United States Economic Update

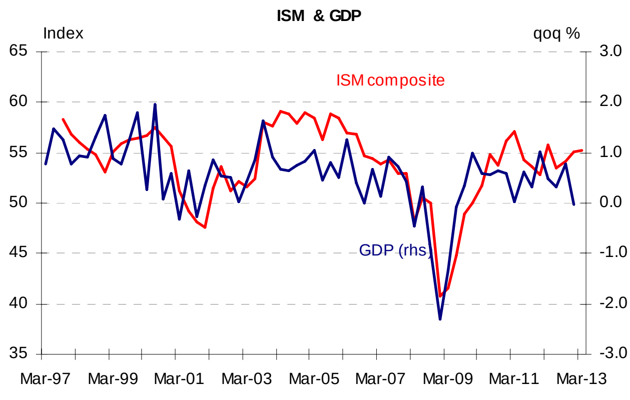
- **US GDP fell by 0.1% (annualized rate) in the December quarter but the underlying trend is modest growth.**
- **Extremely loose monetary policy likely to continue for an extended period.**
- **Expect QE3 monthly asset purchases will finish at end of 2013 (an end to continued loosening of policy).**
- **Fed funds rate likely on hold until late 2015/early 2016.**

Brief Economic Overview

US GDP in the December quarter fell by the smallest of margins (0.04% qoq or 0.1% annualised). The decline was largely due to the reversal of temporary factors that boosted growth in the previous quarter. The pace of consumption, business and housing investment spending growth all strengthened suggesting solid underlying momentum in the economy despite the poor headline number.

This is also the takeaway from other broad based measures of the economy such as a composite of the ISM surveys. Indeed the manufacturing ISM PMI strengthened in January to its highest level since April 2012 while the non-manufacturing survey, although slightly down, was still solid. Moreover, despite a small rise in the unemployment rate (to 7.9% from 7.8%), the January employment data pointed to continuing steady non-farm employment growth.

Despite GDP fall surveys suggest stronger underlying trend



Source: Bureau of Economic Analysis, ISM, NAB. Composite ISM is a GDP weighted combination of the manufacturing and non-manufacturing surveys. March 2013 estimate for ISM based on January results.

Over 2013 we expect the relatively sluggish recovery to continue but for growth to move to being slightly above its long-term 'trend' rather than below. Overall, we are forecasting GDP growth of 2.2% in 2013 and 2.9% in 2014.

More commentary on the economic outlook can be found in our report on the December quarter GDP[1] result. The summary table at the back of this note also provides details of our forecasts.

[1] http://business.nab.com.au/us-economic-update-us-gdp-2012-q4-2725/

Monetary policy

This month we depart from our normal format to have a closer look at monetary policy and what might happen down the track.

State-of-play

Monetary policy in the US has moved a long way from the simple 'move policy interest rate up or down' world that was familiar for so long. Before talking about the outlook for monetary policy a quick re-cap on the current settings is worthwhile.

The key elements are:

- a target fed funds rate of 0 to ¼%.
- QE3: asset purchases of $85 billion per month ($40 billion MBS, $45 billion longer-term Treasury securities).
- Both the fed funds rate and continuing asset purchases are, to a greater or lesser extent, state (economy) contingent; this is a form of 'forward-guidance'.
- Monetary policy will be kept looser for longer than would normally be the case when the recovery strengthens.

The state contingent nature of current policy is most clear for the fed funds rate. Here the Fed anticipates that a 0 to ¼% target for the feds fund rate will be appropriate at least while the unemployment rate remains above 6.5%, projected inflation between one and two years ahead is no more than 2.5%, and longer-term inflation expectations remain well anchored. The thresholds (6.5% unemployment, projected 2.5% inflation) are not automatic triggers for a rate rise as the Fed says it will consider other information (particularly other labour market indicators). Also words such as 'currently anticipates' makes clear that this is not a promise about how the Fed will act in the future but more an indicator of intentions. Moreover, what is meant by 'well-anchored' inflation expectations is not defined.

For asset purchases, the Fed has indicated that "If the outlook for the labor market does not improve substantially, the Committee will continue its purchases of Treasury and agency mortgage-backed securities". What constitutes a substantial improvement in the labour market is, however, undefined.

Fed speakers have made it clear that they expect QE purchases to end before any fed funds rate hike. Several Fed members have made suggestions about what might be a substantial improvement in the labour market. For example, the President of the Boston Fed, Eric Rosengren, has suggested that the Fed should not consider stopping QE until the rate has fallen to 7.25%. The Chicago Fed President Charles Evans has suggested that the test be monthly increases in non-farm employment of at least 200,000 jobs a month for around six months and a faster pace of GDP growth. Interestingly the latest labour data (released since Evan's comments and which included substantial revisions to history) indicate non-farm employment growth averaging 200,000 over the last three months.

The December FOMC meeting minutes indicated that the FOMC is evenly divided between those who think economic conditions will warrant ending QE in mid-2013 and those who think a later date more appropriate (as well as some participants who wanted a smaller QE or no QE at all). Another part of the minutes noted that a few members thought asset purchases would be warranted until the end of 2013 (as well as a range of other views around this).

The central tendency of FOMC participant projections is for an unemployment rate of 7.4 to 7.7% at end 2013. This suggests that the (unstated) threshold for the unemployment rate, in respect of QE, may not be that high at around 7.5%. This is supported by Rosengren's proposed threshold of 7.25% as he is clearly one of the more dovish members of the Fed so the consensus would likely be higher.

The fourth point in our list of the current monetary stance was that policy will be kept looser than is normally the case when the recovery strengthens. The idea is that with the Fed constrained by the inability to move the fed funds rate any lower then it should hold down future rates more than would normally be the case so that the average path of rates over time is about right.

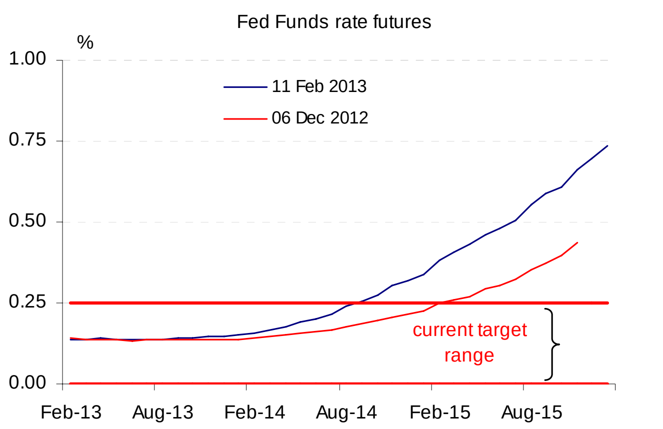
Remember also that the Fed has committed itself to a longer-run inflation target of 2% as well to achieving full-employment (which it currently considers to be in the range of 5.2 to 6.0%).

Outlook for monetary policy

Interest rates have been rising in recent months. Since early December, the 10 yr Treasury rate has gone from around 1.6% to around 2.0%, its highest level since April last year. Corporate bond yields have also increased. This has in part been put down to reduced 'safe-haven' demand as various uncertainties in the US have been (largely and/or temporarily) taken-off the table – fiscal cliff and debt limit – and less negative sentiment about the world economy.

At the same time the futures curve for the fed funds rate has moved up, suggesting that the market has brought forward its timing of the first fed funds rate increase to some extent. As at 11 February, the fed futures curve does not reach 0.5% until July 2015 suggesting that the first rate increase is fully priced into the curve for mid-2015., but that some market participants expect an earlier rise.

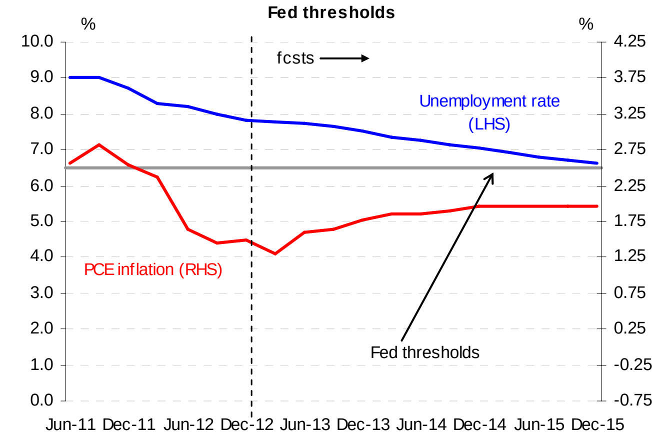
Upward move in Fed funds rate futures curve since December



Source: Bloomberg

Our view, based on the Fed's specified threshold is that we expect the fed funds rate to stay on hold until at least late 2015/early 2016. This can be seen in the chart below that shows our forecasts for the unemployment rate and inflation. We have factored in similar GDP growth in 2015 as in 2014 (the limit of our normal forecast horizon) and hence a similar rate of decline in the unemployment rate. Using these assumptions the unemployment rate gets close to – but does not quite reach – the unemployment threshold by the end of 2015. This is later than the Fed's most recent projections which suggest that the Fed expects the unemployment threshold to be reached in the September quarter 2015.

Fed thresholds – a long way to go before they are reached



Sources: Bureau of Labor Statistics, Bureau of Economic Analysis, NAB

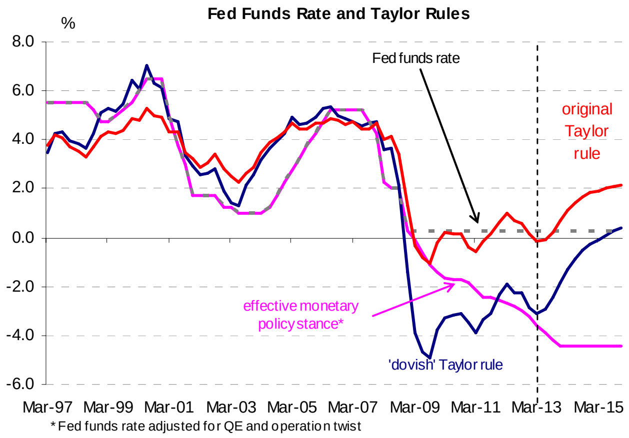
A risk to our unemployment rate projection is that the participation rate moves downward generating a quicker fall in the unemployment rate. Over the year to December, despite GDP growth on only 1.5% over this period, the unemployment rate declined 0.7 percentage points – a faster pace of decline than we are projecting despite lower GDP growth. This was due to a 0.4 percentage point decline in the participation rate over this period. Due to demographic and other factors the longer-term trend is down but as the recovery continues some 'discouraged' job seekers should re-enter the workforce.

The other threshold is inflation. Similar to our GDP assumption we hold inflation constant at its forecast end-2014 level. There might be upside risk to the inflation forecast in 2015 as the slowly closing output gap releases inflationary pressures, but there is some tolerance as the end 2014 forecast is around 0.5 percentage points below the threshold level. The Fed's threshold is based on their own forecast of inflation (one-to-two years ahead) which raises the prospect that if inflationary pressures start to emerge then the Fed may forecast one-to-two year ahead inflation of above 2.5% even while actual inflation is lower. The Fed will be torn at this point; do they continue to forecast around target (2%) inflation in order to try and keep inflation expectations under control or do they use the risk of inflation as a way of exiting earlier from ultra loose monetary policy while keeping true to their threshold guidance.

Why this tension might arise can be seen by looking at Taylor rules. A Taylor rules sets out a path for the Fed funds rate based on movements in inflation and the output gap (the difference between the current level of output and potential output). As inflation moves higher and/or the output gap narrows a Taylor rule would specify a higher policy rate. The problem with Taylor rules is that there are many versions of them. In the chart below we show the original Taylor rule as well as a 'dovish' version of the rule (which is same except that the weight on the output gap component is twice as large as under the original version).

The other issue is that Taylor rules say nothing about so called unconventional monetary policy actions. To allow for this we have developed an estimate of the effective monetary policy stance which allows for the QE and 'operation twist' programs. It does so by estimating what fed funds rate would be needed (if it could go negative) to have had the same impact on ten year Treasury yields as the QE programs and operation twist.[2] The impact of the QE programs are still a subject of debate and the 'effective monetary stance' line should only be seen as illustrative. Part of the debate is whether QE is just a way of communicating that the fed funds rate will be kept low for a long time which can be accomplished by forward guidance. The Fed is taking no chances and doing both. We assume that the estimated impacts of QE are also picking up the impact of forward guidance and make no additional allowance for the latter.

Taylor rules highlight tensions for the Fed



Sources: Thomson Reuters Datastream, NAB

The chart assumes that QE3 runs through to end 2013 and the fed funds rate is unchanged to end-2015. On this basis the Fed's policy stance is currently roughly where it should be using a 'dovish' Taylor rule and as the recovery continues policy should become less loose. However, this does not happen; if anything as long as the QE purchases are continuing it is getting easier. Moreover, the original Taylor rule would suggest that policy right now is far too loose; the fed funds rate should be about where it is but there should be no QE or forward guidance (as currently expressed).

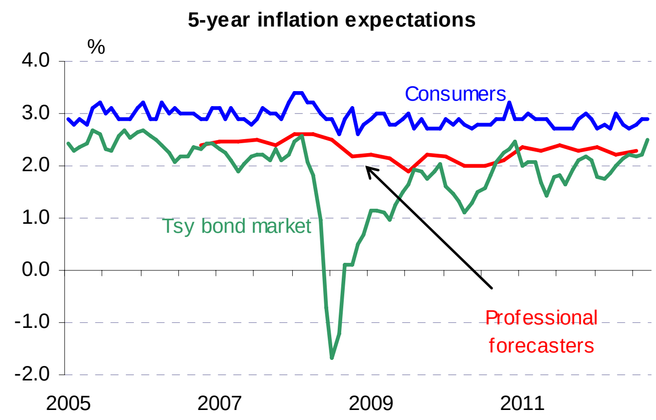
Of course, this is just confirming what we described as the fourth plank of the Fed's current monetary stance – they are saying that their intention is to keep policy looser than normal as the recovery strengthens. However, the original Taylor rule specification was adopted so that it matched the fed fund's rate in historical episodes considered to be examples when the monetary policy settings were 'right'. To be well away from even a 'dovish' Taylor rule will really set alarm bells ringing in 2014 and, particularly, 2015 if our forecasts of the economy come to fruition.

This was always the problem with forward guidance – the Fed is saying it will do something in the future which it won't actually want to do at that future time. Of course the Fed's commitment to this is a very loose one with plenty of escape clauses – expected inflation, inflation expectations (ill defined) and, moreover, the Fed can simply change its mind about forward guidance.

At this stage, the Fed has few immediate concerns. Inflation is well under control and is in fact sitting well under its 2% long-term target. However, as monetary policy works with a lag the risk of an inflation breakout may be in the period 2015/2016 and beyond. Given this the Fed will be keeping a close eye on medium-term inflation expectations and emerging cost pressures. The still large amount of excess capacity in the economy is placing downward pressure on prices, including labour costs. Annual employment cost growth is still well below pre-recession levels, and has stabilised at around a relatively low 2% yoy. With unemployment still high this is likely to stay weak for a while to come, although as the labour market continues to heal it may start to slowly move upwards. There are some tentative signs of this – average hourly earnings for private non-farm workers increased by 3.4% (annualised rate) over the three months to January 2013. This is the fastest three monthly growth since early 2009. However, these data are somewhat volatile and is probably a correction to a period of low growth probably and signals that the recent subdued inflation readings won't be sustained (as we are forecasting).

Many modern theories of price determination emphasise the importance of inflationary expectations (which explains the Fed's focus). Some measures of inflationary expectations have actually moved up recently, but they still remain within their historical bounds. This will give comfort to the Fed that the policy path it is attempting to navigate is possible. However, as the recovery continues and the tensions between an extremely loose monetary policy and declining output gap mount there is no guarantee this will remain the case.

Inflation expectations up but remain within historic norms



Sources: Thomson Reuters/University of Michigan, Federal Reserve, Philadelphia Federal Reserve.

The Fed sees its credibility as one factor anchoring inflation expectations – if people believe inflation will be kept under control then wage demands and other price rises will be kept reasonable even if inflation creeps above (the 2% long-run target) in the short-term. The importance that the Fed places on its credibility as an instrument of policy will place constraints on its behaviour. In particular it will not want to be seen as having artificially raised its inflation forecasts (to above the 2.5% threshold) or overstated any increase in inflation expectations in order to justify an early tightening of monetary policy. For the same reason it will not want to abruptly announce a change in its forward guidance (such as to the threshold levels). To do so would undermine the capacity of the Fed in the future to use such a policy.

Therefore we expect that the Fed will wait until the thresholds are breached and resist any temptation to change them or forecast inflation much different to consensus. However, once the thresholds are reached – which we expect to be in late 2015/early 2016 – it will start tightening straight-away given that policy would be too loose judged against normal standards (such as Taylor rules).

Tightening would only be delayed if the threshold breach looks likely to be only temporary or inconsistent with other data. For example, if the unemployment rate fell to 6.5% mainly on the back of an unexpected decline in the participation rate rather than jobs growth the Fed would likely wait until employment growth indicators strengthened.

[2] The San Francisco Fed Economic Letter (2011-31) Unconventional Monetary Policy: Lessons from the Past Three Years put the estimated impact on 10yr yields of a $600b QE at 15-20bps which typically would be the result of a 75bp cut in the fed funds rate. We assume that the impact arises at the time of the asset purchases although in reality a large part probably happened earlier when markets first realised the programs were going to be put in place.

Once started the pace of tightening would be relatively rapid as the Fed strives to get the fed funds rate back to an appropriate level. Based on past experience this would mean an increase in the fed funds rate of 0.5 to 0.6% on average per quarter over the tightening cycle. However, when the decision is made to actively start unwinding QE may affect the pace of rate rises; the sooner they start unwinding QE the slower the pace of fed funds rate increases may be.

In terms of QE3, the possible timing revealed in the December FOMC minutes implied an unemployment rate threshold of around 7.5%. This is a little higher than the threshold suggested by Eric Rosengren; however, he is one of the more dovish members and so the consensus view might be a bit higher. These sort of threshold values point to QE3 ending between end-2013 and mid-2014 based on projections of the labour market.

We think QE3 finishing at the end of 2013 is the most likely outcome (or at least a phasing down of the amount of monthly purchases). Our forecasts suggest the economy will move to growing slightly above trend rather than below over 2013 which would give the Fed comfort about the direction of the economy. Moreover, the Fed has stated that in considering the pace of the QE program that it will consider the efficacy and costs of such purchases. A concern will be that as the asset purchases get larger the impact of each additional monthly instalment will decline (i.e. diminishing returns). At the same time the potential costs (or the risk that they will occur) of QE are probably seen as rising with the size of the QE program. The potential costs that Fed members are worried about include the risk of fuelling financial and economic imbalances in the economy[3]; disruptions to, or withdrawal by participants from, markets where the Fed is the major player; the risk the Fed will make an operating loss when interest rates start to rise; and the ability of the Fed to implement its exit strategy from the current fed funds rate.[4] .

Having ended QE the next step will probably be to cease reinvesting some or all payments of principal (this would slowly run down the Fed's asset holdings as its securities holdings matured over time). This would be the first (mild) step in policy tightening by the Fed. Actual sales of assets wouldn't occur until after the fed funds rate started to rise and even then only over a period of several years. This is in essence the exit strategy mapped out by the Fed in its June 2011 FOMC meeting minutes and given the desire to return the fed funds rate to being the major tool of monetary policy this remains the most likely sequencing.

It might seem to be odd to be talking about when the Fed will tighten monetary policy just after the unemployment rate has increased. However, what we are forecasting is the current extremely loose monetary policy largely staying in place through to 2015. An end to QE3 asset purchases at the end of this year would not represent a tightening of policy – it is the stock of assets purchases which are relevant not the flow[5] - but rather an end to continued easing.

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[3] The reason given by the one dissenting voter in the last FOMC meeting.

[4] The possibility of an operating loss arises in the case where the interest rate on excess reserves (IOER) were to rise (while receipts on the Fed's long-term asset holdings stayed constant). While the Fed sets the level of the IOER in practice when it starts increasing the target fed funds rate it will need to increase the IOER. Otherwise the large level of reserves in the fed funds market would mean that the actual fed funds rate would be below target. The IOER in effect operates as a floor under the fed funds rate. It is only a soft floor as the fed funds rate is currently trading below the IOER. The Fed expects that the use of IOER and reserve draining operations (reverse repos and term deposits) will allow it to target the fed funds rate it wants but not everyone is sure that this will be the case.

[5] Even if the views of some that QE has no effect other than as an indirect way of providing forward guidance (now redundant given the Fed's move to explicit forward guidance) then the end of QE also does not represent a tightening of policy.

Economic Comment

National Australia Bank

US Economic & Financial Forecasts

	Year Average Chng %				Quarterly Chng %									
					2012		2013				2014			
	2011	2012	2013	2014	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
US GDP and Components														
Household Consumption	2.5	1.9	1.9	2.6	0.4	0.5	**0.4**	**0.5**	**0.6**	**0.6**	**0.6**	**0.7**	**0.7**	**0.7**
Private fixed investment	6.6	8.4	7.7	9.0	0.2	2.3	**1.7**	**2.4**	**2.4**	**2.3**	**2.2**	**2.1**	**2.0**	**1.9**
Government Spending	-3.1	-1.7	-1.3	-0.5	1.0	-1.7	**-0.2**	**-0.2**	**-0.2**	**-0.2**	**-0.1**	**-0.1**	**-0.1**	**-0.1**
Inventories*	-0.2	0.1	0.0	0.0	0.1	-0.3	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Net Exports*	0.1	0.0	0.0	-0.1	0.1	-0.1	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Real GDP	**1.8**	**2.2**	**2.2**	**2.9**	**0.8**	**-0.04**	**0.6**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**
US Other Key Indicators (end of period)														
PCE deflator-headline		(yoy%)												
Headline	2.5	1.5	1.8	2.0	0.4	0.3	**0.4**	**0.5**	**0.4**	**0.4**	**0.5**	**0.5**	**0.5**	**0.5**
Core	1.7	1.5	1.5	2.0	0.3	0.2	**0.3**	**0.4**	**0.4**	**0.4**	**0.5**	**0.5**	**0.5**	**0.5**
Unemployment Rate (%)	8.7	7.8	7.5	7.1	8.0	7.8	**7.8**	**7.7**	**7.7**	**7.5**	**7.4**	**7.3**	**7.1**	**7.1**
US Key Interest Rates (end of period)														
Fed Funds Rate	0.25	0.25	0.25	0.3	0.25	0.25	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**
10-year Bond Rate	1.98	1.72	2.50	3.25	1.72	1.72	**2.00**	**2.50**	**2.50**	**2.50**	**2.50**	**2.75**	**3.00**	**3.25**

Source: NAB Group Economics

***Contribution to real GDP**

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