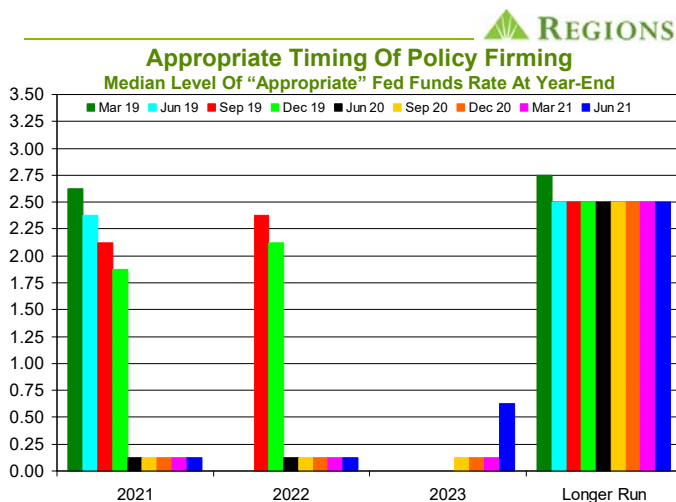


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## The Dot Plot: Lots Of Noise, Any Actual Signal?

If you didn't know what the FOMC did at their June meeting but instead had to guess based on the reaction in the markets and amongst analysts, you would have been excused for guessing that the Committee had sent the Fed funds rate soaring, emptied out the Fed's balance sheet, and, for good measure, outlawed prosperity. In other words, the markets took it badly, and many analysts and commentators took it even worse. Some described the FOMC as having taken a "hawkish" turn in their policy stance while some went so far as to describe it as a "super hawkish" turn. As for what the FOMC actually did at their June meeting, the short answer would be "nothing, really." While market participants came to this realization in fairly short order, that isn't the case with many analysts who continue to speak of a suddenly "hawkish" FOMC.

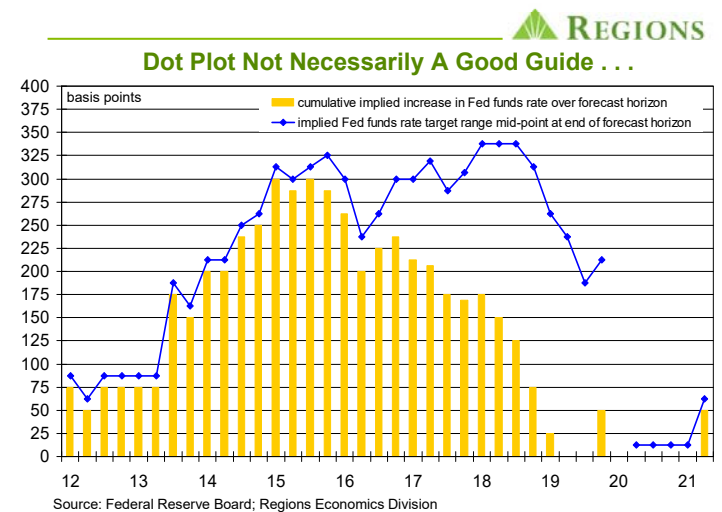
Under the heading of "a little perspective can go a long way," it helps to think about what the FOMC did, and did not, do at their June meeting. The FOMC made no changes to the Fed funds rate target range, and they made no change in the pace of the Fed's monthly asset purchases while offering no hints about when such a change may come about and what it might look like. While allowing for a period of faster real GDP growth and faster inflation, the FOMC's updated economic projections show no changes in the view of the longer-term trend rates of real GDP growth (just below 2.0 percent) or inflation (right at 2.0 percent). What the FOMC did do was alter their collective view of the potential future path of the funds rate, implying the target range mid-point might increase by 50 basis points in 2023, as illustrated in the chart below.



This fairly modest change to the potential path of policy triggered the overwrought reaction that, for many, has yet to subside. There

is a distinction between policy being less accommodative and policy being restrictive, even if that distinction seems to have been lost on many of those commenting in the wake of the June FOMC meeting. As we noted at the time, if this modest change in the potential future path of the Fed funds rate is hawkish, let alone super hawkish, we'll have to invent a whole new vocabulary to describe the FOMC's policy stance should they ever venture all the way back to merely neutral ground.

To that point, even should the FOMC begin tapering the rate of monthly asset purchases, which we expect to see in early-2022, it will still be some time before asset purchases come to an end, and even longer, assuming proceeds from maturing assets continue to be reinvested, before the Fed's balance sheet would actually start to shrink. As such, 50-basis points worth of funds rate hikes in 2023 would still leave monetary policy accommodative, and one could easily make a persuasive case that policy would be unduly accommodative. Even aside from this question, however, we think it worth considering the track record of the FOMC's "dot plot" as a guide to the actual path of the Fed funds rate.



The chart above shows the implied path of the Fed funds rate (specifically, the mid-point of the Fed funds rate target range) over the life of the dot plot, first introduced in 2012. The gold bars show the cumulative change in the funds rate, measured in basis points, over the forecast horizon in each set of projections issued by the FOMC (which they do four times a year). For instance, the first set of projections issued in 2012 implied the funds rate would be 75 basis points higher at the end of the forecast horizon than was the case when the projections were issued. The blue line shows the implied funds rate at the end of the forecast horizon in each set of projections, which is simply the sum of the funds rate at the time the projections were issued and the cumulative change in the funds rate implied by each dot plot. It is easy to see the build-up

in expectations ahead of the initial funds rate hike at the December 2015 FOMC meeting. Also, recall that the December 2016 meeting kicked off a series of funds rate hikes that culminated with the mid-point of the Fed funds rate target range peaking at 2.375 percent as of the December 2018 meeting. It makes sense that as the funds rate was rising, expectations for subsequent increases would be diminishing, hence the declining height of the gold bars.

As noted above, the mid-point of the Fed funds rate target range peaked at 2.375 percent, never reaching the 3.375 percent peak implied by the first three dot plots issued in 2018. That has been a common outcome over the life of the dot plot, i.e., the dot plot has tended to imply a higher funds rate than actually turns out to be the case. It remains to be seen whether that pattern will be broken with the June 2021 edition of the dot plot, though we're not sure we even want to imagine the set of conditions that would warrant the mid-point of the Fed funds rate target range ending 2023 below the 0.625 percent implied by the June 2021 dot plot.

It is worth noting that while the focus tends to be on the median value of the funds rate implied by the dot plot, as in our prior chart, there can be a good deal of dispersion around the median dot in any given set of projections. Indeed, in the June 2021 edition of the dot plot, 13 of the 18 Committee members signaled that at least one hike in the funds rate would be appropriate by year-end 2023, compared to the 7 members who did so in the March 2021 edition of the dot plot. Moreover, 7 of the 18 Committee members signaled that at least one funds rate hike would be appropriate in 2022, up from the 4 members who did so in March. This was one factor that contributed to the narrative around the FOMC having taken a "hawkish" turn at their June 2021 meeting.

To the extent the FOMC actually took a turn, hawkish or otherwise, at their June meeting, it's worth considering what led to that. It could simply be a matter of more members thinking that, with the improvement in economic and labor market conditions seen to date and the further improvement expected over coming quarters, it would be appropriate to begin dialing down the degree of monetary policy accommodation. Another possible explanation is that more members are more concerned about inflation than has been the case in the past.

With each set of projections, members are asked to assess how they perceive the balance of risks to their forecasts for real GDP growth, the unemployment rate, and both headline and core inflation, i.e., do they perceive the risks to be to the upside, to the downside, or to be balanced. In the June 2021 projections, 13 of the 18 Committee members perceived the risks to their inflation forecasts to be to the upside, i.e., the risk was that inflation would be faster than they anticipated. This is easily the highest number of members indicating the risks to their inflation forecasts were weighted to the upside in the life of the projections; the prior high of five members came in the March 2021 projections. In June, 15 of the 18 members indicated they saw the risks to their forecasts of real GDP growth and the unemployment rate to be balanced.

That the number of members perceiving the risks to their inflation forecasts being weighted to the upside matches the number of members who signaled at least one funds rate hike would be appropriate by year-end 2023 – again, 13 in each case – could be nothing more than coincidence. We have no way of knowing this,

given that there are no names attached to the projections of individual Committee members. While this is a somewhat curious practice, given how frequently FOMC members speak publicly on their outlook for the economy, it nonetheless has been the practice of the Committee since they began issuing these projections. That does not, however, keep people from trying to name names. Not too long after the June FOMC meeting, we came across more than one piece purporting to identify each dot on the dot plot, based on a thorough scouring public comments by each FOMC member. Our first thought when coming upon these pieces was "wow, it must be nice to have free time." Really, what's next, "The Masked Central Banker" as the latest reality TV show?

Okay, maybe not, but this does go to some of the questions around the dot plot and, more broadly, the whole notion of "forward guidance." Many question the value of the dot plot, in part because, to our earlier point, it hasn't been all that useful a guide to the actual path of the Fed funds rate. Keep in mind that the dot plot isn't a formal forecast; instead, each member is asked to indicate what they would see as the appropriate year-end value of the funds rate if economic conditions evolve as they anticipate. The further out into the future one goes, however, the less meaning such projections have. To be clear, this isn't intended as a commentary on the forecasting ability of FOMC members, as we're very mindful that those who forecast in glass houses should not throw stones. It is instead a reminder of how things, in this case overall economic conditions, can and do change, and often quickly. Anyone needing a reminder of that need only look back to March 2020, but, even in less severe circumstances, making a forecast of economic conditions up to three years out and having a high degree of confidence in that forecast are different matters.

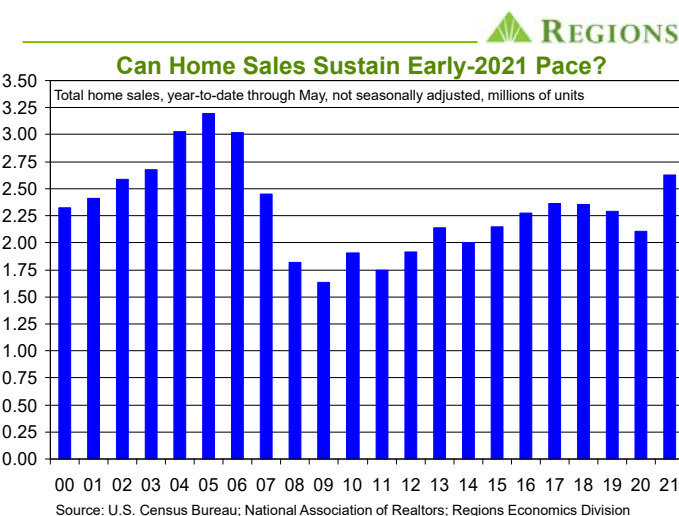
That Fed Chairman Powell routinely downplays the dot plot, as did his predecessor, raises the question of whether there is any actual value in the dot plot in the context of providing meaningful forward guidance. For instance, the economic recovery from the pandemic and the efforts to stem its spread has been very uneven and remains far from being complete, even more so for the global economy than for the U.S. economy, and it will be some time before any lasting effects of the experience of the pandemic have made themselves clear. In such an environment, making an economic forecast extending through 2023, soon to be extended to 2024 in the FOMC projections, is fraught with peril and, by extension, so too is making assessments of the appropriate path of monetary policy over such an extended horizon.

Sure, the issue may not be the dot plot itself but instead how many people, knowing what the dot plot is intended to show and its track record as a guide to the actual path of the funds rate, react to every shift in the dot plot and spend so much time trying to identify who put what dot where. Be that as it may, if the intent of the FOMC is to provide meaningful forward guidance as to the potential path of monetary policy, a little clarity would go a long way. For instance, we repeatedly hear FOMC members use the phrase "substantial further progress" toward the goals of price stability and full employment as a threshold for changing the pace of the Fed's monthly asset purchases. What we've yet to hear is what that specifically means, i.e., what are the metrics being used to assess "substantial further progress" and what values of those metrics constitute such progress.

Along those same lines, we are told the Committee “will aim to achieve inflation moderately above 2.0 percent for some time so that inflation averages 2.0 percent over time.” Left unanswered are how high above 2.0 percent and for how long. Obviously, in a group of 18 members (19 at full strength) there will be a wide range of opinions on each of these questions, but there has to be a consensus somewhere, otherwise no policy decisions can ever be taken. And, sure, the thinking around what constitutes “full employment” can, and does, change over time, but that is well known, so adapting policy objectives around shifts in the perception of full employment, or for that matter around shifts in the perception of how much inflation is tolerable for how long, should not pose insurmountable hurdles for market participants to clear. To the extent more specific guidance around possibly shifting targets requires more time and effort on the part of those trying to divine the future path of monetary policy, that seems like time better spent than obsessing over who put what dots where.

### *Fast Start For Home Sales In 2021, Can They Keep Up The Pace?*

Our discussing inventories of new and existing homes for sale, or the lack thereof, is nothing new, as this is a topic we’ve been emphasizing for the past several years. Over that time, the inventory situation got progressively worse, and while our sense is that inventories hit a bottom this winter and have started to rise, that nonetheless leaves them far away from anything that would constitute normal. One consequence of lean inventories coupled with robust demand is a marked acceleration in the rate of house price appreciation, which has given rise to concerns of a housing market bubble. As we discussed in our May *Outlook*, however, we do not share these concerns.

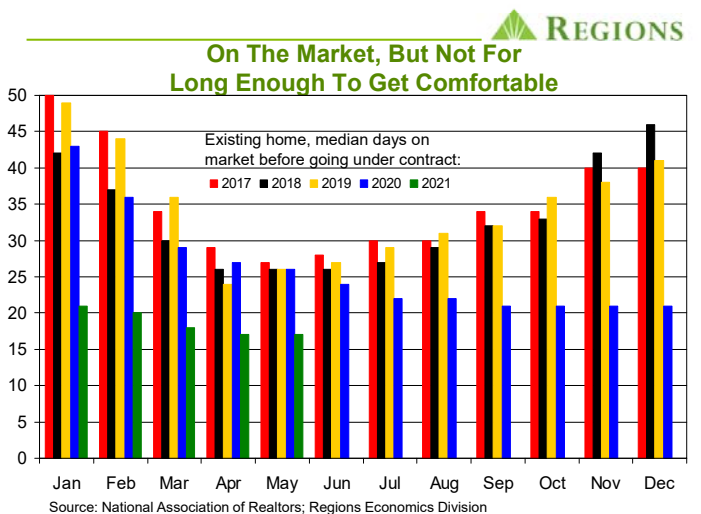


Still, for all of the talk of how lean inventories have acted as a drag on the pace of home sales, on a year-to-date basis through May there were a total of 2.631 million home sales – combined new and existing sales, not seasonally adjusted, as measured by the U.S. Census Bureau and the National Association of Realtors. What might surprise you is that this is the highest such total since 2006, as seen in the chart above. Okay, sure, another comparison to the year 2006 isn’t going to give much comfort to those worried that

we’re in the midst of a housing market bubble. Be that as it may, we think it is worth noting a few points to help reconcile the seeming contradiction between inventories just making their way off of record lows and the best year-to-date sales total since 2006.

Recall that new home sales are booked at the signing of the sales contract, which can occur before construction on the unit has begun, during the construction of the unit, or after the unit has been completed. As we’ve noted in our monthly write-ups of the new home sales data, units on which construction had not yet started have been accounting for an elevated share of total new home sales over the past several months. In other words, builders are selling them before they’re building them, and these units do not turn up in the data on “physical” homes for sale, i.e., units either under construction or finished. To be sure, new home sales account for a much smaller share of total home sales – roughly 13 percent of total sales over the past two years – than do existing home sales, so this is not the primary reason for total home sales seemingly outperforming the inventory numbers.

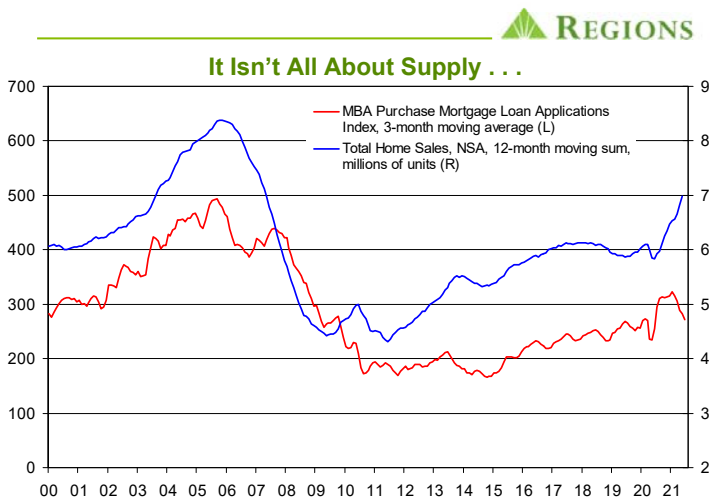
In the market for existing homes, while there isn’t nearly as much inventory as there has been in the past, what inventory there is has been turning over at a much faster rate. In other words, the ratio of sales-to-listings has risen sharply over the past year and continues to hover around the highest levels on record. Another way to see the increase in the “velocity” of sales is the median days on market metric, or, the number of days an existing home is on the market before going under contract. Of existing homes sold in May (existing home sales are booked at closing, not the signing of the sales contract), the median number of days on market was 17 days, matching April as the lowest on record in the life of the NAR data.



The median days on market metric started 2020 looking normal enough, as was the case with most of the economic data. But, after wobbling during the early days of the pandemic, home sales rebounded strongly, aided by mortgage interest rates falling to record lows. At the same time, an already bad inventory situation got even worse, in part because many would-be sellers simply did not want to list their home amid the pandemic. This contributed to the increasing velocity of existing home sales, which led to a steady decline in median days on market over the remainder of 2020. Note from the chart that there are clear seasonal patterns

in the median days on market metric (the data are not seasonally adjusted), i.e., starting out any given year elevated, then falling sharply through the spring sales season and then turning higher. These patterns clearly did not hold in 2020, as days on market declined through the year and have fallen further thus far in 2021.

So, despite notably lean inventories, home sales got off to a fast start in 2021. The question, however, is whether the pace of sales seen over the first five months of 2021 can be sustained, and there are already signs that sales are slowing. Over the past two months, builders have begun to limit build-to-order sales, with some going as far to stop them completely. Many builders, faced with already large backlogs of unfilled orders and considerable uncertainty around materials prices, have begun to concentrate on working down order backlogs. This will weigh on new home sales, with units on which construction has not yet started accounting for a smaller share of overall sales.



There is also reason to think that, despite mortgage interest rates remaining quite favorable, affordability constraints are becoming a drag on new and existing home sales. As seen in the above chart, applications for purchase mortgage loans have weakened, falling in three consecutive months and well off of their early-2021 peak. Changes in purchase mortgage applications tend to lead changes in home sales though, given the differences in timing as to when sales are booked – new home sales at contract signing, existing home sales at closing – there is more of a lead-in for new home sales than for existing home sales. Either way, the downward drift in purchase mortgage loan applications raises concerns over the demand side of the market.

There are offsets to the decline in purchase mortgage loan applications, at least in the market for existing homes. All-cash transactions have accounted for over 22 percent of all existing home sales thus far in 2021, a greater share than in any of the prior four years, this after 2020 saw a decline in the share of sales accounted for by all-cash sales. Investors have also accounted for a greater share of existing home sales in 2021, almost 17 percent thus far, than has been the case in recent years (note that many investor purchases are also all-cash transactions). For non-investors, however, those buyers with the wherewithal to make all

cash offers are at a distinct advantage in such a strong sellers' market, and the higher share of all-cash sales has played a role in the increased velocity of home sales thus far in 2021. Though there is reason to wonder how much upside capacity there is for all-cash transactions, at least for now they are to some extent offsetting the impact of declining purchase loan applications.

Clearly, though, not all buyers have the wherewithal to pull off an all-cash purchase. And while mortgage interest rates remain favorable, the extent to which house prices have risen has eroded some of the affordability buffer provided by low mortgage rates. At the same time, higher prices make down payments more of a burden, and the group impacted the most is prospective first-time buyers. Another potential impact of higher prices is that it could be more difficult for homes to appraise at asking prices, let alone at above-asking prices. There are also concerns over appraisals in the new homes market, given the extent to which higher materials have pushed up construction costs. To the extent homes do not appraise at agreed upon purchase prices, either the buyer will have to come up with more cash or the buyer and seller will have to agree on a new, lower purchase price. Given current market conditions, however, the latter seems unlikely, and the former could mean some prospective buyers will have to back out.

New home sales have already turned lower, and existing home sales could follow suit (again, reporting differences mean shifts in sales patterns are visible in new home sales before they are visible in existing home sales). That said, there is no reason to think the bottom is about to drop out of the market, sending home sales plummeting as they did back in 2006. Once again, now is not then. It is worth raising a point we've made before, which is that record low mortgage interest rates likely pulled some demand forward into 2020, so in that sense some evening out was to be expected in 2021 and will ultimately be reflected in the 12-month moving sum of unadjusted sales flattening out. More broadly, however, we think demographics will be a powerful support for home sales in the years ahead. That doesn't mean we won't see fluctuations around what should be an upward trend in sales, but it does suggest we are unlikely to see sales collapse as was the case between 2006 and 2009.

We also look for some relief on the supply front over the second half of 2021. As noted above, we believe inventories hit a bottom during the winter months, and inventories of both existing and new homes have increased over the past few months. To be sure, these increases are more along the lines of inventories inching higher than taking great leaps higher, but, in the end, higher is higher, and higher inventories will at some point take some of the steam out of the pace of house price appreciation. Additionally, the recent decline in lumber prices offers hope for broader relief from the higher materials costs that have pushed new home prices up so sharply, though lingering supply and transportation bottlenecks suggest this will be a slow process.

In short, we won't be surprised to see total home sales dip in the months ahead, but by no means do we expect sales to collapse. In a market as chronically undersupplied as has been the case in the housing market over the past several years, a modest decline in sales is much more likely to result in a slower pace of house price appreciation than in a pronounced and sustained decline in house prices.

# ECONOMIC OUTLOOK



July 2021

Q4 '20 (a)	Q1 '21 (a)	Q2 '21 (f)	Q3 '21 (f)	Q4 '21 (f)	Q1 '22 (f)	Q2 '22 (f)	Q3 '22 (f)		2018 (a)	2019 (a)	2020 (a)	2021 (f)	2022 (f)
4.3	6.4	6.5	7.1	6.4	5.8	4.4	3.0	Real GDP <sup>1</sup>	3.0	2.2	-3.5	6.1	5.3
2.3	11.4	10.6	2.4	5.9	4.7	4.2	3.3	Real Personal Consumption <sup>1</sup>	2.7	2.4	-3.9	7.7	4.6
13.1	11.7	8.7	6.1	6.9	8.2	6.3	5.8	Real Business Fixed Investment <sup>1</sup>	6.9	2.9	-4.0	8.7	6.9
25.4	15.0	9.5	5.8	5.8	9.5	6.6	5.3	Equipment <sup>1</sup>	8.0	2.1	-5.0	15.0	6.9
10.5	15.3	10.9	9.1	8.5	7.0	6.1	5.7	Intellectual Property and Software <sup>1</sup>	7.8	6.4	1.7	9.7	7.3
-6.2	-2.0	1.2	0.2	6.0	6.9	5.3	7.3	Structures <sup>1</sup>	3.7	-0.6	-11.0	-6.1	5.3
36.6	13.1	-4.7	6.4	7.5	7.6	4.2	2.4	Real Residential Fixed Investment <sup>1</sup>	-0.6	-1.7	6.1	13.2	4.9
-0.8	5.7	-4.9	1.8	2.3	6.1	5.9	2.8	Real Government Expenditures <sup>1</sup>	1.8	2.3	1.1	0.2	3.4
-1,122.0	-1,212.3	-1,204.5	-1,217.4	-1,221.9	-1,236.5	-1,254.3	-1,276.1	Real Net Exports <sup>2</sup>	-877.7	-917.6	-926.0	-1,214.0	-1,264.8
1,220	1,156	1,093	1,132	1,163	1,187	1,202	1,207	Single Family Housing Starts, ths. of units <sup>3</sup>	871	889	1,004	1,136	1,203
356	443	466	445	433	427	425	425	Multi-Family Housing Starts, ths. of units <sup>3</sup>	376	403	393	447	426
16.1	16.8	17.0	15.4	16.2	16.4	16.7	16.7	Vehicle Sales, millions of units <sup>3</sup>	17.2	17.0	14.4	16.3	16.7
6.8	6.2	5.9	5.4	5.0	4.7	4.5	4.3	Unemployment Rate, % <sup>4</sup>	3.9	3.7	8.1	5.6	4.4
-6.0	-5.6	8.5	4.6	4.3	4.6	4.1	3.0	Non-Farm Employment <sup>5</sup>	1.6	1.3	-5.7	2.7	3.5
-7.6	62.0	-27.7	-10.8	-4.8	3.9	3.9	3.8	Real Disposable Personal Income <sup>1</sup>	3.6	2.2	6.0	2.9	-2.1
1.3	1.9	3.8	3.8	4.0	3.5	2.7	2.2	GDP Price Deflator <sup>5</sup>	2.4	1.8	1.2	3.4	2.6
1.2	1.8	3.8	3.9	4.1	3.8	2.7	2.2	PCE Deflator <sup>5</sup>	2.1	1.5	1.2	3.4	2.7
1.2	1.9	4.7	4.6	4.6	4.2	2.8	2.1	Consumer Price Index <sup>5</sup>	2.4	1.8	1.2	4.0	2.8
1.4	1.6	3.3	3.3	3.6	3.5	2.6	2.3	Core PCE Deflator <sup>5</sup>	2.0	1.7	1.4	2.9	2.7
1.6	1.4	3.6	3.6	3.8	4.1	2.9	2.5	Core Consumer Price Index <sup>5</sup>	2.1	2.2	1.7	3.1	3.0
0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	Fed Funds Target Rate Range Mid-Point, % <sup>4</sup>	1.78	2.16	0.42	0.13	0.13
0.86	1.32	1.59	1.57	1.71	1.84	1.90	1.98	10-Year Treasury Note Yield, % <sup>4</sup>	2.91	2.14	0.89	1.55	1.94
2.76	2.88	3.00	3.04	3.18	3.32	3.43	3.54	30-Year Fixed Mortgage, % <sup>4</sup>	4.54	3.94	3.12	3.03	3.48
-3.3	-3.5	-3.3	-3.1	-3.3	-3.4	-3.3	-3.4	Current Account, % of GDP	-2.1	-2.2	-2.9	-3.3	-3.4

a = actual; f = forecast; p = preliminary

Notes: 1 - annualized percentage change      4 - quarterly average  
 2 - chained 2012 \$ billions                      5 - year-over-year percentage change  
 3 - annualized rate

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