ECONOMIC OUTLOOK



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Living Down To Expectations . . .

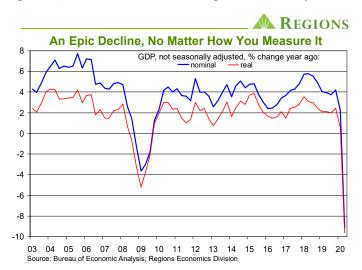
On July 30, the BEA released its initial estimate of Q2 GDP showing real GDP contracted at an annualized rate of 32.9 percent in Q2, which followed an annualized contraction of 5.0 percent in Q1. While the contraction in real GDP in Q2 was record breaking, as it is the largest quarterly contraction on record, the report on Q2 GDP broke no new ground, as it was clear by the end of March that there would be an epic contraction in real GDP in Q2. Indeed, perhaps the most surprising thing about the Q2 GDP data was that there were no real surprises in the Q2 GDP data. As we and other analysts processed the damage done to the economy by the COVID-19 virus and the efforts to stem its spread, by the middle of April forecasts of Q2 real GDP had gravitated toward an annualized contraction of better than 30 percent. Given the extent to which the pandemic has wreaked havoc on the monthly economic data, which more often than not have been far out of line with expectations, it is interesting that Q2 GDP came in so close to expectations.

Sure, the usual caveat applies here, which is that, in any given quarter, the initial estimate of GDP is based on highly incomplete source data and, as such, is prone to sizable revision. Speaking of surprises, or the lack thereof, we won't be at all surprised if the revision to the initial estimate of Q2 GDP is somewhat larger than is normal for an initial estimate. But, even if that proves to be the case, it won't really change anyone's perceptions of the damage done to the U.S. economy by the virus and the efforts to stem its spread, or the speed with which that damage was done.

Either way, there are some elements of the Q2 GDP data that merit discussion. For starters, while there is no way to make the Q2 data look good, neither should they be made to look worse than was actually the case. Keep in mind that the "headline" print of a 32.9 percent contraction is the annualized percentage change between Q1 and Q2. In other words, if the rate of contraction between Q1 and Q2 prevailed for four quarters, then, sure, you end up with a decline of 32.9 percent. As we've discussed before, we're no fans of the convention of reporting the data in terms of annualized rates of change, as even in normal times doing so can greatly distort the magnitude of actual changes in economic activity. In times as abnormal as these that we're living through now, those distortions are even greater, and the Q2 GDP data are a prime example.

Though not widely publicized or reported on, BEA does report the GDP data on a not seasonally adjusted basis, albeit this is a recent development and there is a limited history to the data. On a not seasonally adjusted basis, real GDP declined by 6.97 percent in Q2, following a 5.73 percent decline in Q1. Again, the point isn't to minimize the damage done to the economy in Q2, just to put it in context. The largest quarterly decline in real GDP on a not seasonally adjusted basis during the 2007-09 recession was the 4.79 percent decline in Q1 2009. With the decline over the first

half of 2020, as of Q2 the level of real GDP on a not seasonally adjusted basis was 12.31 percent below that of Q4 2019. So, no matter how you measure it, the economy has a very deep hole to dig out of, which we think will be a long and drawn out process.

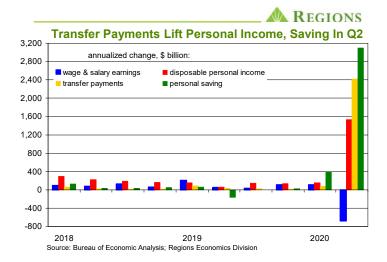


We devoted most of last month's outlook to a discussion of how an unprecedented injection of transfer payments to individuals boosted personal income in Q2 despite a significant contraction in wage and salary earnings, easily the largest individual component of personal income. While we won't go back over a lot of that detail here, we do think it worth summarizing with complete Q2 data now at our disposal. In light of the above discussion, we'll note that, unlike the data for GDP and its component parts, the data on personal income and its component parts are reported only on a seasonally adjusted and annualized basis.

Disposable (or, after-tax) personal income rose at an annualized rate of 42.14 percent in Q2, a number that is difficult to even process, let alone put in any kind of context. Which of course won't stop us from trying – on an annualized basis, disposable personal income rose by \$1.534 trillion in Q2, larger than the cumulative increase over the prior nine quarters. That increase came despite an annualized decline of \$680 billion in total wage and salary earnings (a 27.42 percent annualized decline). Over the past several years, wage and salary earnings have comprised about 57 percent of disposable personal income; in Q2 2020 that share fell to 48.54 percent, easily the lowest share on record. The decline in wage and salary earnings reflects the hit to the labor market from the COVID-19 virus and the efforts to stem its spread. After having declined by 20.787 million jobs in April, nonfarm payrolls increased by a combined 7.499 million jobs in May and June, for a net decline of 13.288 million jobs for Q2 as a whole.

Still, thanks to the Economic Impact Payments (EIP) and the \$600 per week in supplemental Unemployment Insurance (UI) benefits

incorporated into the CARES ACT, transfer payments to individuals rose by \$2.419 trillion on an annualized basis in Q2, more than making up for the hit to labor earnings and pushing disposable personal income sharply higher. Transfer payments accounted for 31.02 percent of disposable personal income in Q2, compared to an average of 19.40 percent over the prior several years.



The above chart helps visualize the wild swings seen in Q2, showing the annualized quarterly changes in wage and salary earnings, transfer payments, disposable personal income, and personal saving. Note that if, as we think likely, Congress does pass and the Administration signs a bill including additional EIP funds and another round of supplemental UI benefits, disposable personal income would likely rise modestly in Q4 before falling sharply in Q4 (barring yet another aid package). Still, given how far apart the two parties are in their vision of what the next round of aid will contain and how long any such aid will be provided, the outlook for personal income growth over the next few quarters remains highly uncertain, even with our assumption of further gradual improvement in labor market conditions.

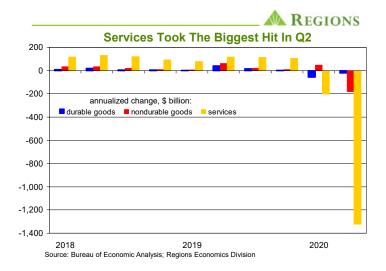
In any event, the above chart makes it clear that aid to individuals, particularly those displaced from the labor market, made a major contribution to personal income and saving in Q2. Whether sooner or later, there will ultimately be a potentially sizable hole assuming aid programs eventually run their course. Either way, looking at the extent to which personal saving rose in Q2 may lead one to discount the need for any additional aid, on the premise that households have a healthy cushion of saving to carry them through until the labor market, and the broader economy, normalize.

On an annual basis, personal saving rose by \$3.100 trillion in Q2, which in part reflects the magnitude of the increase in disposable personal income. As with any aggregate, however, the magnitude of the increase in personal saving tells us nothing about how that increase was distributed across households. Our sense, however, is that while saving rose across households in all income brackets, the increase in saving was more concentrated amongst upper-income households. The Census Bureau's *Household Pulse Survey*, a weekly survey designed to measure the experiences of U.S. households during the COVID-19 pandemic, shows households across all income buckets used at least some portion of their Economic Impact Payment funds to add to saving, though, as

would be expected, the percentage of households in each income group doing so was significantly higher for household incomes above \$50,000. Additionally, as of week 12 of the survey (which took place from July 16 through July 21), over 47.6 million adults reported that funds from the EIP had been used to meet spending needs over the prior seven-day period, and of this group, over 26.7 million were not employed, whether by choice or by circumstance. Additionally, over 30 million adults who were not employed had drawn down saving to help meet spending needs over the prior seven-day period.

So, while lower income households have at least some financial cushion from the EIP and, where applicable, the supplemental UI benefits, that cushion is likely considerably smaller than is true of upper income households. That subsequent improvement in labor market conditions is likely to come at a much slower pace than has thus far been the case means that, for many lower income households, any extra savings from aid tied to the CARES Act could be exhausted before labor earnings are restored.

It is also important to note that the spike in disposable personal income accounts for only part of the massive increase in personal saving in Q2. Personal consumption expenditures (total consumer spending on goods and services) declined at an annualized rate of \$1.528 trillion in Q2. Personal consumption expenditures also declined in Q1, contributing to the increase in personal saving seen during that quarter. While lower outlays on consumer goods help account for the decline in overall consumer spending in Q2, the main culprit was a sharp decline in consumer spending on services, which accounted for 87 percent of the decline in total consumer spending (in a given quarter, spending on services accounts for just over two-thirds of total consumer spending as measured in the GDP data).

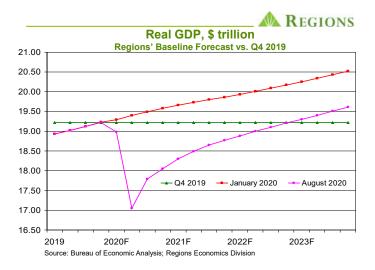


Recall that as economic activity began to shut down in mid-March, the most immediate impact was on consumer spending on services, such as travel, tourism, recreational activities, sporting events, live arts and music performances, and dining out, while spending on health care also fell significantly. That carried through much of April, and while spending on services began to rebound in May and June, the level at the end of Q2 was still considerably below the level at the end of Q1. To the extent that a high share

of spending on services consists of discretionary spending, which in turn is more concentrated amongst upper-income households, this would again suggest that the increase in personal saving in Q2 was highly concentrated amongst upper-income households. This bolsters the argument for additional income support for lower-income households that have been disproportionately displaced from the labor market.

We'll end this section by returning to our earlier point about how reporting the data in terms of annualized percentage changes exaggerates the degree of actual changes in economic activity. We and most other analysts are expecting the Q3 data to show notably rapid growth in real GDP – our August baseline forecast anticipates annualized growth of just over 20 percent, which is pretty much in line with consensus estimates. To be sure, it is early in the game and as more Q3 data become available, forecasts of Q3 real GDP growth will be refined accordingly. But, even if these early forecasts prove to be on or near the mark, we'd suggest being careful in how you would interpret such a result.

After all, thanks to the magic of GDP math, it would be virtually impossible for real GDP to decline in Q3. This can be illustrated with the monthly data on personal consumption expenditures. The quarterly figure reported in the GDP data is simply the average of the monthly data, which are reported in seasonally adjusted annualized terms. As noted above, consumer spending rebounded in May and June, such that in June the level of real consumer spending was well above the Q2 average reported in the GDP data. Indeed, even if consumer spending stayed at June's level for all of Q3, that would still yield an annualized increase of 26.8 percent over Q2, which would add roughly 18 percentage points to topline real GDP growth in Q3, but which at the same time would leave the level of real consumer spending 6.7 percent below that of January 2020, the cyclical peak. To carry this point further, even with another guarter of rapid (annualized) growth in Q4, our August baseline forecast would leave the level of real GDP in Q4 2020 roughly 4.0 percent below that of O4 2019.



That, to us, is the relevant marker of the economy's progress in recovering from the damage done by the COVID-19 virus and the efforts to stem its spread. We've been using the above chart since April, updated with each month's forecast, to illustrate our point. As of our August baseline forecast, we do not anticipate the level

of real GDP returning to its Q4 2019 level until Q4 2022. Sure, as we've noted countless times, there is a high degree of uncertainty around any economic forecast being made these days, so our timing could be off by a quarter or two either way. The point, however, is that the annualized real GDP growth numbers we and many others expect to see for the back half of 2020 could be taken to mean the economy is fully recovered from the short but violent recession stemming from the pandemic and the efforts to stem its spread. This of course would not be the case. Moreover, as the recent upturn in COVID-19 cases makes clear, the virus is still in the driver's seat, meaning that the path ahead for the U.S. economy is anything but clear. What does seem clear is that it will be some time before the economy is fully healed.

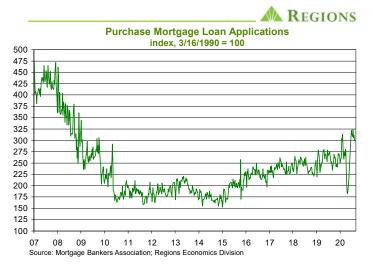
Can The Housing Market Continue To Outperform?

In an economy that over the last few months has been full of surprises, good and bad, perhaps the biggest surprise has been the housing market. To say the housing market came into 2020 with the wind at its back isn't necessarily overstating the case, but one would have to specify that it was much more of a light, steady breeze than a powerful, driving wind. That simply reflected the dichotomy we've been pointing to for some time now and which has been, well, the foundation, of our forecasts for single family construction and sales. So, while our January 2020 baseline forecast anticipated further increases in home sales, we noted that a paucity of existing homes for sale and ongoing limitations on the supply of labor and the supply of buildable lots would all act to limit the extent of any increase in total home sales.

While 2020 started out normally enough for the housing market and the broader economy, everything changed, seemingly in an instant, as the COVID-19 pandemic emerged, and by mid-March wide swaths of economic activity had come to an abrupt halt. As we began to adapt our forecast to what was a somber and highly uncertain economic landscape, the housing market was not spared. Indeed, our initial forecast anticipated plummeting home sales and significant declines in house prices. Our forecast did call for single family construction and sales to recover in 2021, but at levels well below those of our January 2020 baseline forecast.

Though single family construction and sales did indeed sink, the housing market surprised us with its resiliency. Indeed, by late-April, it was clear our initial assessment was too dire, and we began to adjust our forecast upward. Of course, any forecast is refined in accordance with the incoming data, and that has been true of our macro forecast as well as our housing market forecast. The difference, however, is that although we've refined our macro forecast over the past few months, the decidedly uninspiring tone of that forecast has not changed, while the tone of our housing market forecast has improved. That does not, however, mean we've turned into raging housing market bulls; lingering supply constraints remain a concern and, low mortgage interest rates notwithstanding, we question whether, or to what extent, demand for home purchases can continue to outperform the labor market.

The first sign that the housing market was holding up better than we initially thought would be the case came in the MBA's weekly data on applications for purchase mortgage loans. In the week of April 10, the MBA's index of purchase mortgage loan applications fell to its lowest level since October 2015. Against the backdrop of broad based shutdowns of economic activity, that sharp decline came as no surprise. What was surprising, however, was the sharp and sudden rebound that began in the week of April 17, as seen in the following chart.



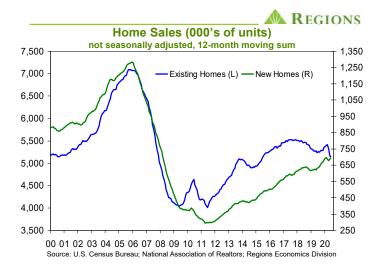
The first inclination was to see this rebound as nothing more than evening out the score, i.e., making up for the transactions that, due to those widespread shutdowns, did not take place between mid-March and mid-April. But, as each successive week brought higher numbers of applications for purchase mortgage loans, it became clear this went beyond mere payback. Indeed, by the end of June the index of weekly applications for purchase mortgage loans was at its highest point in almost twelve years. While activity has cooled slightly since then, the index nonetheless remains up by more than 20 percent year-on-year.

Obviously, an application for a loan is not the same thing as an approved loan. The Federal Reserve's quarterly survey of senior commercial bank lending officers shows that banks began tightening mortgage lending standards in Q2, and the share of banks doing so has increased dramatically in Q3 – the highest net share since Q4 2008. While tighter lending standards mean that not all applications will have been approved, home sales have nonetheless rebounded smartly after stumbling badly in April.

That improvement is more readily apparent in new home sales than in existing home sales, with timing disparities accounting for some of the difference. More specifically, new home sales are booked at the signing of the sales contract, while existing home sales are booked at closing. As such, new home sales are the more timely indicator of patterns in home sales. New home sales began to weaken in March then declined much more sharply in April, but May brought a reversal while June saw not seasonally adjusted new home sales rise to their highest level since May 2007.

Allowing for the timing differences noted above, existing home sales have also regained their footing. Pending home sales, a gauge of signed sales contracts, collapsed in March and April, in keeping with widespread shutdowns and the turmoil in the labor market. This was reflected in existing home sales for April and May, when sales fell to the lowest rate since 2010. Pending home

sales roared back in May, which tipped the rebound in June existing home sales, and with pending home sales having risen further in June, July existing home sales (to be reported on August 21) should handily beat June's sales rate.



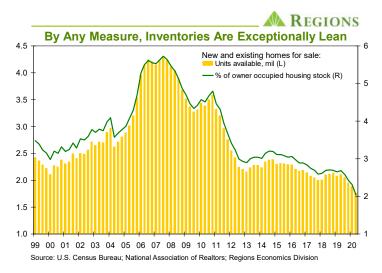
The above chart shows the running 12-month total of new and existing home sales, which is our preferred lens through which to view the underlying trends in the data. As of the June data, the running 12-month total of new home sales had basically made up the ground lost over the prior few months, but, even with what we expect will be a hefty increase in July sales, the running 12-month total of existing home sales will still be well off of its pre-pandemic level. In each case, the question is where sales go from here.

There is the matter of what to make of the recent softening in applications for purchase mortgage loans. Though still up by more than 20 percent year-on-year, applications for purchase mortgage loans have declined in each of the past two weeks and are off their early-July peak despite extraordinarily low mortgage interest rates. It could be that the upturn in COVID-19 cases, which has contributed to consumer sentiment backtracking, has led to an increased hesitancy amongst prospective buyers. The recent softening in labor market conditions may have also had the same effect; as mortgage apps were on their upward march despite the carnage in the labor market, we noted that those buyers still confident in their job and income prospects were aggressively taking advantage of low mortgage interest rates. With the pace of improvement in the labor market having slowed in the wake of the upturn in COVID-19 cases, it could be that confidence in job and income prospects has gone down by several degrees.

We don't expect much clarity in the data on applications for purchase mortgage loans over the next several weeks. We are in a seasonally slow time of the year for home sales and, given that seasonal adjustment is much less reliable in the present economic environment, the weekly apps data could be all over the map. Still, builders remain confident and many report continued interest, particularly amongst prospective first-time buyers, who to an increasing degree have been shut out of the market for existing homes due to supply constraints. This suggests further upside room for new home sales, even given the recent softening in labor market conditions.

One support for demand could be the experience during the pandemic, which has soured many on living in densely populated urban cores. Some argue this will lead to a surge in new single family construction in suburban areas. To which we say yes . . . and no. Urban cores have clearly lost some of their appeal, but the shortages of buildable lots and the costlier and more cumbersome entitlement processes that have curbed construction in suburban area over the past several years aren't going away any time soon. What is more likely is that single family construction will push further out, into exurban areas, where land is more available and there are fewer hurdles to construction. And, to the extent that the changes in working arrangements brought on by the pandemic – more people working remotely and no longer tied to a traditional office – endure beyond the pandemic, that would likely intensify the push into exurban areas.

Still, greater demand will put upward pressure on land prices, no matter where the land is located, and a faster pace of construction would also put upward pressure on prices for building materials, both of which would in turn put upward pressure on home prices. Moreover, builders continue to contend with shortages of skilled labor, which continue to act as a brake on the pace of construction. We've often noted over the past few years that builders could easily sell more new homes if only they could build more new homes, and while a push to the exurbs would ease constraints on the supply of new homes, it would not eliminate them.

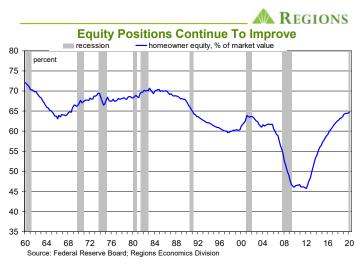


As for existing homes, we've been talking about notably lean inventories of homes for sale for the past several years, and over that time inventories have gotten smaller, not larger. Two main culprits are demographics – in over 55 percent of the owner occupied housing stock, the primary householder is over 55 years old – and the rise of single family REITs in the aftermath of the housing market bust associated with the 2007-09 recession. Neither of those constraints is likely to ease any time soon.

This leaves the situation depicted in the above chart. Inventories of homes for sale, new and existing, are the lowest on record and, as of Q2, were equivalent to only 2.04 percent of the owner occupied housing stock. Again, inventories of new homes for sale are playing a role in this; spec inventories of new homes for sale have fallen steadily over the past 18 months and, as of June, were at a three-year low. This suggests that even if the demand side of

the market withstands a slower pace of recovery in the labor market, there is limited upside room for new home sales.

As long as demand holds up, however, lean inventories will act as a support for prices of new and existing homes. Builders have been flexing their pricing muscles, and after having declined steadily over the prior two years, the gap between median sales prices on new and existing homes has increased over recent months. At the same time, existing home prices, as measured by CoreLogic, were still rising at a better than 4.0 percent rate as of May, the latest available data point. While we do anticipate the pace of price appreciation will slow in the months ahead, that slowdown will be less pronounced and come off of a higher starting point than we had initially expected would be the case. To be sure, low mortgage interest rates will help blunt pressures on affordability, but that is not the same as saying price does not matter. And, with price appreciation stronger than would otherwise be the case, affordability becomes increasingly sensitive to any increase in mortgage interest rates. While that may not seem like much of an issue now, it could be at some point.



The more immediate downside risk to the housing market is that the recovery in the broader economy, and in turn the labor market, stalls out, in which case the housing market would not be spared. Such an outcome would raise the risk that some share, perhaps a significant share, of mortgage loans now in forbearance progress to foreclosure. Though the number has fallen over recent weeks, the MBA estimates that, as of July 26, there were 3.8 million mortgage loans in forbearance. Even so, it is important to note the starting point for the housing market is much stronger now than was the case prior to the 2007-09 recession. Equity positions are much stronger now, and underwriting standards over the recently ended expansion were much stricter. As such, there would be no reason to expect a wave of foreclosures anywhere near as severe as that associated with the 2007-09 recession and, given how lean inventories now are, foreclosures would be absorbed much more quickly and without the same disruption in prices than was the case during the prior cycle.

In other words, what in the good times was the housing market's main weakness – chronic undersupply – would in the bad times help mitigate the fallout. Thus, even should demand for housing falter, there is far less downside risk to the broader economy.

ECONOMIC OUTLOOK AREGIONS August 2020



Q1 '20 (a)	Q2 '20 (p)	Q3 '20 (f)	Q4 '20 (f)	Q1 '21 (f)	Q2 '21 (f)	Q3 '21 (f)	Q4 '21 (f)		2017 (a)	2018 (a)	2019 (a)	2020 (f)	2021 (f)
-5.0	-32.9	22.2	8.9	2.5	1.6	2.7	2.6	Real GDP ¹	2.3	3.0	2.2	-4.7	3.0
-6.9	-34.6	27.9	13.4	-1.2	1.0	2.5	2.8	Real Personal Consumption ¹	2.6	2.7	2.4	-4.8	3.1
-6.7	-27.0	-6.8	-2.3	1.8	3.7	6.6	5.4	Real Business Fixed Investment ¹	3.7	6.9	2.9	-8.1	-1.1
-15.2	-37.7	-3.8	-1.7	0.3	2.5	6.4	5.3	Equipment ¹	3.2	8.0	2.1	-13.2	-2.2
2.4	-7.2	-0.6	0.8	5.8	6.1	6.8	6.0	Intellectual Property and Software ¹	4.2	7.8	6.4	0.9	3.4
-3.7	-34.9	-24.1	-9.8	-3.3	1.5	6.5	4.0	Structures ¹	4.2	3.7	-0.6	-12.4	-7.6
19.0	-38.7	20.3	9.6	9.3	5.7	3.3	1.2	Real Residential Fixed Investment ¹	4.0	-0.6	-1.7	-0.4	4.7
1.3	2.7	7.0	1.6	-2.4	-1.3	-0.8	-0.2	Real Government Expenditures ¹	0.9	1.8	2.3	2.8	0.3
-788.0	-780.7	-902.2	-952.3	-901.6	-891.5	-881.9	-889.9	Real Net Exports ²	-816.8	-877.7	-917.6	-855.8	-891.2
968	740	887	932	950	959	963	965	Single Family Housing Starts, ths. of units ³	851	872	893	882	959
517	304	345	366	375	384	385	385	Multi-Family Housing Starts, ths. of units ³	356	376	403	383	382
15.0	11.3	14.4	14.7	14.9	15.1	15.2	15.3	Vehicle Sales, millions of units ³	17.1	17.2	17.0	13.9	15.1
3.8	13.0	10.1	9.7	9.2	8.6	8.1	7.7	Unemployment Rate, %4	4.3	3.9	3.7	9.2	8.4
1.2	-11.2	-7.0	-6.1	-5.5	8.0	3.2	2.2	Non-Farm Employment ⁵	1.6	1.6	1.4	-5.8	1.7
2.6	44.9	0.1	-17.9	-19.8	0.1	1.2	1.2	Real Disposable Personal Income ¹	3.1	3.6	2.2	7.2	-6.5
1.8	0.6	1.0	0.6	0.5	1.4	0.9	1.2	GDP Price Deflator⁵	1.9	2.4	1.8	1.0	1.0
1.7	0.6	1.0	0.5	0.6	1.6	1.1	1.6	PCE Deflator⁵	1.8	2.1	1.5	0.9	1.3
2.1	0.4	0.8	0.7	0.8	2.1	1.6	1.6	Consumer Price Index⁵	2.1	2.4	1.8	1.0	1.5
1.8	0.9	0.7	0.5	0.5	1.1	1.2	1.4	Core PCE Deflator⁵	1.7	2.0	1.7	1.0	1.0
2.2	1.3	1.1	1.1	1.1	1.9	1.8	1.7	Core Consumer Price Index⁵	1.8	2.1	2.2	1.4	1.6
1.30	0.13	0.13	0.13	0.13	0.13	0.13	0.13	Fed Funds Target Rate Range Mid-Point, $\%^4$	0.97	1.78	2.16	0.42	0.13
1.38	0.69	0.60	0.73	0.88	1.04	1.11	1.18	10-Year Treasury Note Yield, %4	2.33	2.91	2.14	0.85	1.05
3.52	3.24	3.01	3.06	3.13	3.24	3.27	3.31	30-Year Fixed Mortgage, % ⁴	3.99	4.54	3.94	3.21	3.24
-1.9	-2.1	-1.9	-1.8	-1.7	-1.9	-1.7	-1.8	Current Account, % of GDP	-1.9	-2.2	-2.2	-1.9	-1.8

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