The U.S. Economic Outlook

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University of Maryland
December 10, 2015

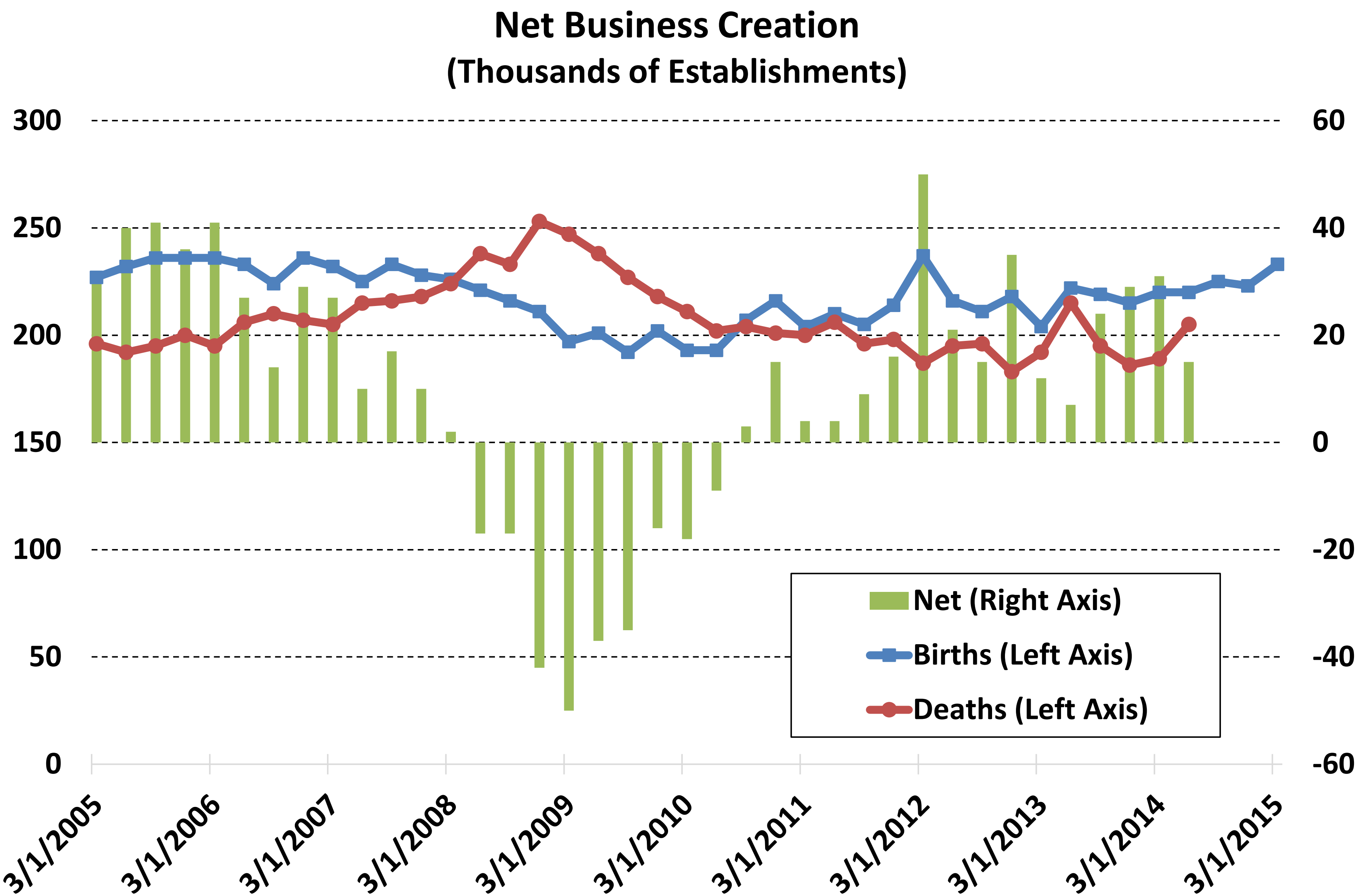
Inforum Annual Conference

- Inforum Forecast
- Inequality and Mobility
- Deflators and Growth
- Modeling Energy and the Economy
- Washington Metro Economy

Inforum forecast

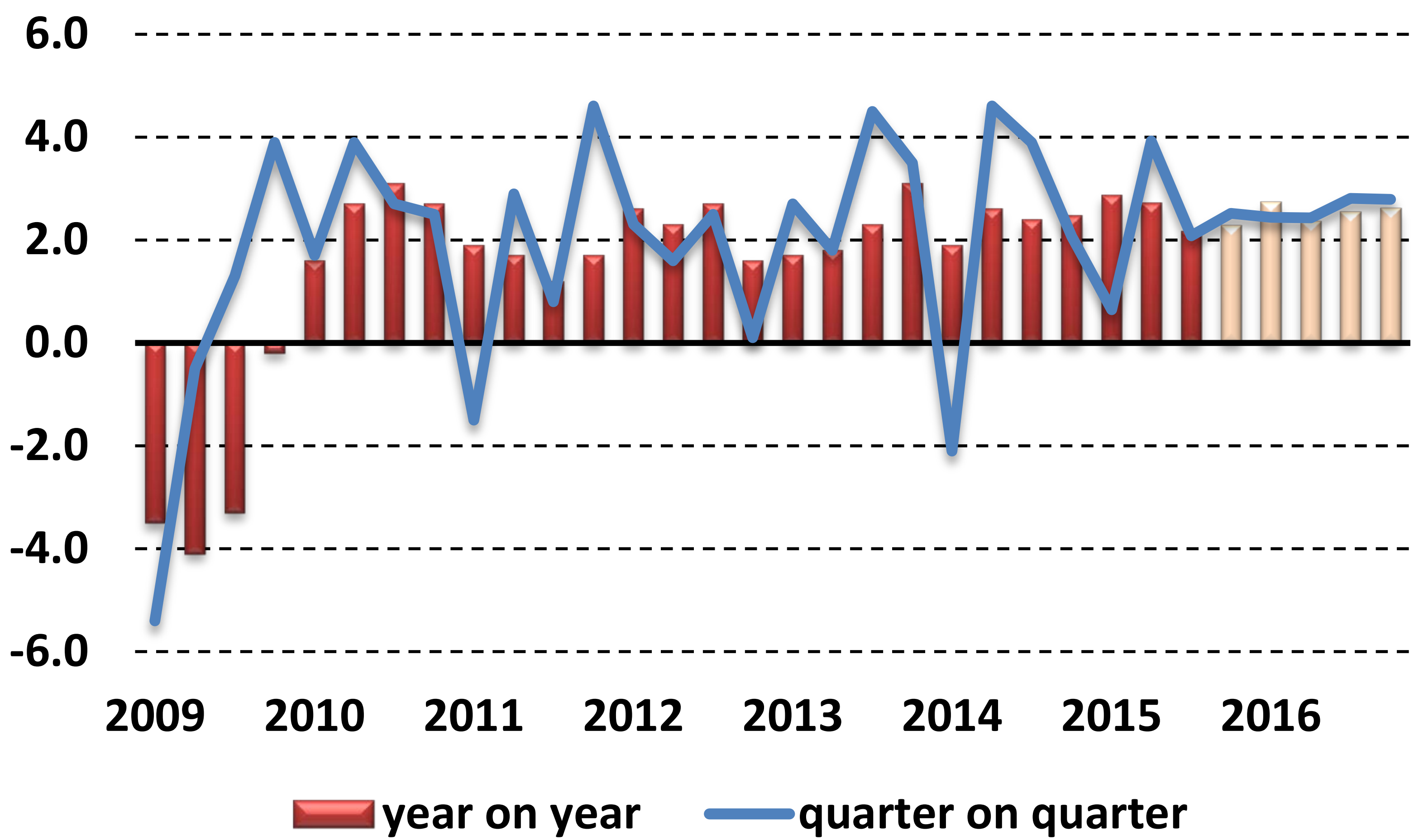
- Domestic economic growth looks steady
- Inflation is still too low
- Many risks

  Rising interest rates -> strong dollar -> danger of importing foreign deflation



Source: BLS; Private sector establishment births and deaths, seasonally adjusted. Total private.

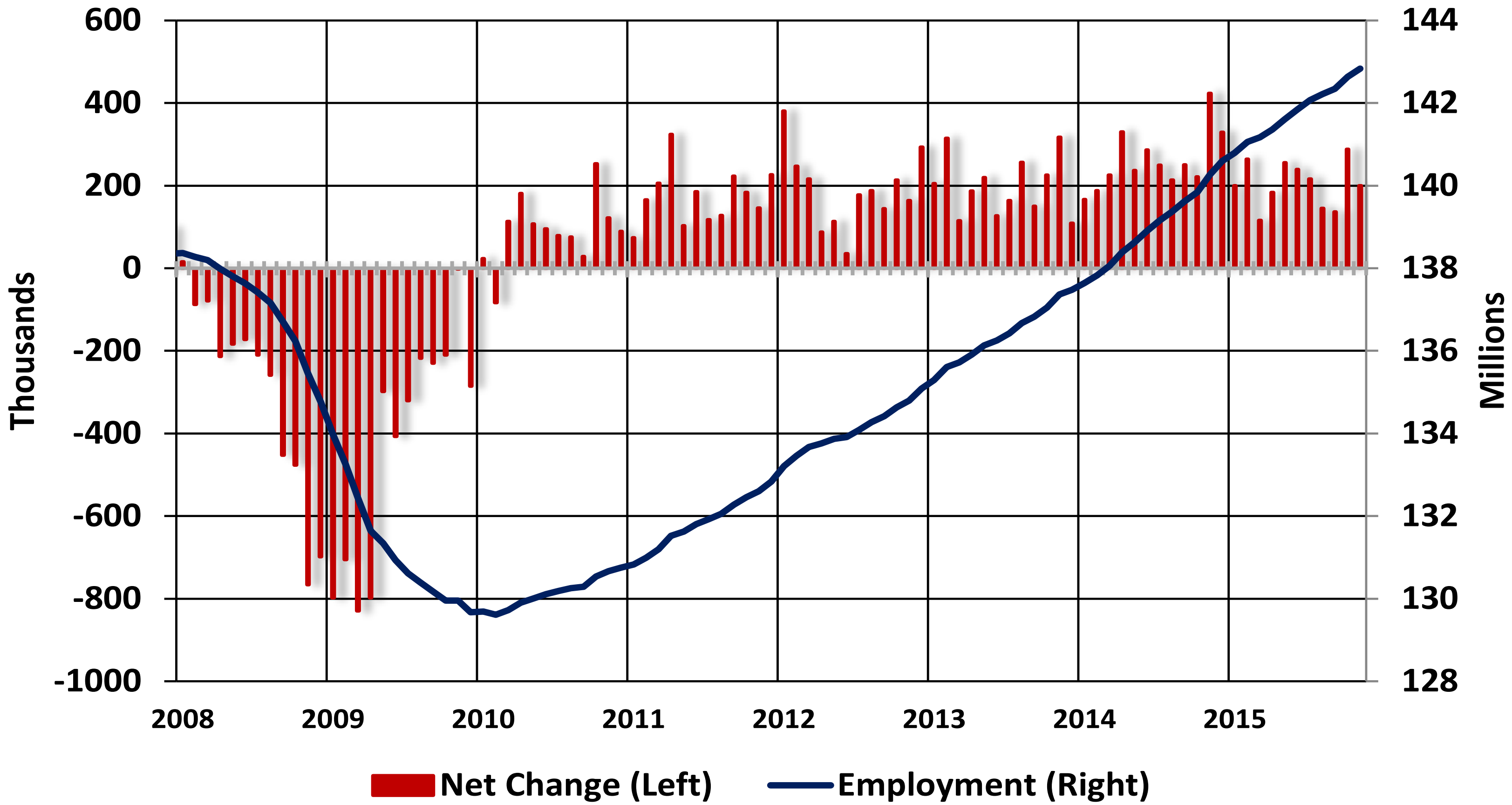
GDP steady moderate growth ...



Still Mostly Good News on Domestic Demand

- Expanding employment will have positive spillovers, especially for wages and housing.
- Oil prices low, interest rates low, consumers confident.
- Government spending is stabilizing. Fiscal situation is improved especially for many states and localities.
- Private business sitting on lots of cash. Non-financials wait for firmer expansion of demand.
- Currently, foreign financial and security linkages pose the biggest threat to U.S. economic growth and stability.

Payroll employment is up 13.3 million jobs since the trough in Feb 2010

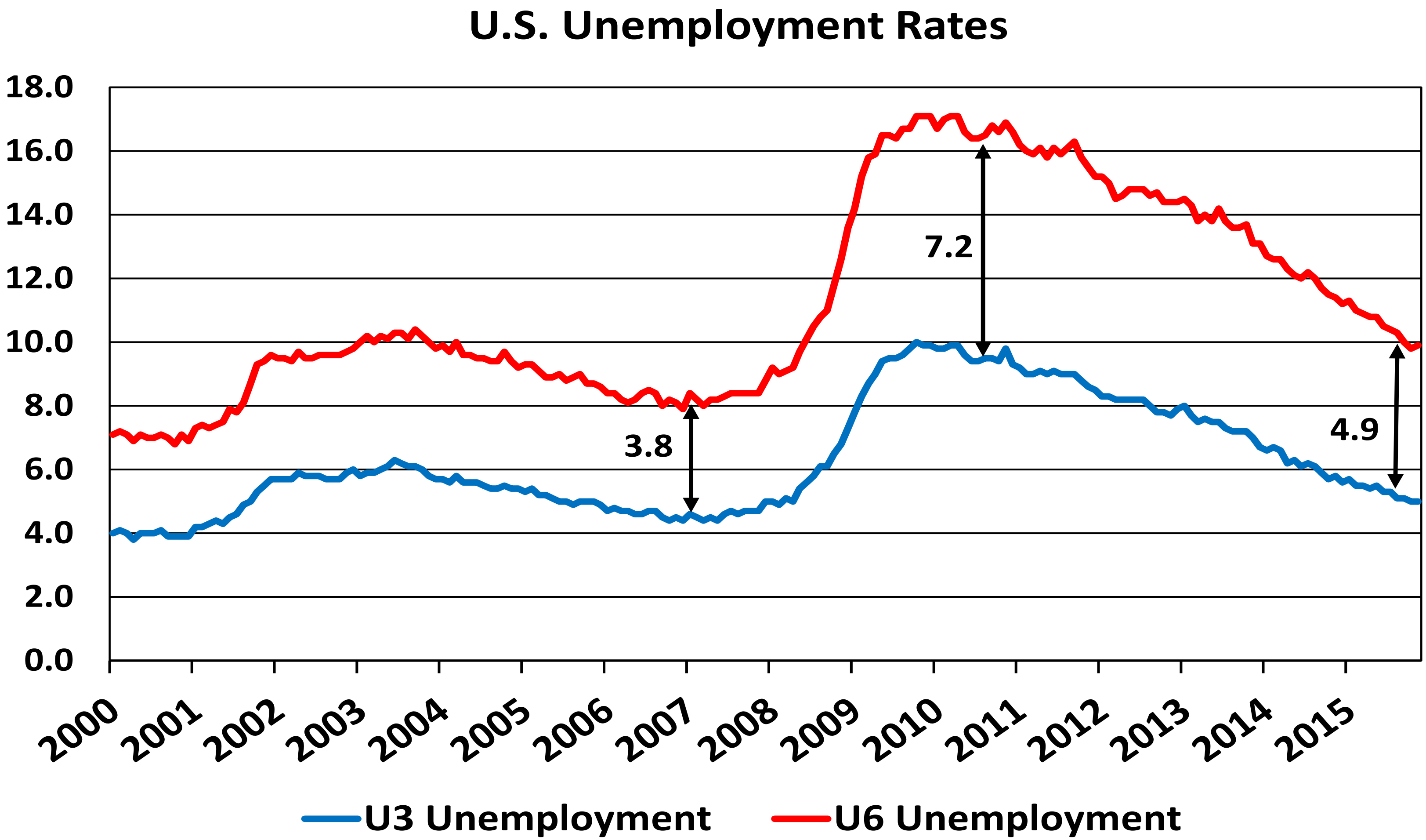


Source: Bureau of Labor Statistics

Is there any slack left? (See Yellen, FRB, Dec 2)

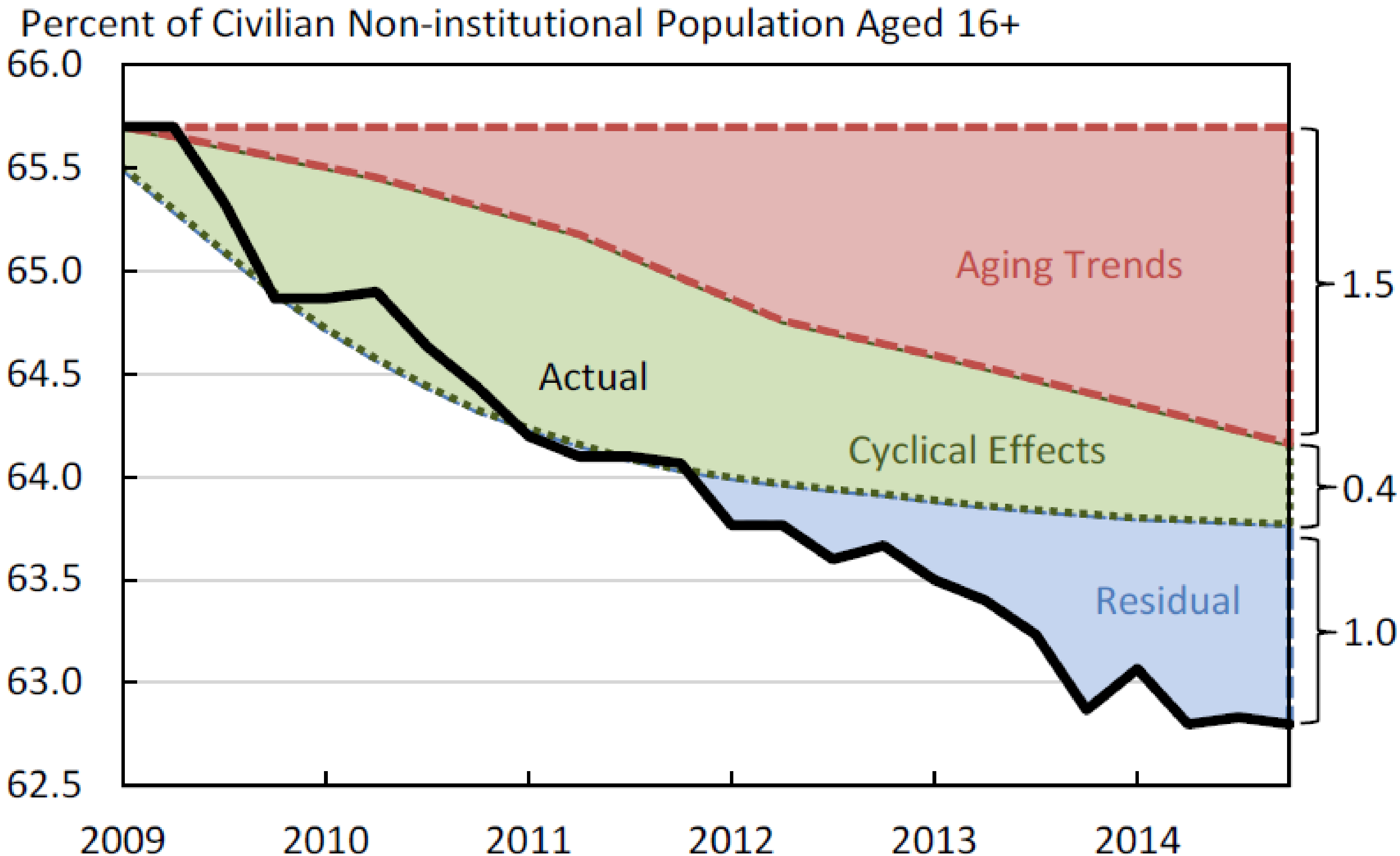
- U6 Labor Underutilization
  - “Involuntarily” part-time (4% of employed)
  - Marginally Attached
- Participation rate (~2 million)
- Wage Growth

Unemployment is Relieved Across the Board



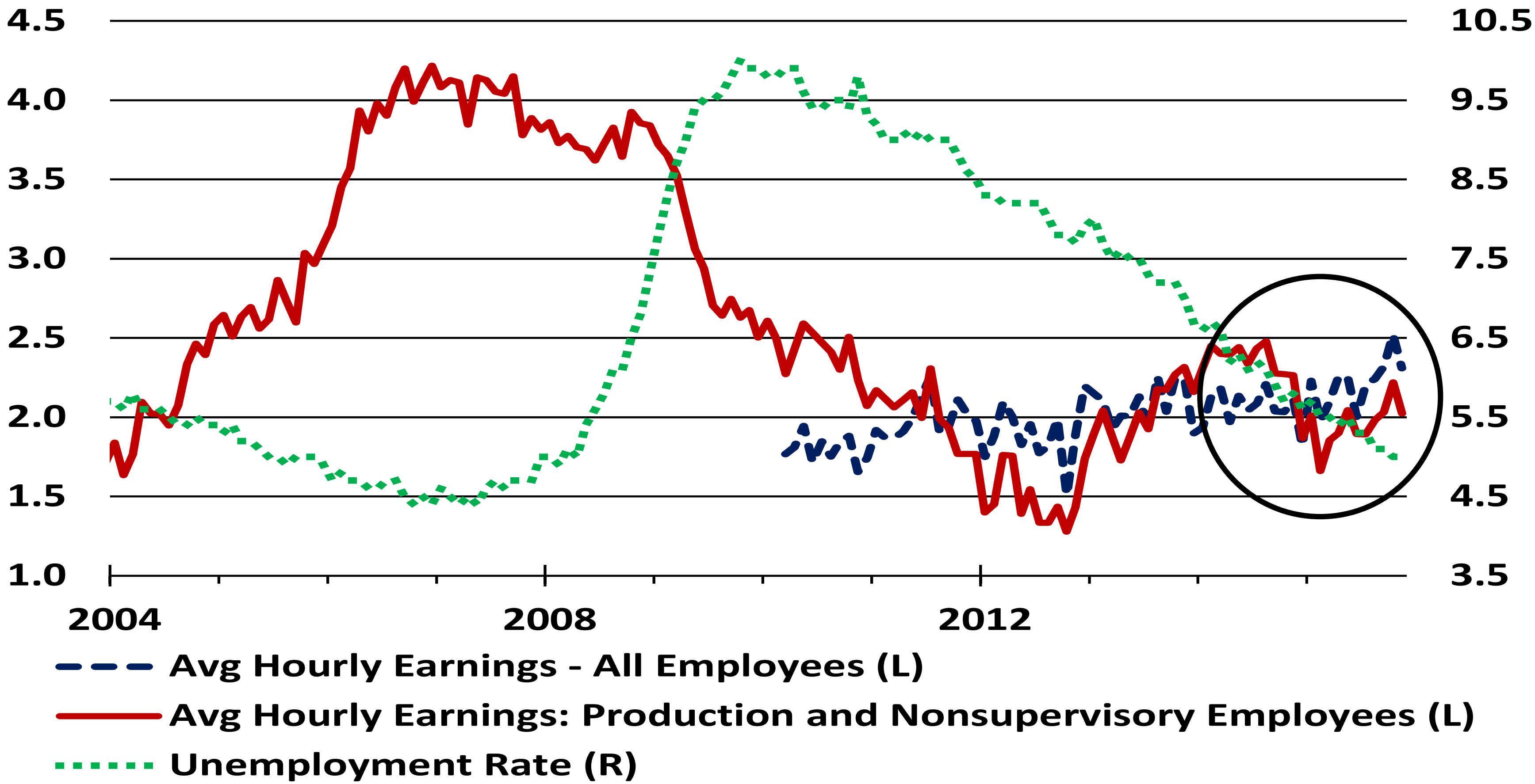
Source: Bureau of Labor Statistics

Labor Force Participation Decomposition



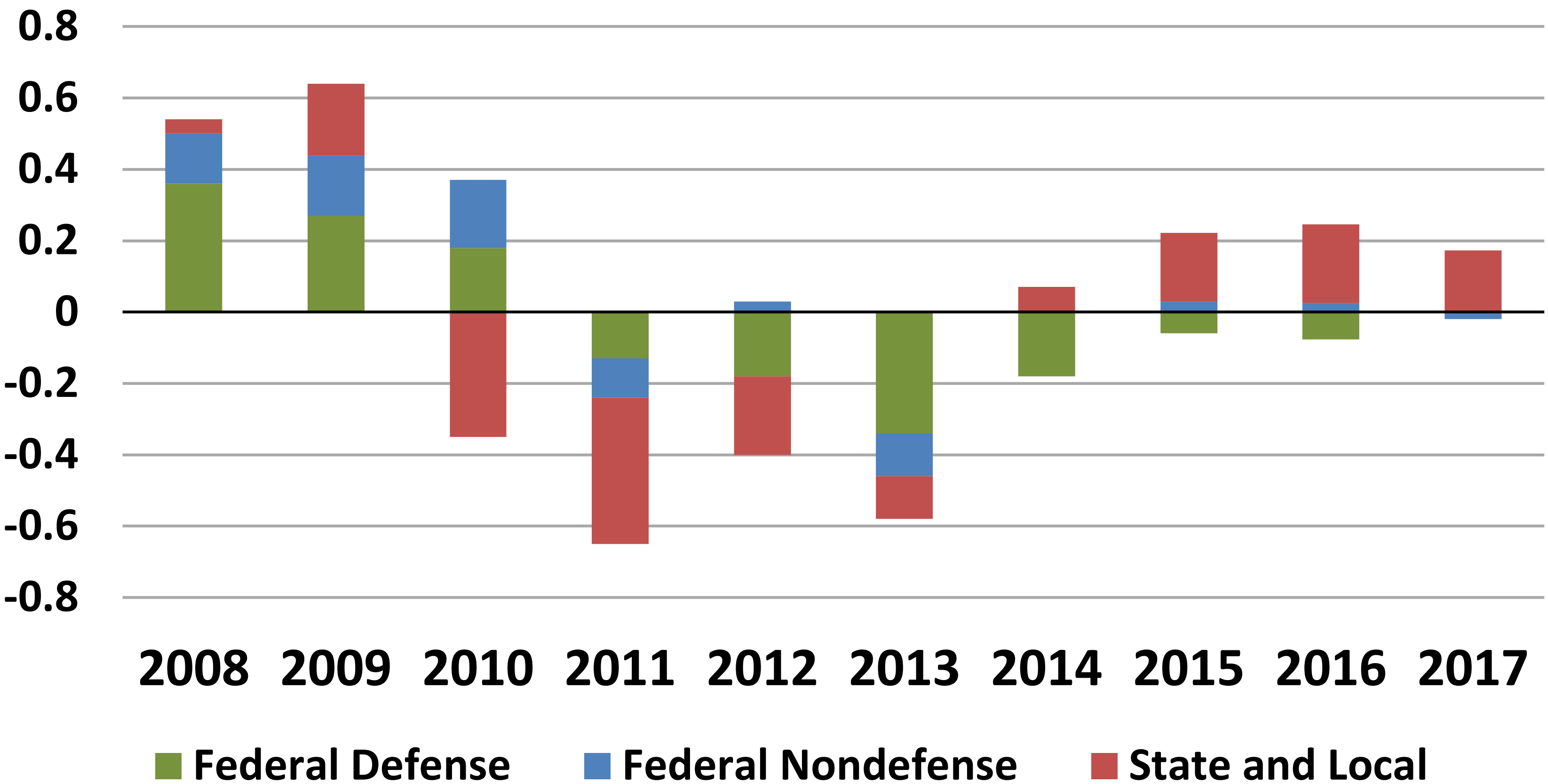
Source: Council of Economic Advisors

Wage growth continues to struggle, though it has ticked up lately.

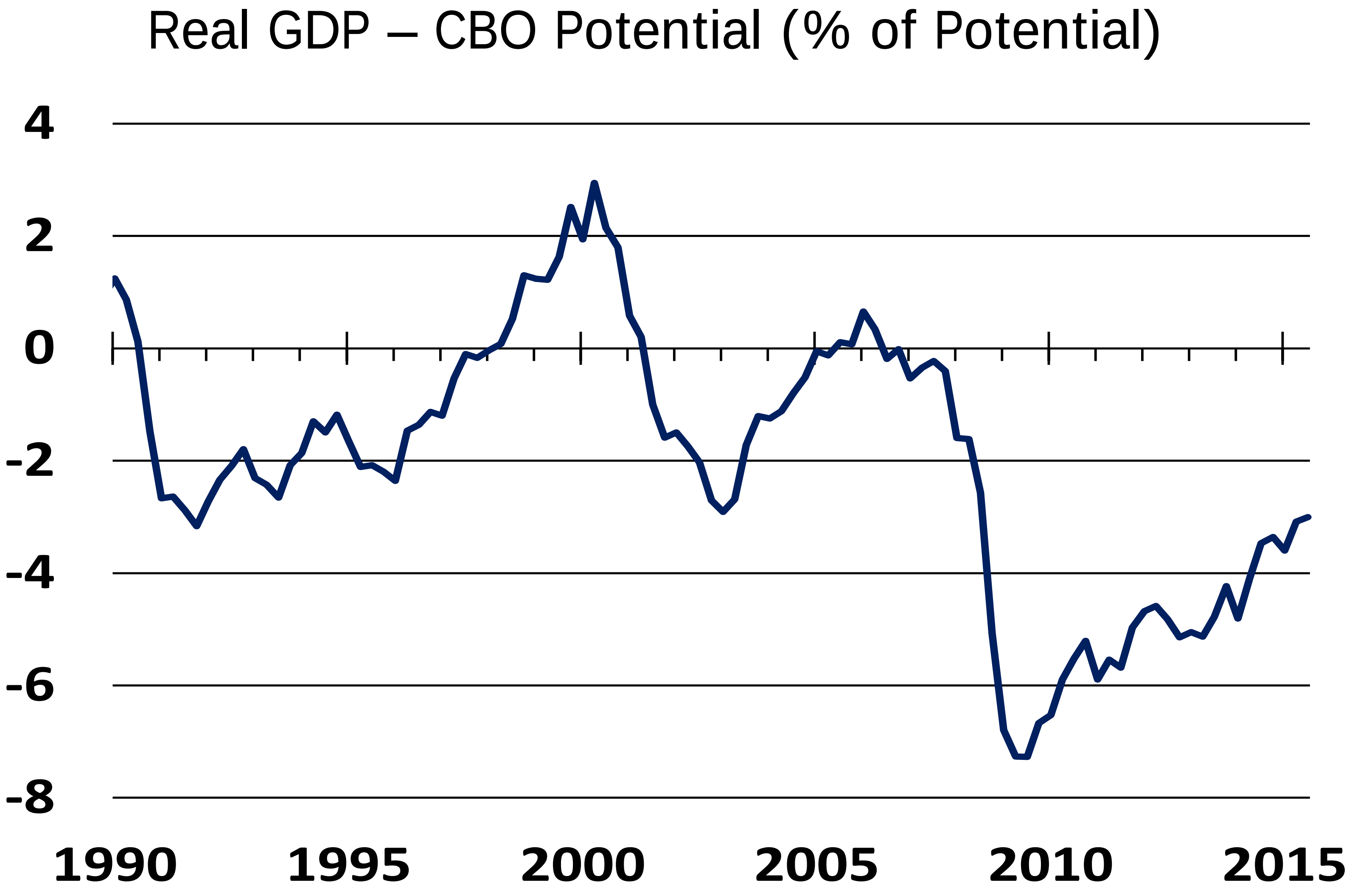


Fiscal Policy Is Now Benign

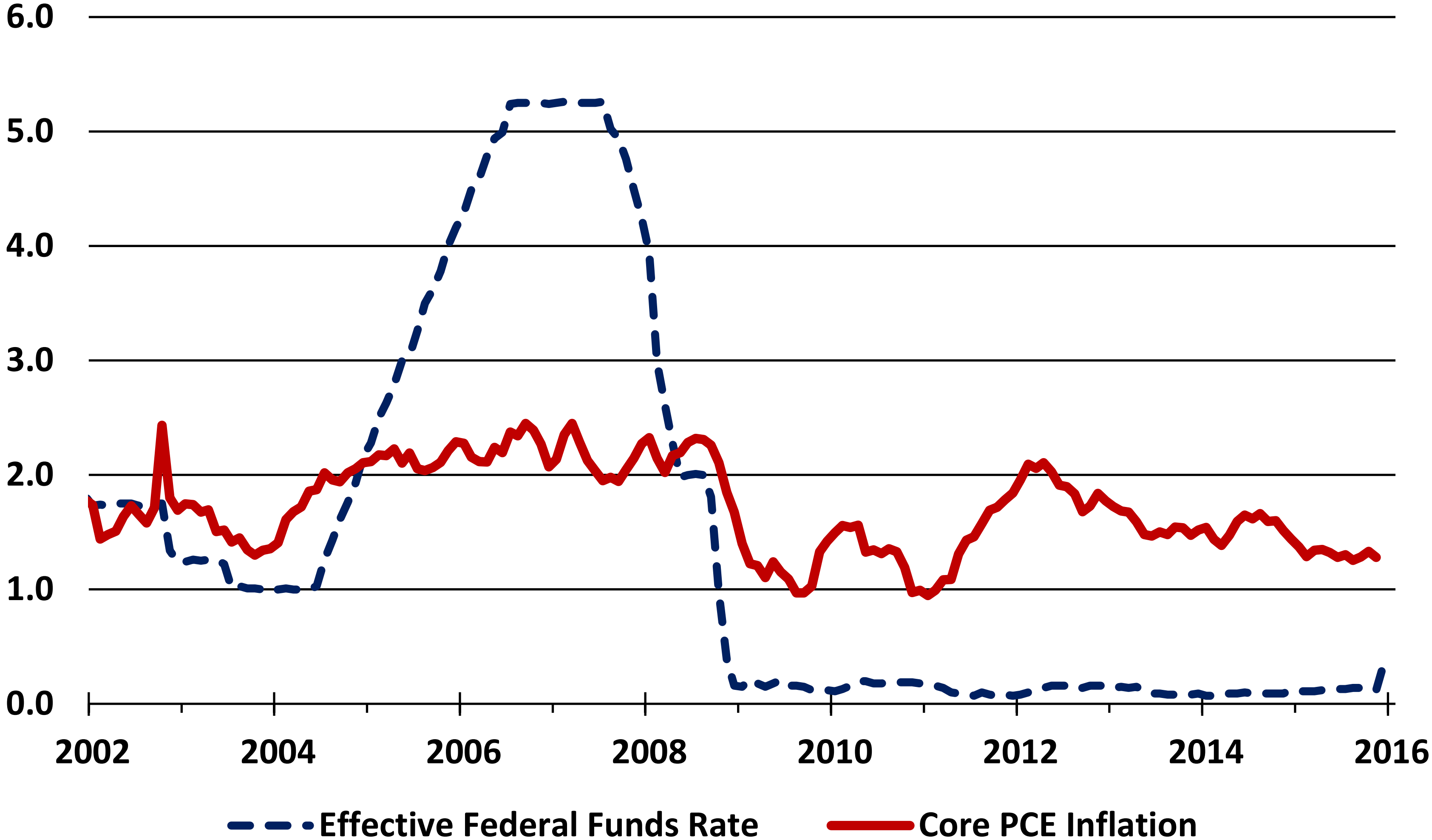
Government Consumption and Investment
Contribution to GDP Growth



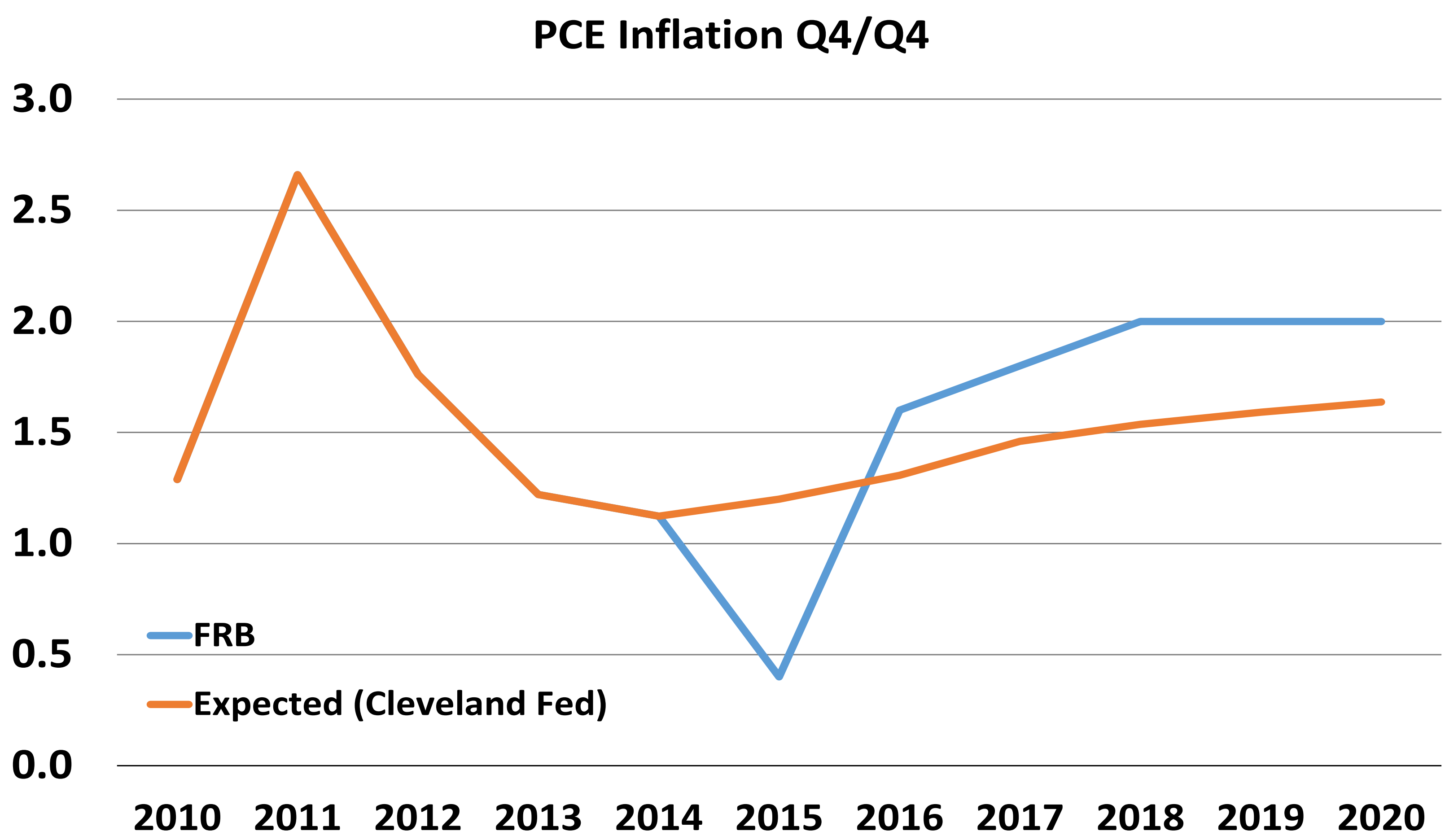
The GDP Gap is Closing, but only gradually.



Inflation, Interest Rates STILL Indicate a Liquidity Trap



Inflation expectations are less than forecasts.

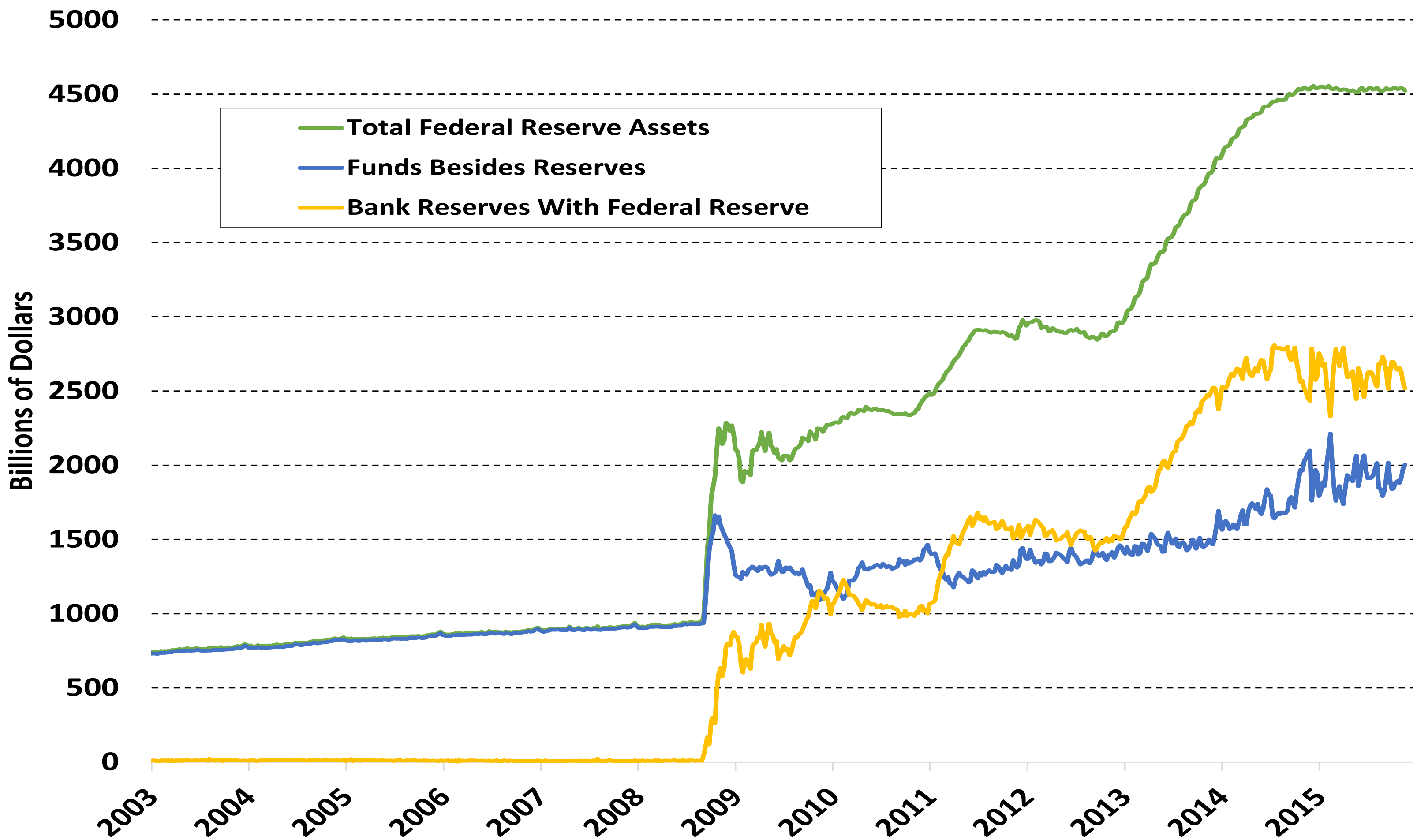


Source: FRB and https://www.clevelandfed.org/our-research/indicators-and-data/inflation-expectations.aspx

Why is low inflation damaging?

- When the economy is especially weak and nominal interest rates fall to zero, real interest rates (r-i) become too high to sustain full employment aggregate demand.
- Debt burdens are more persistent making deleveraging harder. (D/Y)
- Wages and prices are sticky. Under low inflation, relative wages and prices cannot adjust easily. In some sectors or firms, real wages become too high. Markets become distorted.

Unconventional Monetary Policy: Fed Reserve Balance Sheet



The end of ZIRP. What's next?

Monetary Policy with a Large Balance Sheet

- New tools:
  - IOER: Rate of Interest paid On Excess Reserves
  - ON RRP: Overnight Reverse Repurchase Agreement
- Balance sheet "renormalization" (if?) when it occurs will be through maturation, not sales.
- Much of the ROW is loosening. The dollar will rise, how much?
- Europe, China, and emerging markets are all vulnerable in their own way, but the US could end up importing their deflationary conditions.

INFORUM

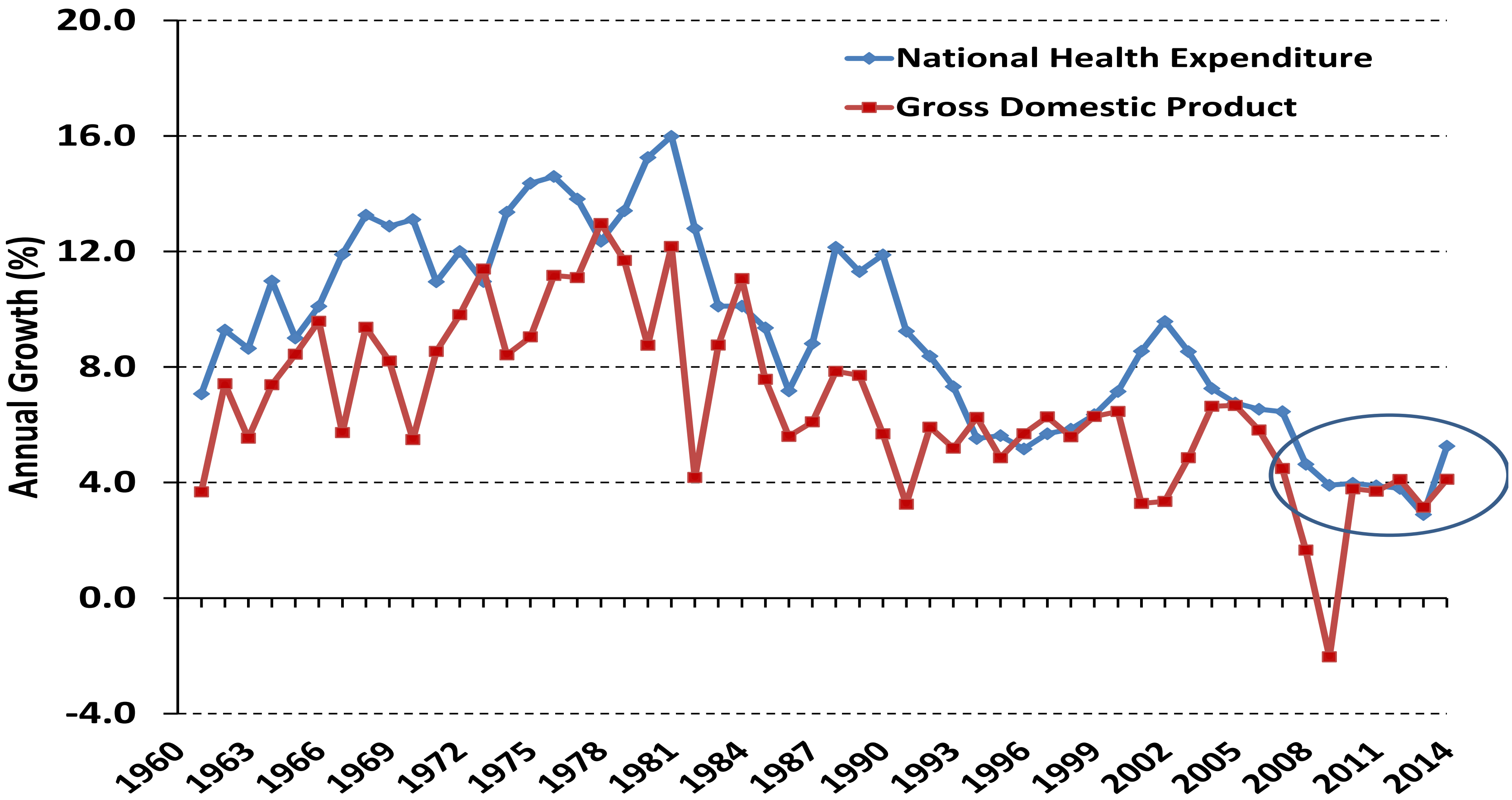
Outlook Overview

Real (Inflation-Adjusted) Quantities, Average Annual Growth Rates, Percent								
	13-14	14-15	15-16	16-17	17-18	18-20	20-30	30-40
Gross domestic product	2.4	2.5	2.7	2.6	2.6	2.6	2.3	2.2
Personal consumption	2.7	3.1	2.8	2.5	2.4	2.2	2.1	2.0
Nonresidential structures	8.1	-0.5	6.5	7.0	5.4	5.2	3.1	2.9
Equipment & intangibles	5.6	4.4	4.5	3.5	3.6	4.1	3.7	3.9
Residential	1.8	8.3	8.8	5.4	6.0	6.4	3.0	2.8
Exports	3.4	1.2	1.9	3.0	3.7	4.3	4.1	3.6
Imports	3.8	4.9	3.0	2.6	2.5	2.5	3.0	3.2
Government	-0.6	0.9	1.0	0.9	1.0	0.9	1.1	1.4
GDP deflator	1.6	1.0	1.8	1.9	1.9	2.1	2.1	2.2
Consumption deflator	1.4	0.4	1.8	1.8	2.0	2.2	2.3	2.4

Outlook Overview

	13-14	14-15	15-16	16-17	17-18	18-20	20-30	30-40
Supply (percent growth)								
Population	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.6
Labor force	0.3	1.2	0.8	0.8	0.8	0.8	0.8	0.6
Employment	1.9	1.6	1.2	0.8	0.8	0.8	0.8	0.6
Labor productivity	0.3	0.7	0.9	1.3	1.7	1.7	1.3	1.5
Potential GDP	1.5	1.7	1.8	2.0	2.2	2.2	2.2	2.2
	2014	2015	2016	2017	2018	2020	2030	2040
Unemployment Rate (%)	6.2	5.3	5.0	5.0	5.0	5.0	5.0	5.0
Treasury Bills, 3-month	0.0	0.1	0.8	1.7	2.8	3.4	3.4	3.4
Yield, 10 yr. Treasury bonc	2.5	2.3	2.8	3.7	4.0	4.2	4.3	4.3
Nominal Quantities (billion $)								
Current account	-546.3	-594.0	-623.7	-600.0	-638.9	-569.1	-639.5	-1137.3
(% of GDP)	-3.1	-3.3	-3.3	-3.1	-3.1	-2.5	-1.8	-2.1
Federal net borrowing	-681.4	-538.7	-468.0	-463.9	-483.2	-431.5	-191.3	-238.0
(% of GDP)	-3.9	-3.0	-2.5	-2.4	-2.4	-1.9	-0.5	-0.4

National Health Care Expenditures
Growth ticked up in 2014



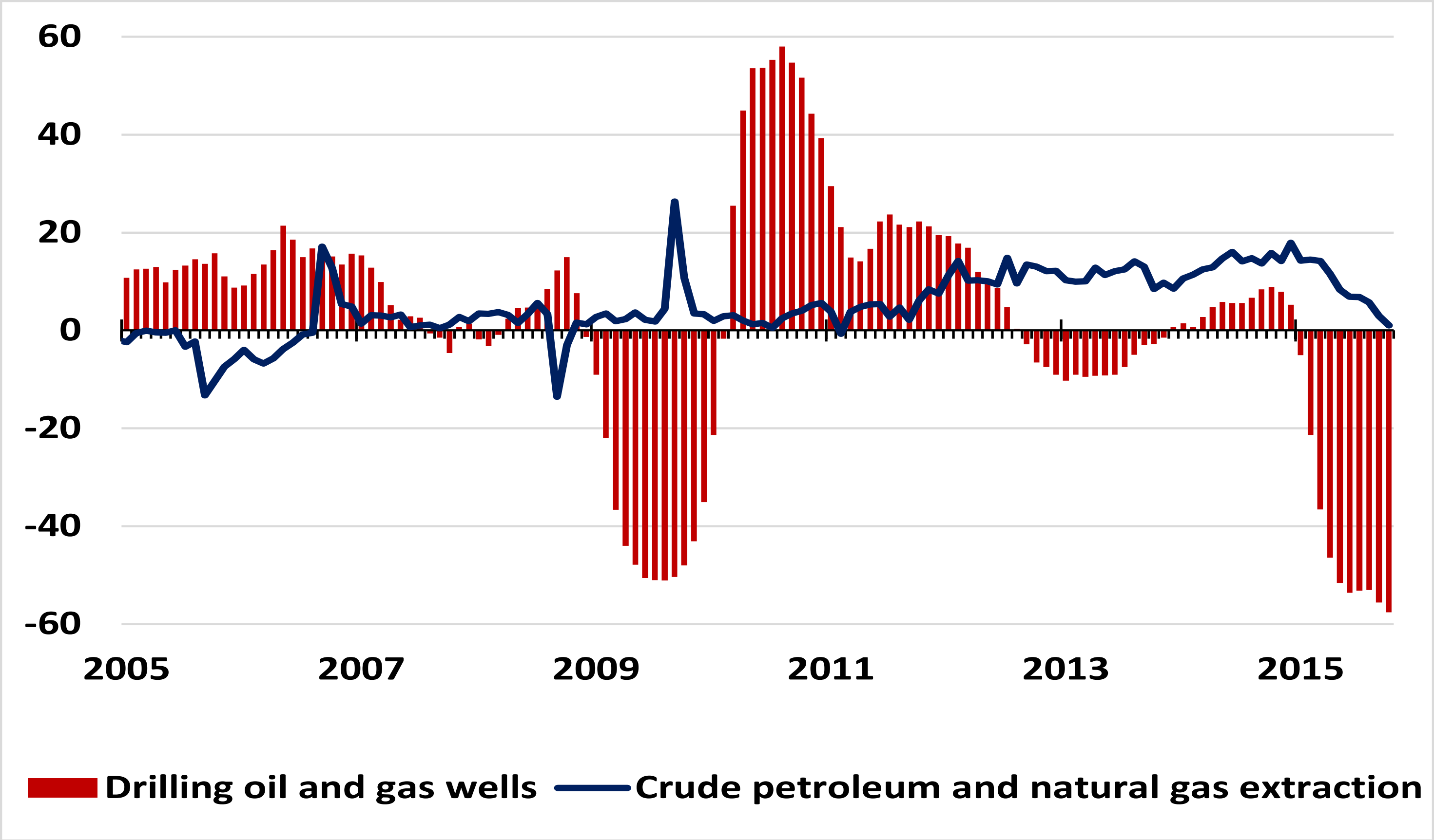
Source: Center for Medicare and Medicaid Services

Recent NHE history is hopeful and affects current entitlement scores

	1960-2014	1960-2000	2000-2014	2009-2014
	Annual Percent Change			
Gross Domestic Product (GDP)	6.6	7.6	3.8	3.8
National Health Expenditures	9.1	10.3	5.8	4.0
NHE as percent of GDP	2.3	2.5	2.0	0.2
GDP Deflator	3.4	3.9	2.0	1.7
Health Care Price Deflator	5.3	6.3	2.7	1.8
Real GDP	3.2	3.7	1.8	2.1
Real Health Care Expenditure	3.8	4.0	3.2	2.2
Decompostion of "Excess Cost" of Health Care				
Excess Health Care Cost	2.5	2.7	2.0	0.2
Excess Health Care Inflation	1.9	2.3	0.6	0.1
Excess Real Expenditure	0.6	0.3	1.4	0.1

Oil and Natural Gas: Drilling and Production are Down

Year over year percent change



Risks are Many

- Security: DOMESTIC, Middle East, Central Europe, Asia
- U.S. interest rates are set to rise: Can financial systems at home and abroad digest these increases without distress?
- Inflow of foreign capital could stoke domestic demand and further appreciate the dollar, hurting U.S. net exports. Big increase in external deficit would signal a new debt bubble.
- Divided government perpetuates uncertainty and gridlock.
- Secular stagnation.
- Climate change makes natural catastrophes more probable.
- Continued inequitable growth maybe unsustainable.

Trading Partner Growth Mixed

Real GDP

Percentage change from previous year

	2013	2014	2015	2016	2017
Canada	2.0	2.4	1.2	2.0	2.3
Mexico	1.6	2.1	2.3	3.1	3.3
United States	1.5	2.4	2.4	2.5	2.4
France	0.7	0.2	1.1	1.3	1.6
Germany	0.4	1.6	1.5	1.8	2.0
Italy	-1.8	-0.4	0.8	1.4	1.4
Spain	-1.7	1.4	3.2	2.7	2.5
Euro area	-0.3	0.9	1.5	1.8	1.9
United Kingdom	2.2	2.9	2.4	2.4	2.3
Japan	1.6	-0.1	0.6	1.0	0.5
Korea	2.9	3.3	2.7	3.1	3.6
Total OECD	**1.2**	**1.9**	**2.0**	**2.2**	**2.3**
China	7.7	7.3	6.8	6.5	6.2
Russia	1.3	0.6	-4.0	-0.4	1.7

Source: OECD Economic Outlook November 2015

But the Real Danger Rests with Low Inflation

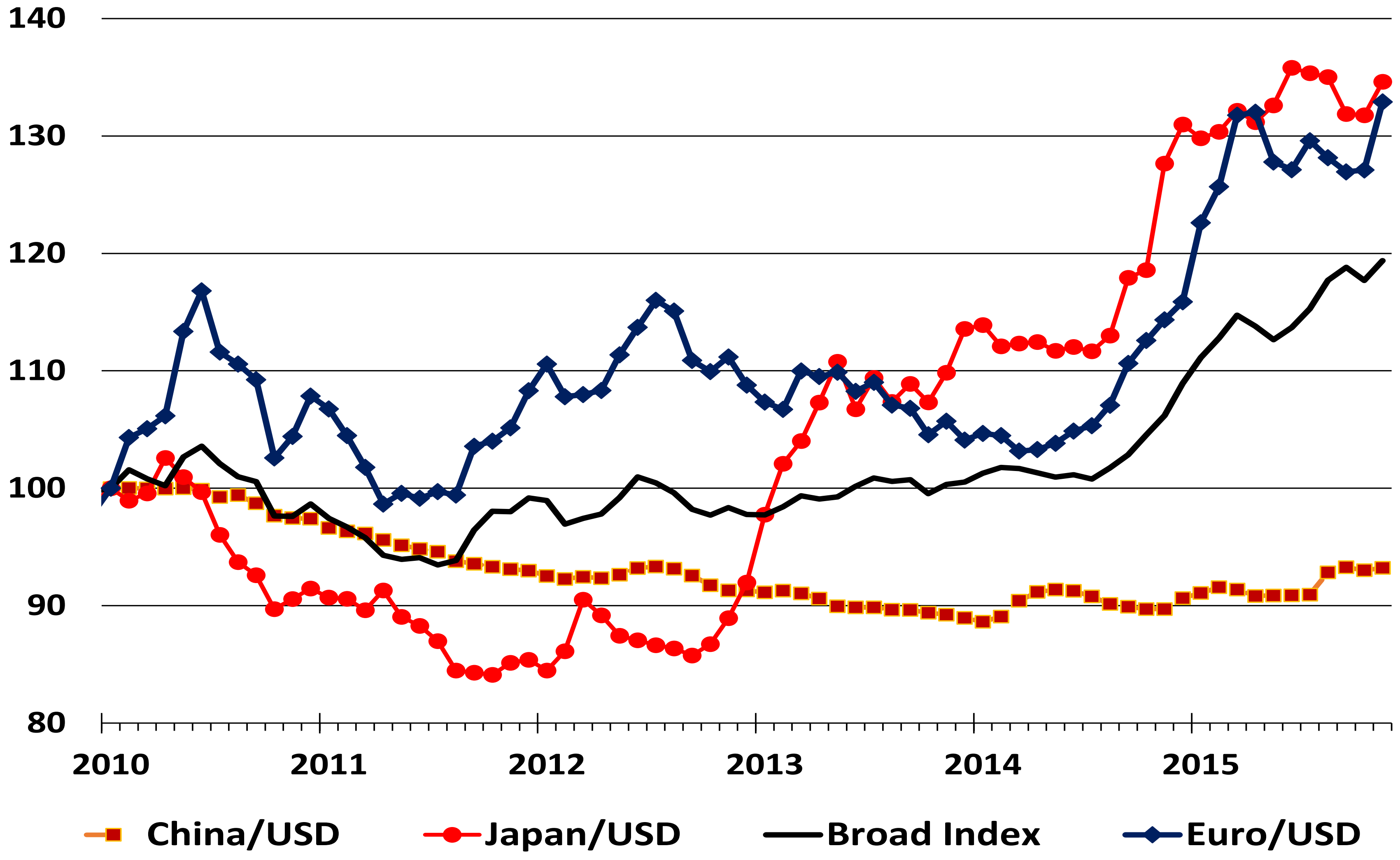
OECD Private consumption deflators

	2014	2015	2016	2017
Germany	0.9	**0.6**	1.0	1.5
France	0.0	**0.0**	0.9	1.2
Italy	0.3	**0.2**	0.7	1.0
Spain	0.3	**-0.1**	0.7	0.9
Japan	2.0	**0.3**	0.9	2.3
China*	0.8	**-0.4**	-0.1	0.8
United States	1.4	**0.3**	1.3	1.7
Canada	1.9	**1.2**	1.9	2.1
Mexico	3.7	**3.8**	3.3	3.1

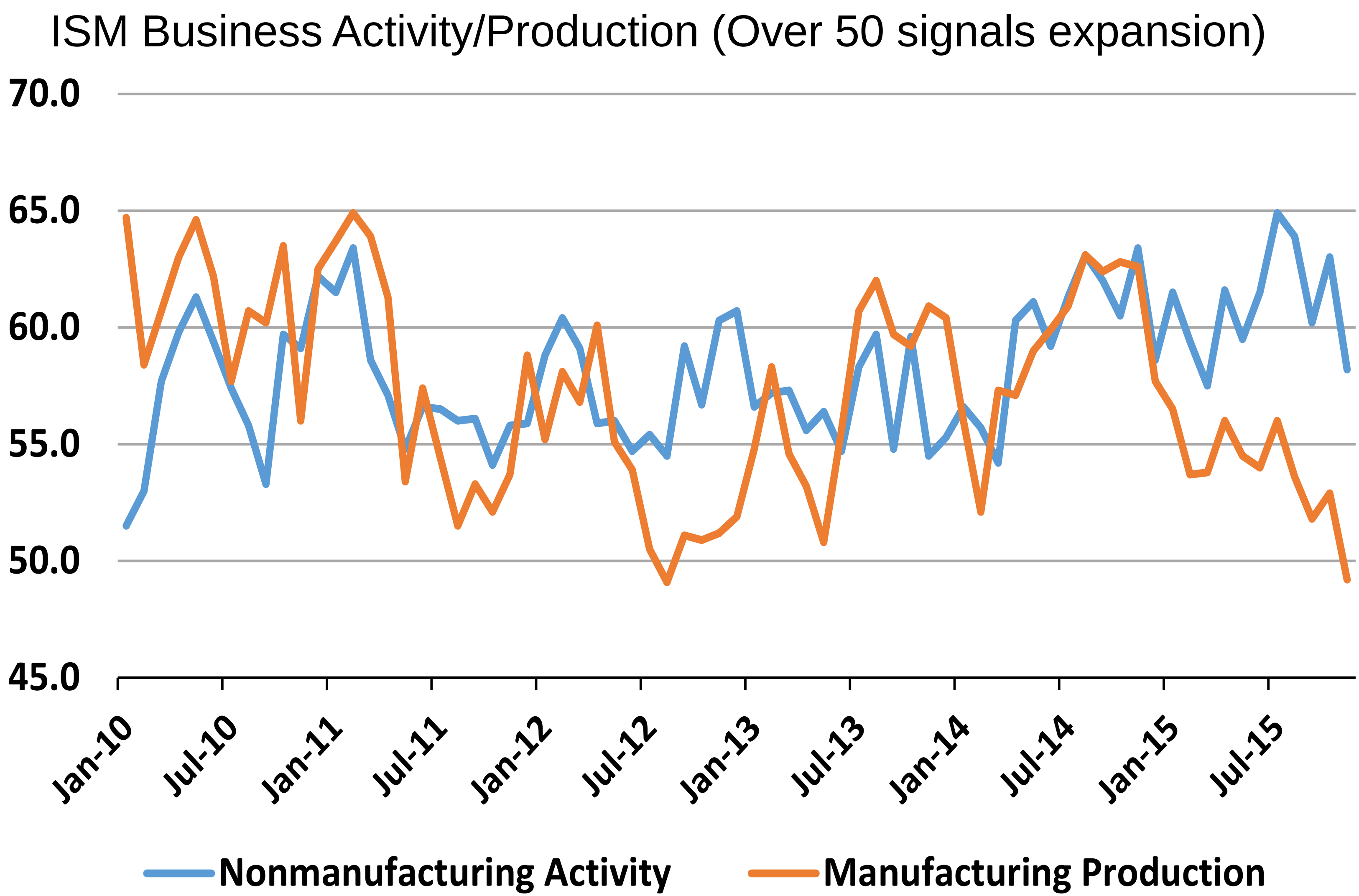
*GDP Deflator

Source: OECD Economic Outlook November 2015

Dollar Still Strengthening



Manufacturing already diverging.

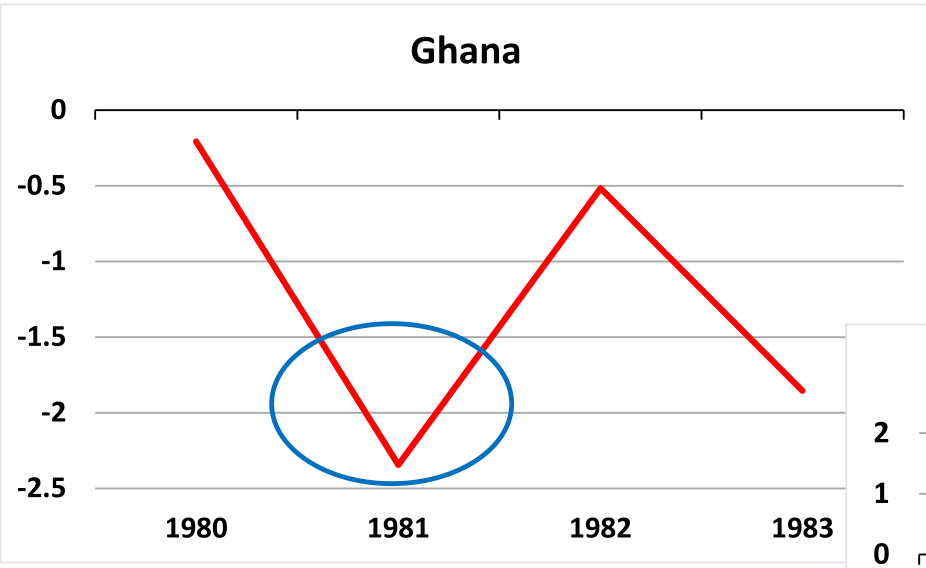


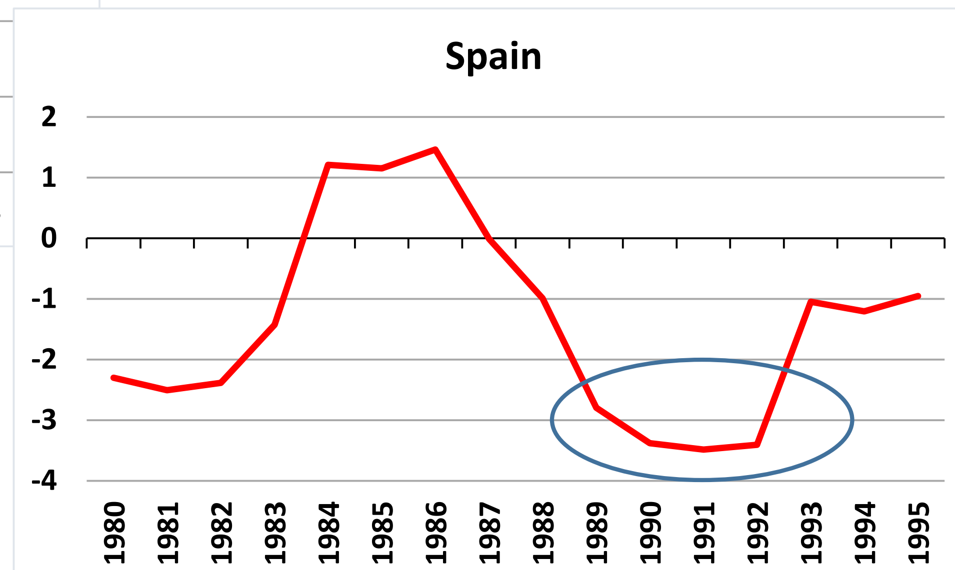
Hopefully, the rise is about almost over. But don't be too sure.

EXCHANGE RATE ASSUMPTIONS (Foreign currency per US Dollar)					
Positive means dollar appreciation.					
	13-14	**14-15**	**15-16**	**16-17**	**15-20**
Euro	0.1	18.8	5.0	0.0	0.0
Canadian dollar	7.3	15.1	5.0	0.6	0.7
Mexican peso	4.2	18.9	5.0	0.5	1.4
Japanese yen	8.5	14.0	0.5	0.3	0.5
Chinese yuan	0.0	2.0	5.0	2.1	1.2
British pound	-5.2	7.6	5.0	0.0	0.0
South Korean won	-3.7	7.1	5.0	1.6	1.2

How do you spot a financial crisis?

Current Account as a Percent of GDP





How do you spot a financial crisis?

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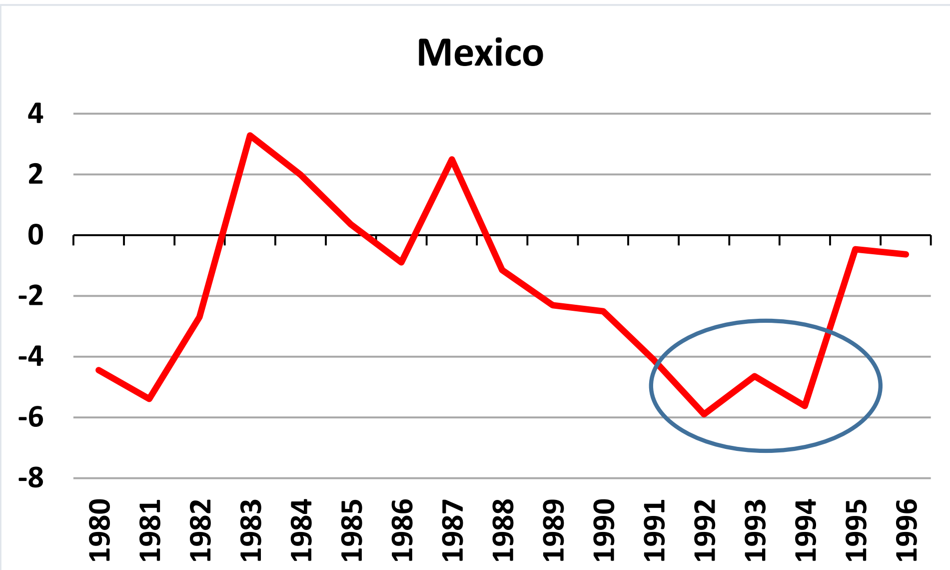

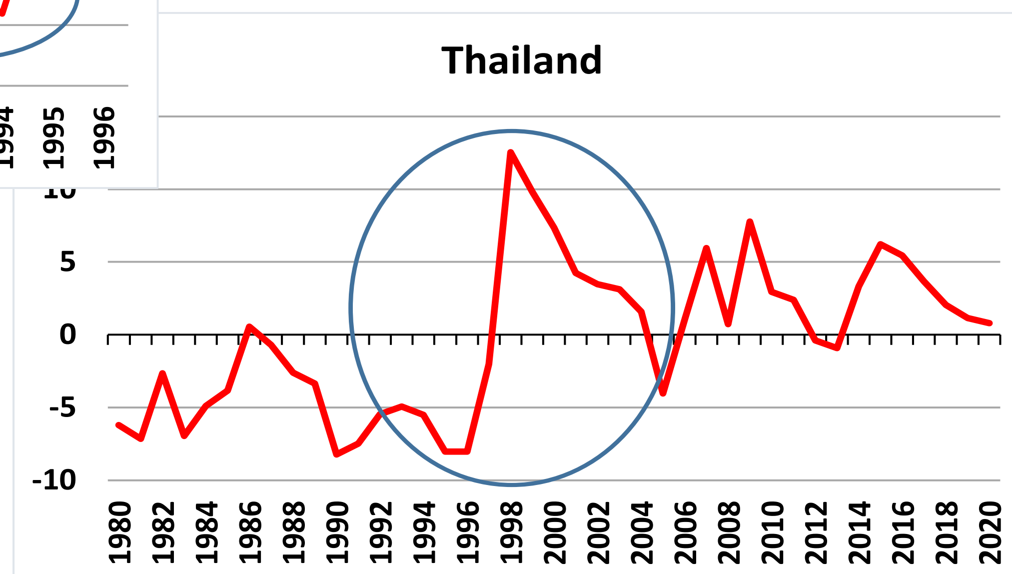

How do you spot a financial crisis?

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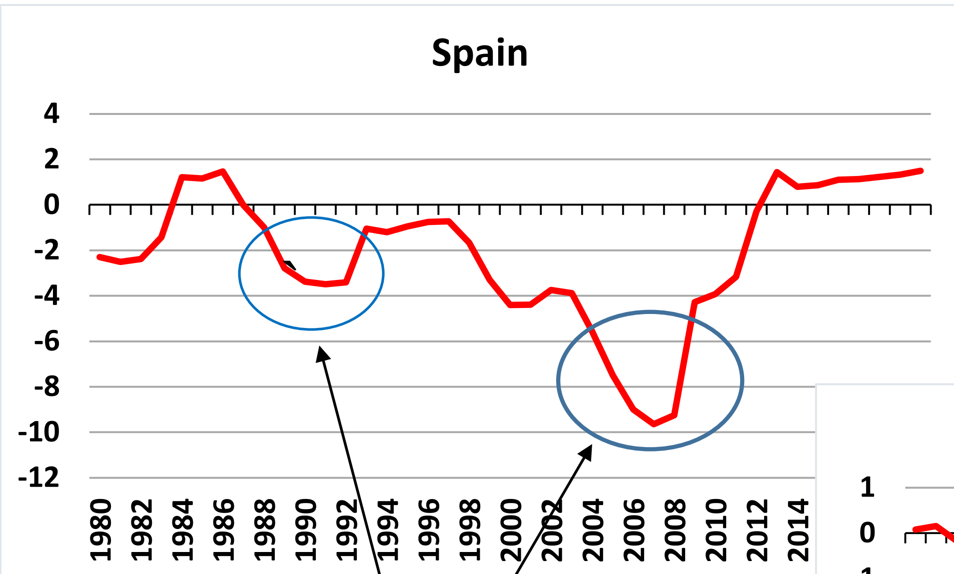
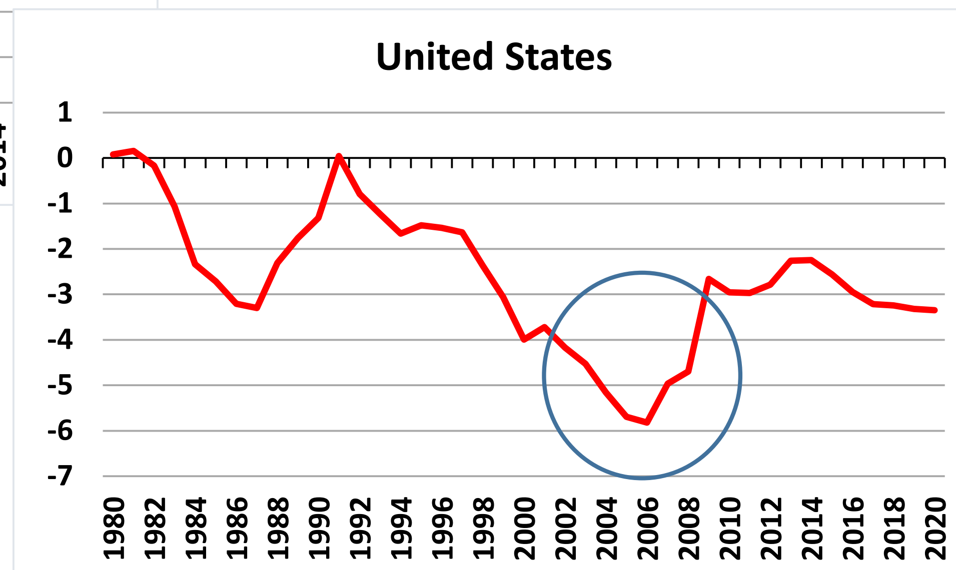




Deja vous all over again?

(Y. Berra)

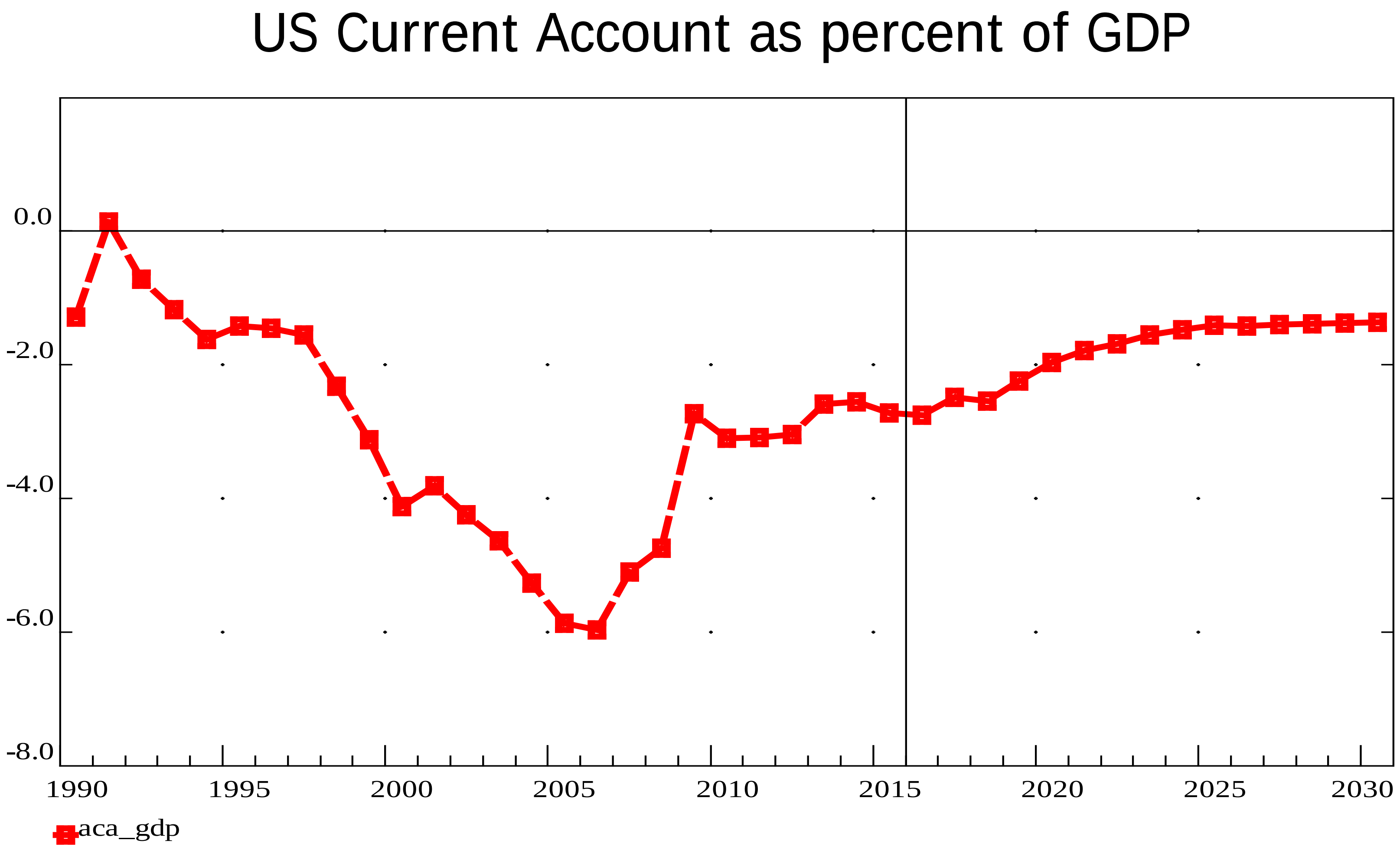
How do you spot a financial crisis?

Current account balances as a percentage of GDP

	2004	2005	2006	2007	2008	2009	2010	2011
Iceland	**-9.8**	**-15.8**	**-23.3**	**-14.0**	**-22.8**	-9.7	-6.6	-5.3
Latvia	**-12.3**	**-11.9**	**-20.9**	**-20.8**	**-12.4**	8.1	2.3	-2.8
Greece	**-5.6**	**-7.5**	**-11.0**	**-14.1**	**-14.4**	-10.9	-9.9	-9.9
Portugal	**-8.3**	**-9.9**	**-10.7**	**-9.7**	**-12.1**	-10.4	-10.1	-6.0
Spain	**-5.6**	**-7.5**	**-9.0**	**-9.6**	**-9.3**	-4.3	-3.9	-3.2
United States	**-5.2**	**-5.7**	**-5.8**	**-5.0**	**-4.7**	-2.7	-3.0	-3.0
Ireland	**-0.1**	**-3.3**	**-4.9**	**-6.1**	**-5.8**	-4.1	-0.8	-1.2
Italy	**-0.4**	**-0.9**	**-1.6**	**-1.5**	**-2.9**	-1.9	-3.5	-3.1
Japan	3.9	3.7	4.0	4.9	3.0	2.9	4.0	2.2
Germany	4.4	4.6	5.7	6.8	5.5	5.7	5.4	6.0
Netherlands	6.8	6.1	7.9	6.0	4.1	5.8	7.4	9.1
China	3.6	5.8	8.5	10.0	9.2	4.8	3.9	1.8
Euro area	1.0	0.4	0.4	0.3	-0.6	0.4	0.5	0.8
Total OECD	-0.9	-1.3	-1.5	-1.2	-1.7	-0.5	-0.4	-0.6

Source: OECD Economic Outlook 98 database.

Our forecast is sanguine.



Slow Supply Growth vs. Secular Stagnation

- Slow Supply Growth – Sluggish Technological Change and Slow Demographics (Gordon)
- Secular Stagnation – Chronic Operation Below Potential Output (Summers)
- Potential GDP: How much hysteresis from the Great Recession? Can we reach “full” employment?
- Factors:
  - Demographics and human capital
  - Federal Debt – Do high rates slow growth?
  - Unequal income distribution and mobility
  - Entrepreneurial Crisis
  - Political Dysfunction

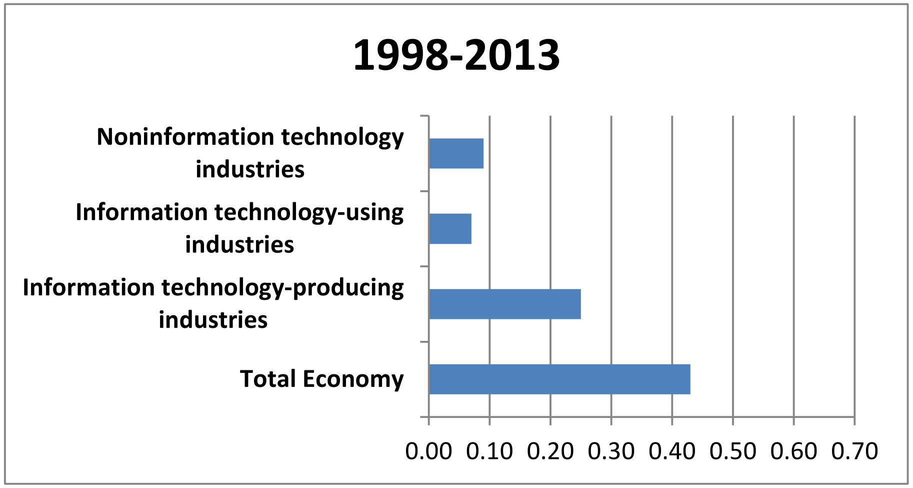
Contribution of industry-specific productivity to aggregate productivity growth

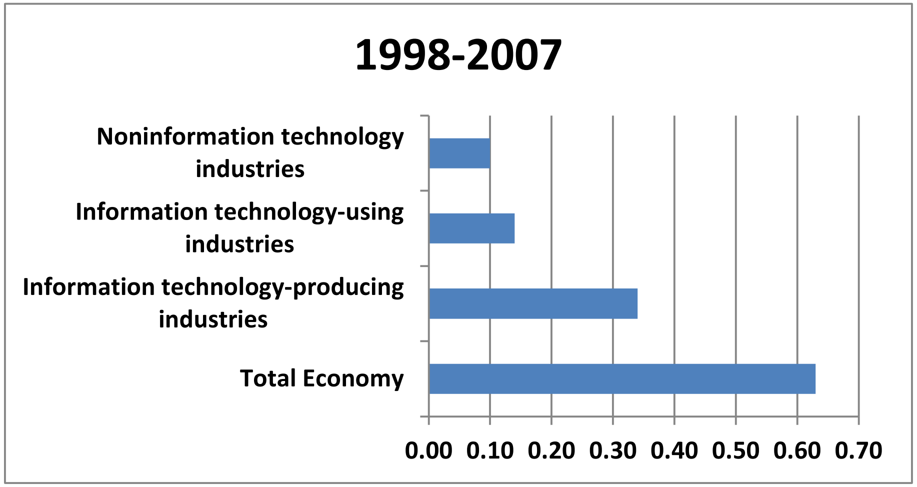
Average MFP Growth and Percent Contribution to Aggregate MFP growth 1987-2010 (BLS)

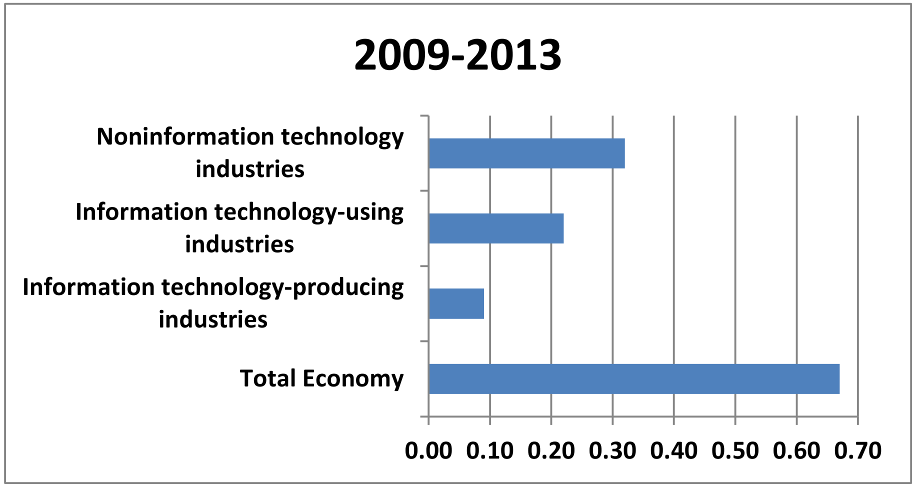
		Multi-Factor Productivity Growth		
	NAICS Code	**Industry**	**1987 - 2010**	**Percent Contribution**
		Progressive		
1	111,112	Farms	1.8	4.3
		Total Manufacturing	**1.5**	**47.4**
21	334	Computer and electronic products	10.4	38.3
26	339	Miscellaneous manufacturing	2.0	2.3
27	42	Wholesale trade	1.9	14.2
28	44,45	Retail trade	1.6	14.8
42	523	Securities, contracts, and investments	4.3	12.0
		Stagnant		
7	23	Construction	-0.54	-5.27
41	521-522	Credit intermediation, and related	-0.64	-3.03
45	531	Real estate	-0.38	-2.78
46	532,533	Rental and leasing services	-1.61	-3.03
50	55	Management of companies and enterprises	-0.75	-2.01
54	**621**	**Ambulatory health care services**	**-0.37**	**-1.73**
55	**622,623**	**Hospitals, nursing and residential facilities**	**-0.88**	**-2.79**
61	81	Other services, except government	-0.29	-1.05
		Private Business Sector	**0.99**	**100.00**

Composition of Productivity Growth May be Changing

Source: Integrated BEA/BLS Industry-level Production Account, Dumas, Howells, Rosenthal and Samuels

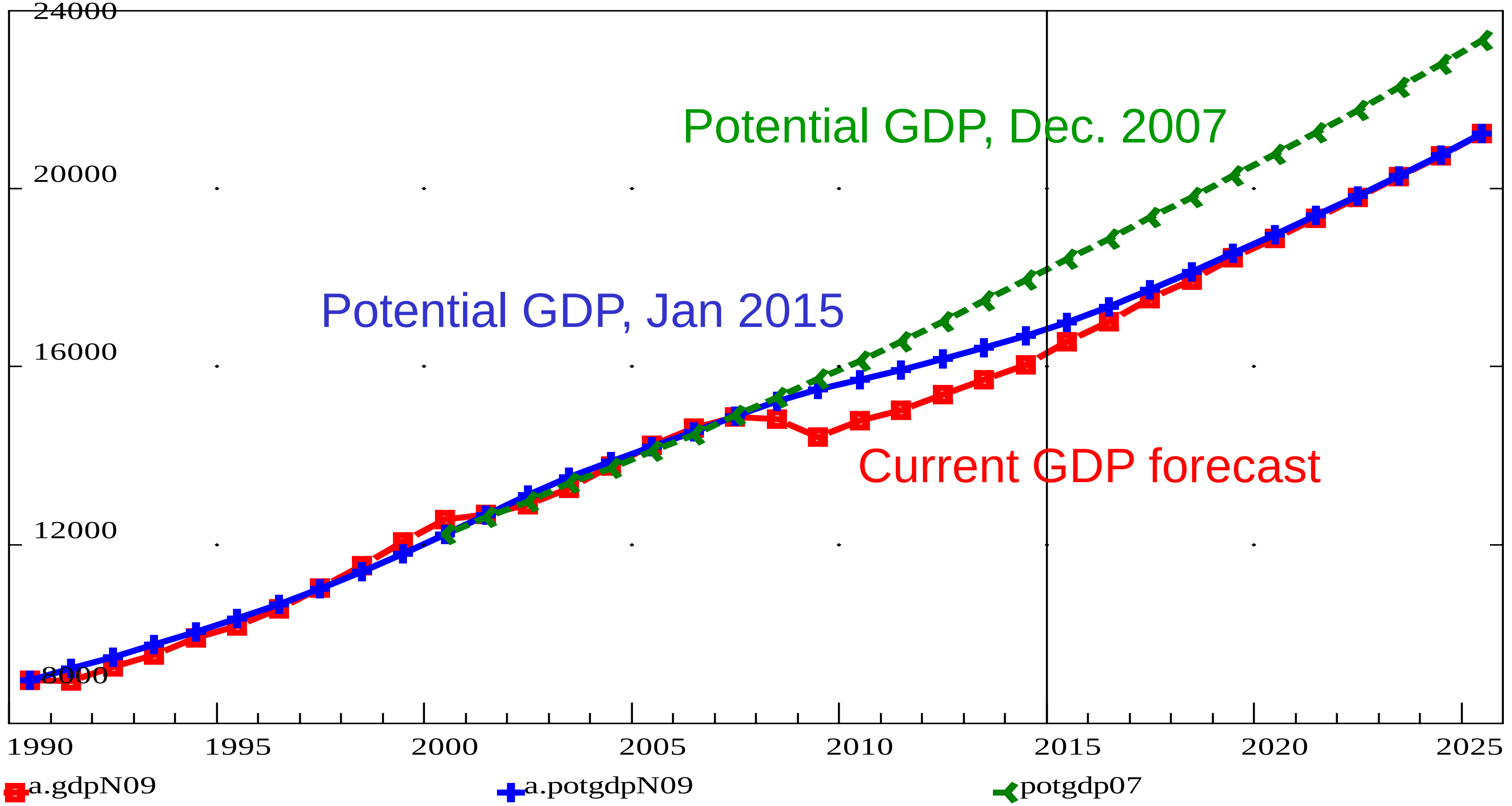






Potential GDP and GDP 1990-2025:
"The future ain't what it used to be." *(Y. Berra)*

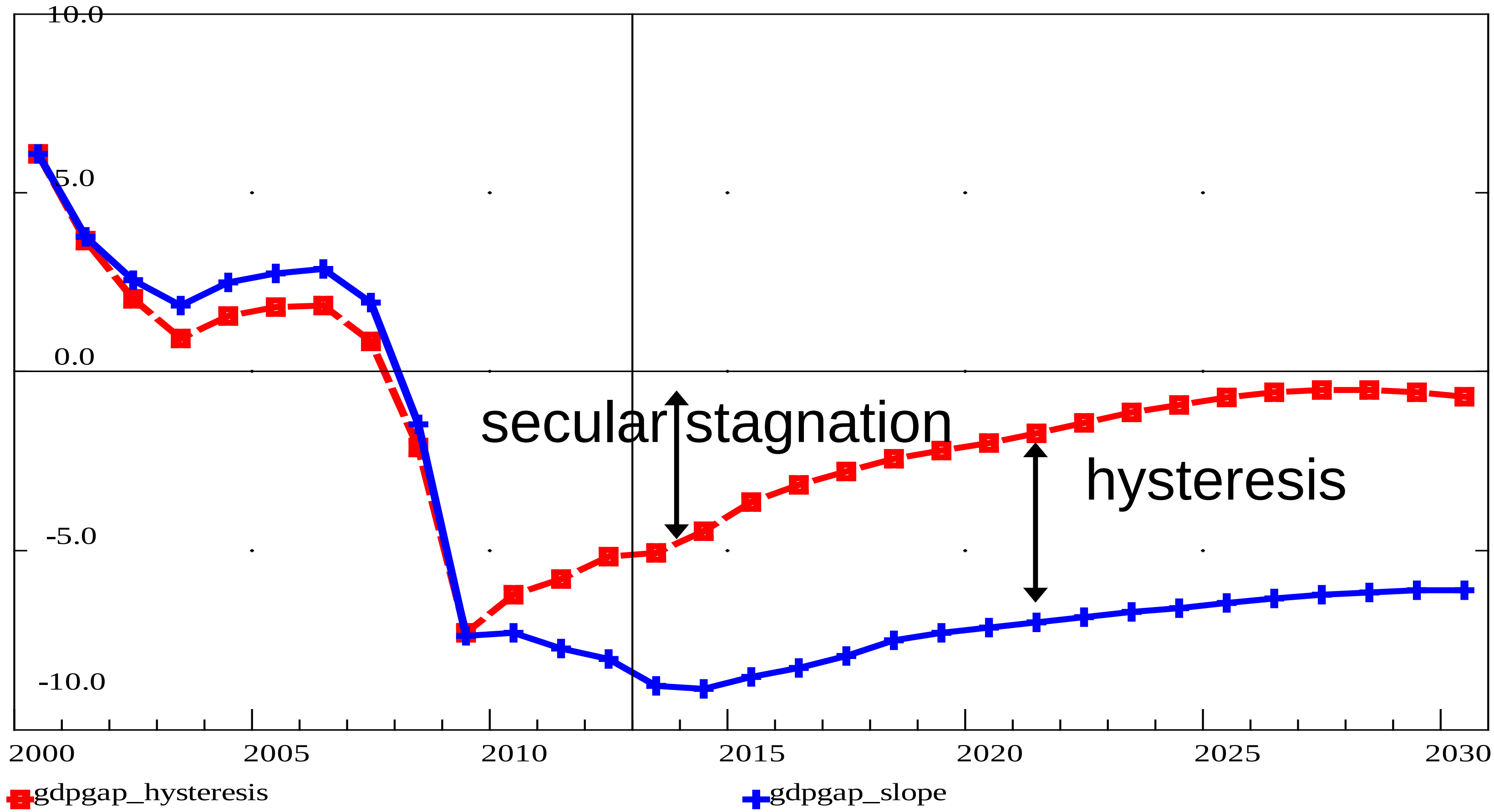
Billions of 2009 dollars



GDP Gaps: Did we permanently lose 6% of income?

GDP – GDP potential
(% of potential)

For further discussion see: Aggregate Supply in the United States: Recent Developments and Implications for the Conduct of Monetary Policy, Reifschneider, et. al. (FRB)

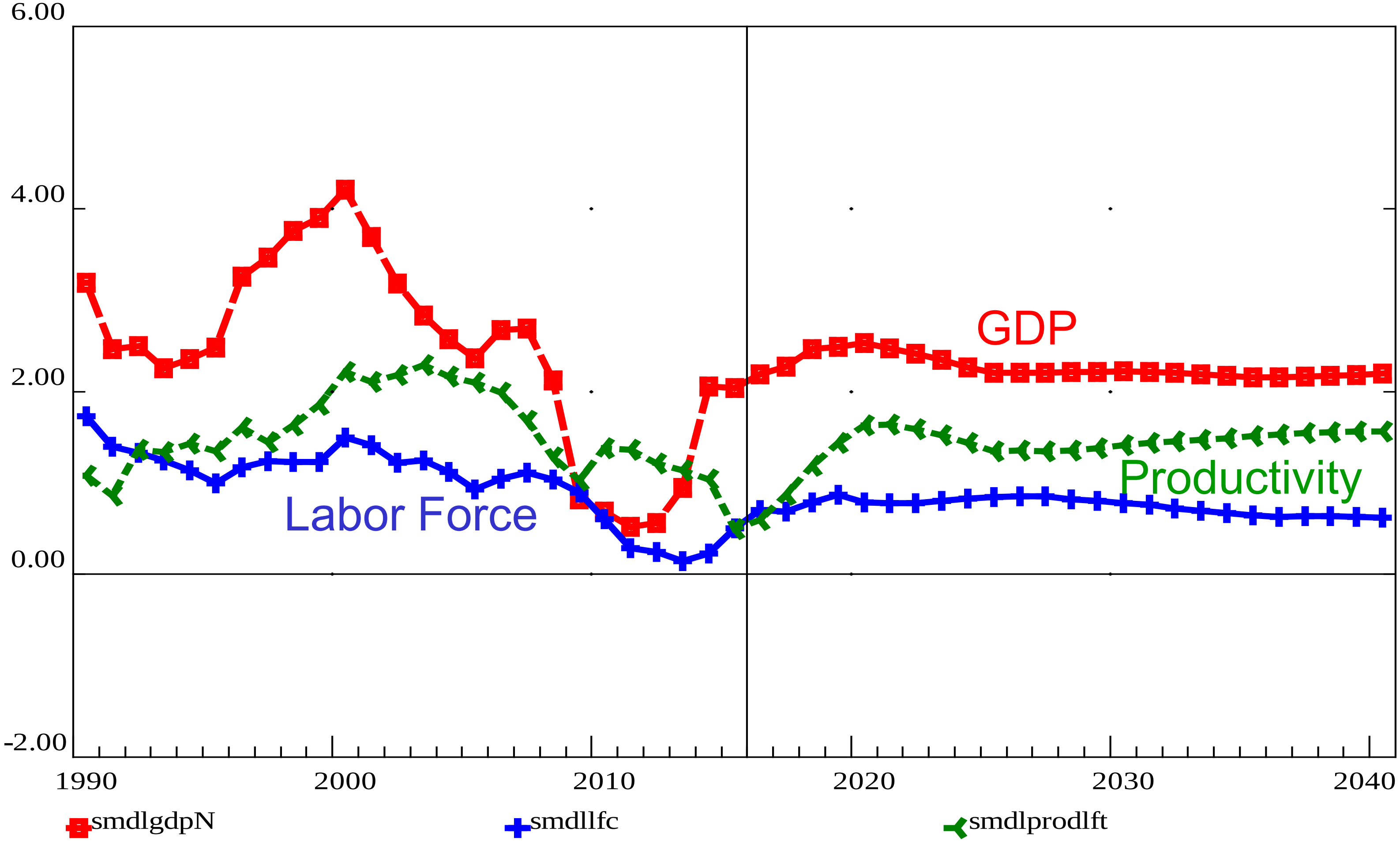


Longer term forecast (to 2040):

- Potential GDP growth ~ 2.2%
- Forecast assumes gradual rebalancing of private, government and external accounts.
- Manufacturing outlook is challenging (real exchange rate).
- Government services and transfers will expand. Health care spending (with/without reform) will dominant future of government spending and domestic production growth.
- All roads lead to tax reform. To pay for entitlements, education and infrastructure, government revenues will have to rise. How this is accomplished is important.

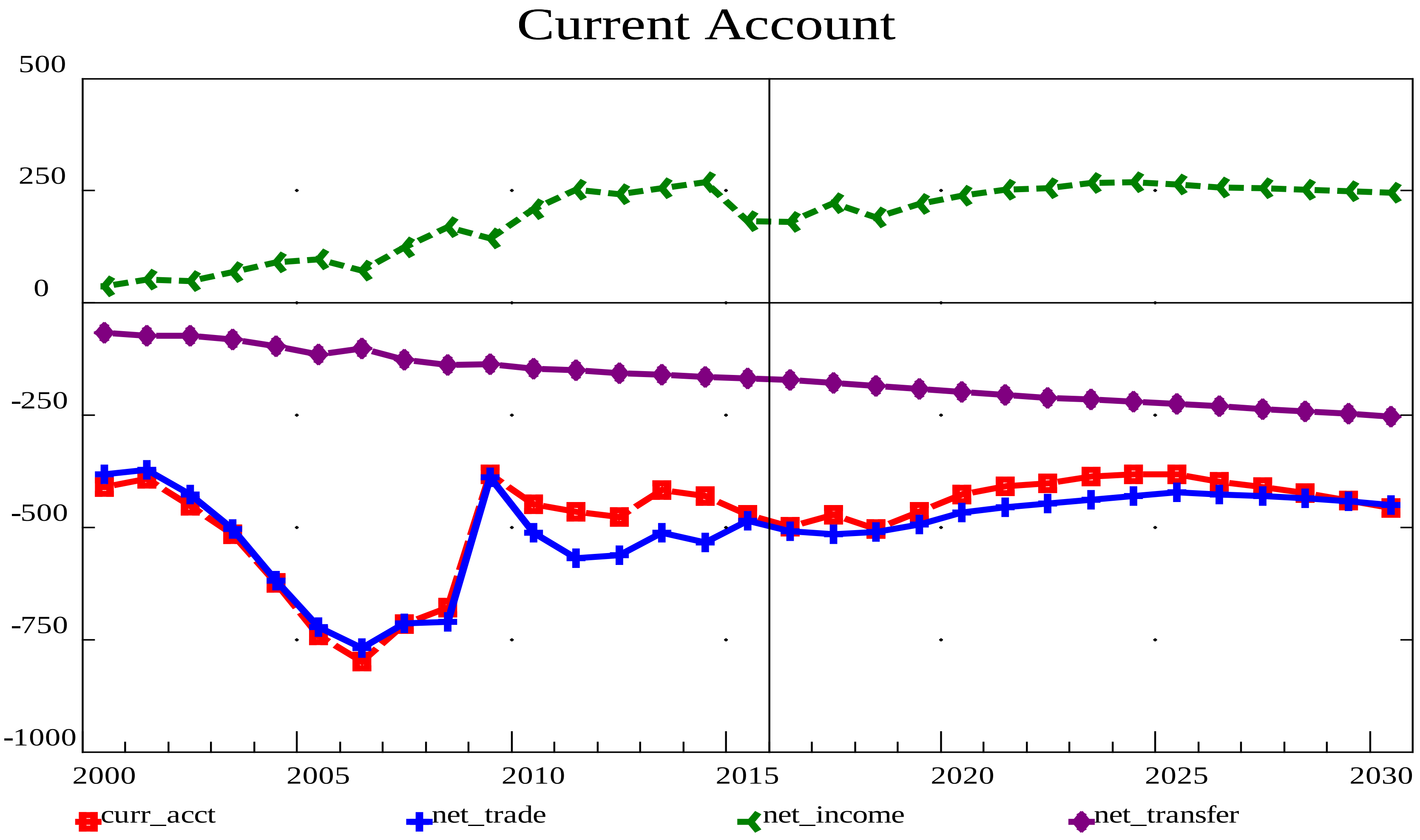
Long term potential growth is almost 2.2%

Difference in logs, 5-year moving average



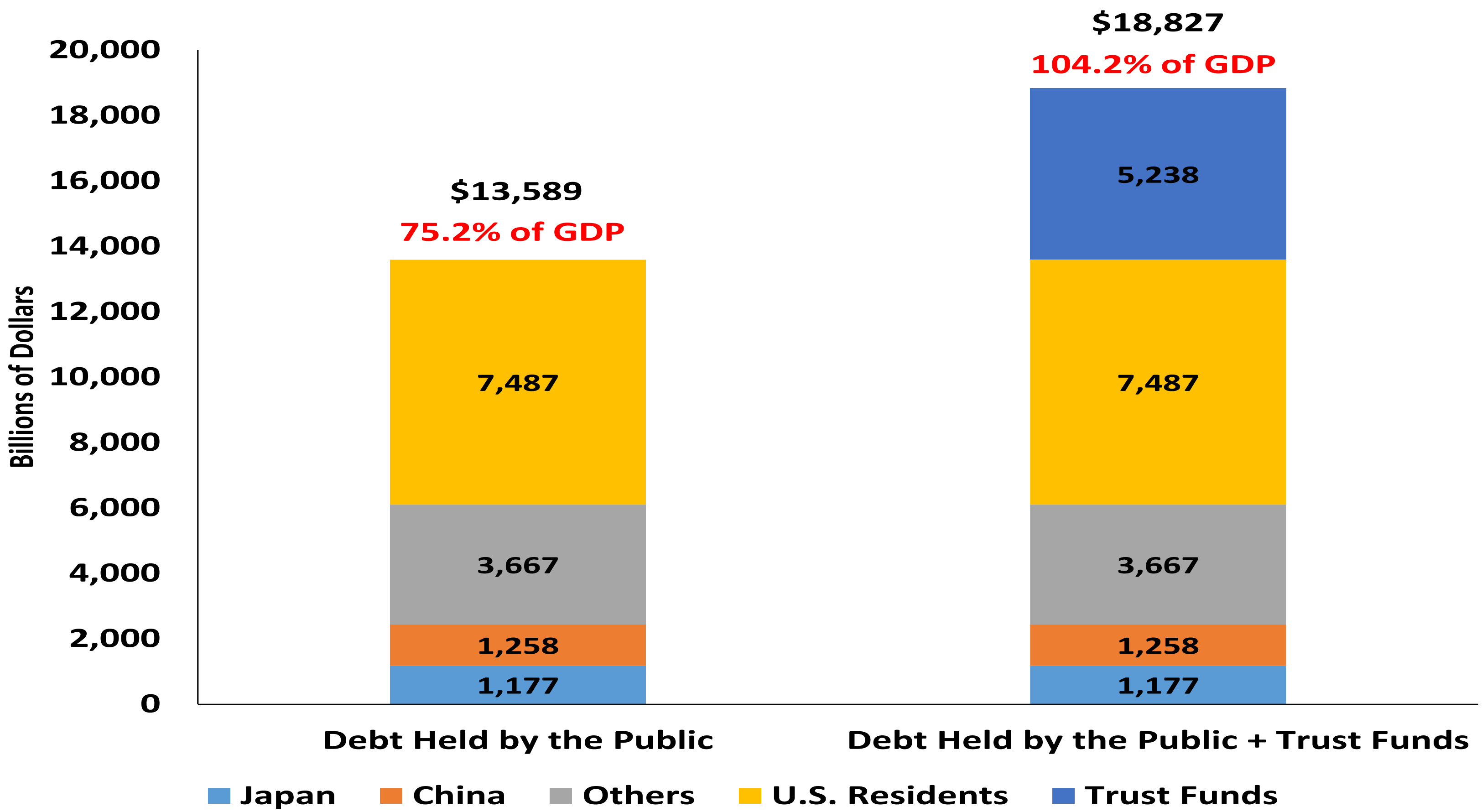
Current account deficit: soft landing

Billions of dollars



Debt Check! Federal Net and Gross Debt

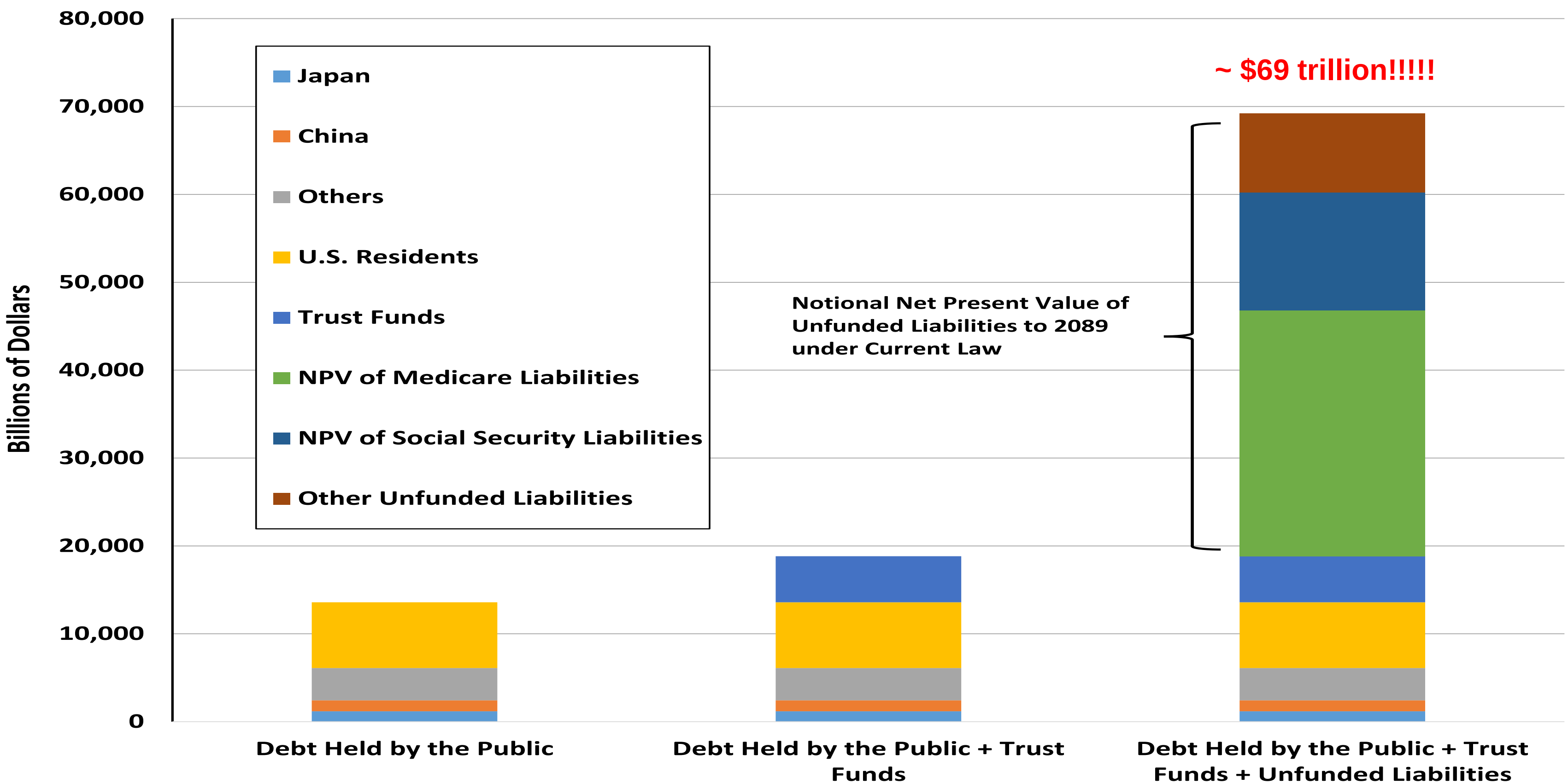
Accrued Debt Held by the Public plus Trust Funds (09/30/15)



Source: U.S. Treasury Department and Inforum Calculations

...do not cover future obligations.

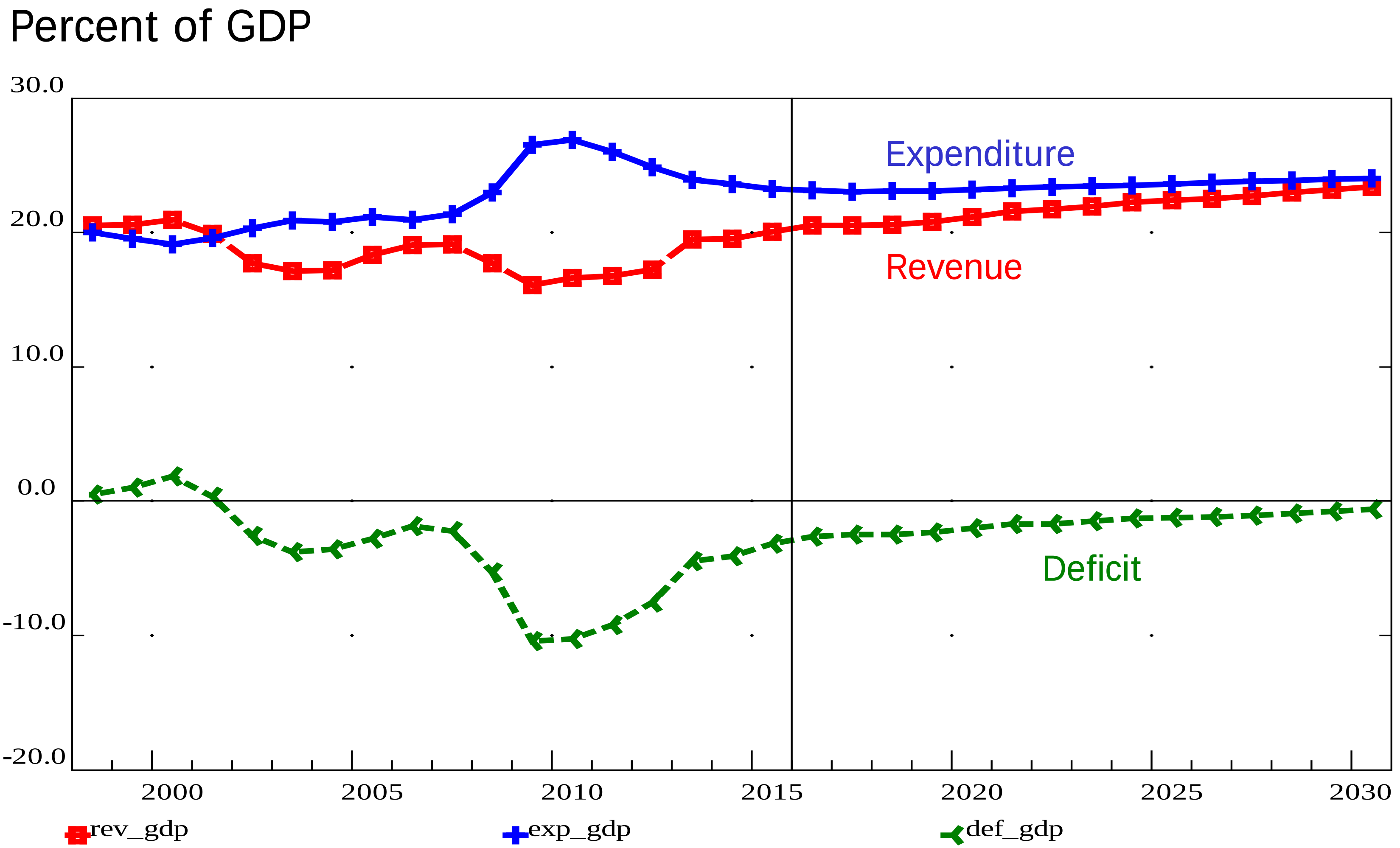
Federal Debt + Trust Funds + Unfunded Obligations



Perspective: This is 6-7% of Cumulated Notional PV of GDP, 2013-2089

Source: U.S. Treasury Department and Inforum Calculations

Federal expenditures, revenues and deficit
(CBO/CMS on expenditures, tax rate increase)

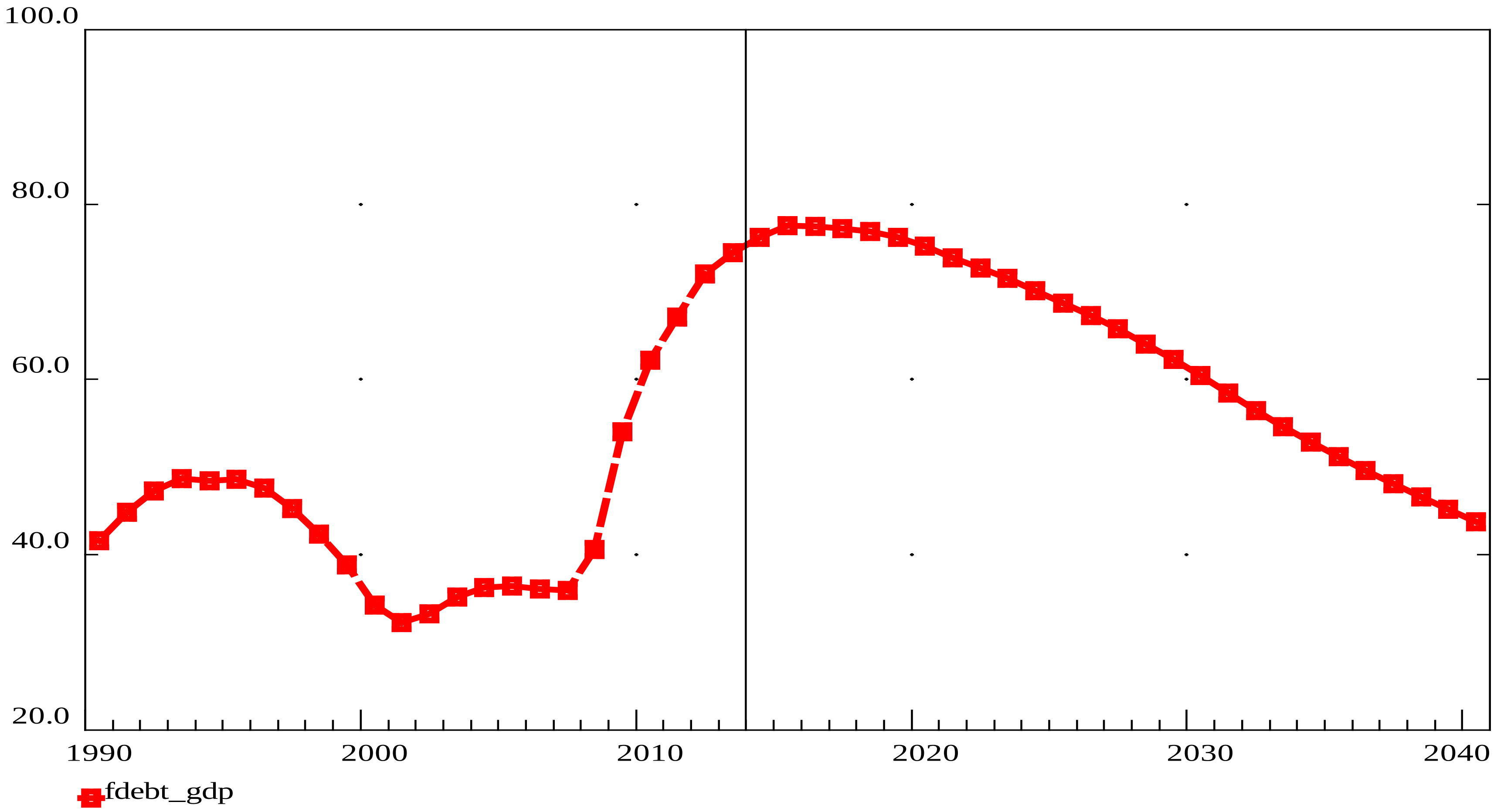


Tax Reform: How can we tax labor and capital less and consumption more?

- Reduce/Eliminate tax expenditures, especially:
  1. Convert health care premium income exclusion to tax credit (voucher). (~0.85% of GDP 2016-26)
  2. Phase out mortgage interest deduction (~0.54% GDP).
- Use proceeds to lower and flatten rates.
- Lower Corporate tax rates (phase out eventually)
- Unify rates across earned, dividends, capital.
- Best time ever for Higher energy taxes/Carbon tax!
- National Sales (RD) or Value Added Tax.

Federal Debt as percent of GDP

(Debt held by the Public)



Does Income Inequality Discourage Growth ?

- Stiglitz, Deaton, Solow, Saez, Podesta, Kearney
- It appears that both Inequality and Immobility are rising.
- Potential Mechanisms:
  - Lower consumer spending
  - Leads to credit bubbles and crisis
  - Underinvestment in education and health
  - Government capture: Rent-seeking behavior
  - Reduce risk-taking and entrepreneurs

Further reading: Journal of Economic Perspectives—Vol 27, No. 3—Summer 2013

Inforum Economic Outlook

Thank you!