

CalPERS Chief Investment Officer Total Fund Update

Appendix A: Market and Economic Update

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Investment Committee
February 2013

Underlying improvements in the US economy (and abroad)

- US GDP growth stalled at the end of 2012, but forward looking indicators continue to improve and the economy could get back to 2% growth in 1H2013 and higher still in the second half.
- Slow but stable growth with few imbalances and benign inflation supports “risk-on” markets, despite the further fiscal confrontations ahead of us.
- Retail trade and business spending showed less impact from the Fiscal Cliff than expected, and personal income had a solid finish to 2012.
- Revisions to the jobs report showed a 181K per month rise in jobs during 2012, vs the initial estimate of 152K per month.
- The labor force participation rate is unlikely to rebound, so that the unemployment rate is likely to be in the low 7s later this year if we get the same jobs growth as 2012.
- The Fed’s Senior Loan Officer’s Survey for 1Q12 showed a rebound in demand for loans, but the money multipliers and money velocity remain low enough not to be worried about inflation.
- The global economic activity indicators also improved in January, although political developments in Italy and Spain may be worrisome this month.

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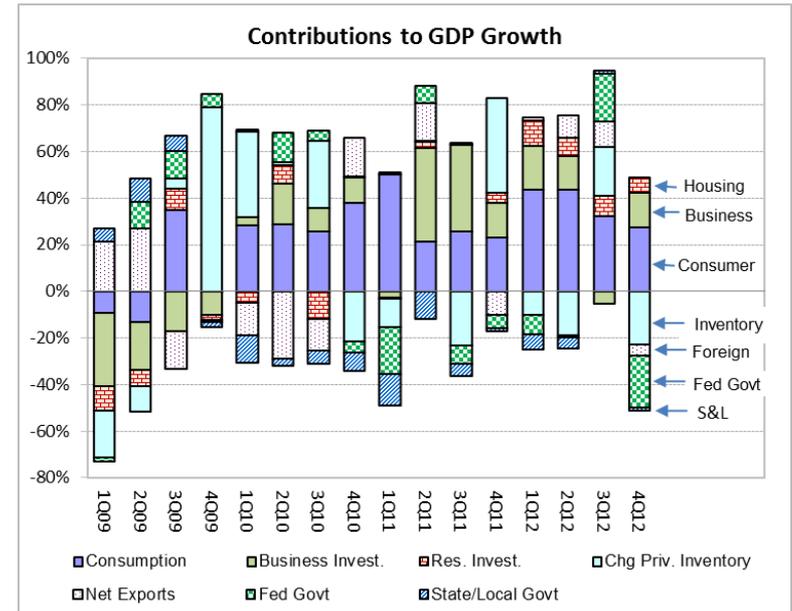
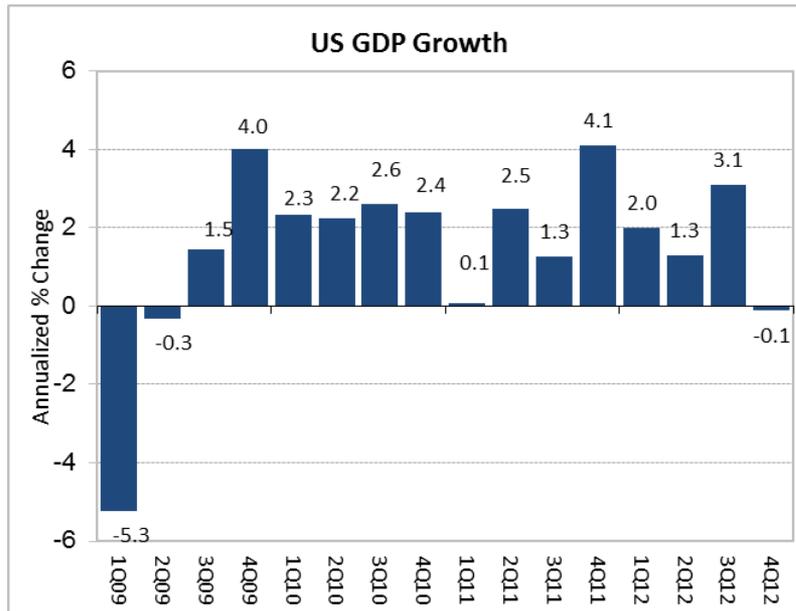
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i. US Economy in Aggregate

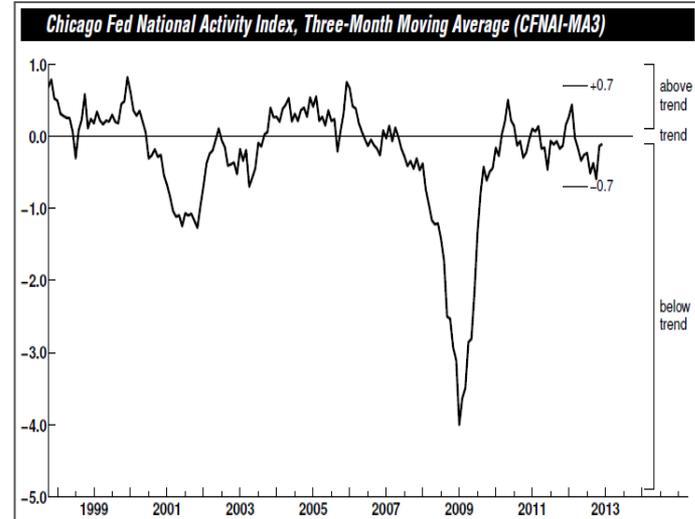
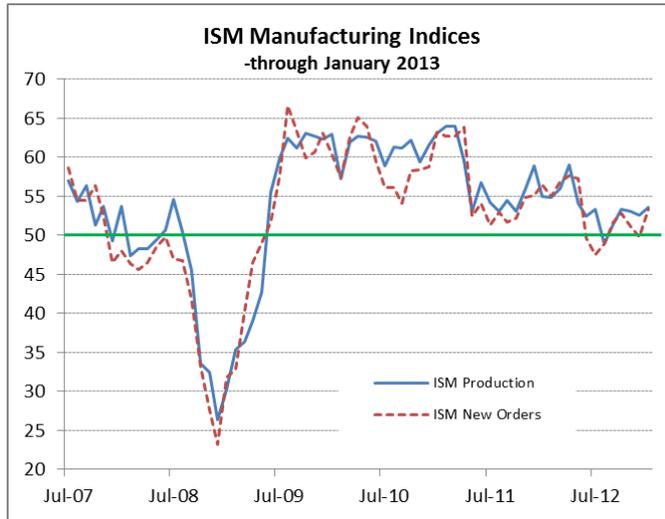
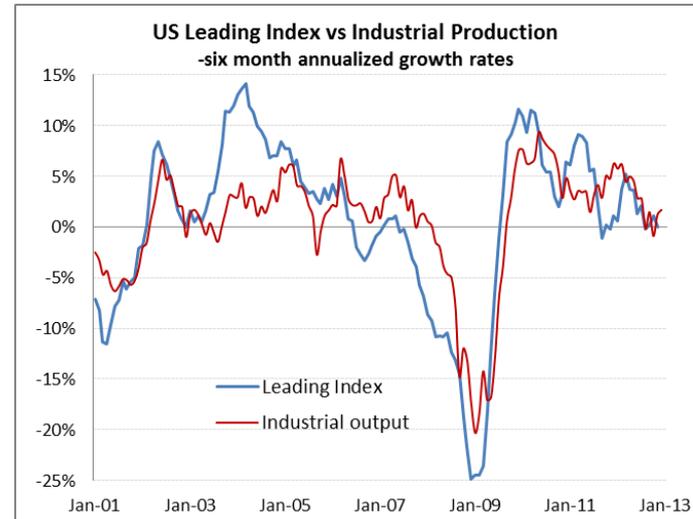
- More strong points than negatives in the recent US economic data flow.

 Positive	 Same Trend	 Negative
<p>- Jobs <i>Jobs +175K pm in 2011 and +181K in 2012 (both revised from 152K).</i></p> <p>- Personal income <i>Strong growth of income in 2012, only partly due to dividend pull forward.</i></p> <p>- Housing starts <i>During 2012, +18% for single family starts, +91% for multi family.</i></p> <p>- Business spending <i>Orders for capital goods, aircraft and defense improved into year end.</i></p> <p>- Business surveys <i>ISM manufacturing (53.1) and services indices (55.2) project solid growth.</i></p> <p>- Retail sales <i>US retailing finished 2012 better than expected despite imminent tax hikes.</i></p>	<p>- Home sales <i>New and existing sales level out but it may be a lack of supply.</i></p> <p>- CPI inflation <i>Steady at just below 2% as energy and food prices and rents stabilize.</i></p>	<p>- GDP growth <i>4Q 2012 GDP fell (-0.1%) for the first time since the 2008-09 recession.</i></p> <p>- Consumer sentiment <i>Deteriorated in Dec-Jan, as taxes went up on consumers and employers.</i></p> <p>- Mortgage refi applications <i>Less applications now that mortgage rates have modestly risen.</i></p>

- For the first time since the recession ended in mid 2009, US GDP fell outright in 4Q 2012 (it narrowly averted this in 1Q 2011).
- In the 3 ½ years since the recession ended, growth averaged only 2.1%, well below recovery rates from the 2001 and 1991 recessions (2.9% and 3.3%)
- Private final demand (consumer, business investment and housing) recorded a solid 3.3% rise in 4Q 2012.
- Offsetting this were sharp subtractions from inventories, exports and defense. Some but not all of this will rebound.

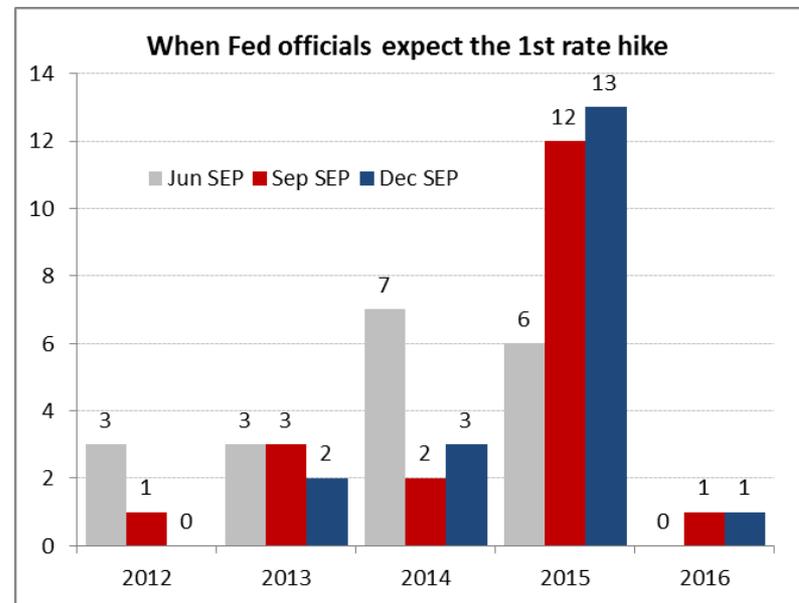


- The ISM manufacturing survey showed an improvement in January.
- Both the US leading index and the Chicago Fed National Activity Index confirmed the slow rate of economic activity toward the end of the year, but started to improve modestly.



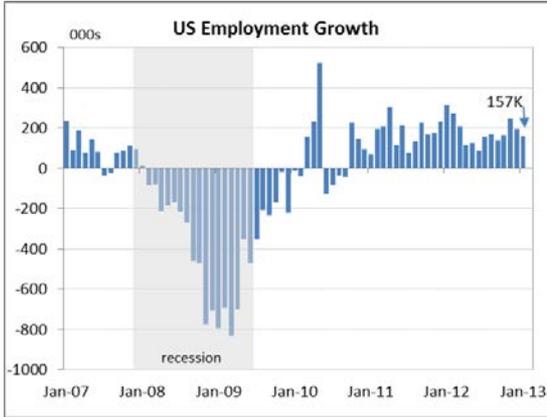
- At its December 2012 meeting the Federal Reserve:
 - Announced an open ended program to purchase \$45bn per month of US Treasuries along with a continuation of its \$40bn/monthly MBS purchases. That program will continue until the labor market improves *substantially*.
 - Communicated that the near-zero fed funds target will be “appropriate at least as long as the unemployment rate remains above 6.5 %, projected inflation is no more than 2.5%, and longer-term inflation expectations continue to be well anchored ... (it)will also consider additional measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial developments”.
- The Fed made no further changes at its Jan 2013 meeting but did say: “...growth in economic activity paused in recent months, in large part because of weather-related disruptions and other transitory factors.”

FOMC: Summary of Economic Projections, December 2012					
	2012	2013	2014	2015	Longrun
Change in real GDP					
June	1.9 to 2.4	2.2 to 2.8	3.0 to 3.5	n.a	2.3 to 2.5
Sep	1.7 to 2.0	2.5 to 3.0	3.0 to 3.8	3.0 to 3.8	2.3 to 2.5
Dec	1.7 to 1.8	2.3 to 3.0	3.0 to 3.5	3.0 to 3.7	2.3 to 2.5
Unemployment rate					
June	8.0 to 8.2	7.5 to 8.0	7.0 to 7.7	n.a	5.2 to 6.0
Sep	8.0 to 8.2	7.6 to 7.9	6.7 to 7.3	6.0 to 6.8	5.2 to 6.0
Dec	7.8 to 7.9	7.4 to 7.7	6.8 to 7.3	6.0 to 6.6	5.2 to 6.0
PCE inflation					
June	1.2 to 1.7	1.5 to 2.0	1.5 to 2.0	n.a	2.0
Sep	1.7 to 1.8	1.6 to 2.0	1.6 to 2.0	1.8 to 2.0	2.0
Dec	1.6 to 1.7	1.3 to 2.0	1.5 to 2.0	1.7 to 2.0	2.0
Core PCE inflation					
June	1.7 to 2.0	1.6 to 2.0	1.6 to 2.0	n.a	n.a
Sep	1.7 to 1.9	1.7 to 2.0	1.8 to 2.0	1.9 to 2.0	n.a
Dec	1.6 to 1.7	1.6 to 1.9	1.6 to 2.0	1.8 to 2.0	n.a

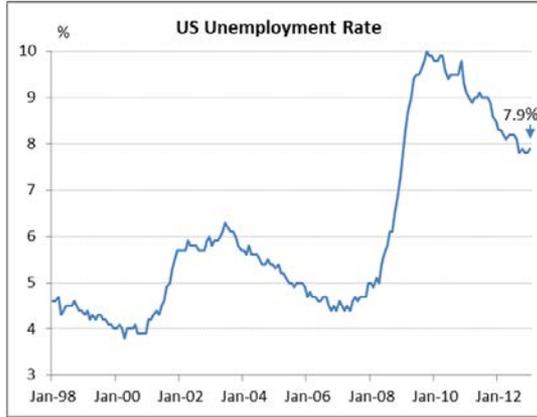


ii. US Jobs Market

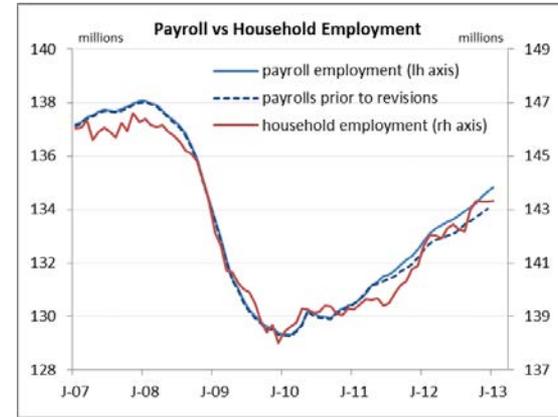
- Monthly jobs growth in '12 revised up from 152K to 181K



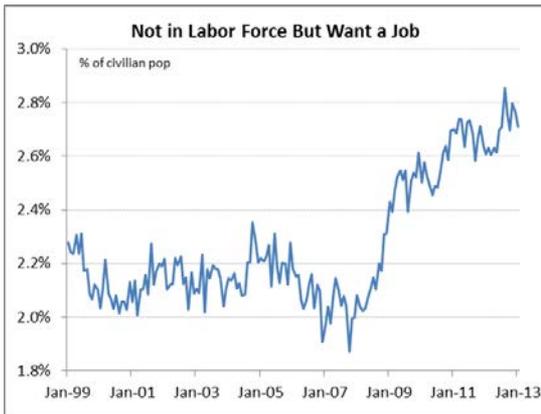
- The trend in the unemployment rate is a fairly steep fall



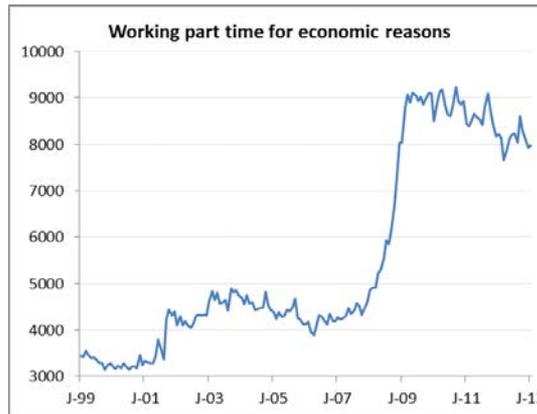
- Household survey more volatile



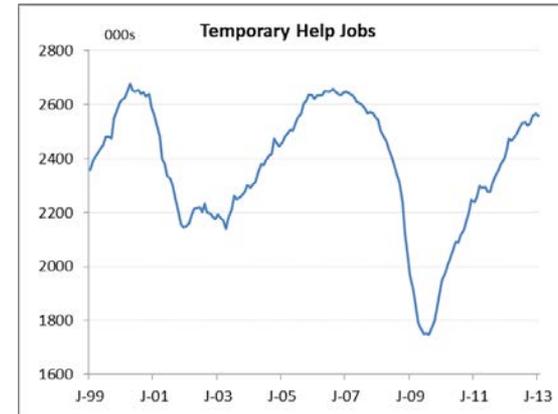
- Peaked shy of 7 mn



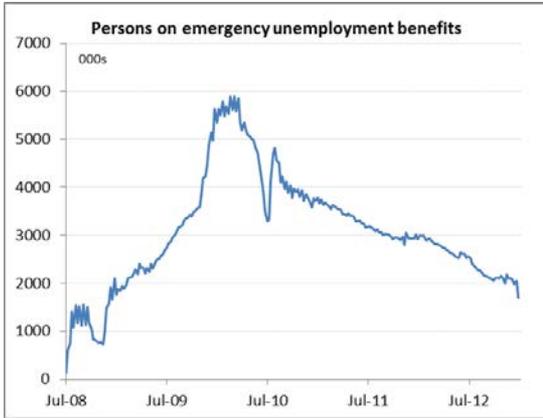
- Less workers forced into part time



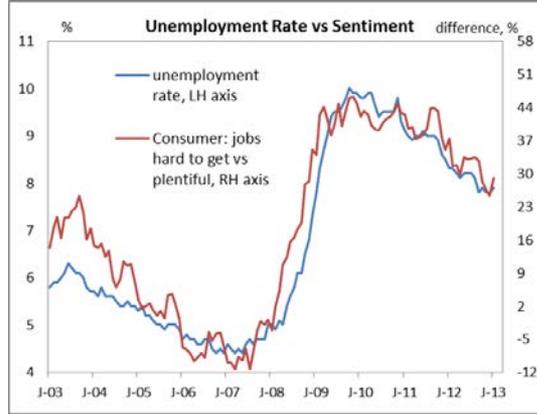
- Temporary help near past cycle highs



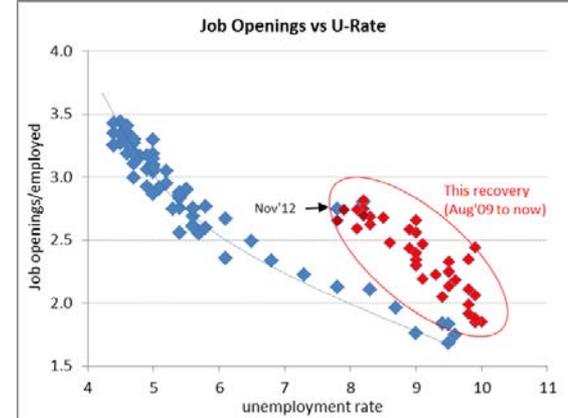
- Emergency benefits gradually receding



- Sentiment survey confirms lower unemployment rate



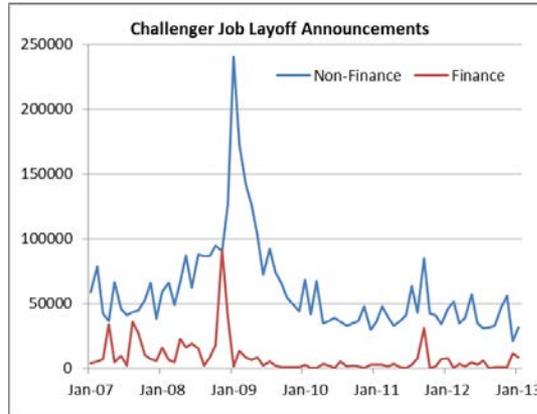
- Improved job openings



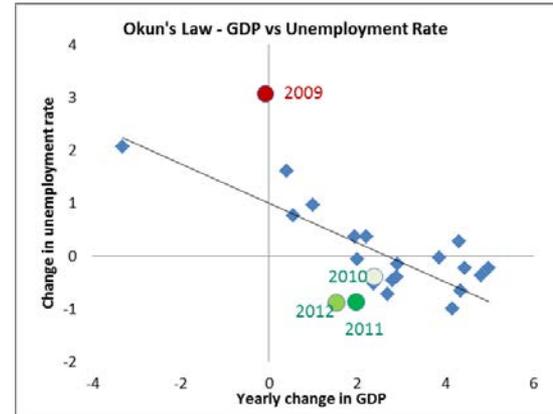
- Housing/trades jobs pick up Dec-Jan



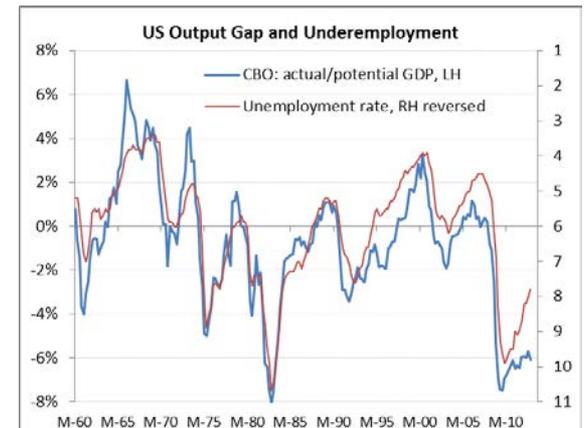
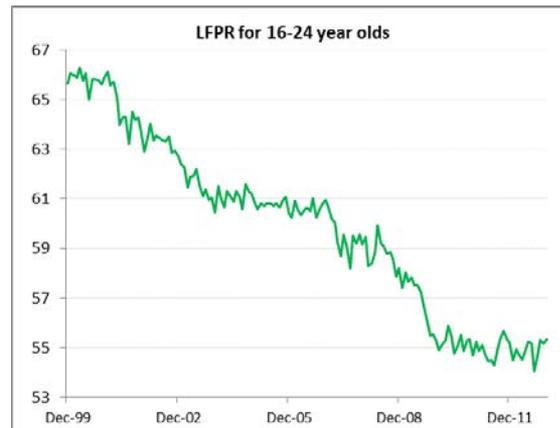
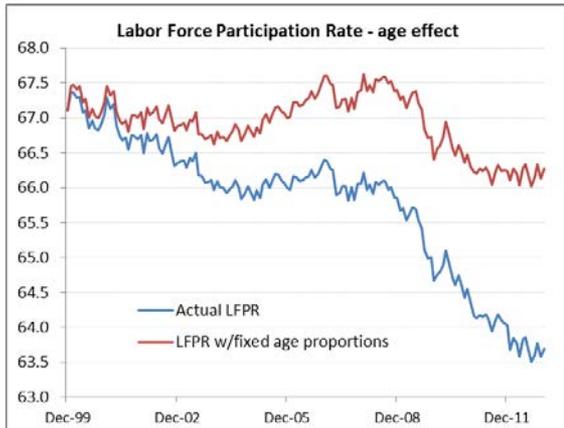
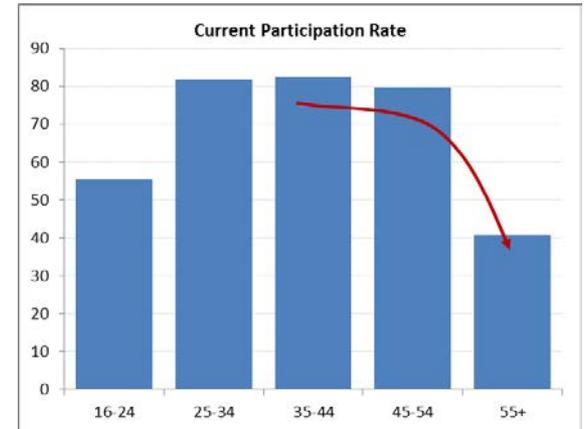
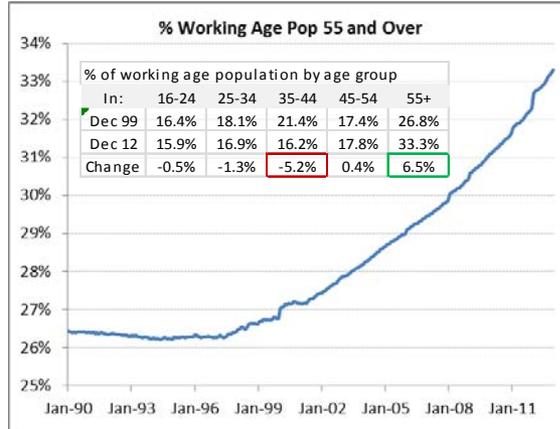
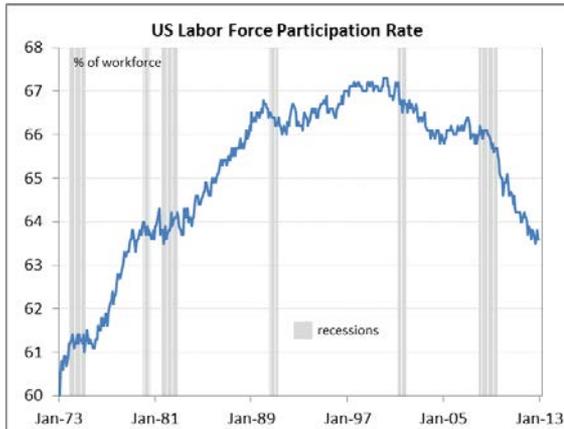
- Layoffs subdued



- Volatile relationship, GDP vs jobs

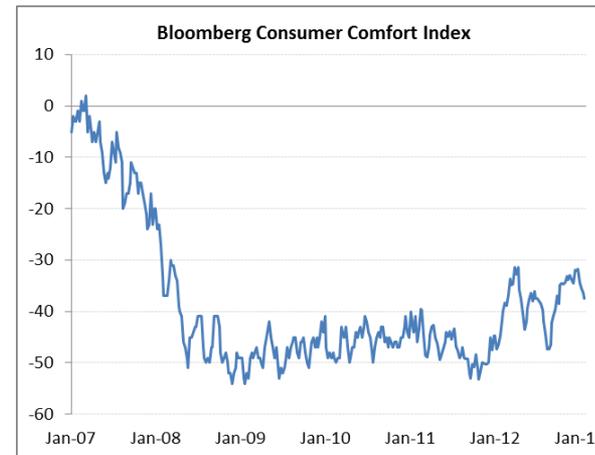
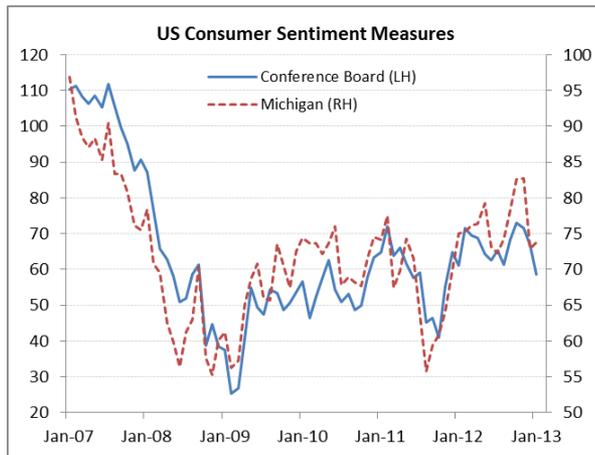
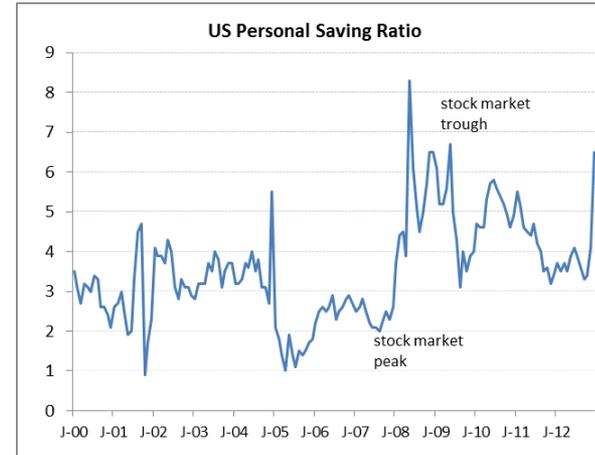
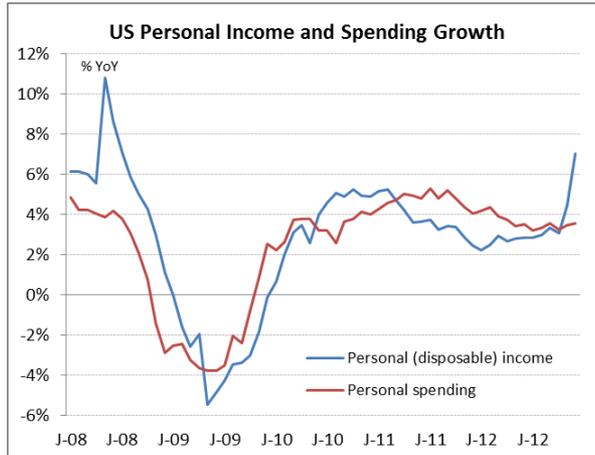


- Most of the drop in the US labor force participation rate is due to (a) population moving into the 55+ cohort and (b) more 16-24 year olds opting for education.
- This is unlikely to reverse, thus the “output gap” is shallower than conventional measures suggest.

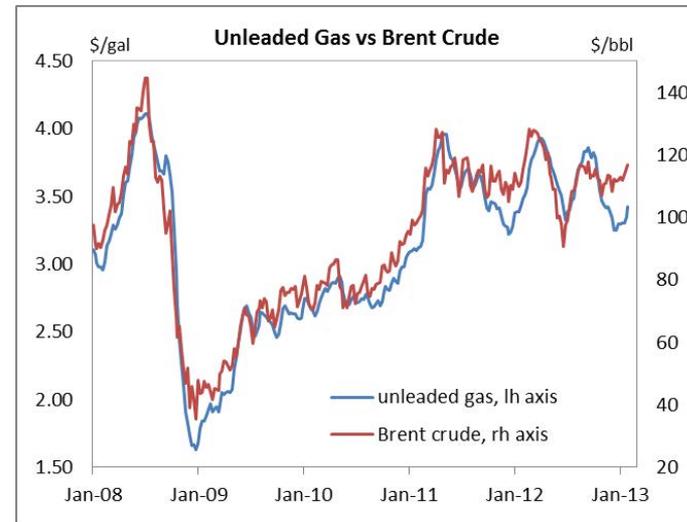
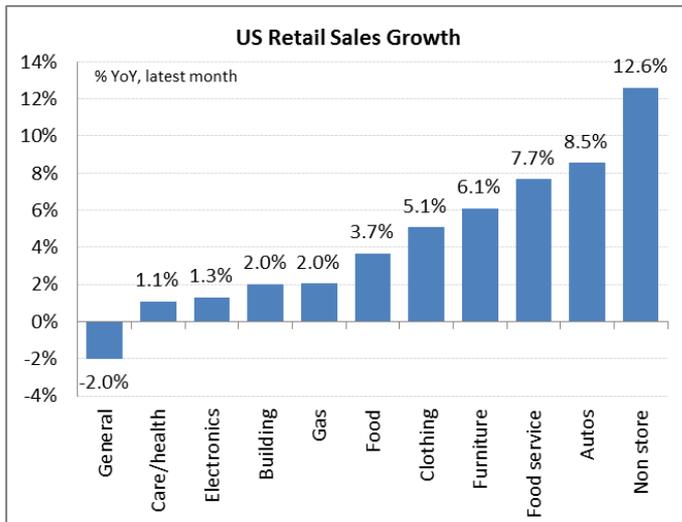
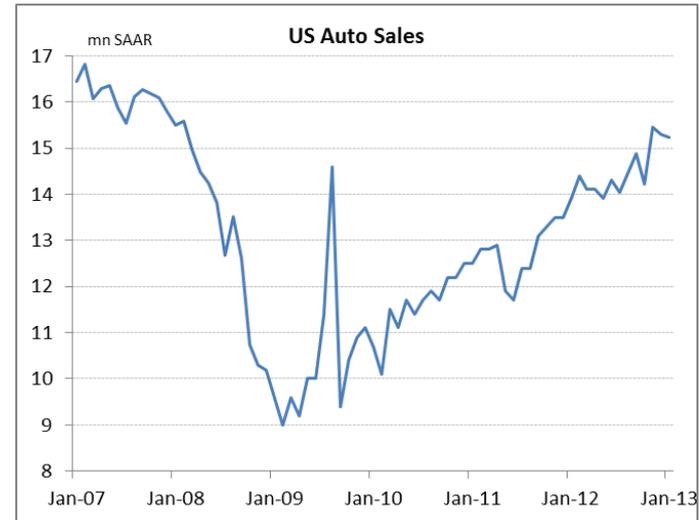


iii. Household Sector

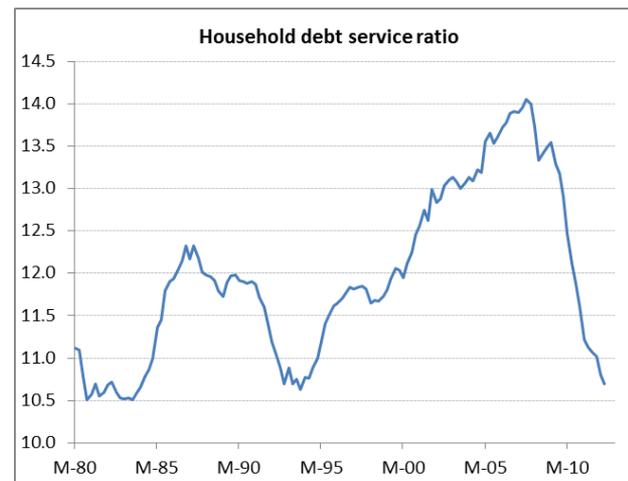
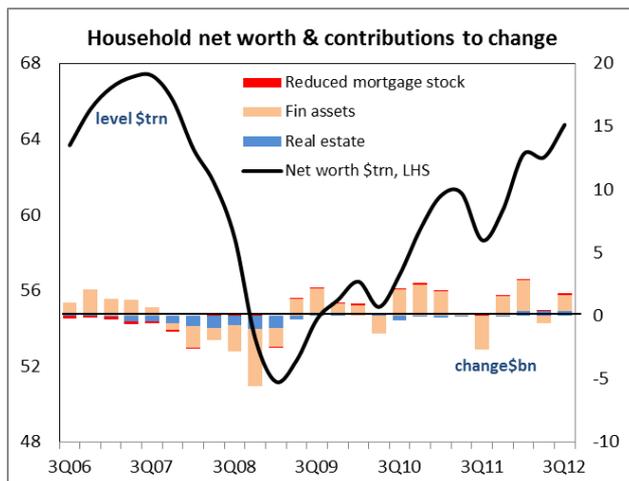
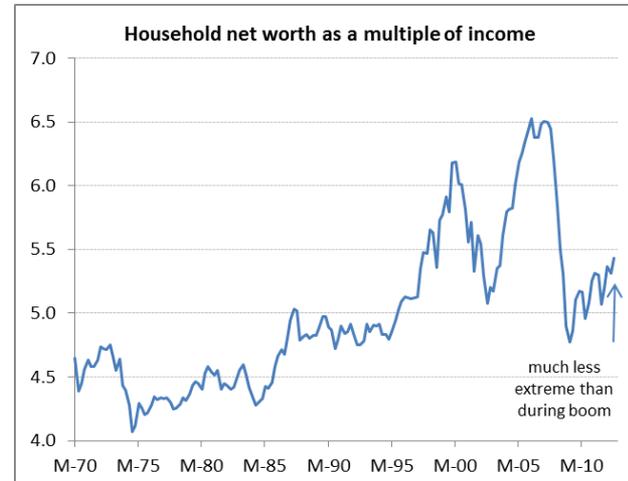
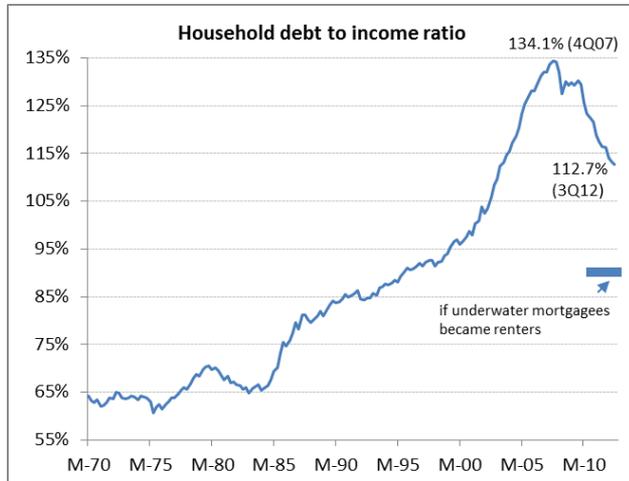
- Dividend and bonus income brought forward caused income and savings to surge in December. During 2012 personal income rose by 6.9%, including 5.4% for private sector wages and salaries.
- Confidence dipped in December-January around tax increases.



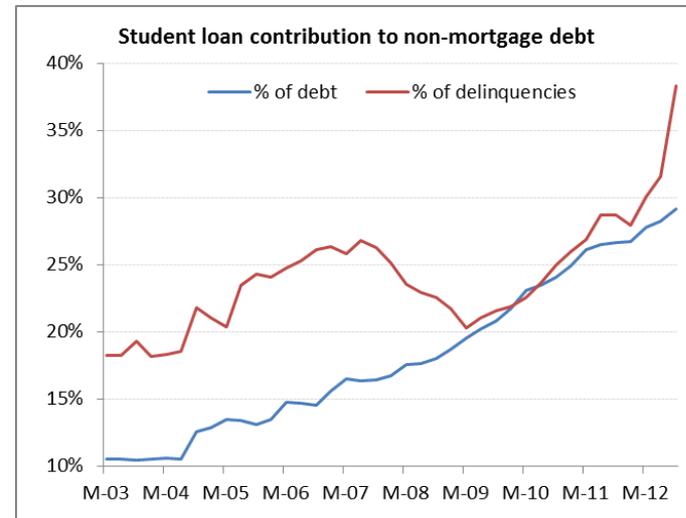
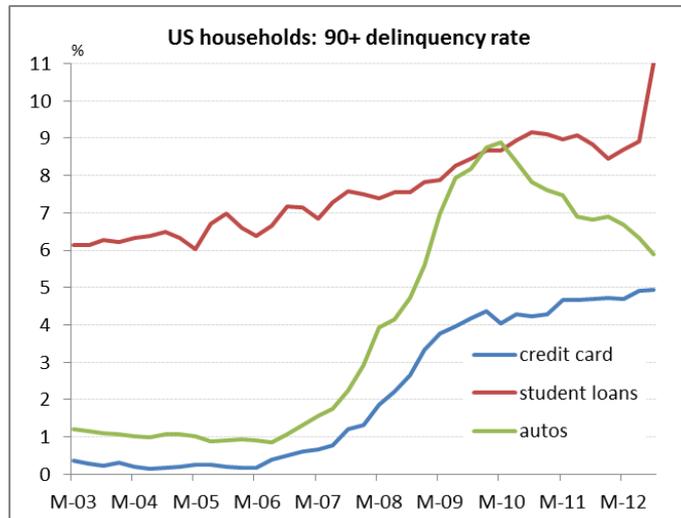
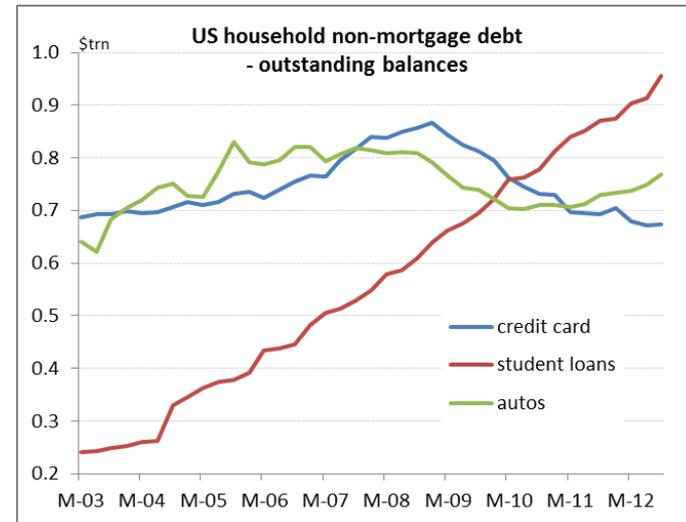
- US retail spending rose by 4.7% during the 12 months of 2012, slower than the growth rate of 6.5% in the prior 12 months ... but still respectable.
- 2012 sales slowed for gasoline, building materials and general purchases (department etc) stores.
- Weekly chain store data suggests that spending held up pretty well during January despite tax hikes.



- US household leverage continues to unwind as debt service is unusually cheap.
- In 3Q12, household asset values were 8% higher than a year ago (financial assets +10%, real estate +6%).

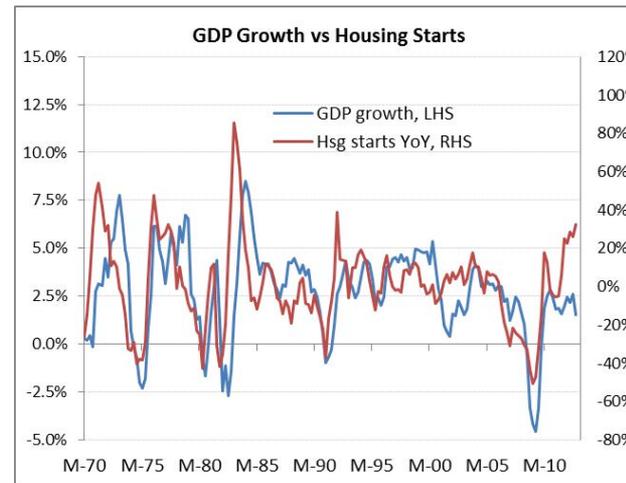
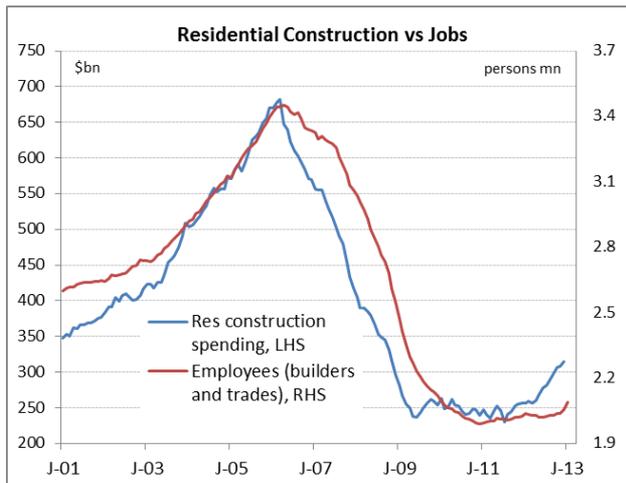
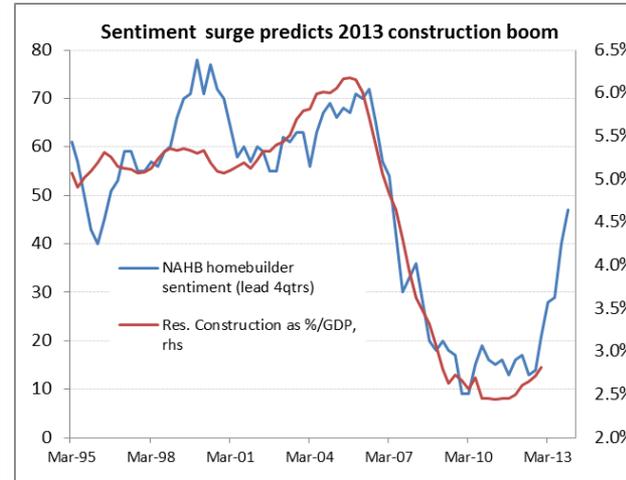
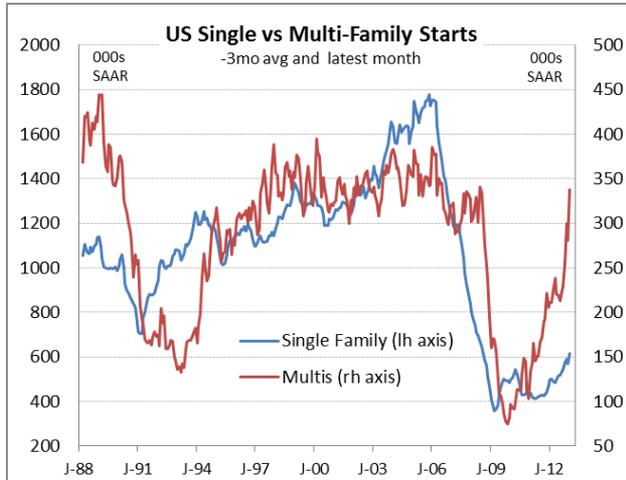


- Outstanding student loan debt rose another 4.6% during 3Q 2012.
- The large spike in delinquency rates for student loans reflects a change in reporting, but it will also eventually go much higher still.

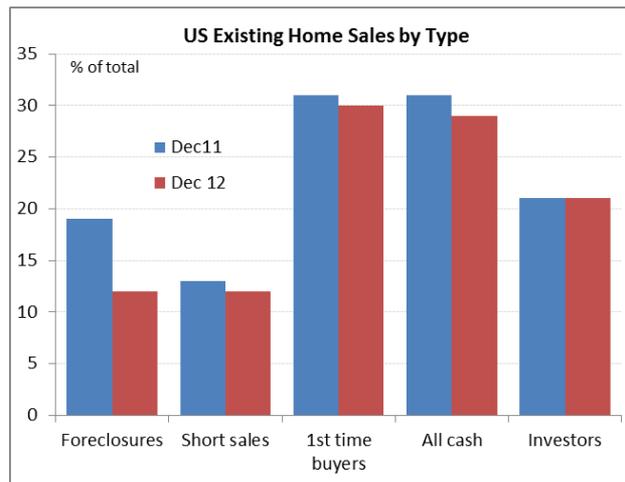
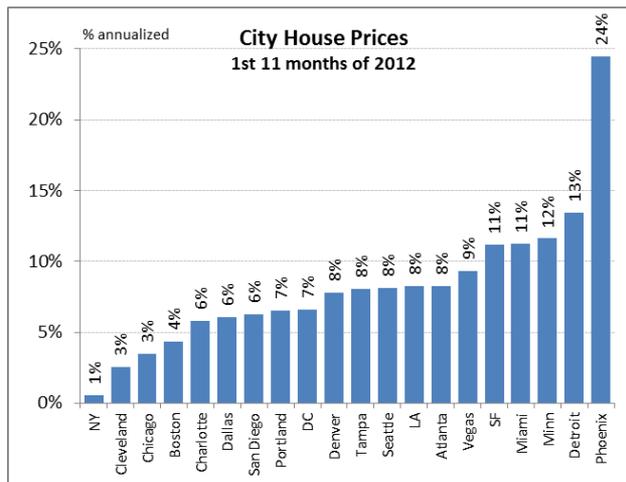
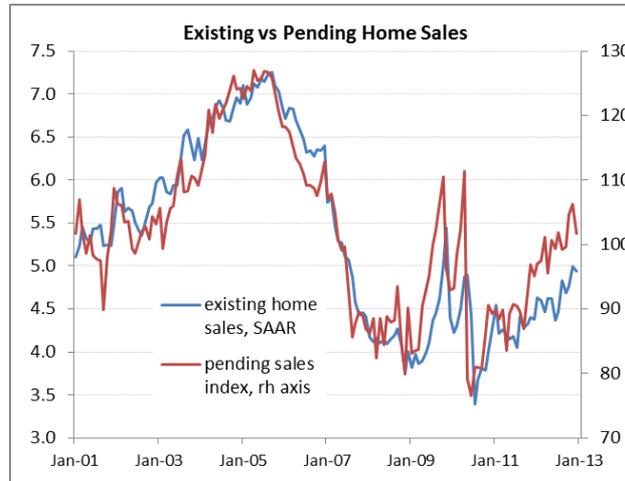
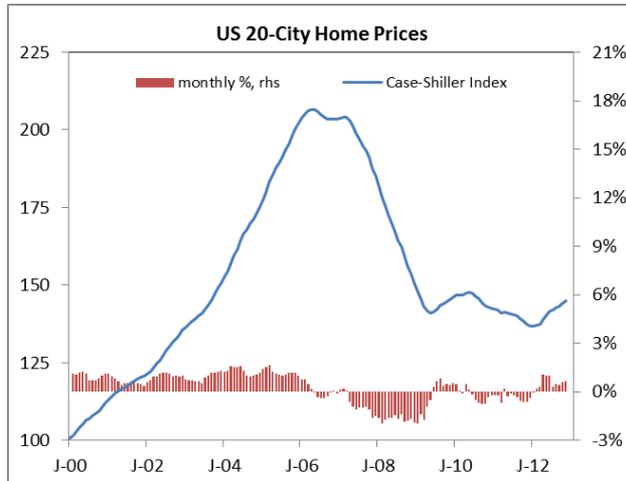


iv. US Housing Market

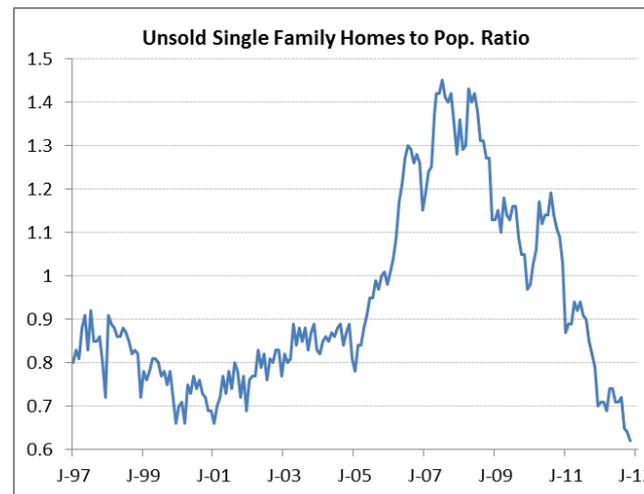
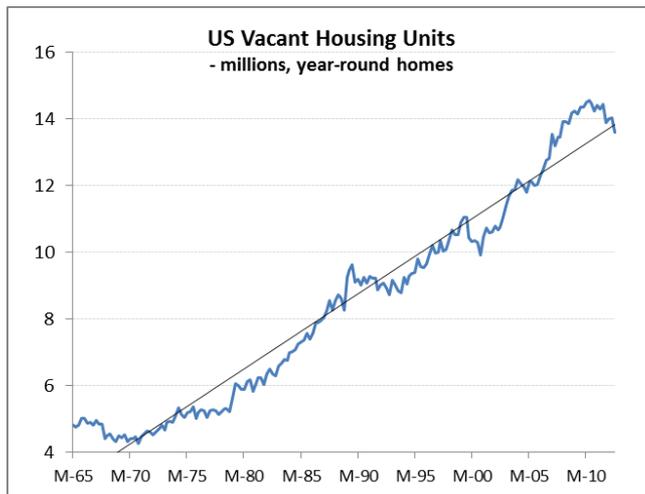
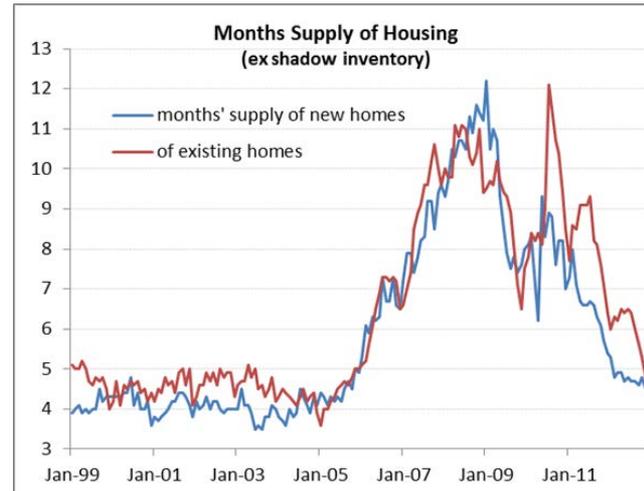
- US housing starts are surging, especially for multi-family units.
- Strength in housing has a good read-through for jobs and GDP in past cycles.



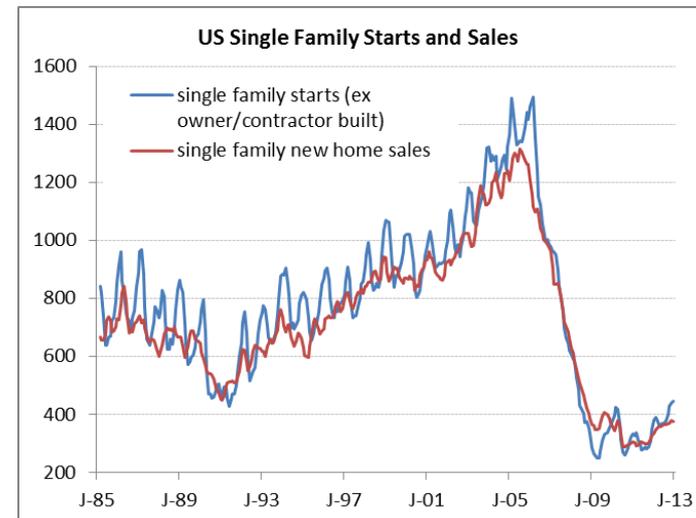
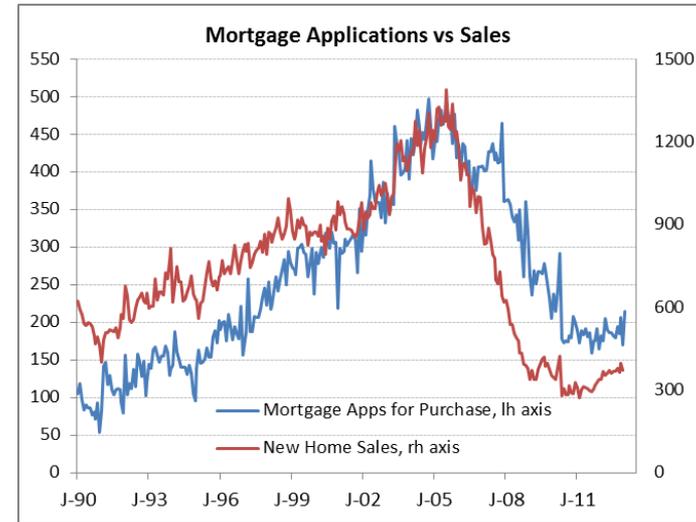
- Scarce supply means that house prices are recovering at a modest but persistent pace.
- Price recovery is most evident in markets where foreclosure inventory has cleared.



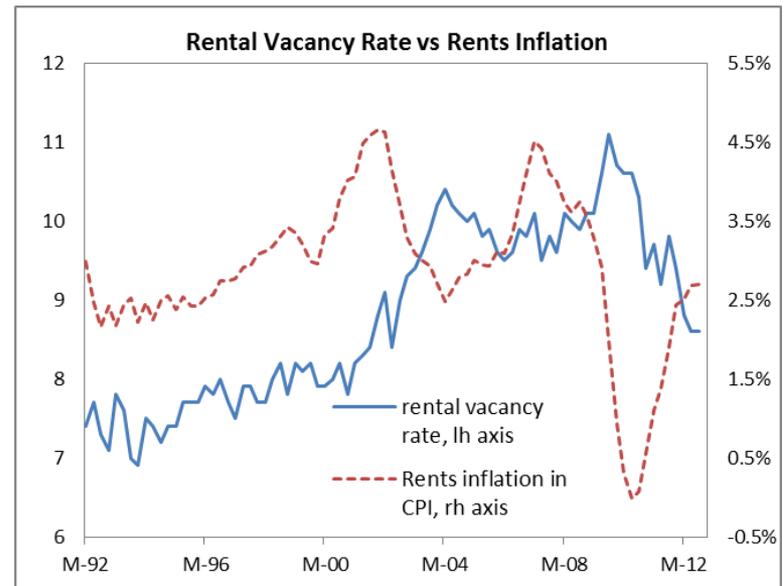
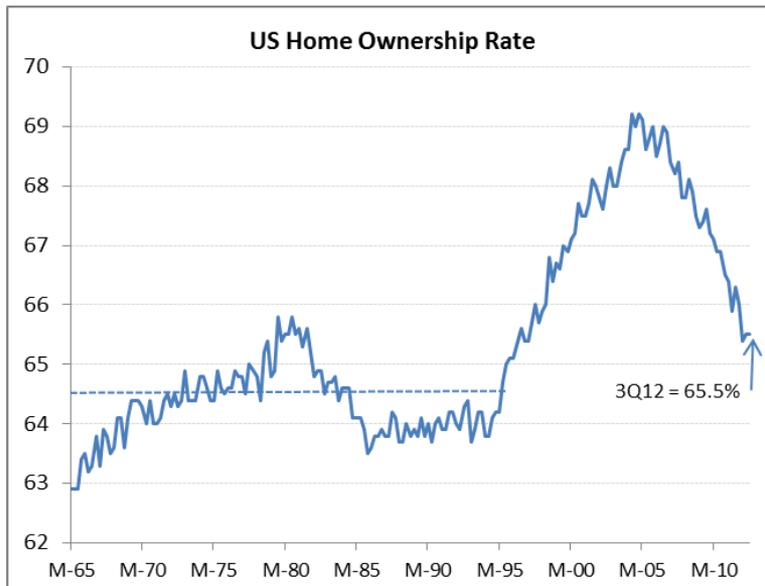
- Low inventory of homes for sale and vacant homes have helped to drive the price recovery.



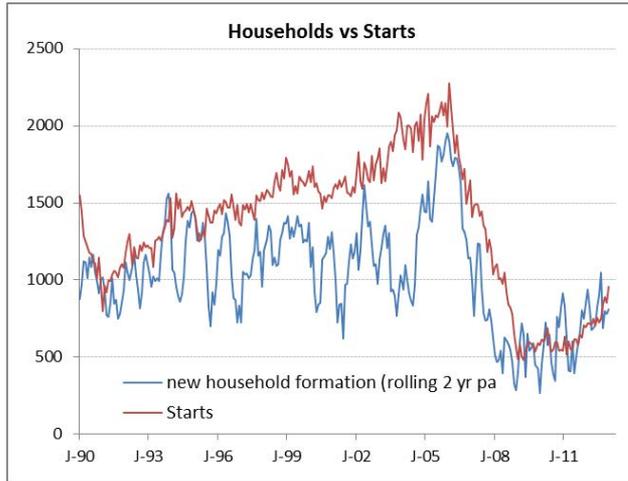
- Homebuilder expectations are well ahead of actual new home sales.
- To facilitate this process we should expect to see stronger numbers for mortgage applications for purchase, which has also been slow to emerge.
- For single family homes, starts and sales are still comparatively low.



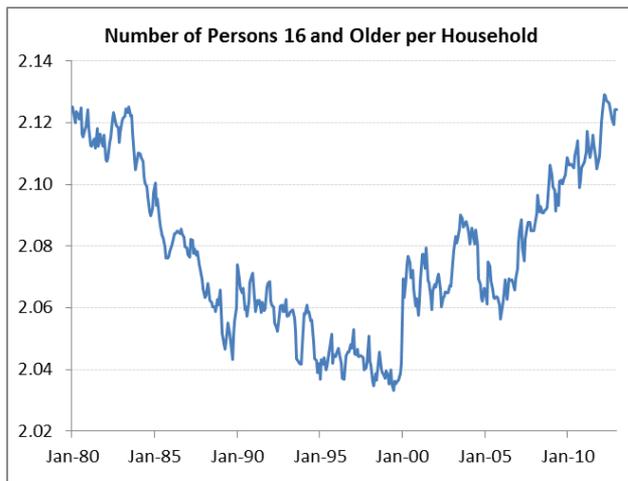
- The supply response in multi-family units is associated with the home ownership rate reverting toward pre-bubble levels.
- Meanwhile, tight rental vacancy growth rates have propelled rents inflation back up to around 2.75%.



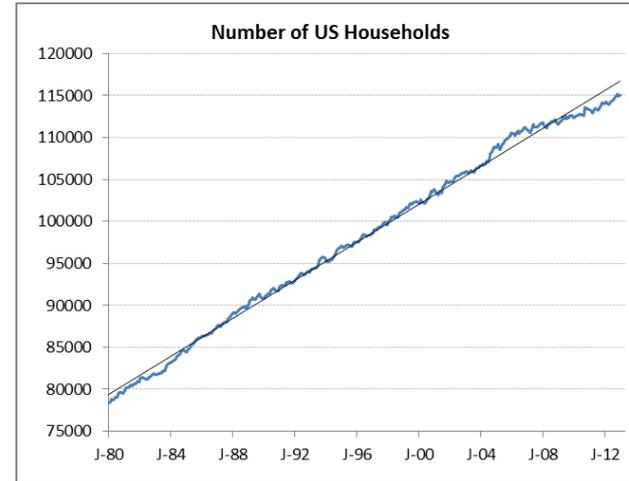
- Household formation rebounds to 1% (~ 1mn) pa)



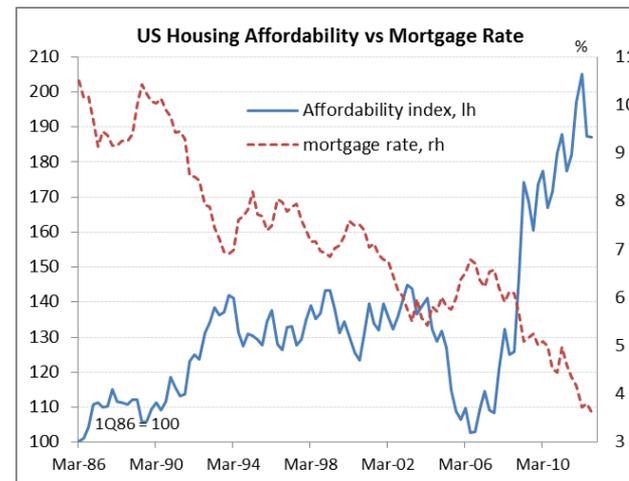
- Partly reversible



- Trend growth more like 1.3% and we are below trend-line



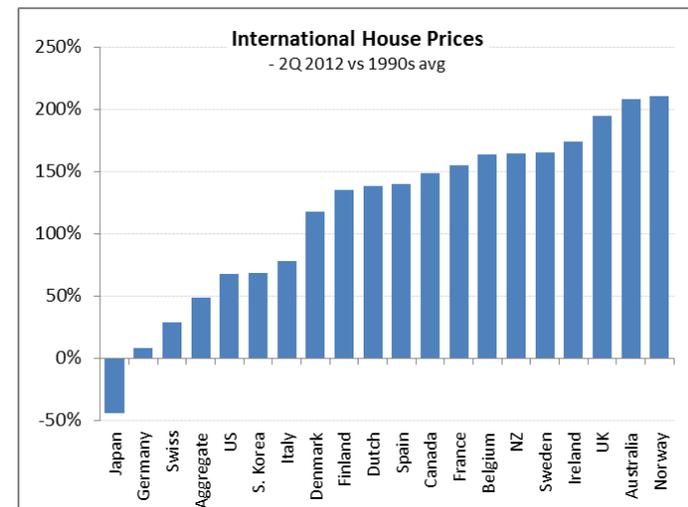
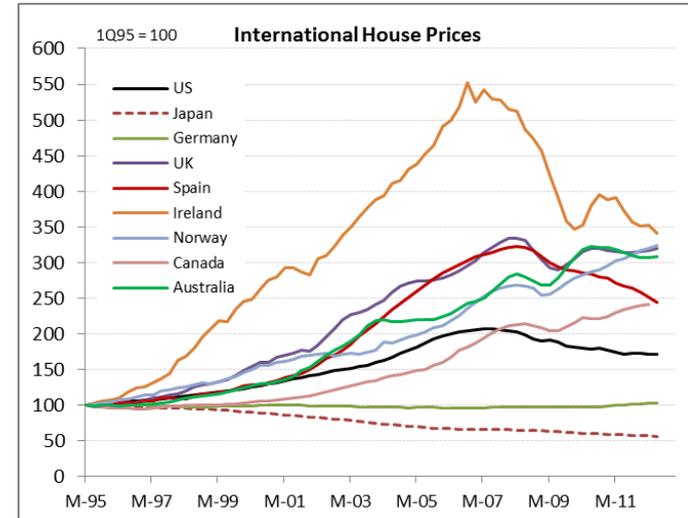
- High affordability supports household formation



- US house prices are relatively low by international standards

OECD data on house prices

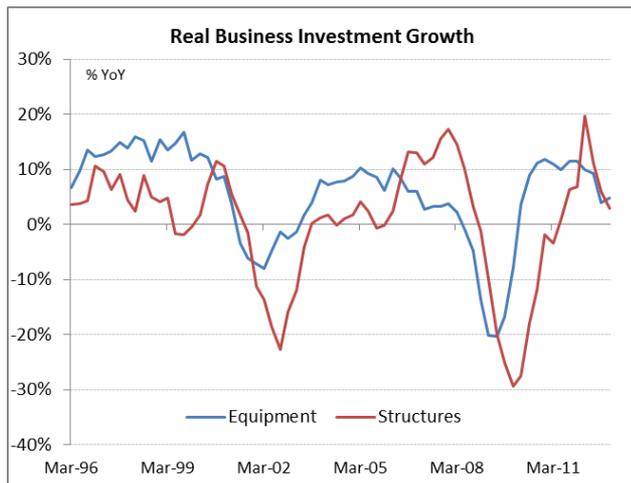
Country	% change in:		Current vs Long Term Average (100)		
	2011	2012F	Price to rent	Price to income	Latest data
US	-6.6%	0.4%	97	84	2Q 2012
Japan	-2.1%	-1.6%	63	65	1Q 2012
Germany	3.3%	8.0%	89	84	3Q 2012
France	3.8%	-1.4%	139	133	2Q 2012
Italy	-4.6%	-4.0%	99	112	1Q 2012
UK	-5.4%	-1.2%	132	126	3Q 2012
Canada	2.8%	3.3%	160	135	3Q 2012
Australia	-5.0%	-2.6%	139	121	3Q 2012
Belgium	0.0%	-0.1%	163	152	2Q 2012
Denmark	-5.1%	-5.6%	112	109	2Q 2012
Finland	-0.6%	-1.4%	135	99	3Q 2012
Greece	-8.6%	-9.4%	87	98	2Q 2012
Ireland	-14.4%	-14.2%	90	91	3Q 2012
Korea	1.3%	1.0%	108	64	3Q 2012
Netherlands	-4.5%	-7.0%	116	125	3Q 2012
Norway	6.7%	4.9%	172	128	3Q 2012
NZ	-2.2%	1.7%	150	119	2Q 2012
Spain	-8.8%	-9.5%	112	118	3Q 2012
Sweden	-0.5%	-3.4%	130	122	3Q 2012
Switzerland	4.0%	3.5%	97	93	3Q 2012
AVERAGE	-3.4%	-0.3%	104	95	



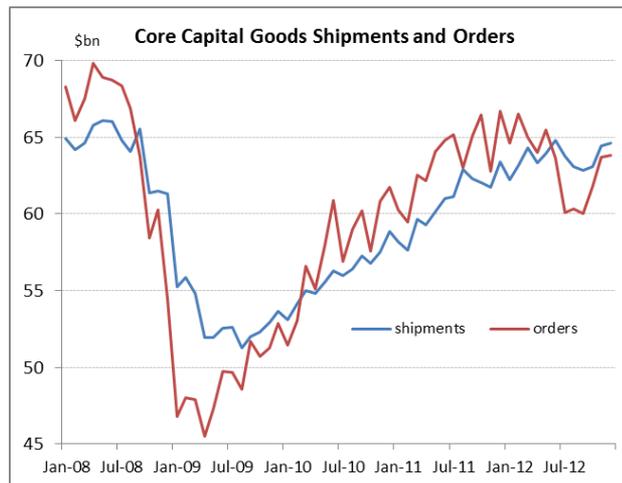
Source: Dallas Fed

v. Business sector

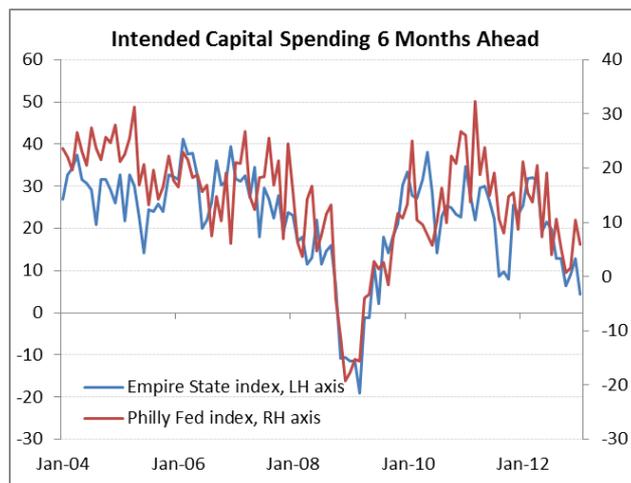
- Toppish real growth rates in uncertain year



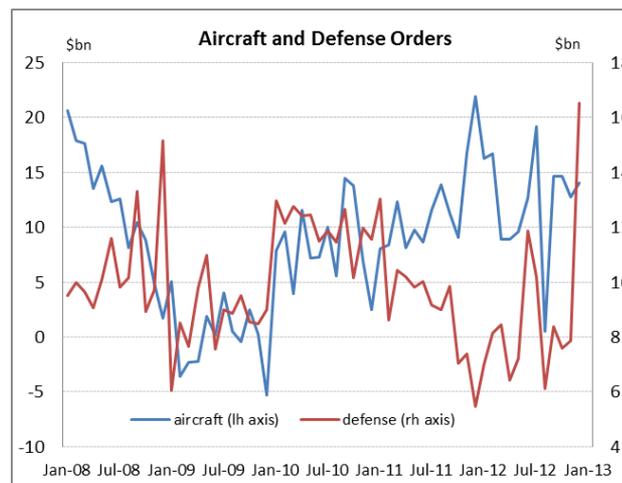
- Softening occurred before fiscal cliff



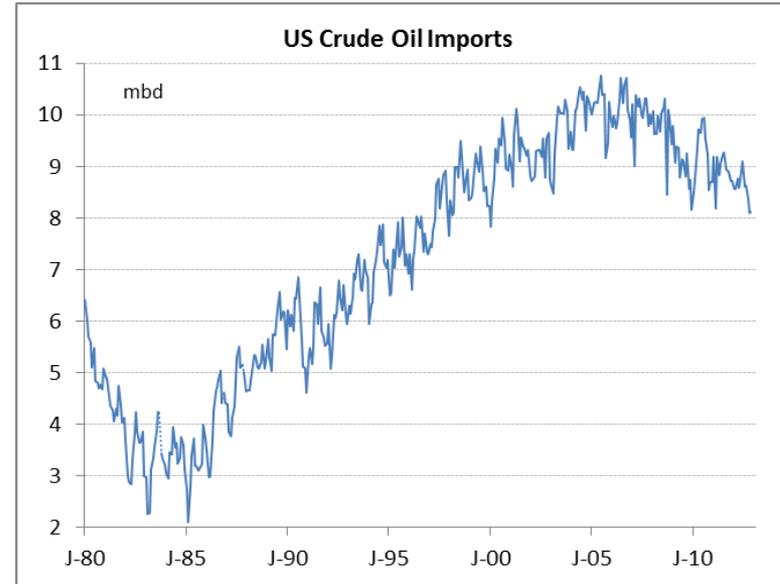
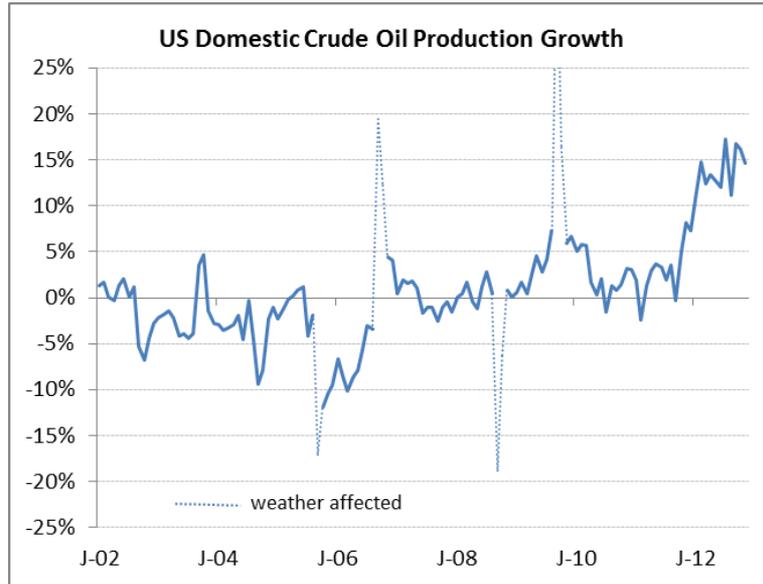
- Intended capex still soft

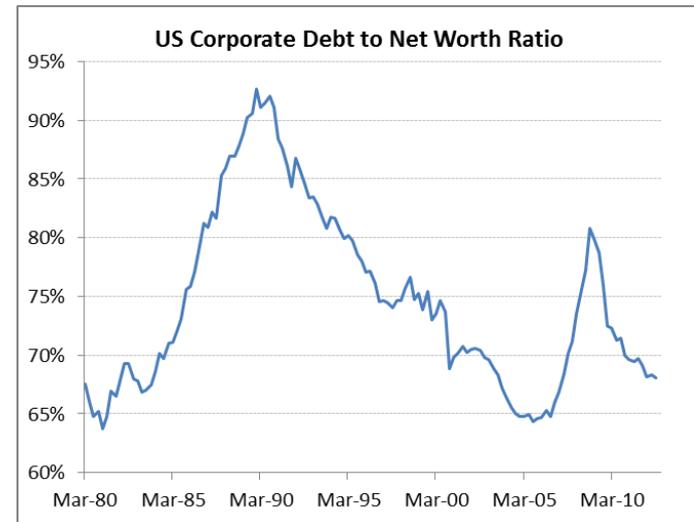
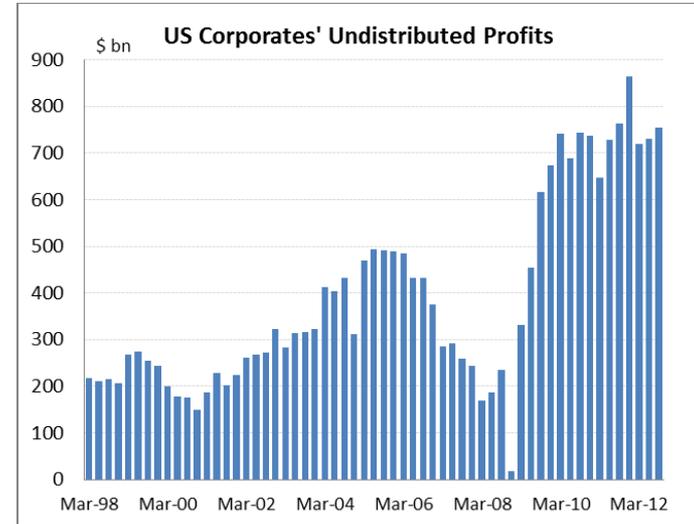
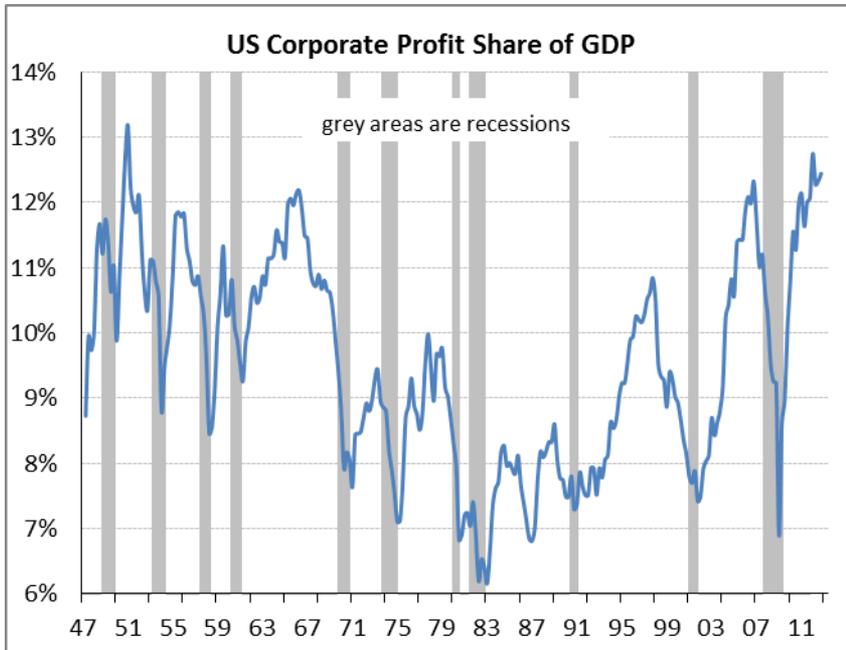


- Looks like a bunching of defense orders

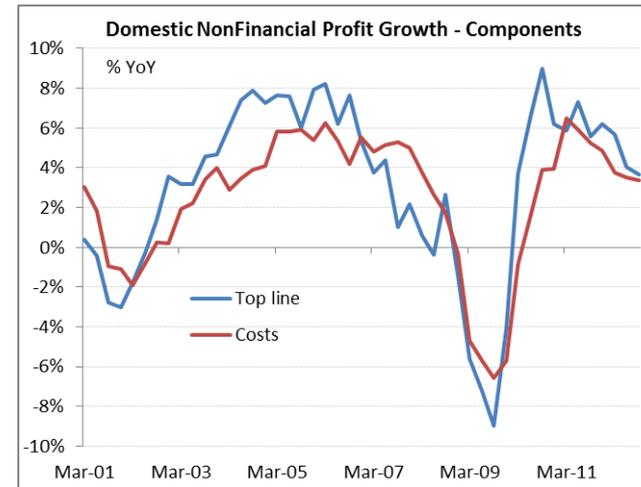
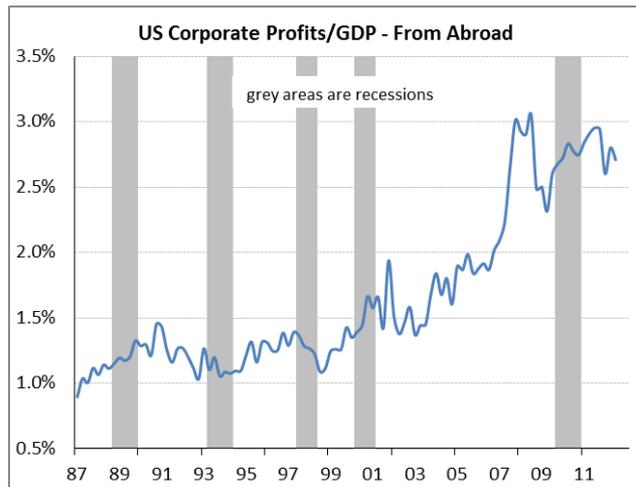
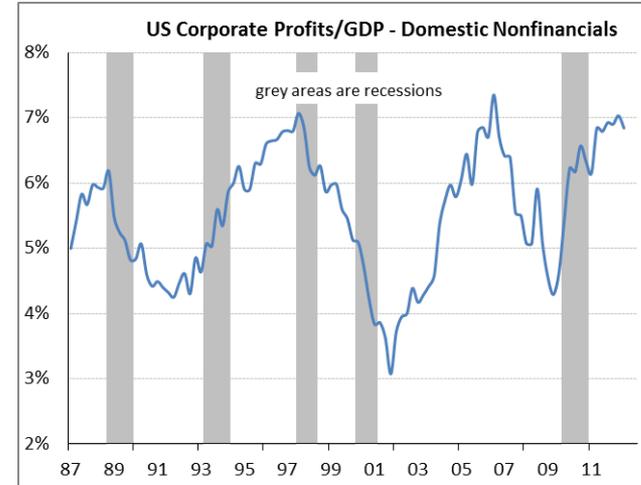
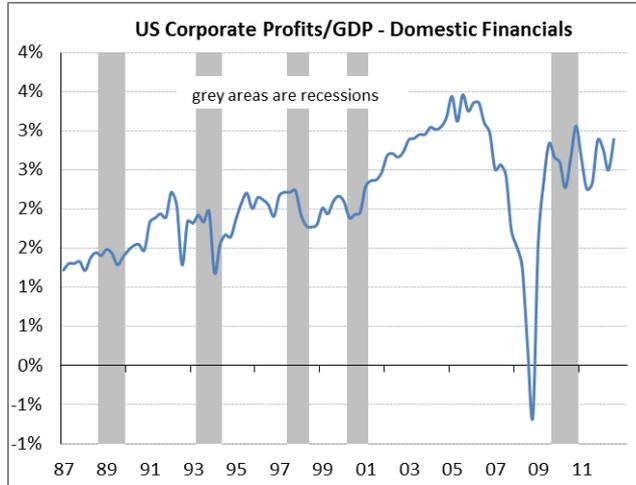


- US oil production grew 15% in the year to November 2012, while crude oil imports *fell* by 7%.



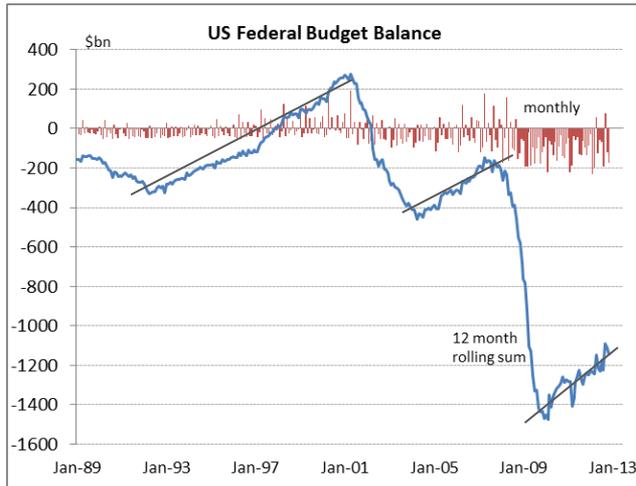


- US financial companies experienced strong profits growth in 3Q12. Profits for other corporates and earnings from abroad were a touch softer.
- Profits for domestic nonfinancial corporates have steadied, with top-line and costs both rising at 3.5% per annum

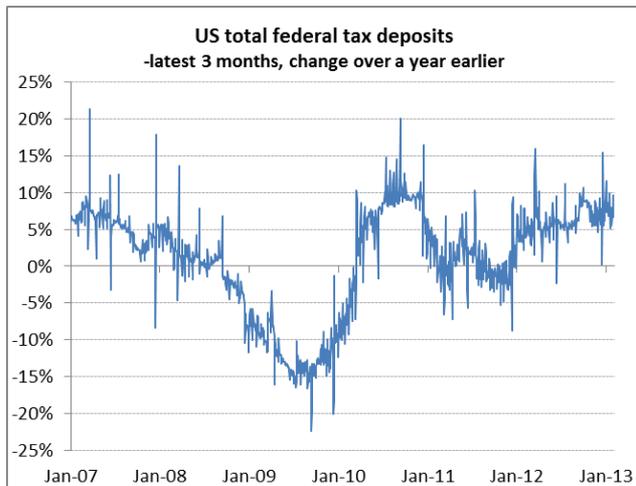


vi. Government sector

- Federal deficit narrowing is impressive



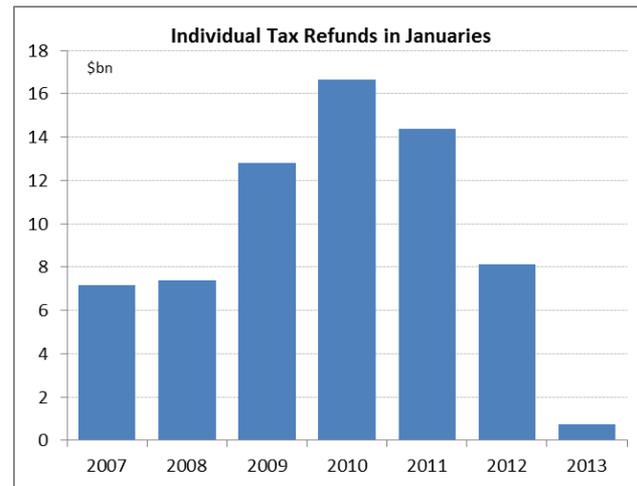
- Federal tax deposit growth 7-8%



- Improvement in state and local revenue portends a future recovery in spending



- Individual tax refunds running behind this year



CBO's Revised Projections for US Federal Budget Path												
Yr to Sep:	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Budget deficit (\$bn)												
CBO-Aug12 *	-1128	-1037	-924	-810	-832	-833	-870	-1003	-1102	-1200	-1362	
CBO-Feb13	-1089	-845	-616	-430	-476	-535	-605	-710	-798	-854	-957	-978
(Deficit/GDP)	-7.0%	-5.3%	-3.7%	-2.4%	-2.5%	-2.7%	-2.9%	-3.2%	-3.5%	-3.6%	-3.8%	-3.8%
Federal Debt (\$trn)												
CBO-Aug12*	11.32	12.46	13.48	14.39	15.32	16.26	17.21	18.30	19.48	20.75	22.18	
CBO-Feb13	11.28	12.23	12.94	13.46	14.02	14.64	15.32	16.09	16.96	17.88	18.90	19.94
(Debt/GDP)	72.5%	76.3%	77.7%	76.3%	74.6%	73.4%	73.1%	73.5%	74.2%	75.0%	76.0%	77.0%
Note GDP (CY), F	2.3%	1.4%	2.6%	4.1%	4.4%	3.8%	2.6%	2.4%	2.3%	2.2%	2.2%	2.2%

* CBO's 'Alternative Fiscal Scenario' which assumed partially going over the fiscal cliff

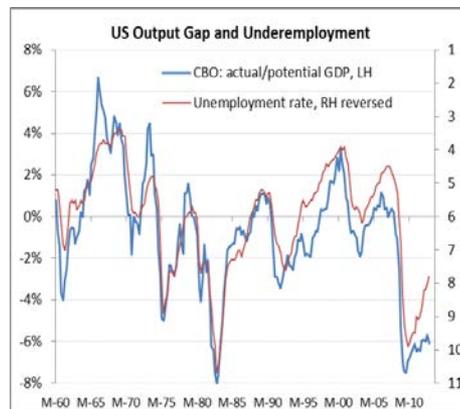
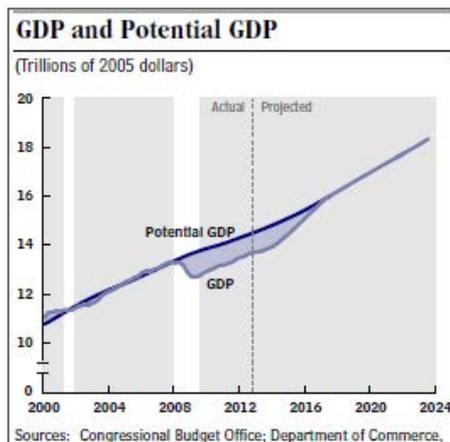
- If the output gap is not as much as the CBO thinks, US GDP growth is not likely to be as fast as the CBO expects in 2015-17.

“Good news” on the federal budget

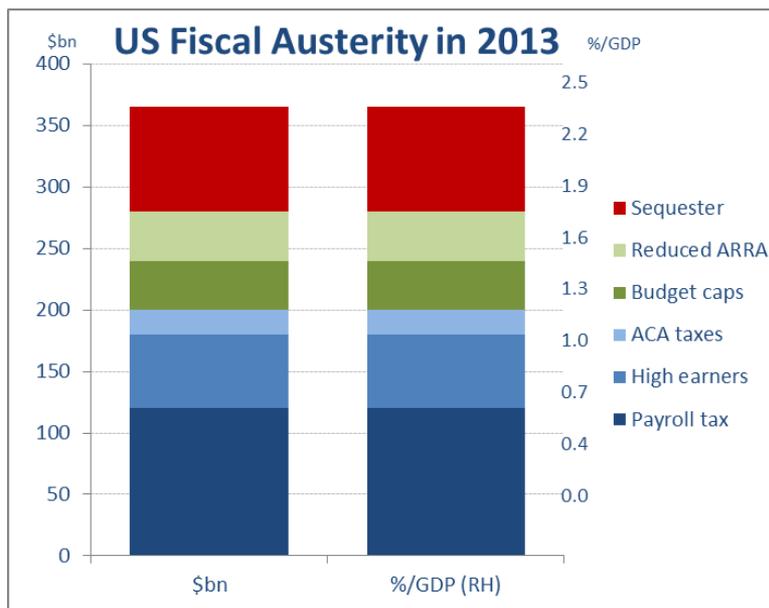
- On Feb 5 the Congressional Budget Office released new projections for the US Federal budget for the next ten years, and they represent a significantly better “look” than they did in August when the CBO last prepared these numbers.
- The new projections have the federal deficit falling from 7%/GDP in the fiscal year just ended to 2.4%/GDP (\$430bn) within 3 years, allowing this narrow measure of debt/GDP stabilizing in the low 70s. Only later in the ten year time frame to rising healthcare and social security costs start to push out the deficit again.
- So the numbers infer that the deficit will fall quite sharply over the next few years regardless of whether a ‘grand bargain’ or a series of smaller reforms of Medicare and Social Security kick in now or a bit later.

But two caveats

1. The new CBO projections are based on ‘current law’ which assumes that the full sequester (spending cuts) kick in on 1 March, subtracting \$85bn from spending in the remainder of 2013 and \$109bnpa thereafter. It also assumes that the delayed cuts in Medicare payments to doctors will happen in January 2014. If all of these were undone by Congress, debt/GDP would peak at 87% vs 78% in the above.
2. The CBO is unrealistic in expecting GDP growth to average 4% in 2015-17. The labor market is telling us that there is not so large an output gap to close.



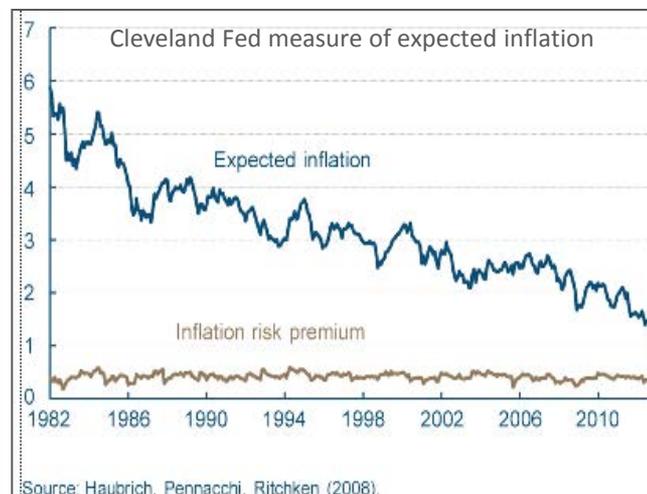
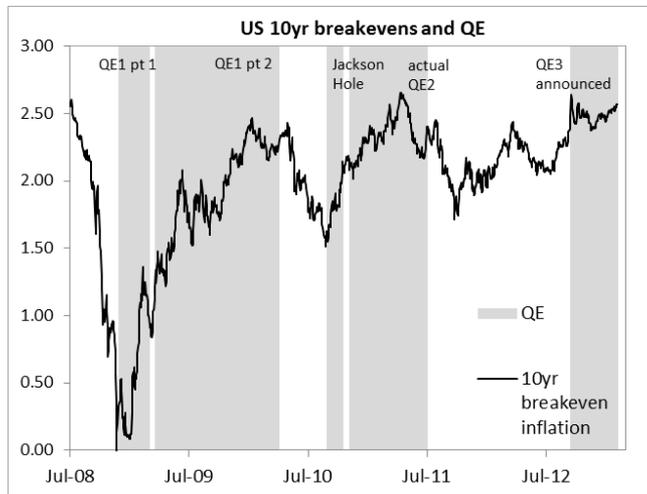
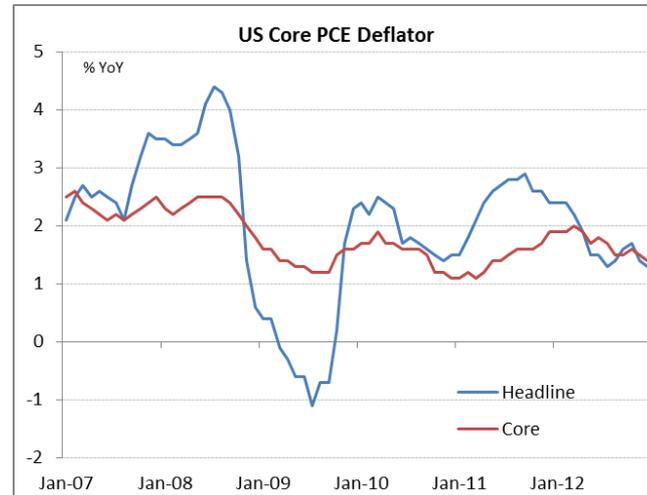
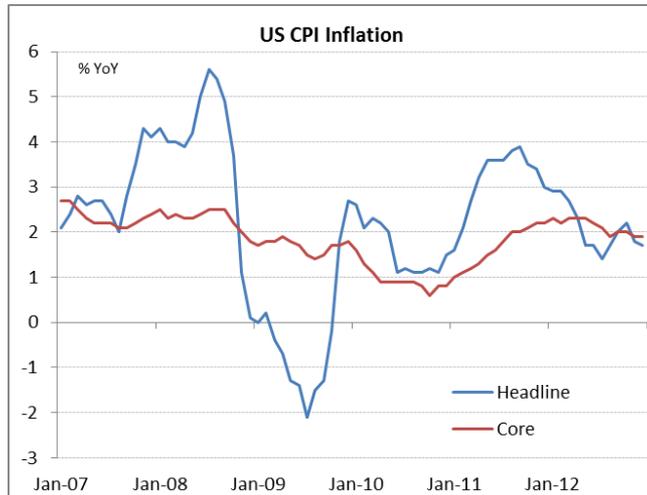
- US fiscal austerity could amount around \$365 billion (2.3%/GDP) this year if Congress were to allow delayed sequestration to kick in on March 1 as scheduled.
- This would represent around double the hit to the economy from the federal budget that we experienced in both 2011 and 2012.
- The good news is that other parts of the economy are now stronger, so that the federal deficit fell from \$1250bn during 2011 to \$1060bn during 2012 and might fall to ~\$800bn during 2013.



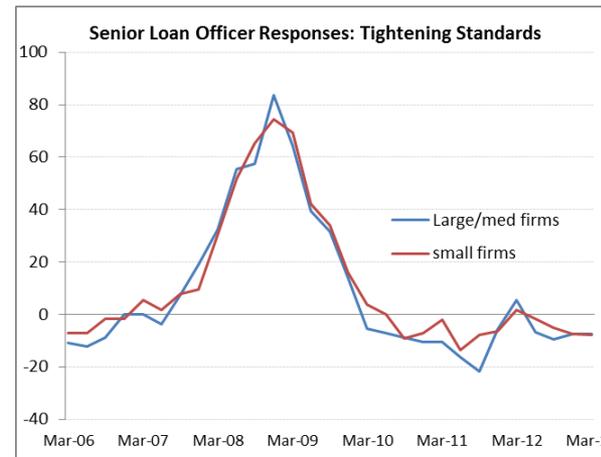
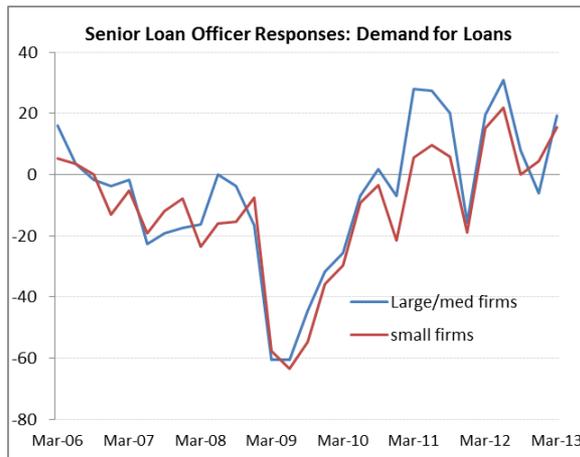
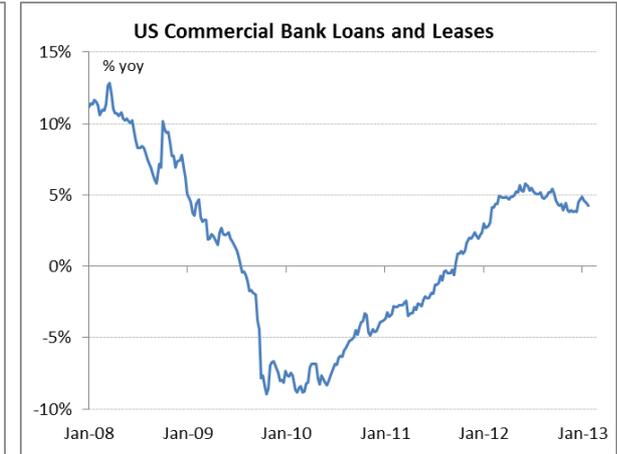
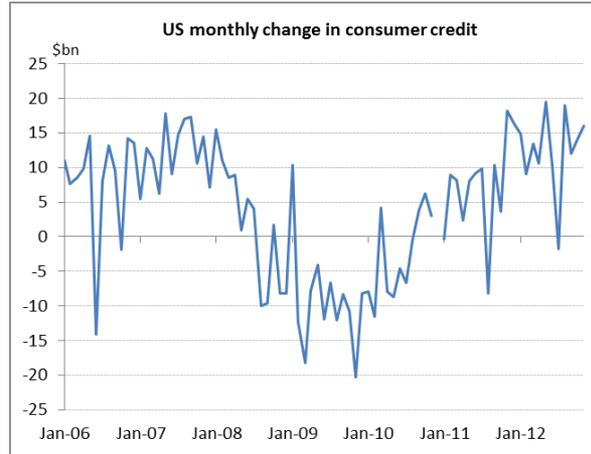
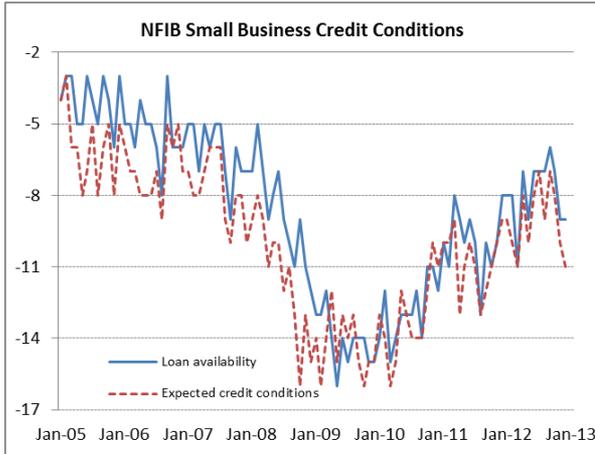
Key Fiscal Dates Remaining in 2013		
Date	Event	Comment
1-Mar	Revised 'sequestration' starts	If Congress does nothing, \$85bn of spending cuts kick in for Mar-Dec 2013 and another \$1trn for 2014-2021.
27-Mar	Continuing resolution expires	Six-monthly budget funding authorization expires, thus requiring another CR to avoid government shutdown.
15-Apr	Budget adoption	Congress bill required House and Senate to pass FY13 budgets by 4/15 or Congress' pay is suspended.
19-May	Debt ceiling extension expires	Congress allowed \$16.4trn debt ceiling to be extended to 5/19. However Treasury 'tricks' could extend to Aug.

vii. Inflation, Money and Credit

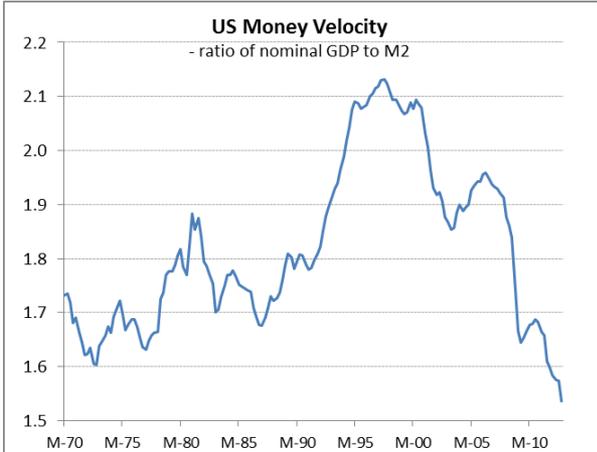
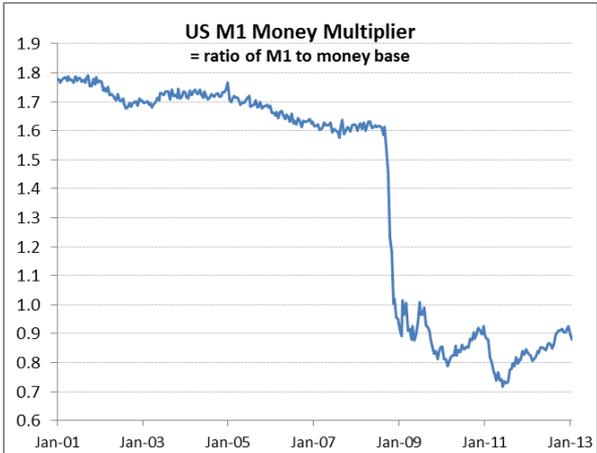
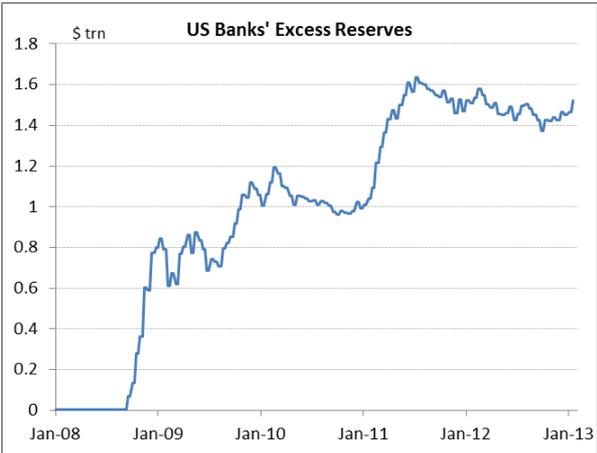
- Actual and expected inflation remain very tame, although break-evens have rebounded a bit.



- For consumers, auto and student loans have been strong. Commercial bank loan growth has faded a little as corporates delay capex decisions.
- 1Q 2013 Senior Loan officers survey reports unlogging credit channels.



- Money growth is not yet creating pricing power as measured by money velocity.



viii. Global Cycle

- Composite leading indicators point to stabilizing economic growth in most major economies.

	Ratio to trend, amplitude adjusted					Month on Month change					Year on Year change	Growth cycle outlook
	(long term average =100)					(%)					(%)	
	2012					2012					Latest month	
	Jul	Aug	Sep	Oct	Nov	Jul	Aug	Sep	Oct	Nov		
OECD Area	100.1	100.1	100.1	100.2	100.2	-0.06	-0.03	0.01	0.04	0.06	0.17	growth firming
Euro Area	99.5	99.4	99.4	99.4	99.5	-0.10	-0.08	-0.04	0.01	0.06	-0.55	stabilising growth
Major Five Asia*	99.2	99.2	99.2	99.3	99.5	-0.08	-0.02	0.05	0.12	0.15	-0.64	stabilising growth
Major Seven	100.2	100.2	100.2	100.3	100.4	-0.06	-0.01	0.04	0.07	0.08	0.27	growth firming
Canada	99.8	99.7	99.6	99.5	99.4	-0.07	-0.07	-0.08	-0.09	-0.09	-0.37	weak growth
France	99.6	99.5	99.5	99.5	99.5	-0.07	-0.07	-0.06	-0.03	0.02	-0.68	stabilising growth
Japan	100.3	100.2	100.2	100.2	100.2	-0.11	-0.08	-0.05	-0.01	0.00	-0.25	stabilising growth
Germany	99.2	99.0	98.9	98.8	98.9	-0.25	-0.20	-0.13	-0.03	0.07	-1.02	stabilising growth
Italy	99.0	98.9	99.0	99.0	99.1	-0.06	-0.02	0.02	0.05	0.09	-1.25	stabilising growth
United Kingdom	99.8	100.0	100.2	100.5	100.7	0.17	0.19	0.22	0.23	0.20	1.50	growth firming
United States	100.6	100.6	100.7	100.8	101.0	-0.03	0.03	0.10	0.12	0.11	0.87	growth firming
Brazil	99.3	99.3	99.3	99.3	99.3	0.06	0.03	0.02	0.00	0.01	0.97	stabilising growth
China	99.3	99.3	99.4	99.5	99.7	-0.04	0.03	0.08	0.16	0.21	-0.80	tentative turning point
India	97.7	97.6	97.6	97.8	97.9	-0.22	-0.13	0.03	0.13	0.14	-1.33	tentative turning point
Russia	99.7	99.4	99.1	98.8	98.6	-0.49	-0.33	-0.27	-0.25	-0.23	-3.61	weak growth

* China, India, Indonesia, Japan and Korea.

- JPM Global Economics: The global economy made a solid start to 2013 ... Output is being supported by the pillars of rising new business inflows, work on pipeline contracts and rising employment. This should help sustain the expansion during the opening quarter, even if growth remains below trend initially.”

Global Manufacturing PMI™ Summary

50 = no change on previous month.

	Dec	Jan	Change	Summary, rate of change
Global PMI	50.1	51.5	+	Expanding, faster rate
Output	50.4	52.4	+	Expanding, faster rate
New Orders	49.7	51.8	+	Expanding, from contracting
Input Prices	55.1	55.4	+	Rising, faster rate
Employment	50.3	50.8	+	Rising, faster rate

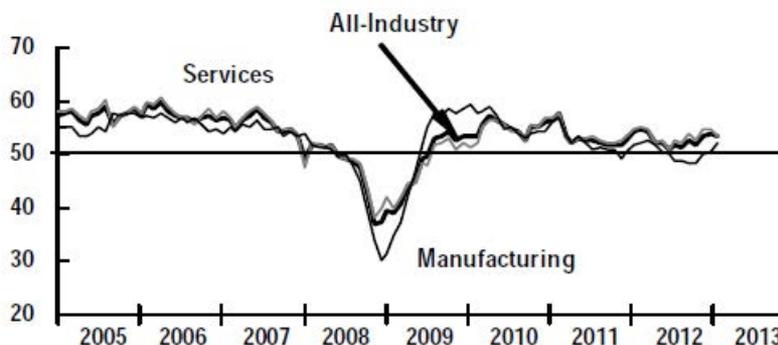
Global Manufacturing & Services PMI™ Summary

50 = no change on previous month.

	Dec	Jan	+/-	Change Summary
Output	53.7	53.3	-	Expanding, slower rate
New Orders	52.5	52.6	+	Expanding, faster rate
Input Prices	55.0	55.4	+	Rising, faster rate
Employment	51.8	52.5	+	Rising, faster rate

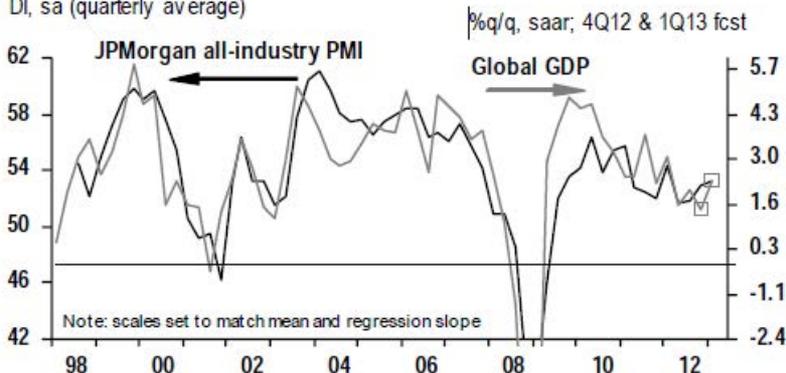
JPMorgan global PMI output

DI, sa



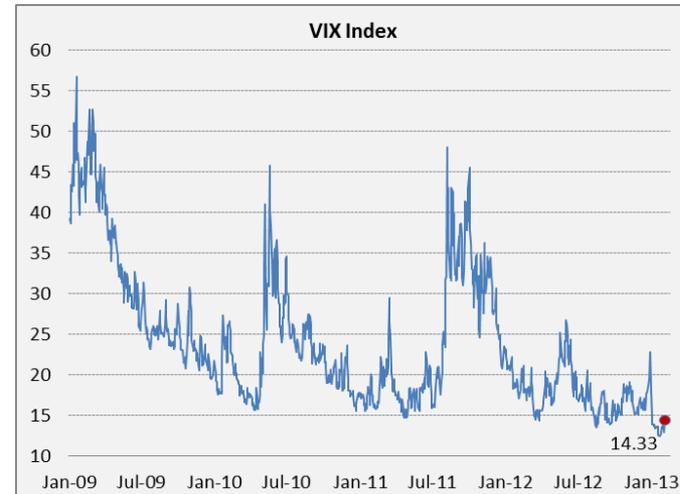
Global activity indicators

DI, sa (quarterly average)

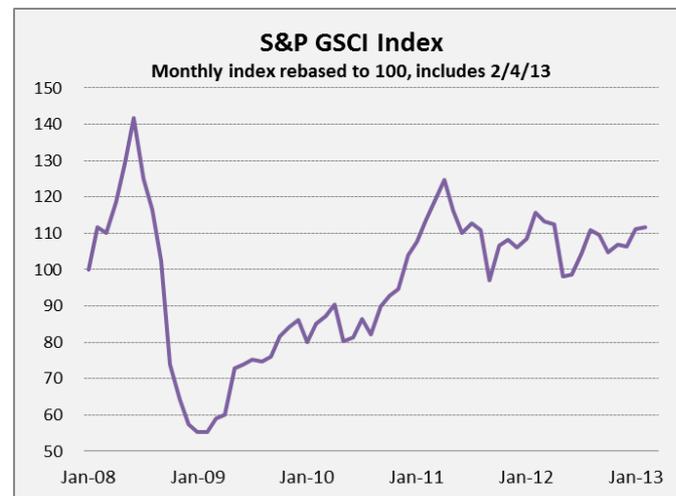
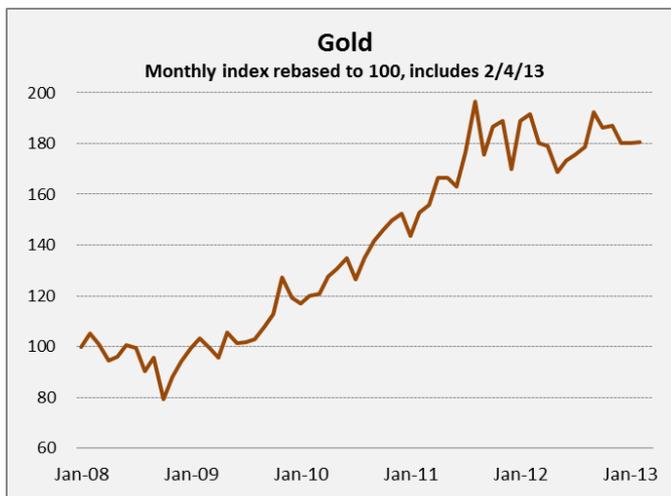
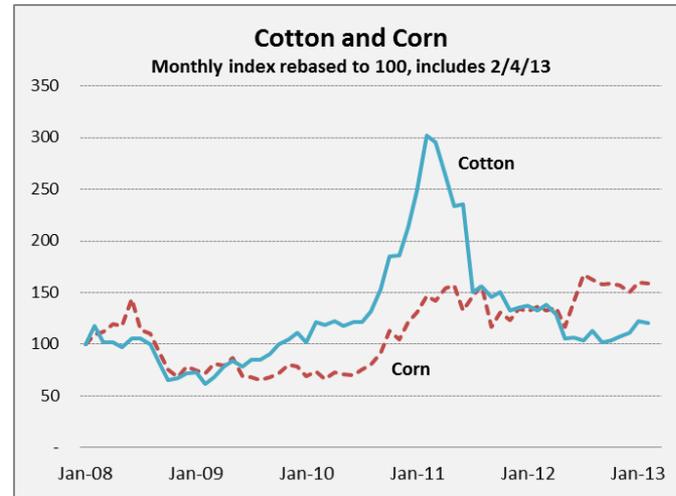
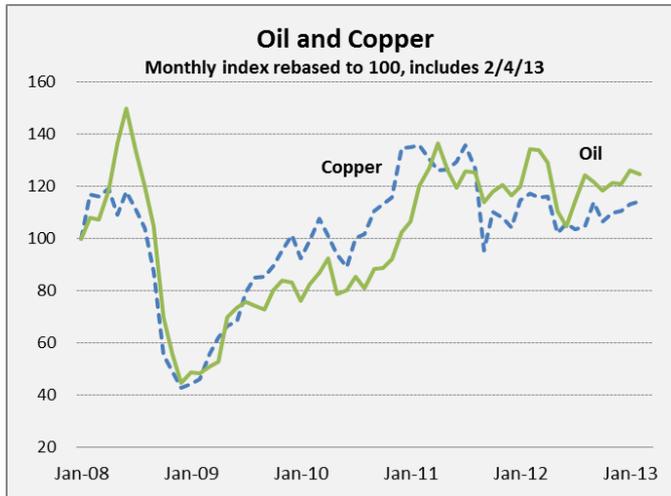


ix. Financial Markets

- European equity markets have outperformed since June 2012.



- Commodities advance modestly on risk-on and a soft dollar.



- The US dollar continues to strengthen vs the Japanese yen but weaken against the Euro.

