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## *This Month: Short Takes*

From time to time we like to step back and revisit topics we have touched on in the past. Sure, we know what you're thinking, but, no, we really haven't run out of ideas on how to fill four pages each month. We do so partly because some topics, such as our annual holiday sales forecast, merit a follow-up at some point down the road. Or, given the ongoing changes in our distribution, some people will have come on since the last time we touched on a particular topic and we think these periodic refreshers help bring new readers up to speed. It is also the case that sometimes our long-time readers find this useful as well, as they may have forgotten some of the how or why behind our analysis. As for those who would simply like to forget, well, we can't really do much for them other than to make that more difficult. In any event, in what follows we'll revisit some topics that have most been on our minds.

**Residential Construction and Sales:** Anyone who has followed us for any length of time will have heard us say that, sure, knowing what the numbers are is important, but knowing why the numbers are what they are is far more important. So, we'll start with a look at how we look at the data on residential construction and sales, and why we look at the data the way we look at it. Okay, now we're confused. Which is precisely how one can end up if all they do is look at the headline numbers on the monthly reports on home sales and new residential construction. These are some of the most inherently volatile series amongst the top-tier economic data sets and in many months the headline numbers on these reports tell us little, if anything, about the underlying trends.

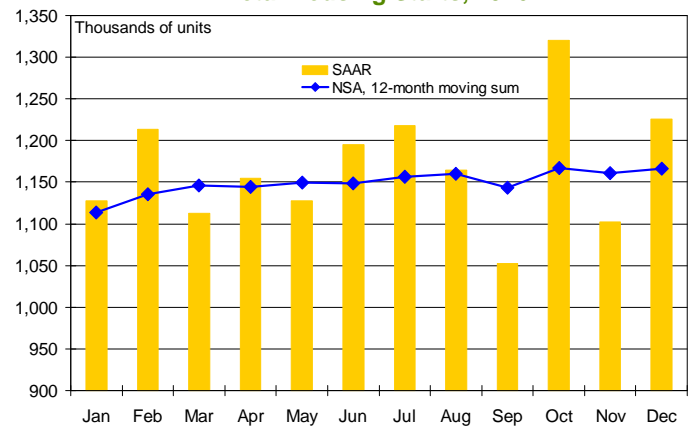
To be clear, our issue is not with the quality or the reliability of the data, but instead with how the data are typically reported, and reported on. For instance, the data on residential construction and home sales are reported on a seasonally adjusted annualized basis. Right off the bat, there are two sources of noise in these series – annualizing monthly changes that, in the raw data, may not be significant, and seasonally adjusting data that are prone to behave in an atypical manner in any given month. Residential construction is sensitive to weather patterns, and in a typical year construction activity will be depressed during the winter months before picking up significantly in the spring and summer months. Which is fine when the weather cooperates, but this is not always the case and in recent years seems to seldom have been the case.

The following chart shows total housing starts for each month of 2016 (charts for housing permits and home sales would look pretty much the same, as would charts for any given year), with the solid bars showing the "headline" starts number, i.e., as reported on a seasonally adjusted annualized basis. As can be seen in the chart, however, there is considerable volatility from one month to the next when the data are reported on this basis. For instance, according to the National Oceanic and Atmospheric Administration, February 2016 was the warmest February since the year 2000.

Builders took advantage of this favorable weather so that in a month in which there is normally a lull in construction activity, the "raw" data, i.e., before any seasonal adjustment, show housing starts rose substantially last February. The seasonal adjustment factors for the month of February, however, are geared towards a decline in raw housing starts, meaning the increase actually seen was then magnified by seasonal adjustment and, after the change was annualized, the result is the spike in "headline," i.e., seasonally adjusted annualized, housing starts.



### Total Housing Starts, 2016



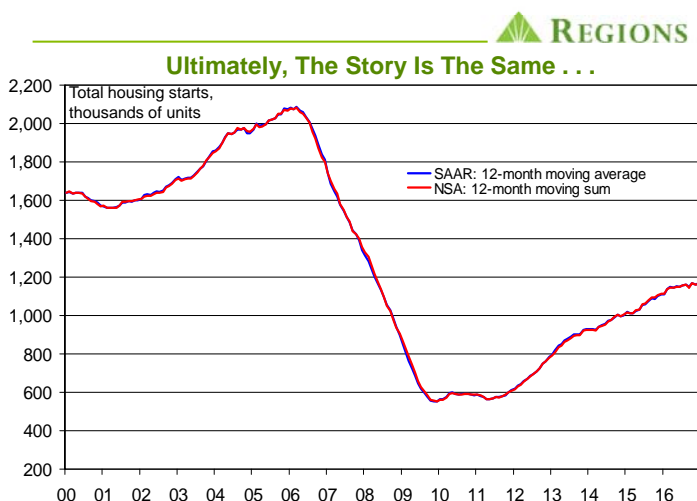
This spike is what many analysts and media accounts reacted to, so naturally there were numerous upbeat assessments of the outlook for the housing market. Of course, the tone of these assessments changed sharply in March. Given that some portion of the construction activity that would normally have taken place in March was pulled forward into February, raw housing starts increased in March by less than is typical for the month. As a result, the seasonally adjusted annualized headline number showed a steep decline in housing starts, as seen in the chart above.

Our point, which we made at the time, was that the narrative of the housing market did not change sharply in February and then again in March. To see that, one need only look at the "raw" data, i.e., neither seasonally adjusted nor annualized but simply the count of how many housing units were actually started during a given month. The blue line in the above chart is the basis on which we assess the data on residential construction and home sales, i.e., the 12-month moving sum of the not seasonally adjusted data, which we see as the truest gauge of the underlying trends.

On this basis, the modest pickup in construction in February was added to in March, but we saw no need to change our assessment of the health of the housing market in either month. Another underlying trend in the raw data that got lost in the swings of the seasonally adjusted annualized headline number was the shift in

construction activity away from multi-family units and toward single family units. This shift accounts for the 12-month moving sum being flat for most of 2016, as seen in the blue line in the above chart. This shift was largely overlooked, however, by those simply reacting to the headline starts numbers which, as seen in the prior chart, were pretty much all over the map in 2016.

Again, our point is that the headline number on the report for any given data series in any given month actually tells you very little about what is actually going on with that data series. And, it is worth noting that, regardless of how you look at the data, whether you look at the raw data or the adjusted and annualized data, you ultimately end up in the same place. In other words, if you take a 12-month moving average of the seasonally adjusted annualized data, it should be virtually identical to the 12-month moving sum, as we illustrate in the chart below – yes, there are actually two lines in the chart.



The problem is that each month's adjusted, annualized number is treated as a new revelation on new residential construction (the relationship shown in the above chart of course holds for housing permits and home sales as well) when in reality the story is in the trends. It is simply, at least for us, too emotionally exhausting to swing between euphoria and despair from month to month based on the swings in the headline numbers. And, sure, underlying trends are not always the most interesting thing to watch, but are nonetheless the most informative thing to watch.

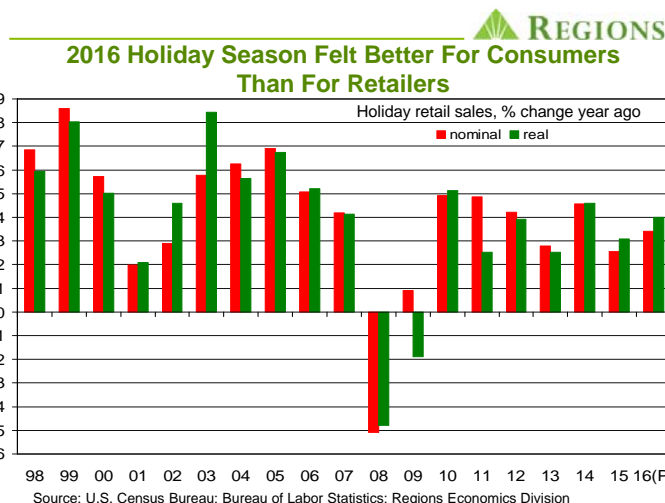
When we do our forecasts of the monthly data on housing permits, housing starts, and home sales, we start by forecasting the not seasonally adjusted numbers for each of the four broad Census regions. This is in keeping with how we analyze the data. We then estimate the seasonal adjustment factors, and then aggregate up to a seasonally adjusted annualized headline number for the U.S. What we've found is we've gotten reasonably good at forecasting the not seasonally adjusted numbers, so that our misses on the headline numbers mostly reflect our missing on the seasonal adjustment factors. This does not bother us at all, as these seasonal adjustment factors are, in the end, irrelevant and indeed often distort the headline numbers while telling us nothing about the underlying trends. So, for anyone puzzled as to why in our monthly write-ups of the housing data we tend to brush aside the

headline numbers and focus our analysis on the raw data, this discussion hopefully helps you understand why we do so.

**Holiday Sales and Hiring:** In our November 2016 *Outlook* we presented our holiday sales forecast, an annual exercise in which we take the pulse of the U.S. consumer, conduct extensive research, apply sophisticated statistical analysis, draw on our years of professional experience, and then basically guess how much consumers will spend over the holiday sales season. Though there are many ways in which holiday sales are measured, our definition is combined November and December retail sales excluding motor vehicle, gasoline, building materials, restaurant, grocery store, and drug store sales. With the initial estimate of December retail sales now in hand, we can make an initial assessment of our forecast.

Our forecast was that 2016 holiday sales would be up 2.9 percent from 2015, and we also noted that would feel a lot better for consumers than it would for retailers. Our point was that the pervasive goods price deflation that consumers have come to know and love but retailers have come to loathe over the past few years would make holiday sales look weaker than they actually were. This is a point we routinely make in our write-ups of the monthly retail sales reports, as the retail sales data are reported in nominal terms, i.e., they are not adjusted for price changes.

To illustrate our point, we included our forecast of a 3.5 percent increase in real, i.e., adjusted for inflation, holiday sales which was based on our forecast that core goods prices (as measured by the CPI) would be down 0.6 percent from the 2015 holiday season. While our forecast of goods price deflation was spot on, nominal holiday sales were up 3.4 percent, a bit stronger than our forecast. As a result, real holiday sales growth also topped our forecast, posting a 4.0 percent increase (this is an initial estimate that will change as the initial estimates for December retail sales are revised). Still, the 2016 holiday shopping season was fairly pedestrian compared to historical norms.



Of course, some retailers fared better than others during the 2016 holiday sales season. We had forecast online sales would be up 12.3 percent in 2016 but that appears to have undershot the mark, by a wide margin. While we don't yet have an estimate of online sales for December, this category rolls up into the broader "nonstore retailers" category, which includes but is not limited to

online sales. Online sales account for roughly 88 percent of sales in the nonstore retailer category and online sales have consistently grown at a significantly pace than has the broader category. So, with sales by nonstore retailers up 12.8 percent in the 2016 holiday season, it follows that online sales were up even more.

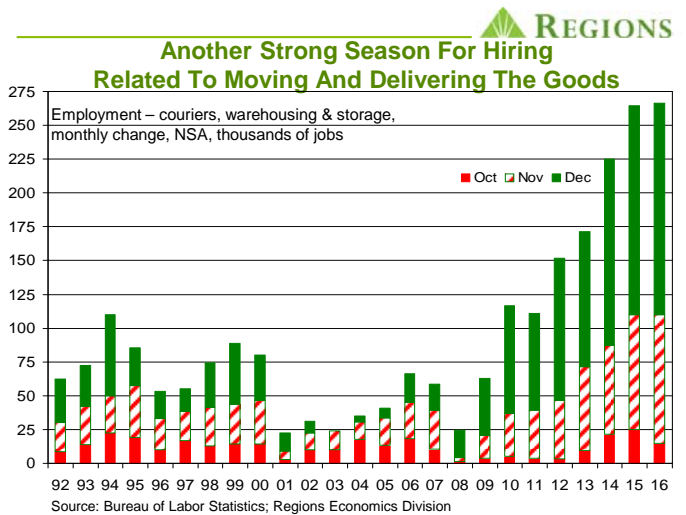
This growth came largely at the expense of brick and mortar retailers, particularly those without an established online footprint. For instance, holiday sales at department stores fell by 7.7 percent in 2016, while sales at electronics stores were down 3.0 percent and sales at apparel stores were up just 0.7 percent. These results reflect the combination of weak pricing – which was even more painful for those retailers who relied on aggressive discounting to attract shoppers – and the increased prominence of online shopping. To be sure, it could be the case that individual retailers outperformed the broader categories into which they fall but, for the most part, the 2016 holiday season left little to remember it by for much of the brick and mortar retail world.

It is also worth keeping in mind that, like the broader retail sales data, our measure of holiday sales does not include spending on services – spending on services accounts for roughly two-thirds of all consumer spending. So to the extent consumers spent on travel and tourism – categories that in the November/December period saw solid growth – that would not be captured in any estimate of holiday sales. Also, estimates of holiday sales generally do not include motor vehicle sales, which were notably strong in Q4 2016 when they topped 18.0 million units on an annualized basis. It could be that people actually do surprise their spouse by leaving a neatly gift wrapped new car in the driveway during the holiday season, or it could be that spending on motor vehicles crowded out other forms of holiday spending, but the point is that consumer spending is healthier than implied by simply looking at holiday sales, no matter how defined.

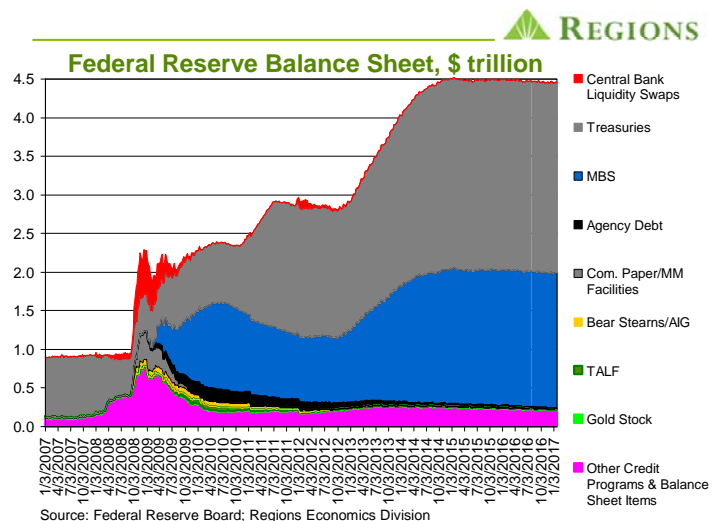
We also discussed trends in holiday hiring amongst retailers and warehousing and delivery operations, trends that reflect the changing manner in which consumers shop. We track hiring in retail trade over the October through December period (retailers generally begin to ramp up holiday related hiring in October), and 2016 saw the weakest holiday retail hiring since 2010. In general, holiday hiring in retail trade in the post-recession years has fallen short of the levels seen in the pre-recession years going all the way back to the early 1990s. This mainly reflects the extent to which online shopping has grown over the past several years, such that retailers do not need as many employees in the store around holiday time as was the case in the past.

In contrast, holiday related hiring related to the logistics of storing, shipping, and delivering goods purchased online was strong in 2016. Here too we look at hiring over the October through December period, and in 2016 hiring in these areas in October was less robust than was the case in both 2014 and 2015. However, hiring was notably stronger in November 2016 than in the prior two Novembers, and December hiring was marginally stronger than in 2015 and far stronger than in 2014. All in all, over 266,000 jobs were added in these areas over the final three months of 2016. It is worth noting that, given online shopping has been growing rapidly for some time, holidays or not, hiring in these areas has been growing as well over the course of any given year. That we still observe such strong holiday hiring on top of that

ongoing growth is a testament to the extent online sales have captured a larger and larger share of total holiday spending.



**Fed Balance Sheet:** For some time now the Fed’s balance sheet had basically been hiding in plain sight, no mean feat considering how large that balance sheet is. Recent weeks, however, have seen the Fed’s balance sheet gently pushed out of the shadows, even if it remains some distance from center stage in the FOMC’s policy framework. To be sure, when it comes to monetary policy, the Fed funds rate remains the main focus of the FOMC as well as market participants, but that many FOMC officials are now openly discussing the balance sheet means it’s time for the rest of us to start paying attention.



Prior to the financial crisis, the Fed’s balance sheet was stable at less than \$900 billion in assets. During the crisis, however, the FOMC embarked on a path of large-scale purchases of financial assets, primarily in the form of U.S. Treasury securities and mortgage-related securities backed by the U.S. government. The point of these purchases (commonly referred to as “quantitative easing”) was to help stabilize the financial system and, by holding down long-term market interest rates, to help foster the recovery from the deep and painful 2007-09 recession.

Our point here is not to debate the merits or the efficacy of the Fed's large-scale asset purchases; we've expressed our views on prior occasions. Instead, we think it useful to discuss the manner in which the Fed's balance sheet may begin to shrink and what some of the implications would be. As can be seen in the chart on the prior page, the Fed's balance sheet began to stabilize in late-2014. At their October 2014 meeting, the FOMC opted to halt its asset purchases, having deemed there to have been "a substantial improvement in the labor market" and "sufficient strength in the broader economy" to warrant ending the asset purchases. But, the FOMC also decided to continue its policy of reinvesting principal payments and proceeds of maturing assets, which explains why the balance sheet has remained stable, at roughly \$4.5 trillion, since the asset purchases came to a halt.

For some time now, in their post-meeting policy statements the FOMC has noted that it expected to continue reinvestments "until normalization of the level of the federal funds rate is well under way." While there is considerable debate as to just what, precisely, "normalization" of the funds rate (note – we'll use the term "funds rate" to mean the mid-point of the target range) means in terms of the level of the funds rate, we don't know of anyone who thinks that process to be "well under way." After all, with just a cumulative 50-basis point increase in the funds rate to date, the mid-point of the target range stands at 0.625 percent. And, while to some extent "normalized" must be put in the context of the "equilibrium" value of the funds rate, the FOMC's latest projections put this at 3.00 percent, which is about the center of the range of private sector estimates.

To be clear, we do not expect the FOMC to implement a change to its balance sheet policy until at least sometime in 2018, but we think their beginning to discuss this possibility well ahead of time makes sense for two reasons. First, prepping market participants for the possibility of a contracting Fed balance sheet with plenty of lead time should, at least in theory, help minimize the impact on market interest rates when the Committee actually does change its policy on reinvestment. The FOMC no doubt wants to avoid a repeat of 2013's "taper tantrum" – the spike in market interest rates following the FOMC's signal that large-scale bond purchases would end in 2013.

Second, with the FOMC's latest iteration of its "dot plot" implying a faster pace of rate hikes in 2017 – three 25-basis point hikes – coupled with the upside risks to growth and/or inflation stemming from potential changes to fiscal, trade, and regulatory policy over coming months, the process of normalizing the funds rate could easily move at a faster pace than many, including the FOMC, had anticipated just a few short months ago. That would bring the Fed's balance sheet into play sooner than had been anticipated.

It is also important to stress that the FOMC can pare the balance sheet down "passively" or "actively." In other words, the passive approach would be to simply stop reinvestment while an active approach would be for the FOMC to begin selling the assets now on its balance sheet. An active approach is highly unlikely, at least to any significant degree, meaning that, when they do deem it the appropriate time, the FOMC will adopt the passive approach to paring down the Fed's balance sheet. This should help minimize the impact on market interest rates, though there is always the possibility that market participants will price in a larger reduction

in the size of the Fed's balance sheet than the FOMC intends to allow and, to the extent this is the case, it would mean market interest rates overshoot on the high side.

This simply reinforces the importance of the FOMC clearly communicating its intentions to the market, again with plenty of lead time. As to what a passive paring down of the balance sheet might look like, the maturity schedule indicates over \$200 billion of U.S. Treasury securities will mature in 2017 and over twice as much will mature in 2018. It is also worth noting that when the Fed does roll over its holdings of U.S. Treasury securities, it does not do so in public auctions but rather via noncompetitive bids in regular Treasury auctions, with Treasury simply expanding the size of its auctions by the amount of desired Fed purchases. So, in lieu of other financing options, when the FOMC does decide to halt reinvestment, Treasury will have to increase the amount of securities being sold at auction, which would be a source of upward pressure on market interest rates.

To the extent this comes amidst what would already be increased upward pressure on rates due to faster economic growth and/or faster inflation stemming from changes to fiscal, regulatory, and trade policy, market rates could move significantly higher should the FOMC decide to end reinvestment. On top of what, in such circumstances, would be further increases in the Fed funds rate, this would mean that the FOMC is effectively tightening policy far more than they had anticipated. To be sure, if they felt this to be a threat to the expansion, they could easily pull back on one, if not both, of these policy levers, but the risk is that, even if they were to do so, there could be material disruptions to economic activity. Moreover, market participants could lose confidence in the FOMC if faced with an "on again-off again" policy of balance sheet reduction, which clearly would not be a desirable outcome.

The FOMC is obviously aware of the potential pitfalls, and the desire to avoid such market disruptions is one reason they will be in no hurry to begin paring down the Fed's balance sheet. Another manner in which the FOMC can help limit the impact on market interest rates is to decide on what they feel is the optimal size of the Fed's balance sheet, which likely lies somewhere between the less than \$900 billion pre-crisis level and the current \$4.45 trillion level. If the FOMC did announce a balance sheet target, they could also control the pace at which the balance sheet winds down to this desired level, which should limit the effects on market interest rates. To be sure, nothing would be set in stone, nor should it be, but barring the economy performing either materially better or materially worse than anticipated, there would at least be a known target and known pace at which that target would be approached. Our view is that such a policy would be preferable to a more open-ended approach to paring down the Fed's balance sheet.

It is highly likely that over coming months there will be more discussion of the balance sheet by FOMC members. We think the more discussion there is, and the sooner market participants hear it, the less disruptive it will be when the FOMC does end its policy of reinvestment. And, again, we think it critical that the FOMC announce where it wants the balance sheet to ultimately settle and the rate at which it wants to approach that target. Sure, discussions of the size of the Fed's balance sheet may not strike you as being even remotely interesting, but hopefully this brief primer illustrates why these discussions matter.

# ECONOMIC OUTLOOK



February 2017

Q3 '16 (a)	Q4 '16 (p)	Q1 '17 (f)	Q2 '17 (f)	Q3 '17 (f)	Q4 '17 (f)	Q1 '18 (f)	Q2 '18 (f)		2015 (a)	2016 (p)	2017 (f)	2018 (f)
3.5	1.9	2.0	2.3	2.3	2.2	1.9	1.8	Real GDP <sup>1</sup>	2.6	1.6	2.2	2.0
3.0	2.5	2.2	2.2	2.4	2.2	2.0	2.0	Real Personal Consumption <sup>1</sup>	3.2	2.7	2.5	2.1
								Business Fixed Investment:				
-1.4	4.5	4.0	3.3	3.0	3.0	2.5	2.2	Equipment, Software, & IP <sup>1</sup>	4.0	0.2	2.9	2.5
12.0	-4.9	3.0	6.0	3.6	4.0	3.1	1.8	Structures <sup>1</sup>	-4.4	-3.1	2.9	3.0
-4.1	10.2	5.4	4.6	2.7	5.4	7.1	7.0	Residential Fixed Investment <sup>1</sup>	11.7	4.9	3.7	6.1
0.8	1.2	0.5	0.5	1.1	1.3	1.2	1.1	Government Expenditures <sup>1</sup>	1.8	0.9	0.7	1.1
-522.3	-599.6	-589.8	-594.3	-598.2	-607.4	-619.7	-632.6	Net Exports <sup>2</sup>	-540.0	-561.6	-597.4	-638.3
1.145	1.216	1.182	1.171	1.194	1.220	1.255	1.284	Housing Starts, millions of units <sup>3</sup>	1.108	1.168	1.192	1.303
17.5	18.0	17.6	17.2	17.0	16.9	16.5	16.3	Vehicle Sales, millions of units <sup>3</sup>	17.4	17.5	17.2	16.2
4.9	4.7	4.7	4.6	4.6	4.5	4.5	4.5	Unemployment Rate, % <sup>4</sup>	5.3	4.9	4.6	4.5
1.8	1.6	1.6	1.6	1.4	1.3	1.2	1.2	Non-Farm Employment <sup>5</sup>	2.1	1.8	1.5	1.2
1.3	1.6	1.8	1.6	1.6	1.5	1.7	1.8	GDP Price Index <sup>5</sup>	1.1	1.3	1.6	1.9
1.0	1.5	1.9	1.9	2.0	1.9	1.9	2.0	PCE Deflator <sup>5</sup>	0.3	1.1	1.9	2.0
1.1	1.8	2.6	2.6	2.7	2.4	2.1	2.0	Consumer Price Index <sup>5</sup>	0.1	1.3	2.6	2.0
1.7	1.7	1.7	1.7	1.8	2.0	2.0	2.1	Core PCE Deflator <sup>5</sup>	1.4	1.7	1.8	2.1
2.2	2.2	2.0	2.0	2.1	2.2	2.2	2.3	Core Consumer Price Index <sup>5</sup>	1.8	2.2	2.1	2.3
0.38	0.42	0.63	0.67	0.88	0.92	1.13	1.17	Fed Funds Target Rate, % <sup>4</sup>	0.14	0.39	0.77	1.27
1.56	2.13	2.45	2.55	2.60	2.65	2.70	2.75	10-Year Treasury Note Yield, % <sup>4</sup>	2.14	1.84	2.56	2.65
3.45	3.84	4.22	4.31	4.35	4.39	4.44	4.48	30-Year Fixed Mortgage, % <sup>4</sup>	3.85	3.65	4.32	4.37
-2.4	-2.7	-2.9	-3.0	-3.1	-3.2	-3.4	-3.5	Current Account, % of GDP	-2.7	-2.7	-3.1	-3.6

a = actual; f = forecast; p = preliminary

- Notes:
- 1 - annualized percentage change
  - 2 - chained 2009 \$ billions
  - 3 - annualized rate
  - 4 - quarterly average
  - 5 - year-over-year percentage change