John Williams'
Shadow Government Statistics
Analysis Behind and Beyond Government Economic Reporting

COMMENTARY NUMBER 917

September 2017 Production, Durable Goods Orders, New Construction and Home Sales

October 26, 2017

**Already Weakened versus Nonsense, Headline Second-Quarter Strength,
Relative Third-Quarter GDP Growth Likely Was Softened Further by Disaster Damages, with
Less-Than-Offsetting Gains from Early-Recovery Activity**

**Natural-Disaster Effects Hit Third-Quarter Production, Boosted Orders and
Softened Housing Starts with Mixed Impact on Home Sales**

**Pre-Hurricane Headline Production Data Weakened Meaningfully in Revisions;
Pre-Existing, Broadly-Negative, Underlying Economic Trends Have Not Changed;
General Outlook Remains One of Non-Recovered Business Activity in Renewed Downturn**

**In the Dominant but Still-Faltering Manufacturing Sector of Production:
A Record 117 Months of Continued Non-Expansion, with No End in Sight**

**September Industrial Production and Manufacturing, Respectively,
Were Down by 0.7% (-0.7%) and by 6.3%(-6.3%) from Their Pre-Recession Peaks**

Real Durable Goods Orders Still Down 10.3% (-10.3%) from Recovering Pre-Recession Peak

**September Housing Starts Took a Small Hit from the Tempests,
But No More than Seen Within in Regular Monthly Volatility for the Series**

**Increasingly-Negative Trends in Smoothed Home Sales and Construction Activity
Show Low-Level, Non-Recovered, Faltering Stagnation**

**Still Shy of Recovering Their Pre-Recession Peaks:
Housing Starts Down by 50.4% (-50.4%), Building Permits Down by 46.3% (-46.3%),
New Home Sales Down by 52.0% (-52.0%), Existing-Home Sales Down by 25.9% (-25.9%)**

SPECIAL NOTE: The *Opening Comments* and Industrial Production coverage in the *Executive Summary* and *Reporting Detail* were published as a partial *Commentary* on October 26th, with the Durable Goods, Housing Starts and Home-Sales sections posted on the 27th to complete the missive.

PLEASE NOTE: An "Advance Commentary," *Friday, October 27th, will provide a preliminary review of initial Third-Quarter 2017 GDP reporting. That will be followed on Monday, October 30th by a* "Special Commentary" *fully updating the general economic outlook, consumer liquidity conditions, and the prospects for financial-market conditions and potential FOMC activity.*

Best wishes to all — John Williams (707) 763-5786 [Phone system now is fully functional, post wildfires.]

Today's (October 26th/27th) *Opening Comments and Executive Summary*. The ***Opening Comments*** discusses the general economic circumstance and previews tomorrow's first or "advance" estimate of third-quarter 2017 GDP. The ***Executive Summary*** reviews highlights of September Industrial Production (page 3), New Orders for Durable Goods (page 7), Housing Starts and Building Permits (page 13) and New- and Exiting-Home Sales (page 19).

The ***Reporting Detail*** covers in greater detail those headline numbers for September 2017 Industrial Production (page 22), New Orders for Durable Goods (page 35), New Residential Construction – Housing Starts (page 39) and New- and Existing-Home Sales (page 44).

See the ***Opening Comments*** here (of October 26th), which provided an assessment of likely, initial Third-Quarter GDP reporting. Otherwise, the ***Hyperinflation Watch***, the ***Consumer Liquidity Watch*** and the ***Week, Month and Year Ahead*** will be updated fully in the October 30th *Special Commentary No. 918-B.*

OPENING COMMENTS AND EXECUTIVE SUMMARY

In the Context of Underlying, Non-Recovering and Faltering, Harder Economic Numbers, Disaster Damages Likely Softened the "Advance" Estimate of Relative Third-Quarter 2017 GDP Growth, with Less-Than-Offsetting Gains from Initial-Recovery Activity. Given the third estimate of inflation-adjusted, real annualized Second-Quarter 2017 Gross Domestic Product (GDP) at a heavily-bloated 3.06% (3.1% headline one decimal point), consensus forecasts are running around 2.6%, plus-or-minus, for the first or "advance" estimate of Third-Quarter 2017 GDP, which will be released tomorrow, Friday, October 27th. The implied annual real growth for such a third-quarter estimate would be at 2.2%, versus the headline 2.23% annual growth in second-quarter activity.

Given a slightly deeper-than-expected "advance" third-quarter trade deficit released this morning, late-expectations for GDP could weaken slightly.

As usual, underlying reality is much weaker, and a downside headline "surprise" is within reason, where uncertainties around the headline measurement of the impact of Hurricanes Harvey and Irma on aggregate national activity offer something of a wildcard. Underlying economic reality remains suggestive of flat-to-minus quarterly and annual activity for the headline GDP detail.

The headline GDP details follow in tomorrow's *Advance Commentary No. 918*. Reviewed here, natural-disaster impact on third-quarter activity was negative on Industrial Production, although with some implied offsetting future activity seen with some boost to third-quarter activity in New Orders for Durable Goods, from recovery effects, such as the replacement of storm-damaged automobiles and other equipment. Providing some offset to weakened quarterly aggregate production, was storm-related, "surging" third-quarter real retail sales activity (see prior *Commentary No. 916*). Still that short-term spike in sales activity left annual real growth in the Retail Sales series continuing to signal "imminent recession." Where some "replacement" auto sales certainly came from inventories, such could be offset some in the headline GDP numbers from a headline decline in inventories.

Also reviewed here, hurricane impacts had mixed effects on Housing Starts and Home Sales activity, likely a relative a net-neutral for the quarter. The otherwise nonsensical, headline month-to-month spike of 19% in September 2017 New-Home sales was not statistically significant at the 95% level, as usual, and it more than offset and counter-balanced any conceivable storm-related damage to headline August sales. Nonetheless, that highly-volatile series still-contracted quarter-to-quarter in third-quarter 2017, for the second straight quarter. Going forward, many structures were destroyed in the hurricanes, and their replacement, insurance-funded or otherwise, should provide some net-upside boost to construction activity in the next quarter or so.

EXECUTIVE SUMMARY: Industrial Production—September 2017—Pre-Hurricane Data Revised Lower; Third-Quarter Dropped 1.55% (-1.55%), Would Have Gained 0.5% Ex-Storms. Amidst downside revisions to pre-hurricane industrial production data (July and before), and a revised, narrowed monthly contraction of 0.7% (-0.7%) [previously down by 0.9% (-0.9%)] in August activity, headline September 2017 production gained 0.3% in the month. That left headline Third-Quarter 2017 Industrial Production in an annualized quarterly contraction of 1.5% (-1.5%). Per the Federal Reserve, though, "excluding the effects of the hurricanes, the index would have risen at least ½ percent." Half-percent annualized quarterly growth is negligible, unusually weak, for the production series."

The hard-hit Texas Gulf Coast region production and mining categories tied to petroleum-related exploration, and refinement in August, showed recovery for oil and gas exploration, but with a further drop off in monthly oil and gas drilling activity. Refinement declined in the month, but at a slower pace of decline than had been seen in pre-hurricane activity in July.

Headline Industrial Production—September 2017. Headline September 2017 production gained by 0.28%, having declined by a revised, narrowed 0.73% (-0.73%) in August and sharply-lowered estimate of a decline of 0.14% (-0.14%) in July, which previously had been a gain. August and September activity reflected mixed, but generally negative impact from the hurricanes. Year-to-year change in September 2017 industrial production was 1.60%, versus downwardly revised annual gains of 1.16% in August 2017 and 1.83% in July 2017, 2.06%.

Monthly Growth by Major Sector. Detailed by major industry group (see *Graphs 24, 26, 31* and *33* in the *Reporting Detail*), the headline September 2017 monthly aggregate gain of 0.28% was composed of a monthly gains of 0.10% in manufacturing activity, 1.49% in utilities and 0.39% in mining activity (including oil and gas production).

Production Activity and Graphs—Corrected and Otherwise. In the context of the downside 2017 benchmark revisions to production of March 31st (see *Commentary No. 877*), and the subsequent regular monthly reporting through September 2017 production activity, index-level and annual-growth details are found in and plotted in the *Reporting Detail* (*Graphs 22* to *25*), along with the drill-down graphs of major subcomponents of the production series (*Graphs 26* to *39*).

The level of headline production showed a topping-out process in third- and fourth-quarter 2014, followed by deepening quarterly downturns into first- and second-quarter 2015, with the second-quarter 2015 also beginning a string of quarterly year-to-year contractions. Third-quarter 2015 showed some bounce, but activity in fourth-quarter 2015 and in first- and second-quarter 2016 turned down anew, dropping sharply into negative quarter-to-quarter growth and continuing year-to-year decline. Third-quarter 2016 growth was positive on a quarter-to-quarter basis, but continued in annual contraction. That pattern repeated in fourth-quarter 2016. That seventh straight quarter of annual contraction was a circumstance never seen in industrial production surveying outside of periods that eventually were recognized formally as recessions.

With the reporting of first-quarter and second-quarter 2017 details, production showed both annual and quarterly gains, although the headline activity has remained below pre-recession highs seen in 2007, except for October and November 2014. A recently reported gain in July 2017, which just took headline growth above the December 2007 peak for a second time, just disappeared in the latest revisions, as discussed in the *Reporting Detail*.

Following *Graphs 1* and *2* address reporting quality issues tied just to the overstatement of headline growth in the total series that results directly from the Federal Reserve Board using too-low an estimate of inflation in deflating some components of its production estimates into real dollar terms, for inclusion in the Index of Industrial Production. Hedonic quality adjustments to the inflation estimates understate the inflation rates used in deflating those components; thus overstating the resulting inflation-adjusted growth in the headline industrial production series (see *Public Comment on Inflation* and *Chapter 9* of *2014 Hyperinflation Report—Great Economic Tumble*).

Graph 1 shows official, headline industrial production reporting, but indexed to January 2000 = 100, instead of the Fed's formal index that is set at 2012 = 100. The 2000 indexing simply provides for some consistency in the series of revamped "corrected" graphics including, real new orders for durable goods, real retail sales and the GDP. Those "corrected" numbers are covered respectively in *Graphs 3* and *4* of the next section, prior *Commentary No. 916* and in *Commentary No. 913*, to be updated in Monday's *Special Commentary No. 918-B*). The indexing does not affect the appearance of the graph or reported growth rates (as can be seen with a comparison of *Graph 1* here to *Graph 24* in the *Reporting Detail* section).

Graph 2 is a recast version of *Graph 1*, corrected for the estimated understatement of the inflation used in deflating certain components of the production index. Estimated hedonic-inflation adjustments have been backed-out of the official industrial-production deflators used for headline reporting.

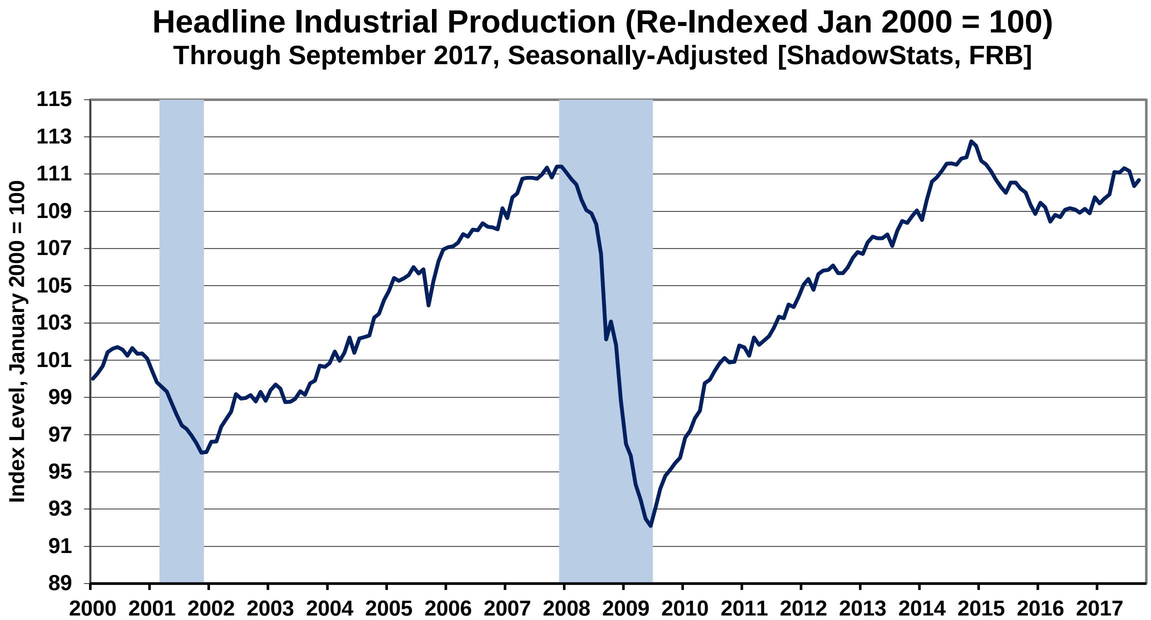
This "corrected" *Graph 2* shows some growth in the period subsequent to the official June 2009 trough in production activity, but that upturn has been far shy of the short-lived full recovery and the renewed expansion reported in official GDP estimation (see *Commentary No. 869* and the *ECONOMY* section of

No. 859 Special Commentary). Unlike the headline industrial production data and the headline GDP numbers, corrected production levels never recovered pre-recession highs, although the headline aggregate production index quickly backed off its official two-month "recovery" in October and November 2014, and the headline manufacturing sector still never has recovered its December 2007 pre-recession peak. Instead, the "corrected" series entered a period of protracted low-level, but up-trending, stagnation in 2010, with irregular quarterly contractions seen through 2013, an irregular uptrend into 2014, a topping-out in late-2014, generally turning lower through fourth-quarter 2016 and into early-2017, with a small upturn and the renewed downturn aggravated and stabilized by natural-disaster impact of the last two months.

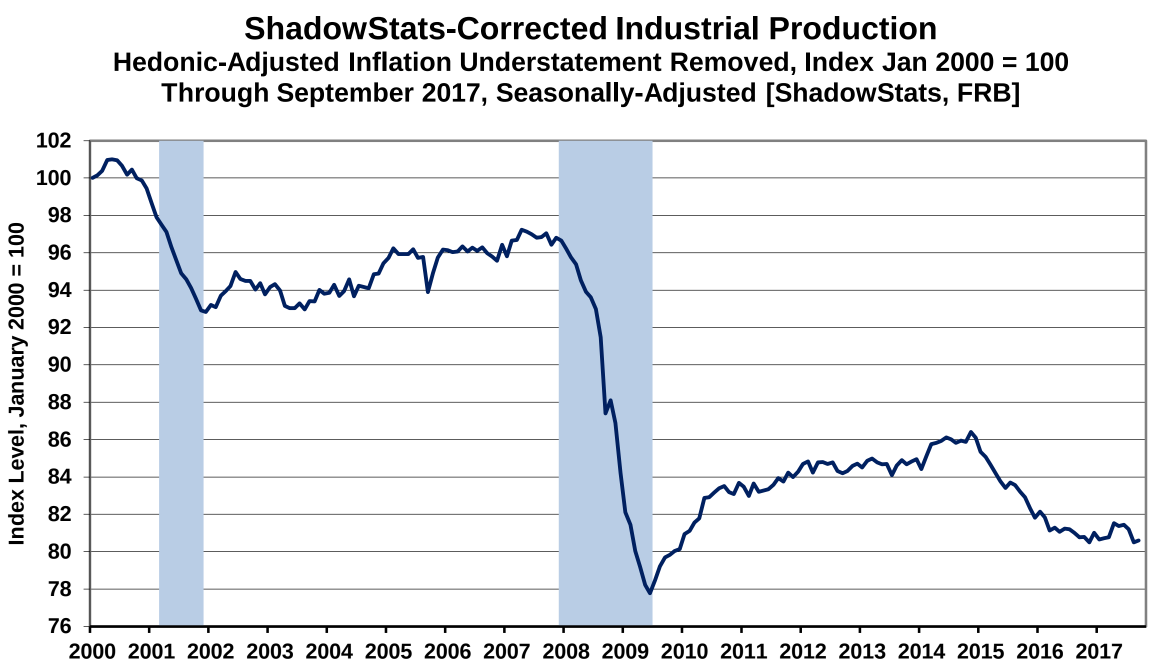
Where the corrected series has remained well shy of a formal recovery, both the official and corrected series suffered an outright contraction in both first- and second-quarter 2015; that is a pattern of severe economic weakness last seen during the economic collapse. Despite the brief third-quarter 2015 quarter-to-quarter uptick, headline fourth-quarter 2015 and first- and second-quarter 2016 industrial production continued in quarter-to-quarter contractions, but rallied thereafter. A string of seven quarters of year-to-year contraction began in second-quarter 2015 and continued through fourth-quarter 2016. First-quarter 2017 GDP grew both quarter-to-quarter and year-to-year, as did second-quarter 2017, with third-quarter 2017 activity turning down due to short-lived disruptions from natural disasters, as discussed in the *Reporting Detail*.

[Graphs 1 and 2 follow on the next page.]

Graph 1: Indexed Headline Level of Industrial Production (Jan 2000 = 100)



Graph 2: Headline ShadowStats-Corrected Level of Industrial Production (Jan 2000 = 100)



New Orders for Durable Goods—September 2017—Revised Hurricane-Driven Boost for Motor Vehicles Interplayed with a Downside Revision to Commercial Aircraft Orders. Net of inflation and a continuing monthly upsurge in highly-irregular commercial aircraft orders, real new orders for durable goods held in fluctuating, non-recovering, low-level stagnation in third-quarter 2017, albeit with an upside bias. Meaningful impact on orders activity from late-August Hurricane Harvey was not obvious in initial August reporting, but just-published upside revisions to new orders for motor vehicles (likely Houston-area flood losses) now suggest that third-quarter 2017 activity was boosted by the tempest disruptions.

Headline nominal New Orders for Durable Goods jumped by 2.16% in September 2017, having gained a revised 2.04% in August 2017 and declined by a revised 6.81% (-6.81%) in July, dominated by monthly jumps of a 31.5% in September and revised 33.5% jump in August, with a 71.1% (-71.1%) plunge in July, of the irregularly-volatile, commercial-aircraft orders. Ex-commercial aircraft, new orders rose by 0.9% in September 2017, versus an upwardly-revised 1.0% in August 2017 and an unrevised monthly gain of 0.5% in July. Net of month-to-month inflation, real month-to-month gains, ex-commercial aircraft were 0.8% in September 2017, 0.9% in August and 0.5% in July.

More-extensive coverage of these monthly numbers and related revisions follow in the *Reporting Detail*, while the related graphs follow here.

Graphs of Inflation-Adjusted and Smoothed Durable Goods Orders. Updated for the headline September 2017 numbers, *Graphs 3* and *4* show the monthly detail, as well as the six-month moving-average activity for both the aggregate new orders series and the same series net of the irregularly-volatile commercial-aircraft orders. The broad pattern of smoothed, real activity generally remains one of low-level, non-recovered stagnation, albeit minimally uptrending.

The moving-average levels in *Graphs 3* and *4* turned lower into year-end 2014, and after an uptick in mid-2015—some smoothed bounce-back—the trend turned down anew into late fourth-quarter 2015, with continued minor fluttering into third-quarter 2016, and initially a small uptick in fourth-quarter 2016 activity continuing on the upside into early-2017, which was much reduced in the annual benchmarking of May 18th. With subsequent softening headline monthly detail into May 2017 new orders, orders then were boosted by irregularly-surging commercial aircraft orders in June 2017, with reverse impact from a sharp decline in similar orders in July and a renewed surge in aircraft orders in August and a continued gain in September.

Graph 5 shows the annual year-to-year percent change in the real new orders series, net of commercial aircraft orders (see the comparative plot of parallel year-to-year headline changes in the manufacturing sector of industrial production in later *Graph 6*.

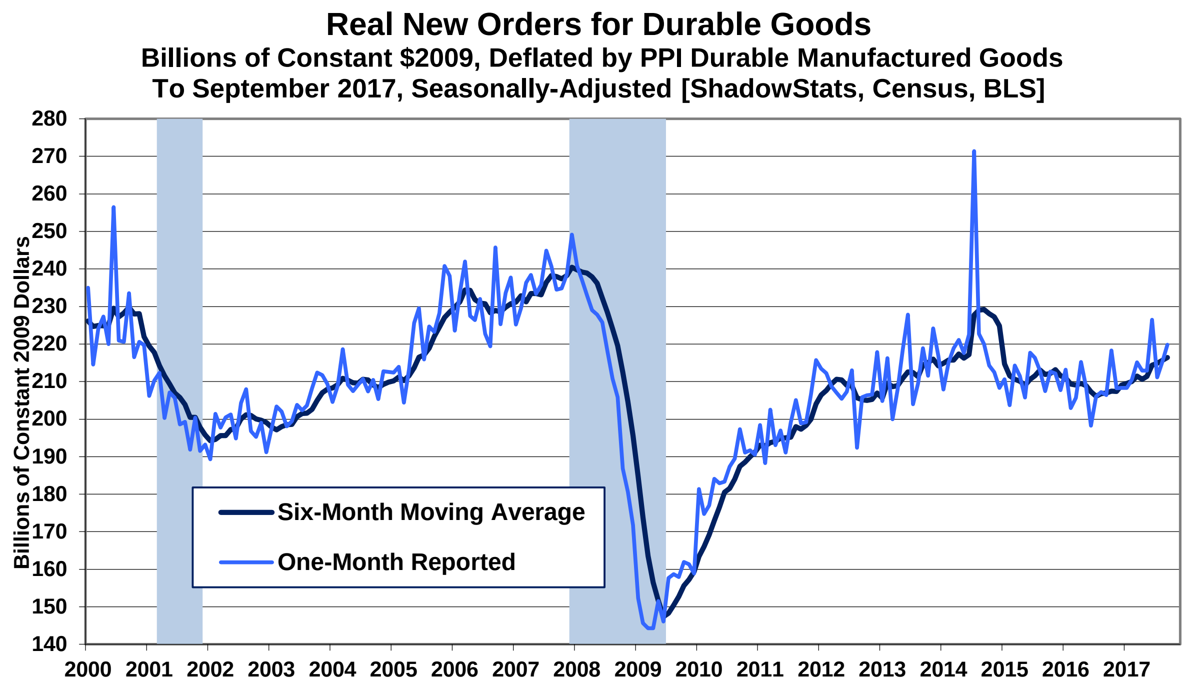
The level of annual growth for the inflation-adjusted August 2017 new orders for durable goods, ex-commercial aircraft, continued to slow. That broadly was consistent with the fluttering low level of downtrending annual growth and non-recovered stagnation seen in the manufacturing series, with annual growth currently in positive territory.

While that might suggest a near-term bottoming in orders (discussed in *General Commentary No. 867*), such partially is an artefact of roughly two-percentage-points understatement of the inflation used in deflating the headline durable goods series, an issue addressed later with *Graphs 6* to *9*. Nonetheless, as shown also *Graphs 5* and *6*, the year-to-year change in the ex-aircraft durable goods orders series generally has led the broad pattern of annual growth reflected in the headline level of annual change in the manufacturing sector of industrial production, a series that also suffers inflation-reporting distortions.

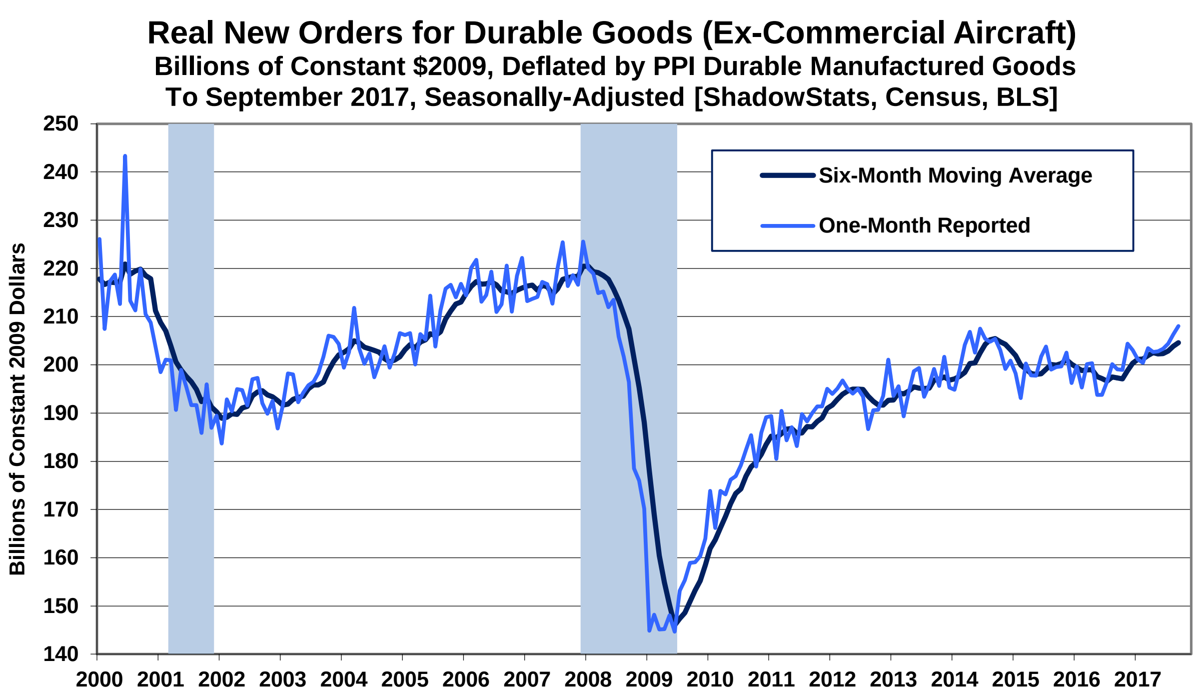
Broadly, there has been a general pattern of stagnation or bottom-bouncing evident in the orders of recent years —clearly not the booming recovery seen in official GDP reporting. The real monthly and six-month moving-average levels of new orders in September 2017 remained below both the pre-2007 recession high, as well as the pre-2000 recession high for the series. The pattern of low-level stagnation and fluctuating trend in the annual inflation-adjusted series since mid-2014—net of the irregular aircraft-order effects—again is one that most commonly precedes and/or coincides with a recession, as is the current circumstance. Again, the series remains in non-recovered, non-expanding, low-level stagnation.

[Graphs 3 to 9 begin on the next page.]

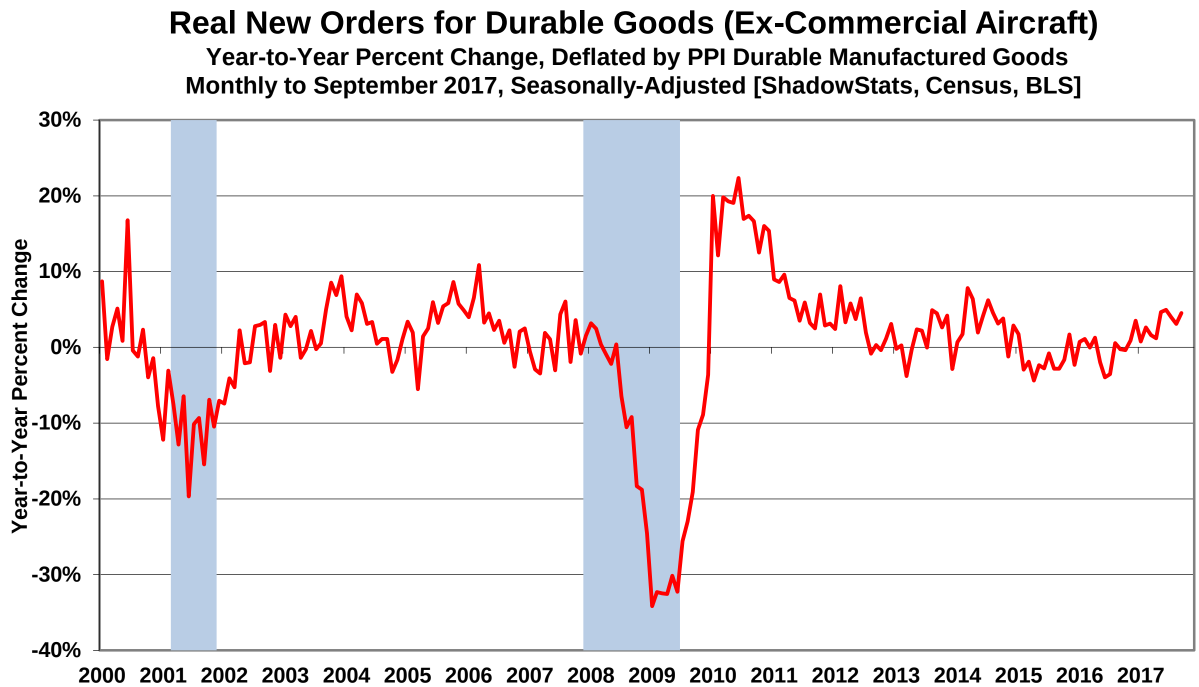
Graph 3: Real Total New Orders for Durable Goods to Date



Graph 4: Real New Orders for Durable Goods – Ex-Commercial-Aircraft Orders to Date



Graph 5: Year-to-Year Percent Change, Real New Orders for Durable Goods – Ex-Commercial Aircraft to Date



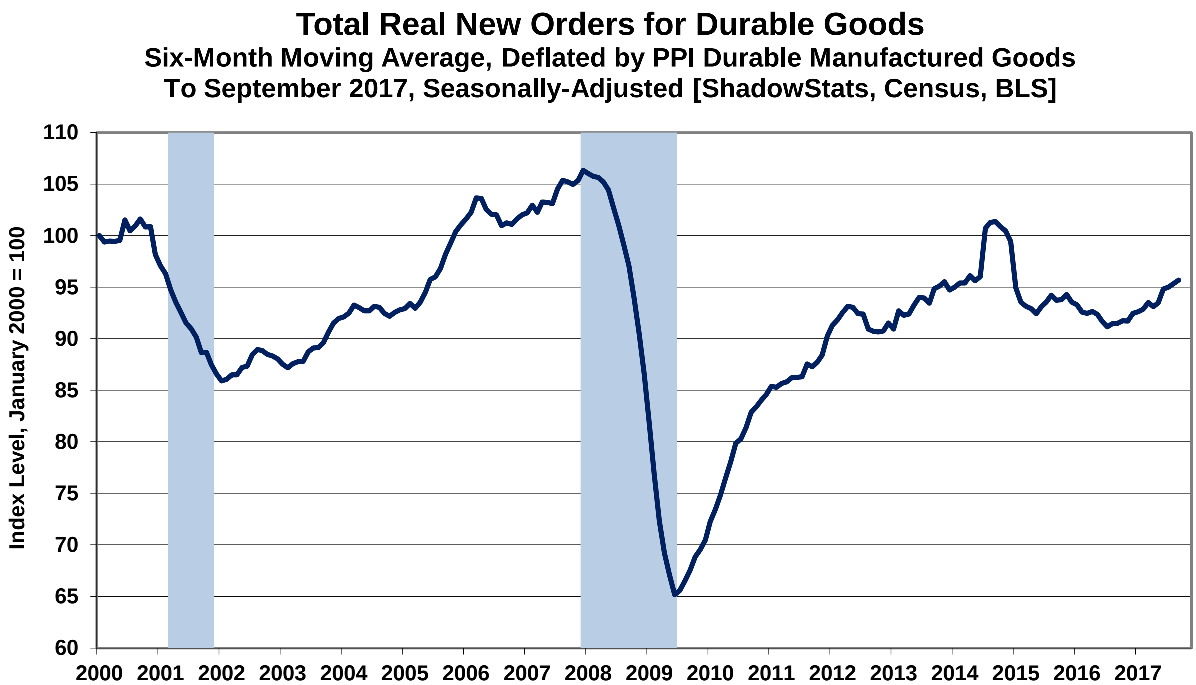
The Real New Orders Series "Corrected" for Inflation Understatement. As with other economic series deflated by official government inflation measures, headline estimates of inflation-adjusted growth in new orders for durable goods generally are overstated, due to the understatement of official inflation. That understatement comes from the government's use of hedonic-quality adjustments—quality issues usually not perceived by the users or consumers of the involved products—in justifying a reduced pace of headline inflation used in deflating some series (see *Public Commentary on Inflation Measurement*).

As done for other series such as Industrial Production (see earlier *Graphs 1* and *2*), Real Retail Sales (see respectively *Graphs 1* and *2* of prior *Commentary No. 916*) and GDP (see *Graph 4* in *Commentary No. 913*, to be updated in Monday's *Special Commentary No. 918-B*), ShadowStats publishes an experimental, corrected-inflation version of the graph of real New Orders for Durable Goods. Real activity, in this case, is corrected for the understatement of the inflation used in deflating the new orders series with the headline PPI inflation for manufactured durable goods (see the *Reporting Detail*).

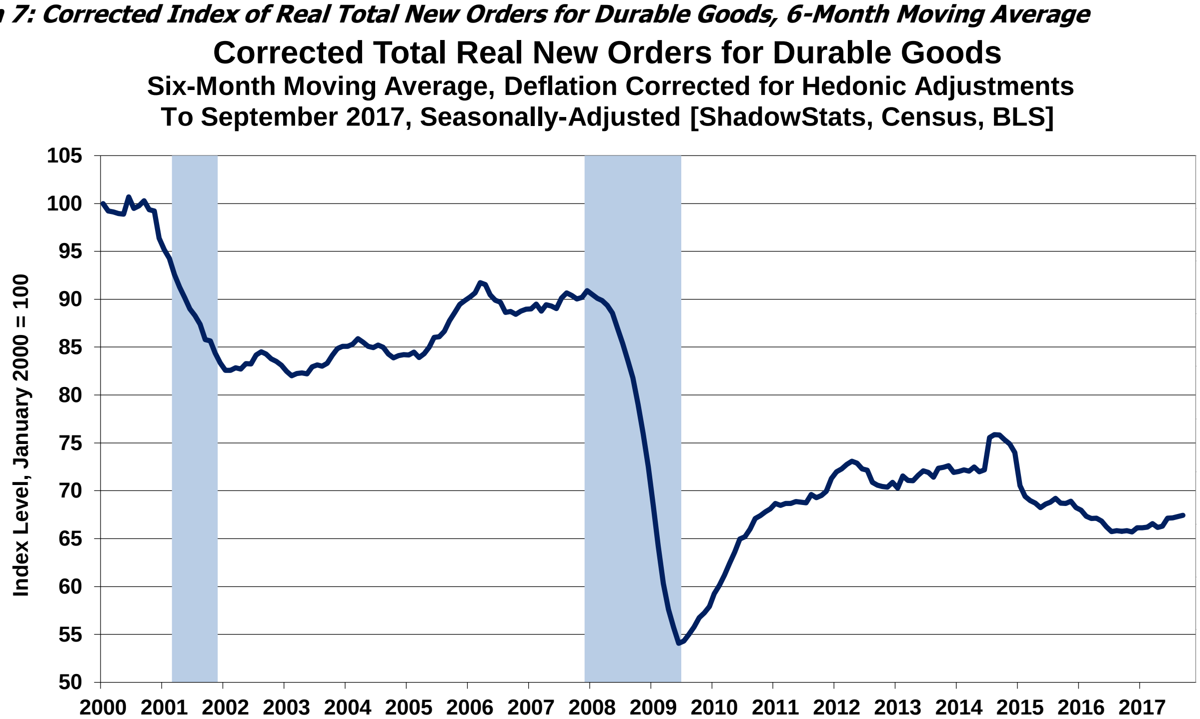
Two sets of graphs follow. The first set (*Graph 6* and *Graph 7*) shows the aggregate series or total durable goods orders; the second set (*Graph 8* and *Graph 9*) shows the ex-commercial aircraft series. The aggregate orders series in *Graphs 6* and *7* includes the monthly commercial aircraft orders. Placed years in advance, aircraft orders are a better indicator of long-range production activity, than they are as a near-term leading indicator of production activity. Again, *Graphs 8* and *9* are shown net of those volatile commercial aircraft orders.

The first graph in each of the two sets shows the official six-month moving average, the same heavy dark-blue line shown in *Graph 3* and *Graph 4*, along with the light-blue thin line of monthly detail. The second graph in each set is the same six-month, moving-average series shown in the first graph, but it has been re-deflated to correct for the ShadowStats estimate of the understatement of the PPI manufactured durable goods inflation measure used in the headline-deflation process. The "corrected" graphs all are indexed to January 2000 = 100.

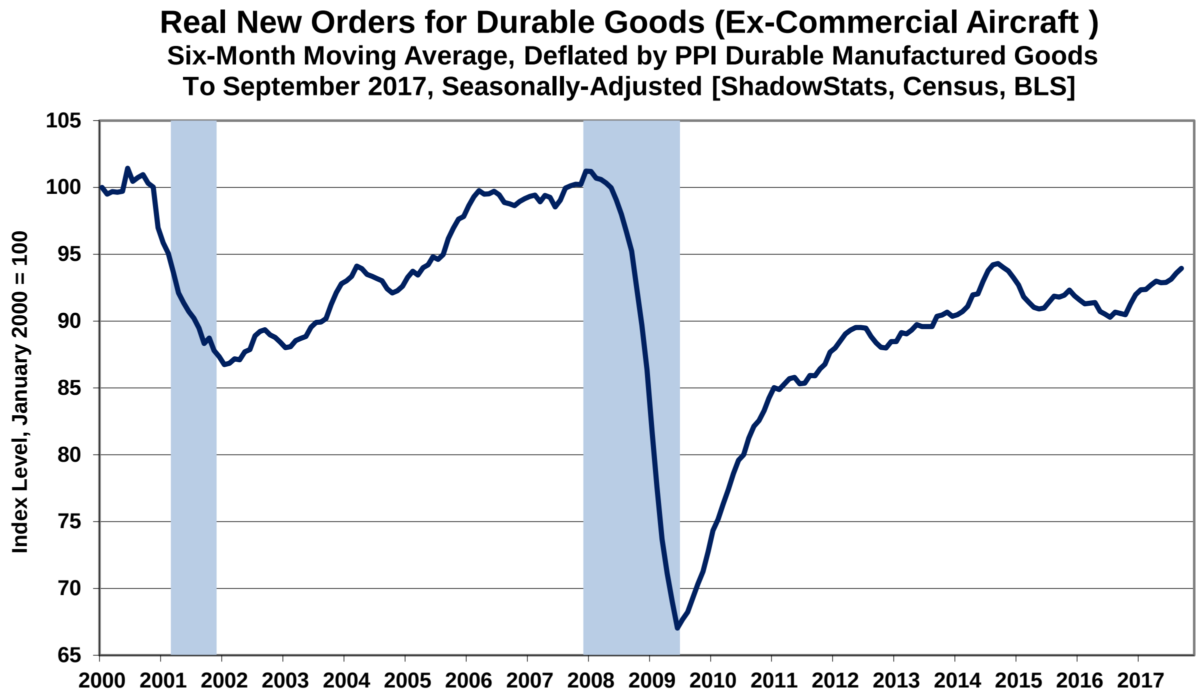
Graph 6: Index of Real Total New Orders for Durable Goods, 6-Month Moving Average



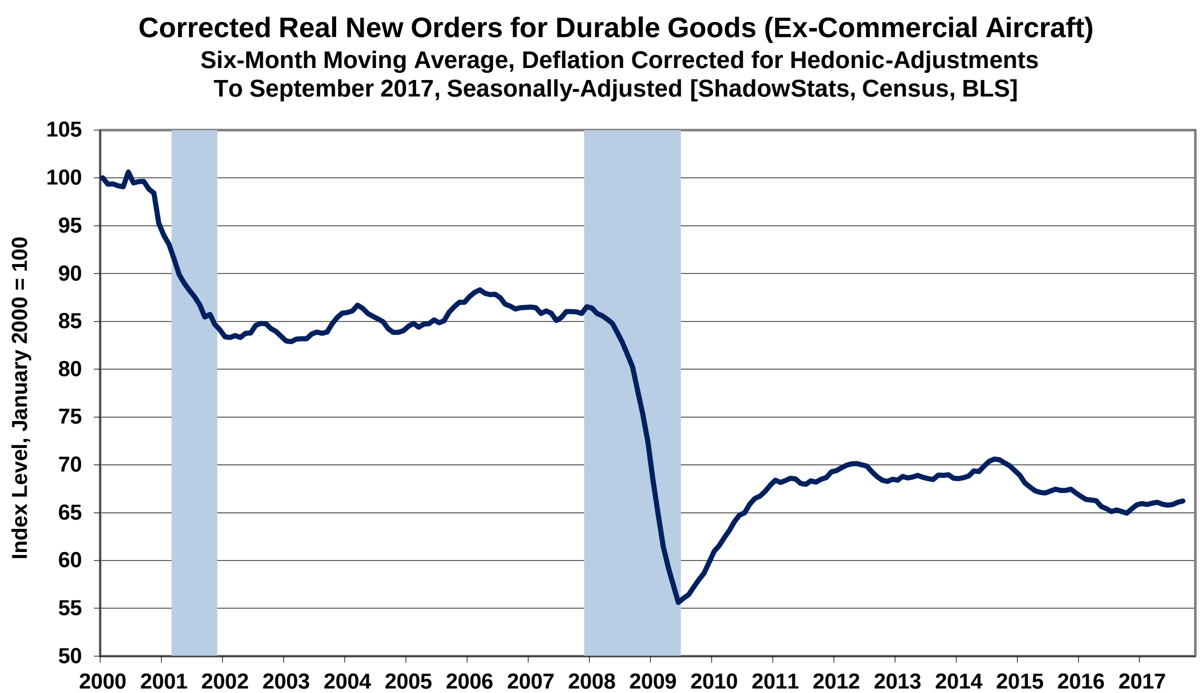
Graph 7: Corrected Index of Real Total New Orders for Durable Goods, 6-Month Moving Average



Graph 8: Index of Durable Goods Orders – Ex-Commercial Aircraft, 6-Month Moving Average



Graph 9: Corrected Index of Durable Goods Orders – Ex-Commercial Aircraft, 6-Month Moving Average



New Residential Construction—September 2017—Downtrending Activity Intensified, but Some Short-Lived, Recovery Boost Should Follow. Where near-term housing starts continued in downturn, with some decline likely was from hurricane disruptions in August and September, post-disaster recovery should trigger some near-term increase in activity as destroyed structures are replaced in the months ahead. Prior-period revisions were relatively small and mixed.

Nonetheless, near-term reporting of the monthly housing starts series is unreliable and often extremely volatile, with frequent, massive, prior-period revisions. Headline September 2017 reporting detail provide a typical circumstance of generally meaningless headline month-to-month reporting. In the context of relatively small prior-period revisions, consider that total housing starts declined by 4.7% (-4.7%) in September 2017, with single-unit starts down by 4.6% (-4.6%) and with multiple-unit starts (5 units or more) down by 6.2% (-6.2%), yet none of those changes came close to being statistically-significant at the 95% confidence level. Extended detail on monthly and annual changes for the various series is found in the *Reporting Detail* section.

Building Permits is considered a leading indicator—albeit not a high-quality one—to Housing Starts, and although it is a more-stable series than Housing Starts, it is not reported on an historically-consistent basis. Permits showed a statistically-significant, monthly decline of 4.5% (-4.5%) in September 2017. Such reflects the potential for a near-term boost in activity, here, reflecting recovery repairs, rebuilding and new construction resulting from hurricane damage and destruction in the wake of Hurricanes Harvey and Irma. Given continued negative trends in home sales activity, however, the headline broad trend in Housing Starts activity should continue otherwise on the downside.

The six-month smoothed trends remain negative, across-the-board for the housing starts series. Monthly activity for the various measures remained shy of regaining their 2005/2006 pre-recession peaks. Building Permits was down by 46.3% (-46.3%), for example as reflected in *Graphs 41* and *43* in of the *Reporting Detail*.

Reflected in accompanying *Graphs 10* to *13*, and *Graphs 42* and *44 to 46* in the *Reporting Detail*, September 2017 total housing starts was down 50.4% (-50.4%) from recovering its pre-recession high. Within the monthly detail, the dominant (73.6% of total starts) single-unit housing starts sector (*Graphs 14* and *15*) was down from its January 2006 pre-recession peak by 54.5% (-54.5%).

In contrast the smaller count in the multiple-unit category (two units or more), 26.4% of the total, hit its recent high in June 2015, topping its pre-recession January 2006 peak then by 12.7%. It had dropped back below that 2006 high by 33.8% (-33.8%) as of September 2017.

Reflected in the smoothed graphs of this *Executive Summary*, the various housing-starts series generally are downtrending, at a low level of stagnation (*Graph 13* for the aggregate). Such was a blend of the low-level, minimally-downtrending stagnation in the six-month-smoothed single-unit activity (*Graph 15*), with the more-volatile, smoothed multiple-unit starts (*Graph 17*), which had regained its pre-recession peak but now has turned lower in an intensifying downtrend.

A Note on the Housing Starts Graphs. Headline reporting of Housing Starts activity is expressed by the Census Bureau as an annualized monthly pace of starts, which was 1,127,000 in September 2017, versus a minimally revised 1,183,000 [previously 1,180,000] in August 2017. The scaling used in the aggregate housing starts and building permits *Graphs 41* to *46* in the *Reporting Detail* reflects those annualized numbers in millions.

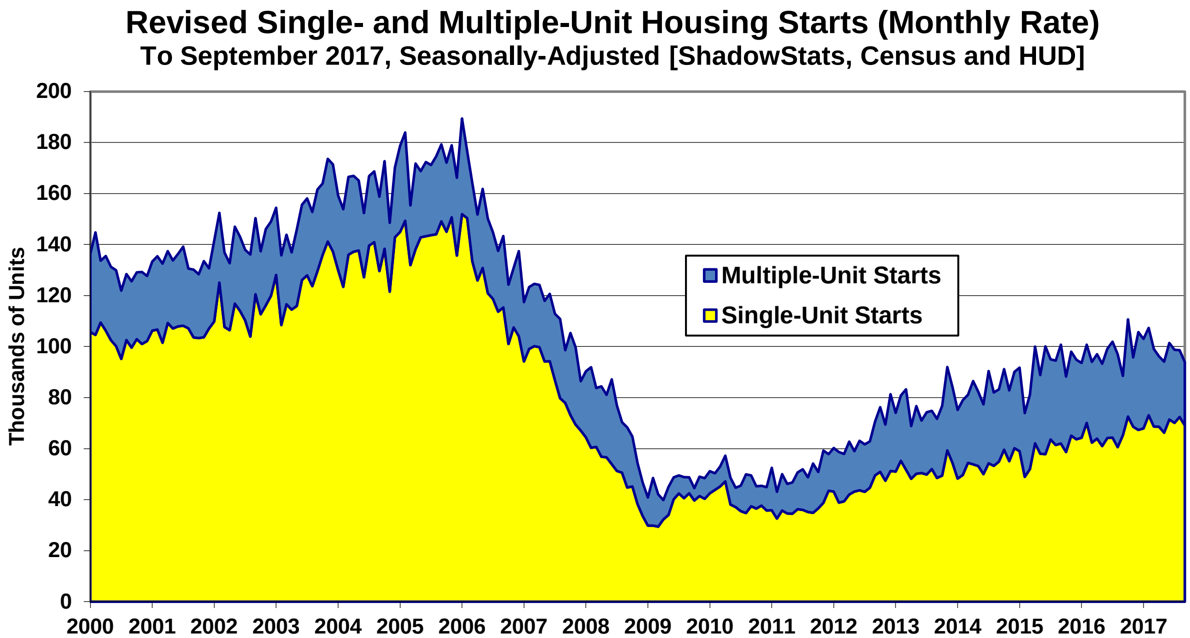
Nonetheless, given the nonsensical monthly volatility in reporting and the exaggerated effect of annualizing the monthly numbers in this unstable series, the magnitude of monthly activity and the changes in same, more realistically are reflected at the non-annualized monthly rate. Consider that the headline, month-to-month gain at an annualized rate of 266,000 in October 2016 was larger than any actual level of (not change in) monthly starts, ever (in units per month, not annualized), for a single month. That is since related starts detail first was published after World War II.

Accordingly, the monthly rate of 93,917 units in September 2017, instead of the annualized headline level of 1,127,000 units, is used in the scaling (monthly units in thousands) of accompanying *Graphs 7* to *17*. With the use of either scale of units, though, appearances of the graphs and the relative monthly, quarterly and annual percentage changes are otherwise identical, as seen in a comparison of *Graph 12* versus *Graph 42* in the *Reporting Detail*.

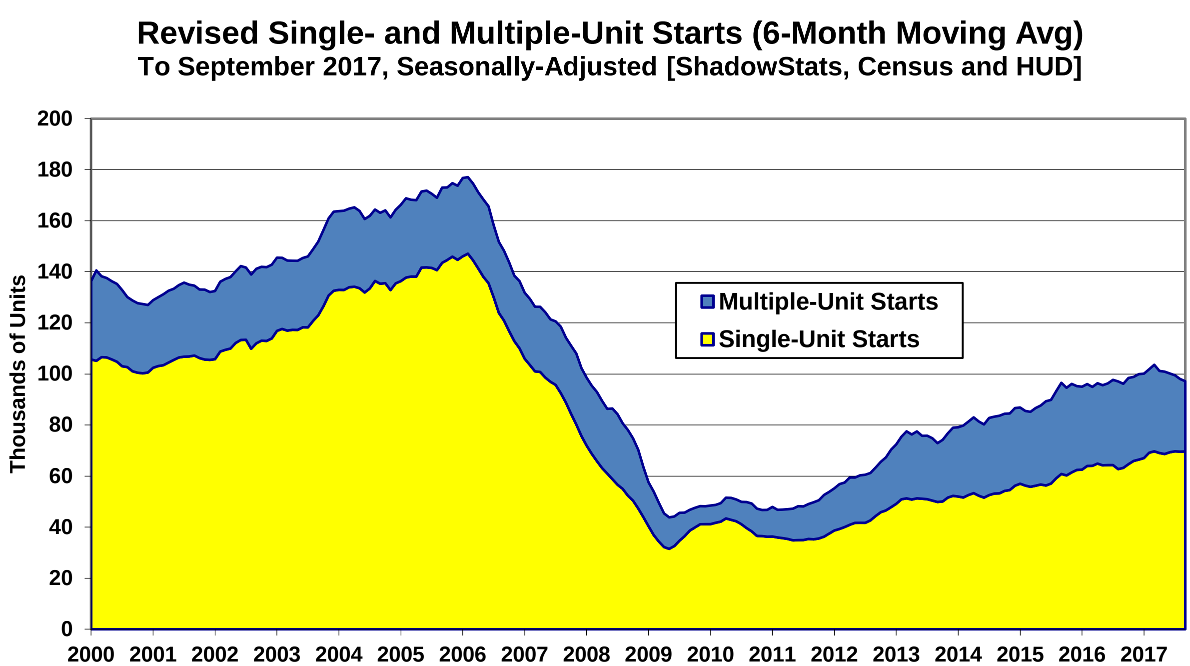
The record monthly low level of activity seen for the present aggregate series was in April 2009, where the annualized monthly pace of housing starts then was down by 79% (-79%) from the January 2006 pre-recession peak for the series. Against that downside-spiked low in April 2009, the September 2017 headline monthly number was up by 136%, but it still was down by 50% (-50%) from the January 2006 pre-recession high. Shown in the historical perspective of the post-World War II era, current aggregate-starts activity is in relative stagnation, still at low levels that otherwise have been seen at or near the historical troughs of other recession activity of the last 70 years, as reflected in *Graphs 45* and *46* at the end of the *Reporting Detail*. In fact, as can be seen there in *Graph 46*, current housing starts activity not only has failed to recover the current pre-recession (pre-collapse into 2009) peak, but also has yet to recover to the level of any pre-recession peak activity seen in the entire post-World War II era.

[Graphs 10 to 17 begin on the next page.]

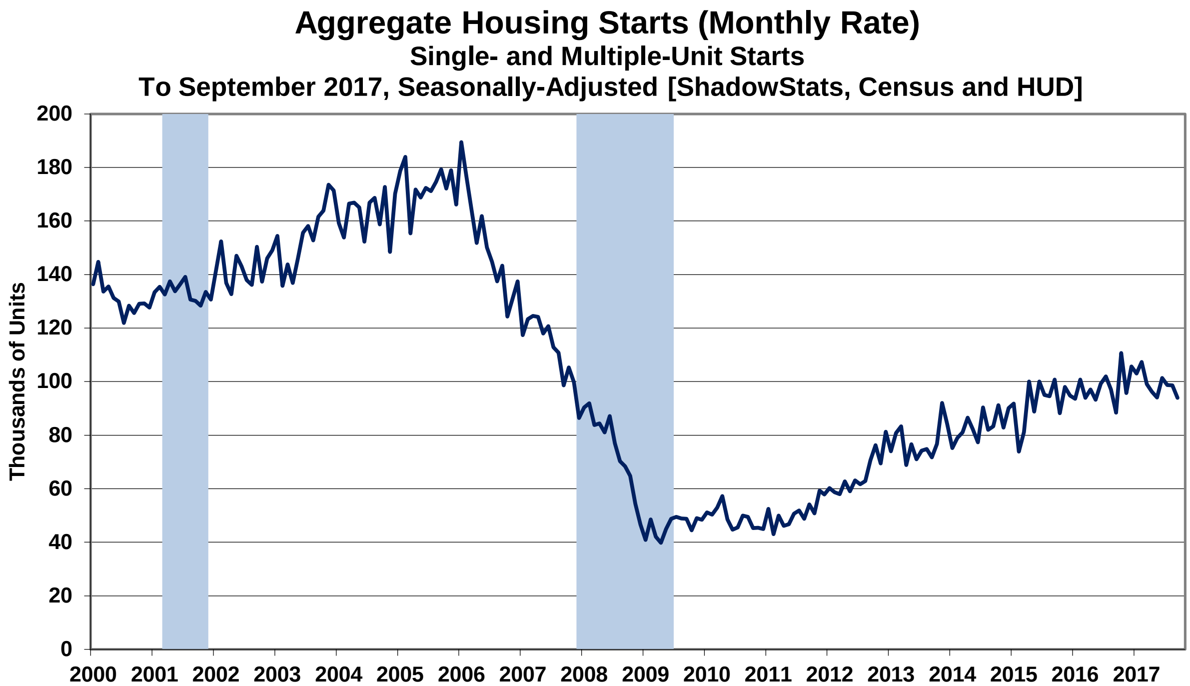
Graph 10: Single- and Multiple-Unit Housing Starts (Monthly Rate of Activity)



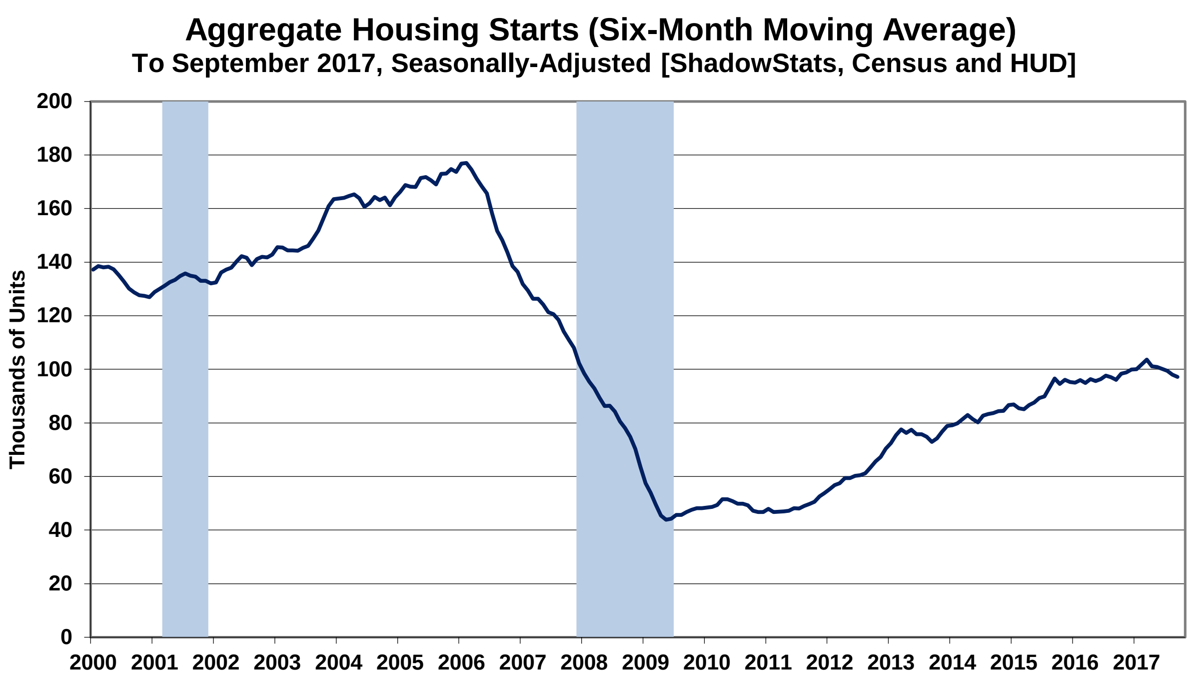
Graph 11: Single- and Multiple-Unit Starts (Six-Month Moving Average, Monthly Rate of Activity)



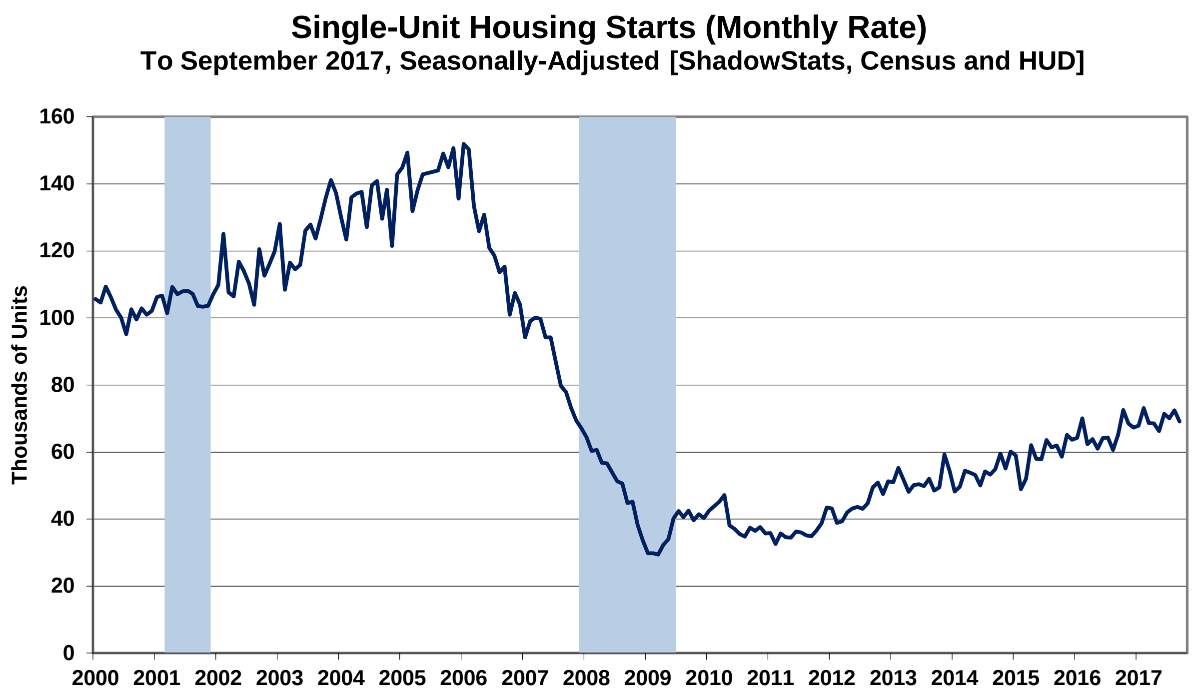
Graph 12: Aggregate Housing Starts (Monthly Rate of Activity)



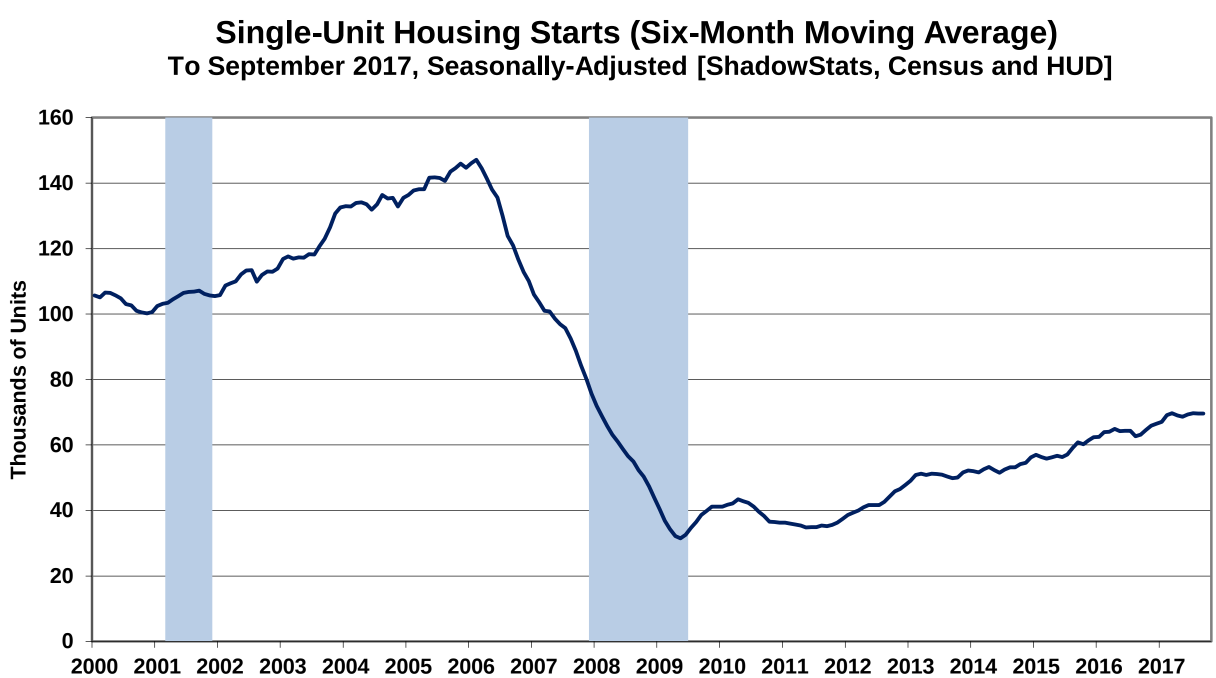
Graph 13: Aggregate Housing Starts (Six-Month Moving Average, Monthly Rate of Activity)



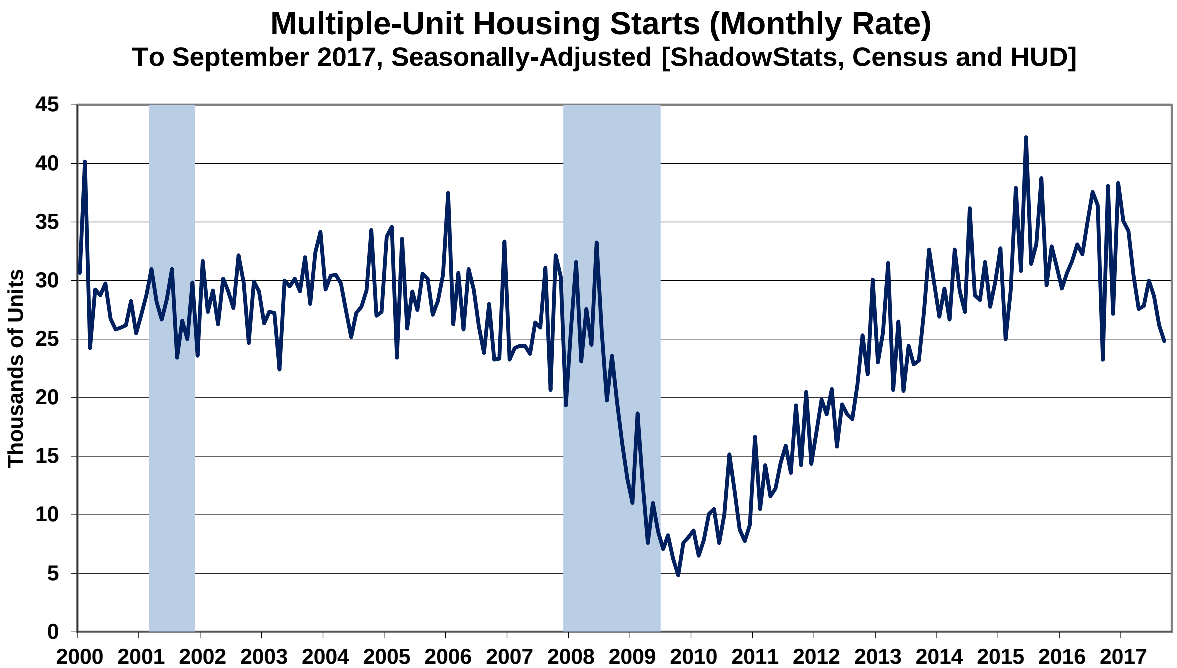
Graph 14: Single-Unit Housing Starts (Monthly Rate of Activity)



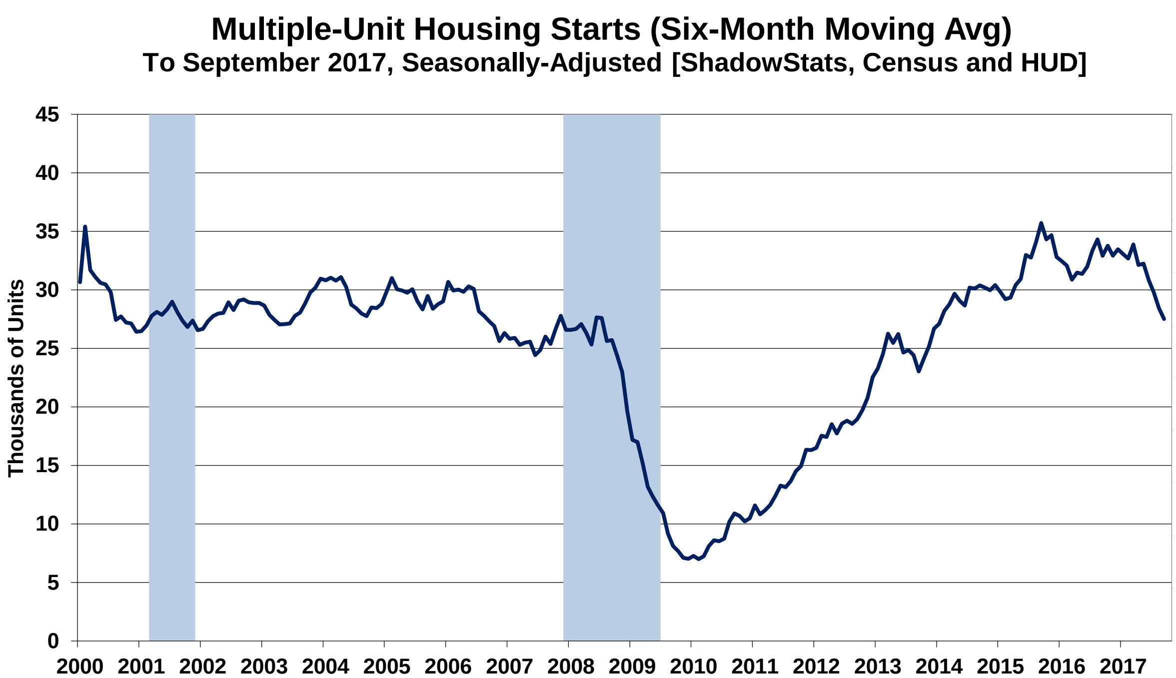
Graph 15: Single-Unit Housing Starts (Six-Month Moving Average, Monthly Rate of Activity)



Graph 16: Multiple-Unit Housing Starts (Monthly Rate of Activity)



Graph 17: Multiple-Unit Housing Starts (Six-Month Moving Average, Monthly Rate of Activity)



New- and Existing-Home Sales—September 2017—Both Series Contracted in Second- and Third-Quarter 2017, Irrespective of Unstable Data, Still Well Shy of Recovering Pre-Recession Peaks. Despite monthly gains for both New-Home Sales (Commerce Department) up by 18.9%, and Existing-Home Sales (National Association of Realtors) up by 0.75%, both series contracted quarter-to-quarter in both second- and third-quarter 2017. Both series also remained shy of recovering their pre-recession peaks, with New-Home Sales still down by 51.2% and Existing-Home Sales still down by 25.9% (-25.9%).

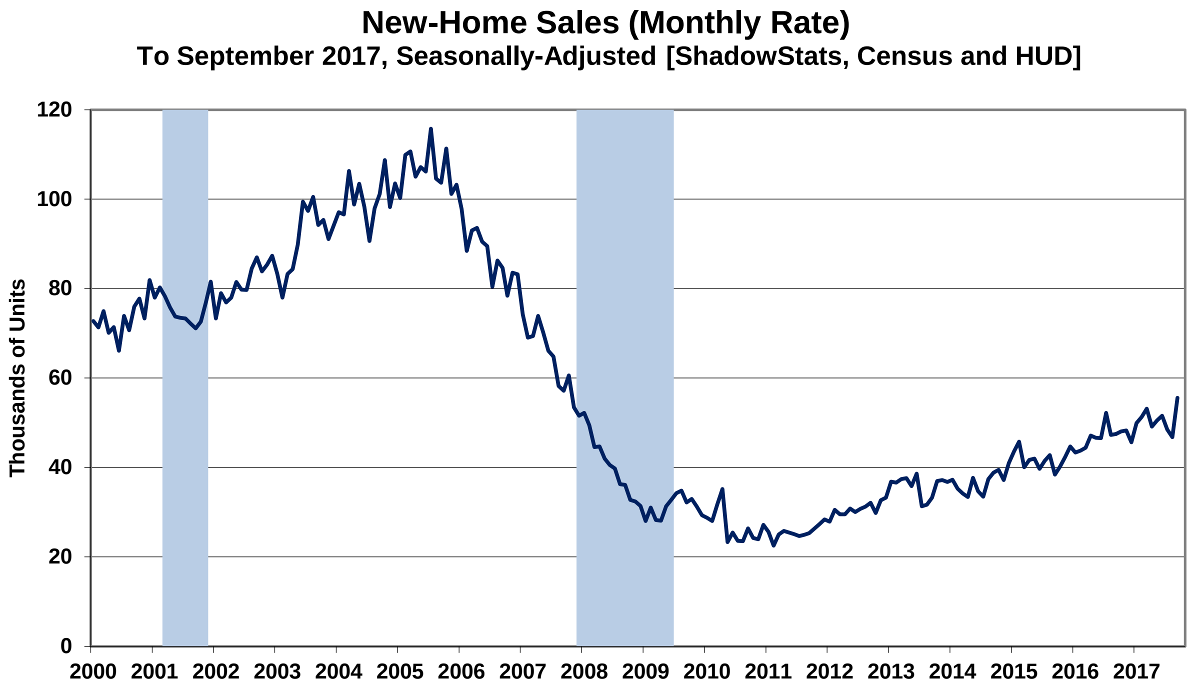
Despite the extraordinary 18.9% monthly surge in September 2017 New-Home Sales, the gain was not statistically-significant at the 95% level. It more than compensated for any conceivable short-fall in storm-related August damage, and it still left the series down for the quarter. This new-home series remains so unstable as to be virtually meaningless its headline monthly reporting.

In contrast, the Existing-Home Sales series remains reasonably stable in its monthly headline detail.

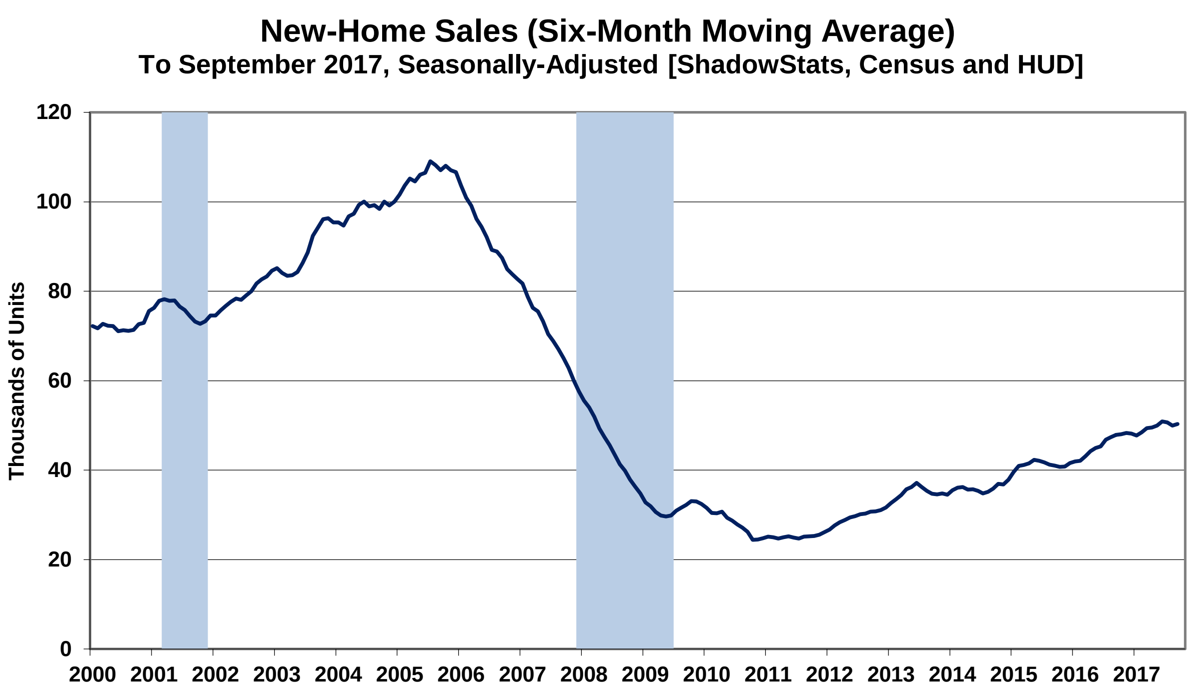
That said, both series, smoothed for six-month moving averages broadly had been in uptrending stagnation, which recently shifted to downtrending stagnation, as reflected in *Graphs 18* and *19* of the New-Home Sales series (see also *Graphs 14* and *15* of the Single Unit Housing Starts, where both series reflect activity in terms of just single-unit housing); and *Graphs 20* and *21* of the Existing-Home Sales series (see also *Graphs 12* and *13* of the Housing Starts, where both series reflect activity in terms of single- and multiple-housing units). Extended detail is found in the *Reporting Detail* section.

[Graphs 18 to 21 begin on the next page.]

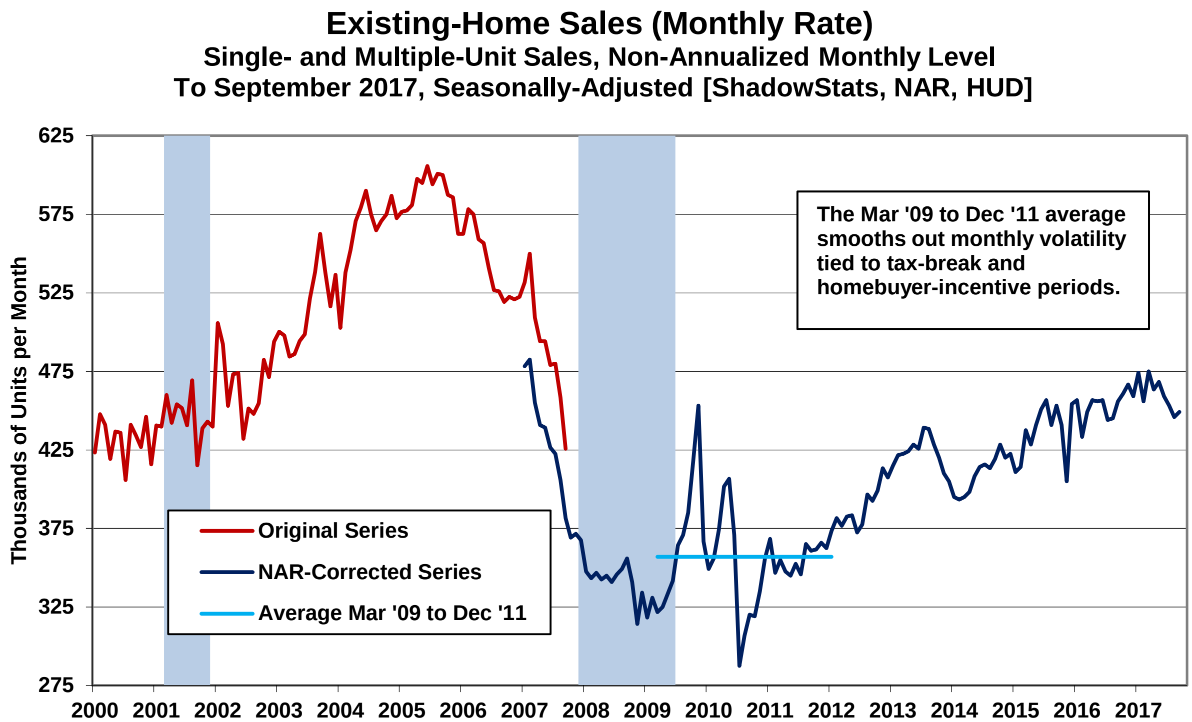
Graph 18: New-Home Sales – Monthly Rate of Activity



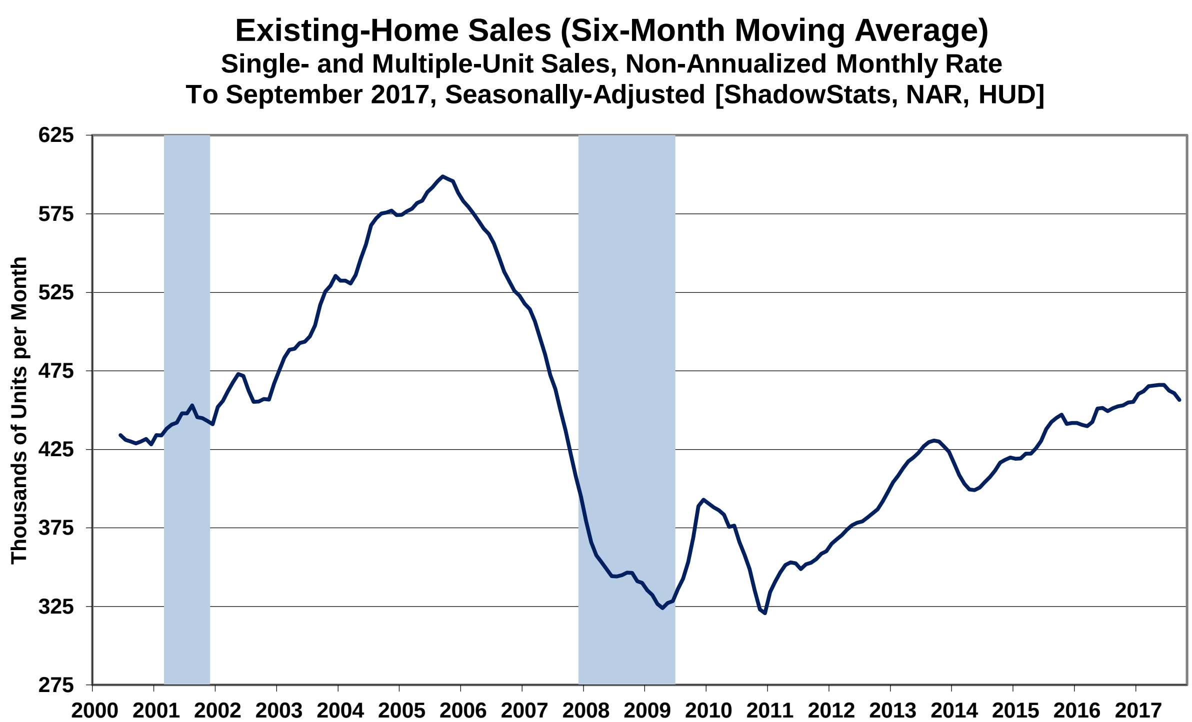
Graph 19: New-Homes Sales – Six-Month Moving Average, Monthly Rate of Activity



Graph 21: Existing-Home Sales – Monthly Level



Graph 21: Existing-Home Sales (Six-Month Moving Average)



[Extended analysis and graphics follow in the **Reporting Detail.***]*

REPORTING DETAIL

INDUSTRIAL PRODUCTION (September 2017)

Pre-Hurricane Data Revised Sharply Lower; Third-Quarter Contracted by a Hurricane-Induced 1.55% (-1.55%), Would Have Gained 0.5% Otherwise. Amidst downside revisions to pre-hurricane industrial production data (July and before), and a revised, narrowed monthly contraction of 0.7% (-0.7%) [previously down by 0.9% (-0.9%)] in August activity, headline September 2017 production gained 0.3% in the month. That left headline Third-Quarter 2017 Industrial Production in an annualized quarterly contraction of 1.5% (-1.5%). Per the Federal Reserve, though, "excluding the effects of the hurricanes, the index would have risen at least ½ percent." Half-percent annualized quarterly growth is negligible, unusually weak, for the production series."

The hard-hit Texas Gulf Coast region production and mining categories tied to petroleum-related exploration, and refinement in August, showed recovery for oil and gas exploration, but with a further drop off in monthly oil and gas drilling activity. Refinement declined in the month, but at a slower pace of decline than had been seen in pre-hurricane activity in July.

Production No Longer Recovered Its Pre-Recession High in July 2017. Noted in the last two month's production reporting in *Commentary No. 905* and *Commentary No. 910*, preliminary July 2017 industrial production had risen enough to push the headline production detail above its pre-recession peak activity of December 2007 by 0.14%. That circumstance just vanished in the latest downside revisions to headline July 2017 activity (again, these revisions were before any hurricanes).

That short-lived gain would have been the second such "recovery" for the series, had it survived, where production briefly topped its pre-recession high in the two-month recovery of October and November 2014. Albeit currently exacerbated by hurricane impact, headline September 2017 Industrial was down by 0.66% (-0.66%) from its pre-recession peak of December 2007, and down by 1.85% (-1.85%) from its brief, November 2014 recovery peak.

In contrast, the broadly stagnant, but dominant Manufacturing Sector of September 2017 remained 6.34% (-6.34%) shy of recovering its pre-recession peak of December 2007, having now completed a record 117 consecutive months of non-expansion (see *Graph 26*). The manufacturing sector gained month-to-month by a headline 0.10% in September 2017, having declined by a revised 0.25% (-0.25%) [previously 0.28% (-0.28%)]. The usual graphs are displayed here, with the regular month-to-month with relevant commentary as current circumstances, which remain in flux.

One of the Better-Quality Series, Industrial Production Still Overstates Headline Activity. Despite the March 31st benchmark revisions (see *Commentary No. 877*), which hit historical production detail hard, current headline production reporting still overstates economic activity tied to understated inflation. With the benchmarked 2016 industrial production representing 59% of the real value of Gross Domestic Product (GDP), the broad economy remains in the harsh reality of ongoing recession, one that has continued from somewhat before 2007. Headline production remains troubled by its dominant Manufacturing Sector (76.4% of aggregate production), which never has recovered its pre-recession peak, continuing in low-level, non-recovered economic stagnation (again, see *Graph 26*).

All this is despite the continuing happy hype out of the Bureau of Economic Analysis (BEA), which has guesstimated second-quarter 2017 real GDP activity at 13.6% above its pre-recession peak (see *Commentary No. 913*). No other major economic series shows anything close to that purported level of activity (see also the discussions in *Commentary No. 877* and *No. 859 Special Commentary*).

Headline Industrial Production—September 2017. The Federal Reserve Board released its first estimate of seasonally-adjusted, September 2017 Industrial Production on October 17th. Headline September 2017 production increased by 0.28%, having declined by a revised 0.73% (-0.73%) [previously down by 0.90% (-0.90%)] in August and a revised 0.14% (-0.14%) [previously having gained 0.39%, initially 0.19%] in July, following a revised gain of 0.22% [previously 0.19%, 0.35%, initially 0.39%] in June, a revised decline of 0.03% (-0.03%) [previously a gain of 0.06%, unchanged at 0.00%, a gain of 0.06% and initially unchanged at 0.00%] in May and a revised gain of 1.09% [previously 1.06%, 0.94%, 0.84%, 1.13%, initially 0.98%] in April. Net of prior-period revisions, September 2017 production declined month-to-month by 0.10% (-0.10%).

Headline Monthly September 2017 Growth by Major Sector. Detailed by major industry group (see *Graphs 24*, *26*, *31* and *33*), the headline September 2017 monthly aggregate gain of 0.28% was composed of a monthly gains of 0.10% in manufacturing activity, 1.49% in utilities and 0.39% in mining activity (including oil and gas production).

Year-to-Year Change. Year-to-year change in September 2017 industrial production was 1.60%, versus a revised 1.16% [previously 1.54%] gain in August 2017, and revised monthly gains of 1.83% [previously 2.39%, initially 2.19%] in July 2017, 2.06% [previously 2.09%, 2.08%, initially 1.97%] in June 2017, 2.20% [previously 2.26%, 2.09%, 1.95%, initially 2.21%] in May 2017, and 2.12% [previously 2.09%, 1.98%, 1.77%, 2.10%, initially 2.19%] in April 2017.

Quarterly and Annual Production Changes. Year-to-year growth rates in quarterly production had continued to slow and then decline, ranging from a positive 1.72% in first-quarter 2015, to year-to-year declines of 0.76% (-0.76%) in second-quarter 2015, 1.08% (-1.08%) in the third-quarter 2015 and 2.66% (-2.66%) in fourth-quarter 2015.

The annual declines continued, down by 2.17% (-2.17%) in first-quarter 2016, by 1.34% (-1.34%) in second-quarter 2016 and by 1.24% (-1.24%) in third-quarter 2016. Fourth-quarter 2016 production contracted year-to-year for the seventh-straight quarter by 0.14% (-0.14%).

First-quarter 2017 detail, annual change rose by a revised 0.58%, the first annual gain since first-quarter 2015. Second-quarter 2017 production gained year-to-year by a revised 2.12%, with the initial third-quarter 2017 annual gain of 1.53%.

Annualized Quarter-to-Quarter. Going back to first-quarter 2015 industrial production contracted at an annualized quarterly pace of 3.30% (-3.30%), having gained by 2.72% in fourth-quarter 2014. That was followed by a quarterly contraction of 3.97% (-3.97%) in second-quarter 2015, with a third-quarter 2015 production gain of 0.37%, followed by a fourth-quarter 2015 contraction of 3.66% (-3.66%).

The first-quarter 2017 annualized quarterly gain was 1.54%. The second-quarter 2017 gain was a revised 5.55%, with a hurricane-disrupted third-quarter 2017 growth contraction of 1.55% (-1.55%).

Production Graphs. The regular two sets of long- and short-term plots of industrial production levels and annual growth rates (*Graphs 22* to *25*) set the background for the drill-down detail graphs of various components of the aggregate industrial series (*Graphs 26* to *39*).

Graphs 22 and *23*, and *Graphs 24* and *25* show headline industrial production activity to date. *Graph 23* shows the monthly year-to-year percent change in the aggregate series, in historical context since World War II. Post-benchmarking, activity was somewhat stronger coming into 2014, but much weaker going into 2015, as detailed in *Commentary No. 877*.

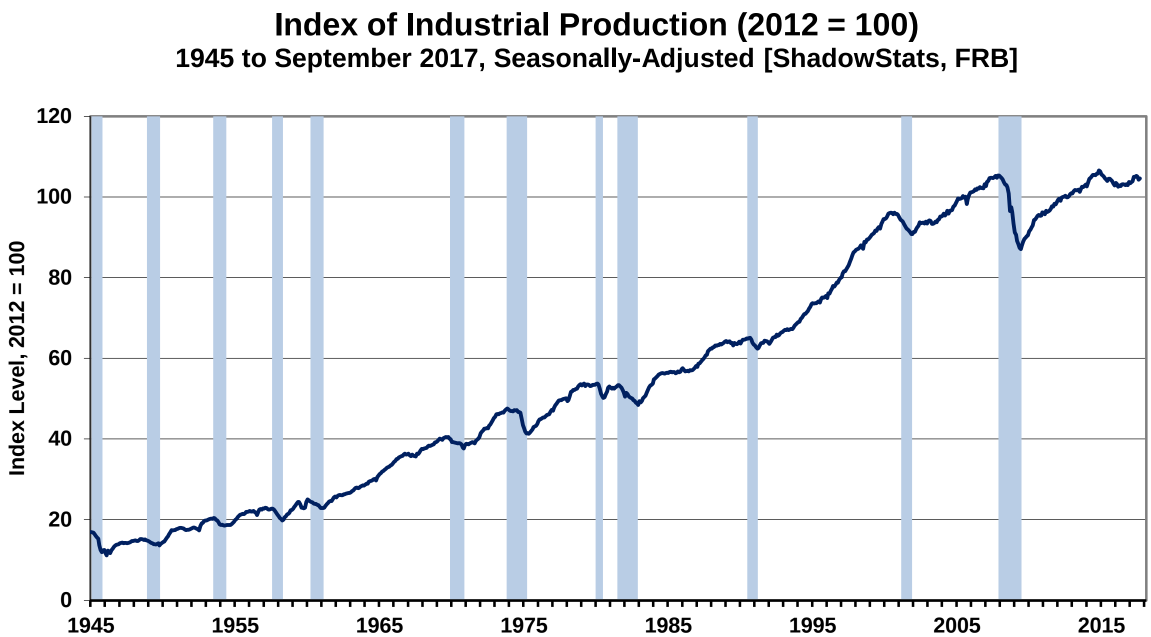
Graph 22 shows the monthly level of the production index post-World War II, with a topping-out and renewed downturn—deepening quarterly contractions in first- and second-quarter 2015, with a bounce in third-quarter 2015, followed by renewed and deeper contractions in fourth-quarter 2015 and first- and second-quarter 2016, a fall-back in July and August 2017 and tick to the upside in September 2017. Such patterns of monthly, quarterly and annual declines post late-2014 to the onset of 2017 (see *Graph 23*) were seen last in the economic collapse into 2009, and historically never seen outside of what would be recognized as formal recessions. *Graphs 24* and *25* show the same series in near-term detail, beginning in January 2000.

Seen most clearly in *Graph 25*, year-to-year activity dipped anew in 2013, to levels usually seen at the onset of recent recessions, bounced higher into mid-2014, fluctuated thereafter, turning negative, again, into 2015 and through 2016 as seen only in formal recessions. In the context of the 2017 benchmark revisions, year-to-year growth remains well off the recent relative peak for the series, which was 8.55% in June 2010, going against the official June 2009 trough of the economic collapse. Indeed, as shown in *Graph 23*, the June 2009 (the end of second-quarter 2009) year-to-year contraction of 15.43% (-15.43%) was the steepest annual decline in production since the shutdown of wartime production following World War II.

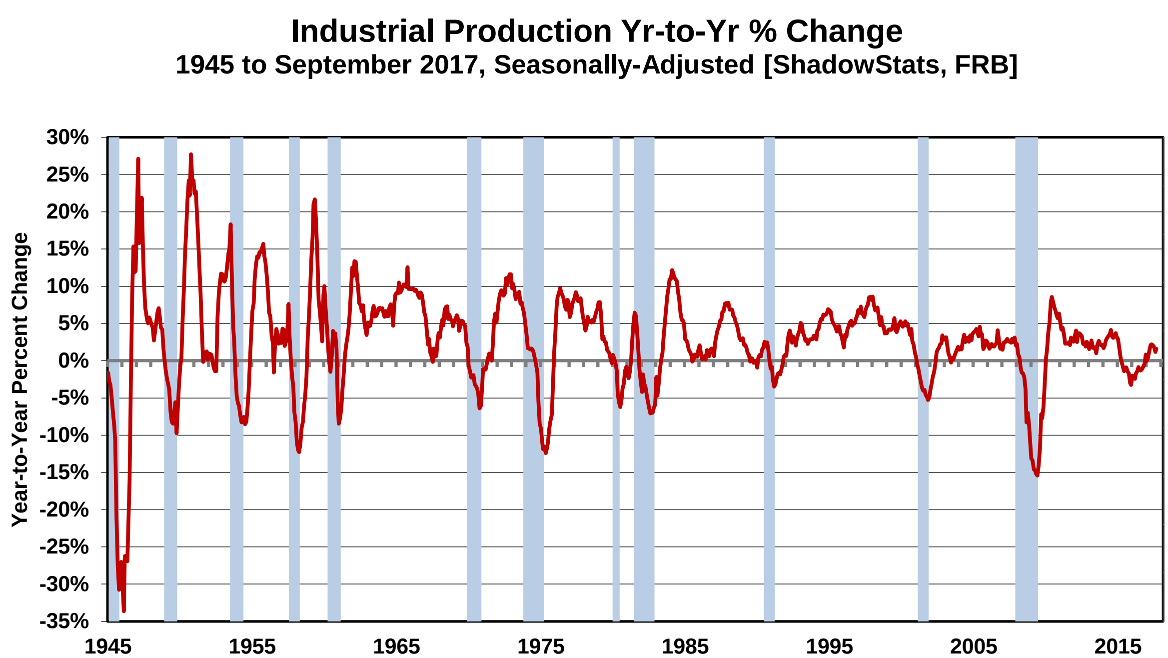
Although generally now in low-level stagnation, official production levels had moved higher since the June 2009 trough, corrected for the understatement of inflation used in deflating portions of the industrial production index (see the *Executive Summary* section, *Graph 2*). That series has shown more of a pattern of stagnation with a slow upside trend, since 2009, with irregular quarterly contractions interspersed. The slow uptrend continued into a topping out pattern in late-2014. Headline growth—purportedly already neutered of any inflation impact—contracted in both first- and second-quarter 2015, moved minimally higher into 2016 through mid-2017. The "corrected" series has contracted quarter-to-quarter throughout 2016 and with some leveling off and minimal uptick into early-2017, with a downturn thereafter.

[Graphs 22 and 23 follow on the next page.]

Graph 22: Index of Industrial Production (Aggregate) since 1945

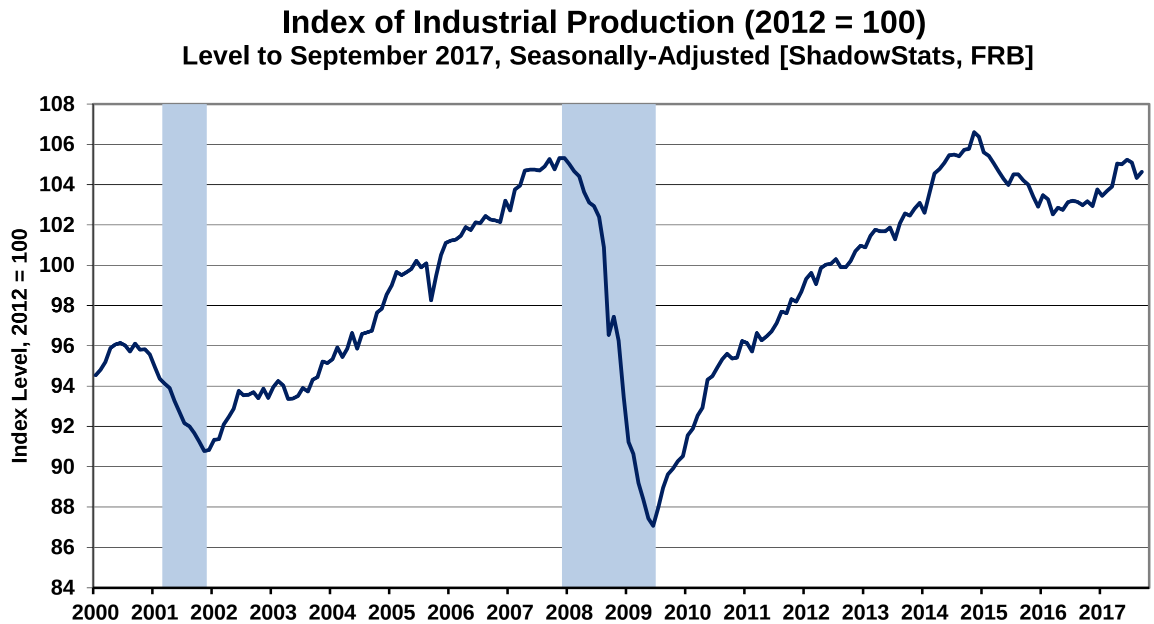


Graph 23: Industrial Production, Year-to-Year Percent Change since 1945

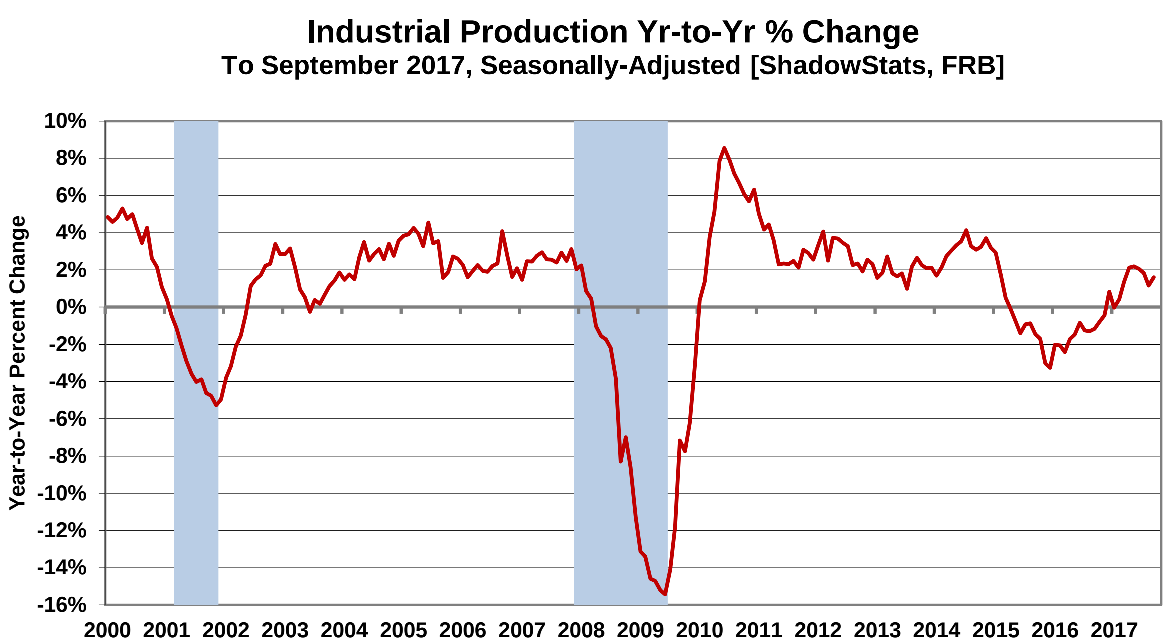


Drilling Down into the September 2017 U.S. Industrial Production Detail. *Graphs 24*, *26*, *31* and *33* show headline reporting of industrial production and its major components.

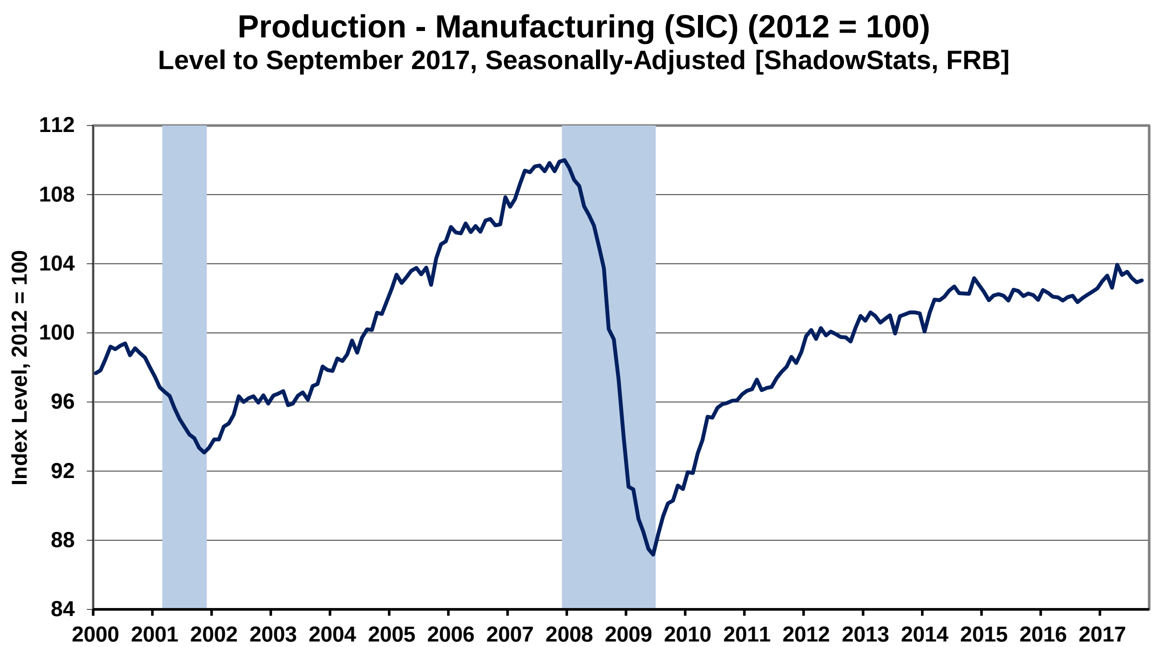
Graph 24: Index of Aggregate Industrial Production since 2000



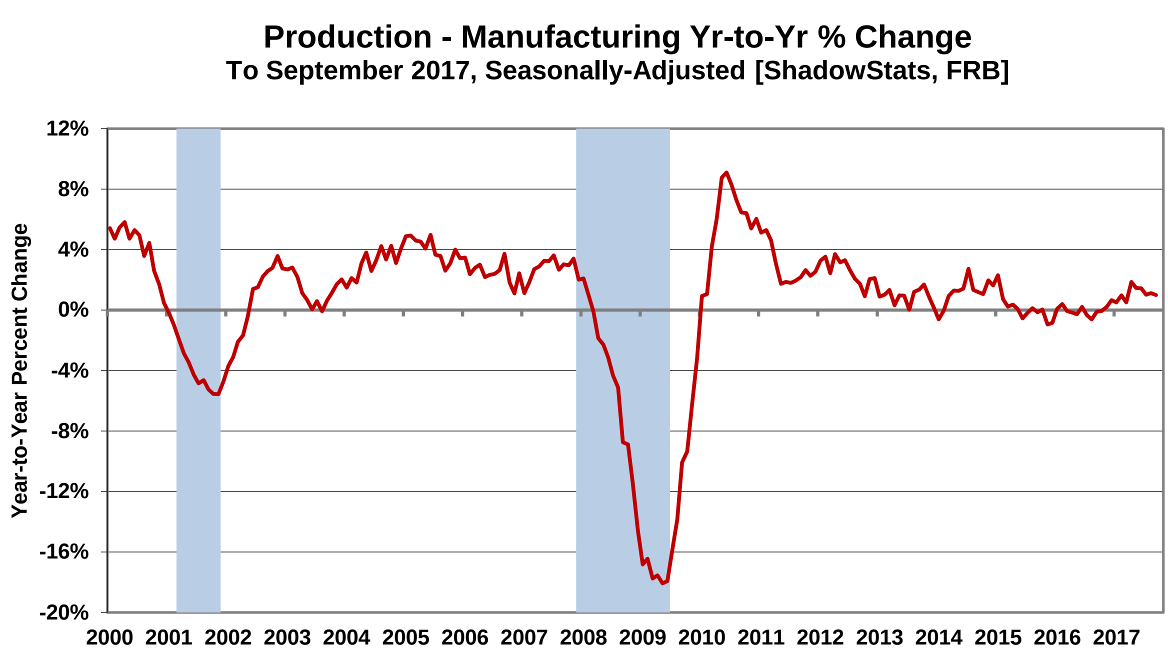
Graph 25: Aggregate Industrial Production, Year-to-Year Percent Change since 2000



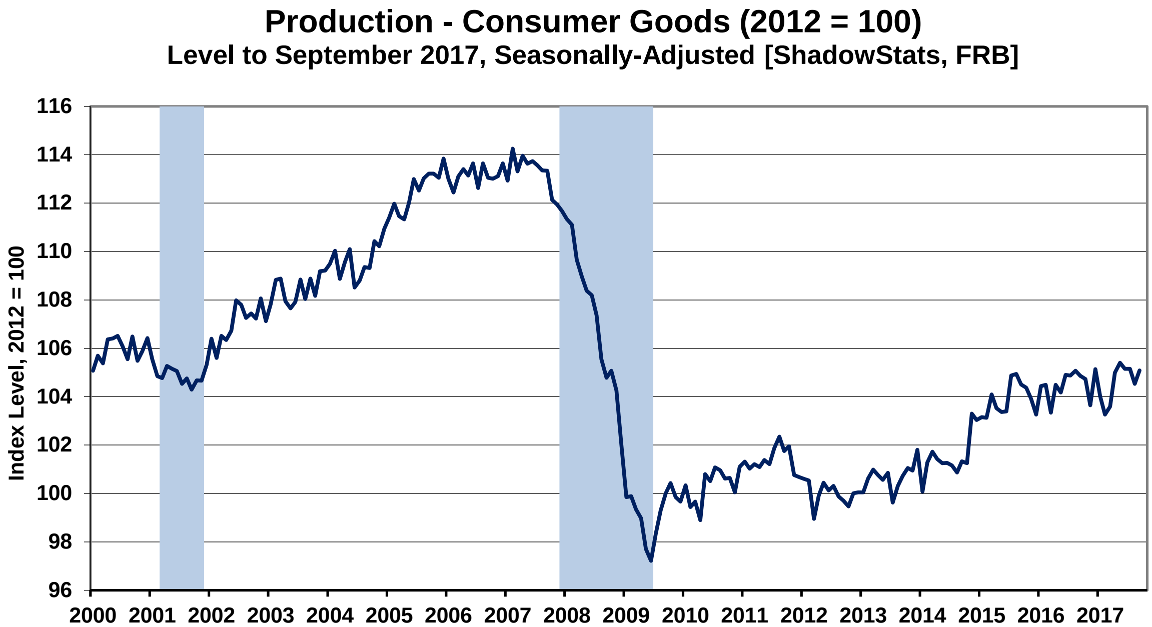
Graph 26: Industrial Production - Manufacturing (76.4% of the IIP in 2016)



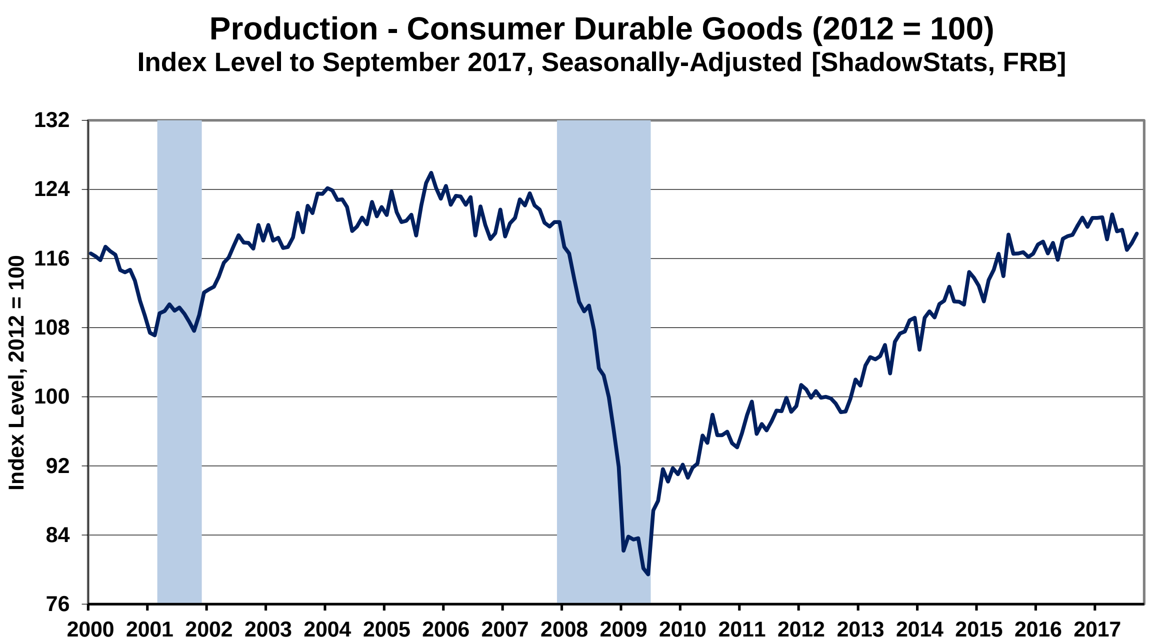
Graph 27: Industrial Production - Manufacturing, Year-to-Year Percent Change Since 2000



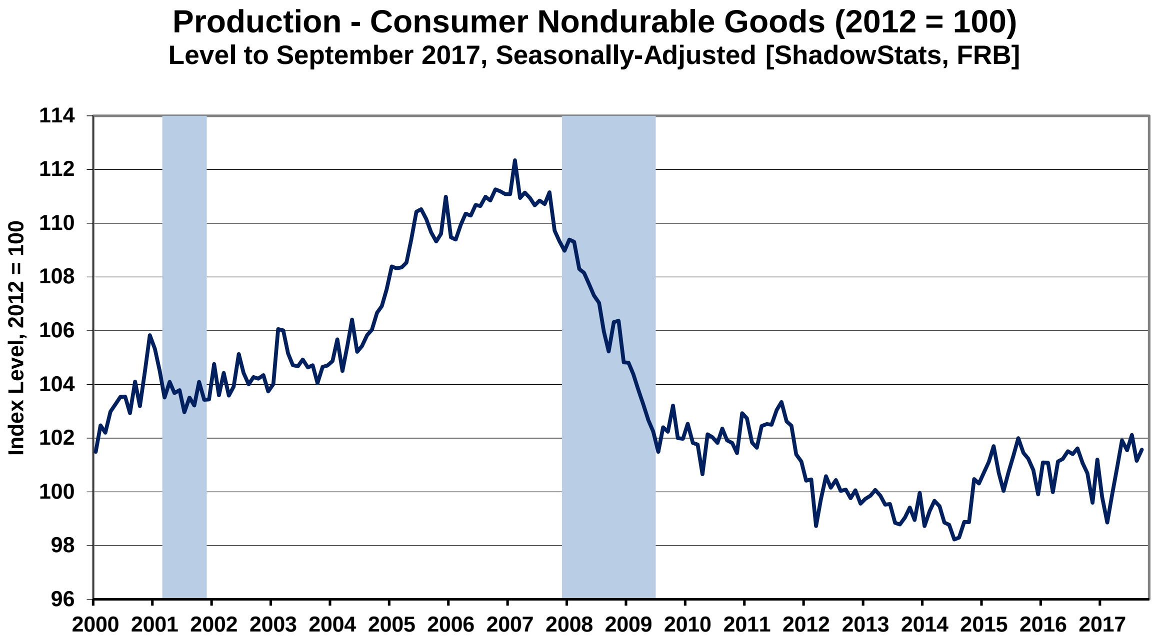
Graph 28: Consumer Goods (28.2% of the Aggregate in 2016)



Graph 29: Durable Consumer Goods (6.3% of the Aggregate in 2016)



Graph 30: Nondurable Consumer Goods (21.9% of the Aggregate in 2016)



The aggregate production index (*Graph 24*) contracted quarter-to-quarter in both first- and second-quarter 2015, with a third-quarter 2015 bounce, followed by ongoing, consecutive quarterly contractions from fourth-quarter 2015 through second-quarter 2016. Year-to-year declines by quarter were seen for seven consecutive quarters, from second-quarter 2015 through fourth-quarter 2016, with first-quarter 2017 activity positive on both a quarterly and annual basis, but flipped to a quarterly contraction and sharp slowing in annual growth, due to hurricane disruptions, discussed earlier.

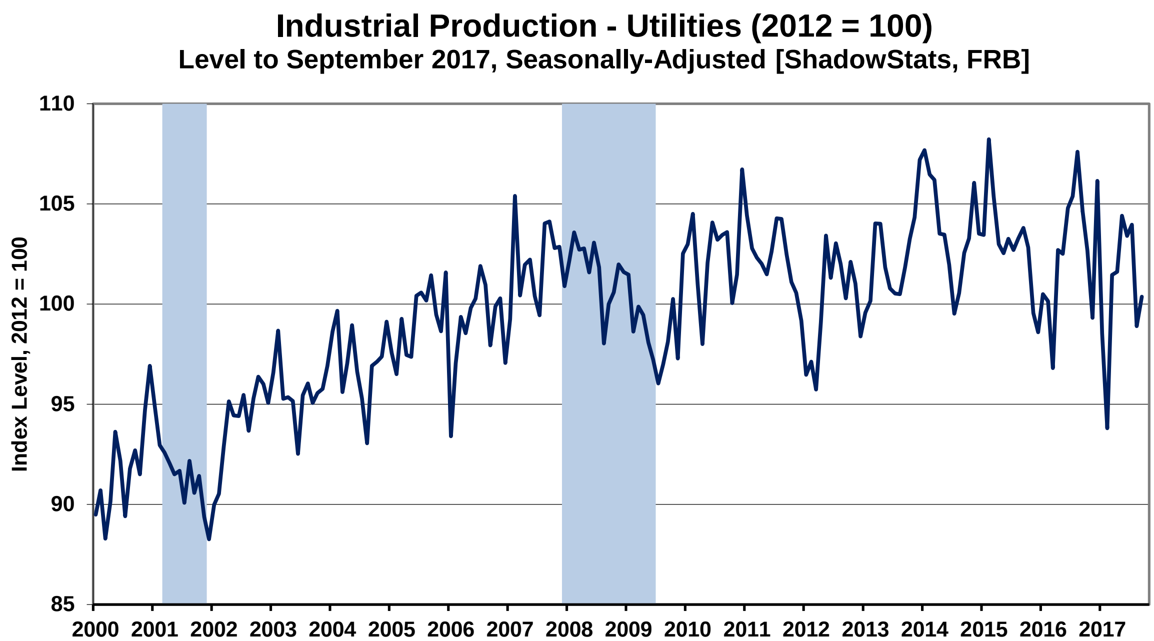
Shown in *Graphs 26, 31* and *33* are the three major industry sectors, Manufacturing, Utilities and Mining, all of which were distorted heavily to the downside by weather in the August 2017 detail, all sectors down month-to-month. In the context of downside prior-period revisions and declining impact from hurricane distortions, all three major industry sectors moved higher month-to-month with the September 2017 detail.

The Manufacturing graph precede this, the other graphs follow, updated for the latest disrupted detail, subject to further revisions and added commentary in the next couple of months. *Graphs 27*, *32* and *34*, show the respective plots of year-to-year change for those series.

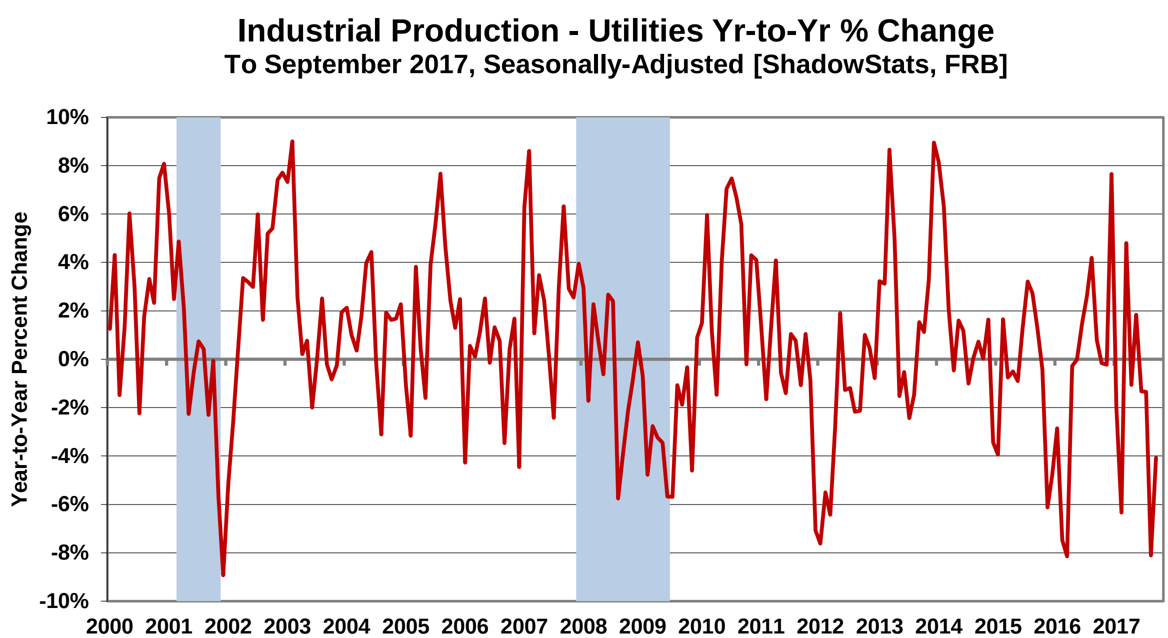
The preceding Manufacturing *Graphs 26* to *30* include plots of various levels of consumer goods production (*Graphs 28* to *30*), all impacted by weather distortions.

The next two *Graphs 31* and *32* reflect weather-impacted Utilities activity. While the final set of Mining *Graphs 33* to *39,* encompasses plots of related mining/oil production or exploration activity (*Graphs 25* to *39*. While oil and gas extraction rebounded in September 2017, and oil and gas drilling continued in decline, directly impacted by Hurricane Harvey.

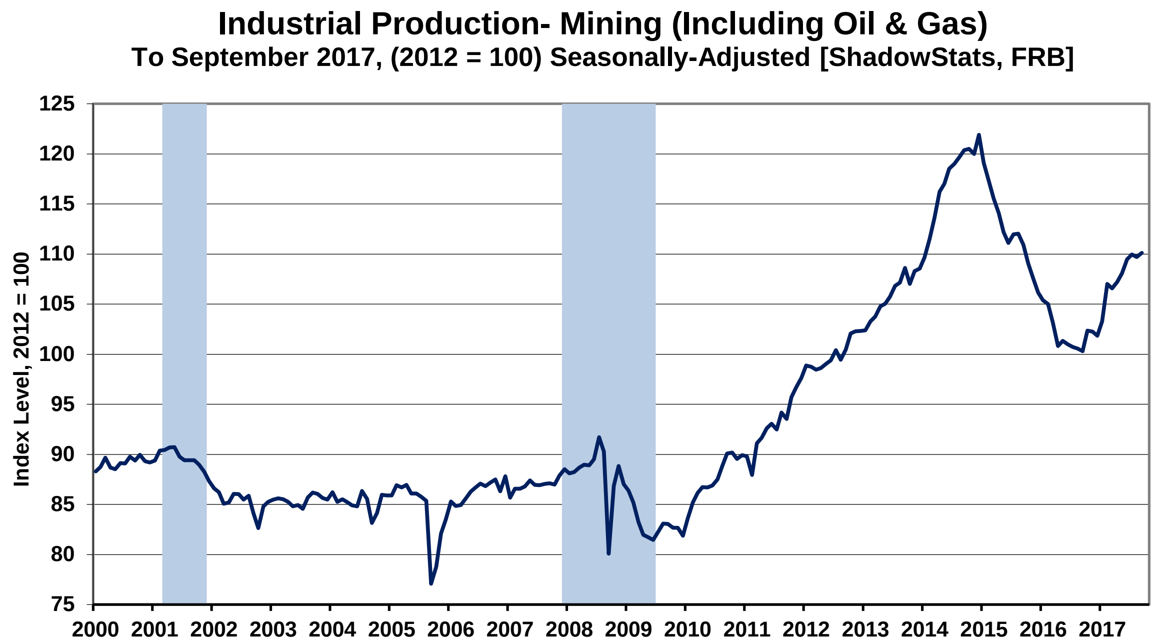
Graph 31: Industrial Production - Utilities (10.6% of the Aggregate in 2016)



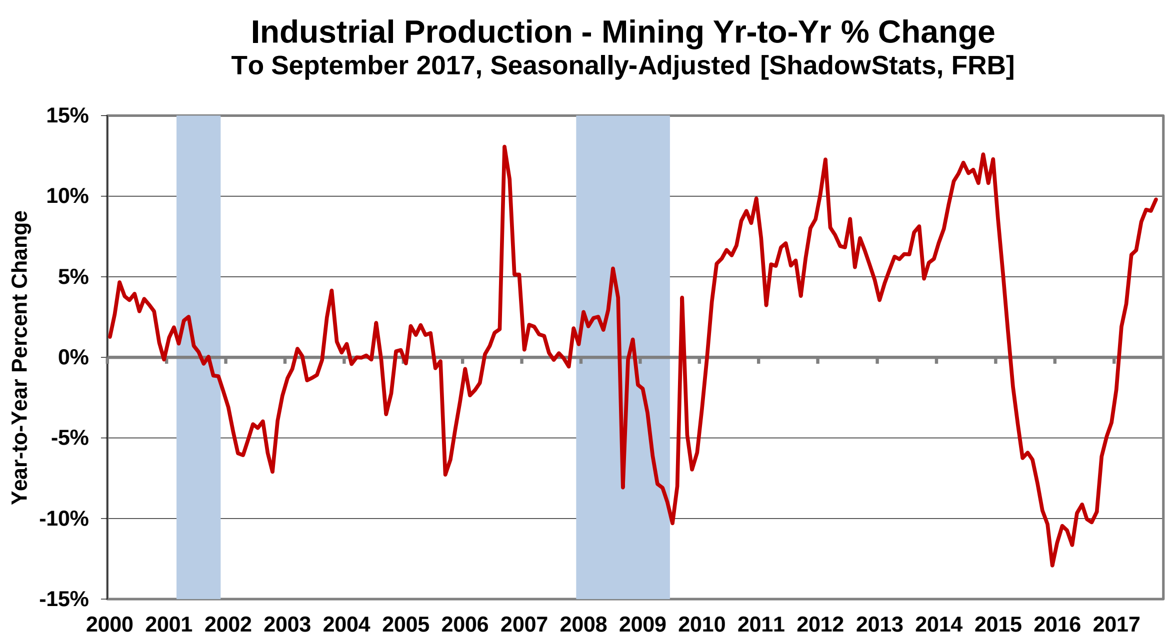
Graph 32: Industrial Production - Utilities, Year-to-Year Percent Change Since 2000



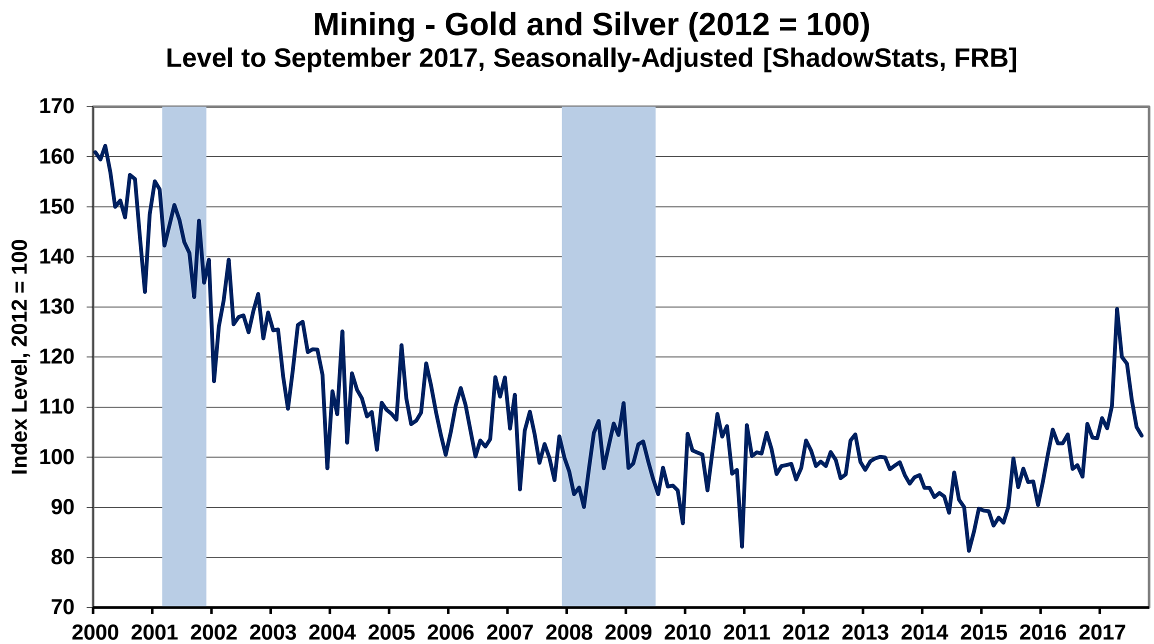
Graph 33: Industrial Production - Mining, Including Oil and Gas (12.9% of the Aggregate in 2016)



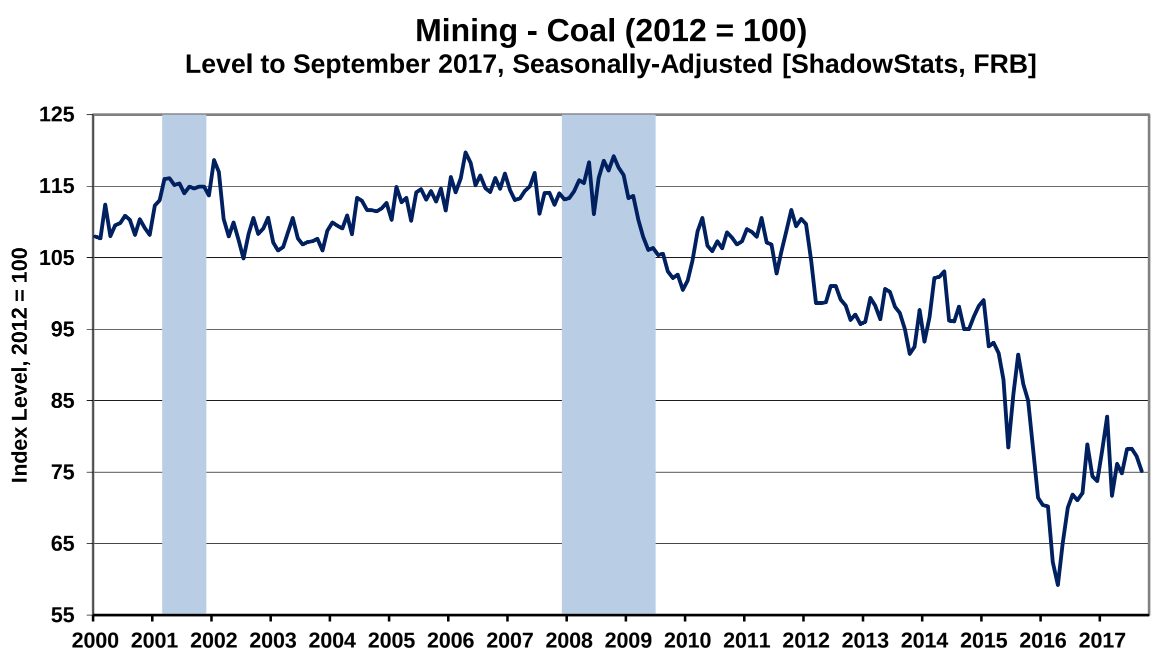
Graph 34: Industrial Production - Mining, Year-to-Year Percent Change



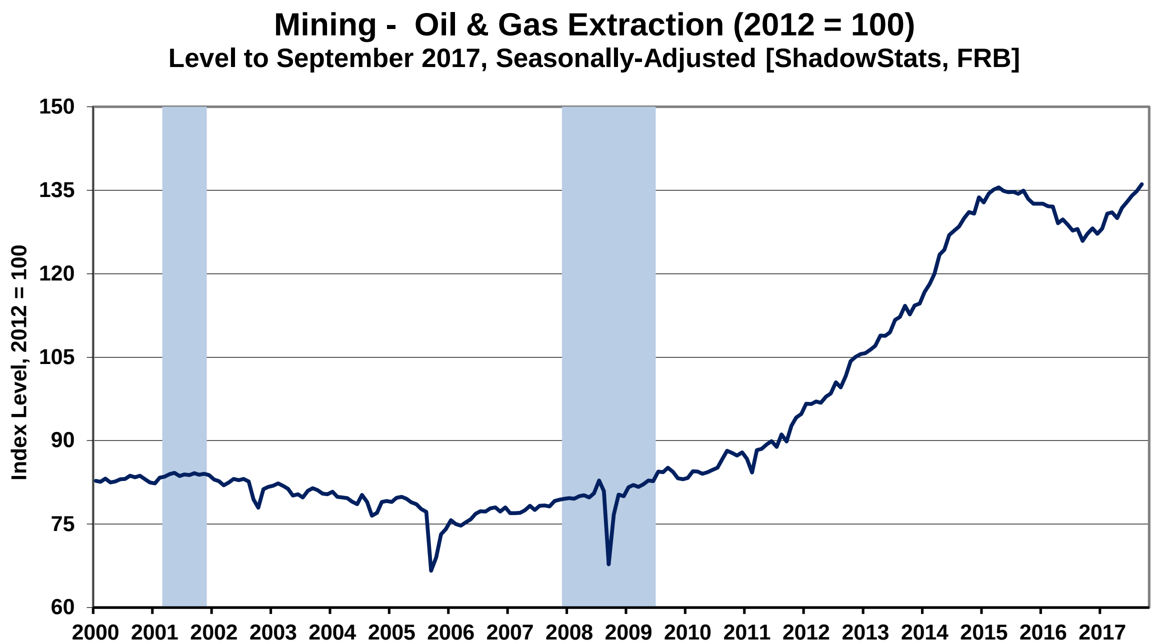
Graph 35: Mining – Gold and Silver Mining (Since 2000)



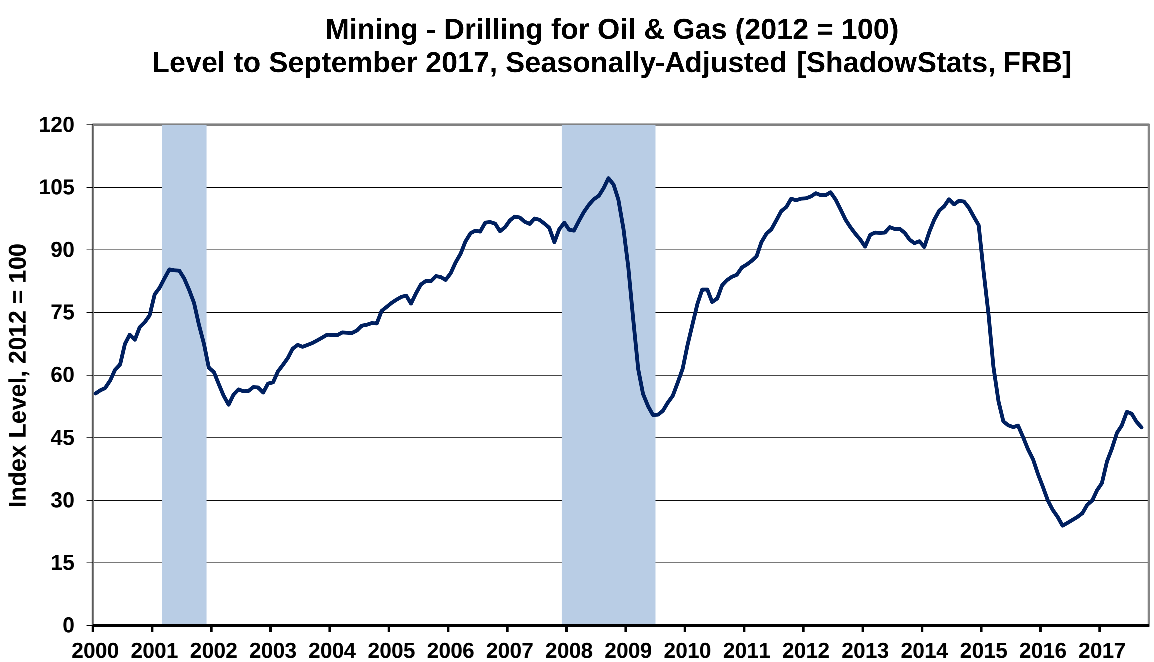
Graph 36: Mining - Coal Mining (Since 2000)



Graph 37: Mining – U.S. Oil & Gas Extraction (Since 2000)



Graph 38: U.S. Drilling for Oil & Gas (Since 2000)

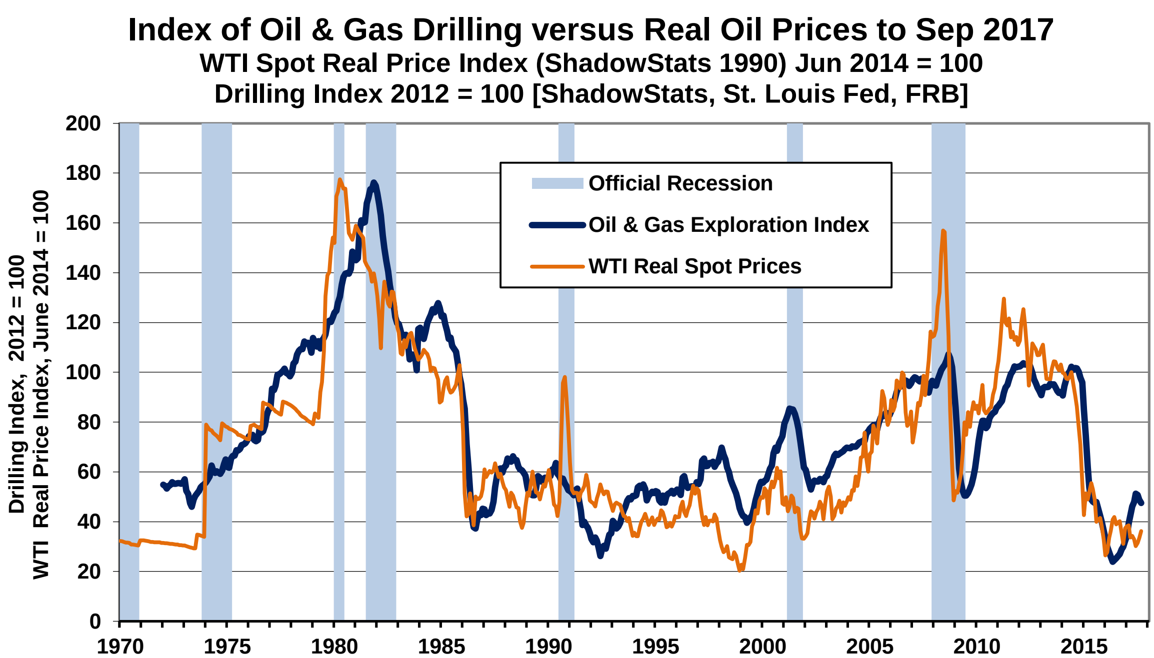


Shown in *Graph 39*, with some lag following sharp movements in oil prices, oil and gas exploration tends to move in tandem, and an upswing in exploration, indeed, appeared to have been in place with what was at least a short-term bottoming in oil prices in early 2016. Prices rallied into mid-2016 then plateaued, and have been moving lower in the last five to six months, with oil and gas exploration easing in July 2017 versus June 2017, the first month without a sharp month-to-month gain, since the boost from the 2016 upturn in oil prices. The oil price index used here is for the West Texas Intermediate (WTI) monthly average spot price, deflated using the ShadowStats Alternate CPI measure (1990 Base). The graph lines have been highlighted to show more clearly the price-level movement, which visually had coincided graphically with the movement in the drilling levels in some recent months.

When the dollar weakens, dollar-denominated oil prices also begin to strengthen, even in a circumstance with excess supply conditions. At such time as the U.S. dollar declines meaningfully—ShadowStats looks for a massive sell-off in the dollar in the year ahead (see prior *Commentary No. 909*)—U.S. dollar-denominated oil prices should rally sharply (see also *General Commentary No. 811*). That said, post-election, the U.S. dollar had rallied, but there had not been quite a commensurate decline in oil prices, and now the dollar has begun to pull back. Where supply had been tightened artificially (see the discussion in *No. 859 Special Commentary*), oil prices showed some increase and oil and gas extraction and exploration continued to pick up accordingly, again with some lag. As the dollar substantially weakens anew, artificial supply constraints likely will ease in tandem, although both the dollar and oil prices have backed off recent, relative peaks.

That said, both oil prices and drilling activity have been meaningfully boosted and hit, respectively in August and September, due particularly to impact of Hurricane Harvey on the Gulf Coast. Both prices and drilling should move back to more-regular movement in the next several months.

Graph 39: Mining – U.S. Drilling for Oil & Gas versus Real Oil Prices (WTI ShadowStats 1990 Base)



NEW ORDERS FOR DURABLE GOODS (September 2017)

New Orders Received a Revised Hurricane-Driven Boost for Motor Vehicles, Complicated by a Downside Revision to Commercial Aircraft Orders. Net of inflation and a continuing monthly upsurge in highly-irregular commercial aircraft orders, real new orders for durable goods held in fluctuating, non-recovering, low-level stagnation in third-quarter 2017, albeit with an upside bias. In the initial headline reporting of August 2017 new orders for durable goods, meaningful impact on orders activity from late-August Hurricane Harvey was not obvious.

That changed with the headline September 2017 detail, which not only included impact from mid-September's Hurricane Irene, but also late revisions to August detail, which included an upside revision of 1.3% to August's new orders for motor vehicles (likely Houston-area flood losses). That turned out to be the bulk of the upside revision to August's new orders, in aggregate. With continued minor monthly September growth, on top of the upwardly-revised August activity, third-quarter 2017 new orders activity now appears to have been boosted by the tempest disruptions of August/September 2017, from what would have been seen otherwise as neutral.

That said, headline nominal New Orders for Durable Goods jumped by 2.2% in September 2017, following a revised 2.0% [previously 1.7%] monthly gain in August and an unrevised monthly plunge of 6.8% (-6.8%) in July. Other than for irregular hurricane disruptions in August, those changes all were dominated by respective monthly swings of a 31.5% jump in September 2017, on top of a revised 33.5% jump in August, and a 71.1% (-71.1%) plunge in July of the irregularly-volatile, commercial-aircraft orders. Ex-commercial aircraft, new orders rose by 0.9% in September 2017, versus an upwardly-revised 1.0% in August 2017 and an unrevised monthly gain of 0.5% in July. With highly-suspect, related negligible month-to-month inflation, a component of the Producer Price Index (PPI), the inflation-adjusted real month-to-month gains were 0.8% in September 2017, 0.9% in August and 0.5% in July.

Discussed later, these extremely volatile, commercial aircraft orders are booked years into the future and are indicative more of longer-term, rather than shorter-term prospects for manufacturing activity. Accordingly, ShadowStats concentrates on the inflation-adjusted real New Orders for Durable Goods series, ex-commercial aircraft, as a leading indicator to broad economic activity reflected in the dominant Manufacturing sector of Industrial Production (see *Graph 5* in the *Executive Summary*, versus *Graph 27* in the *Reporting Detail*). Neither of those series has recovered its pre-recession high of 2007; both continue in non-recovered, non-expanding, low-level stagnation.

There is no economic expansion underway, as heavily touted to the contrary in the popular media. Expansion reflects growth beyond the pre-recession peak of an economic series. The happy hype in the media primarily reflects a purported expansion in headline Gross Domestic Product (GDP) currently (second-quarter 2017) at 13.6% above its precession high (see *Commentary No. 913*). That said, underlying fundamental economic activity, such as seen in September 2017 real new orders for durable goods series, was down by 10.3% (-10.3%) versus its pre-recession high, while the real new orders for durable goods series, ex-commercial aircraft, was down by 7.8% (-7.8%) from its pre-recession peak.

In the context of the May 18th annual benchmark revisions to the new orders series, which lowered the general level of headline activity in recent years (see *Special Commentary No. 888* and the accompanying *Graph 20* there), September headline detail, again, showed the broad economy in ongoing non-expansion, as has been the case for the manufacturing sector in industrial production (see the previous section). Real new orders, ex-commercial aircraft, again, remains the best coincident/leading indicator to industrial production (*i.e.,* manufacturing) and to the general economy.

Smoothed with six-month moving averages, and adjusted for inflation, both of the highly volatile new orders series (total and ex-commercial aircraft) generally have remained in long-term, non-recovering, low-level, downtrending stagnation, which recently had started to show some minimal uptrend, then downtrend—some fluttering—flattening-out, particularly when viewed with alternate-inflation detail. Those patterns have remained consistent in signaling ongoing or non-recovering recession (see *Graphs 6* to *9* in the *Executive Summary*).

Headline Nominal Detail—September 2017. The Census Bureau reported October 25th, that the regularly-volatile, seasonally-adjusted, nominal level of aggregate new orders for durable goods rose by 2.16% in September 2017, having gained a revised 2.04% [previously 1.70%] in August, having declined by a revised 6.81% (-6.81%) [previously 6.84% (-6.84%)] in July and having gained 6.38% in June, versus an "unchanged" 0.00% in May.

Year-to-year, September 2017 nominal durable goods rose by 8.33%, following revised gains of 5.52% [previously 5.14%] in August 2017, 4.06% [previously 4.03%] in July 2017, versus 16.20% in June 2017 and a gain of 3.97% in May 2017. That headline detail, though, was before consideration of the irregular volatility in commercial-aircraft orders, let alone inflation.

Before and after consideration of irregular and unstable month-to-month commercial-aircraft orders in the headline reporting of new orders, the smoothed trends of broad activity generally continued to be flat, consistent with a downturn that had been holding in a continuing pattern of broad stagnation, albeit somewhat fluttering. The inflation-adjusted real series, and that same series corrected for the understatement of official inflation, again, are discussed and graphed in the *Executive Summary*.

The corrected series—net of commercial aircraft orders—has remained relatively flat, in a pattern of low-level stagnation, albeit somewhat uptrending. In parallel with the other plotted series, the corrected series still shows an unfolding economic contraction of a nature that usually precedes or coincides with a recession or deepening business downturn.

Detail Net of Volatility in Commercial-Aircraft Orders. The reporting of extreme contractions and surges in commercial-aircraft orders is seen in an irregularly-repeating process throughout the year (including the most-recent four months), and that often dominates changes in headline monthly durable goods orders. These extremely volatile aircraft orders are booked years into the future and are indicative more of longer-term, rather than shorter-term prospects for manufacturing activity.

In September 2017, a monthly gain of 31.45% in aircraft orders boosted headline aggregate orders to a gain of 2.16%, from what otherwise would have been a monthly gain of 0.89%. That followed a revised monthly gain of 33.49% [previously 44.78%] in August, an unrevised July monthly decline in aircraft orders of 71.07% (-71.07%), a monthly aircraft-order surge of 129.20% in June and a monthly decline in May of 1.37% (-1.37%).

Net of commercial-aircraft orders, month-to-month and seasonally-adjusted, September 2017 new orders rose by 0.89%, versus 1.00% in August, 0.51% in July, 0.26% in June and 0.65% in May. Year-to-year and seasonally-adjusted, September 2017 new orders ex-aircraft rose by 6.33%, having gained 4.70% in August 2017, 3.93%, 5.59% in July 2017, 6.70% in June 2017 and 6.55% in May 2017.

Real Durable Goods Orders—September 2017. ShadowStats uses the PPI component inflation measure "Durable Manufactured Goods" for deflating the new orders for durable goods series. Published only on a not-seasonally-adjusted basis, the related September 2017 PPI series showed headline month-to-month inflation for a second month at 0.06%, the same as in August, against no [0.00%] inflation in July and a monthly increase of 0.06% in June. Related year-to-year annual inflation was 1.74% in September 2107, following 1.56% in August 2017, 1.56% in July 2017 and 1.60% in June 2017 (see *Commentary No. 916* 916).

Adjusted for that 0.06% month-to-month inflation reading in September 2017 and respective inflation rates in earlier months, and as reflected in the graphs in the *Executive Summary* section, real aggregate orders in September 2017 gained by 2.10%, having gained by 1.97% in August, having declined by 6.81% (-6.81%) in July, gained by 6.31% in June and having been "unchanged" at 0.00% May. Ex-commercial aircraft, real month-to-month orders rose by 0.83% in September 2017, 0.94% in August 2017, 0.41% in July, 0.20% in June and by 0.06% in May.

Real total new orders rose year-to-year by 6.48% in September 2017, 3.89% in August 2017, 2.46% in July 2017, 14.27% in June 2017 and 2.18% in May 2017. Ex-commercial aircraft, September 2017 real orders rose year-to-year by 4.51%, having gained 3.09% in August 2017, 3.97% in July 2017, 4.93% in June 2017 and by 4.71% in May 2017.

Real Quarterly Change, Ex-Commercial Aircraft. Where the inflation-adjusted series (ex-commercial aircraft) is the best leading economic indicator out of these data, following are the annualized real quarterly changes in that series. Beginning at the onset of eventually what should become recognized as a formal recession or renewed downturn, the real ex-commercial aircraft orders series showed annualized quarterly declines of 7.92% (-7.92%) in fourth-quarter 2014 and 7.36% (-7.36%) in first-quarter 2015. Annualized real change was a gain of 3.87% for second-quarter 2015, a gain of 3.46% in third-quarter 2015 and an annualized contraction of 2.59% (-2.59%) in fourth-quarter 2015 activity.

First-quarter 2016 orders showed an annualized real contraction of 2.22% (-2.22%), with the series declining at an annualized real pace of 4.74% (-4.74%) in second-quarter 2016. For third-quarter 2016, the annualized real series (ex-commercial aircraft) showed an annualized quarterly gain of 5.46%, fourth-quarter 2016 activity showed an annualized quarterly gain of 7.35%.

First-quarter 2017 showed an annualized contraction of 0.94% (-0.94%). Year-to-year, first-quarter 2017 orders rose by 1.67%. Second-quarter 2017 activity rose at a revised annualized quarterly pace of 2.57% [previously 2.65%], up by a revised 3.56% [previously 3.58%] year-to-year.

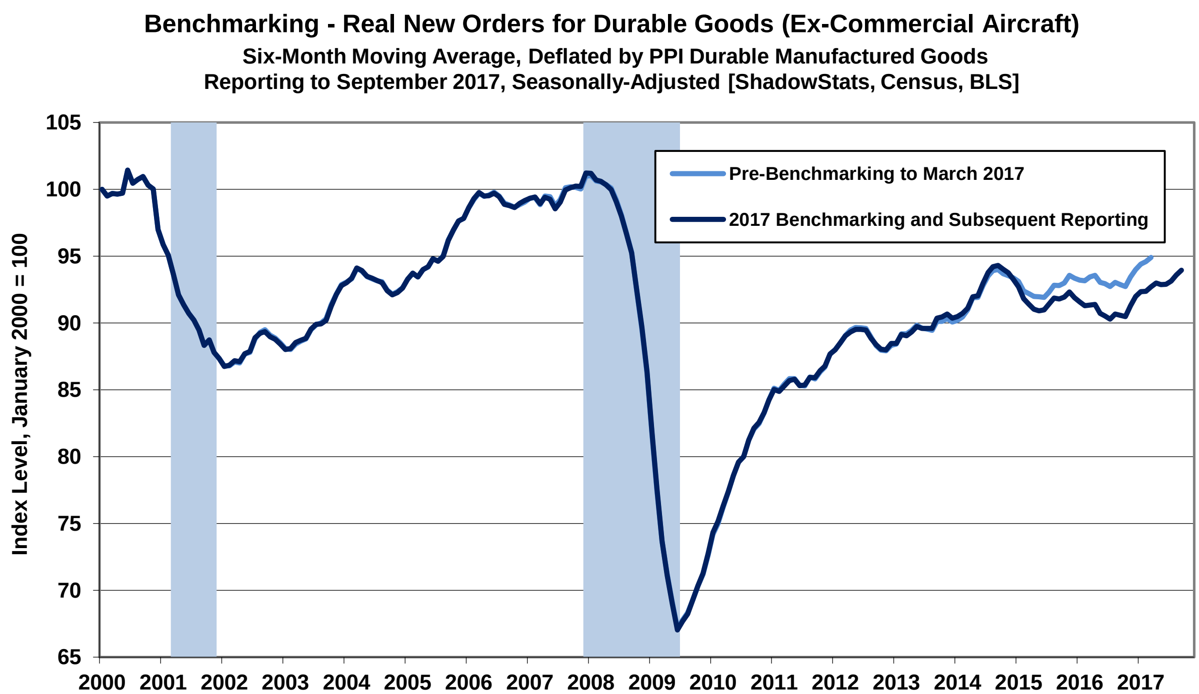
Based solely on initial, full third-quarter 2017 detail, annualized quarterly growth was 6.66%, with year-to-year growth of 3.85%.

Graphs of Inflation-Adjusted and "Corrected" Smoothed Durable Goods Orders. Three sets of inflation-adjusted graphs (*Graphs 3* to *9*) are displayed in the *Executive Summary*. The first set (*Graphs 3* to *5*) shows the headline monthly detail, as well as the six-month moving-average activity for both the aggregate new orders series and the series net of the irregular commercial-aircraft orders. They also show annual growth for the real series (net of commercial aircraft). The moving-average levels in both the durable goods series had turned lower into year-end 2014 and the first two quarters of 2015, with some smoothed bounce-back into third-quarter 2015, followed by renewed downturn into 2016 with a late-year uptick continuing into March 2017, which largely was revised away with the recent benchmarking and now shows a minimally-uptrending level of stagnation.

The second set of graphs (*Graphs 6* and *7*) shows the patterns of six-month moving averages of historical, headline real new orders for durable goods (net of official inflation), as well as that pattern "corrected" for understatement of that inflation (and for the corresponding overstatement of official, inflation-adjusted growth). The third set of graphs (*Graphs 8* and *9*) shows the same patterns, but for the aggregate durable goods orders series (net of commercial aircraft orders).

Caution: Non-Comparability of the Regular Headline Month-to-Month Data. As an example of the regular, annual downside restatement of recent activity, consider the following *Graph 40*. It shows the net revisions to the six-month moving average of real New Orders for Durable Goods (ex-commercial aircraft) from the May 18, 2017 benchmark revisions and subsequent reporting through the September 2017 headline detail, versus the pre-benchmarking detail. For a more-substantive review of the last two years of benchmark revisions to New Orders for Durable Goods, and the parent Manufacturers' Shipments series, see *Special Commentary No. 888*.

Graph 40: Benchmark Revisions to Real Total New Orders for Durable Goods, Ex-Commercial Aircraft.



Current durable goods reporting remains subject to many of the same upwardly-biased sampling assumptions and concurrent-seasonal-adjustment problems commonly seen in the pre-revision reporting as well as with retail sales, and payroll and unemployment reporting. Unusual seasonal-factor volatility raises issues as to the significance of reported seasonally-adjusted monthly and annual changes. While those issues were brought into balance, for a period of eight days, with the annual benchmark revision to durable goods orders through March 2017 on May 18, 2017 (again see *No. 888*), that consistency ceased with the May 26th release of headline April 2017 detail.

For all monthly reporting from the April 2017 detail until the next benchmarking in May 2018, unpublished historical revisions calculated along with current headline month's seasonal adjustments, and with each month to follow, make all historical reporting prior to the current headline month (September 2017) inconsistent with the currently published headline historical numbers.

NEW RESIDENTIAL CONSTRUCTION (September 2017)

Downtrending Activity Intensified, but Short-Lived, Storm-Recovery Boost Lies Ahead. Where near-term housing starts continued in downturn, with some decline likely was from hurricane disruptions in August and September, post-disaster recovery should trigger some near-term increase in activity as destroyed structures are replaced in the months ahead. Prior-period revisions were relatively small and mixed.

Irrespective of near-term reporting instabilities, however, the six-month trends in the key series continued in downtrend, as seen in *Graphs 11*, *13*, *15* and *17* in the *Executive Summary*, along with the headline level of September 2017 monthly activity holding well below the pre-recession peaks for each series.

Indeed, the broad pattern of collapsing residential construction activity from its 2006 pre-recession peak, to a trough in 2009, was followed by a protracted period of up-trending but non-recovering, low-level activity. That flattened out in the last year or two in ongoing, low-level stagnation and now has turned lower with the recent detail, as seen in accompanying *Graphs 41* to *46* (also in *Graphs 10* to *17* in the *Executive Summary*), covering all of the Housing Starts series.

That pattern of non-recovery also broadly was seen with Building Permits activity, with the headline, statistically-significant monthly decline of 4.5% (-4.6%) +/- 1.9% seen in September 2017 having the effect of notching the six-month moving average of that series minimally lower (see *Graph 43*).

Plotted with just the seasonally-adjusted monthly data, the pattern of low-level, broadly downtrending stagnation, showed headline September 2017 building permits activity down by 46.3% (-46.3%) from recovering its pre-recession peak activity, with housing starts activity down similarly by 50.4% (-50.4%). Again, as usual, none of the related headline month-to-month in changes within the housing-starts series was statistically significant. Lack of statistical significance remains a common denominator to nearly all the headline the month-to-month changes, and to most of the year-to-year changes as well.

The six-month smoothed trends remain negative, across-the-board for the housing starts and building permits. Monthly activity for the various measures remained shy of regaining 2005 pre-recession peaks, again, by 46.3% (-46.3%) for Building Permits and 50.4% (-50.4%) for Housing Starts, and down by 54.5% (-54.5%) for Single-Unit Starts. At present, Multi-Unit Starts has fallen back, now down by 33.8% (-33.8%), having recovered its 2005 pre-recession peak temporarily in early-2015.

Third-Quarter 2017 Housing Starts in Third Consecutive Quarterly Decline. In this highly volatile and unstable series of recent years, the total housing-starts count fell at an annualized quarter-to-quarter pace of 23.7% (-23.7%) in first-quarter 2015, rose at an annualized 87.7% pace in second-quarter 2015, rose by 1.9% in third-quarter 2015 and then contracted at an annualized pace of 12.0% (-12.0%) in fourth-quarter 2015.

First-quarter 2016 activity showed an annualized quarterly gain of 10.7%, while second-quarter 2016 rose by 1.5%. Third-quarter 2016 activity contracted on both an annual and quarterly basis, down year-to-year by 1.0% (-1.0%), the first annual decline since first-quarter 2014, and down at an annualized quarterly pace of 2.7% (-2.7%). Fourth-quarter 2016 housing starts showed annualized quarterly growth of 39.0%, up by 11.0% year-to-year.

First-quarter 2017 annualized quarterly change was a contraction of 3.4% (-3.4%), with year-to-year change slowing to 7.3%. Second-quarter 2017 showed an annualized quarter-to-quarter contraction of 21.0% (-21.0%), with year-to-year change slowing to 0.8%. Initial full reporting for third-quarter 2017 Housing Starts activity was an annualized pace of contraction of 0.6% (-0.6%), up by 1.3% year-to-year.

In comparison/contrast, Building Permits, the theoretically-leading series to Housing Starts, showed an annualized quarterly contraction of 2.8% (-2.8%) in first-quarter 2017, with year-to-year change of 7.9%. Second-quarter 2017 showed an annualized contraction of 11.0% (-11.0%), with year-to-year growth slowing to 3.9%. Based on initial full reporting for third-quarter 2017, the quarter showed an annualized gain of 5.1%, with an annual gain of 2.0%.

Consumer Liquidity Problems Continue to Impair Residential Construction Activity. The extreme liquidity bind besetting consumers continues to constrain residential real estate activity, as discussed in the *Consumer Liquidity Watch* (see *Commentary No. 915*). Without sustainable growth in real income, and without the ability and/or willingness to take on meaningful new debt in order to make up for an income shortfall, the U.S. consumer remains unable to sustain positive growth in domestic personal consumption, including aggregate real estate activity. That circumstance—in the last ten-plus years of economic collapse and stagnation—has continued to prevent a normal recovery in broad U.S. economic activity, 73.1% of which is dependent on real personal spending, including residential construction.

September 2017 Housing Starts, Headline Detail. The always-unstable and highly-volatile aggregate Housing Starts series declined month-to-month in September 2017, in the context of a small upside revision to August activity and small downside revision to July. The Census Bureau and Department of Housing and Urban Development (HUD) reported October 18th, a statistically-insignificant, seasonally-adjusted, headline monthly decline in September 2017 housing starts of 4.7% (-4.7%) +/- 9.5% (all confidence intervals are expressed at the 95% level). That followed revised declines of 0.2% (-0.2%) [previously down by 0.8% (-0.8%)] in August and 2.6% (-2.6%) [previously 2.2% (-2.2%), initially down by 4.8% (-4.8%)] in July. Net of the prior-period revisions, headline September Housing Starts declined in the month by 4.5% [-4.5%], instead of the headline decline of 4.7% (-4.7%). Level-of-activity aggregate detail is plotted in *Graphs 10* to *13* of the *Executive Summary*, and in *Graphs 42*, *44*, *45* and *46* at the end of this section.

Year-to-year change in the seasonally-adjusted, September 2017 aggregate housing-starts measure was a statistically-insignificant gain of 6.1% +/- 10.3%, versus a revised gain of 1.6% [previously 1.4%] in August 2017 and a revised decline of 3.11% (-3.11%) [previously down by 2.7% (-2.7%), initially down by 5.6% (-5.6%)] in July 2017.

The September 2017 headline decline of 4.7% (-4.7%) in total Housing Starts encompassed a monthly decline of 4.6% (-4.6%) in the "one unit" category and a decline of 6.2% (-6.2%) in the "five units or more" category. There is a missing balance in the "two to four units" category, which gained month-to-month in September by 33.3%. Where that category is considered too small to be meaningful, it did affect the aggregates minimally, as discussed later in the broader, aggregate "multiple unit" category. As most commonly is the circumstance, not one of the monthly headline changes was statistically significant.

Housing Starts By-Unit Category. *[See* Graphs *10 to 17 in the* Executive Summary.*]* Where the irregular housing starts series can show varying patterns, that partially is due to a reporting mix of residential construction products, with the largest physical-count category of one-unit structure housing starts—generally for individual consumption, resulting in new home sales—versus multiple-unit structure starts that generally reflect the building of condominiums, rental and apartment units.

Housing starts for single-unit structures in September 2017 declined month-to-month by a statistically-insignificant 4.6% (-4.6%) +/- 9.9%, following a revised gain of 3.3% [previously 1.6%] in August and a revised July decline of 1.9% (-1.9%) [previously down by 2.2% (-2.2%), initially down by 0.5% (-0.5%)]. September 2017 single-unit starts showed a statistically-insignificant annual gain of 5.9% +/- 10.1%, versus revised gains of 19.5% [previously 17.1%] in August 2017 and 8.9% [previously 8.5%, initially 10.9%] in July 2017 (see *Graphs 10, 11, 14 and 15* in the *Executive Summary*).

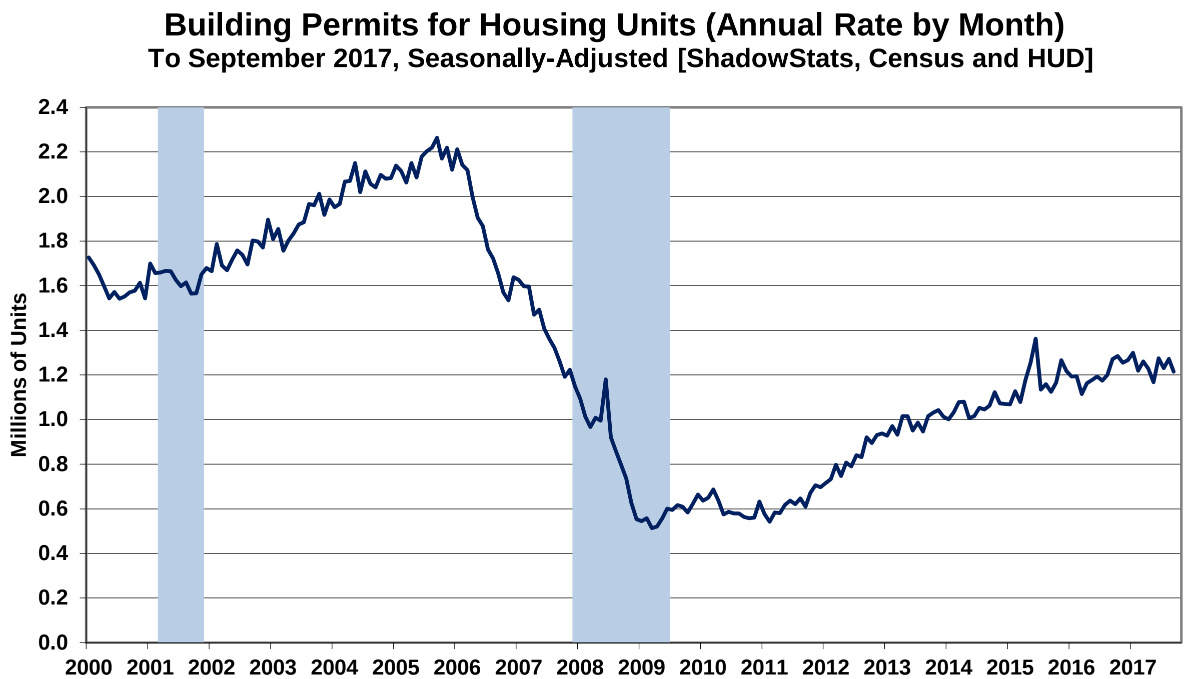
Housing starts for apartment buildings, condominiums, etc. (generally 5-units-or-more) in September 2017 declined month-to-month by a statistically-insignificant 6.2% (-6.2%) +/- 23.8%, versus revised declines of 8.4% (-8.4%) [previously 5.8% (-5.8%)] in August and 5.9% (-5.9%) [previously down by 3.1% (-3.1%), initially down by 17.1% (-17.1%)] in July. A statistically-insignificant year-to-year gain of 7.9% +/- 26.6% in September 2017, followed revised annual declines of 27.4% (-27.4%) [previously 23.1% (-23.1%)] in August 2017 and 24.9% (-24.9%) [previously 22.6% (-22.6%), initially down by 35.2% (-35.2%)] in July 2017.

Expanding the multi-unit housing starts category to include 2-to-4-units plus 5-units-or-more usually reflects the bulk of rental- and apartment-unit activity. The Census Bureau does not publish estimates of the 2-to-4-units category, due to statistical significance problems (a general issue for the aggregate series). Nonetheless, the total multi-unit category can be estimated by subtracting the single-unit category from the total category (see *Graphs 10*, *11*, *16* and *17* in the *Executive Summary*).

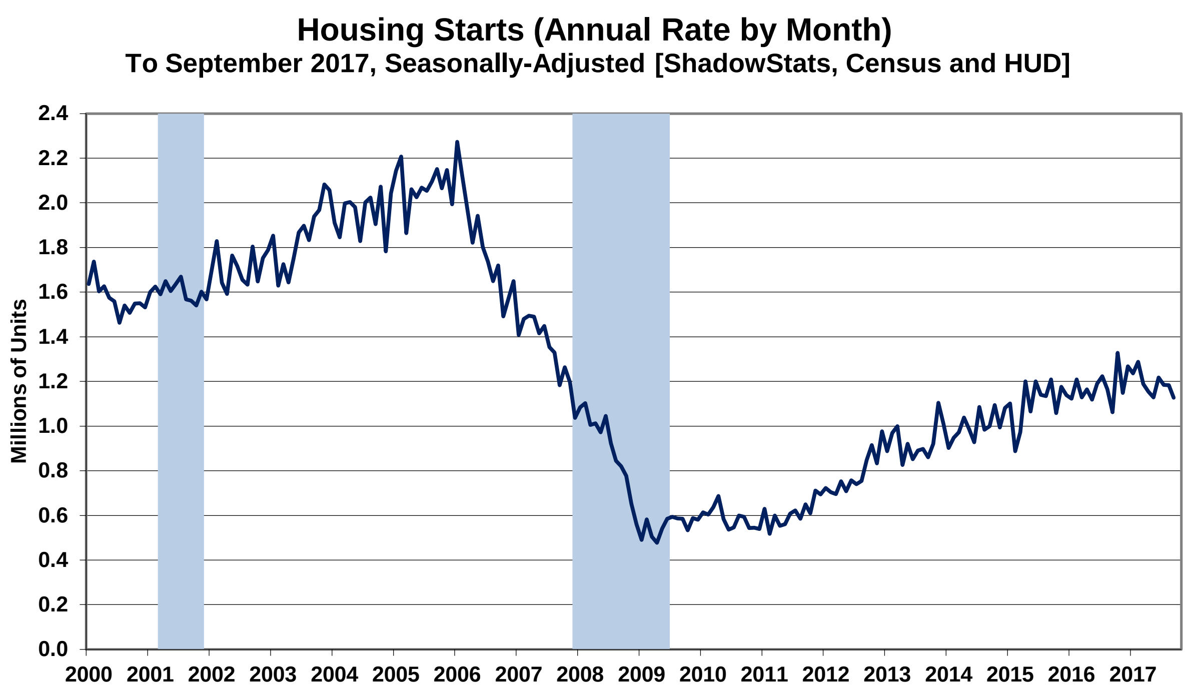
Accordingly, the statistically-insignificant September 2017 monthly decline of 4.7% (-4.7%) in aggregate starts was composed of a statistically-insignificant decline of 4.6% (-4.6%) in one-unit structures and a statistically-insignificant decline of 5.1% (-5.1%) in the multiple-unit structures categories (two-units-or-more, including the five-units-or-more category). In contrast, again, ex-two-units-or-more, the multiple-unit category contracted by 6.2% (-6.2%). Again, these series are graphed in the *Executive Summary*.

[Graphs 41 to 46 begin on the next page.
Please see the *Note on the Housing Starts Graphs* on page 13.]

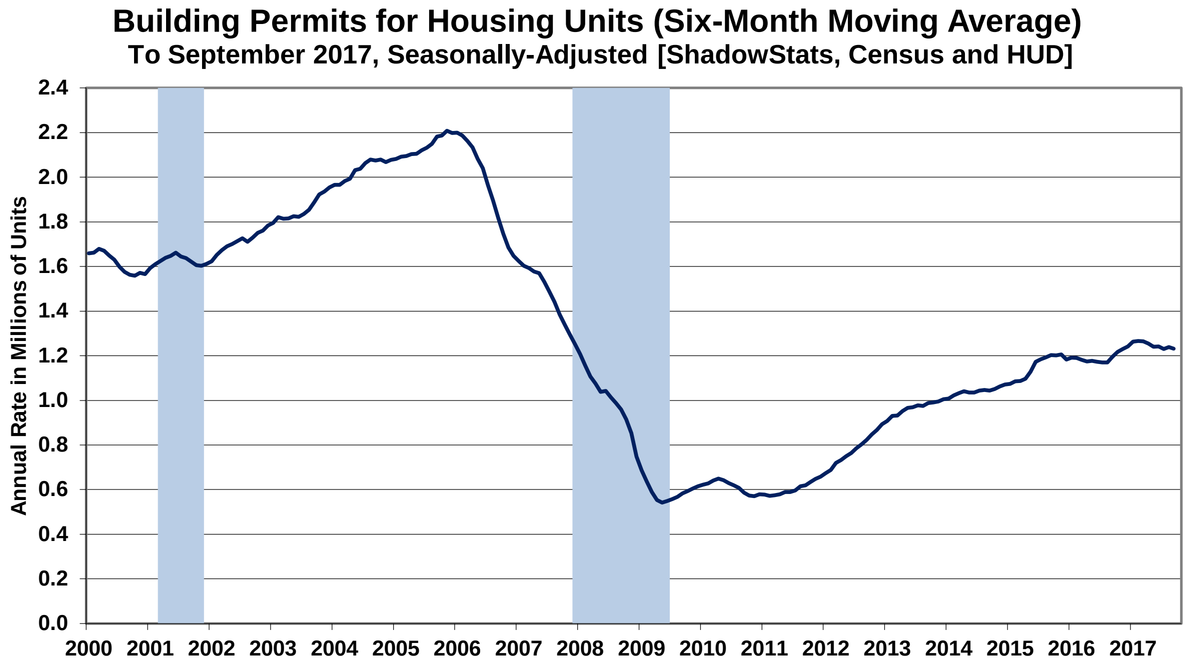
Graph 41: Building Permits (Annualized Monthly Rate of Activity), 2000 to Date



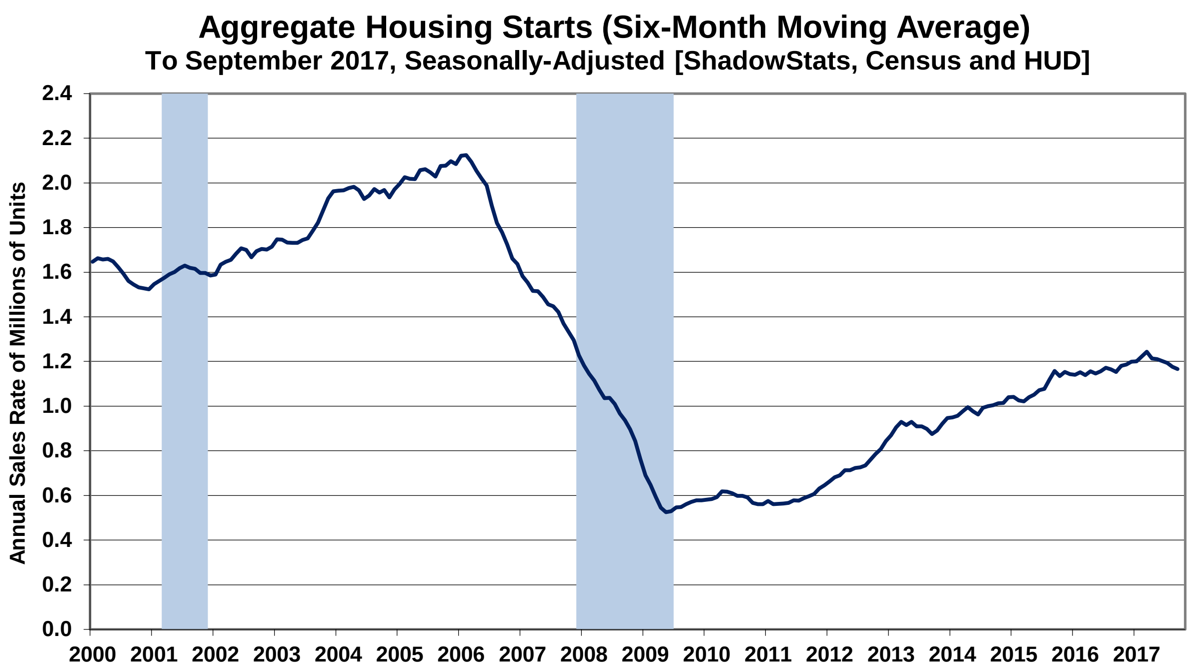
Graph 42: Housing Starts (Annualized Monthly Rate of Activity), 2000 to Date



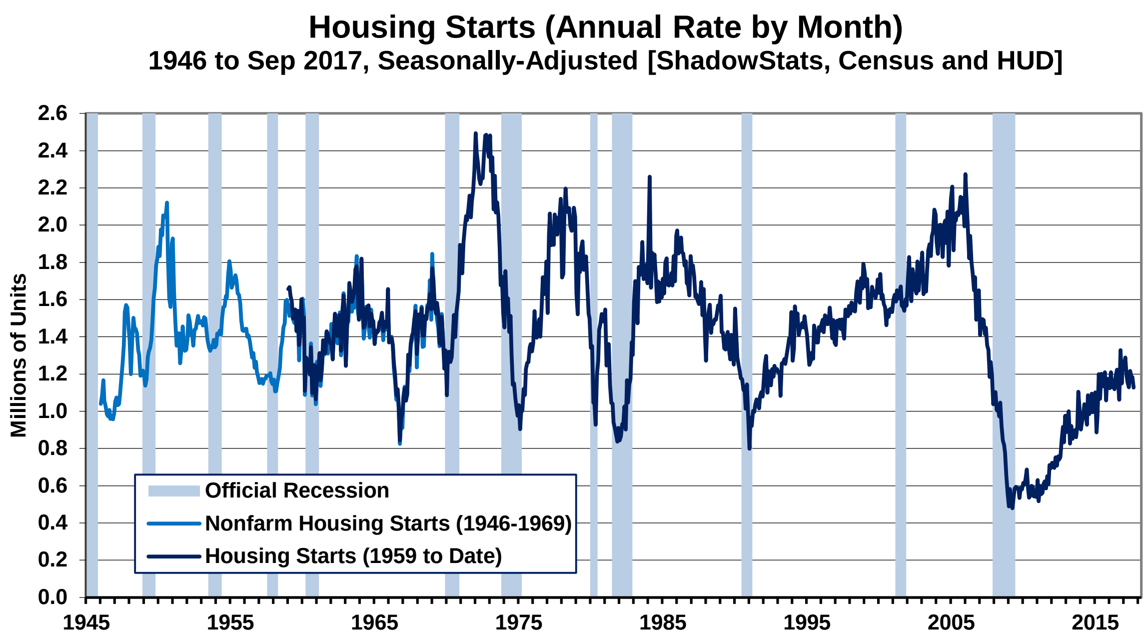
Graph 43: Building Permits (Six-Month Moving Average), 2000 to Date



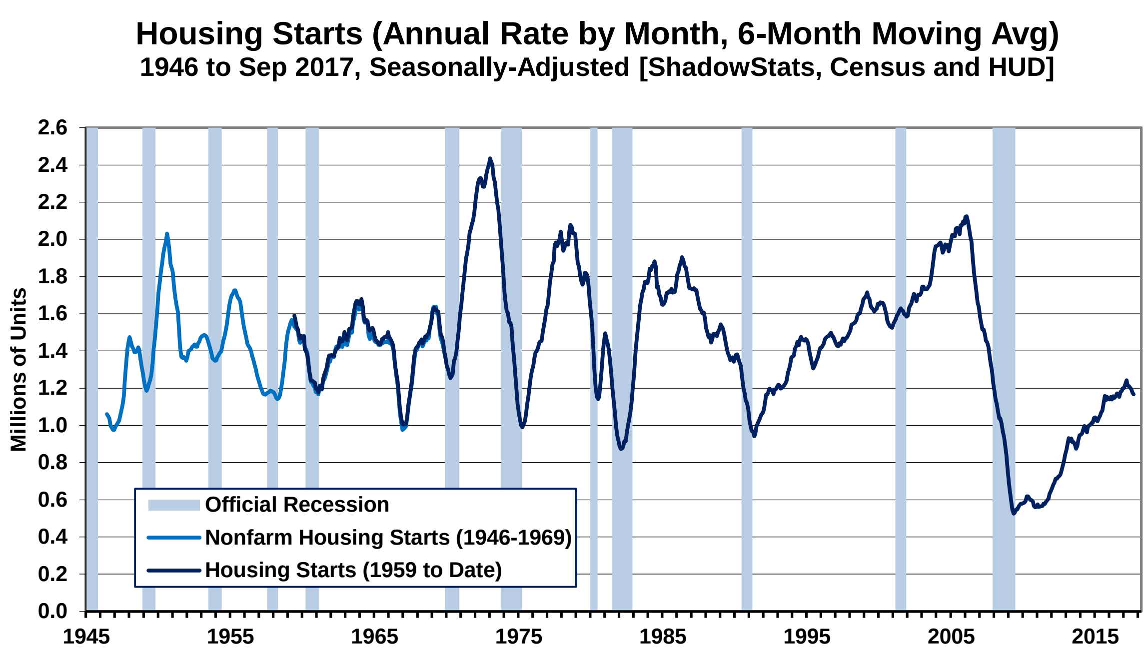
Graph 44: Housing Starts (Six-Month Moving Average), 2000 to Date



Graph 45: Housing Starts (Annualized Monthly Rate of Activity), 1946 to Date



Graph 46: Housing Starts (Annualized Monthly Rate of Activity, 6-Month Moving Avg), 1946 to Date



NEW-AND EXISTING-HOME SALES (September 2017)

New- and Existing-Home Sales Both Contracted in Second- and Third-Quarter 2017, Irrespective of Unstable Data, Holding Well Shy of Never Having Recovered Pre-Recession Peaks. Despite headline monthly gains in September for both New-Home Sales (Commerce Department) and Existing-Home Sales (National Association of Realtors), the two series contracted quarter-to-quarter in both second- and third-quarter 2017. Both series also remained well shy of ever having recovered their pre-recession peaks, with New-Home Sales still down by 51.2% (-51.2%) and Existing-Home Sales still down by 25.9% (-25.9%), respectively, from their 2005/2006 highs.

Consumer Liquidity Constraints. The extreme liquidity bind besetting consumers continues to constrain residential real estate activity (see *Consumer Liquidity Watch* *Commentary No. 915*, also the *Consumer Liquidity* section of *No. 859 Special Commentary*). Without sustainable growth in real income, and without the ability and/or willingness to take on meaningful new debt in order to make up for income shortfall, the U.S. consumer remains unable to sustain positive growth in domestic personal consumption, including real-estate activity. That circumstance—in the last ten-plus years of economic collapse and stagnation—has continued to prevent a normal recovery in broad U.S. economic activity.

Where the private housing sector never recovered from the business collapse of 2006 into 2009, there remains no chance of a near-term, sustainable turnaround in home-sales activity, without a fundamental upturn in consumer- and banking-liquidity conditions. That does not appear to be in the offing, despite any near-term boosts to activity from disaster recovery.

New-Home Sales Saw an Extraordinarily Large but Meaningless Monthly Surge. Released October 25th by the Census Bureau and Housing and Urban Development, the highly volatile and unstable New-Home Sales series, which counts home-sales contracts, exploded in an extraordinary month-to-month surge by 18.9% (+/- 22.2% at the 95% confidence interval), up by 19.1% month-to-month, net of revisions. That followed monthly declines of 3.6% (-3.6%) in August and 6.0% (-6.0%) in July. The September rebound more than compensated for any possible hurricane-related lost activity in August.

Year-to-year change in September 2017 jumped to 17.0%, having declined by 1.1% (-1.1%) in August 2017 and by 7.2% (-7.2%) in July 2017.

Nonetheless, annualized quarterly change in this highly unstable series declined by 1.1% (-1.1%) in third-quarter 2017, following a decline of 7.8% (-7.8%) in second-quarter 2017 and a gain of 39.5% in first-quarter 2017. Smoothed with a six-month moving average, this series remains in low-level, non-recovering stagnation, which recently has turned to a downtrend (see earlier *Graphs 18* and *19*).

Existing-Home Sales Also Continued in Downtrend, Despite a Monthly Uptick, Turning Negative Year-to-Year. Existing-Home Sales rose by 0.75% in September 2017, following unrevised monthly declines of 1.65% (-1.65%) in August and 1.27% (-1.27%) in July. September 2017 year-to-year growth turned negative, declining by 1.46% (-1.46%), following unrevised annual gains of 0.19% in August 2017 and 2.06% in July 2017.

Third-quarter 2017 activity contracted for the second straight quarter, down at an annualized pace of 11.67% (-11.67%), following an annualized decline of 3.97% (-3.97%) in second-quarter 2017. The September details, reflecting actual closings of home sales, were released by National Association of Realtors (NAR) on October 20th.

Proportion of Distressed Sales Held at 4% in August, While All-Cash Sales Rose to 20%. The NAR estimated the portion of September 2017 sales in "distress" at 4% (3% in foreclosure, 1% short sales), slightly off its recent low, but at the same levels as seen in August 2017 and as seen in September 2016. The NAR began surveying such numbers in October 2008. Consider, though, that October 2008 already was more than three years into the housing-market collapse.

Reflecting ongoing lending problems and stresses within the financial system, including related banking-industry and consumer-solvency issues, as well as the ongoing influx of speculative investment money into the existing-housing market, the NAR estimated that all-cash sales held at 20% September 2017, the same level as in August, but against 21% in September 2016.

Again, *Graphs 18* to *21* in the *Executive Summary* section plot both series of home sales activity.

[*Hyperinflation Watch**, **Consumer Liquidity Watch** *and* **Week, Month and Year Ahead** *sections will be updated fully in* **Special Commentary No. 918-B** *of Monday, October 30th.]

