

Texas Loses Bragging Rights as the Economy Slows

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What is changing for Texas?

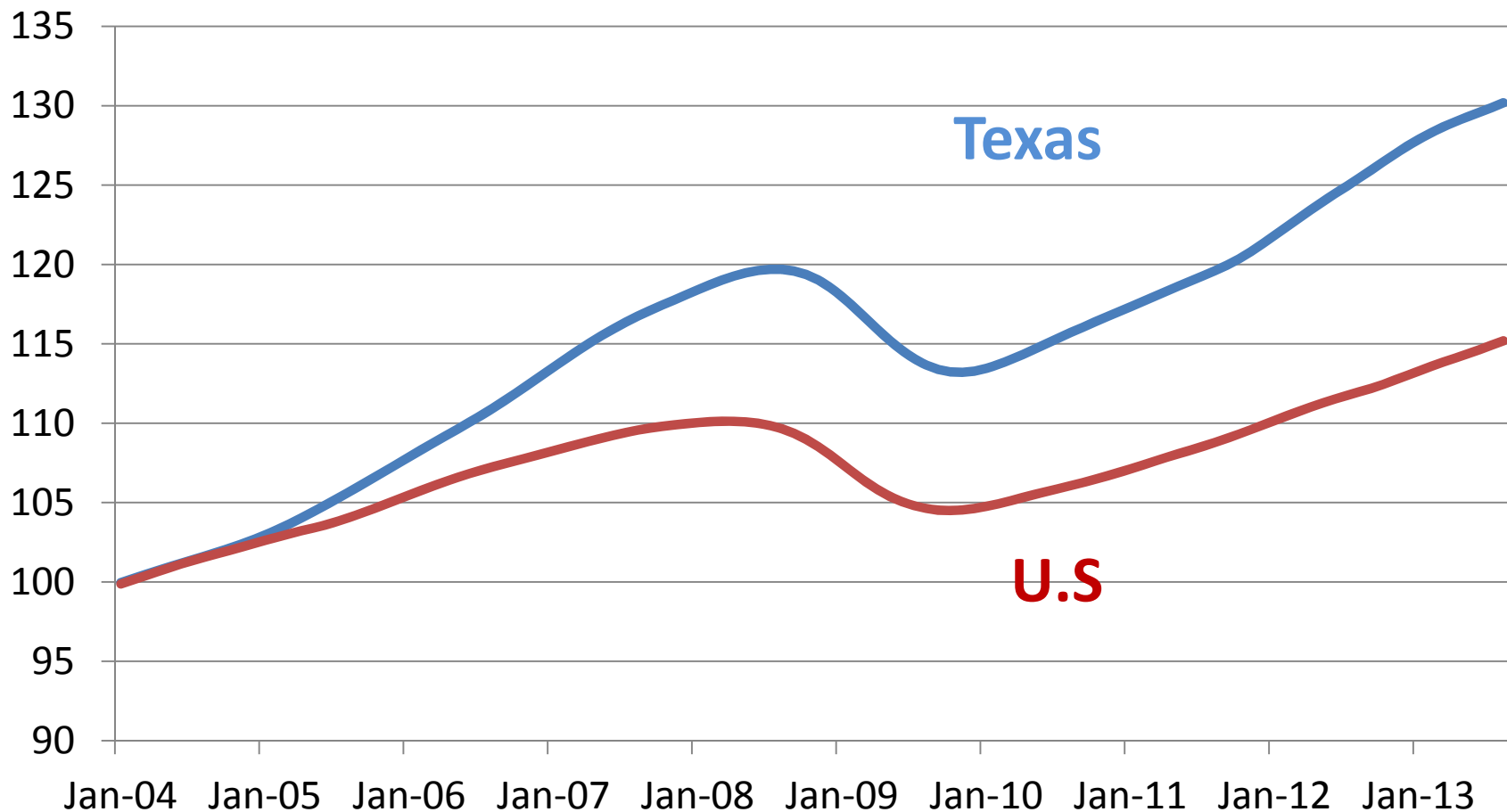
- Upstream drilling has plateaued with the collapse in natural gas prices
- There is still a nice cushion from energy
 - Oil-directed drilling is still strong in North America and around the world
 - Downstream construction will boom on the Gulf Coast as tens of billions are spent on pipelines, refining, chemicals, and natural gas processing

What is changing for Texas?

- The global outlook for 2013 continues to be revised down
 - The slowdown is lead by emerging markets
 - Texas has relied on emerging markets for exports and to maintain high oil prices
 - Forecasts are for healthy growth of emerging markets in coming years, but the out-sized boom of the last decade may be over
- The U.S. puts the aftermath of the financial crisis behind it
 - U.S returns to 3 percent growth rates in 2014 and beyond
 - The Federal Reserve ends its extraordinary monetary measures. The era of super-cheap money ends

The Texas growth slowed
over the summer

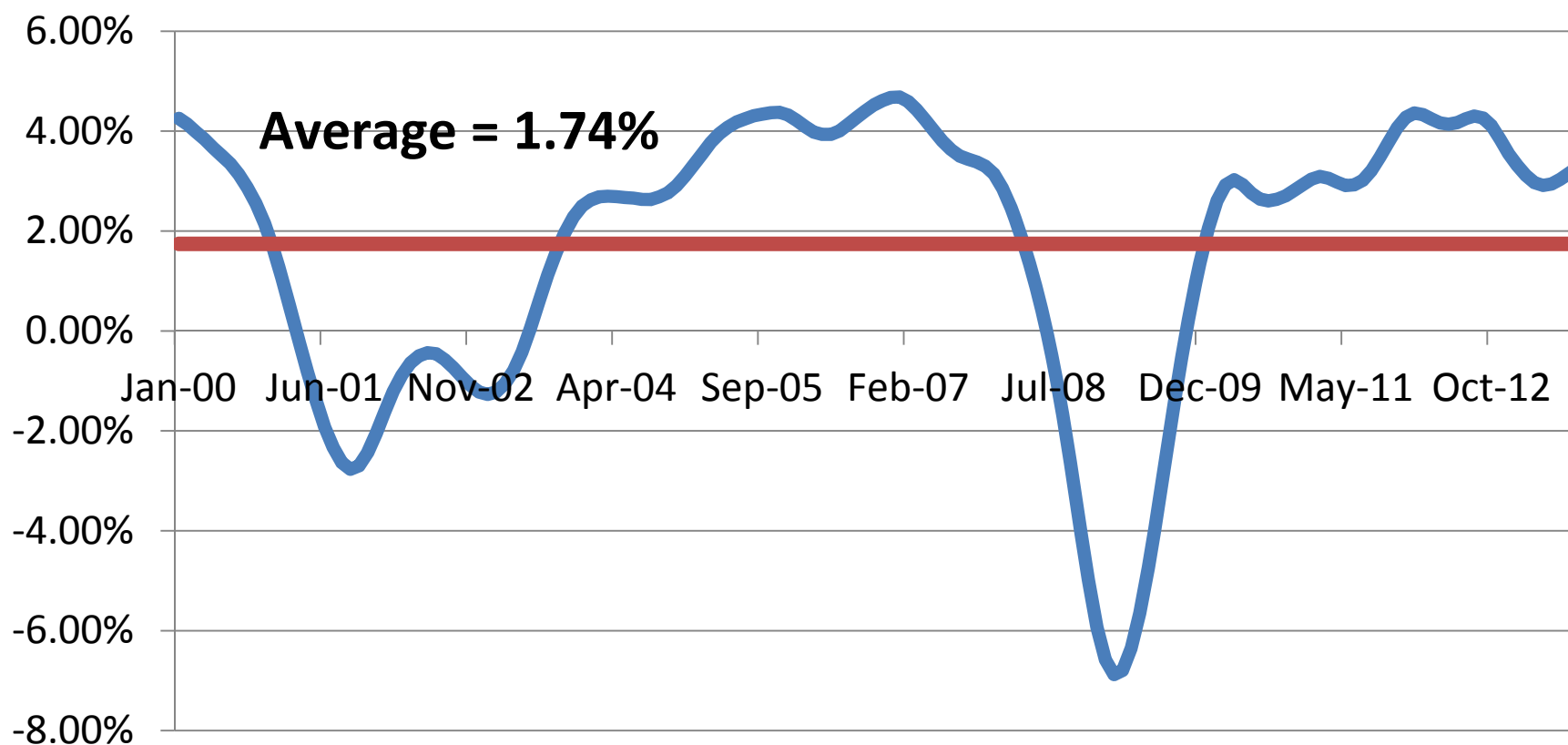
Since the financial crisis the Texas economy has pulled away from the U.S.



Federal Reserve Bank of Philadelphia

The expansion has slowed in recent months but remains strong

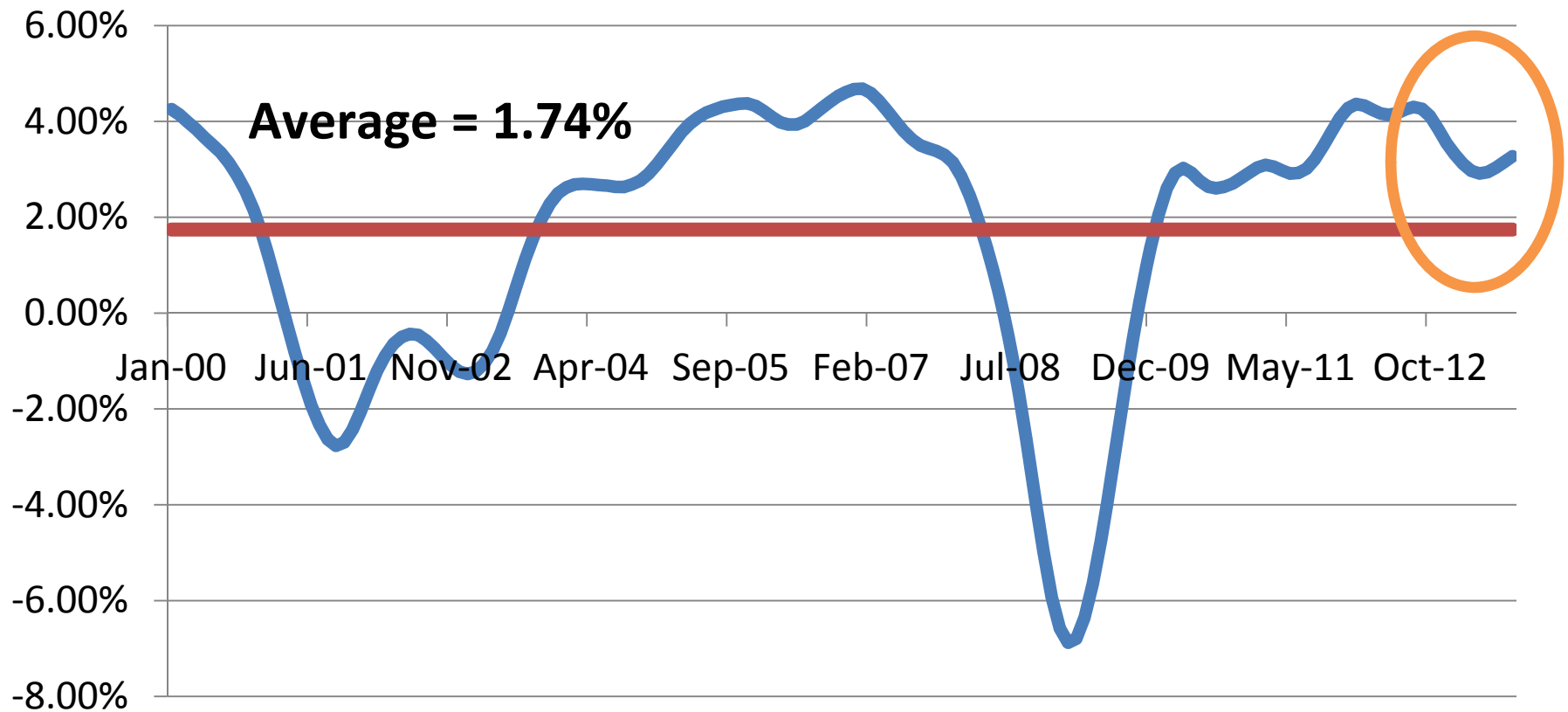
(Business cycle index, % annual rate, 3-mo avg)



Federal Reserve Bank of Dallas, Texas business cycle index

The expansion has slowed in recent months but remains strong

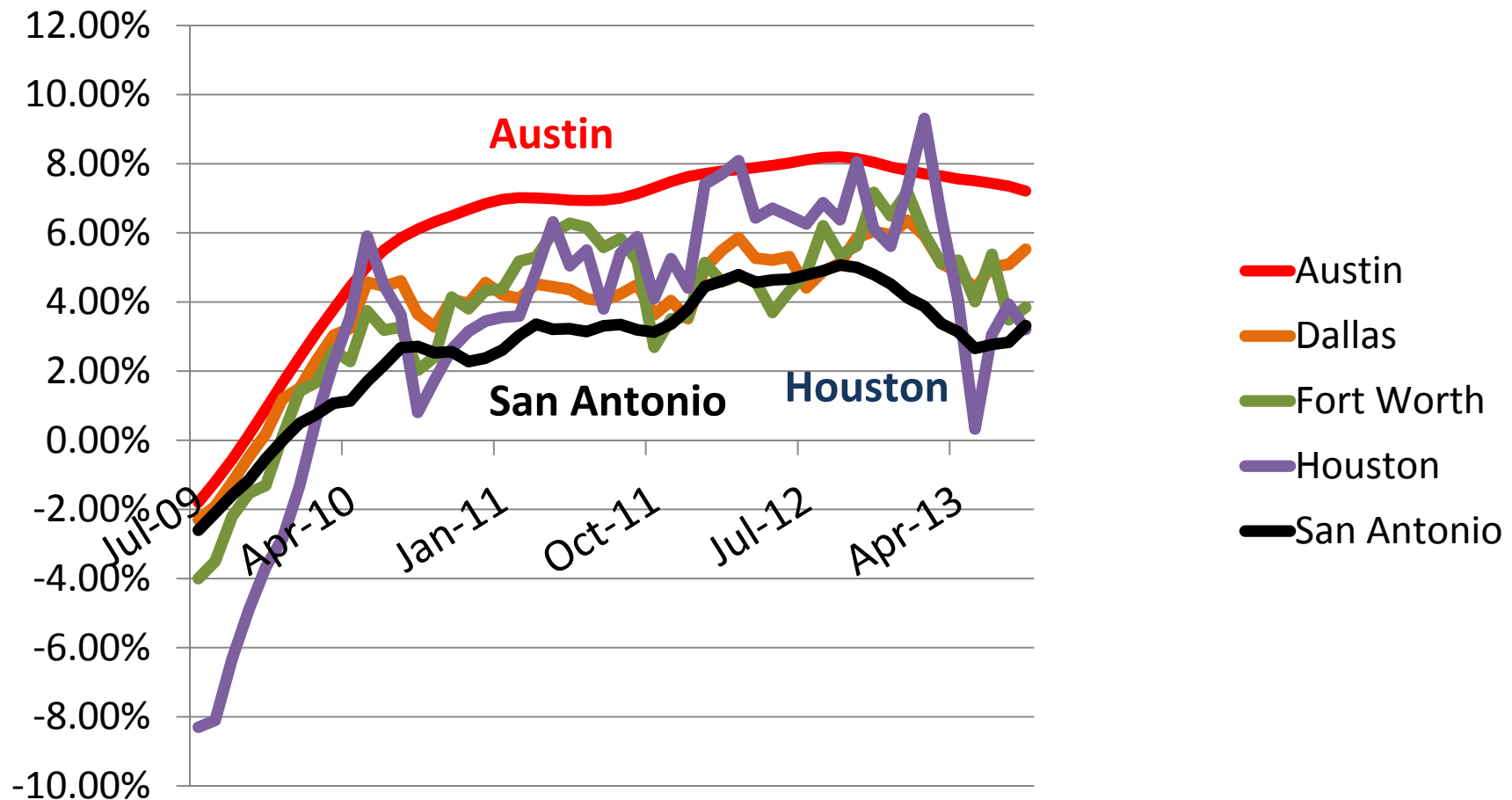
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Federal Reserve Bank of Dallas, Texas business cycle index

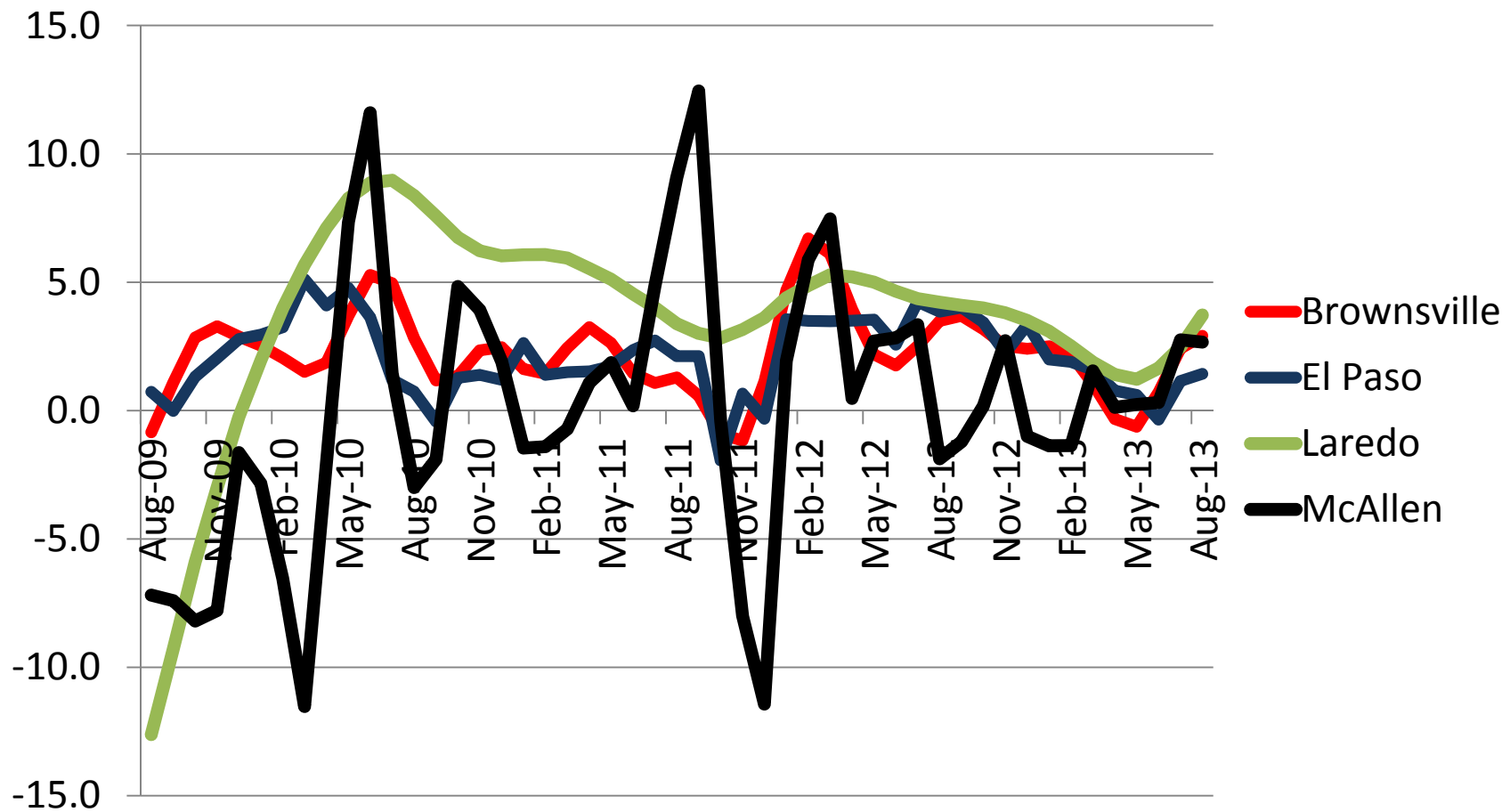
Slowdown is across all major metros, but lead by Houston

(Business cycle index, % annual rate, 3-mo avg)

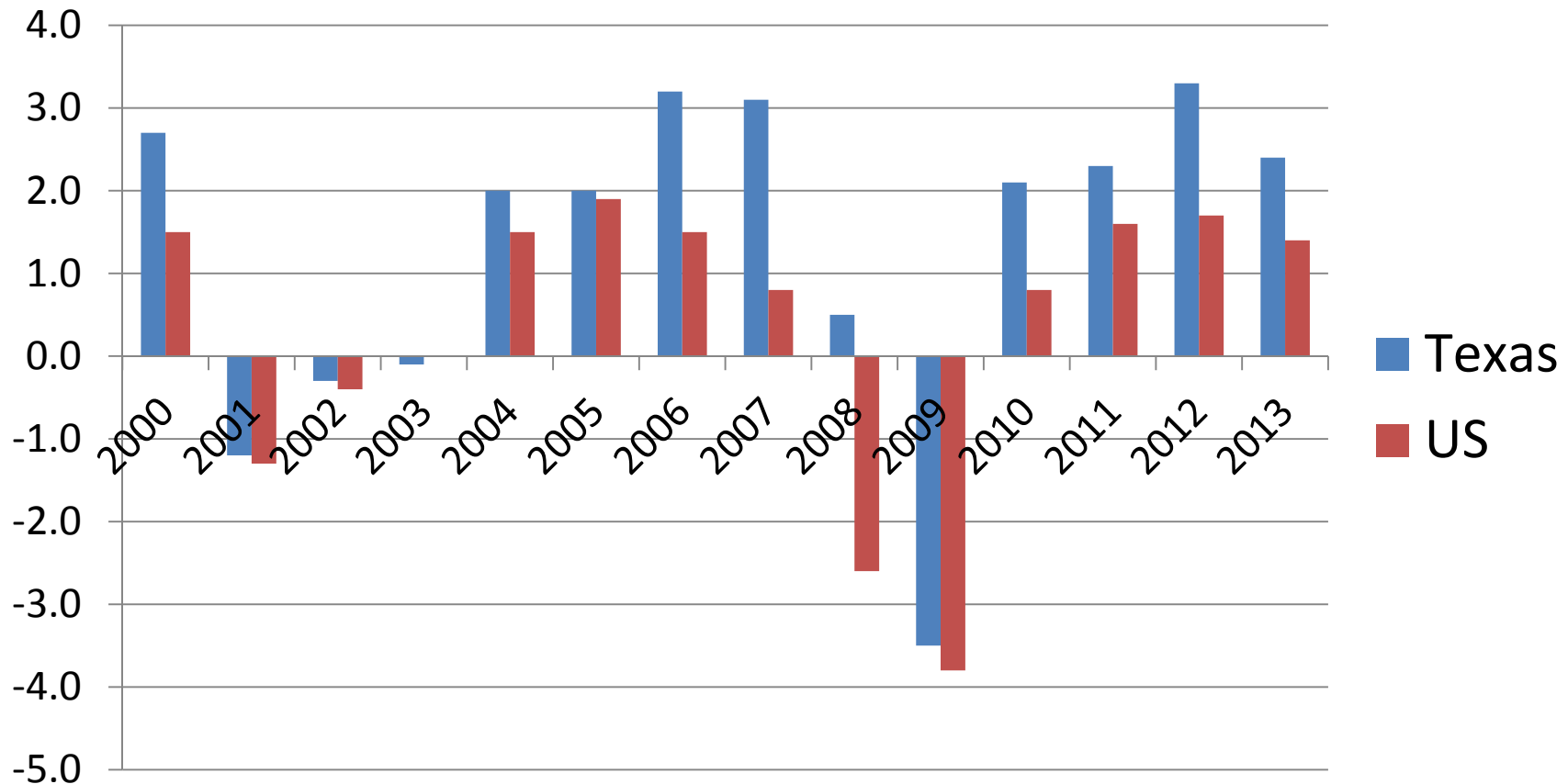


Texas Border Cities have slowed as well

(Business cycle index, % annual rate, 3-mo avg)

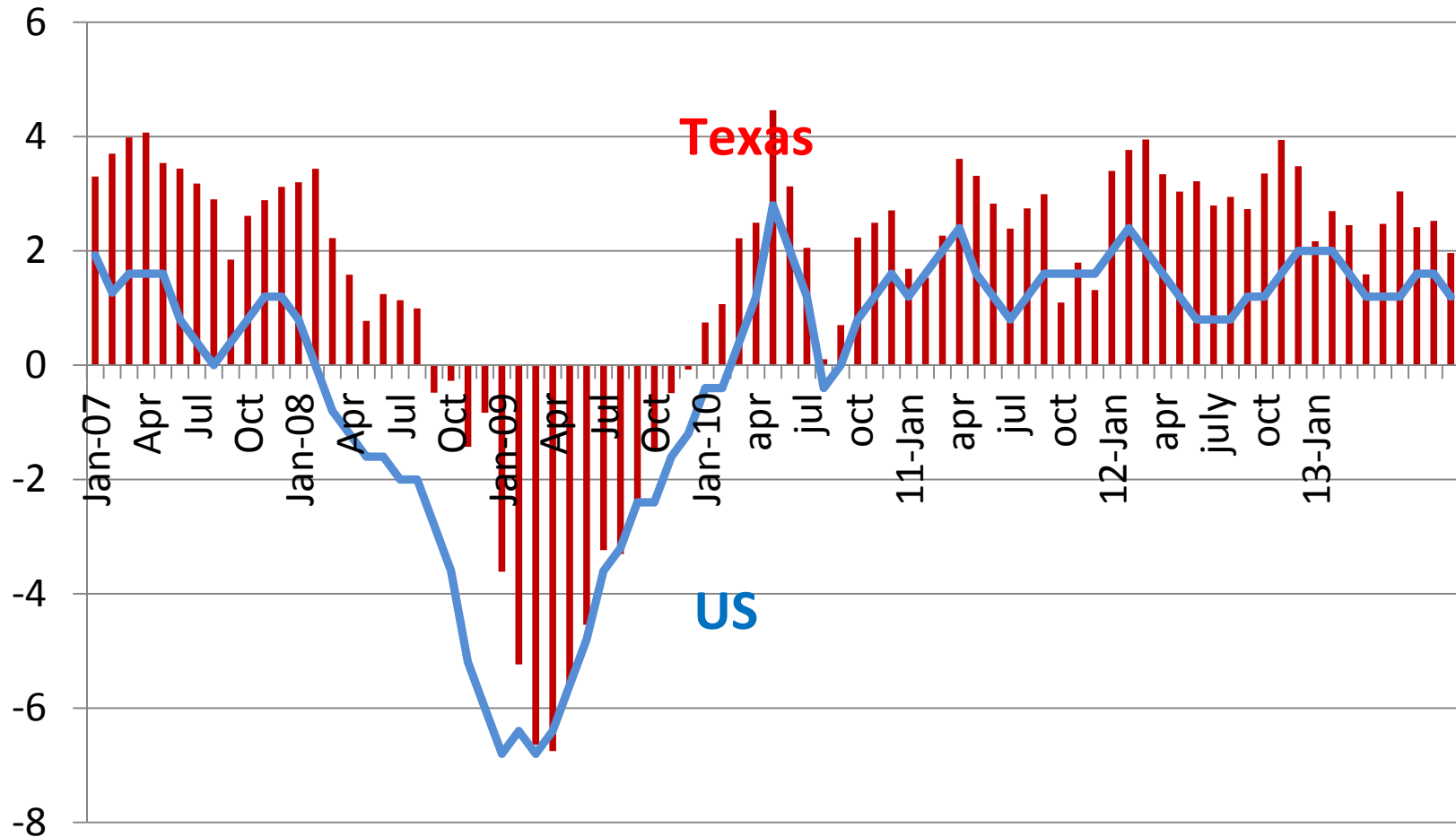


Texas job growth outperformed the US for the last decade (Dec/Dec % change in payrolls)



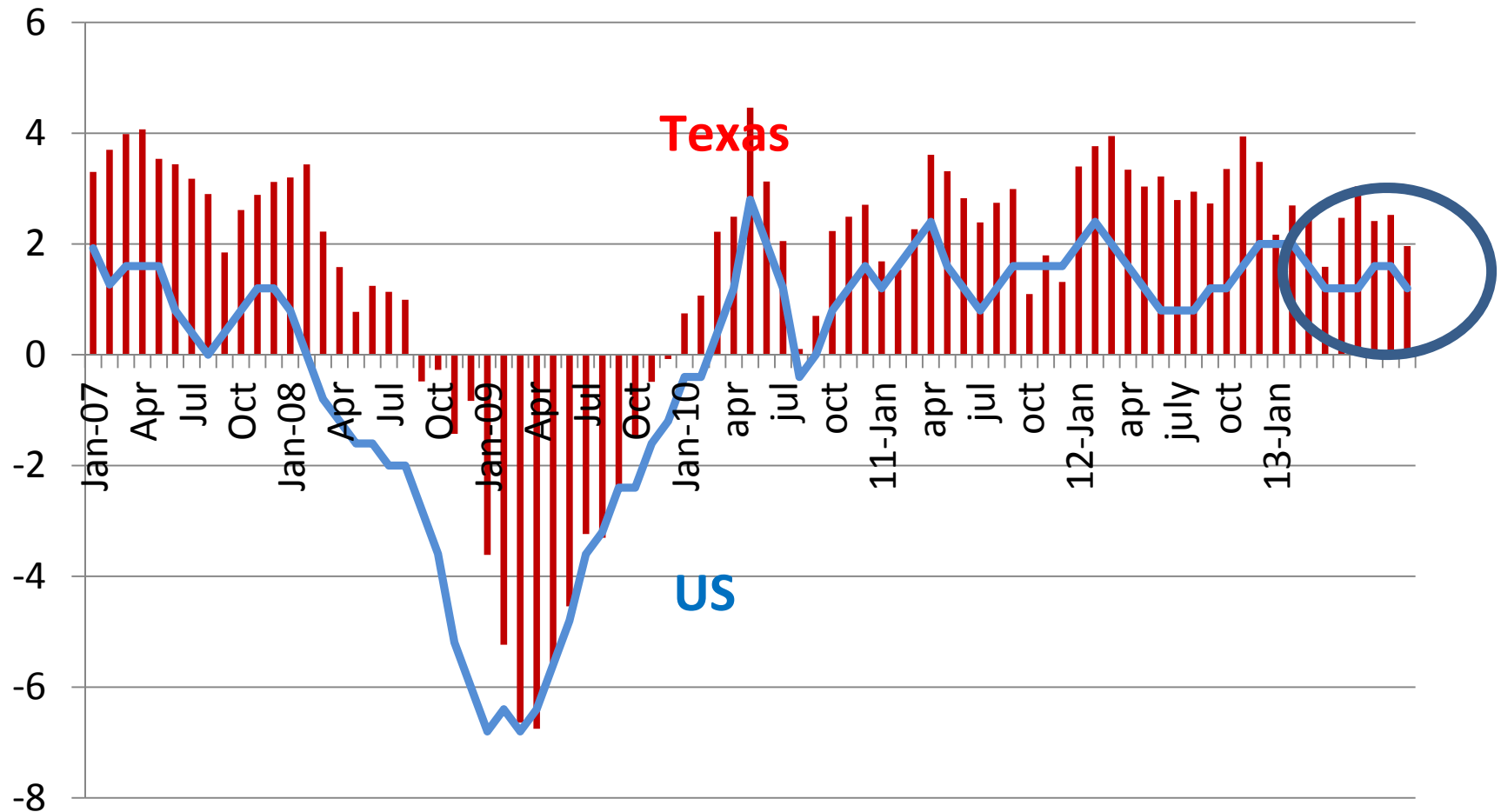
Bureau of Labor Statistics, Dec /Dec except latest year which is year-to-date

Texas employment shows strength in recovery (3-month percent change at annual rates)



Bureau of Labor Statistics

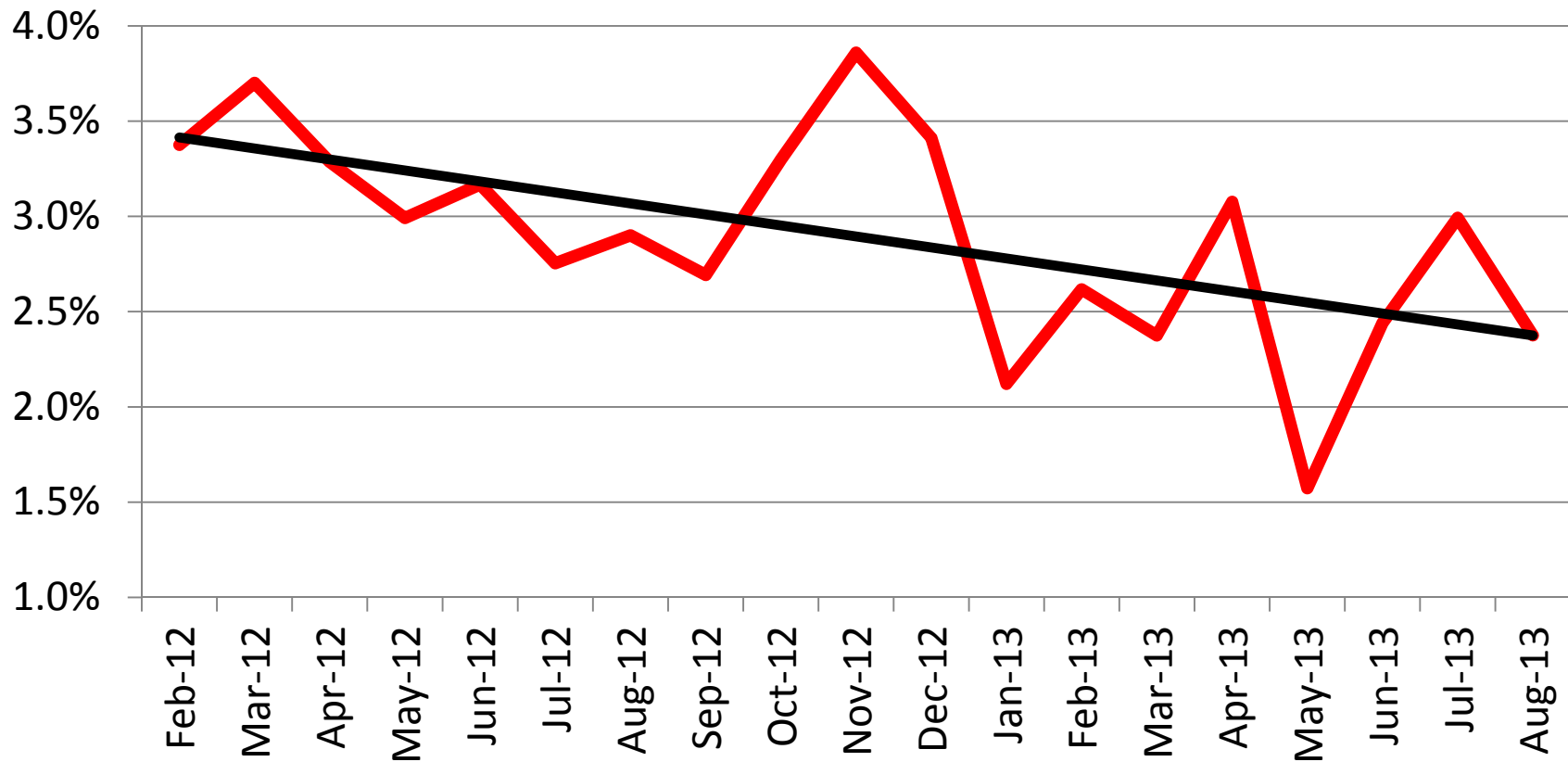
But most recent data shows moderation
(3-month percent change at annual rates)



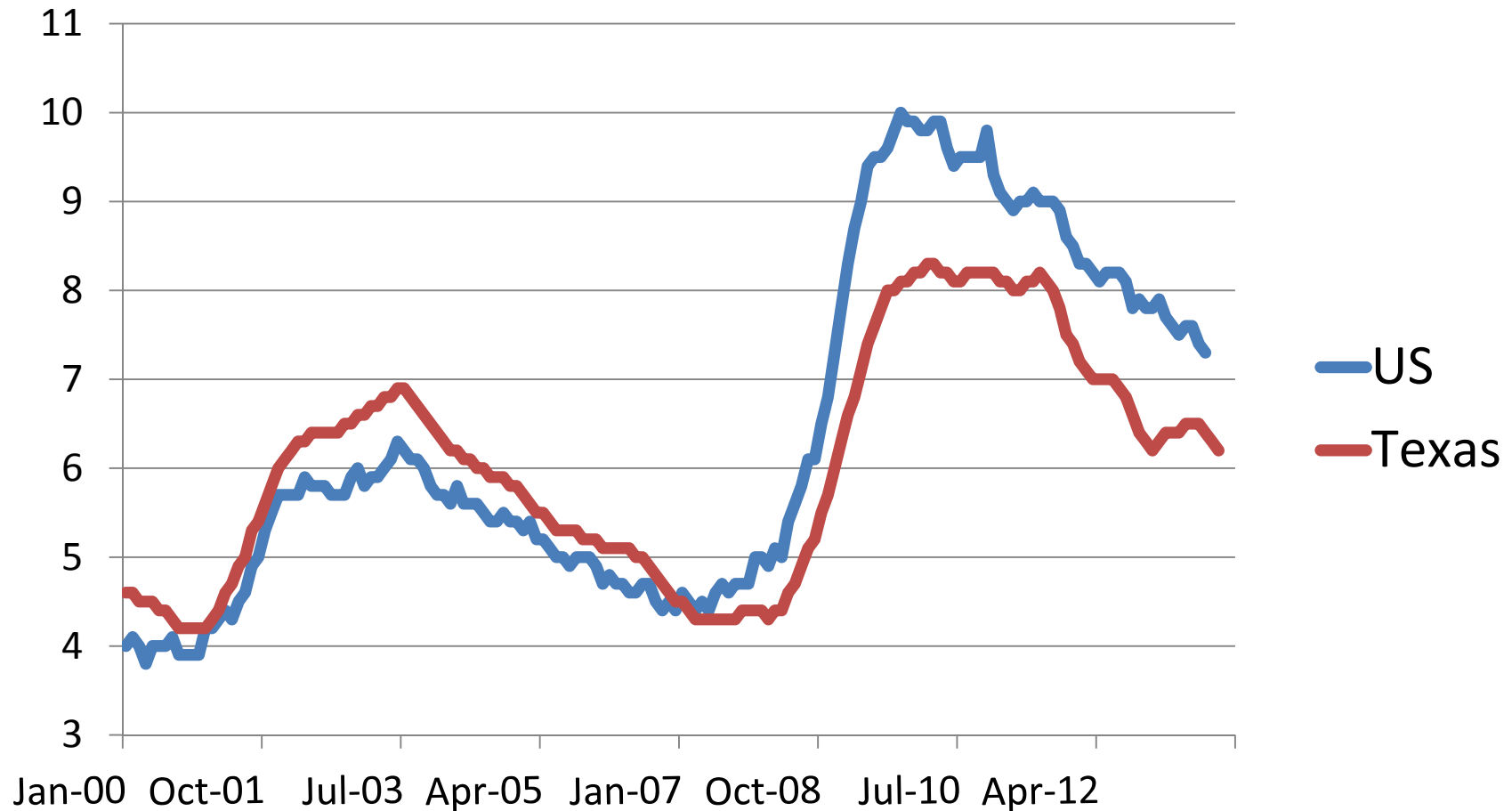
Bureau of Labor Statistics

Once again, job growth to a return to a normal Texas expansion

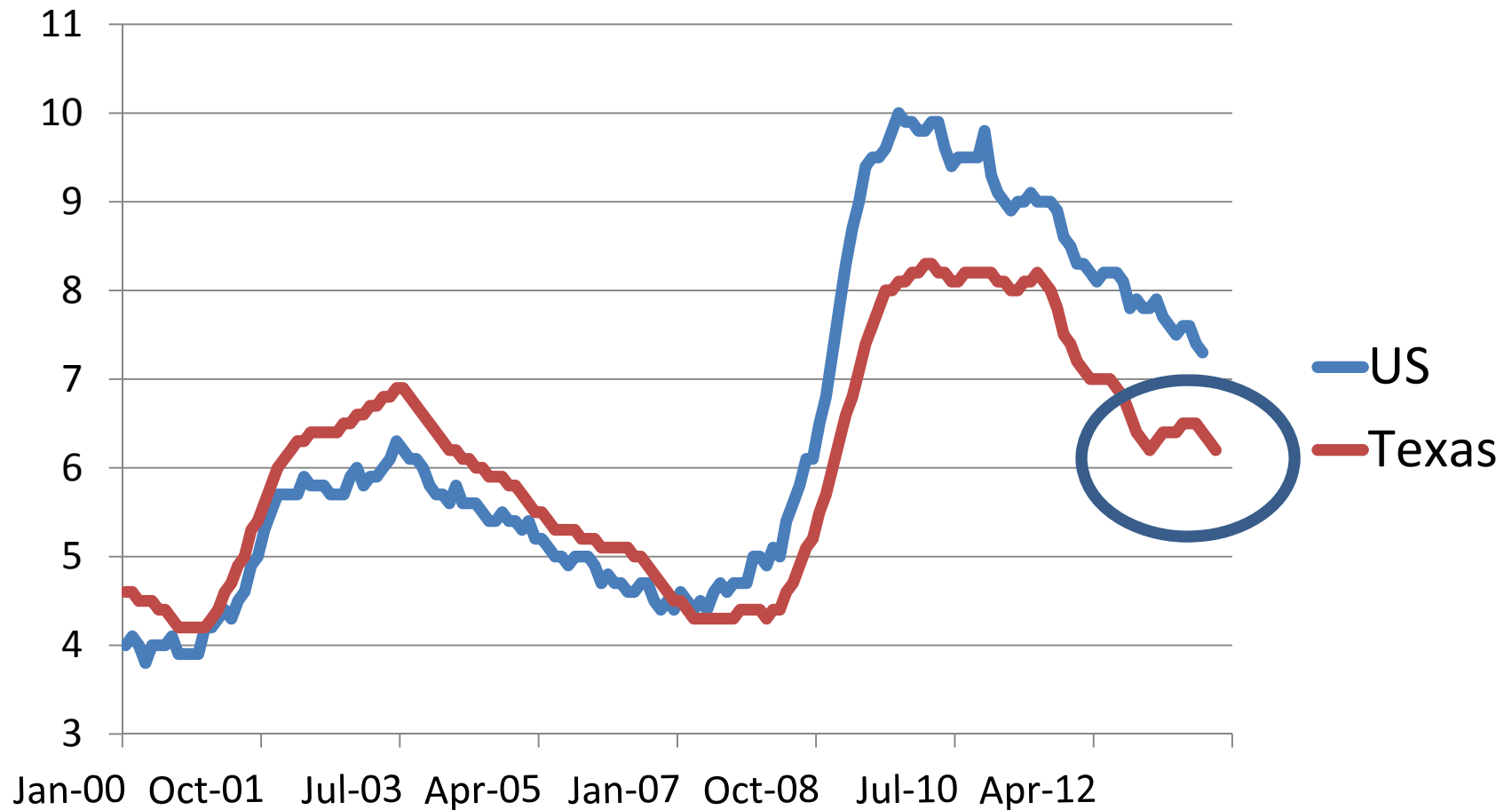
(Annualized growth in payroll employment, 3-mo avg)



Texas unemployment rose later, recovered faster than US



But progress in bringing the rate down
has stalled in recent months

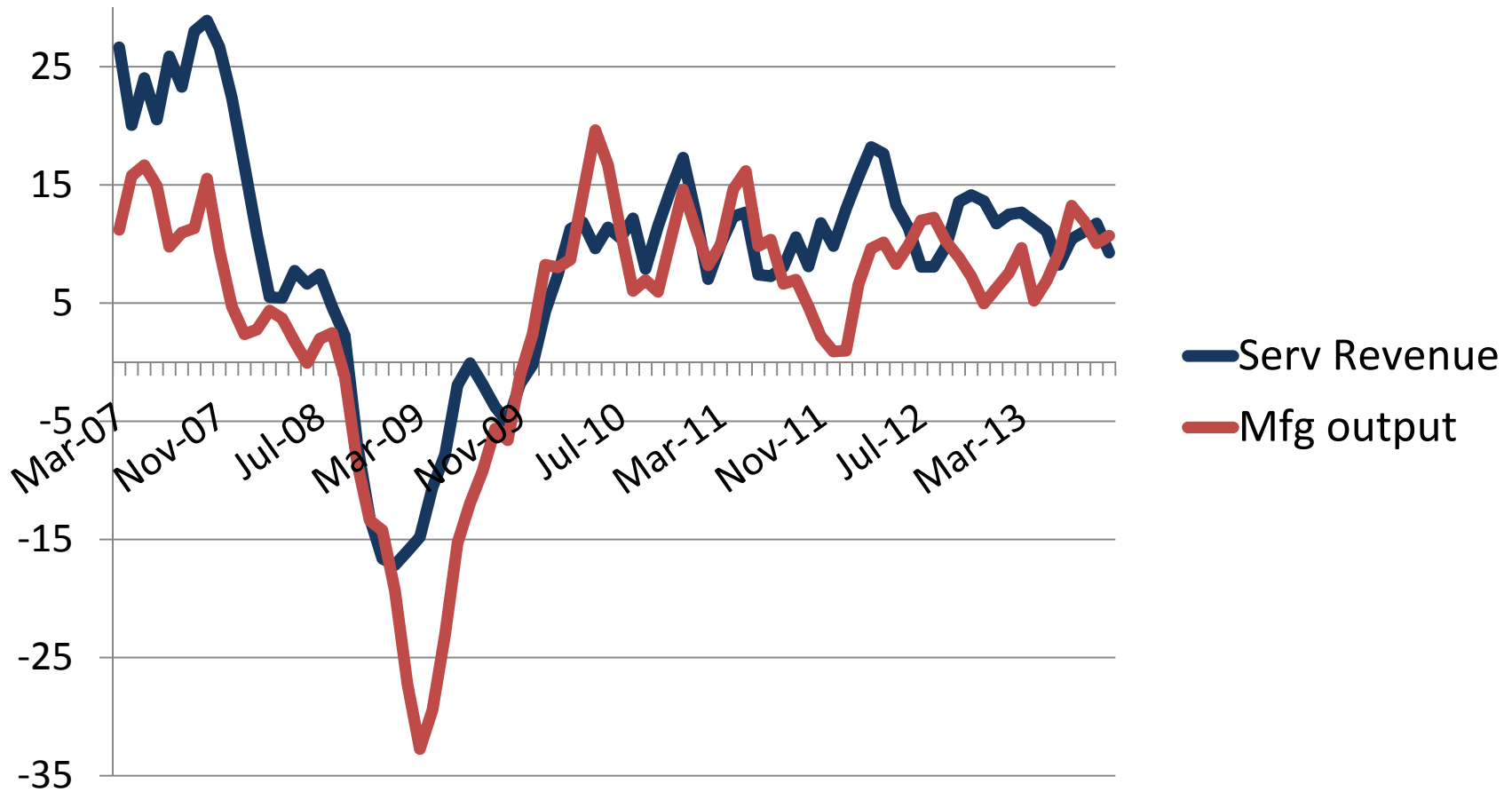


Change can be good!



Services and manufacturing settle into moderate expansion

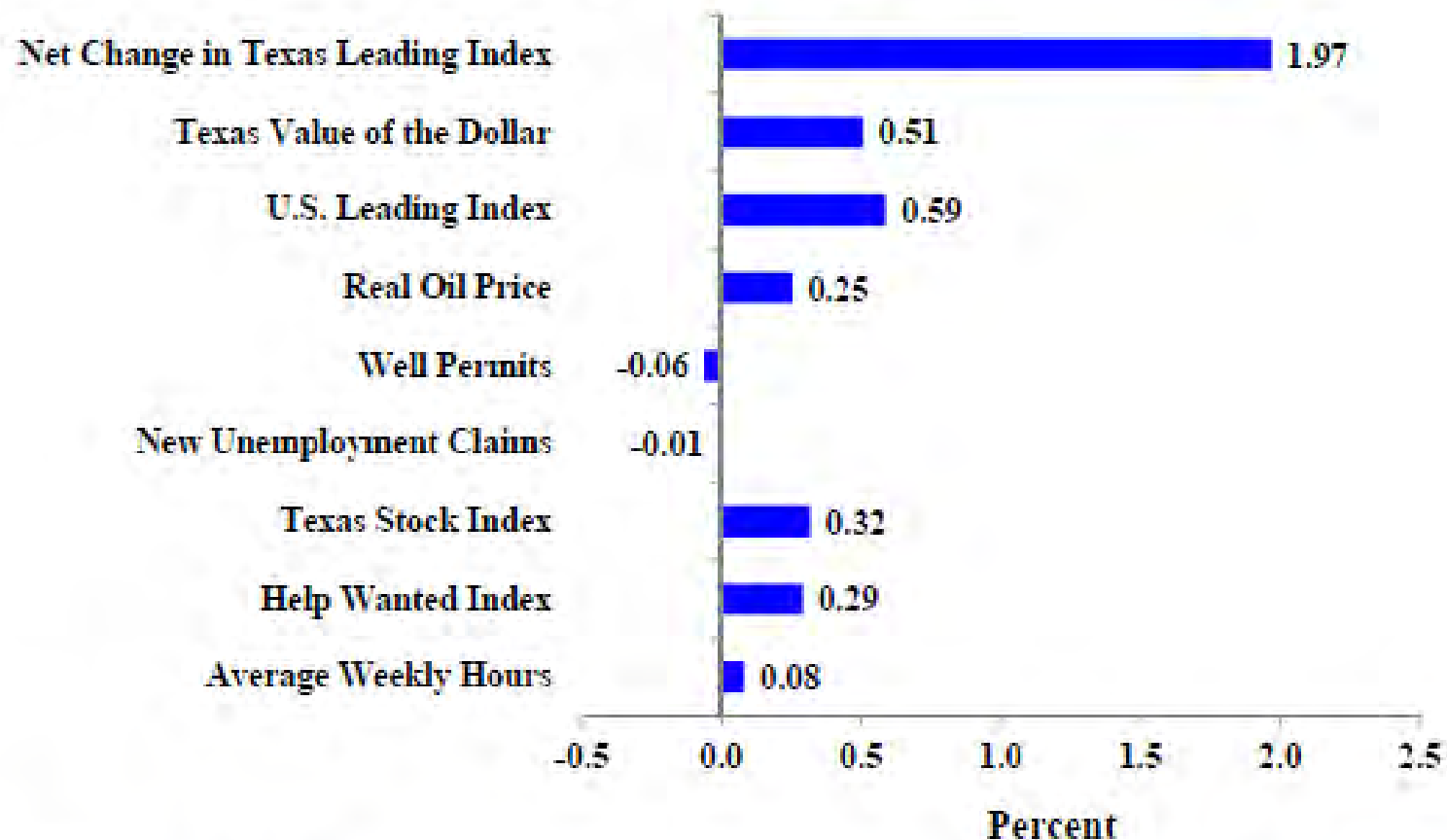
(Dallas Fed index, 3-mo avg)



Federal Reserve Bank of Dallas

FRB Dallas leading index points to moderate growth ahead

3-month change: July to September

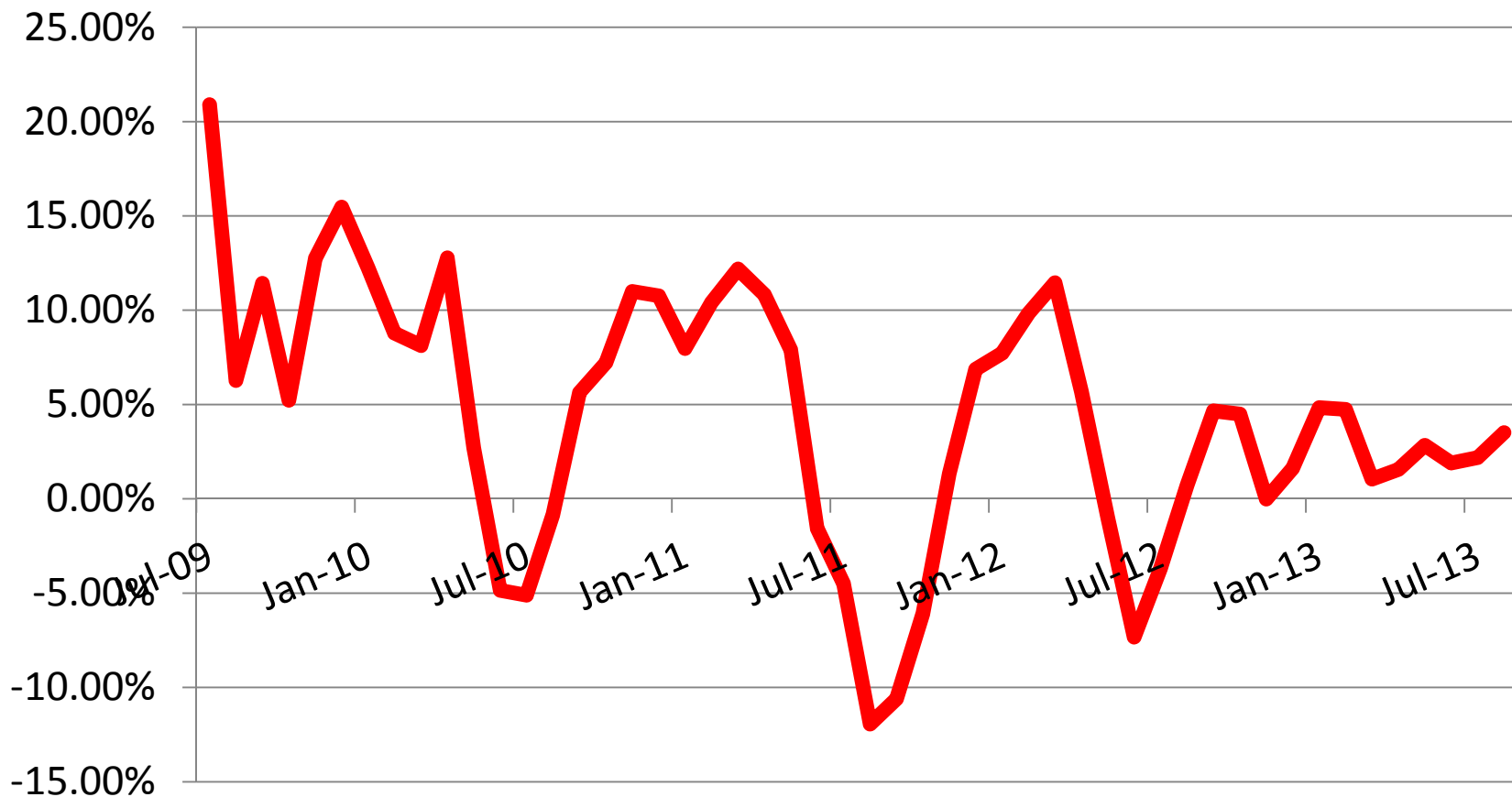


Source: FRB Dallas

<http://www.dallasfed.org>

Texas leading index points to moderate growth ahead

3-month percent change at annual rate



Federal Reserve Bank of Dallas

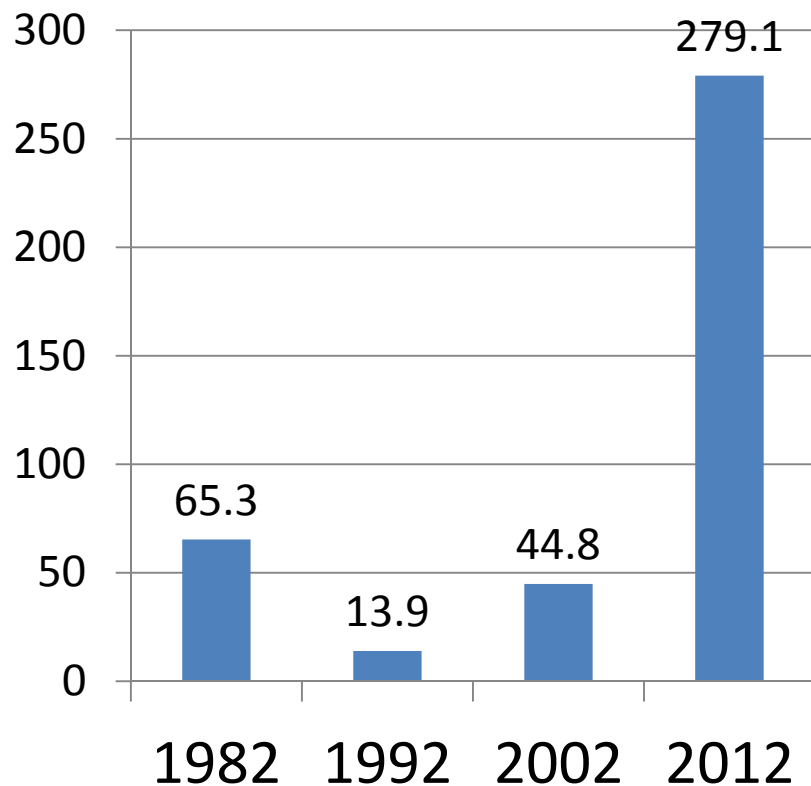
Finding the big picture on the Texas economy

- The US economy has provided modest stimulus in recent years
- Global growth, especially developing countries, drove trade and higher energy prices
- Expensive oil is driving activity upstream, cheap natural gas stimulates construction downstream

The drilling cycle has been key to
separating Texas from the U.S.
economic performance

We are experiencing the greatest drilling boom in U.S. history

Constant \$ billion E&P spending

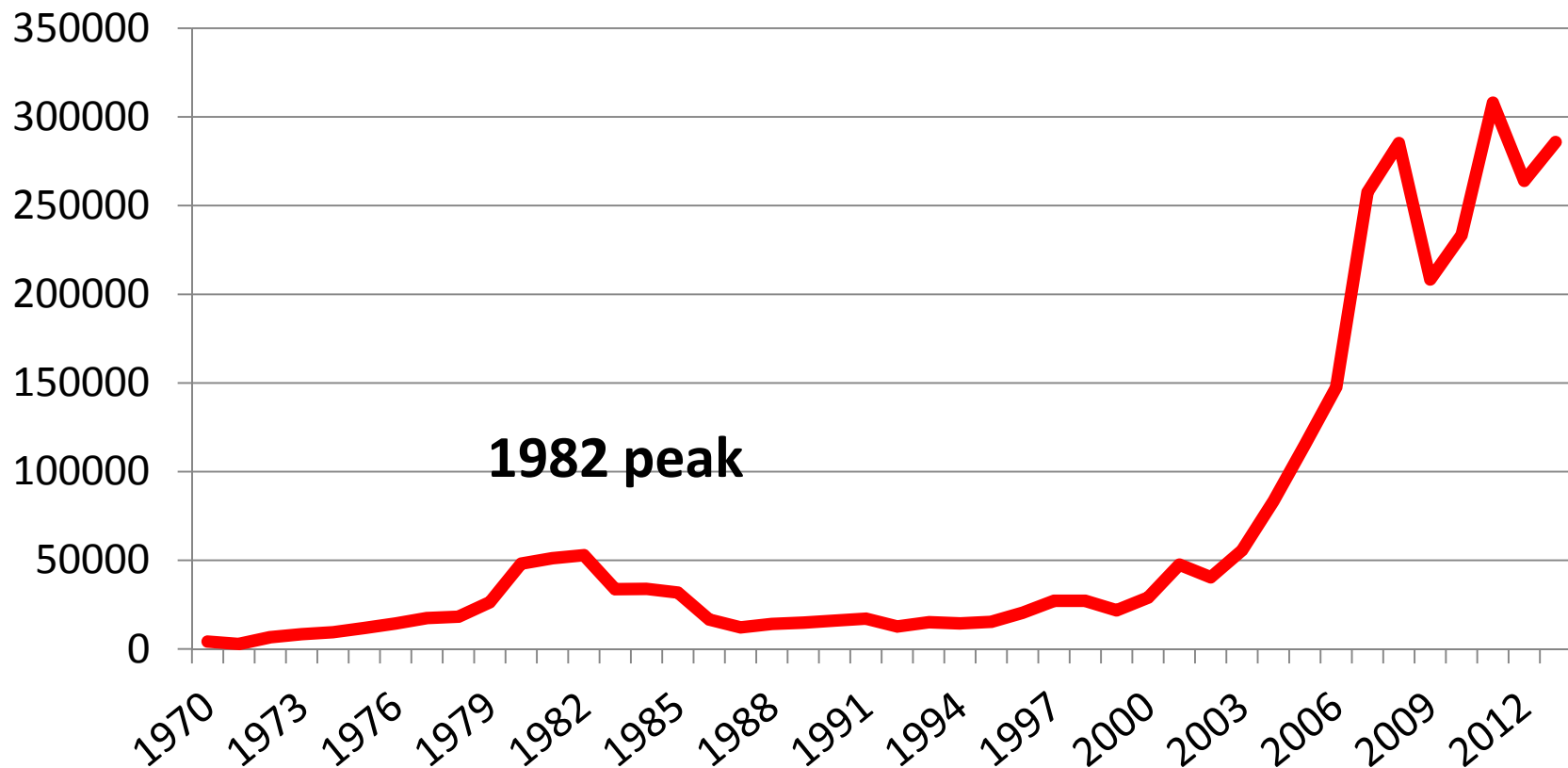


- Horizontal drilling and fracturing lead the increased spending
- Inflation-adjusted expenditures have increased 6x in a decade
- They are currently four times the infamous 1982 peak

Oil and Gas Journal, annual capital expenditure issues

The biggest drilling boom has peaked for now.

Million \$ constant E&P capital expenditures

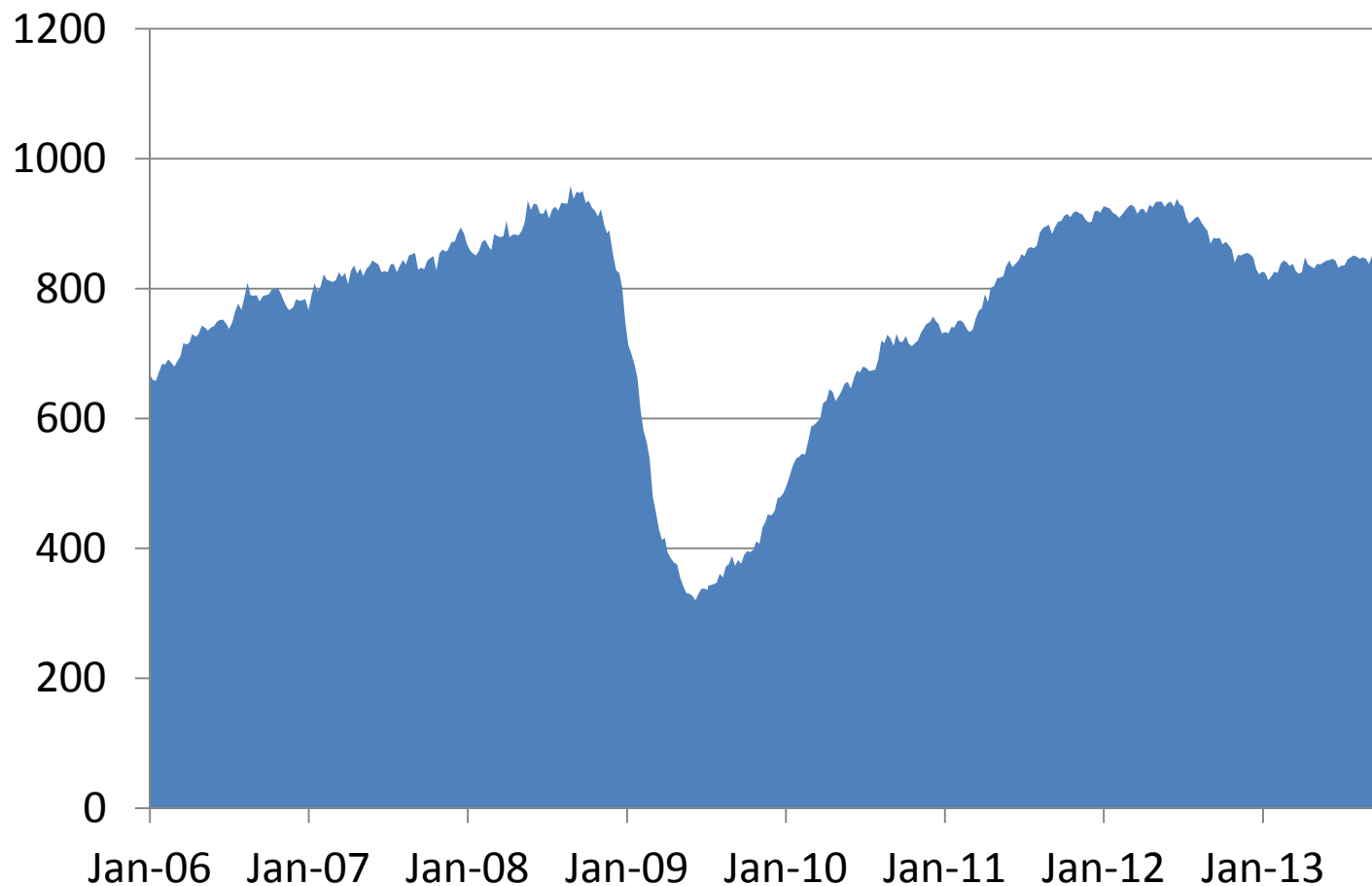


Oil and Gas Journal, annual capital expenditure issues

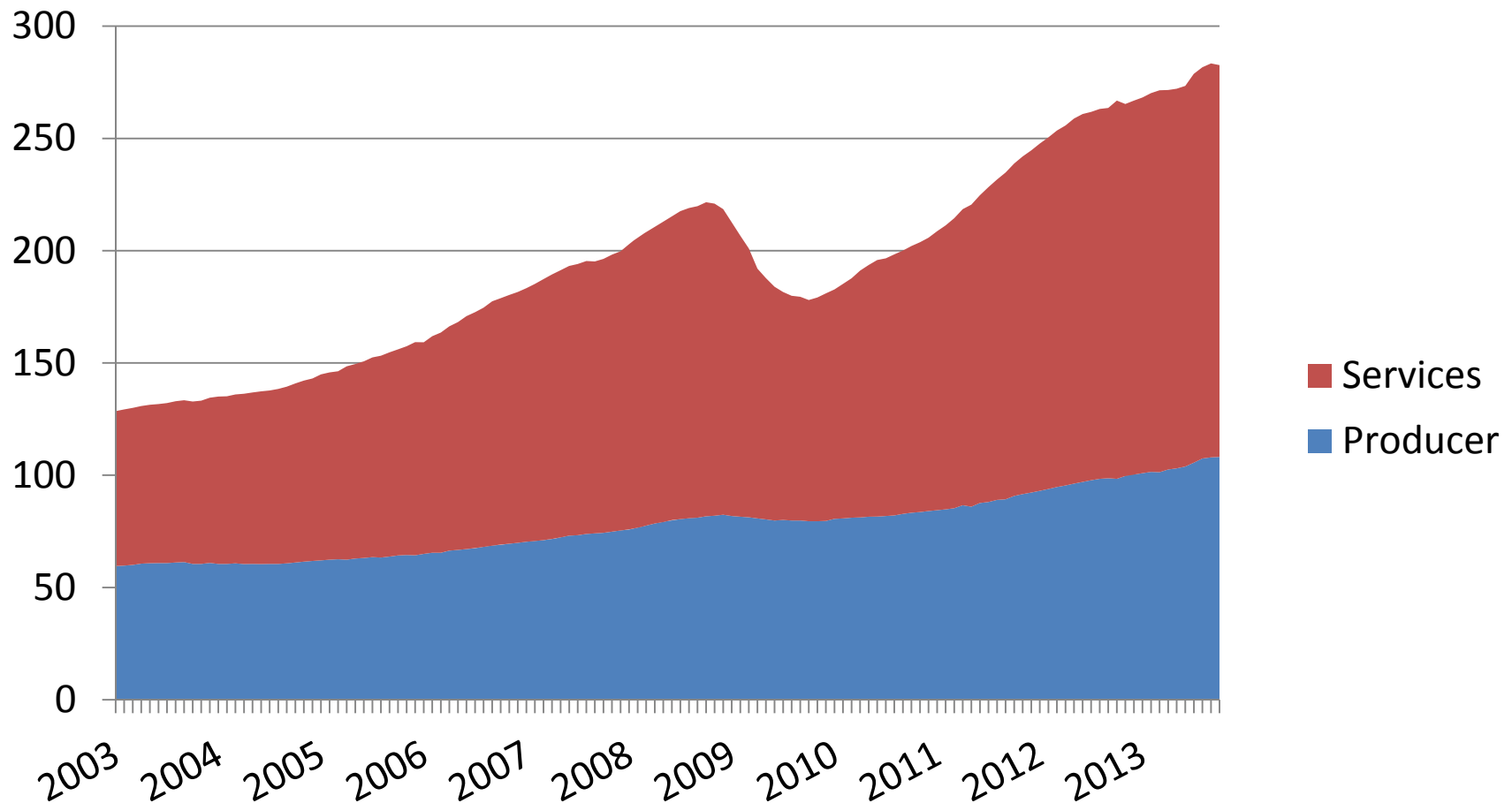
Why oil and gas is important to Texas

- Texas is rich in resources
 - 24.3% of US oil reserves, 33.3 % of oil production
 - 29.2% of US natural gas reserves, 28.5% of marketed gas production
 - 47.7 percent of US working rigs operating in Texas in June 2013
 - Shale activity in the Eagle Ford and Permian will improve these statistics
- Texas has Houston
 - No reserves, not much drilling
 - Headquarters for American oil
 - Home to 22 percent of American oil employment

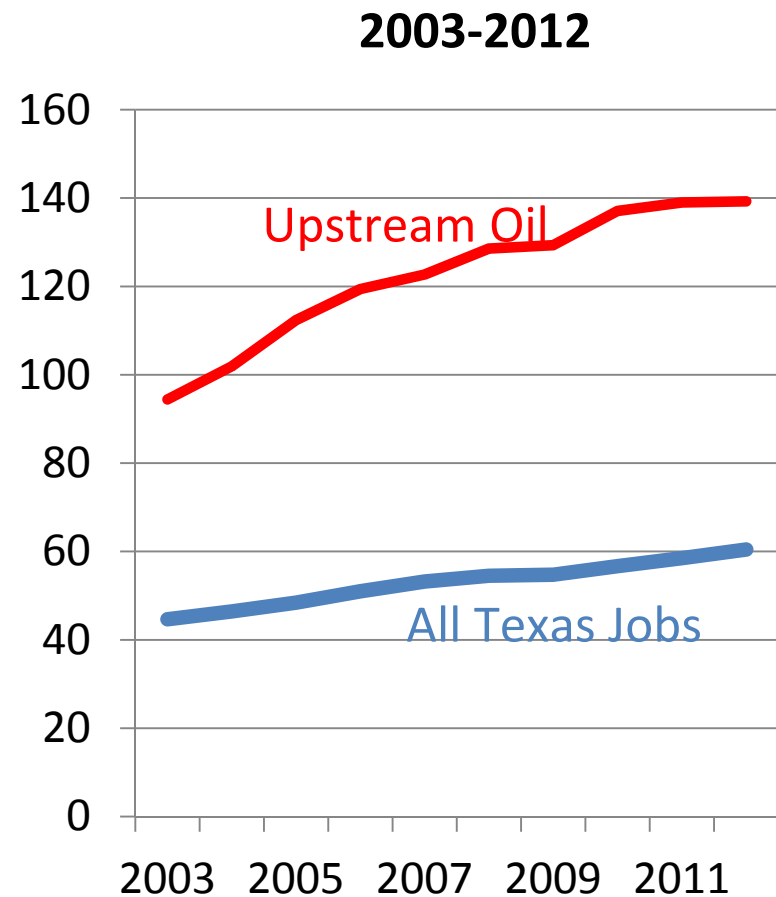
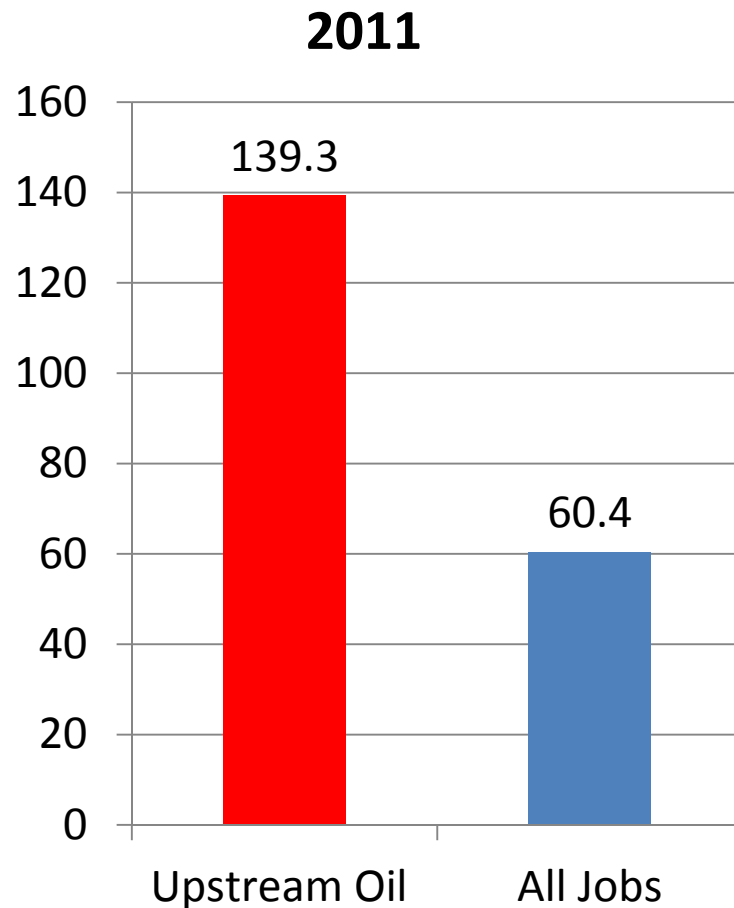
Texas drilling is down in 2013: Down 11.1 percent since June 2012



Texas upstream jobs have more than doubled in a decade

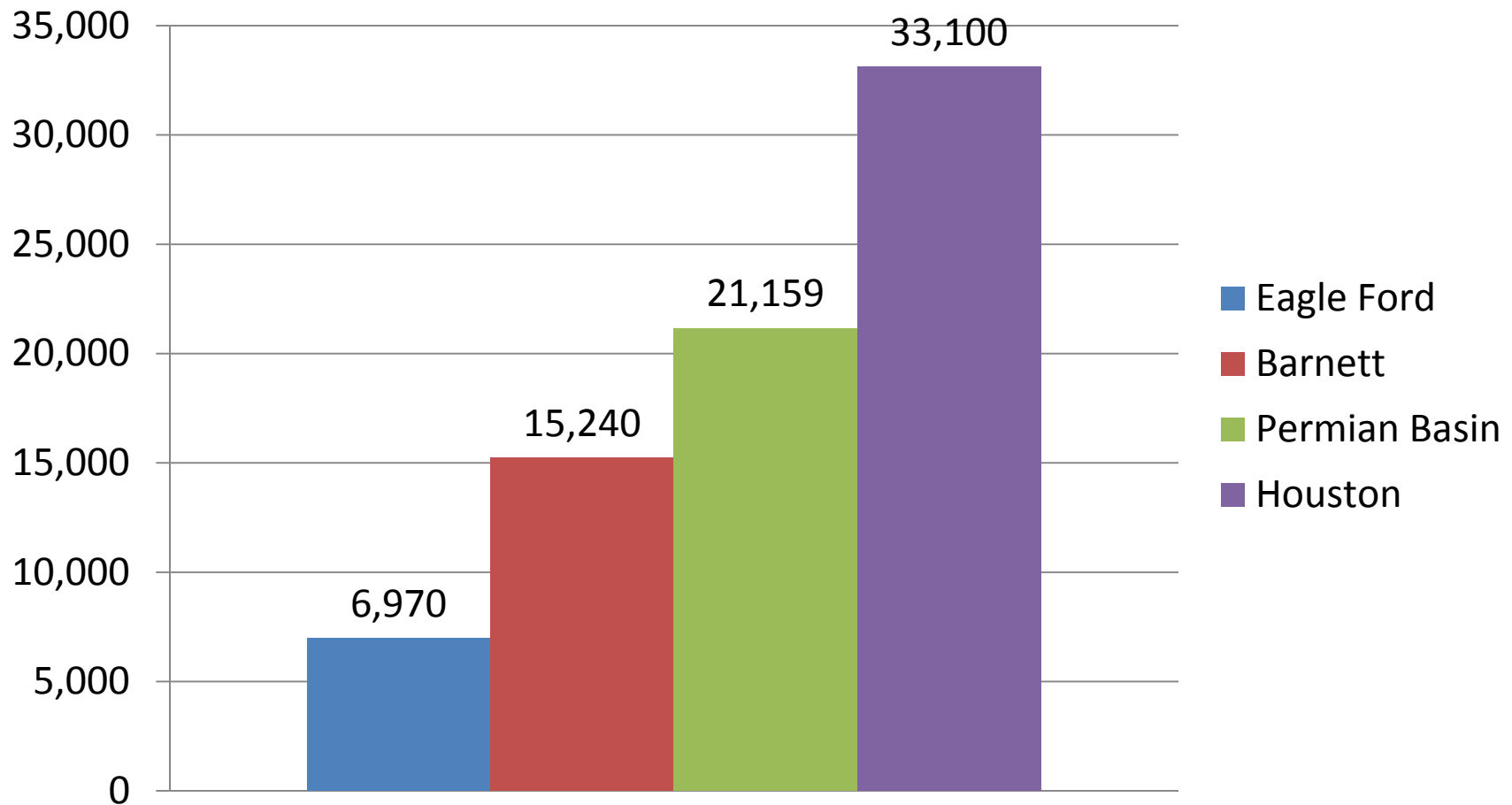


Annual earnings in upstream oil double the typical Texas job in 2012 (\$000/worker)



Bureau of Economic Analysis

Houston has largest gains in upstream oil employment in Texas, 2006-2012



BLS payroll employment and FRB-Dallas calculations

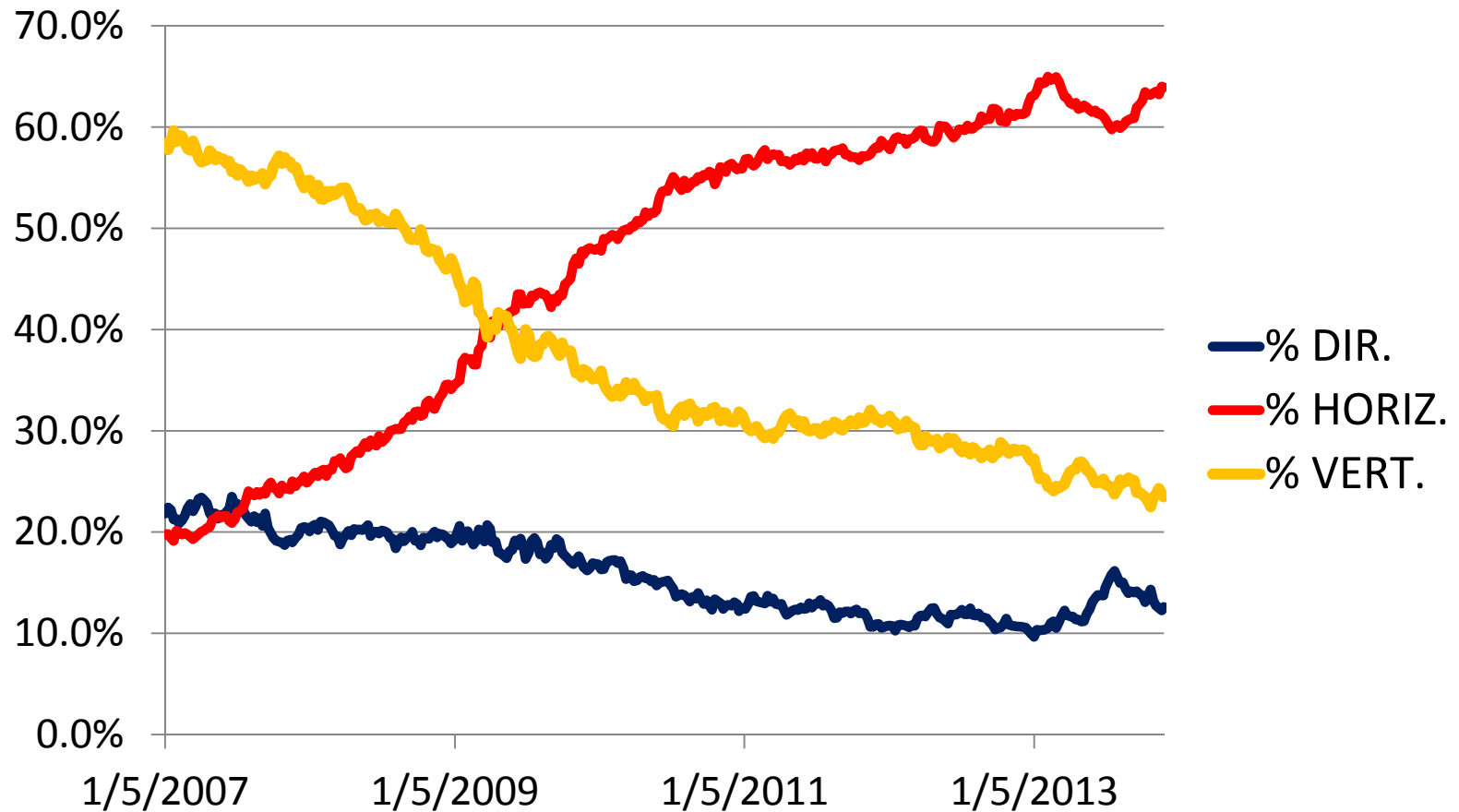
Drilling activity slowed with collapse of
natural gas prices in late 2011

North American shale plays (as of May 2011)



Source: U.S. Energy Information Administration based on data from various published studies. Canada and Mexico plays from ARI.
 Updated: May 9, 2011

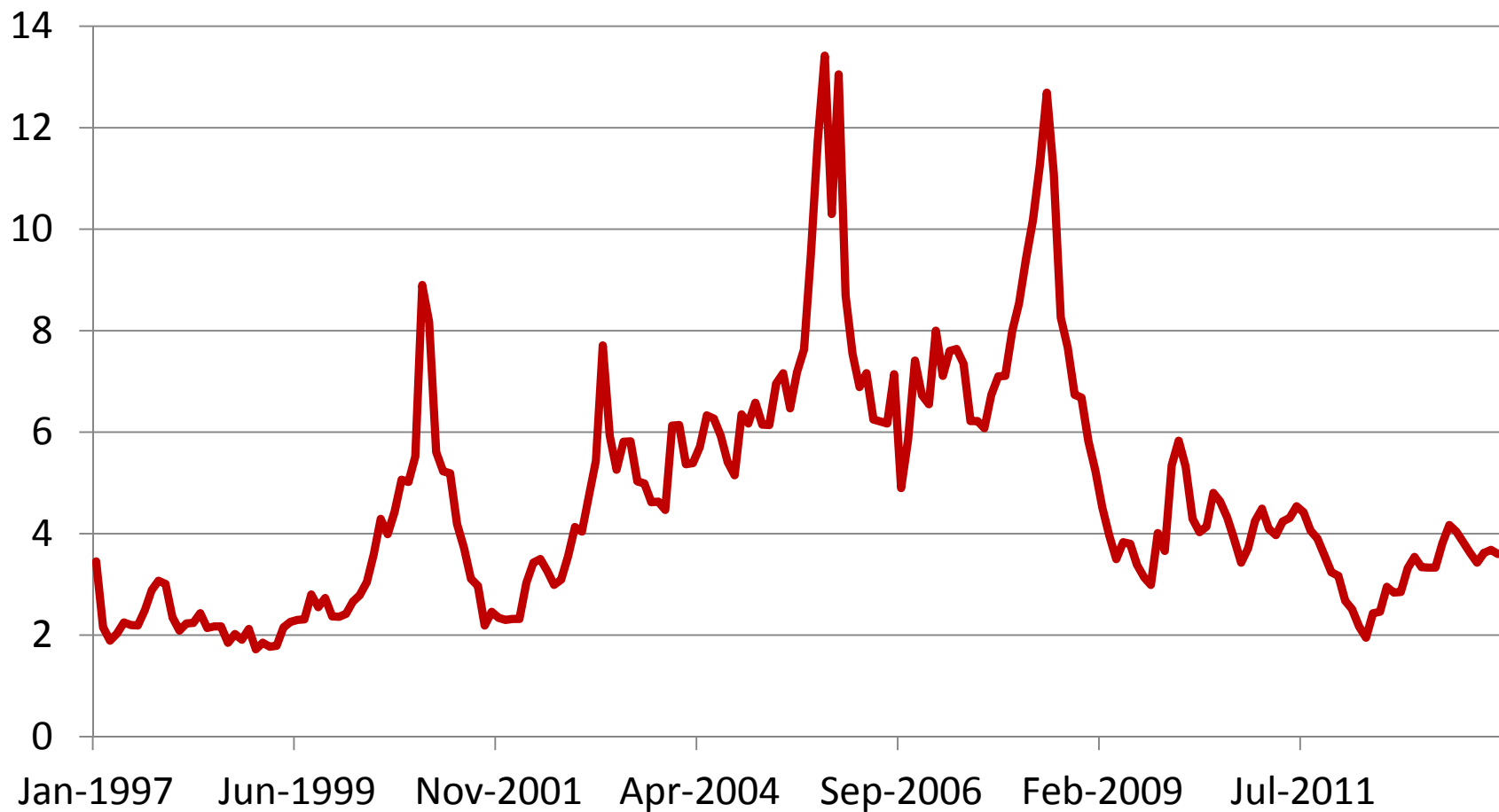
Horizontal Drilling Grows with Shale Gas, Complex Oil Projects



Baker Hughes

Natural gas prices collapsed in late 2011

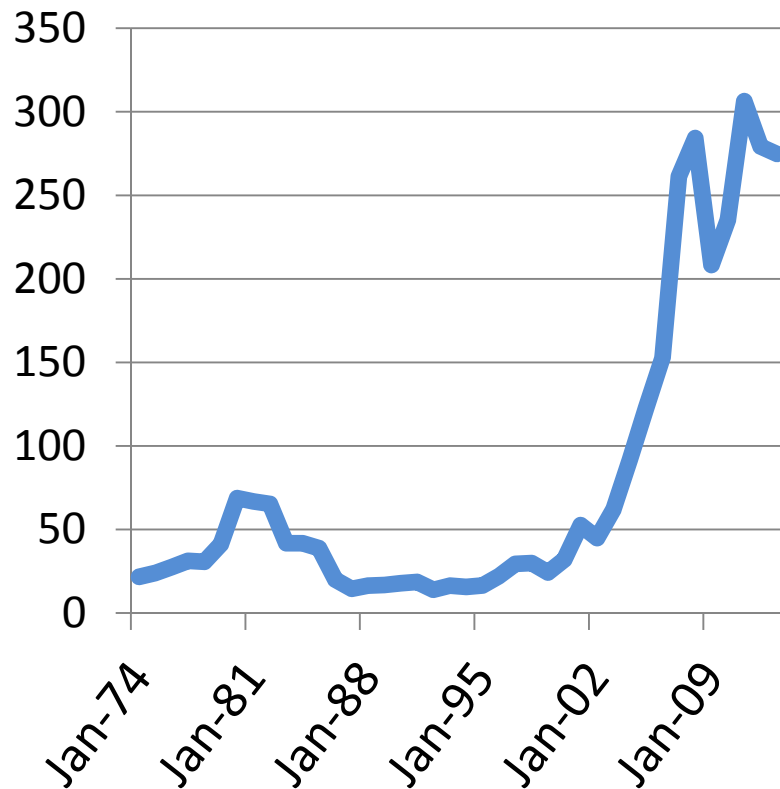
(\$/mcf)



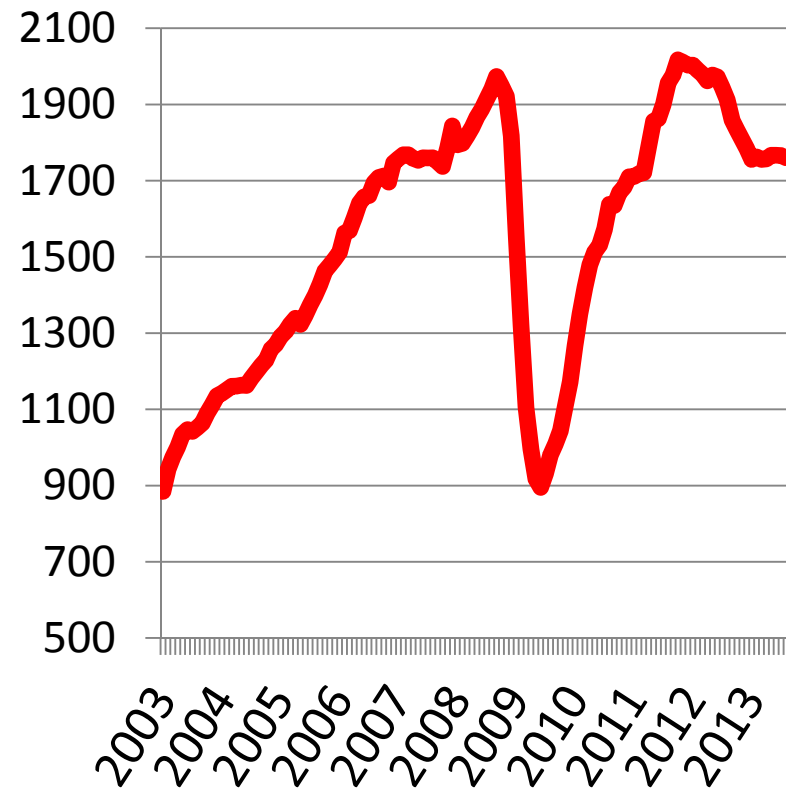
DOE/EIA

E&P spending peaked in late 2011 with the collapse of natural gas prices

Real \$ billion capital expenditures

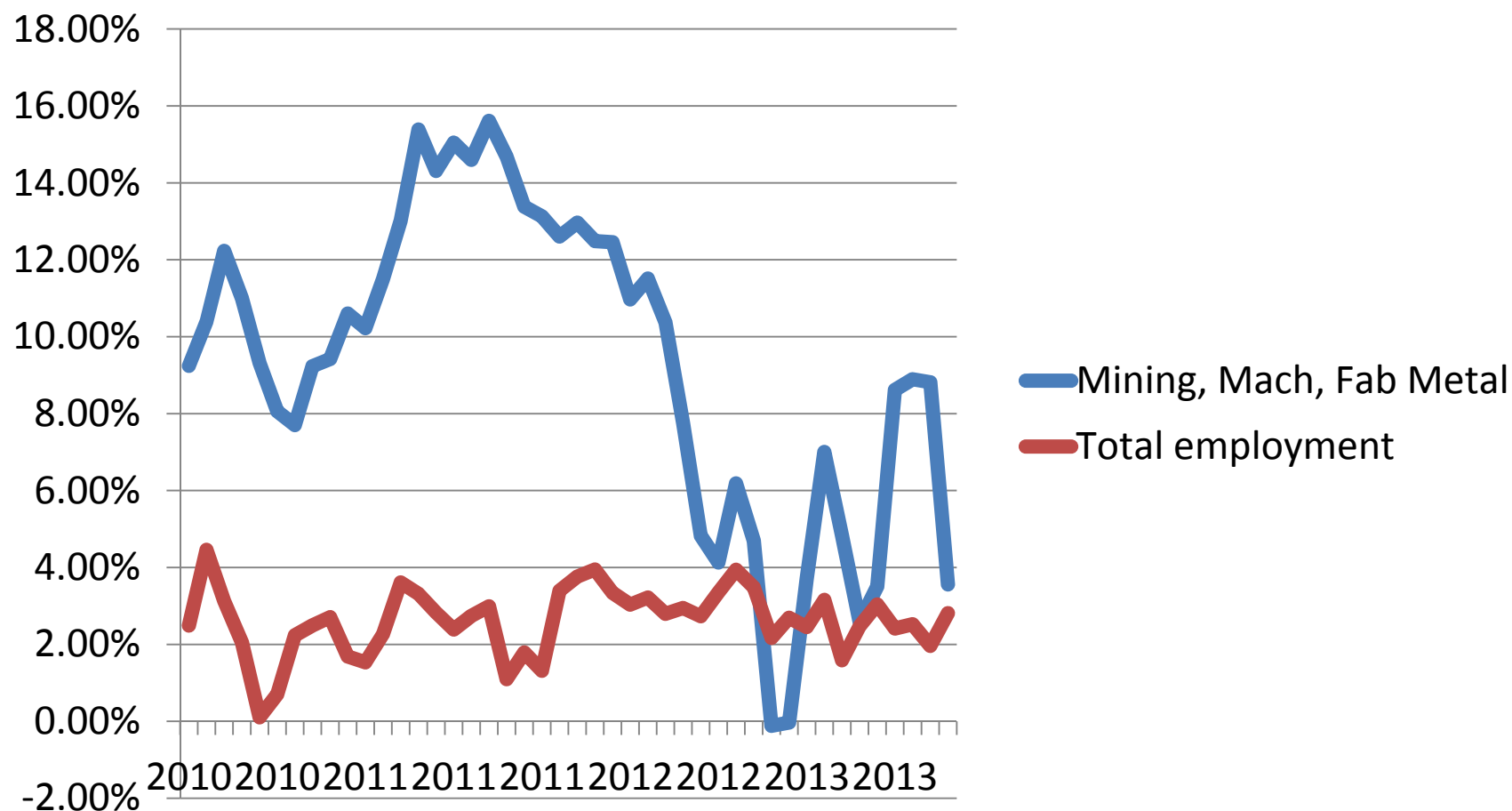


Baker Hughes rig count



Oil and gas job growth has come back to earth with collapse in natural gas prices

(monthly % change at annual rates, 3-mo avg, s.a.)



The chief risk to Texas in the short- and long-term is the price of oil

- 80 percent of drilling – at home and abroad is now driven by oil-directed activity
- The shale/oil sands/deep-water technology is great – but it only works with a price of \$65 per barrel or more
- Short-run risks? One bad election Europe; fiscal crisis in the U.S.; financial crisis in emerging markets as QE ends
- Long-term risks? Growing oil supplies from the U.S. meet up with slowing demand in emerging markets

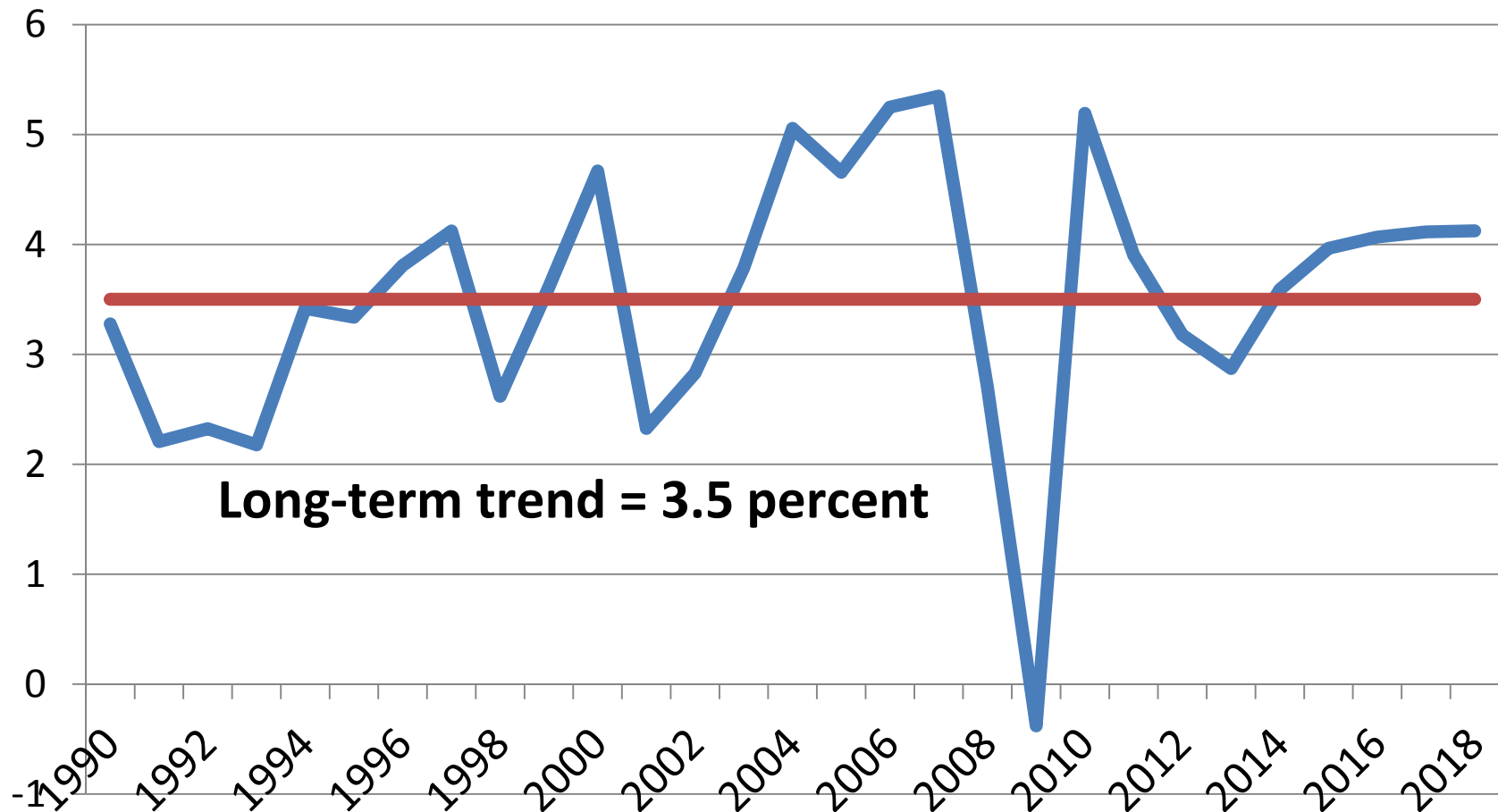
Global Growth Sluggish in 2013

(% GDP Growth)

	2011	2012	2013	2014	2015	2016
World	3.9	3.2	2.9	3.6	3.9	4.1
US	1.8	2.8	1.6	2.6	3.4	3.5
Europe	1.5	-0.6	-0.4	1.0	1.4	1.5
Japan	-0.6	2.0	2.0	1.2	1.1	1.2
	---	---	---	---		
China	9.3	7.7	7.6	7.3	7.0	7.0
India	6.3	3.2	3.8	5.1	6.2	6.5
Brazil	2.7	0.9	2.5	2.5	3.2	3.3

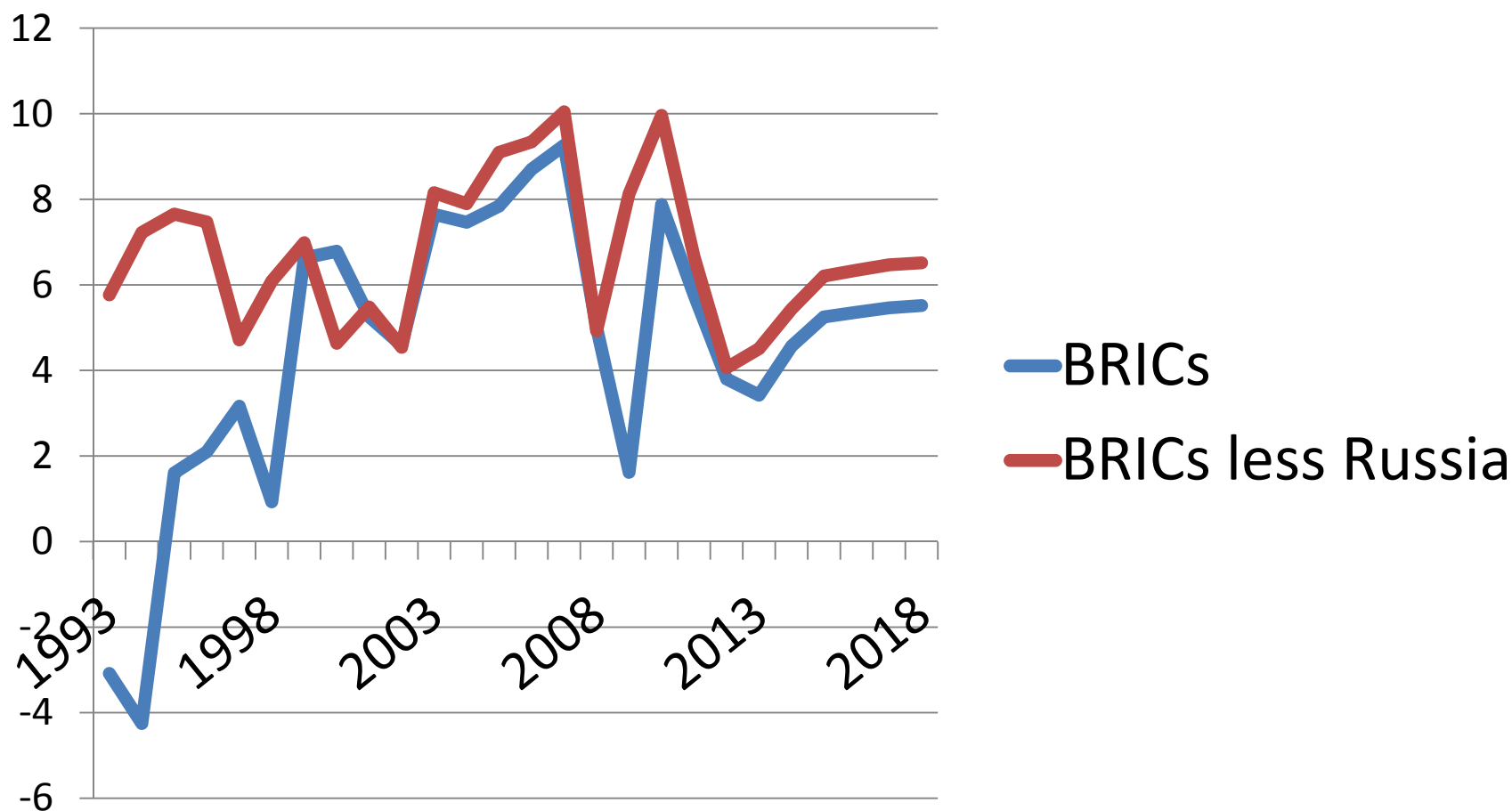
Source: IMF World Economic Outlook, October 2013

A soft landing for world economic growth: Back above the long-term trend by 2014? (percent change in GDP)



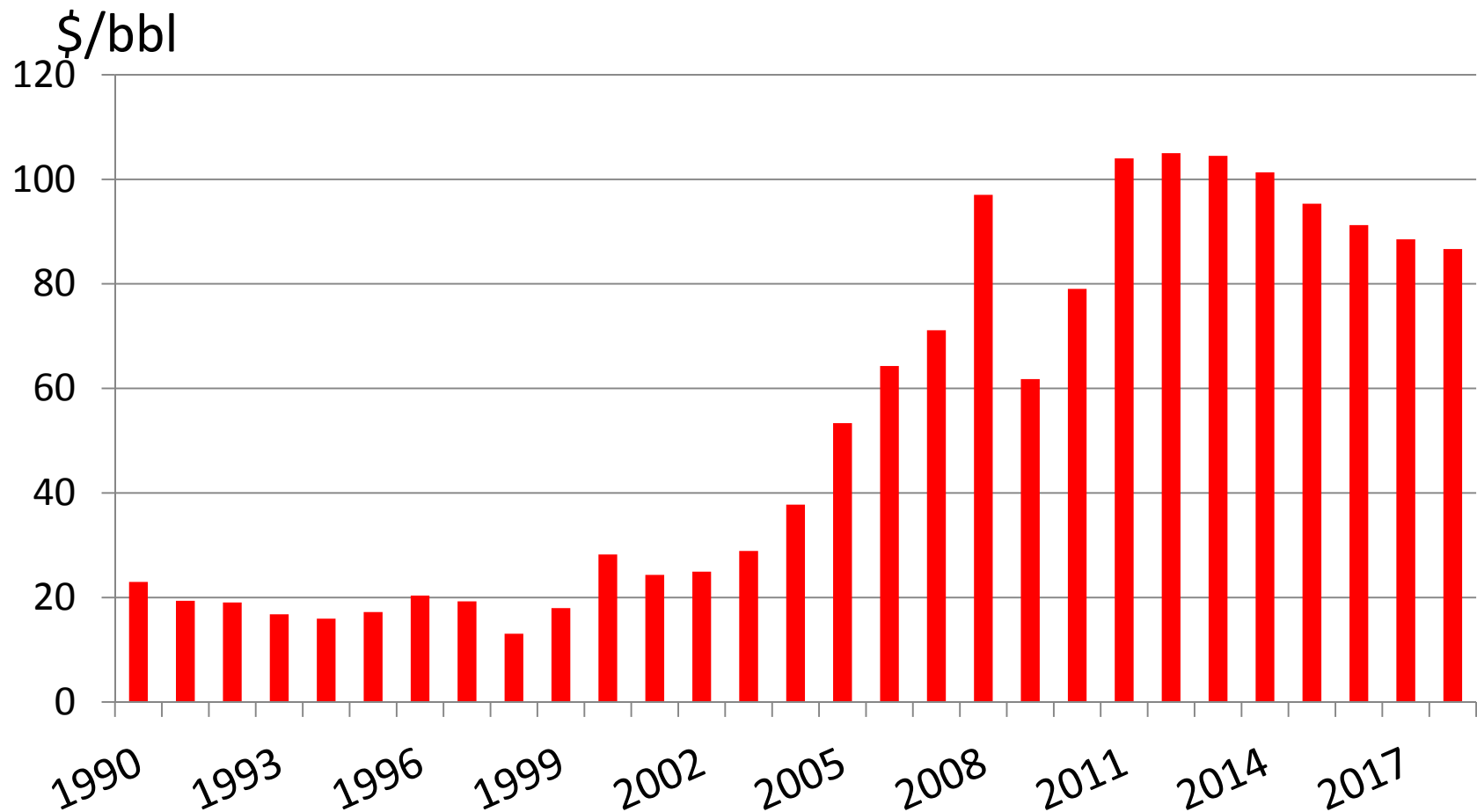
IMF, *World Economic Outlook*, October 2013

BRIC growth returns to high levels, but slower than the last decade (annual percent change in GDP)



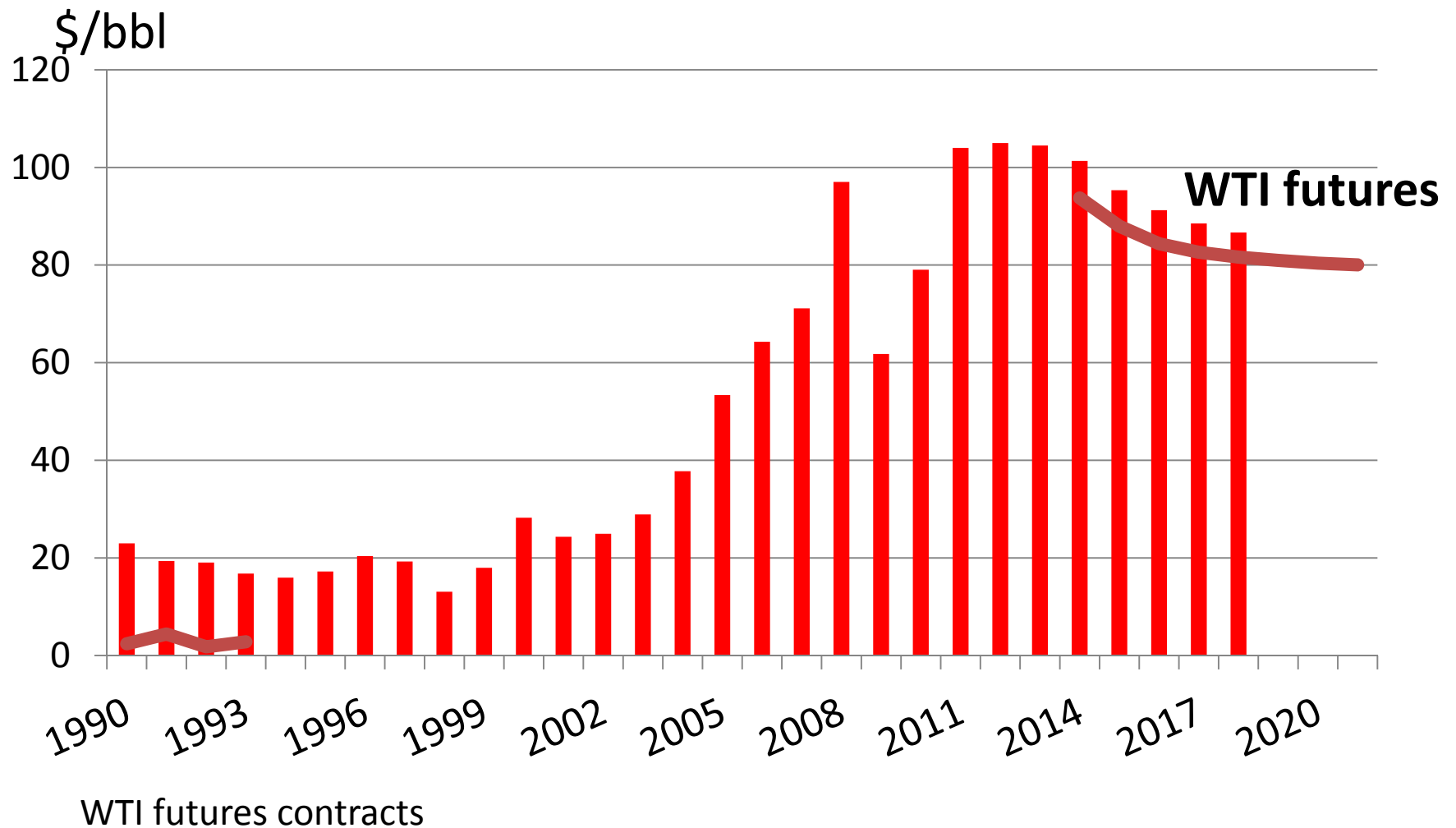
IMF, *World Economic Outlook*, October 2013

IMF World Outlook for oil price remains over \$85 per barrel in 2018



IMF, *World Economic Outlook*, October, 2013

WTI futures also point to oil prices above \$80 per barrel to 2021

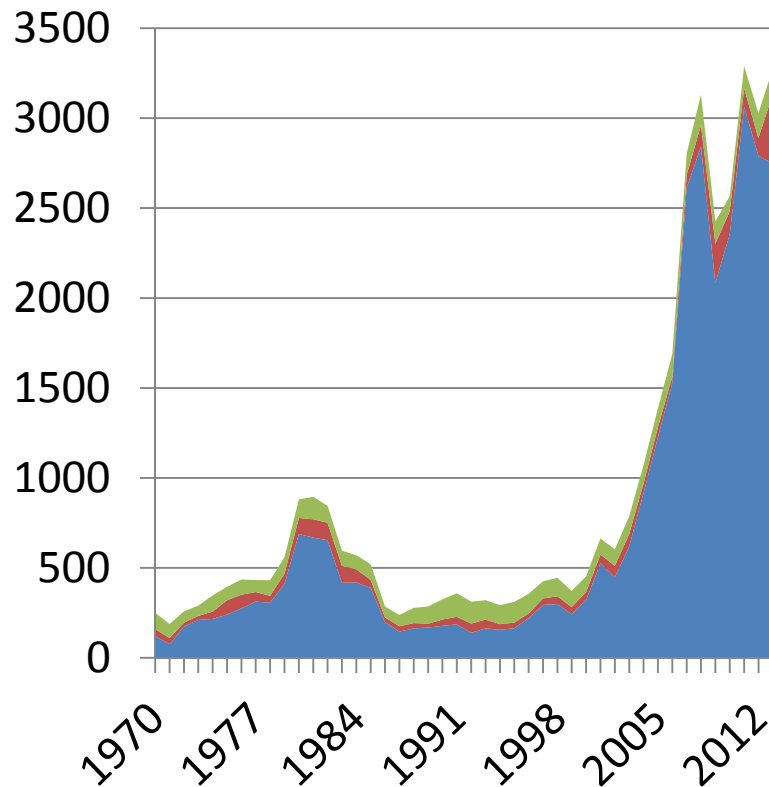


A cushion for the Gulf Coast from
downstream construction

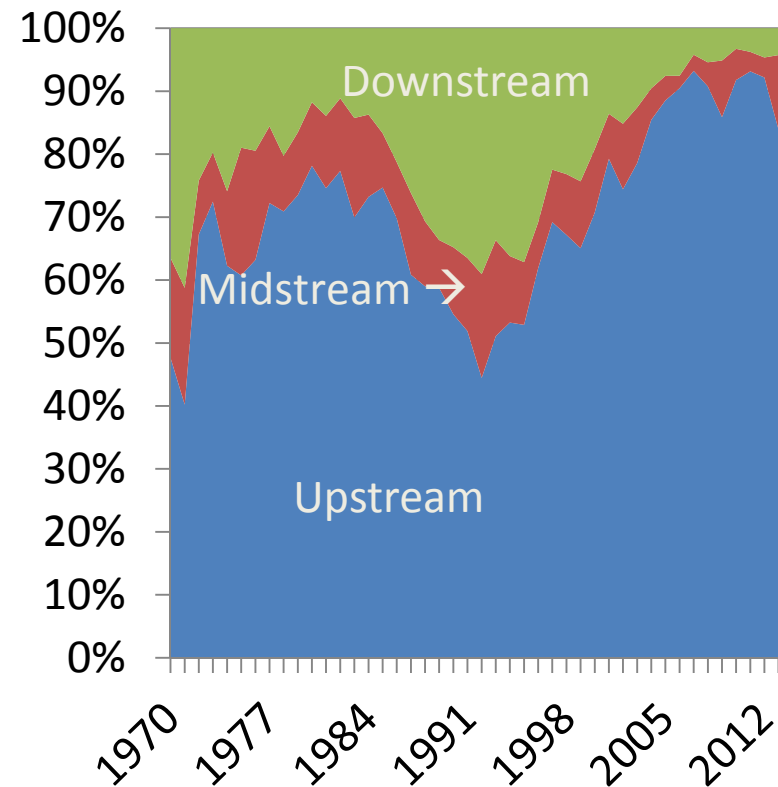


Why the focus on upstream capital expenditures? Historically it dominates

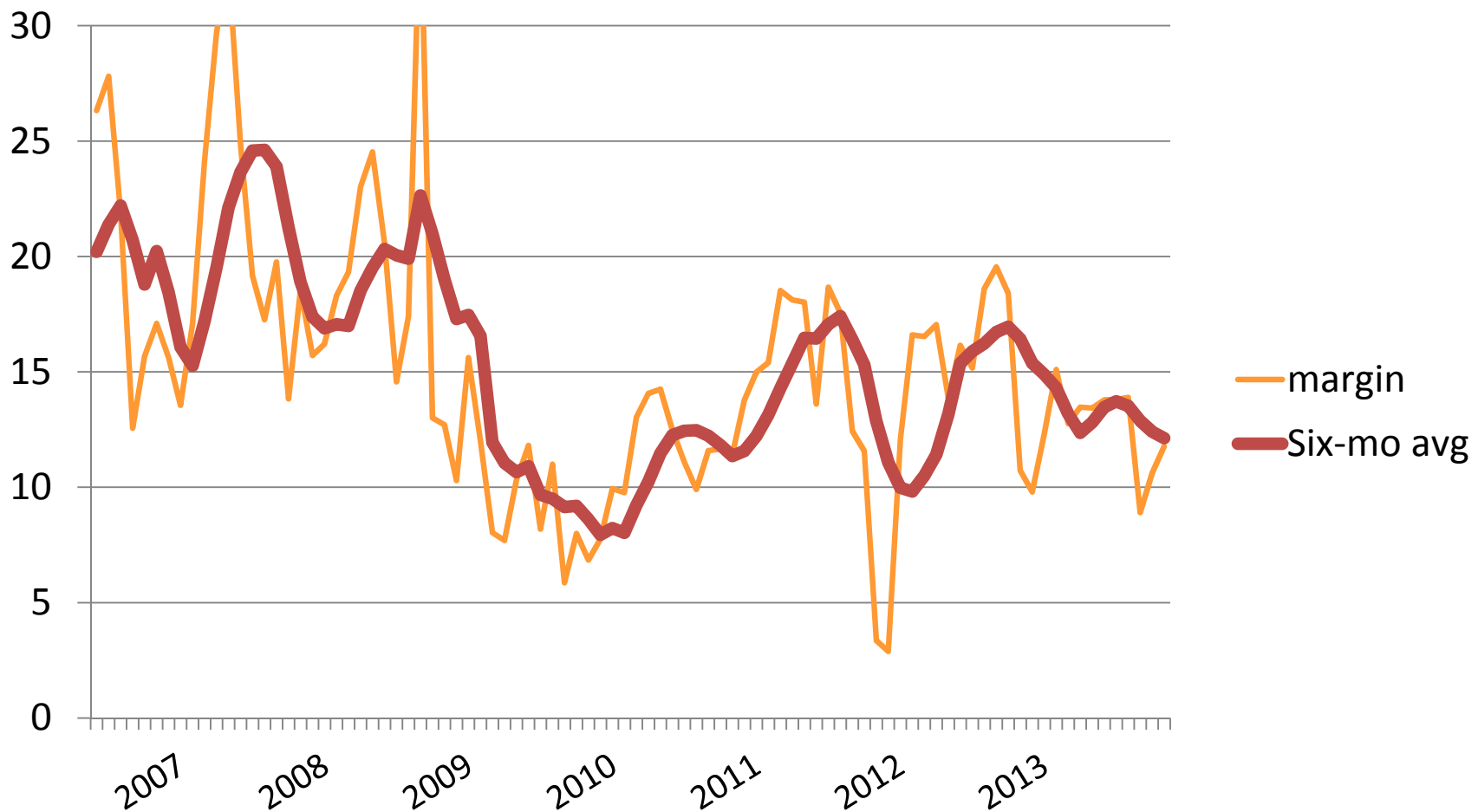
Inflation-adjusted cap-ex



Share of oil industry cap-ex



Gulf Coast Refining Margin (\$/bbl)



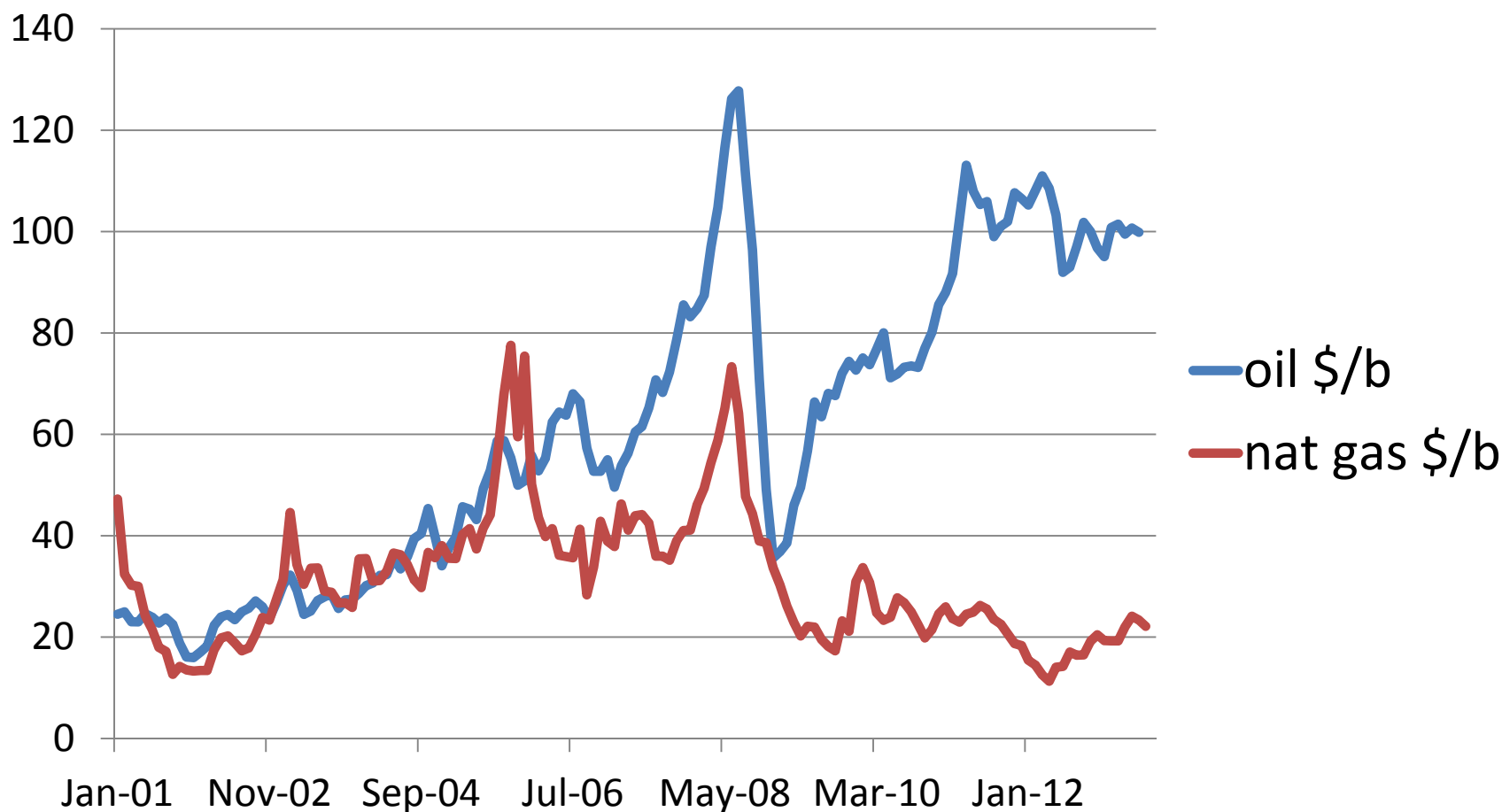
Pace refining margins, *Oil and Gas Journal*

Four of eight largest ethylene complexes in the world are in Houston

Company	Plant location	Capacity (million tpy)
Formosa	Taiwan	2,935.0
Nova	Alberta	2,811.7
Arabian Petrochem	Saudi Arabia	2,250.0
ExxonMobil	Baytown	2,197.0
ChevronPhillips	Sweeny	1,865.0
Dow	Netherlands	1,800.0
Ineos	Chocolate Bayou	1,752.0
Equistar	Channelview	1,750.0
Yanbu	Saudi Arabia	1,705.0
Equate	Kuwait	1,650.0

Oil and Gas Journal, 7/1/2013

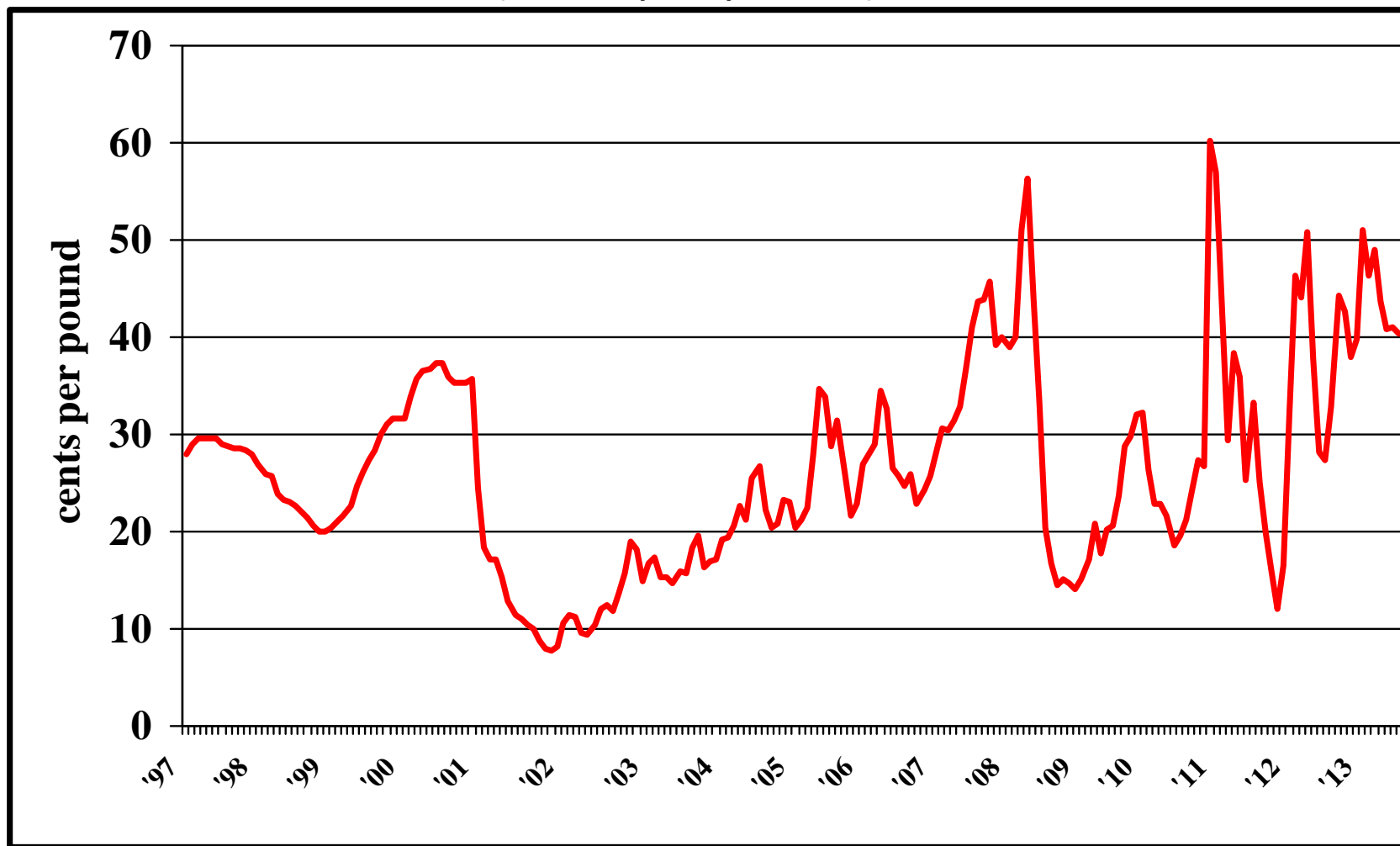
Natural gas energy content equivalent to \$20 per barrel for oil



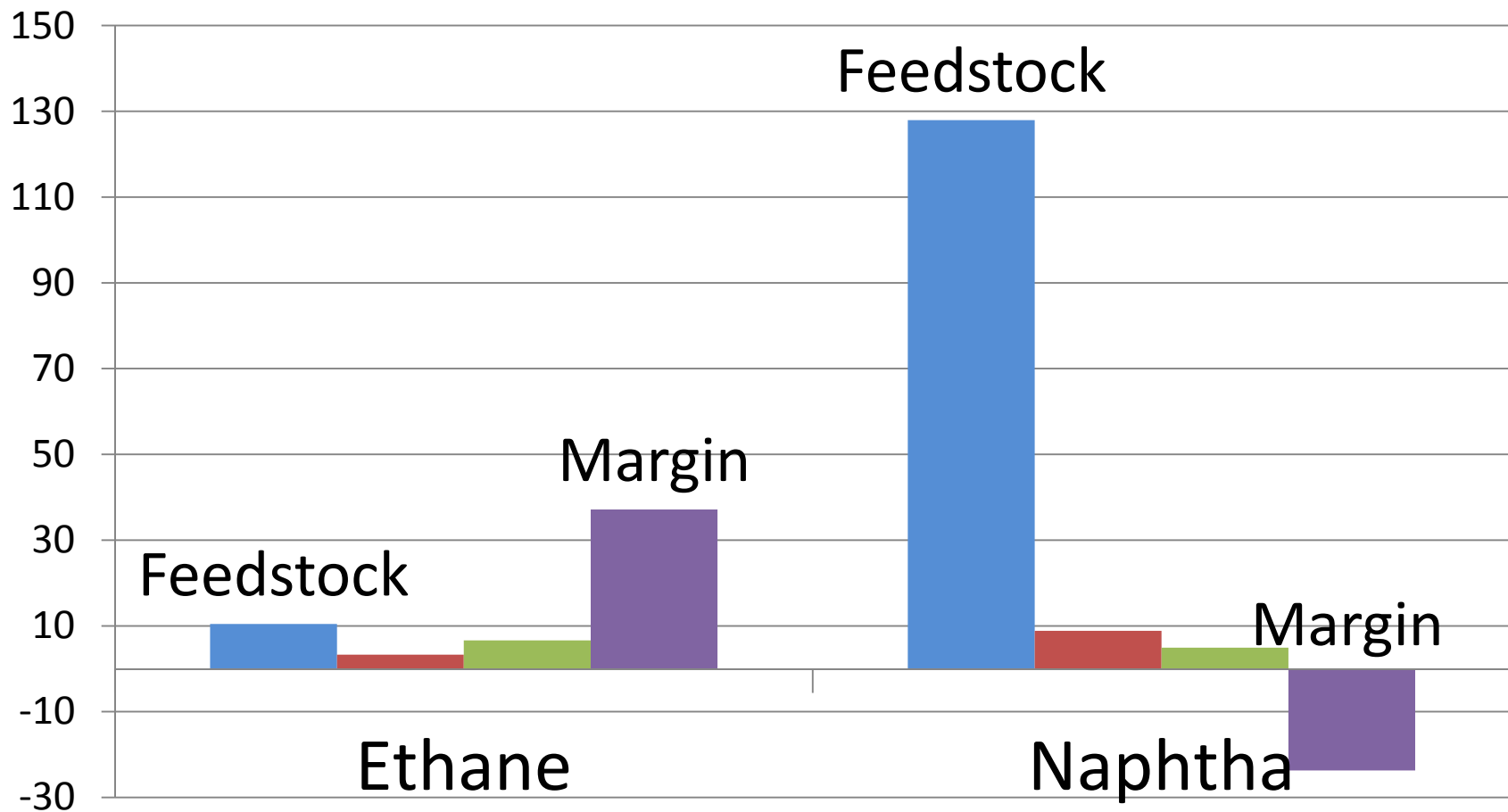
DOE/EIA and calculations of the author

Ethylene Margins

(cents per pound)



October margins for ethylene were 39 cents per pound in North America, -24 cents elsewhere



Muse, Stancil Cash Ethylene Margins, *Oil and Gas Journal*, 2013

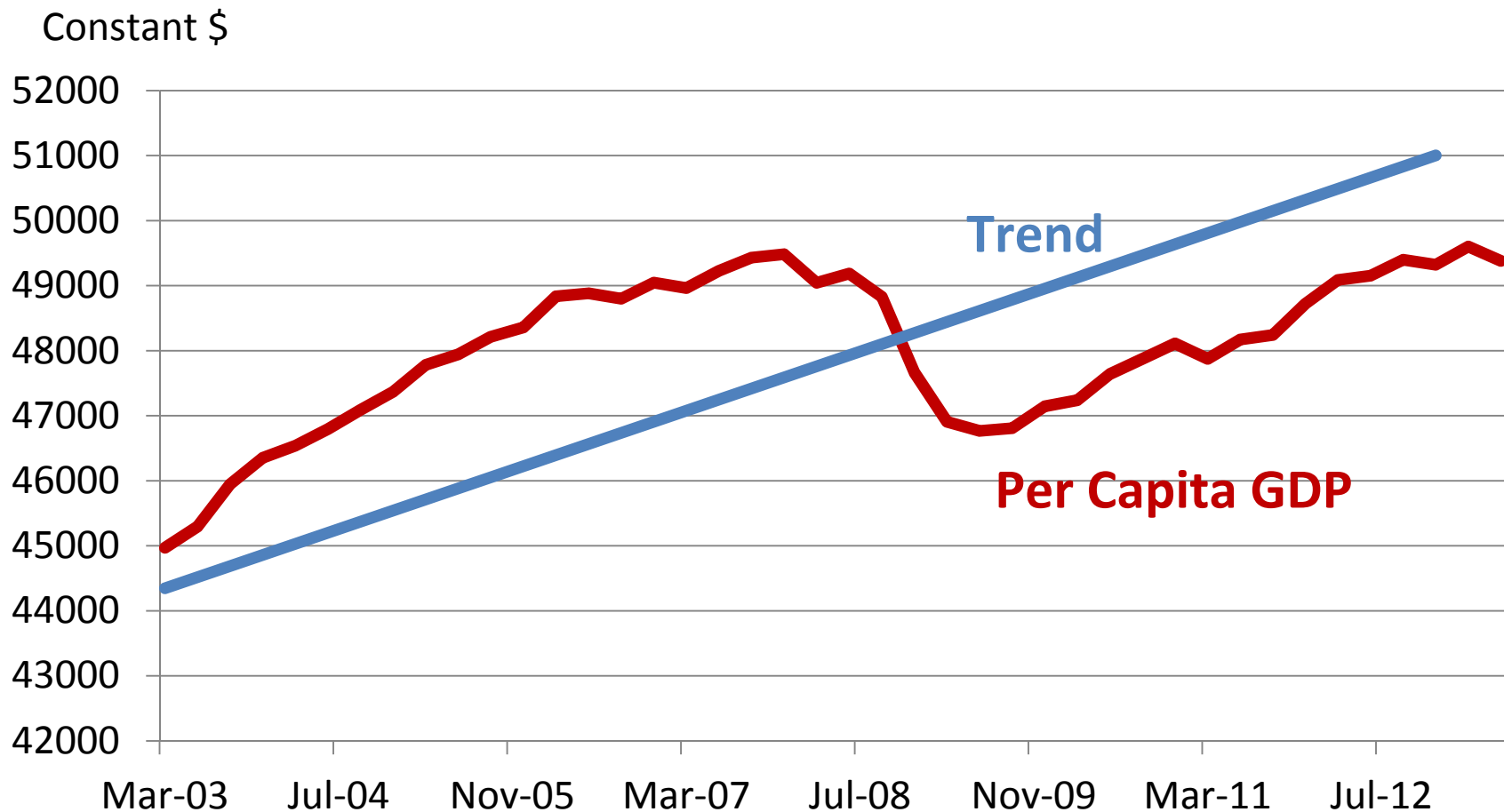
Proposed chemical construction located in Texas near \$50 billion

Potential Newbuild	Location	\$million
Exxon	Baytown	\$5,000
Chevron	Baytown/Old Ocean	\$5,000
Dow	Freeport	\$3,350
Oxy	Ingleside	\$1,300
Other	Un-located new builds	\$2,500
Potential expansion	Location	\$million
Dow	Freeport	\$125
Lyondell	La Porte	\$1,760
INEOS	Chocolate Bayou	\$302
Formosa	Point Comfort	\$900
Dow	Freeport	\$399
BASF/Dow	Port Arthur	\$1,435
Other	Un-located expansions	\$25,650
Total new build + expansion		\$49,621

Can the U.S. economy step up while energy steps back?

- Friedman/Reinhart-Rogoff tell us that any economy will be sluggish for years after a major financial crisis
- While the economy never returns to the prior trend growth, it can return to prior growth rates
- Main damage from the financial crisis is repaired – consumer deleveraged, housing adding to GDP again, state and local government revenues are flowing
- Consensus forecasts have moved to 3 percent trend growth for the U.S. in 2014 and beyond

Per capita GDP falls below long-term growth trend since the crisis



Bureau of Economic Analysis; author's calculations

What is missing in this recovery?

Contribution to GDP (%)

	3 Recent Recoveries	This Recovery
GDP	3.8	2.3
Cons	2.7	1.6
Res Inv	0.7	0.1
Non-Res Inv	0.5	1.3
Govt	0.5	-0.3
Net Xpt	-0.6	-.02

Three sources of lost growth

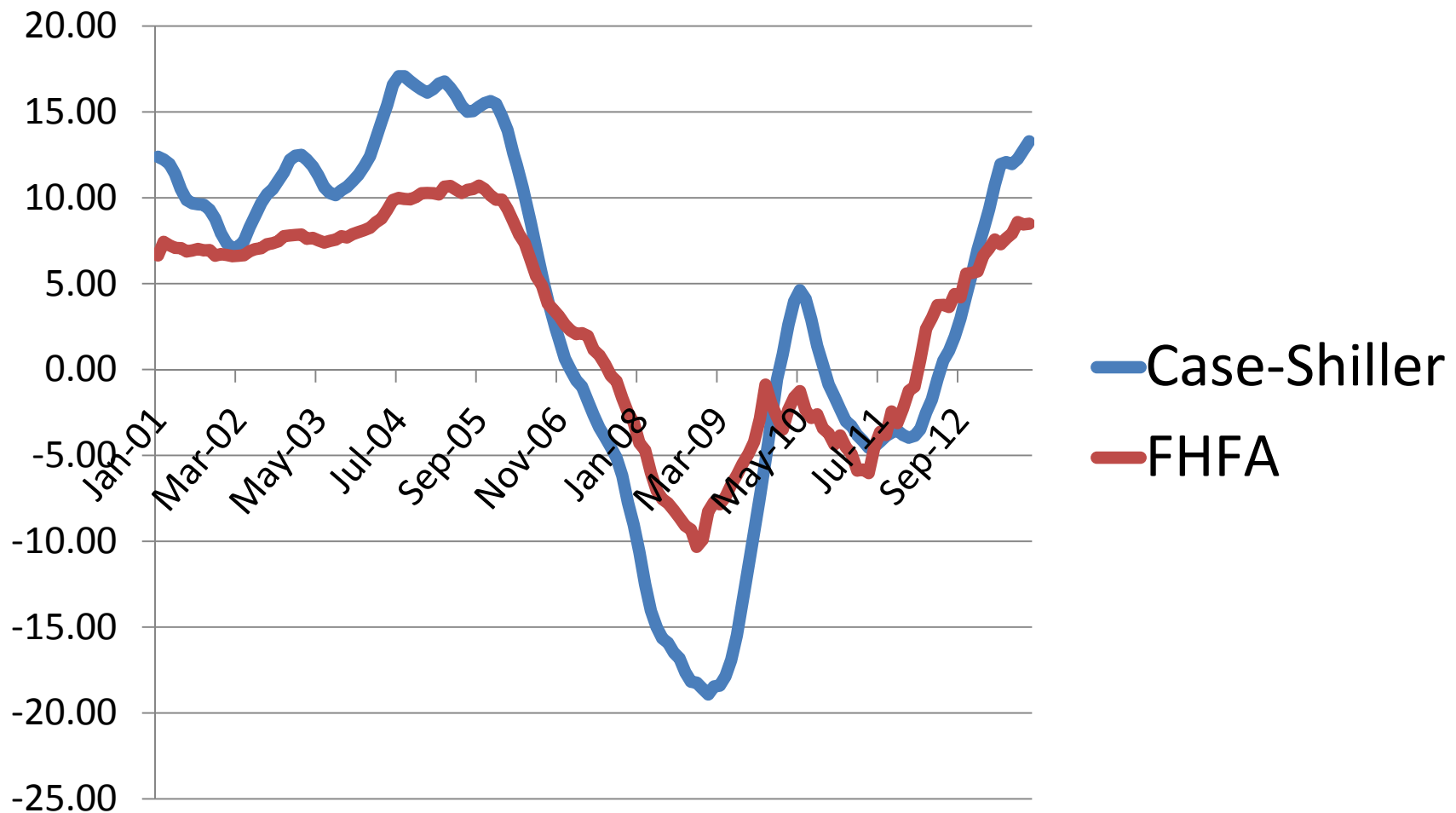
- Personal Consumption
- Housing investment
- State and Local Government

Comparison is after 12 quarters of recovery

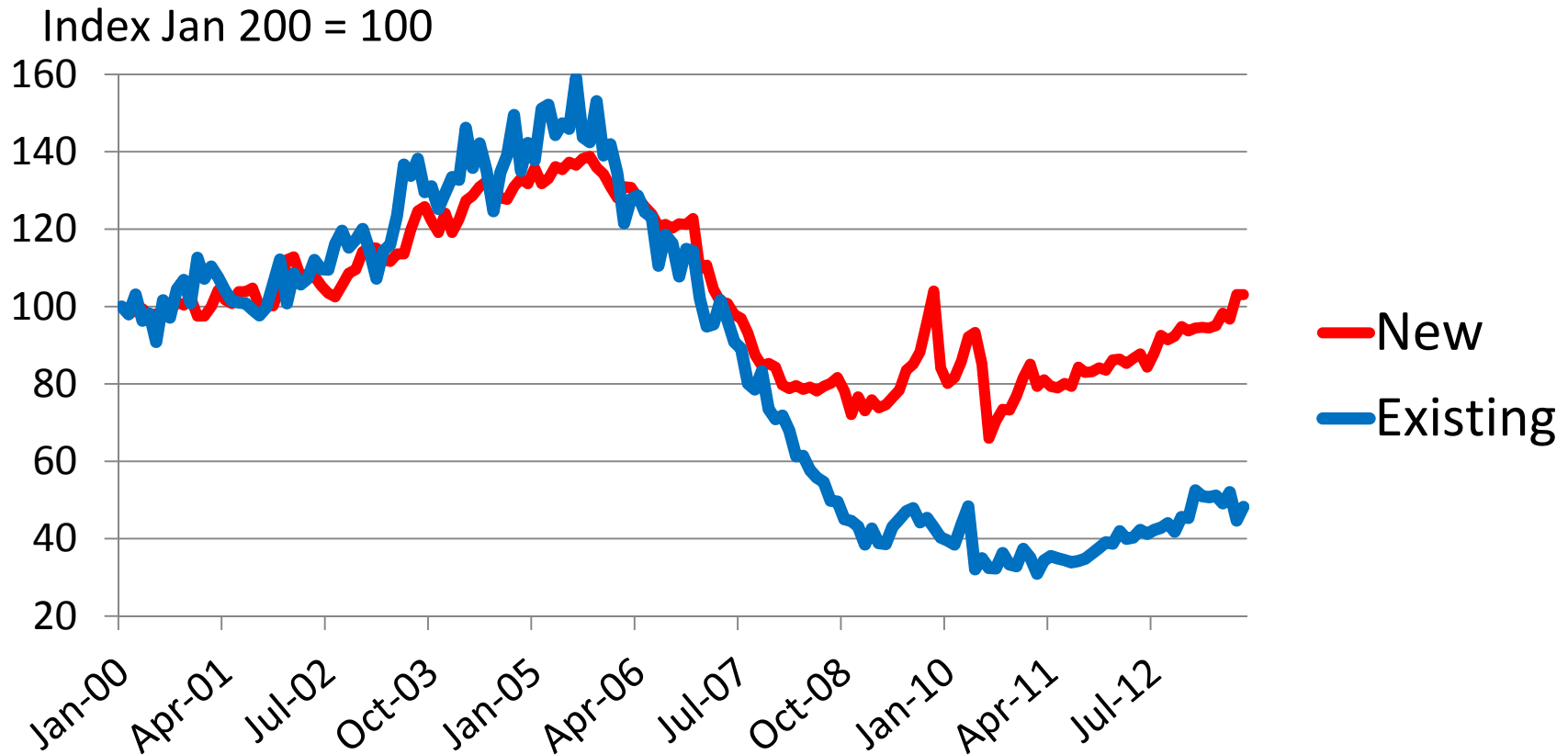
Housing adds to GDP again

Home prices stabilized and turned up in the summer of 2012

(index:12-mo percent change)

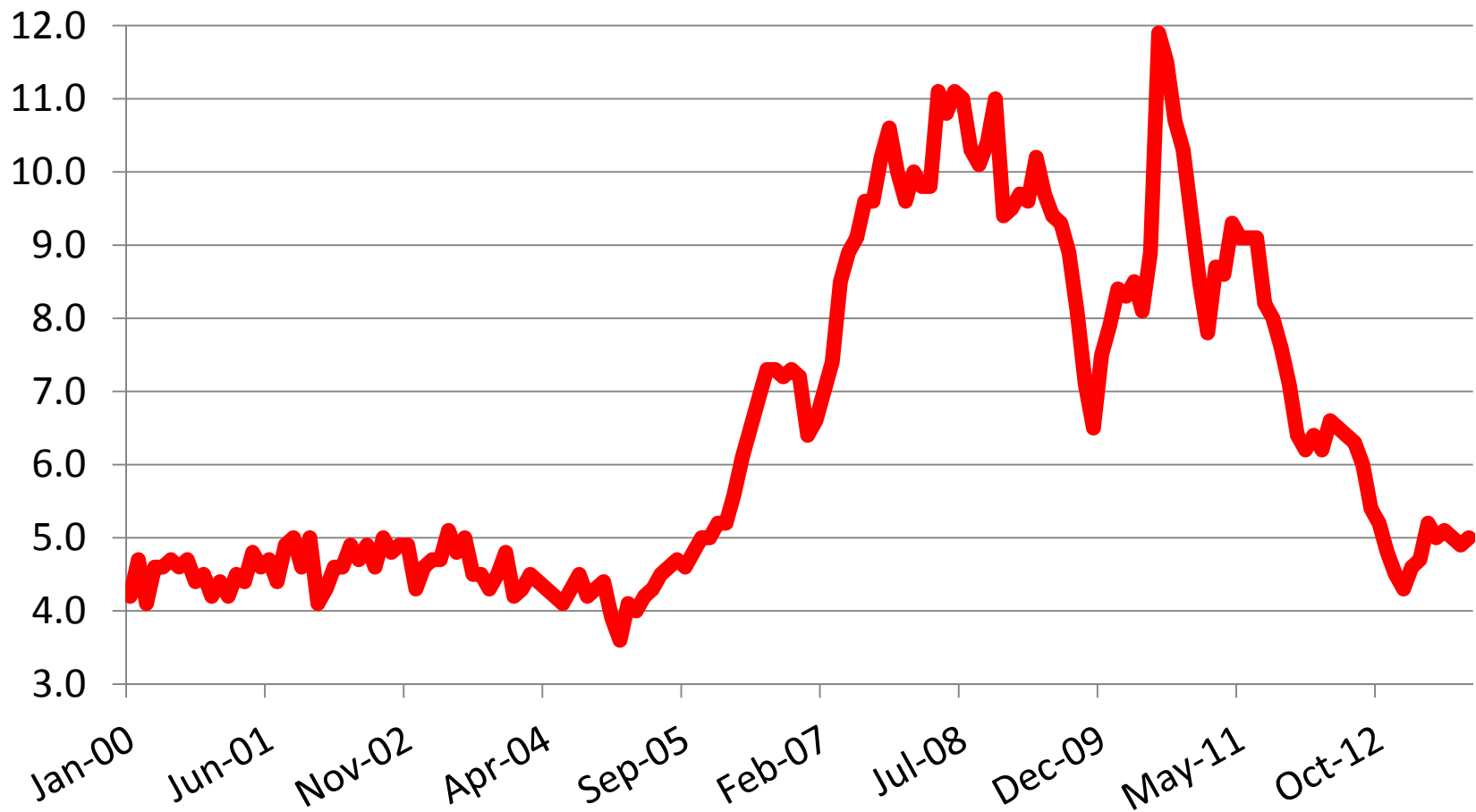


New and existing home sales trend upward again

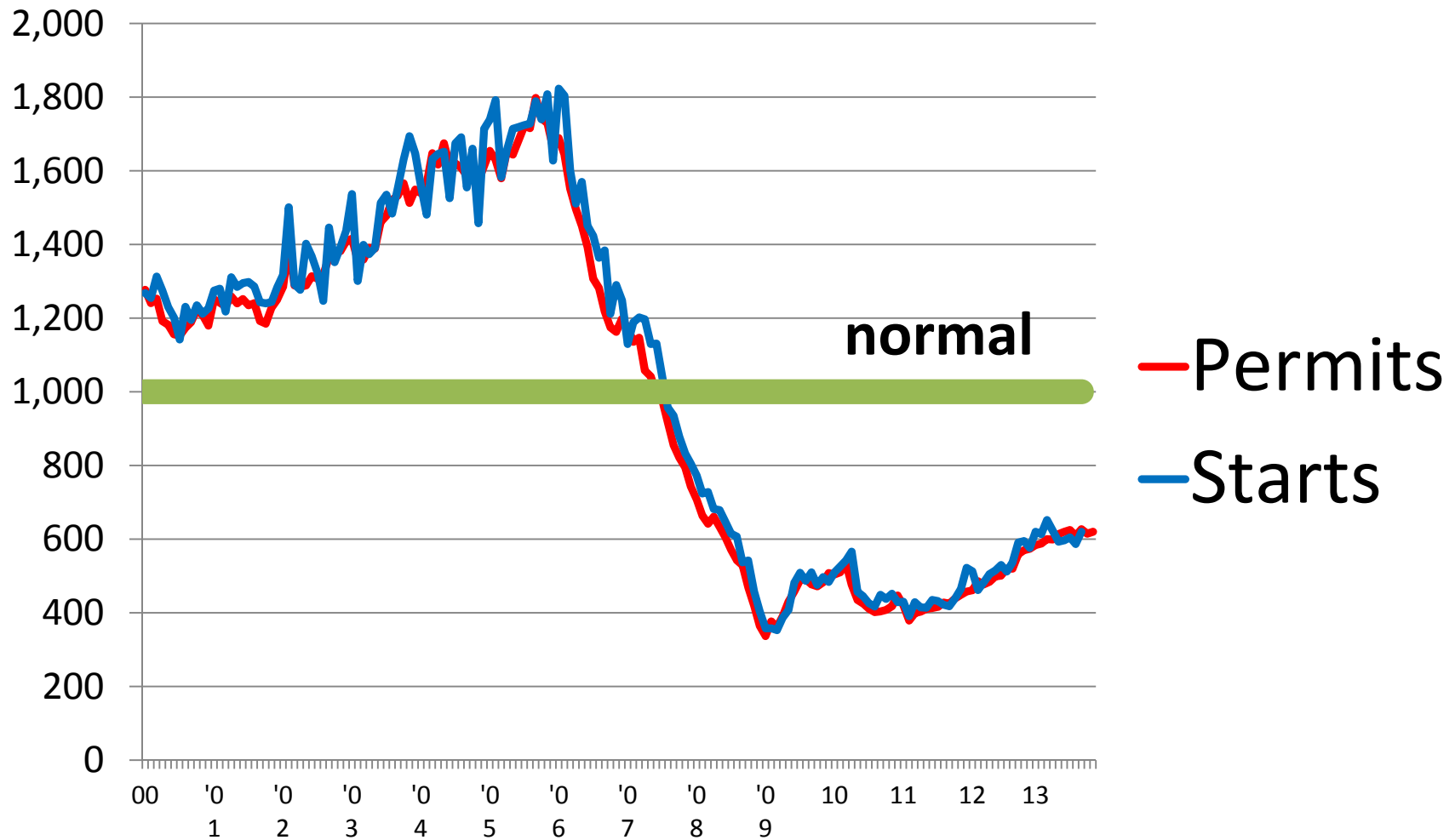


St Louis Federal Reserve Bank

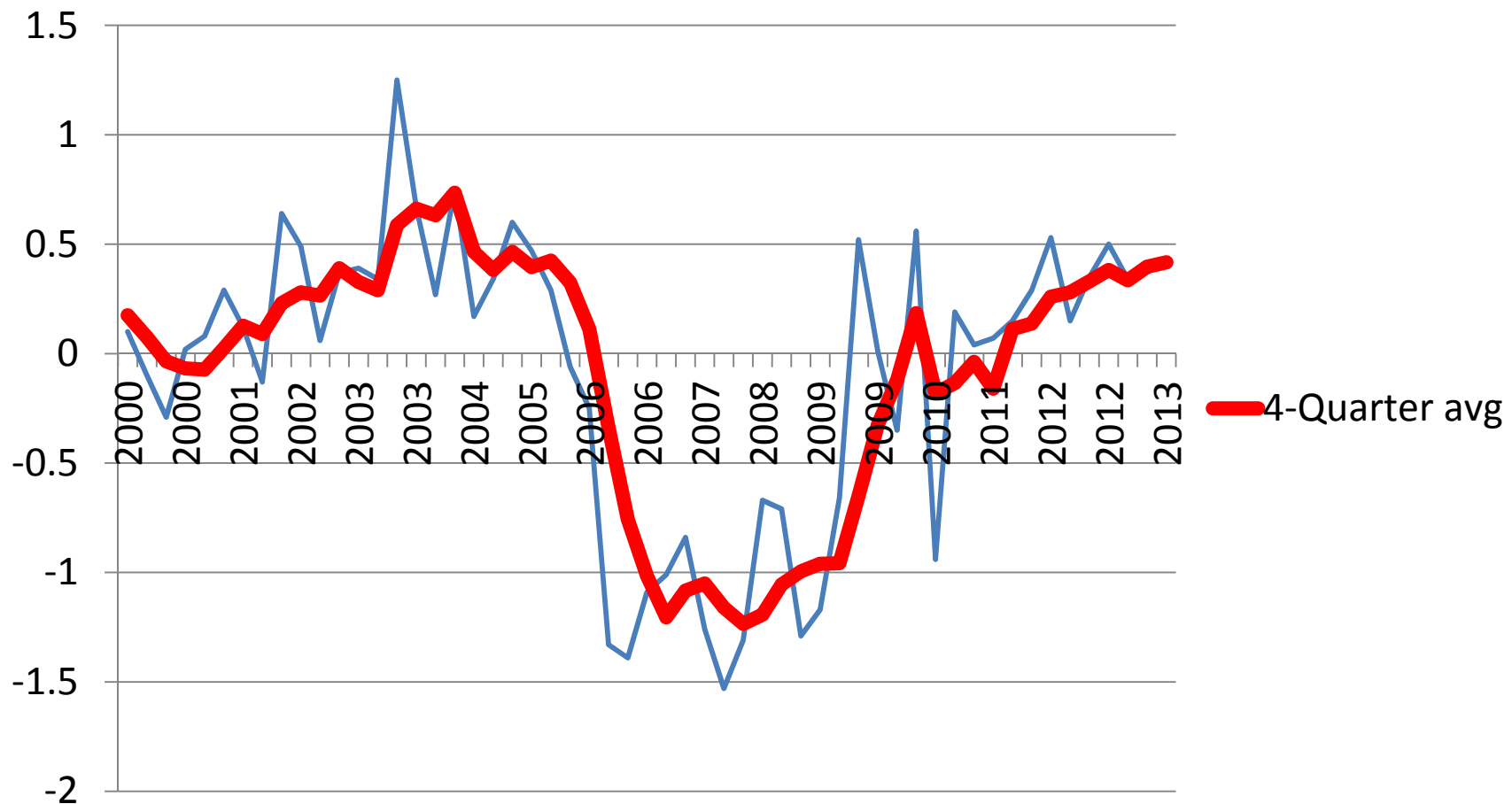
Existing home inventories in U.S. fall to 5.0 months supply



New home construction picking up and adding to growth

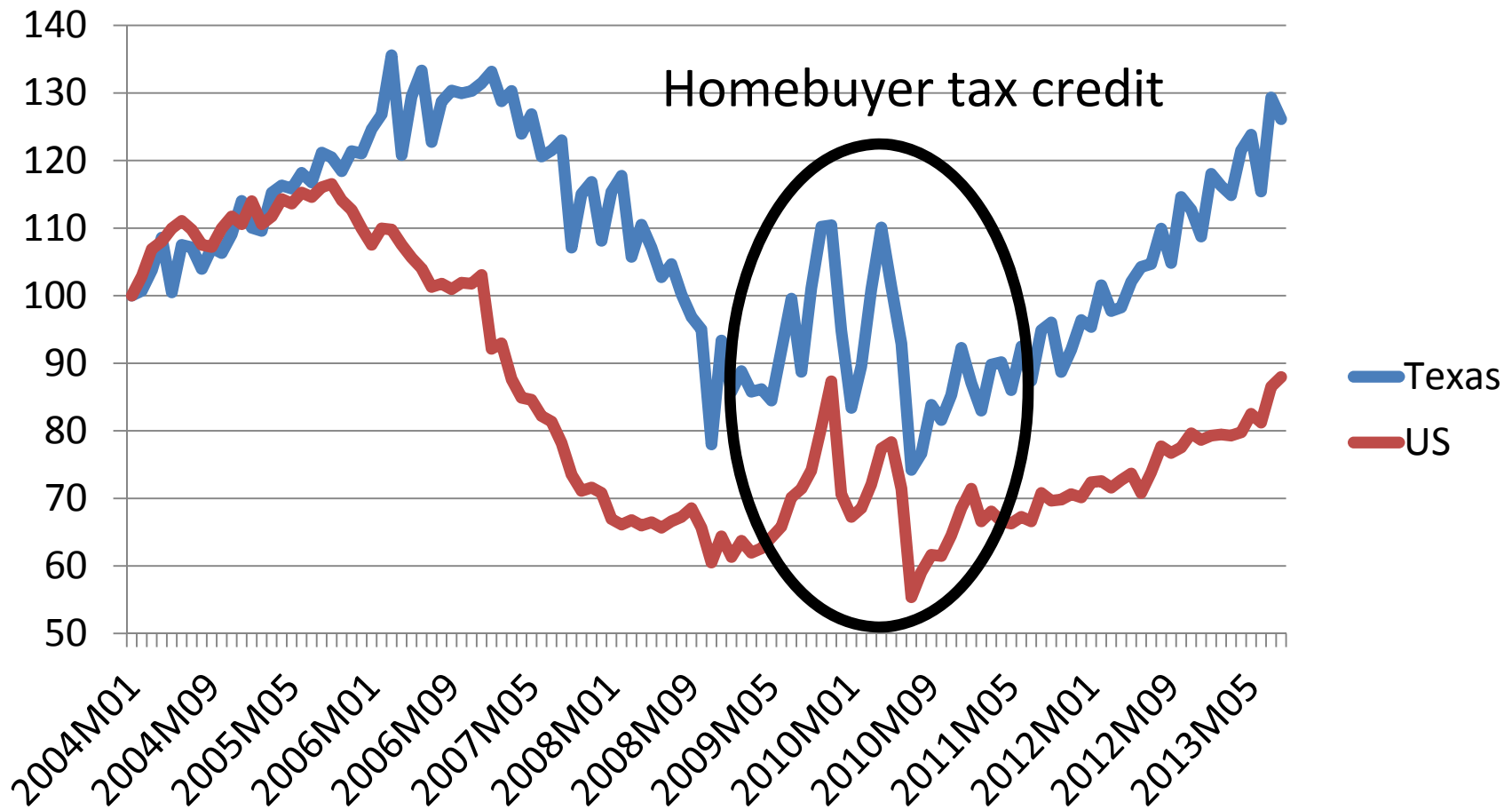


Housing again adding to GDP (percent contribution to GDP growth)

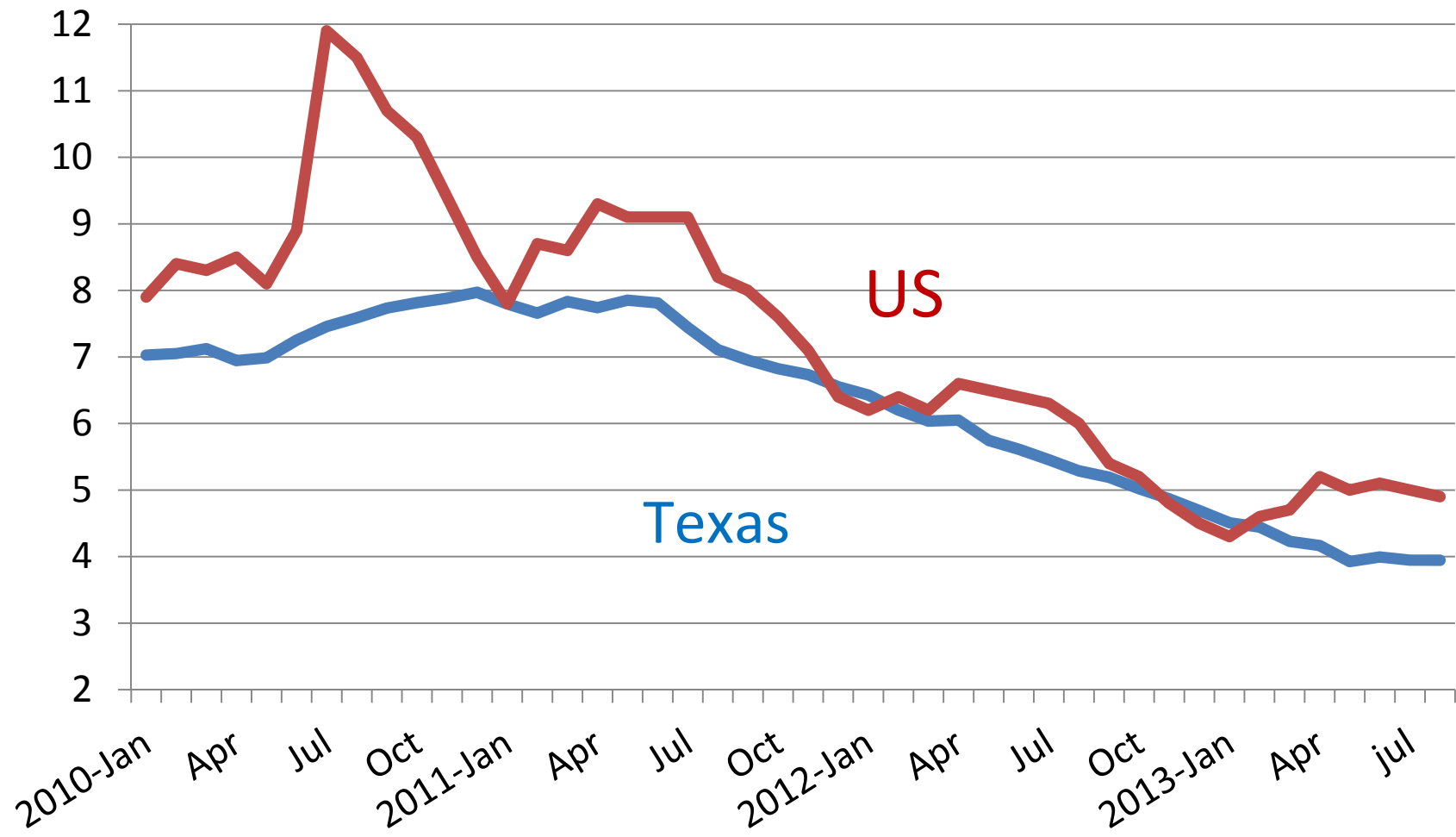


Texas housing like the rest of the
country – on steroids

Texas existing home sales grow strongly in the recovery

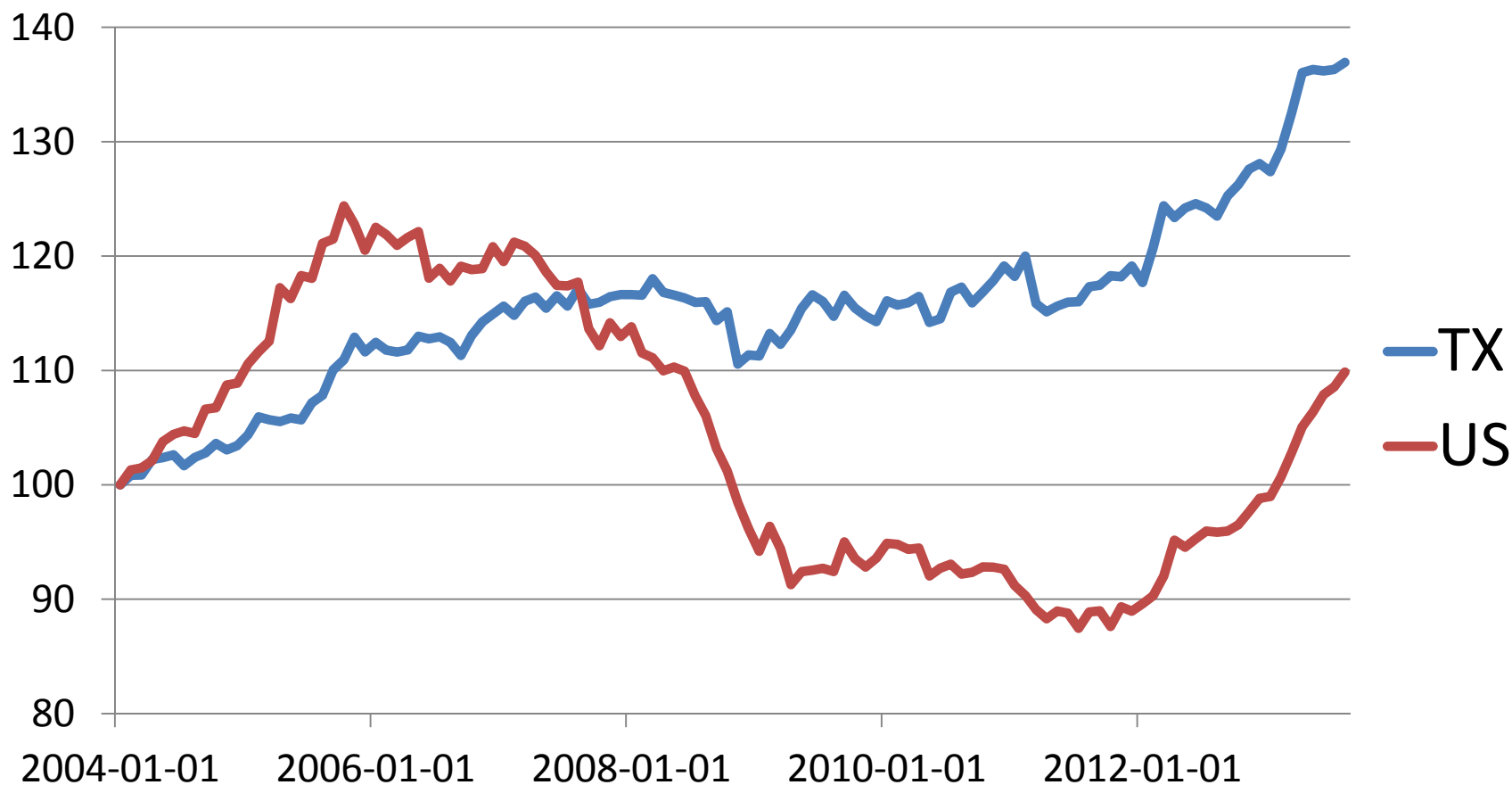


Texas inventory of residential homes moves to four months supply (months supply at current sales rate)



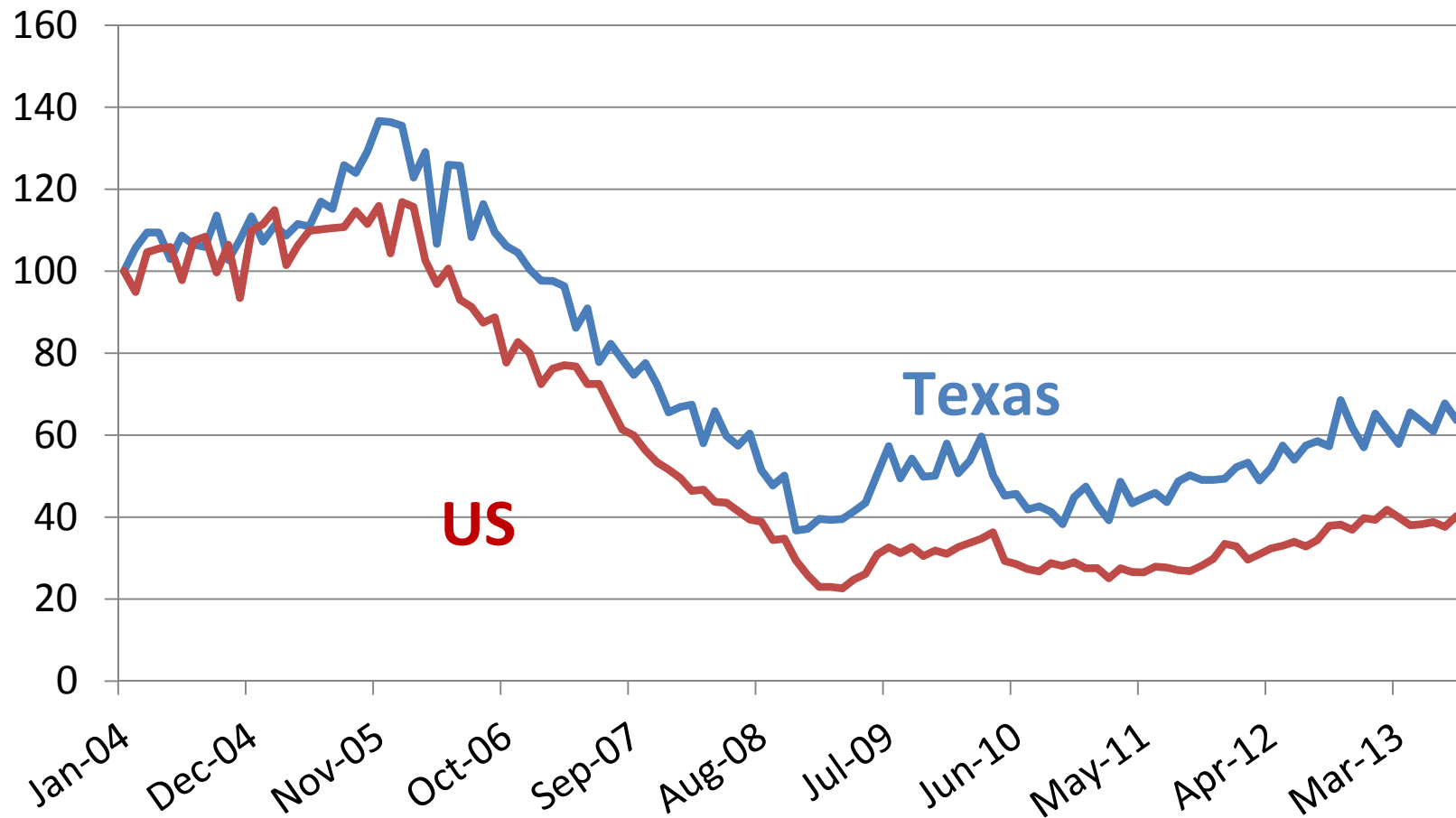
Texas home prices never fell like the US, now share rising prices

(median existing home price Jan 2004 = 100)



Single-family permits trend up in Texas

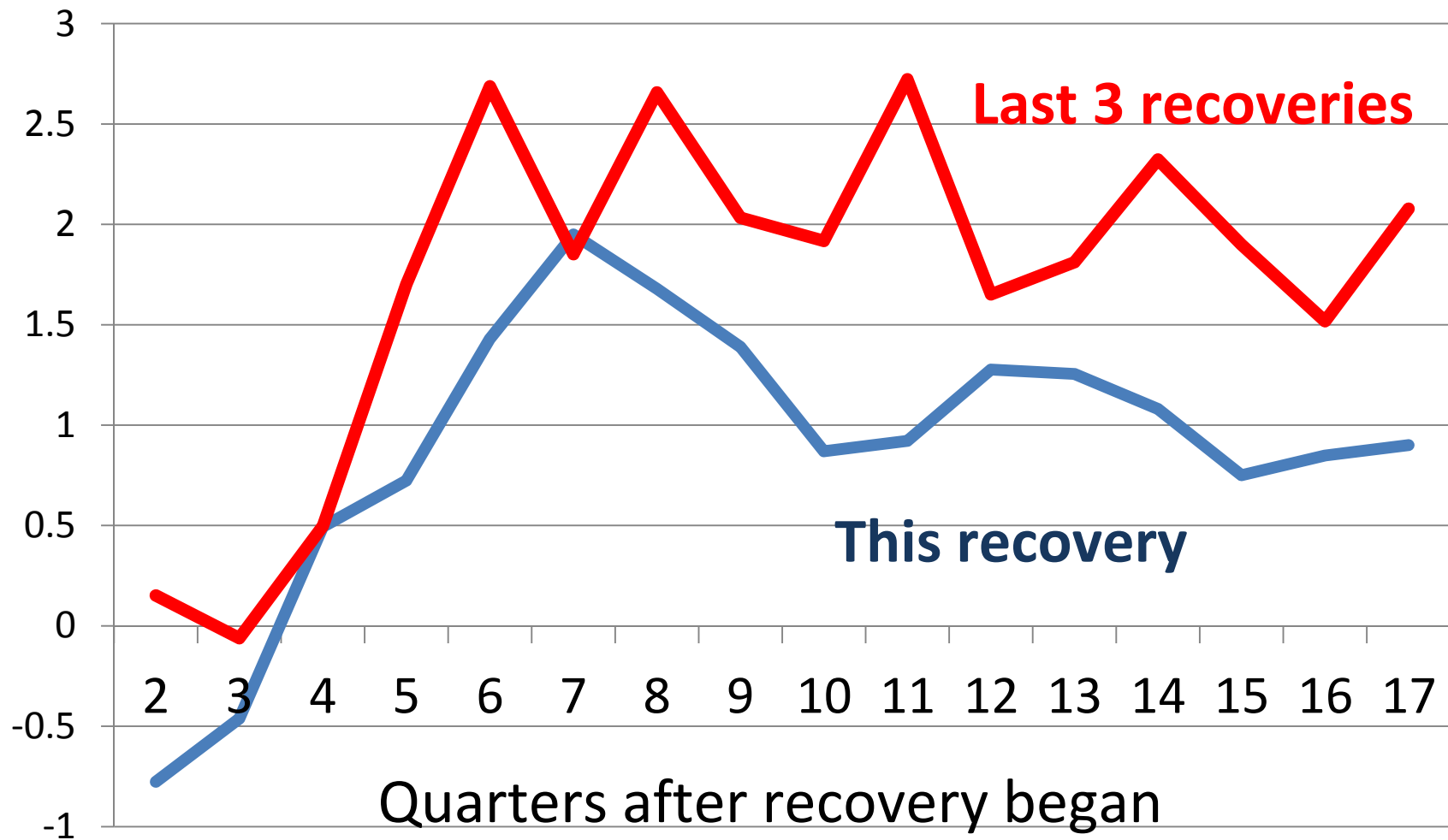
(index: Jan 2000 = 100)



Post-crisis consumer finances have improved dramatically

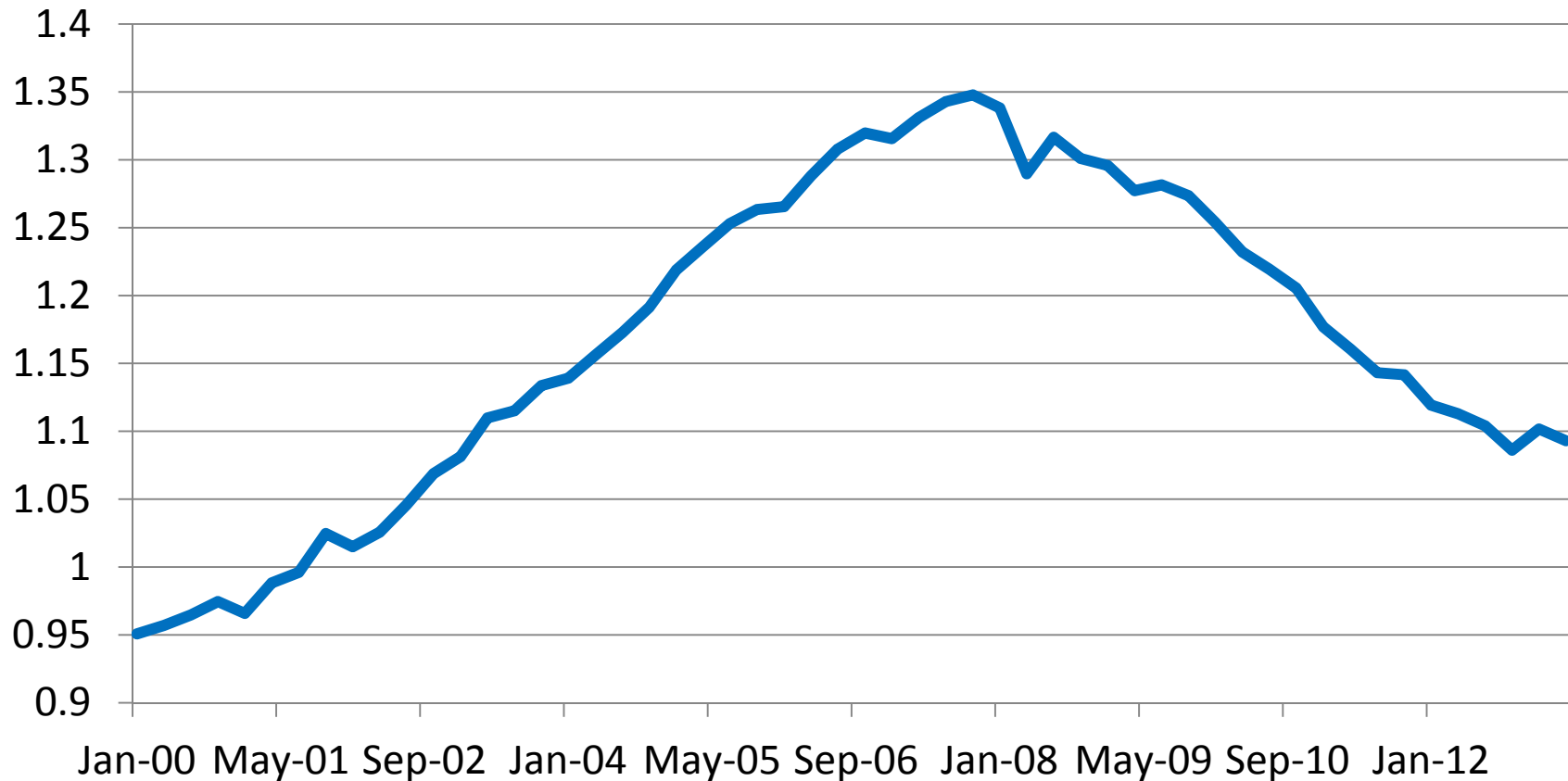


Growth in per capita personal consumption lagged past recoveries (4 quarter percent change)



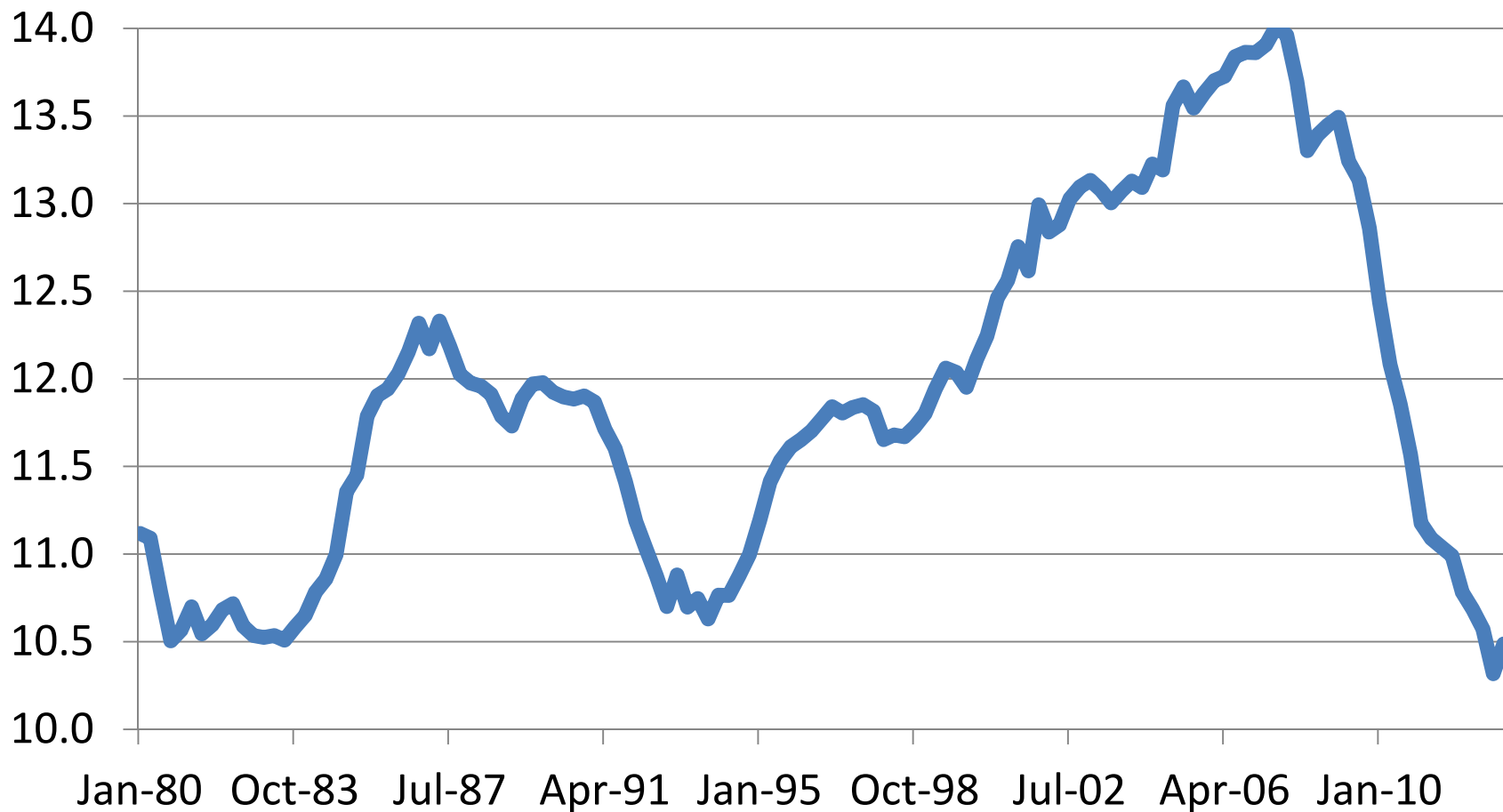
Consumer makes progress reducing debt after the build-up post-2000

(Ratio of debt to disposable personal income)



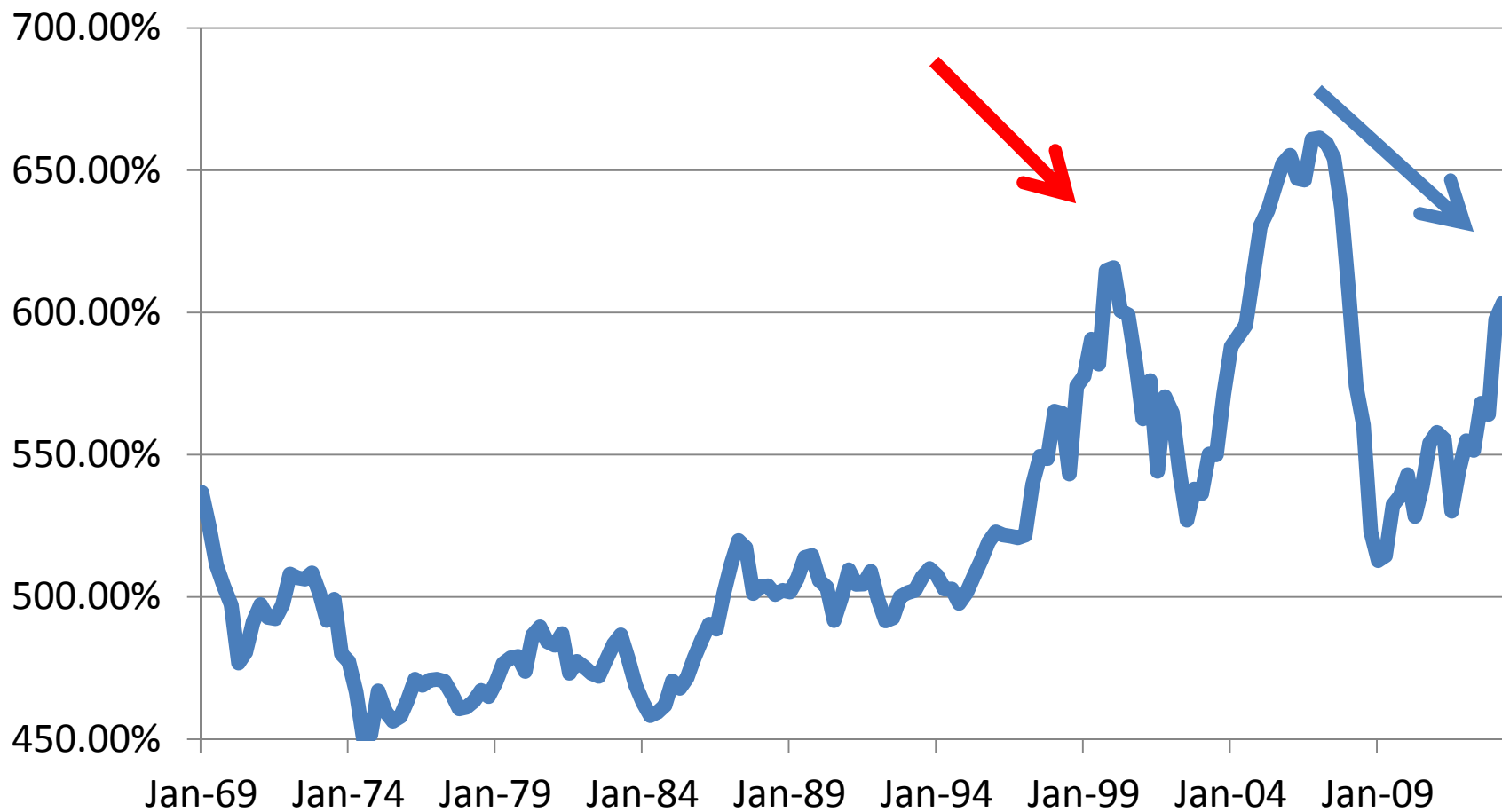
Federal Reserve Board, BEA

Consumer debt service as a percent of income is at historic lows



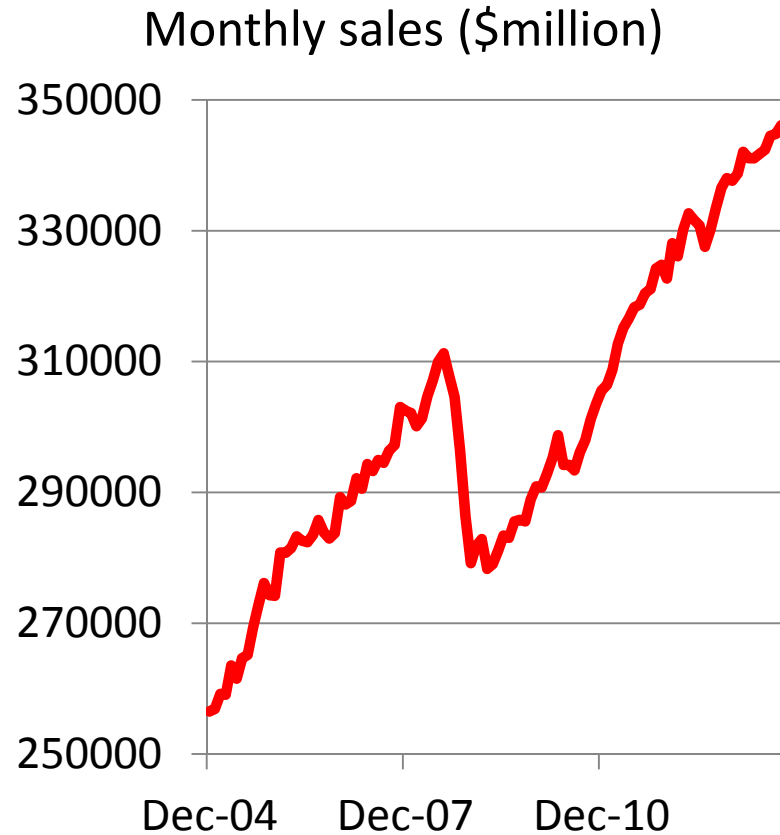
Federal Reserve, U.S. Financial Accounts

Consumer net worth relative to income is near pre-bubble peak

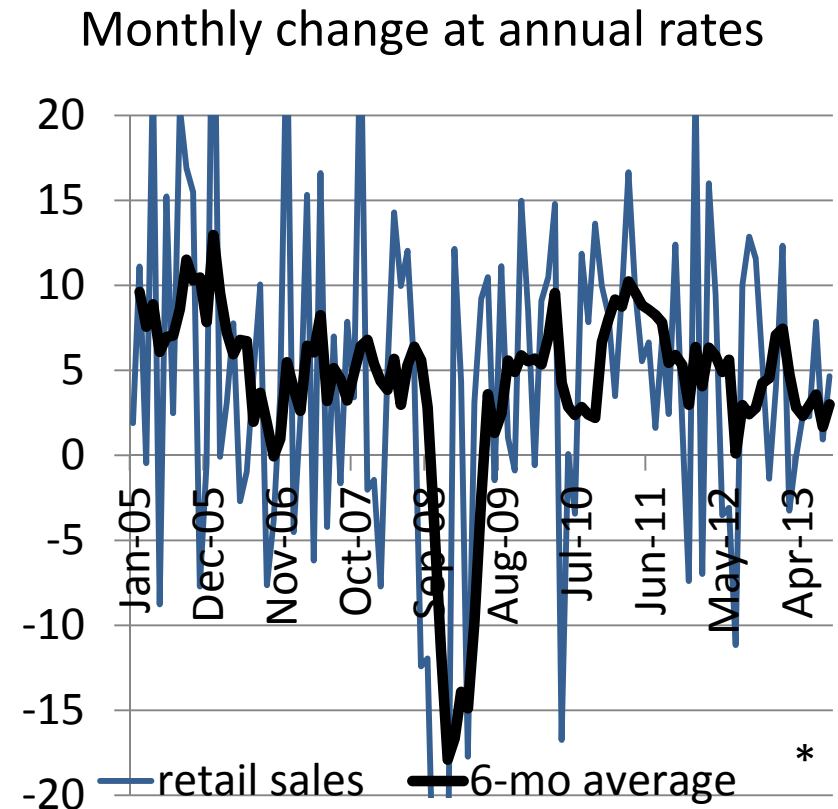


Federal Reserve, U.S. Financial Accounts

Retail sales, ex. Autos, 2005-2012



Seasonally adjusted data



What might U.S. growth look like?

Actual GDP growth rates 1969-2007

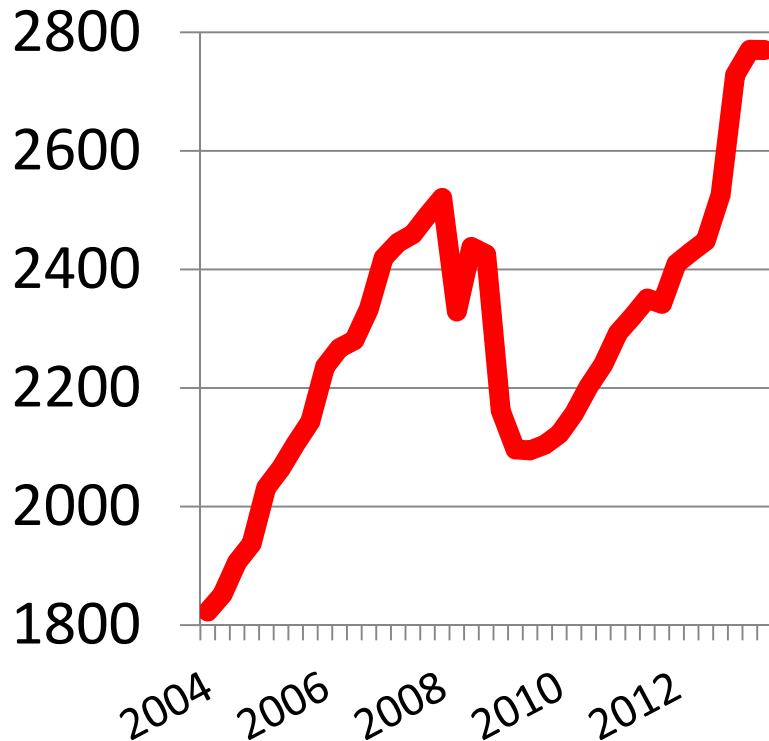
- ***Gross product = 3.1%***
- Consumption = 3.4%
- Investment = 3.9%
- Government = 1.8%
- Net Exports = (-)2.9%

Stronger growth ahead for U.S.?

YES, BUT ... not yet

Personal and social insurance taxes jumped by \$200 billion in 2013

**Federal Government
Revenue (\$ billion)**

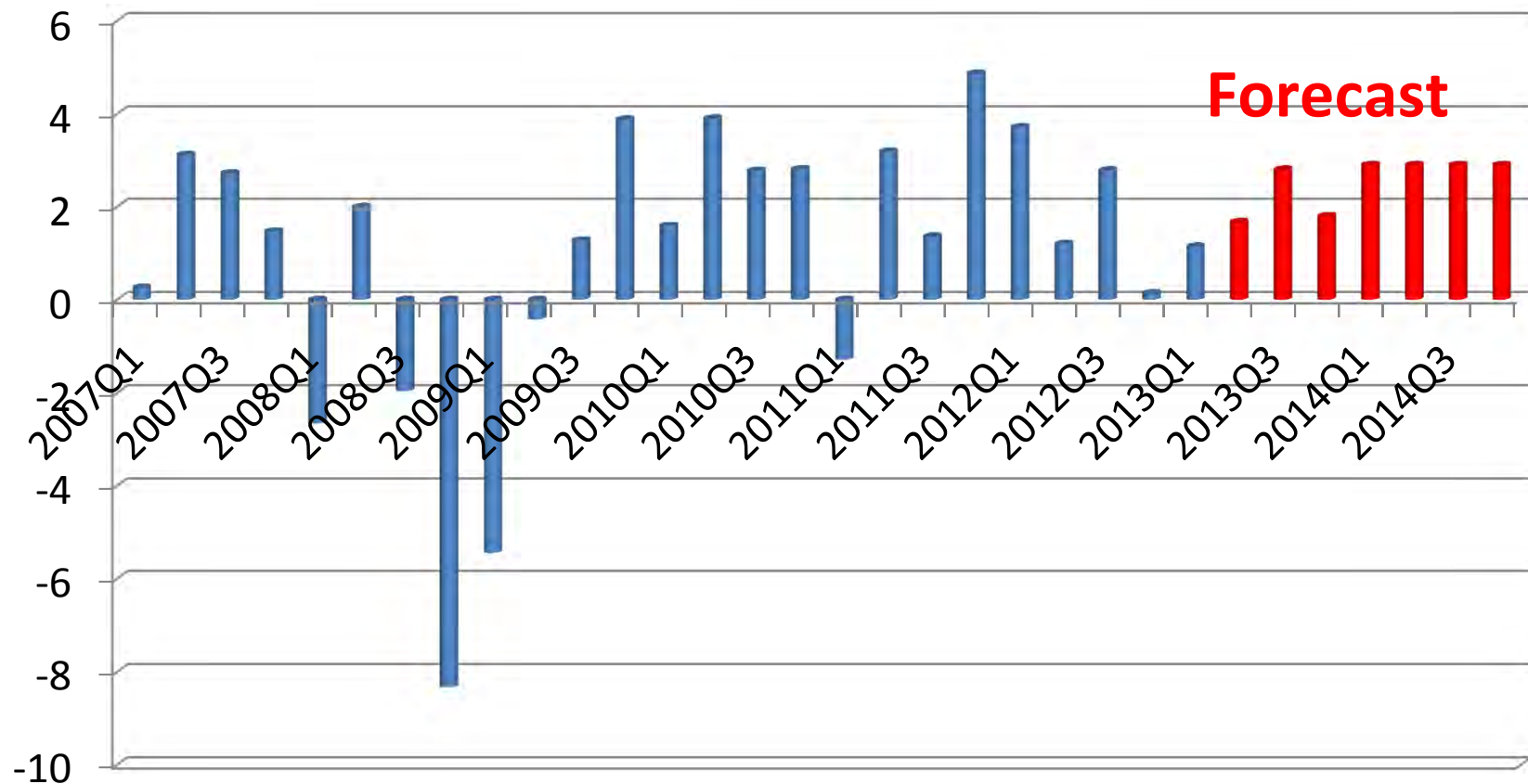


New 2013 taxes

- Return of payroll taxes \$126 billion
- Partial repeal of Bush-era tax cuts \$50 billion
- Affordable Care Act \$26 billion

U.S. GDP growth muddles through at 2.0-2.5 percent into early 2014

(Percent change at annual rates)

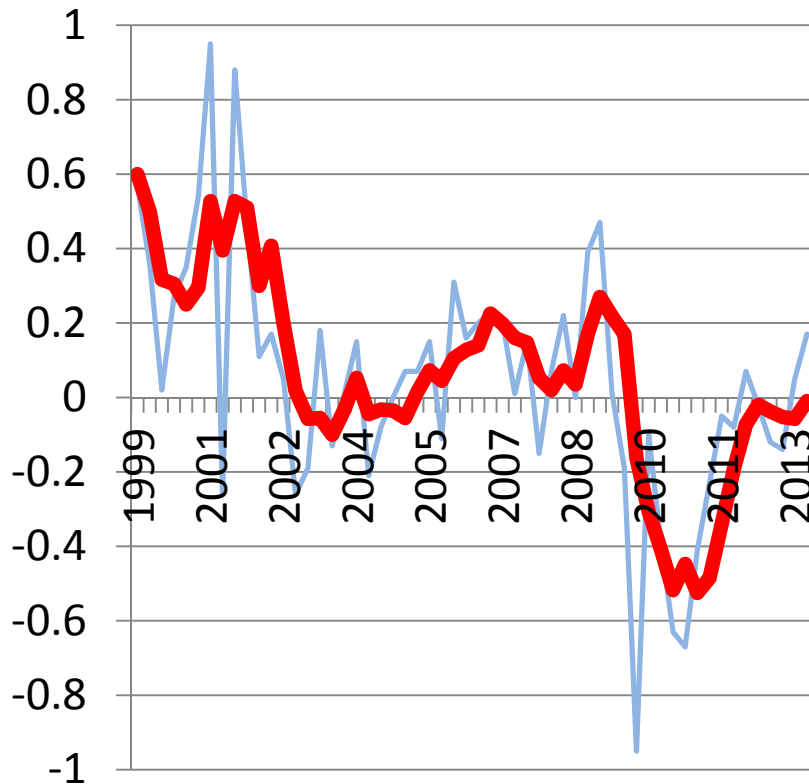


Survey of Professional Forecasters

Government Sector and Housing Improving in Texas, too

Percent contribution of state and local governments to GDP turns positive

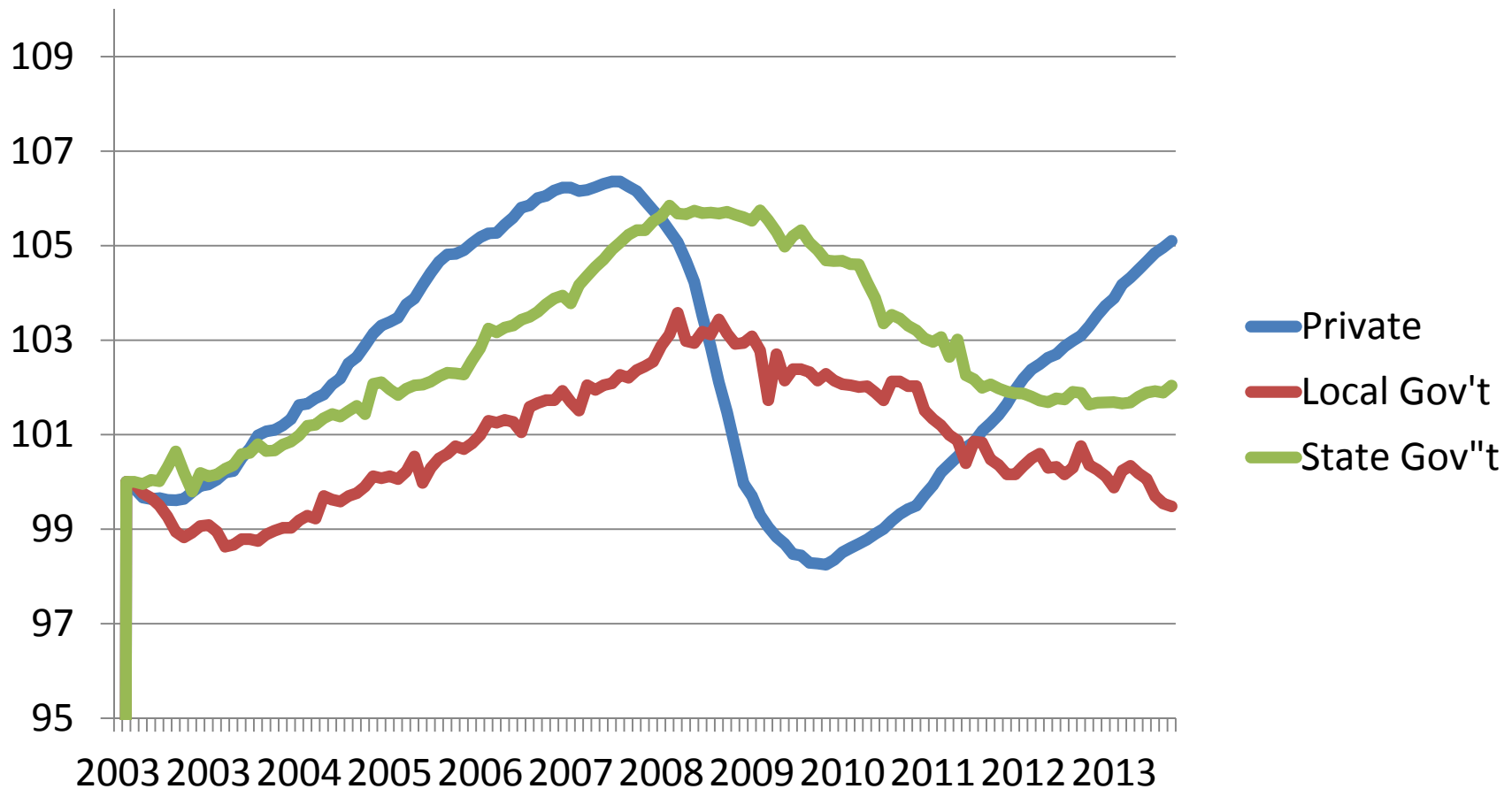
Four-quarter average



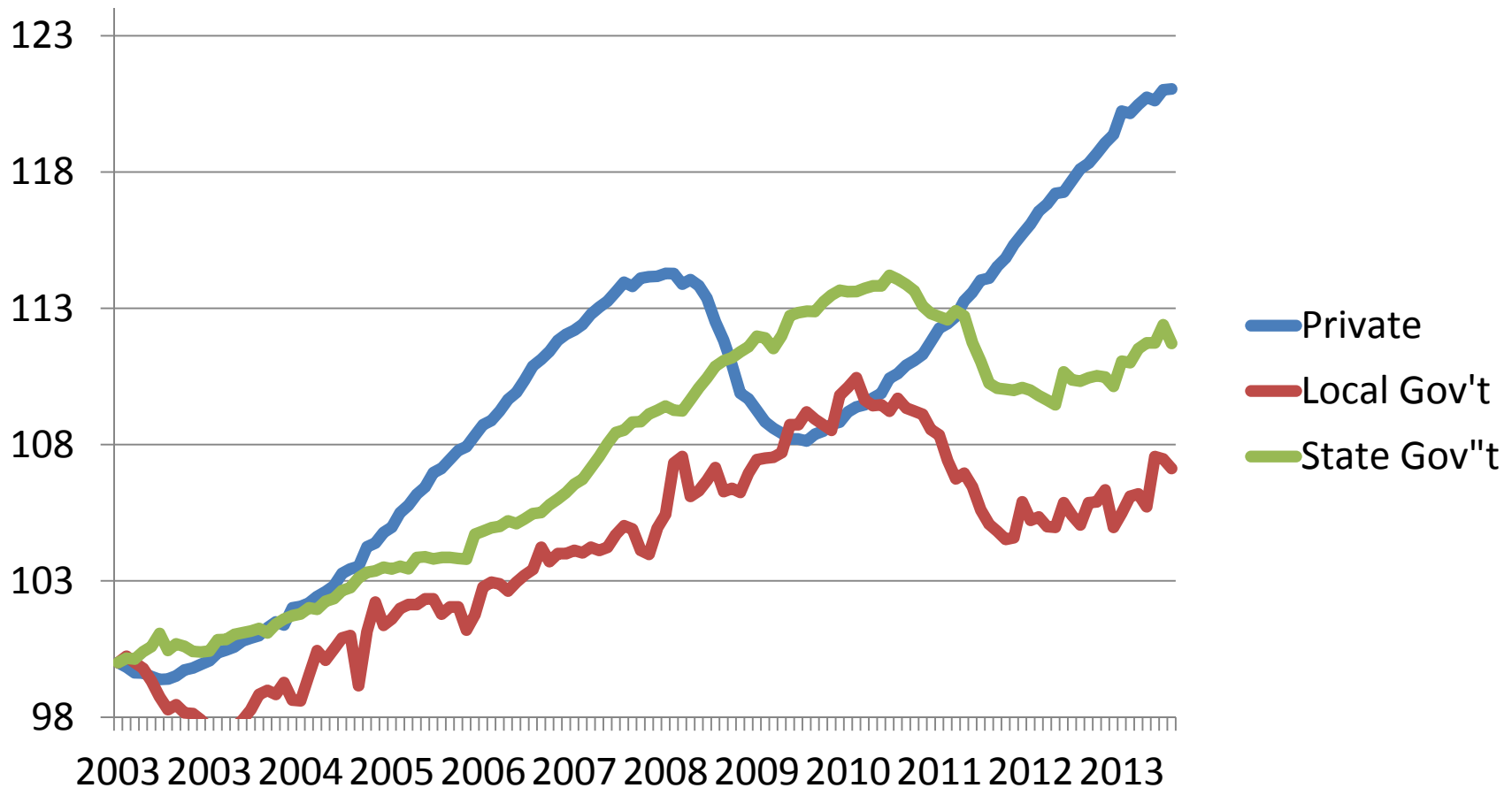
- 90% of states see year-over-year increases in revenue
- Two-thirds report they are meeting revenue projections
- Year-over-year increases average 4-5 percent since 2012

U.S. local government employment has turned up, states still struggle

(payroll jobs, index: jan2003 = 100)



Texas state and local government has begun to grow again (payroll jobs, index: jan2003 = 100)



Texas growth has moderated and
continues moderate through 2014

Why will Texas job growth slow?

- Oil and gas drilling down by over 10 percent, slow recovery forecast
- US economic outlook currently slowed by \$200 billion in new taxes
- Global growth has slowed along with emerging markets, hurting Texas exports

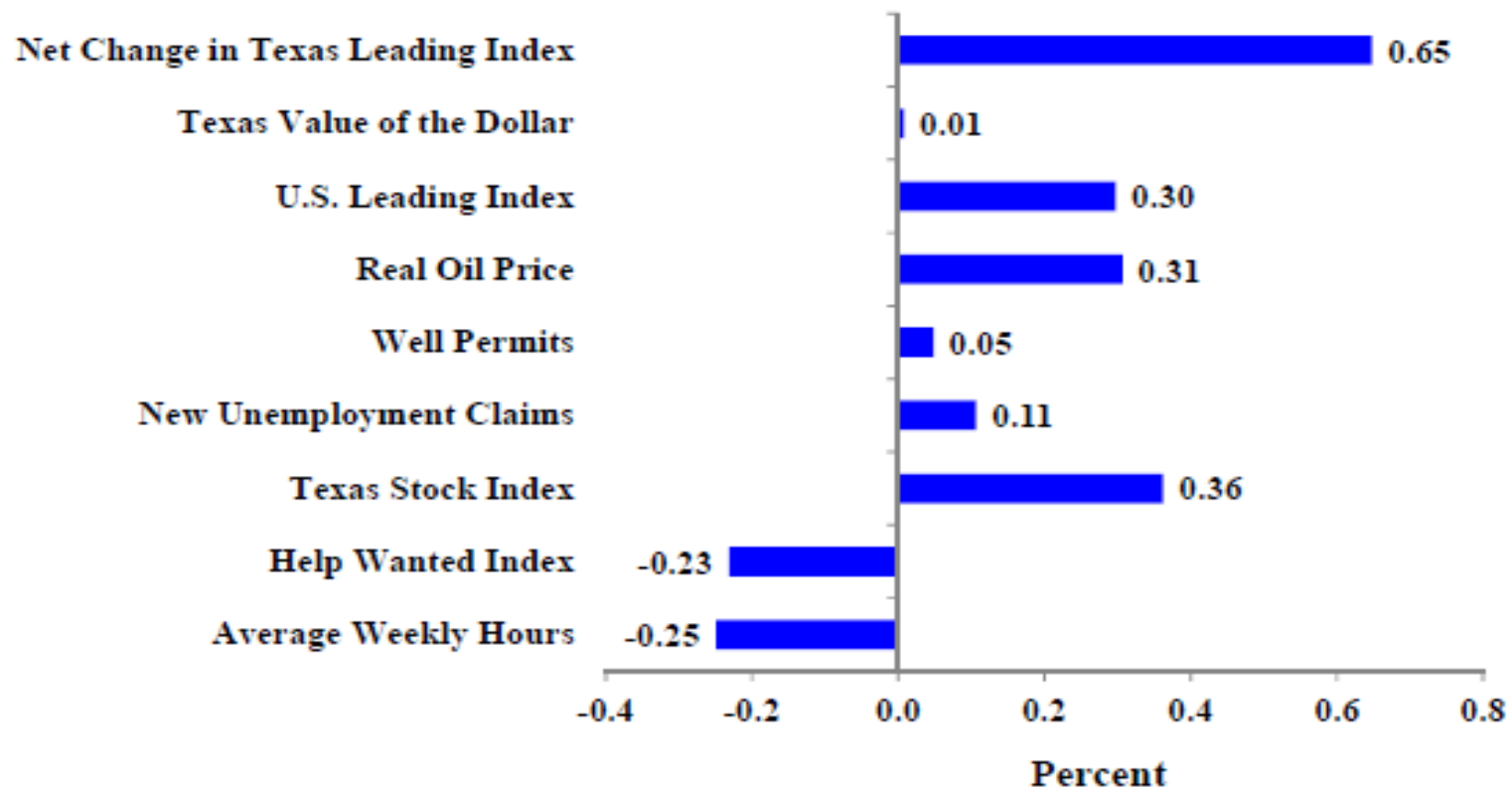
Why Texas job growth stays healthy?

- Oil-directed drilling remains at high levels – just not growing like it was
- U.S. economy sees growth pick up to 3 percent GDP growth in mid-2014 and beyond
- Downstream and midstream construction cushions growth on the Gulf Coast

FRB Dallas leading index points to moderate growth ahead

Net Contributions of Components

3-month change: May to July



Source: FRB Dallas

<http://www.dallasfed.org>

Texas Loses Bragging Rights as the Economy Slows

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