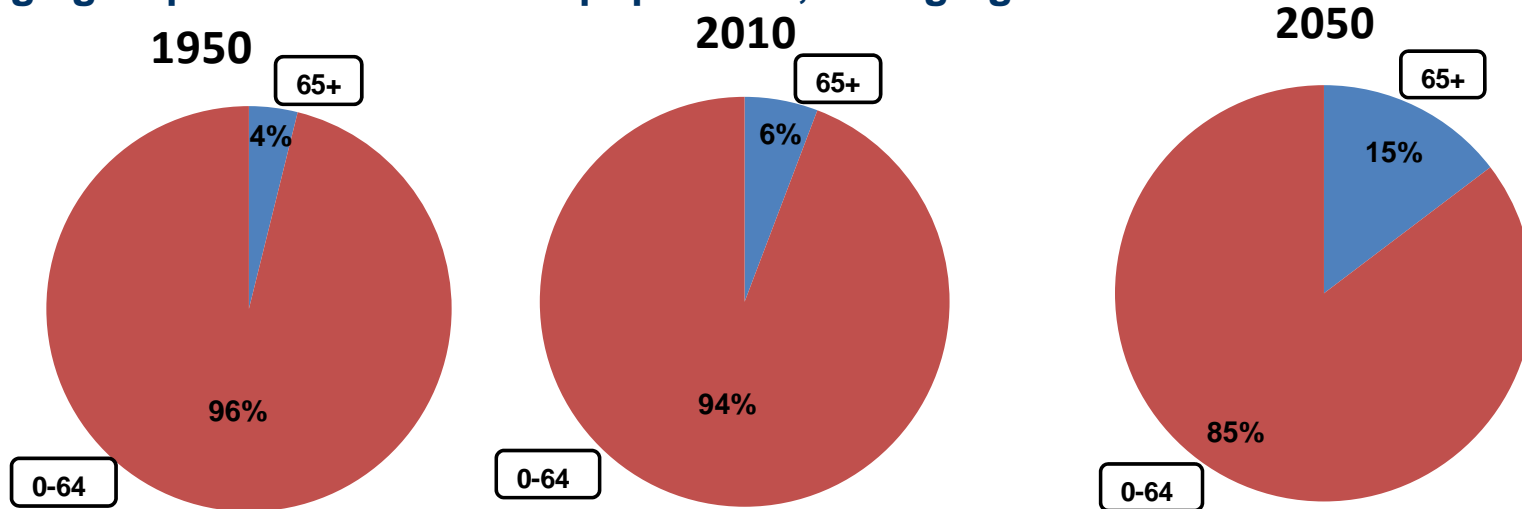
2010: **1027M**
2030: **1572M**

Global Demographic Challenge

Age group as a share of total population, developed markets:

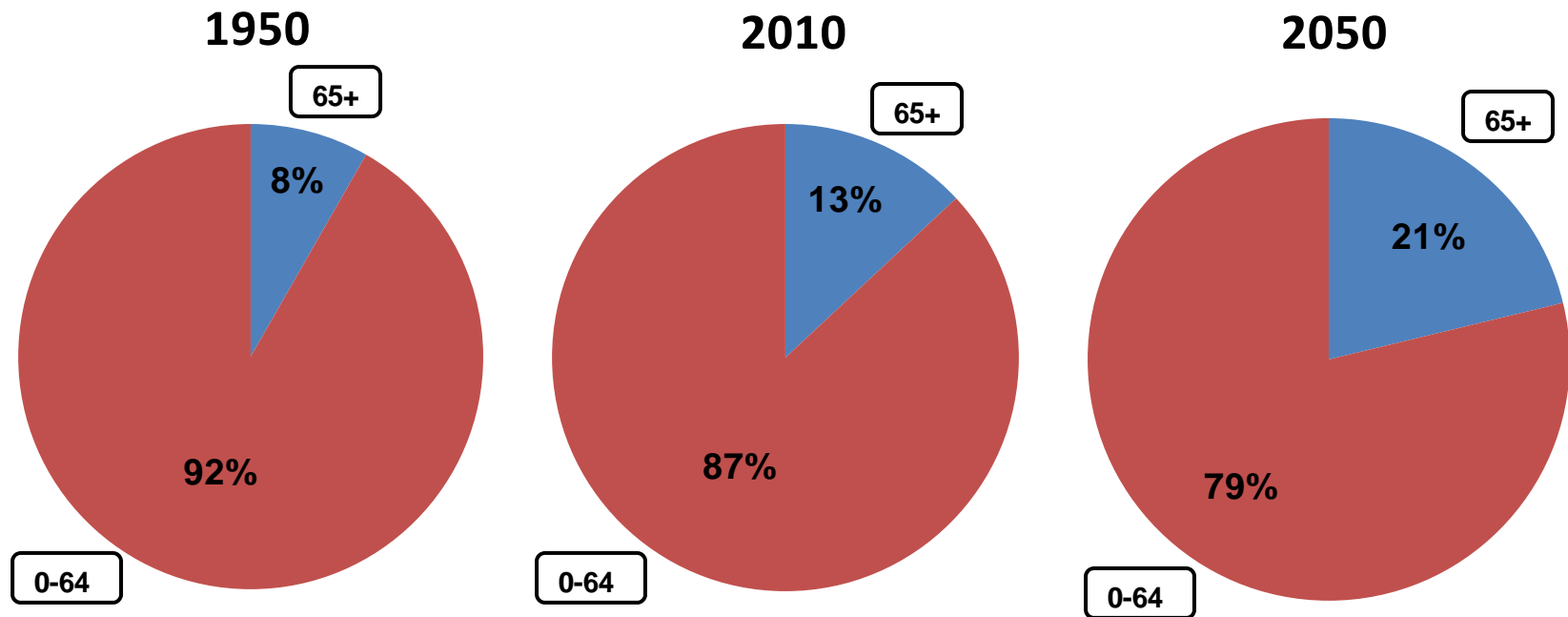


Age group as a share of total population, emerging markets:



US Demographic Challenge

Age group share of total population:

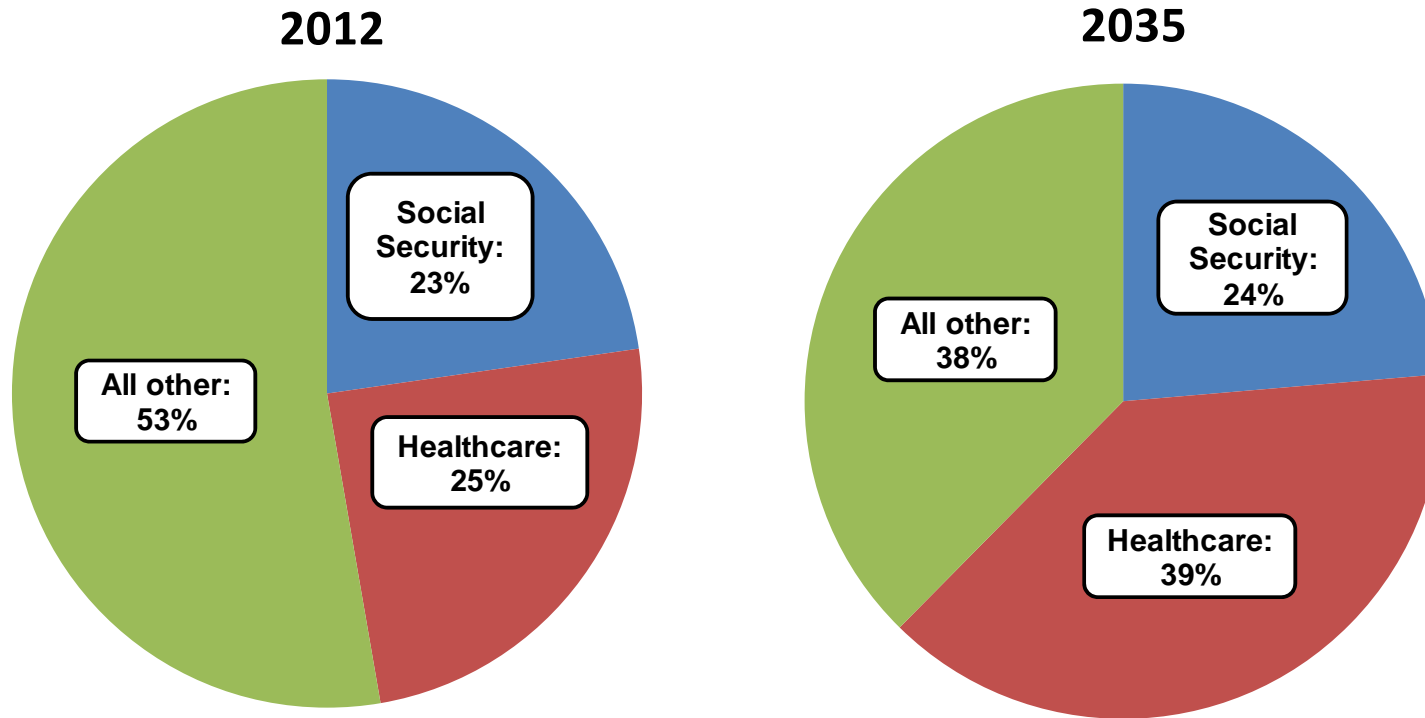


Source: UN Population Division, 2010 revision.

- Age of Medicare eligibility: 65
- Age of Social Security eligibility, reduced benefits: 62; full benefits: 67 (for those born after 1960)

Composition of US Federal Expenditures

Share of government spending (ex interest payments):



- Aging accounts for 2/3 of projected rise in expenditures on social security and healthcare (CBO)
- Healthcare includes Medicare (17% of noninterest spending in 2012, 25% in 2035) and Medicaid, CHIP, and exchange subsidies (combined for 8% of noninterest spending in 2012, 14% in 2035)

Source: Congressional Budget Office, 2012 Long-Term Budget Update, 5 June, 2012.