John Williams'

Shadow Government Statistics

Analysis Behind and Beyond Government Economic Reporting

COMMENTARY NUMBER 910

August 2017 Retail Sales and Industrial Production

September 15, 2017

Net of Hurricane Harvey Effects,
Headline Economic Numbers Still Were Miserable, Suggestive of Recession

Hurricane Impact on August Activity: Mixed, Probably Net-Neutral for Retail Sales;
Accounted for 0.75% (-0.75%) of the 0.90% (-0.90%) Drop in Monthly Production

August Real Retail Sales Declined by 0.61% (-0.61%) in the Month,
Plunged by 1.24% (-1.24%) Net of Downside, Prior-Period Revisions

Third-Quarter Real Retail Sales Are Contracting at an
Early (Two-Month) Annualized Pace of 0.4% (-0.4%)

Ex-Hurricane, August Industrial Production Declined by 0.15% (-0.15%)

In the Dominant but Still-Faltering Manufacturing Sector of Production:
A Record 116 Months of Continued Non-Expansion, with No End in Sight

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PLEASE NOTE: The next regular Commentary, *Tuesday, September 19th, will cover August New Residential Construction – Housing Starts and Building Permits*.

Best wishes to all — John Williams (707) 763-5786

Today's *Opening Comments and Executive Summary* (September 15th). The ***Opening Comments*** reviews early reporting of Hurricane Harvey's economic impact, with the ***Executive Summary*** reviewing highlights of August 207 Industrial Production and Retail Sales in the context of same.

The ***Reporting Detail*** (page 9) provides a more-detailed analysis of the August Industrial Production and Retail Sales numbers.

The ***Consumer Liquidity Watch*** (page 27) has been updated for the University of Michigan's advance estimate of September 2017 Consumer Sentiment.

The ***Week, Month and Year Ahead*** (page 37) provides links to recent *Commentaries* and updates previews next week's release of August Housing Starts.

OPENING COMMENTS AND EXECUTIVE SUMMARY

Harvey Had Mixed, Effectively Neutral Impact on the 0.21% (-0.21%) Decline in Nominal August Retail Sales but Accounted for 0.75% (-0.75%) of the 0.90% (-0.90%) Drop in August Production. In the context of sharp downside revisions to previously-reported levels of June and July 2017 nominal retail sales (before inflation adjustment), headline August 2017 sales dropped by 0.21% (-0.21%), down by 0.84% (-0.84%) net of the revisions, versus July activity. The economic consensus had been for a monthly gain of 0.1% in nominal retail sales. Where the June and July revisions were independent of Harvey, August activity was affected, but with mixed results, suggested by the Commerce Department as effectively neutral impact, described here: *Hurricane Harvey Impact on August Retail Sales*. The Commerce Department noted that its surveying detail was not regional by nature, but that its survey participation, which includes the national chains, was close to normal, and anecdotally, retail sales activity in the affected region reflected spikes in people buying building supplies and stocking up on necessities, offsetting declines in other activity.

Where the jump in the headline, seasonally-adjusted August 2017 CPI-U to 0.40% included some minimal spike related to Harvey's upside impact on gasoline prices (see prior *Commentary No. 909*), real retail sales in August 2017 declined month-to-month by 0.61% (-0.61%), and were down for the month by 1.24% (-1.24%), net of prior-period revisions.

In contrast to the Commerce Department's qualified assessments of Harvey-related impact on retail sales activity, the Federal Reserve Board, which runs a relatively more-rigorous monthly survey of national industrial production, estimated that Harvey reduced the level of August 2017 production by about 0.75% (-0.75%) from what would have been seen otherwise: *Hurricane Harvey Impact on August Industrial Production*. Particularly hit were regional-production and mining categories tied to petroleum-related exploration, and refinement. Utility usage dropped sharply, but that was attributed primarily to seasonally milder-than-normal weather in the East reducing usage of air-conditioning.

Against economic consensus expectations for a monthly production gain of 0.1% in August, and in the context of upside revisions to pre-Harvey production activity in July, headline August 2017 production dropped by 0.90% (-0.90%), which suggests that headline production otherwise declined by roughly 0.15% (-0.15%), net of Harvey's estimated, negative impact of 0.75% (-0.75%) on monthly growth.

EXECUTIVE SUMMARY: Industrial Production—August 2017—Bulk of 0.90% (-0.90%) Plunge in August Activity Attributed to Hurricane Harvey. The Federal Reserve Board estimated that Hurricane Harvey reduced the level of August 2017 industrial production by about 0.75% (-0.75%) from what would have been seen otherwise, implying that production likely declined by about 0.15% (-0.15%) month-to-month, ex-Harvey.

Headline Industrial Production—August 2017. Headline August 2017 production declined by a hurricane deepened 0.90% (-0.90%), having gained a revised 0.39% in July and a 0.19% in June. Year-to-year change in August 2017 industrial production was 1.54%, versus 2.39% in July 2017 and 2.09% in June 2017.

Detailed by major production sector or industry group (see *Graphs 7*, *9*, *14* and *16* in the *Reporting Detail*), the August 2017 monthly aggregate decline of 0.90% (-0.90%) was composed of a monthly decline of 0.28% (-0.28%) in manufacturing activity, a 5.46% (-5.46%) decline in utilities and a decline of 0.75% (-0.75%) in mining activity (including oil and gas production). All those areas suffered major distortions from unusual weather.

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 today's headline production activity for August 2017, index level and annual growth details are found in and plotted in the *Reporting Detail* (*Graphs 5* to *8*), along with the drill-down graphs of major subcomponents of the production series (*Graphs 9* to *17*).

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 had remained below pre-recession highs seen in 2007, until the headline July 2017, which just took headline growth above the December 2007 peak for a second time, but frustrated in today's headline reporting by unusual factors, 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 retail sales, new orders for durable goods and the GDP. Those "corrected" numbers are covered respectively in *Graphs 3* and *4* of the next section, *Commentary No. 906*, *Commentary No. 907*, and also in the *ECONOMY* section of *No. 859 Special Commentary*. 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 7* in the *Reporting Detail* section).

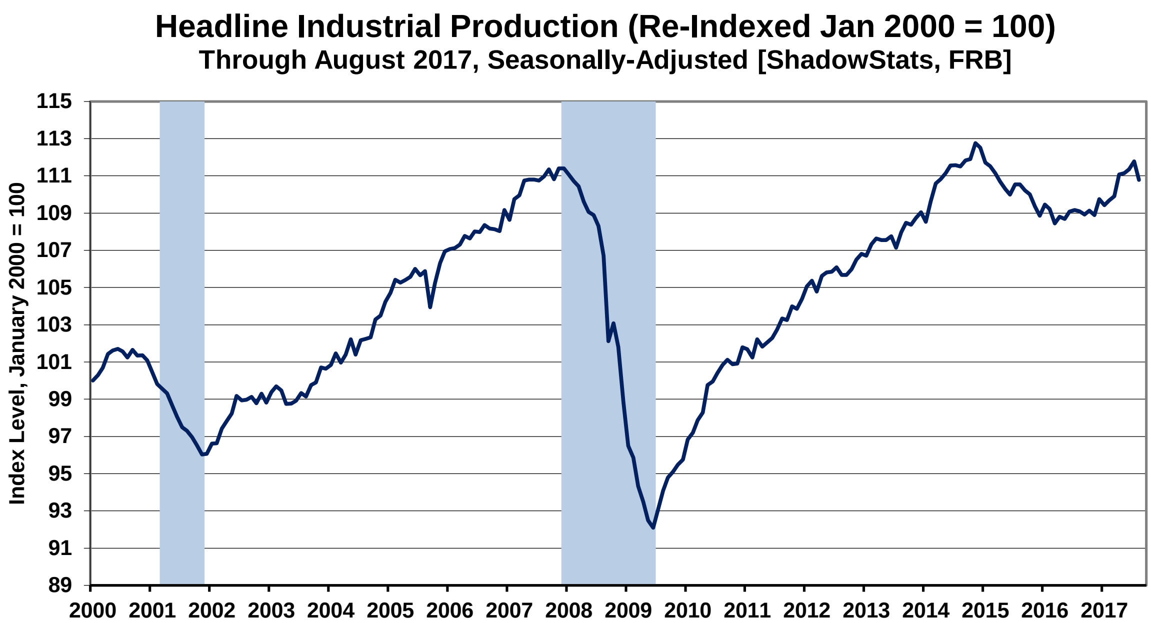
Graph 2 is a recast version of *Graph 1*, corrected for the estimated understatement of the inflation used in deflating certain components of the production index. Estimated hedonic-inflation adjustments have been backed-out of the official industrial-production deflators used for headline reporting.

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 uptick recent activity.

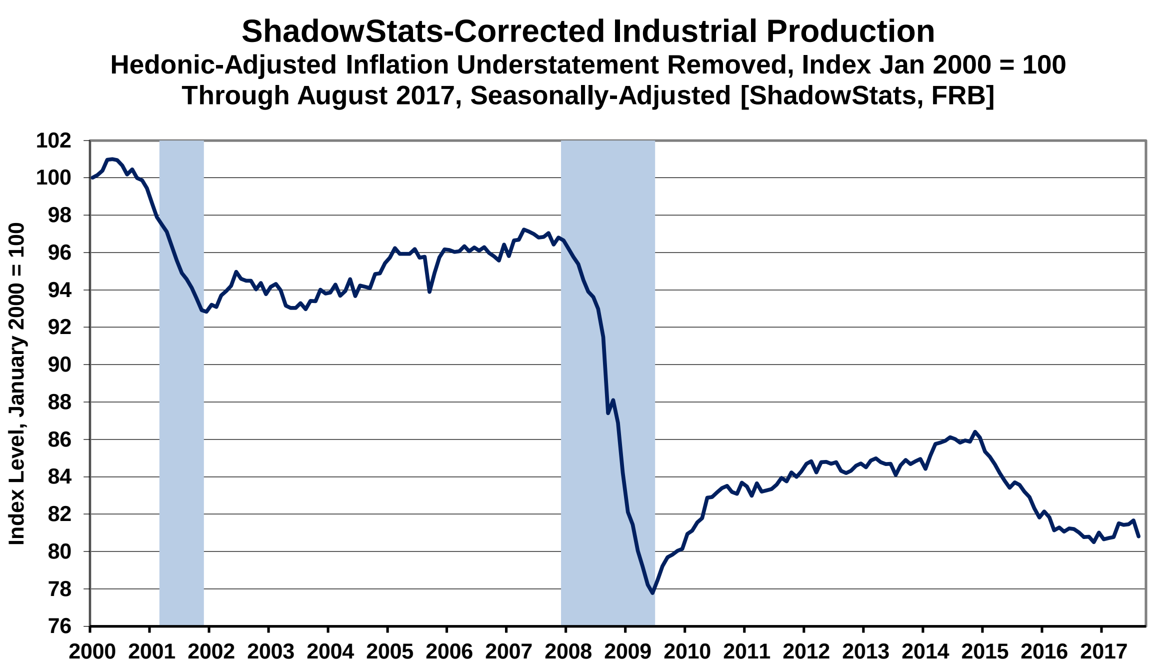
Where the corrected series has remained well shy of a formal recovery, both the official and corrected series suffered an outright contraction in both first- and second-quarter 2015; that is a pattern of severe economic weakness last seen during the economic collapse. Despite the brief third-quarter 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 early third-quarter 2017 activity suggesting continued movement in that area, 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)



Retail Sales (Nominal and Real)—August 2017—On Top of Sharp of Downside Revisions to Activity in June and July, August Sales Plunged, Consistent with an Unfolding Recession. Against consensus expectations for a monthly gain of 0.1% to 0.2%, and in the context of negligible net impact on aggregate sales activity from Hurricane Harvey, August 2017 nominal retail sales dropped by a headline 0.21% (-0.21%), versus downwardly-revised activity in both June and July, with real August sales falling by 0.61% (-0.61%) in the month. Net of prior-period revisions, nominal sales fell by 0.84% (-0.84%) in August, with real sales down by 1.24% (-1.24%).

***Nominal Retail Sales*.** The "advance" estimate of August 2017 Retail Sales showed a nominal (before inflation adjustment) monthly decline of 0.21% (-0.21%), following downwardly-revised monthly growth of 0.26% in July and a contraction of 0.06% (-0.06%) in June Net of the downside revision to July activity, again, August fell by 0.84% (-0.84%). Nominal year-to-year growth in August 2017 Retail Sales was 3.17%, versus downwardly-revised gains of 3.50% in July 2017 and 3.02% in June 2017.

Real Retail Sales—August 2017—In the Context of Collapsing Nominal Sales and Downside Revisions, Surging August Consumer Inflation Hit Real Retail Sales Hard. Adjusted for CPI-U inflation, real monthly growth in retail sales declined by 0.61% (-0.61%) in August 2017, versus a downwardly-revised gain of 0.18% in July and a downwardly-revised contraction of 0.03% (-0.03%) in June. Real annual Retail Sales growth sank to 1.22% in August 2017, versus downwardly revised gains of 1.74% in July 2017 and 1.36% in June 2017. Further analysis is found in the *Reporting Detail*.

Recession Signal Is in Place. During normal economic times, annual real growth in Retail Sales at or below 2.0% signals an imminent recession. That signal broadly has been in play since February 2015 (the "new" recession likely still will be timed from December 2014, based on industrial production, retail sales and other indicators), suggesting a deepening, broad economic downturn. The latest annual growth of 1.22% in August 2017 is as much of a recession warning as can be had, prior an outright quarter-to-quarter real contraction, which also appears to be unfolding in third-quarter 2017 activity. Again, see the *Reporting Detail.*

Real Retail Sales Graphs, Corrected and Otherwise. In the *Reporting Detail*, *Graphs 23* and *25* show the level of real retail sales activity (deflated by the CPI-U), while *Graphs 24* and *26* show year-to-year percent change. The apparent "recovery" of headline real retail sales shown in the following *Graph 3* (again, see also *Graph 23* in the *Reporting Detail*) generally continued into late-2014. Although headline reporting turned down in December 2014, into first-quarter 2015, it turned higher into the third-quarter 2015, slowed to a near-standstill in fourth-quarter 2015 and contracted in first-quarter 2016, with an uptick in second-quarter 2016, renewed slippage into third-quarter 2016, a further uptick in fourth-quarter 2016 and into early-2017, but now it has turned decisively lower into August.

Nonetheless, headline real growth in retail sales continues to be overstated heavily, due to the understatement of CPI-U inflation used in deflating the retail sales series. Discussed more fully in *Chapter 9* of *2014 Hyperinflation Report—Great Economic Tumble* – *Second Installment* and *Public Commentary on Inflation Measurement*, deflation by too-low an inflation number (such as the CPI-U) results in the deflated series overstating inflation-adjusted economic growth.

Both of the accompanying graphs are indexed to January 2000 = 100.0 to maintain consistency in the series of graphs related to corrected inflation-adjustment, including the regular plots of the "corrected" industrial production index, the "corrected" new orders for durable goods and the "corrected" GDP.

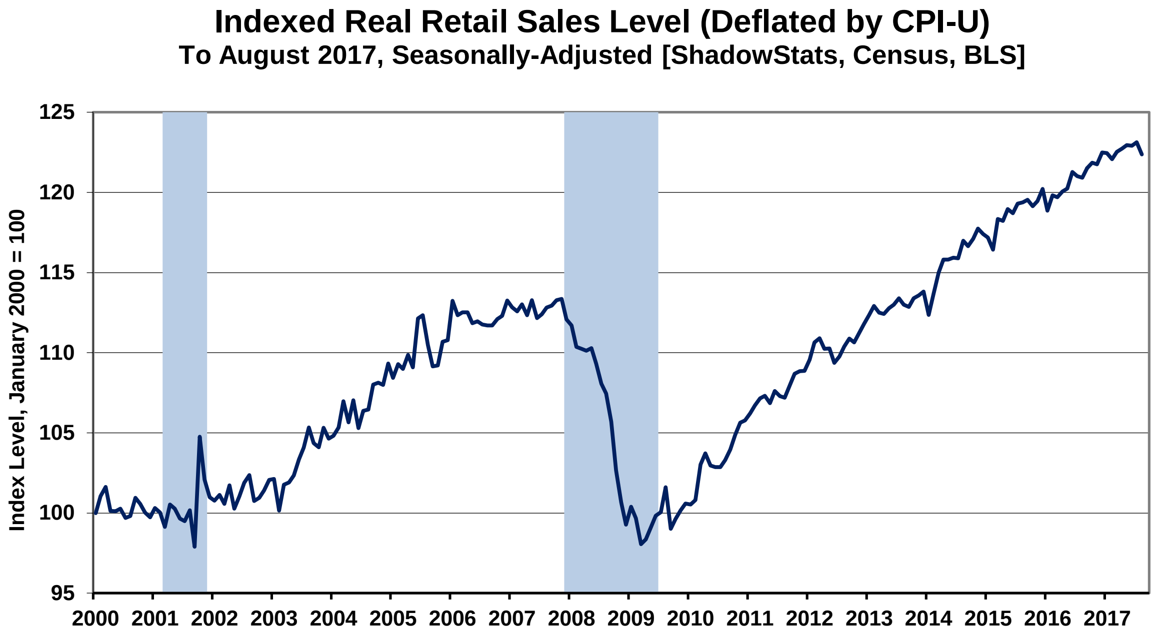
Those "corrected" numbers are covered respectively in *Graphs 1* and *2* of the prior section, *Commentary No. 906*, *Commentary No. 907* and also in *No. 859 Special Commentary*.

The first graph here reflects the official real retail sales series, except that it is indexed, instead of being expressed in dollars. The plotted patterns of activity and rates of growth are exactly the same for the official series, whether the series is indexed or expressed in dollars, again, as is evident in a comparison of *Graph 3* with *Graph 23* in the *Retail Sales—Nominal and Real* in the *Reporting Detail* section.

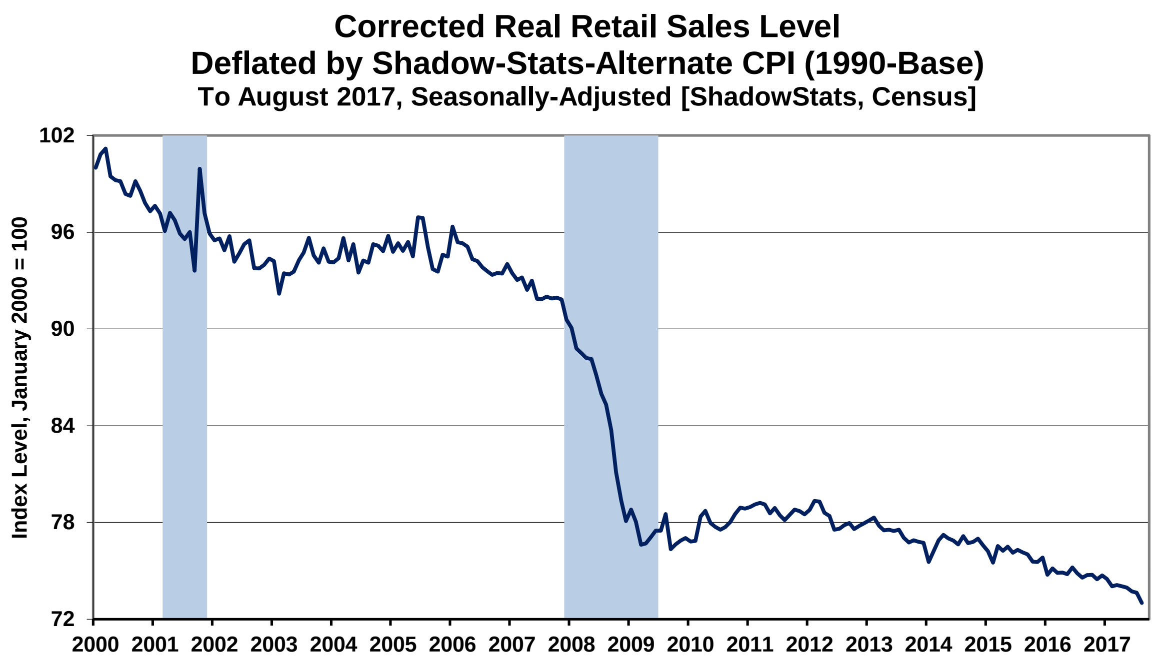
Instead of being deflated by the CPI-U, the "corrected" real retail sales numbers—in *Graph 4*—use the ShadowStats-Alternate Inflation Measure (1990-Base) for deflation. With the higher inflation of the ShadowStats measure, the revamped numbers show a pattern of plunge and stagnation and renewed downturn. That pattern generally is consistent with consumer indicators such as real average weekly earnings (see *Graph CLW-7* in the *Consumer Liquidity Watch*) and faltering consumer liquidity conditions (again see the *Consumer Liquidity Watch* and the *ECONOMY* section of *No. 859 Special Commentary*). Extended coverage is found in the *Reporting Detail*.

[Graphs 3 and 4 follow on the next page.]

Graph 3: Headline Real Retail Sales Level, Indexed to January 2000 = 100



Graph 4: "Corrected" Real Retail Sales Level, Indexed to January 2000 = 100



[The **Reporting Detail** *follows, with graphs and extended analysis.]*

REPORTING DETAIL

INDUSTRIAL PRODUCTION (August 2017)

Production Plunged by 0.90% (-0.90%) in August, of Which 0.75% (-0.75%) Was Attributed by the Fed to Hurricane Harvey. Discussed in the *Opening Comments*, the Federal Reserve Board estimated Hurricane Harvey reduced the level of August 2017 industrial production by about 0.75% (-0.75%) from what would have been seen otherwise (see ***Hurricane Harvey Impact on August Industrial Production***). Accordingly, ex-Harvey, headline production likely declined by about 0.15% (-0.15%) month-to-month.

Where regional-production and mining categories tied to petroleum-related exploration, and refinement were hit hard, such certainly will flow also into the September detail, if not beyond. Utility usage dropped sharply, but that was attributed primarily to seasonally milder-than-normal weather in the East, reducing air-conditioning usage. It was not due to lost power due to Harvey, although such power losses should be a factor in September, along with parallel impact from Hurricane Irma.

Noted in last month's production reporting in *Commentary No. 905*, July 2017 industrial production had risen enough month-to-month to push the headline production detail above its pre-recession peak activity of December 2007 by 0.14%. That was the second such "recovery" for the series, which still was shy by 1.07% (-1.07%) from topping the brief, prior two-month recovery of October and November 2014. Thanks to Harvey, headline production has fallen below its pre-recession high, once again, now down by 0.56% (-0.56%) from December 2007, and down by 1.76% (-1.76%) from the November 2014 "recovery" (see *Graph 7*). That circumstance formally blocks August 2017 as the first month of renewed expansion for the production series. These numbers, however, will revise and do not reflect regular activity. Irrespective of the short-term headline details, aggregate U.S. production activity still is about the same level as it was a decade ago.

In contrast, the broadly stagnant, but dominant Manufacturing Sector remained 6.11% (-6.11%) shy of recovering its pre-recession peak of December 2007, having now completed a record 116 consecutive months of non-expansion (see *Graph 9*). Where the manufacturing sector declined month-to-month by a headline 0.28% (-0.28%) in August 2017, the Fed attributed a hit to the monthly manufacturing sector of 0.75% (-0.75%), the same level as for overall production, from Harvey's impact. That indicates manufacturing would have gained about 0.47% for the month, but for the storm. Accordingly, with monthly growth patterns in disarray, the usual graphs are displayed here, but the regular month-to-month commentary (see *Commentary No. 905*, incorporated here by reference) will be abbreviated or adjusted in the context of the unusual circumstances.

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 9*).

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 13.7% above its pre-recession peak (see *Commentary No. 907*). 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—August 2017. The Federal Reserve Board released its first estimate of seasonally-adjusted, August 2017 Industrial Production on September 15th. Headline August 2017 production declined by 0.90% (-0.90%), having gained a revised 0.39% [previously 0.19%] in July, following a revised gain of 0.19% [previously 0.35%, initially 0.39%] in June, a revised gain of 0.06% [previously unchanged at 0.00%, a gain of 0.06%, initially unchanged at 0.00%] in May, a revised gain of 1.06% [previously 0.94%, 0.84%, 1.13%, initially 0.98%] in April, and a revised gain of 0.21% [previously 0.22%, 0.11%, 0.41%, initially 0.55%] in March. Net of prior-period revisions, August 2017 production declined month-to-month by 0.70% (-0.70%).

Headline Monthly August 2017 Growth by Major Sector. Detailed by major industry group (see *Graphs 7*, *9*, *14* and *16*), the headline August 2017 monthly aggregate decline of 0.90% (-0.90%) was composed of a monthly decline of 0.28% (-0.28%) in manufacturing activity, a 5.46% (-5.46%) decline in utilities and a decline of 0.75% (-0.75%) in mining activity (including oil and gas production).

Year-to-Year Change. Year-to-year change in August 2017 industrial production was 1.54%, versus revised monthly gains of 2.39% [previously up by 2.19%] in July 2017, 2.09% [previously 2.08%, initially 1.97%] in June 2017, 2.26% [previously 2.09%, 1.95%, initially 2.21%] in May 2017, 2.09% [previously 1.98%, 1.77%, 2.10%, initially 2.19%] in April 2017 and 1.36% [previously 1.37%, 1.26%, 1.30%, 1.54%, initially 1.53%] in March 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 annual declines of 0.76% (-0.76%) in second-quarter 2015, 1.08% (-1.08%) in third-quarter 2015 and by 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 by quarter rose by a revised 0.59%, the first annual gain since first-quarter 2015. Second-quarter 2017 production gained year-to-year by a revised 2.15%, with early, distorted detail for third-quarter activity suggesting an annual gain of 2.03%.

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 2016 declined by 1.34% (-1.34%), quarter-to-quarter, with a second-quarter 2016 quarterly decline of 0.68% (-0.68%). Third-quarter 2016 industrial production expanded at an annualized pace of 0.78%, with the fourth-quarter 2016 gain a 0.70%.

The first-quarter 2017 annualized quarterly gain was 1.54%. The second-quarter 2017 gain was 5.66%, with distorted third-quarter 2017 on early track for a gain of 0.33%.

Production Graphs. The regular two sets of long- and short-term plots of industrial production levels and annual growth rates (*Graphs 5* to *8*) set the background for the drill-down detail graphs of various components of the aggregate industrial series (*Graphs 9* to *22*).

Graphs 5 and *6*, and *Graphs 7* and *8* show headline industrial production activity to date. *Graph 6* 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*.

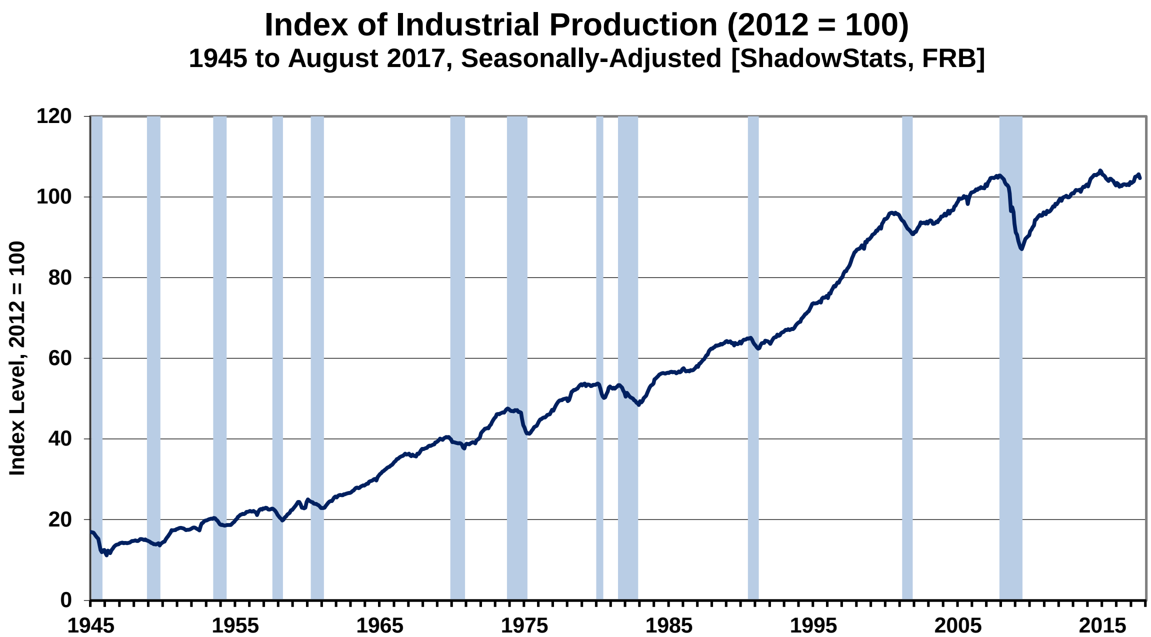
Graph 5 shows the monthly level of the production index post-World War II, with a topping-out and renewed downturn—deepening quarterly contractions in first- and second-quarter 2015, with a bounce in third-quarter 2015, followed by renewed and deeper contractions in fourth-quarter 2015 and first- and second-quarter 2016, a gain in July and fall-back in August 2017. Such patterns of monthly, quarterly and annual declines post late-2014 to the onset of 2017 (see *Graph 6*) were seen last in the economic collapse into 2009, and historically never seen outside of what would be recognized as formal recessions. *Graphs 7* and *8* show the same series in near-term detail, beginning in January 2000.

Seen most clearly in *Graph 8*, 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 6*, 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.

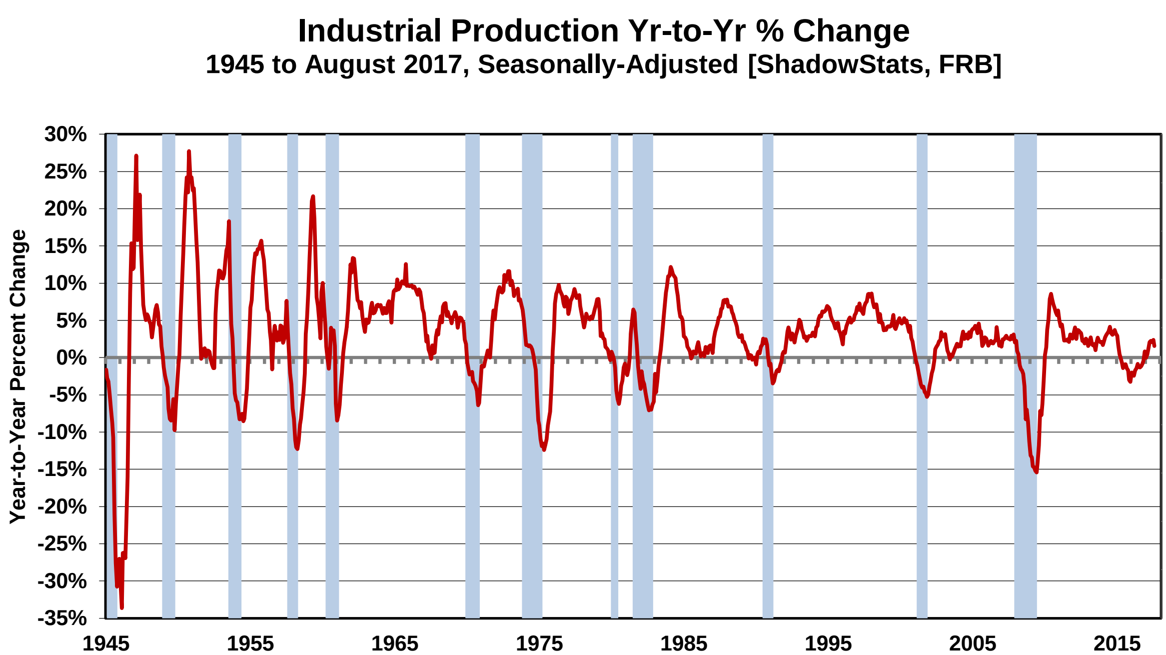
Although generally now in low-level stagnation, official production levels had moved higher since the June 2009 trough, corrected for the understatement of inflation used in deflating portions of the industrial production index (see the *Executive Summary* section, *Graph 2*). That series has shown more 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 2017.

[Graphs 5 and 6 follow on the next page.]

Graph 5: Index of Industrial Production (Aggregate) since 1945

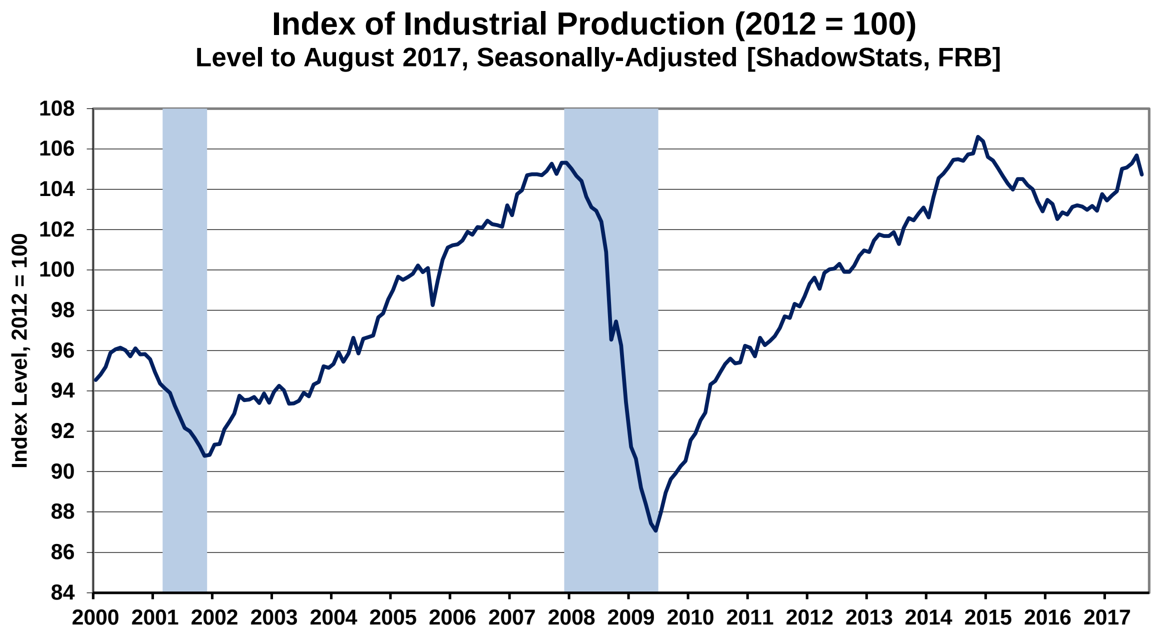


Graph 6: Industrial Production, Year-to-Year Percent Change since 1945

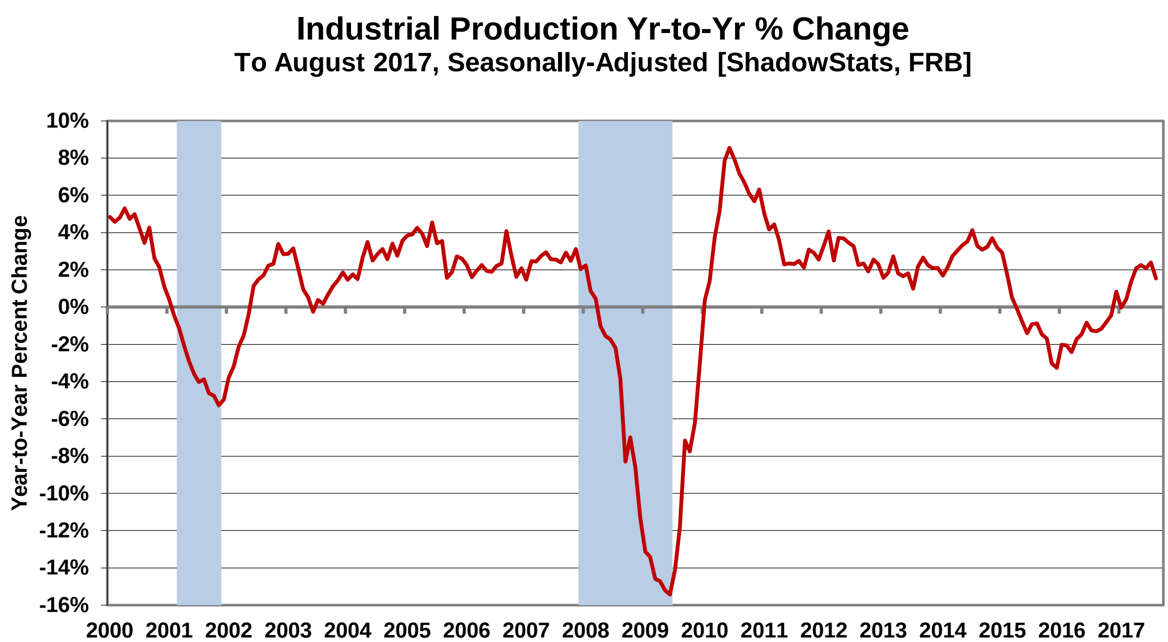


Drilling Down into the August 2017 U.S. Industrial Production Detail. *Graphs 7*, *9*, *14* and *16* show headline reporting of industrial production and its major components.

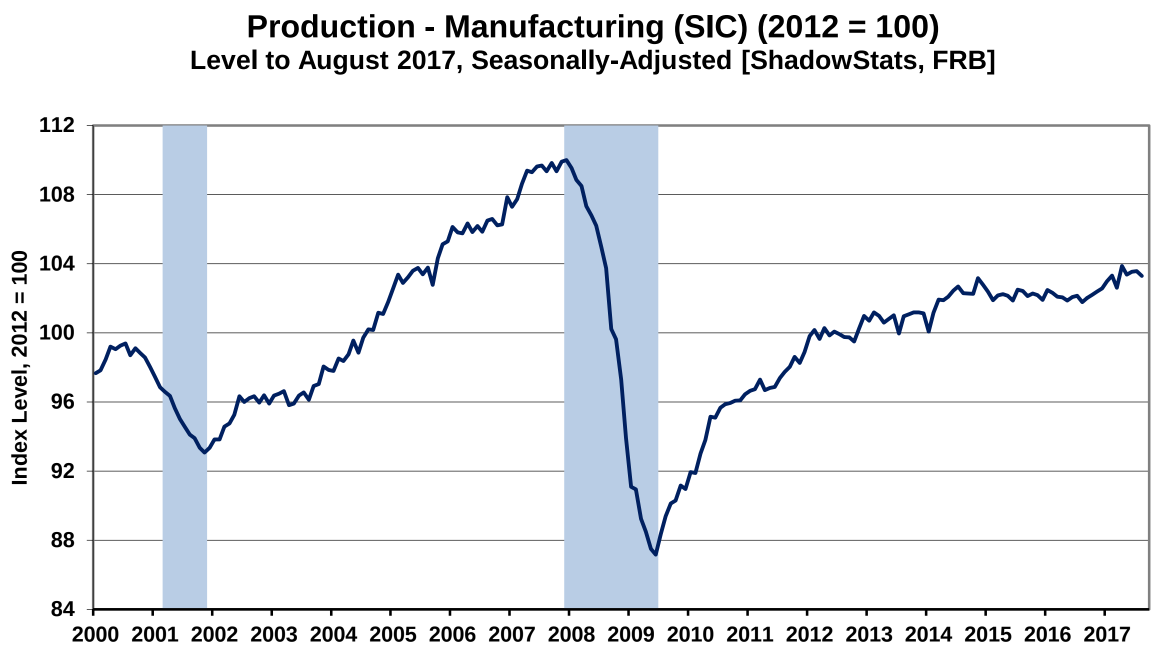
Graph 7: Index of Aggregate Industrial Production since 2000



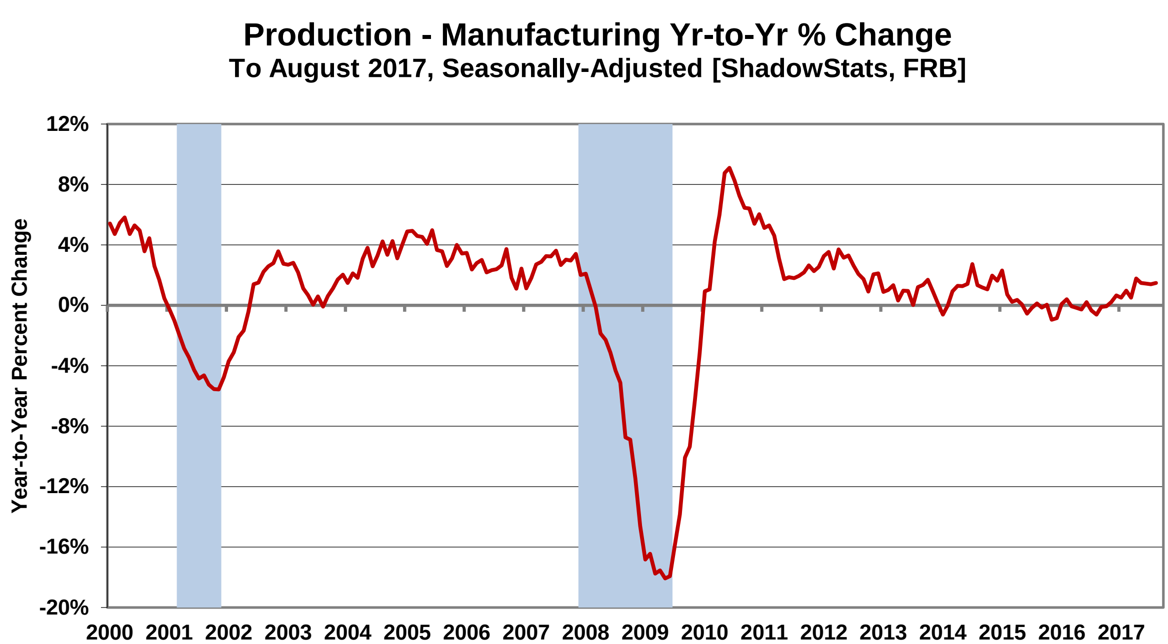
Graph 8: Aggregate Industrial Production, Year-to-Year Percent Change since 2000



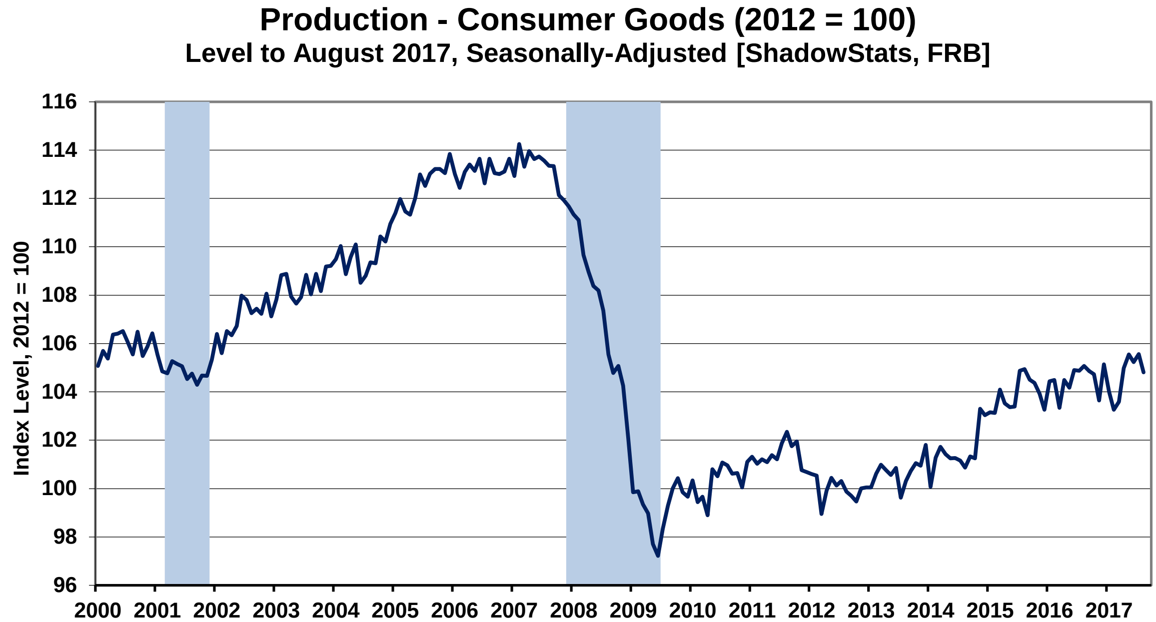
Graph 9: Industrial Production - Manufacturing (76.4% of the IIP in 2016)



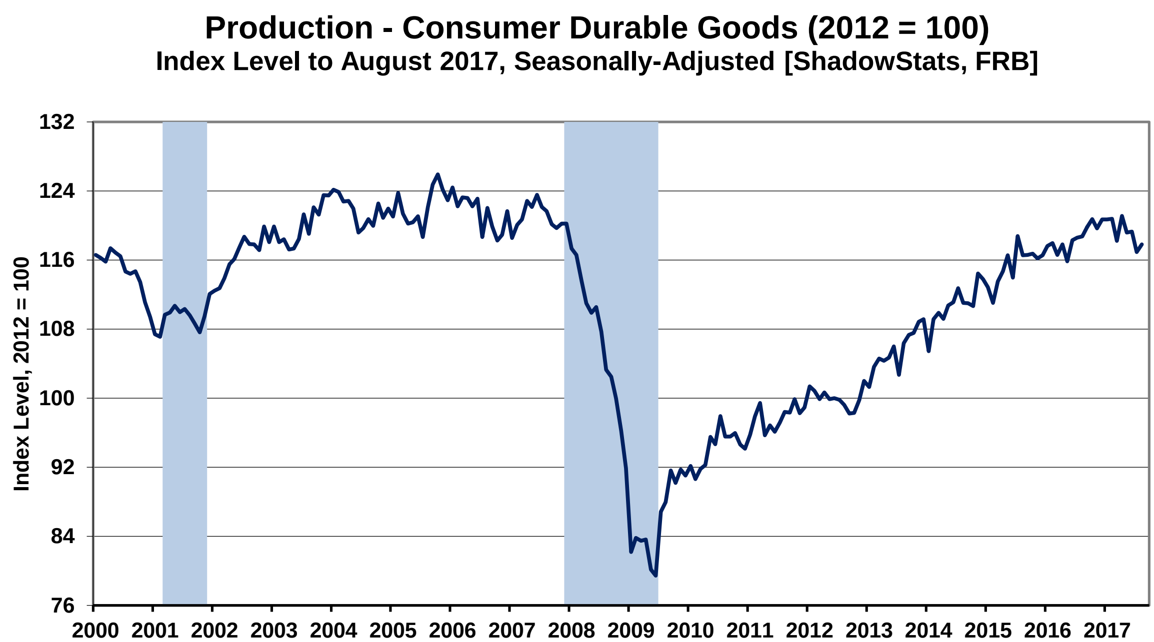
Graph 10: Industrial Production - Manufacturing, Year-to-Year Percent Change Since 2000



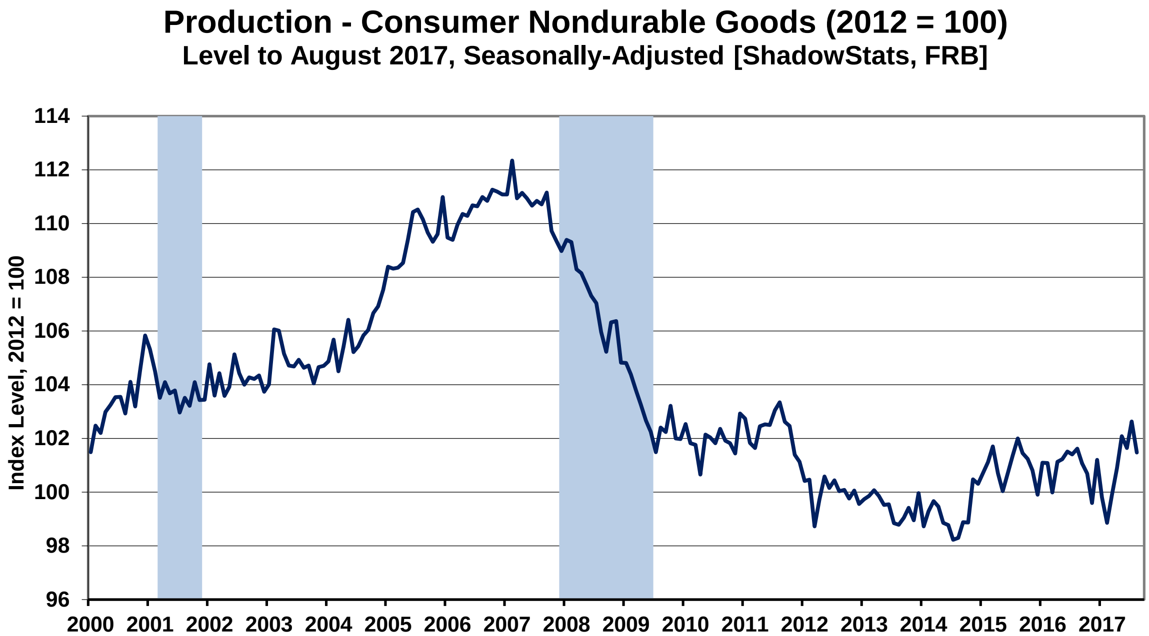
Graph 11: Consumer Goods (28.2% of the Aggregate in 2016)



Graph 12: Durable Consumer Goods (6.3% of the Aggregate in 2016)



Graph 13: Nondurable Consumer Goods (21.9% of the Aggregate in 2016)



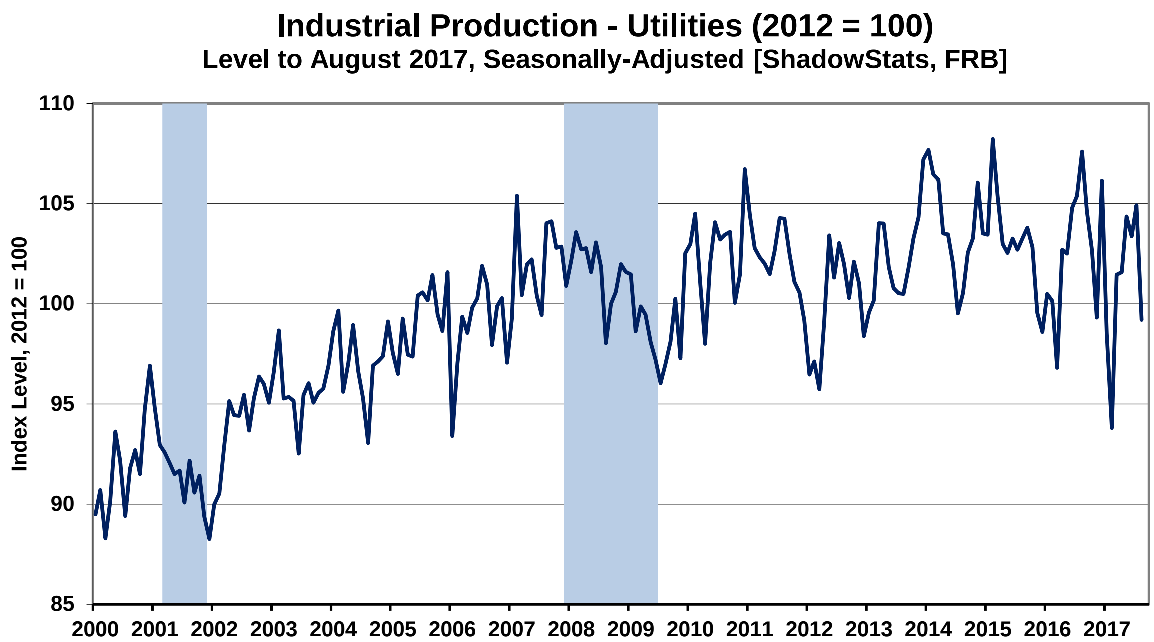
The aggregate index (*Graph 7*) contracted quarter-to-quarter in both first- and second-quarter 2015, with a third-quarter 2015 bounce, followed by ongoing, consecutive quarterly contractions from fourth-quarter 2015 through second-quarter 2016. Year-to-year declines by quarter were seen for seven consecutive quarters, from second-quarter 2015 through fourth-quarter 2016, with first-quarter 2017 activity positive on both a quarterly and annual basis, a trend continuing into third-quarter 2017. Production levels through June 2017 had held below the peak activity seen before the collapse into 2009, but minimally reclaimed that December 2007 level in July 2017 with weather distortions, again, in the August detail.

Shown in *Graphs 9, 14* and *16* are the three major industry sectors, Manufacturing, Utilities and Mining, all of which were distorted heavily to the downside by weather in the latest detail. The Manufacturing graph precede this, the other graphs follow, updated for distorted detail, subject to revisions and added commentary in the next couple of months. *Graphs 10*, *15* and *17*, show the respective plots of year-to-year change for those series.

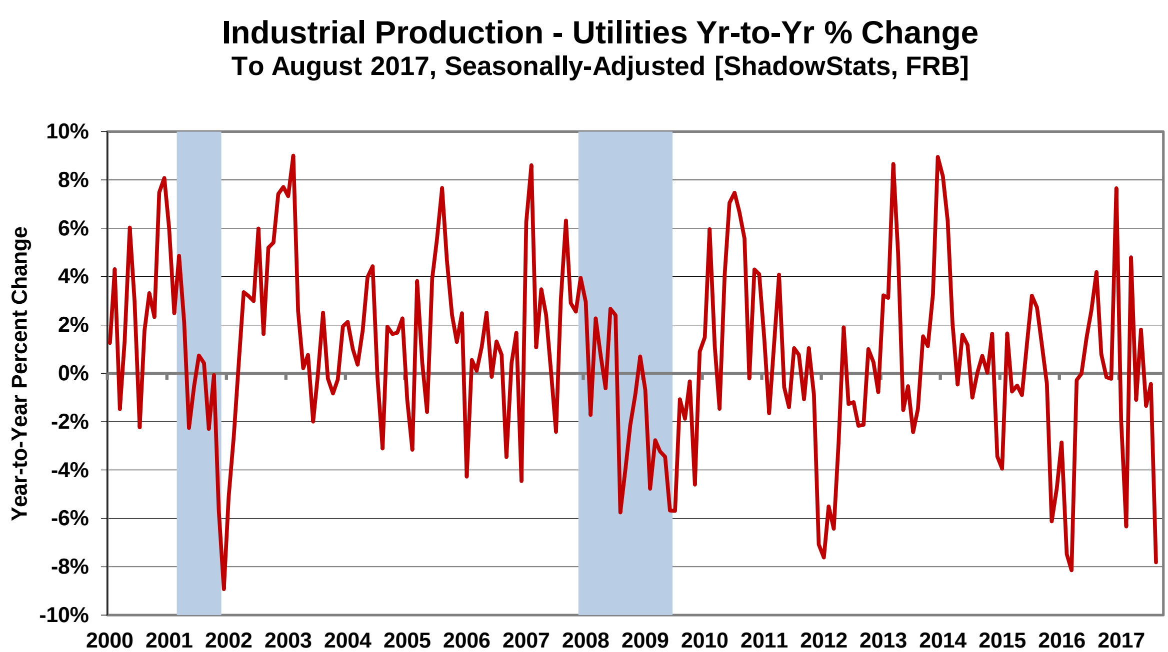
The preceding Manufacturing *Graphs 9* to *13* include plots of various levels of consumer goods production (*Graphs 11* to *13*), all impacted by weather distortions.

The next two *Graphs 14* and *15* reflect weather-impacted Utilities activity. While the final set of Mining *Graphs 16* to *22,* encompasses plots of related miming/oil production or exploration activity (*Graphs 18* to *22*), with the oil extraction and drilling graphs directly impacted (hit) by weather activity.

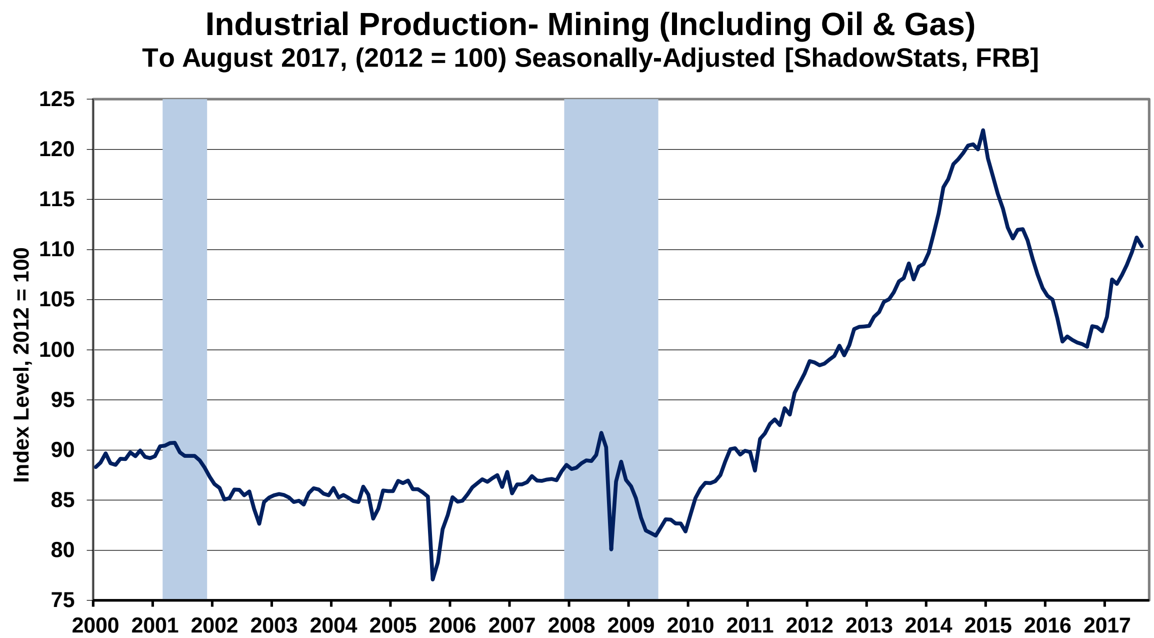
Graph 14: Industrial Production - Utilities (10.6% of the Aggregate in 2016)



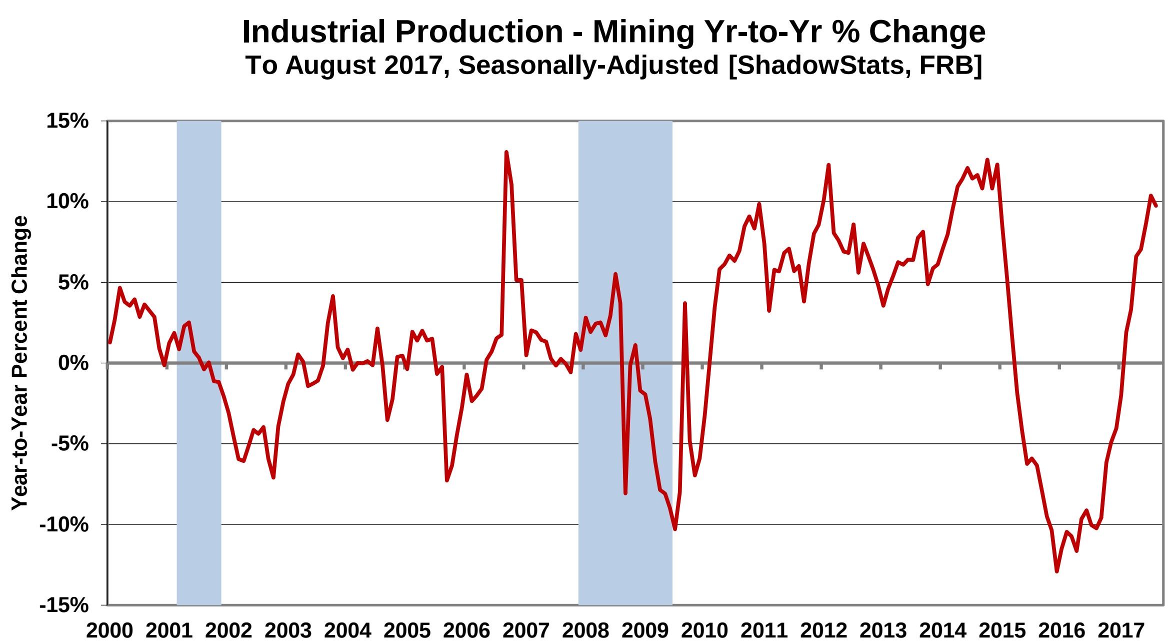
Graph 15: Industrial Production - Utilities, Year-to-Year Percent Change Since 2000



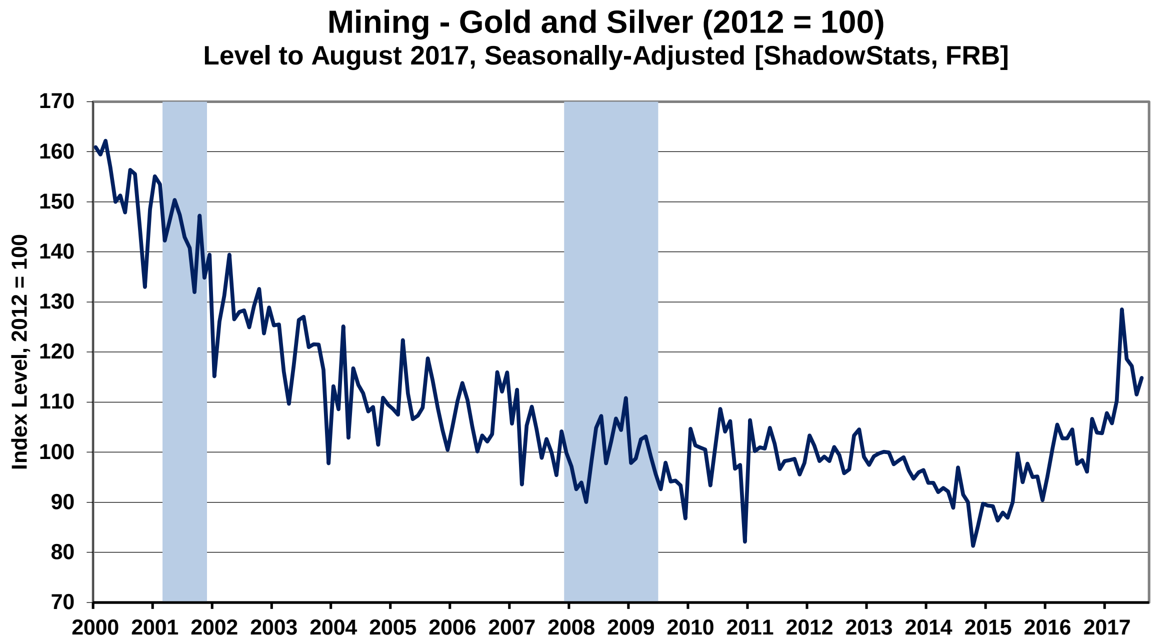
Graph 16: Industrial Production - Mining, Including Oil and Gas (12.9% of the Aggregate in 2016)



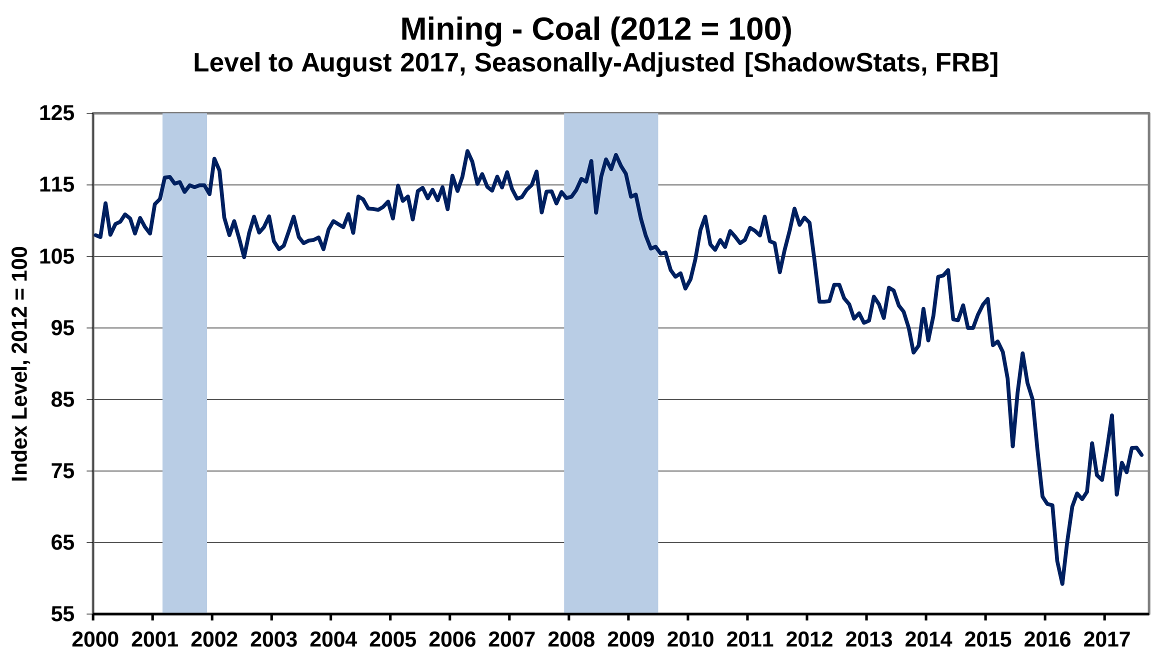
Graph 17: Industrial Production - Mining, Year-to-Year Percent Change



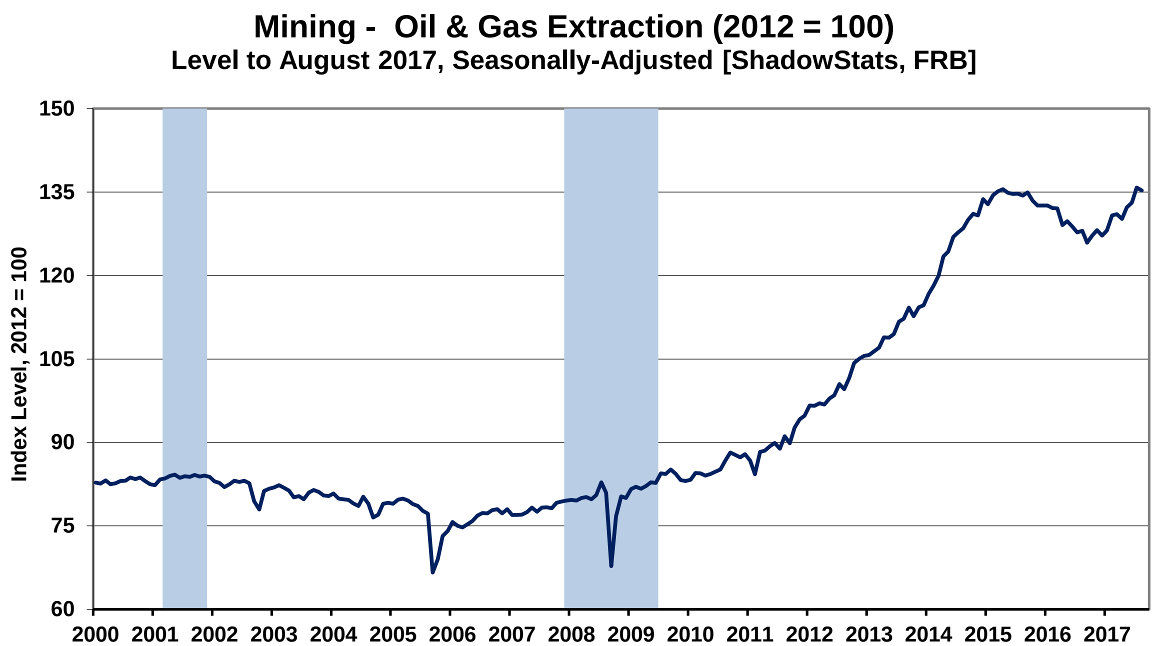
Graph 18: Mining – Gold and Silver Mining (Since 2000)



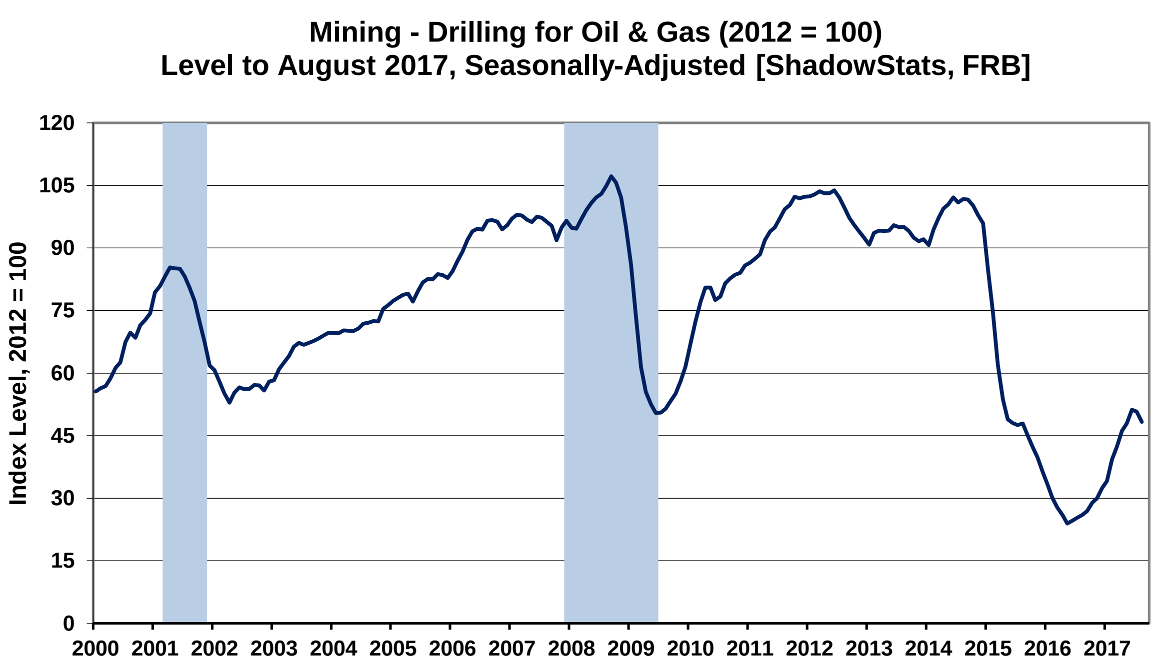
Graph 19: Mining - Coal Mining (Since 2000)



Graph 20: Mining – U.S. Oil & Gas Extraction (Since 2000)



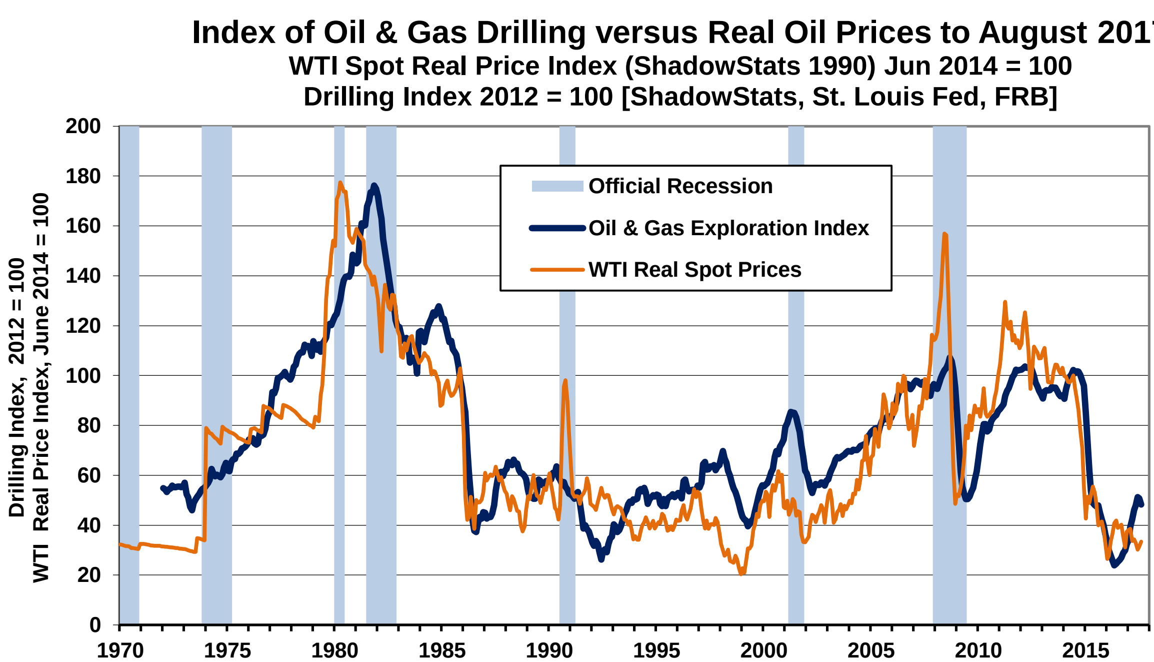
Graph 21: U.S. Drilling for Oil & Gas (Since 2000)



Shown in *Graph 22,* 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. See the discussion in today's *Opening Comments*.

Graph 22: Mining – U.S. Drilling for Oil & Gas versus Real Oil Prices (WTI ShadowStats 1990 Base)



RETAIL SALES—Nominal and Real (August 2017)

On Top of Sharp of Downside Revisions to Activity in June and July, August Sales Plunged, Consistent with an Unfolding Recession. Against consensus expectations for a monthly gain of 0.1% to 0.2%, and in the context of negligible net impact on aggregate sales activity from Hurricane Harvey (discussed in the *Opening Comments*), nominal retail sales dropped by a headline 0.21% (-0.21%), versus downwardly revised activity in both June and July, with real retail sales falling by 0.61% (-0.61%) in the month. Net of prior-period revisions, nominal August retail sales fell by 0.84% (-0.84%), with real August retail sales down by 1.24% (-1.24%).

Prior reporting of much stronger growth had not been credible (see *Commentary No. 905*), with today's headline detail showing much-weakened real annual growth and quarterly growth patterns, with third-quarter 2017 real activity now on trend for an outright quarterly contraction.

Separately, the headline growth in August activity received a 0.16% growth spike from the inconsistent application of seasonal-factor adjustments. As with many series, such as employment and unemployment (see *Headline Distortions from Shifting Concurrent Seasonal-Adjustment Factors* on page 21 of *Commentary No. 908-B*), concurrent seasonal adjustment factors are used with the retail sales. There is nothing wrong with using concurrent seasonal adjustments—where monthly seasonal adjustments are recalculated each-and-every month based on the current headline detail—so long as all data are reported on a consistent, historical basis. Government agencies, however, do not do that (see the discussion in the *Reporting Detail - Retail Sales* section of *Commentary No. 899*, for retail sales specifics).

Nominal Retail Sales—August 2017. The Census Bureau reported this morning, September 15th, its "advance" estimate of August 2017 Retail Sales. Headline nominal activity fell by 0.21% (-0.21%) in August 2017, having gained a downwardly-revised 0.26% [previous up by 0.60%] in July and having declined by a revised 0.06% (-0.06%) [previously up by 0.26%, initially down by 0.16% (-0.16%)] in June 2017. Net the prior-month's revision, monthly August 2017 sales dropped by 0.84% (-0.84%).

Still, the headline, seasonally-adjusted August 2017 nominal monthly drop of 0.21% (-0.21%) +/- 0.59% was not statistically-significant (all confidence intervals are expressed at the 95% level) although the decline it would have been, net of revisions. The revised headline July 2017 monthly retail sales gain of 0.26% +/- 0.23% marginally was statistically-significant.

Year-to-Year Annual Change. The August 2017 nominal year-to-year change in Retail Sales showed a statistically-significant increase of 3.17% +/- 0.82%, versus revised annual gains of 3.50% [previously up by 4.22%] in July 2017 and 3.02% [previously up by 3.35%, initially 2.85%] in June 2017.

August 2017 Core Retail Sales, Net of Food and Gasoline. Reflecting an environment that in theory should be seeing the plus-side of flat seasonally-adjusted food prices [up by 0.05% in the August CPI-U per the Bureau of Labor Statistics (BLS)] and surging gasoline prices [up by 6.30% for the month on a seasonally-adjusted basis, per the BLS], seasonally-adjusted grocery-store sales rose month-to-month by a headline 0.30%, with gasoline-station sales up by 2.52% in August 2017.

Under normal conditions, the bulk of non-seasonal variability in food and gasoline sales is in pricing, instead of demand. "Core" retail sales—consistent with the Federal Reserve's historical preference for ignoring food and energy prices when "core" inflation is lower than full inflation (when the Fed is looking to downplay inflation)—are estimated using two approaches:

Version I: Nominal August 2017 versus July 2017 seasonally-adjusted retail sales series—net of total grocery store and gasoline-station sales—fell by 0.53% (-0.53%), versus the official headline aggregate sales decline of 0.21% (-0.21%).

Version II: Nominal August 2017 versus July 2017 seasonally-adjusted retail sales series—net of the monthly change in grocery store and gasoline-station revenues—declined by 0.43% (-0.43%), versus the official headline aggregate sales decline of 0.21% (-0.21%).

Real Retail Sales—August 2017—In the Context of Collapsing Nominal Sales and Downside Revisions, Surging August Consumer Inflation Hit Real Retail Sales Hard. August 2017 CPI-U inflation (released September 14th and detailed in prior *Commentary No. 909*) showed a monthly jump in seasonally-adjusted consumer inflation of 0.40%, versus a gain of 0.11% in July and a monthly decline of 0.02% (-0.02%) in June, with year-to-year seasonally-adjusted CPI-U inflation of 1.94% in August 2017, versus 1.73% in July 2017 and 1.63% in June 2017.

Accordingly, real month-to-month retail sales declined by 0.61% (-0.61%) in August 2017, versus a downwardly-revised gain of 0.18% [previously up by 0.50%] in July 2017 and a downwardly-revised contraction of 0.03% (-0.03%) [previously up by 0.29%] in June 2017. Real annual Retail Sales growth sank to 1.22% in August 2017, versus downwardly revised gains of 1.74% [previously 2.45%] in July 2017 and 1.36% [previously 1.68%] in June 2017.

Recession Signal Is in Place. During normal economic times, annual real growth in Retail Sales at or below 2.0% signals an imminent recession. That signal broadly had been in play since February 2015 (the "new" recession likely still will be timed from December 2014, based on industrial production, retail sales and other indicators), suggesting a deepening, broad economic downturn.

When that annual growth signal had moved higher, close to three-percent earlier in 2017, ShadowStats had viewed that recession signal as in temporary abeyance. Post-2017 benchmarking (*Commentary No. 882* of April 27th), however, annual growth rates shifted lower, towards two-percent, and then below, reviving that recession signal. Despite volatile near-term revisions, 1.22% year-to-year real growth in August 2017 is the most-solid recession signal since the economy crashed anew into early-2015.

Annual and Annualized Real Quarterly. First-quarter 2017 annualized quarter-to-quarter real growth in Retail Sales slowed sharply to 1.05%, versus 3.34% in fourth-quarter 2016, with annual year-to-year real growth for first quarter-2017 at 2.42%, versus 2.03% in fourth-quarter 2016.

Second-quarter 2017, annualized real quarterly growth just revised lower to 1.68% [previously 2.12%, initially 1.26%], with year-to-year quarterly change at 1.94% [previously 2.05%, initially 1.85%].

Based on two months of reporting, what had been an unsustainable, annualized early trend for the third-quarter 2017 real growth in Retail Sales of 3.01%, and year-to-year third-quarter real growth of 2.30%, based on July reporting, just revised to an annualized quarterly-contraction of 0.37% (-0.37%), with year-to-year growth of 1.33%, based on the revised July and headline August details

Structural Liquidity Issues Continue to Impair Retail Sales. An extreme consumer-liquidity bind increasingly constrains retail sales activity, as updated in the *Consumer Liquidity Watch*. 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 the income shortfall, the U.S. consumer remains unable to sustain positive growth in domestic personal consumption, including retail sales, real or nominal. That circumstance—in the last nine-plus years of economic collapse and stagnation—has continued to prevent a normal recovery in broad, inflation-adjusted U.S. economic activity, 73.1% of which is dependent on personal spending and residential real estate.

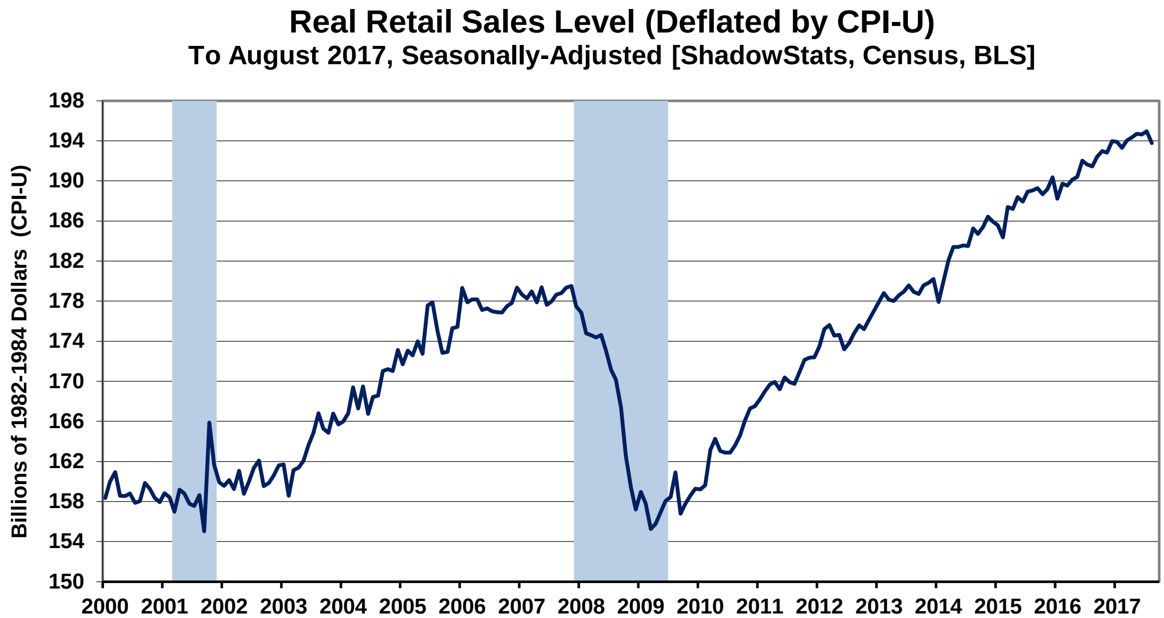
As headline consumer inflation generally resumes its upside climb in the year ahead, and as overall Retail Sales continue to suffer from the ongoing consumer liquidity squeeze, the real Retail Sales data generally should continue to trend meaningfully lower, in what should gain recognition shortly as a formal "new" recession, or down-leg in the economic collapse than began in 2006, formally the 2007 recession.

Real Retail Sales Graphs. The first of the four graphs following, *Graph 23* shows the level of real retail sales activity (deflated by the CPI-U) since 2000; *Graph 24* shows the year-to-year percent change for the same period. Annual real growth had slowed markedly into fourth-quarter 2015 and 2016, generating an intense recession signal, despite some near-term volatility the latest revisions to real annual real growth are turning lower, anew, coincident with the downturn in the level of real retail sales activity. *Graphs 25* and *26* show the level of, and annual growth in, real retail sales (and its predecessor series) in full post-World War II detail.

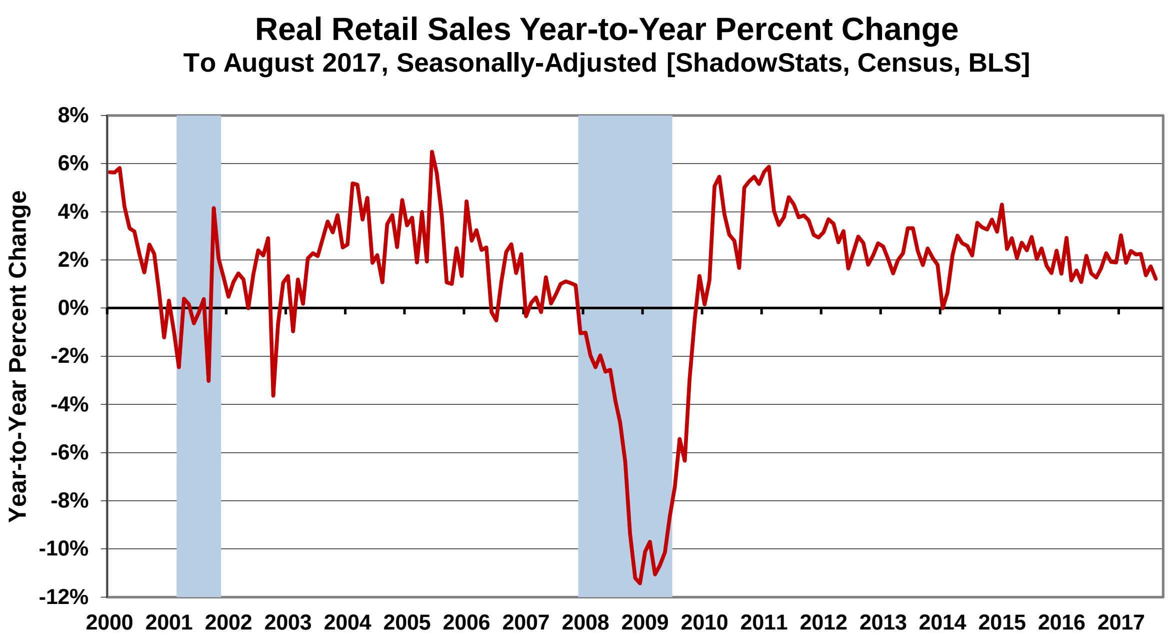
The relative strength seen in the real retail series since the economic trough in 2009 largely has reflected the understatement of the rate of inflation used in deflating the series. Discussed more fully in *Chapter 9* of *2014 Hyperinflation Report—Great Economic Tumble – Second Installment*, deflation by too low an inflation number (such as the CPI-U) results in the deflated series overstating inflation-adjusted, real economic growth. Shown in the latest "corrected" real retail sales—*Graph 4* in the *Executive Summary* section—with the deflation rates corrected for the understated inflation reporting of the CPI-U, the recent pattern of real sales activity has turned increasingly negative. The corrected graph shows that the post-2009 period of protracted stagnation ended, and a period of renewed and ongoing contraction began in second-quarter 2012 and continues to date. The corrected real retail sales numbers use the ShadowStats-Alternate Inflation Measure (1990-Base) for deflation instead of the CPI-U.

[Graphs 23 to 26 begin on the next page.]

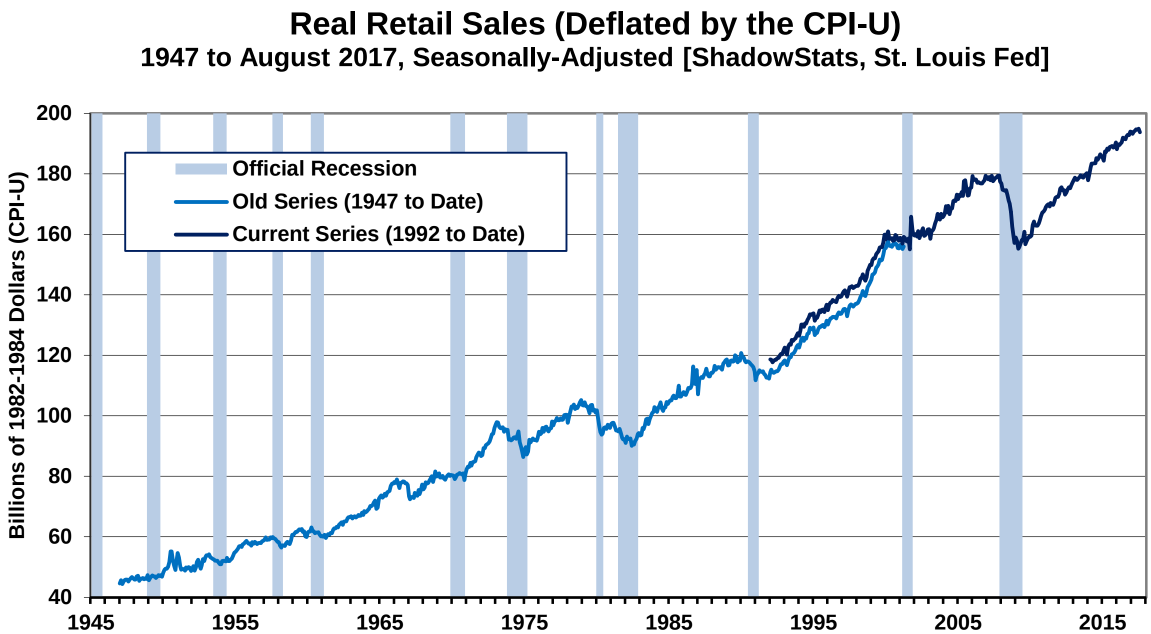
Graph 23: Level of Real Retail Sales (2000 to Date)



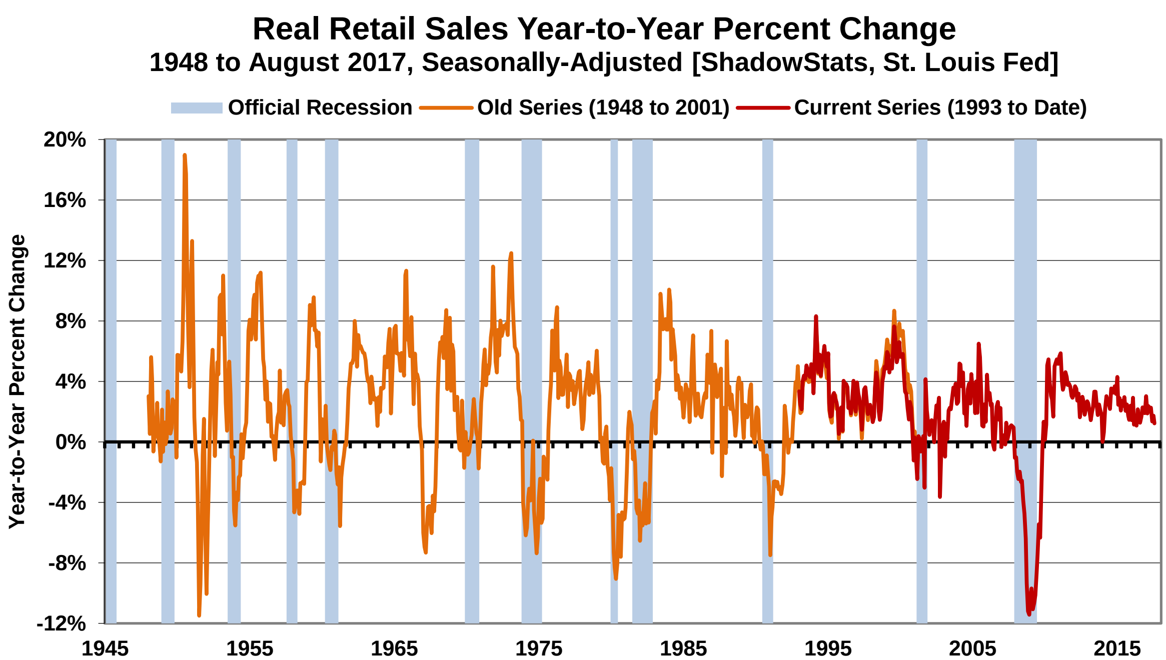
Graph 24: Real Retail Sales (2000 to Date), Year-to-Year Percent Change



Graph 25: Level of Real Retail Sales (1947 to Date)



Graph 26: Real Retail Sales (1948 to Date), Year-to-Year Percent Change



[The Consumer Liquidity Watch begins on the next page.]

CONSUMER LIQUIDITY WATCH

CONSUMER LIQUIDITY CONDITIONS: INCOME, CREDIT AND RELATIVE OPTIMISM.
[The CLW *has been updated for the September 2017 advance estimate of the University of Michigan's Consumer Sentiment Measure.]*

Liquidity Stresses Continue to Mount Amidst Faltering Optimism. The U.S. consumer faces continuing financial stress, increasingly reflected in the renewed softening of headline economic activity, including Employment conditions, Real Retail Sales, Home Sales and impacted construction series and as reflected ultimately in affected broader-based economic series such as Industrial Production.

***Liquidity Issues Limit Economic Activity*.** Severe and persistent constraints on consumer liquidity of the last decade or so drove economic activity into collapse through 2009, and those conditions have prevented meaningful or sustainable economic rebound, recovery or ongoing growth since. The limited level of, and growth in, sustainable real income, and the inability and/or unwillingness of the consumer to take on new debt have remained at the root of the liquidity crisis and ongoing economic woes.

These same pocket-book issues contributed to the anti-incumbent electoral pressures in the 2016 presidential race. The post-election environment showed a near-term surge in both the consumer confidence and sentiment measures to levels generally not seen since before the formal onset of the recession in 2002, let alone 2007. Yet, underlying liquidity conditions, economic reality and lack of positive actions out of the government to turn the economy meaningfully, all have continued to remain shy of consumer hopes. Not surprisingly, consumer optimism has begun to falter anew.

Including the various consumer income stresses discussed in *Special Commentary No. 888*, broad, underlying consumer-liquidity fundamentals simply have not supported, and still do not support a turnaround in general economic activity—a post "Great Recession" expansion—and broadly are consistent with a "renewed" downturn in that non-recovered economic activity. Indeed, never truly recovering post-Panic of 2008, limited growth in household income and credit have eviscerated and continue to impair broad, domestic U.S. business activity, which is driven by the relative financial health and liquidity of consumers. These underlying liquidity conditions and reality—particularly income and credit—remain well shy of consumer hopes and needs.

The combined issues here have driven the housing-market collapse and ongoing, long-term stagnation in consumer-related real estate sales and construction activity, and have constrained both nominal and real retail sales. Related, personal-consumption-expenditure and residential-construction categories accounted for 73.1% of the headline real (73.0% of nominal), second-quarter 2017 U.S. GDP.

With the better-quality economic indicators and underlying economic reality never having recovered fully from the collapse into 2009, consumers increasingly should pull back on consumption in the months ahead. Underlying reality is evident in more-meaningful economic indicators—not the GDP—irrespective of the transient, gimmicked boosts to, and current headline slowing in, that most worthless of economic series, discussed most recently in *Commentary No. 907*.

Consumer Optimism: August Consumer Confidence and Sentiment Measures Had Jumped, but Sentiment Has Pulled in Its "Advance" September Estimate. This detail includes the August 2017 reading of The Conference Board's Consumer-Confidence Index® (Confidence) of August 29th, as well as the September 15th advance-September 2017 reading for the University of Michigan's Consumer Sentiment Index (Sentiment). Reflected in *Graphs CLW-1* and *CLW-2*, both Confidence and Sentiment rose in September 2016 and plunged in October, likely reflecting concerns as to the direction of the presidential race. Post-election, both measures rallied sharply, reflecting a surge in consumer optimism into early 2017. Both series appeared to have topped and pulled back in June, but the July Confidence number rebounded anew, with August continuing to rebound, yet with each rebound being on top of a lesser downside revision to the prior month. Where the July Sentiment number pulled back, the August Sentiment rose anew, with the advance-estimate for September 2017 pulling back once more. Nonetheless, both the latest Confidence and Sentiment levels have remained off their respective post-election, euphoric peaks of March 2017 (Confidence) and January 2017 (Sentiment).

The Conference Board's seasonally-adjusted [unadjusted data are not available] Consumer-Confidence Index® (*Graph CLW-1*), and the University of Michigan's not-seasonally-adjusted Consumer-Sentiment Index (*Graph CLW-2*), again, both soared post-election, into early 2017, with Confidence booming into and topping in March and with sentiment booming into and topping in January 2017. The three-month moving averages in both series also had broken to pre-recession highs, with the Confidence hitting levels not seen since before the 2001 recession, yet the still-high moving averages also have begun to falter.

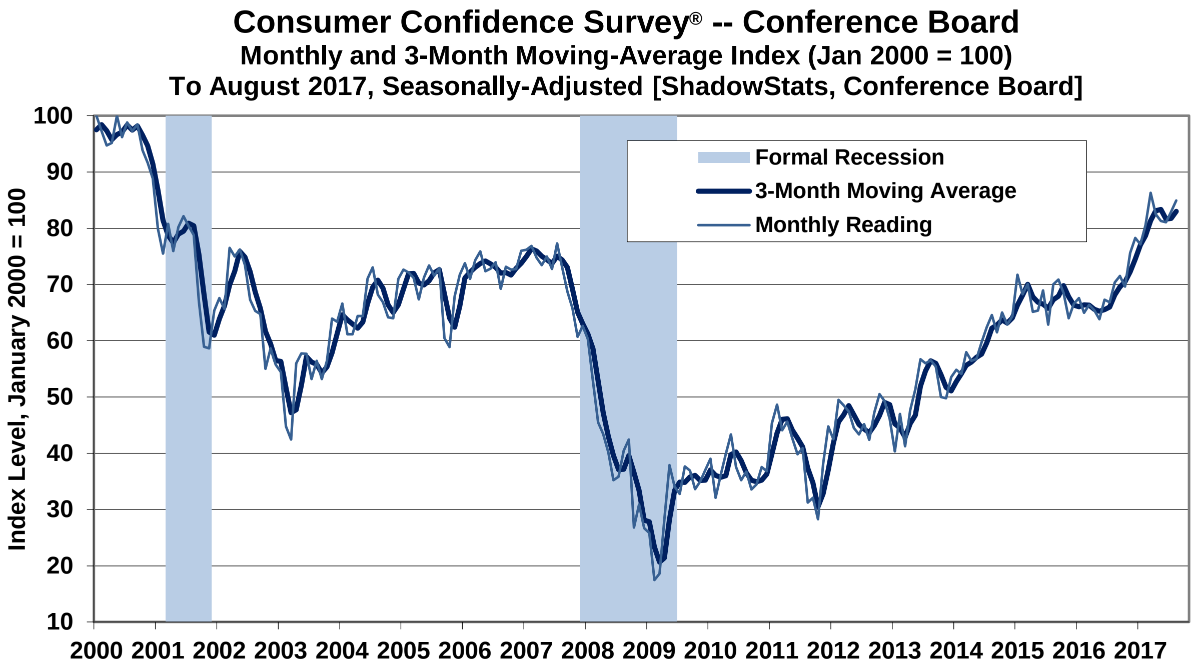
Showing the Consumer Confidence and Consumer Sentiment measures on something of a comparable basis, *Graphs CLW-1* to *CLW-3* reflect both measures re-indexed to January 2000 = 100 for the monthly reading. Standardly reported, the Conference Board's Consumer Confidence Index® is set with 1985 = 100, while the University of Michigan's Consumer Sentiment Index is set with January 1966 = 100.

The Confidence and Sentiment series tend to mimic the tone of headline economic reporting in the press (see discussion in *Commentary No. 764*), and often are highly volatile month-to-month, as a result. With what should become increasingly-negative, unstable and uncertain headline financial and economic reporting in the months ahead—beyond the early change-in-government euphoria—continued, successive negative hits to both the confidence and sentiment readings remain increasingly likely in the near future.

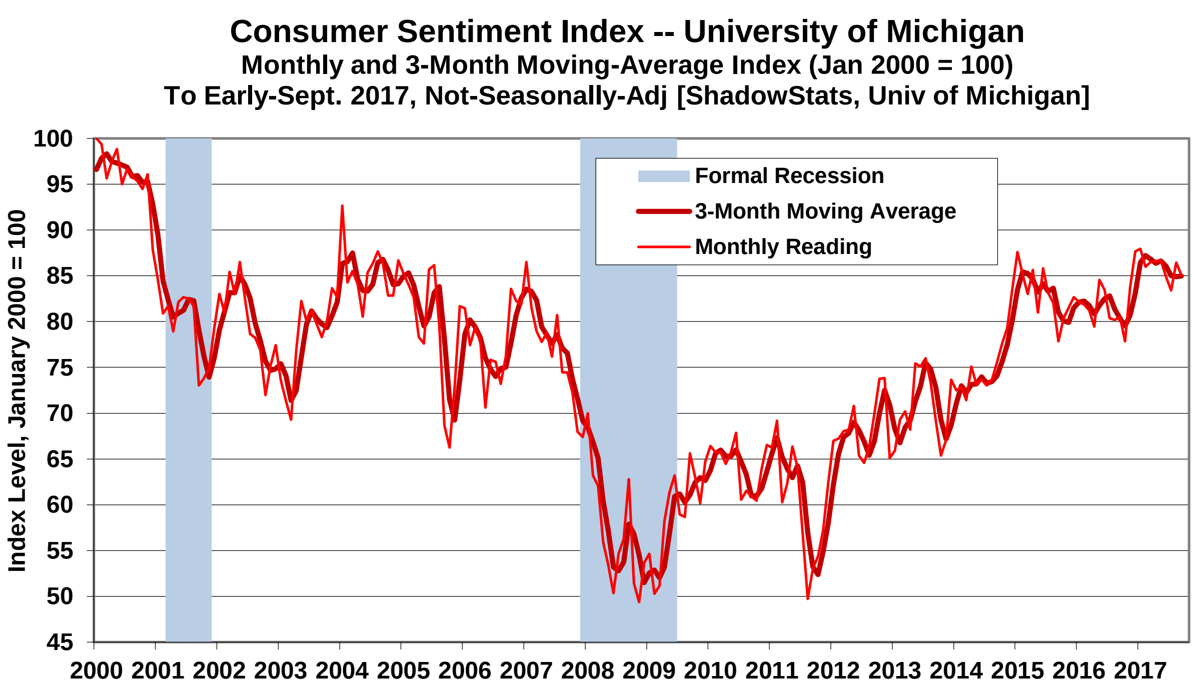
Smoothed for irregular, short-term volatility, the two series still generally had held at levels seen typically in recessions, until the post-2016 election circumstance. Suggested in *Graph CLW-3*—plotted for the last 47 years—the latest readings of Confidence and Sentiment recently have recovered levels seen in periods of normal, positive economic activity of the last four decades, with their six-month moving averages at levels last seen going into the 2001 recession, although they appear to be topping out.

Broadly, though, the harder, financial consumer measures remain well below, or are inconsistent with, periods of historically-strong economic growth as suggested by headline GDP growth in 2014, for second-and third-quarter 2015 and for third-quarter 2016. Beyond having happy feelings about the future, consumers still need actual income, cash-in-hand or credit in order to increase their spending.

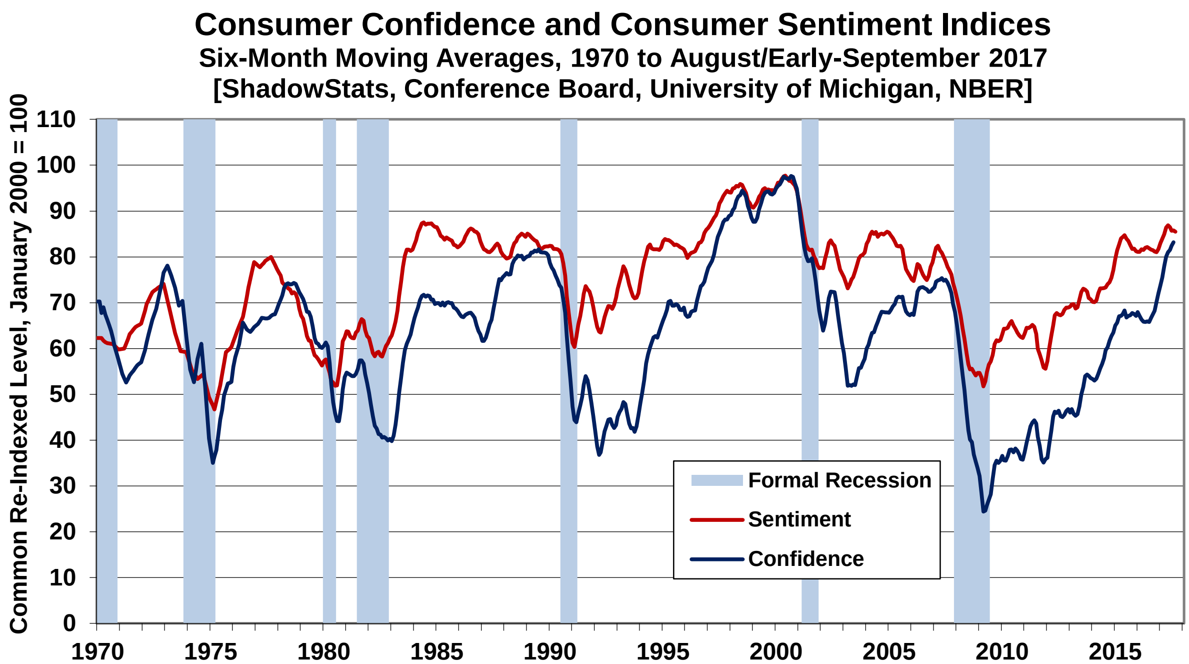
Graph CLW-1: Consumer Confidence (2000 to 2017)



Graph CLW-2: Consumer Sentiment (2000 to 2017)



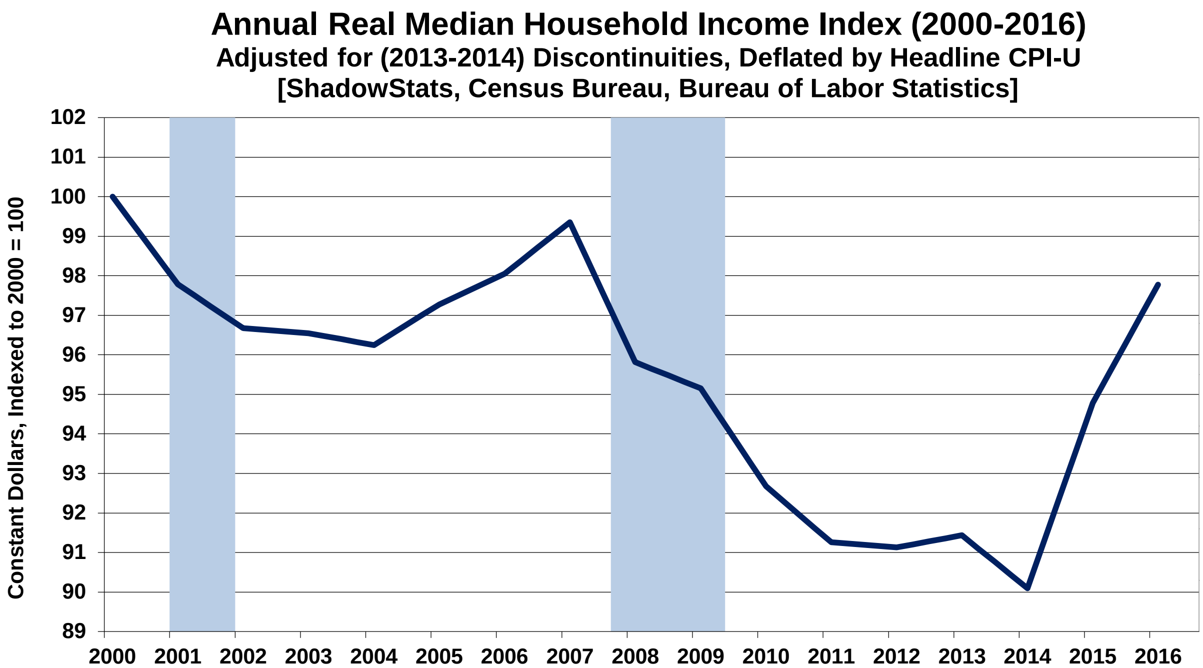
Graph CLW-3: Comparative Confidence and Sentiment (6-Month Moving Averages, 1970 to 2017)



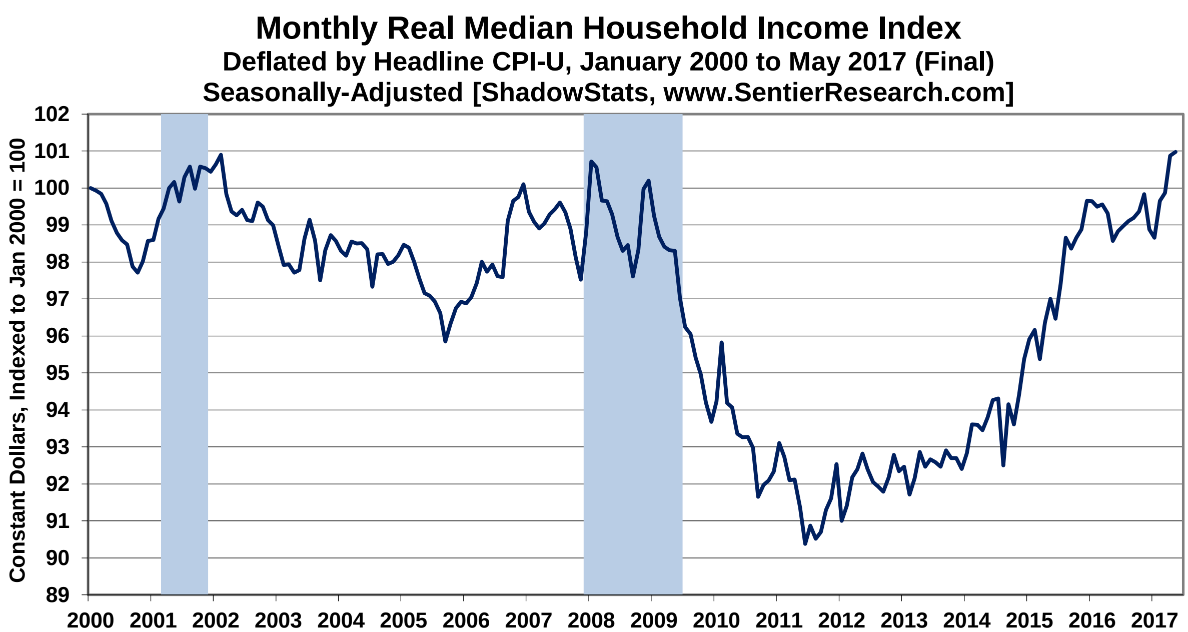
2016 Annual Real Median Household Income Still Was Below Its 2007 Pre-Recession High, Below Activity in the Late-1990s, About Even with the Mid-1970s. The measure of real monthly median household income, which has been provided by www.SentierResearch.com, generally can be considered as a monthly version of the annual detail shown in *Graph CLW-4,* based on the annual detail recently released by the Census Bureau and as discussed the *Opening Comments* of *Commentary No. 909*. The 3.16% headline gain in 2016 real annual median household income for 2016 left the level of income not only below that seen at the purported pre-recession peak of 2007, but also below levels seen in the late-1990s, and minimally above activity see in the mid-1970s (see *Graph OC-1* in *No. 909*). The Sentier details, as far as they go, from January 2000 to May 2017, suggested annual real median income was on track for further increase in 2017, having also indicated the 2015 and 2016 annual increases.

Last Monthly Estimate Showed Stagnating Monthly Real Growth. As last reported by Sentier Research, May 2017 Real Median Household Income was statistically unchanged, despite a boost from falling gasoline prices. Discussed in *General Commentary No. 894*, and in the contexts of then-faltering gains in post-election consumer optimism, and inflation-adjusted activity boosted by declining headline Consumer Price Index (CPI-U) inflation (weakened by seasonally-adjusted gasoline price declines), May 2017 Real Median Monthly Household Income was "statistically unchanged" (a statistically-insignificant monthly gain of 0.10%). That followed a statistically-significant monthly gain of 1.00% in April 2017. Shown in *Graph CLW-4*, such enabled May 2017 real monthly median household income to hold a level regained in April and otherwise last seen in February 2002. Year-to-year real median household income rose to 2.44% in May 2017, the highest level since June 2016, following an annual gain of 1.57% in April 2017 (see *Graph CLW-5*). The May detail, however, may have been the final reporting of the monthly series (see the following *Special Note*).

Graph CLW-4: Annual Real Median U.S. Household Income (1967 to 2016)

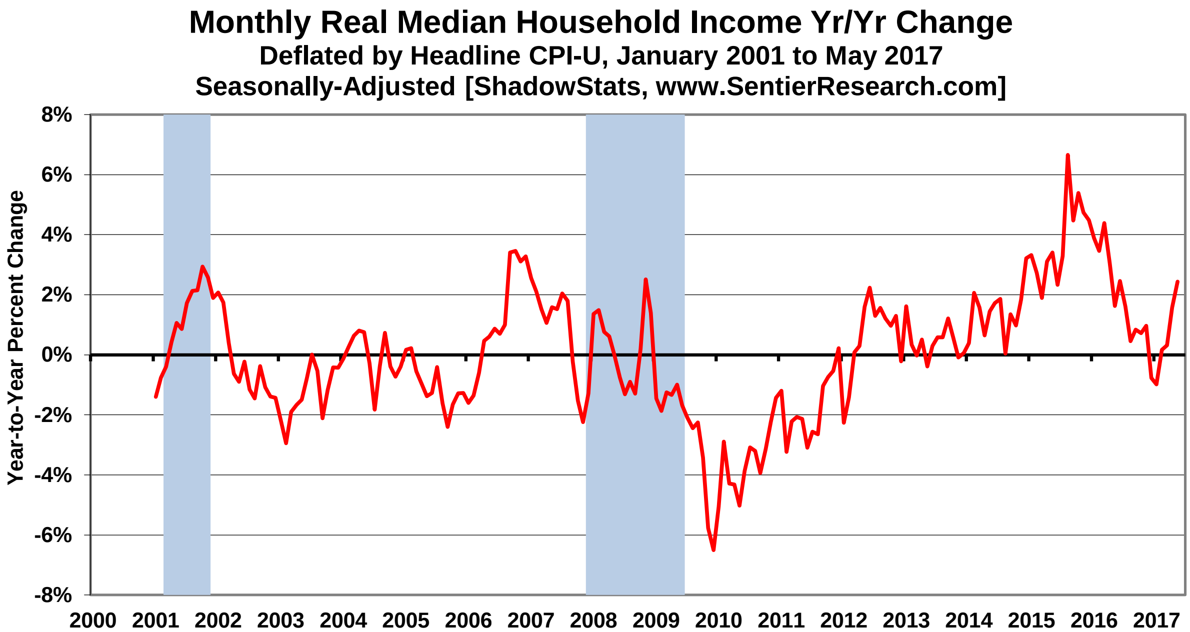


Graph CLW-5: Monthly Real Median Household Income (2000 to 2017) Index, January 2000 = 100



Where real monthly median income plunged into the headline trough of the economic collapse in 2009, it did not then rebound in tandem with the headline GDP activity. When the GDP purportedly started its solid economic recovery in mid-2009, the monthly household income numbers nonetheless plunged to new lows, hitting bottom in 2011. The income series then held in low-level stagnation, until collapsing gasoline prices and the resulting negative CPI-U inflation drove a post-2014 uptrend in the inflation-adjusted monthly income index. The index approached pre-recession levels in the December 2015 reporting, but it remained minimally below the pre-recession highs for both the formal 2007 and 2001 recessions until recent months. Real median household income had the potential to resume turning down anew, as the headline pace of monthly consumer inflation picked up anew, with the August 2017 CPI.

Graph CLW-6: Monthly Real Median Household Income (2000 to 2017) Year-to-Year Change



Nonetheless, the most-recent recent "rebound" reported in the series still left consumers financially strapped. Where lower gasoline prices had provided some minimal liquidity relief to the consumer, indications are that any effective extra cash largely was used to help pay down unsustainable debt or other obligations, not to fuel new consumption. Except for mixed gyrations in first-half 2017, the effects of changing gasoline prices in the headline CPI-U generally had reversed, pushing headline consumer inflation higher and beginning to push real income lower.

Differences in the Monthly versus Annual Median Household Income. The general pattern of relative monthly historical weakness has been seen in the headline reporting of the annual Census Bureau numbers, again, shown in *Graph CLW-4*, with 2014 real annual median household income having hit a ten-year low, and, again, with the historically-consistent 2015 and 2016 annual number still holding below the 2007 pre-recession high. The Sentier numbers had suggested a small increase in 2014 versus 2013 levels, low-inflation induced real increases in 2015 and 2016. Allowing for the direction difference in 2014, and continual redefinitions and gimmicks in the annual series (again, see the *Opening Comments* of *Commentary No. 909*) the monthly and annual series had remained broadly consistent, although based on separate questions within the Consumer Population Series (CPS), as conducted by the Census Bureau.

Where Sentier used monthly questions surveying current annual household income, the headline annual Census Bureau detail is generated by a once-per-year question in the March CPS survey, as to the prior year's annual household income. The Median Household Income surveying results are broadly consistent with Real Average Weekly Earnings.

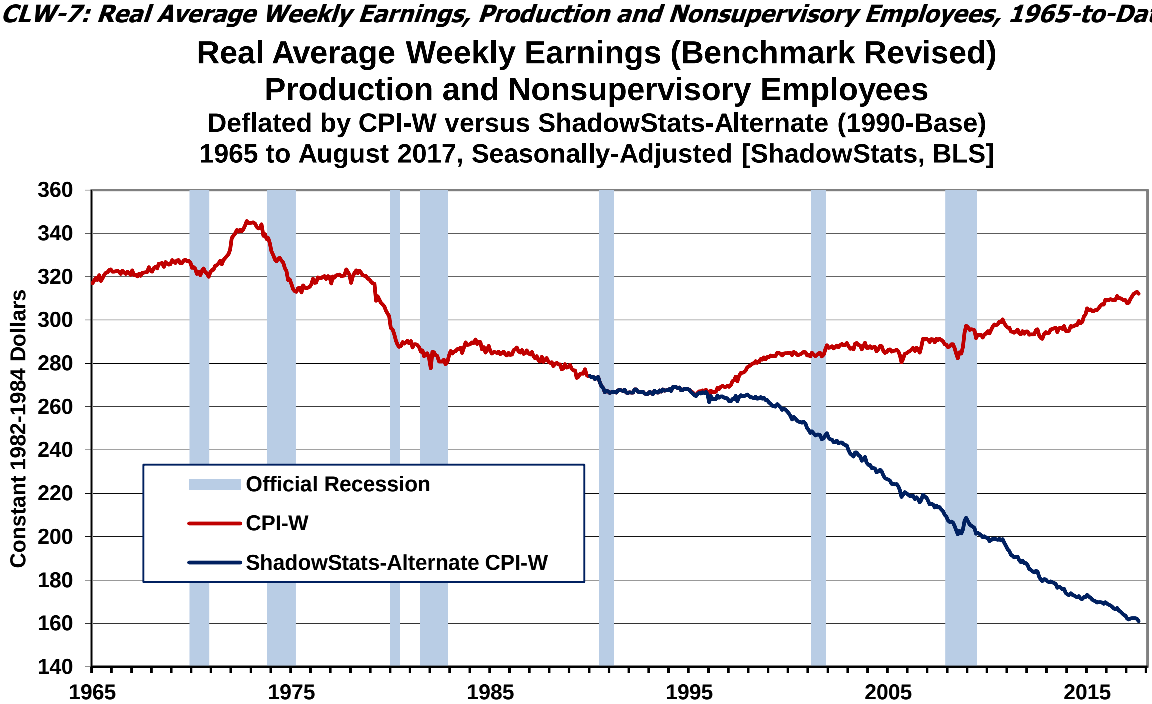
Special Note**:** Accompanying the release of the May 2017 data by Sentier Research was this Notice of Final Report:

> Dear Friends, This will be our final report in the monthly series of median household income. We can no longer afford to provide these estimates given our current level of resources. We believe, as we hope you do, that these estimates provided an important new dimension regarding the economic situation of American households as we slowly climbed out of the Great Recession. The story continues but we must move on. Our hope is that someone will be able to continue this work. Should you or someone you know be interested please contact us. Thanks to all of you for your kind support.. John and Gordon

ShadowStats hopes a circumstance will unfold that enables continued reporting of this extraordinarily valuable and timely indicator of consumer liquidity. Gordon Green and John Coder, the authors of the monthly report, both are former senior officials at the U.S. Census Bureau and have a unique understanding of the underlying monthly data. The Census Bureau publishes a broadly-similar series on an annual basis, but with an extraordinary time lag. The 2016 Census annual detail is due for release and publication in September 2017. Again, see *Commentary No. 833* for the 2015 detail published in 2016.

Real Average Weekly Earnings—August 2017—Month-to-Month Real Earnings Declined. For the production and nonsupervisory employees category—the only series for which there is a meaningful history (see the full discussion on page 16 of *Commentary No. 909*), the regularly-volatile real average weekly earnings fell month-to-month by 0.28% (-0.28%) in August 2017, versus downwardly-revised gains of 0.13% in July and 0.23% in June. Year-to-year, the adjusted August 2017 real change rose to 0.68%, versus a downwardly revised gains of 0.62% in July 2017 and 1.10% in June 2017.

Graph CLW-7: Real Average Weekly Earnings, Production and Nonsupervisory Employees, 1965-to-Date



Based solely on volatile initial reporting for July and August 2017, the early-trend for real third-quarter 2017 activity is for an annualized quarterly gain of 1.01%. Second-quarter 2017 activity reflected a revised, annualized real quarter-to-quarter gain of 4.43%, following contractions in first-quarter 2017 of

1.13% (-1.13%), in fourth-quarter 2016 of 1.36% (-1.36%), and third-quarter 2016 growth of 1.48%, a second-quarter 2016 contraction of 0.11% (-0.11%) and first-quarter 2016 annualized growth of 1.81%.

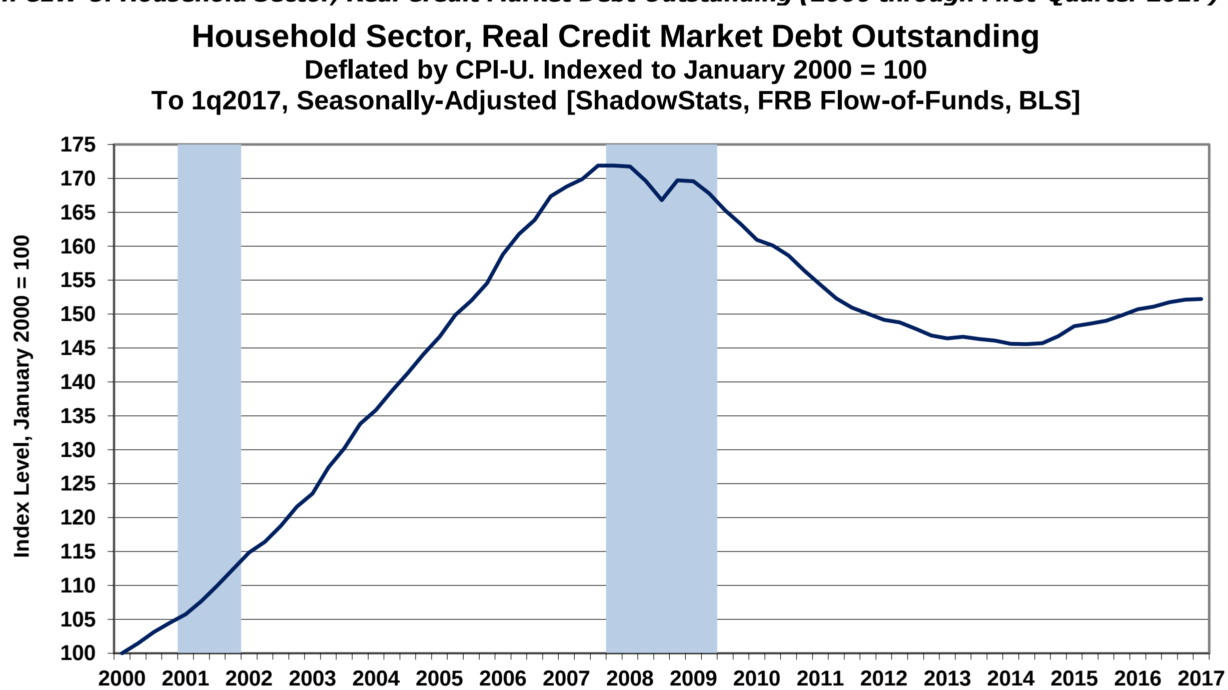
Year-to-year change in third-quarter 2017 was on early track for 0.71%, where second-quarter 2017 real earnings rose by a revised 0.83%, following an annual contraction of 0.29% (-0.29%) in first-quarter 2017, the first annual or year-to-year quarterly contraction since fourth-quarter 2012.

The 2015 rally in real annual income and the subsequent slowdown in latter 2016 and pickup in 2017 pickup all were tied and continue to be tied directly to the impact of irregularly-collapsing/rising gasoline prices, with subsequent rebound/decline in inflation-adjusted income.

Graph CLW-7 plots the seasonally-adjusted earnings as officially deflated by the BLS (red-line), and as adjusted for the ShadowStats-Alternate CPI Measure, 1990-Base (blue-line). When inflation-depressing methodologies of the 1990s began to kick-in, the artificially-weakened CPI-W (also used in calculating Social Security cost-of-living adjustments) helped to prop up the reported real earnings. Official real earnings today still have not recovered their inflation-adjusted levels of the early-1970s (see today's *Opening Comments*), and, at best, have been in a minimal uptrend for the last two decades (albeit spiked recently by negative headline inflation). Deflated by the ShadowStats (1990-Based) measure, real earnings have been in fairly-regular decline for the last four decades, which is much closer to common experience than the pattern suggested by the CPI-W. See the *Public Commentary on Inflation Measurement* for further detail.

Consumer Credit: Lack of Meaningful Real Consumer Credit Growth Remains an Economic Constraint. The final four graphs on consumer conditions address consumer borrowing. Where debt expansion can help make up for a shortfall in income growth, adequate expansion of consumer debt, which would help fuel growth in personal consumption, has been lacking.

Graph CLW-8: Household Sector, Real Credit Market Debt Outstanding (2000 through First-Quarter 2017)



Consider *Graph CLW-8* of *Household Sector, Real Credit Market Debt Outstanding*. The level of real household debt declined in the period following the Panic of 2008, reflecting loan defaults and reduced banking lending, and it has not recovered fully, based on the Federal Reserve's flow-of-funds accounting through first-quarter 2017. Household Sector, Real Credit Market Debt Outstanding in first-quarter of 2017 still was down by 11.5% (-11.5%) from its pre-recession peak of third-quarter 2007, the same as in fourth-quarter 2016.

The series includes mortgages, automobile and student loans, credit cards, secured and unsecured loans, etc., all deflated by the headline quarterly CPI-U. The level of real debt outstanding has remained stagnant for several years, reflecting, among other issues, lack of normal lending by the banking system into the regular flow of commerce. The slight upturn seen in the series through 2015 and into 2016 was due primarily to gasoline-price-driven, negative CPI inflation, which continued to impact the system through second-quarter 2016. Current activity also has reflected continued relative strength from student loans, as shown in the *Graphs CLW-9* to *CLW-11*.

The ShadowStats analysis usually focuses on the particular current weakness in monthly levels of consumer credit, net of what has been rapidly expanding government-sponsored student loans. Where detail on that series is only available not-seasonally-adjusted, the following graphs are so plotted.

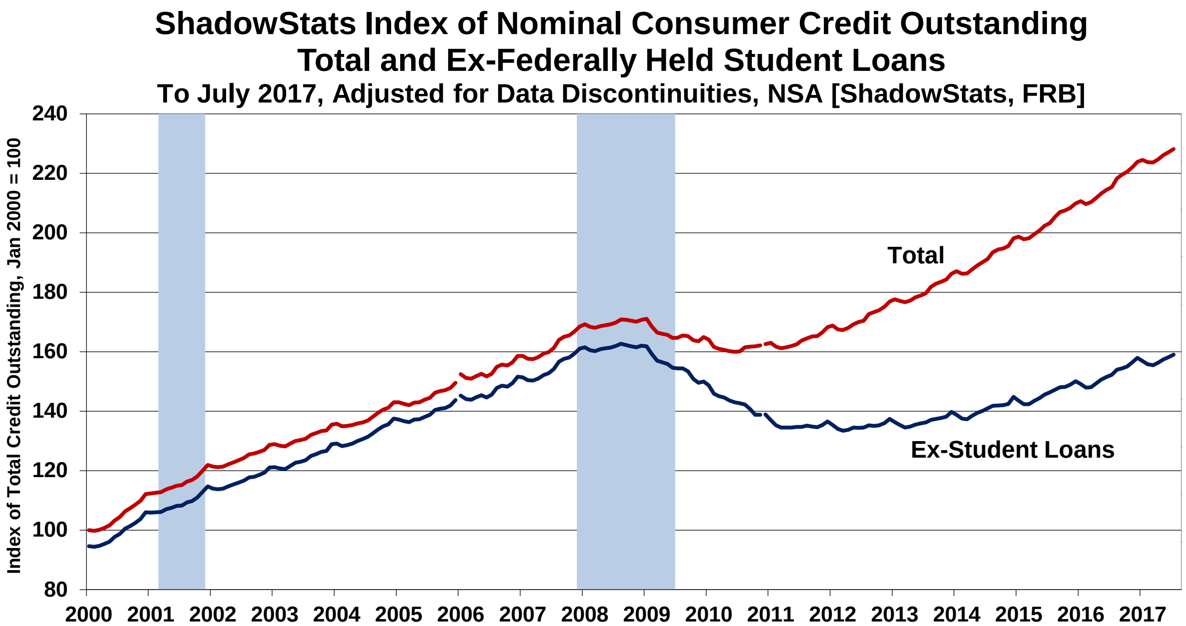
Shown through the July 2017 reporting, *Graph CLW-9* of monthly Consumer Credit Outstanding is a subcomponent of *Graph CLW-8* on real Household Sector debt. Where *Graph CLW-9* reflects the nominal reporting, not adjusted for inflation, inflation-adjusted real activity for monthly Consumer Credit Outstanding is shown in terms of both level (Graph CLW-10) and year-to-year change (*Graph CLW-11*). The August detail includes a downside revision to the last five years of total credit outstanding.

Post-2008 Panic, growth in outstanding consumer credit has continued to be dominated by growth in federally-held student loans, not in bank loans to consumers that otherwise would fuel broad consumption or housing growth. Although in slow uptrend, the nominal level of Consumer Credit Outstanding (ex-student loans) has not recovered since the onset of the recession. These disaggregated data are available and plotted only on a not-seasonally-adjusted basis, with the pattern of monthly levels during one year reflecting some regular, unadjusted seasonal dips or jumps.

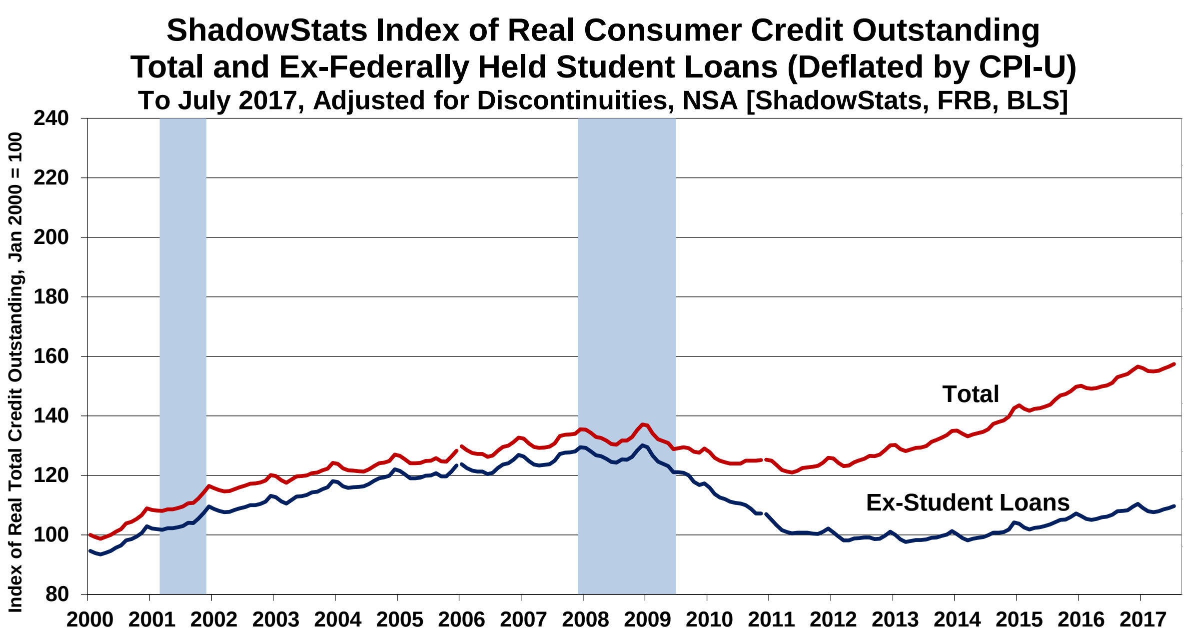
Adjusted for inflation, the lack of recovery in the ex-student loan area is more obvious. Although the recent monthly upside move in the not-seasonally-adjusted consumer credit reflected a seasonal pattern, the pace of year-to-year growth continued to slow, suggesting some tightening of credit conditions. Adjusted for discontinuities and inflation, ex-student loans, consumer credit outstanding in July 2017 (released September 8th) was down from its December 2007 pre-recession peak by 15.3% (-15.3%) [that previously had been down by 12.3% (-12.3%) in June 2017, before the recent downside revisions to the last five years of activity]. Year-to-year real growth shown in *Graph CLW-11* tends to resolve most of the monthly distortions in the not-seasonally-adjusted data.

[Graphs CLW-9 to CLW-11 begin on the next page.]

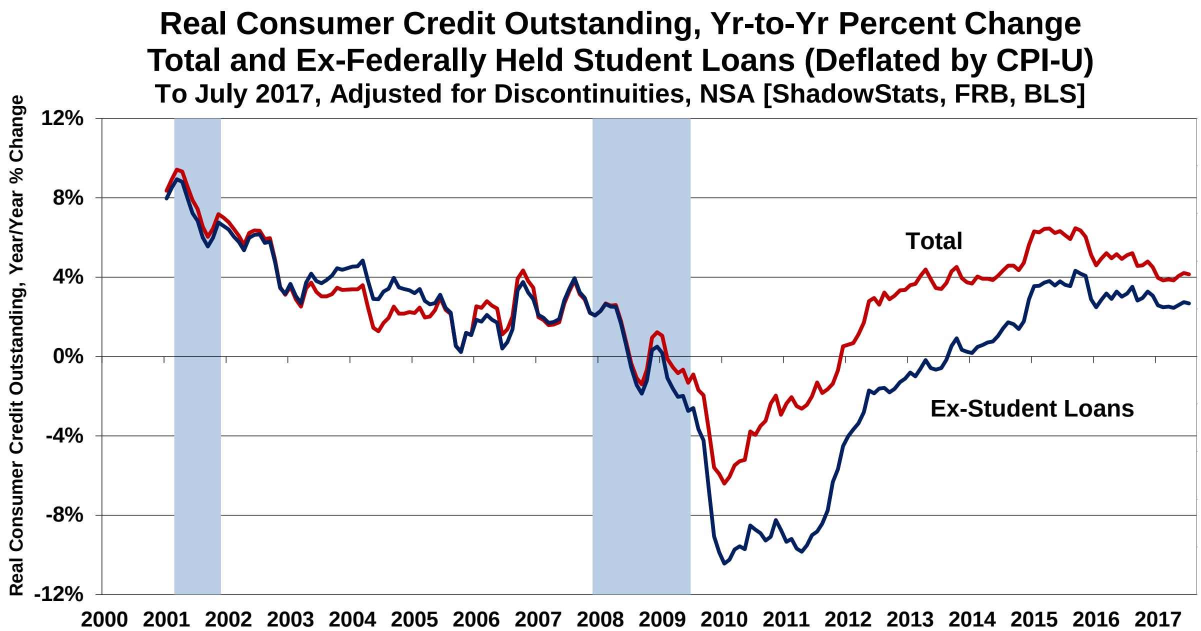
Graph CLW-9: Nominal Consumer Credit Outstanding (2000 to 2017)



Graph CLW-10: Real Consumer Credit Outstanding (2000 to 2017)



Graph CLW-11: Year-to-Year Percent Change, Real Consumer Credit Outstanding (2000 to 2017)



WEEK, MONTH AND YEAR AHEAD

Deteriorating Domestic and Global Political Circumstances and Continued Softening of the Economy Should Continue Increasingly to Pummel the Dollar, Boost the Price of Gold and Foster Financial-Market Turmoil. The *Hyperinflation Watch* of *Commentary No. 909* speaks for itself and will be merged into this section with updated text next *Commentary No. 911* of September 19th. Otherwise, this has not been changed from its prior version, except for the updated *Pending Release* section and a link to the prior *Commentary*.

In the context of the *Opening Comments* and *Hyperinflation Watch* of the August 14th *Special Commentary No. 904* and the *Opening Comments* of *Commentary No. 905*, underlying reality remains a weakening and vulnerable, seriously-impaired U.S. economy, as seen, for example with the latest employment and construction detail, and in likely weak data in the week ahead, all amidst continuing domestic and global political instabilities and unfolding natural disasters. .

Unfolding circumstance still threaten a shift in FOMC policy, combined with the mounting political discord discussed in *Special Commentary No. 904* (see also the *Opening Comments* of *Commentary No.*

901 and *Special Commentary No. 888*), odds continue to mount for intensifying financial-market turmoil in the near future, particularly as would be triggered by a market-related, intensifying heavy sell-off in the U.S. Dollar.

Broad economic activity never recovered fully recovered from its crash into 2009, and it has started to turn down anew. As explored previously in the *Hyperinflation Watches* of *Commentary No. 899* and *General Commentary No. 894*, and further to the *Opening Comments* and *Hyperinflation Watch* of *Commentary No. 892*, headline economic reporting during June, July and early August of 2017, had shown a marked downturn versus consensus forecasts. While these circumstances usually signal an unfolding, major downshift in underlying economic reality, at present, they also forewarn of a potential shift in FOMC activity. Where such an event remains well removed from consensus expectations, at this time, in terms of Fed policy, that would mean a cessation of incremental rate hikes and a shift back towards expanded quantitative easing.

Immediate effects of such a policy change likely would include a massive sell-off in the U.S. dollar, which otherwise has been propped by recent FOMC rate hikes and continual jawboning for same. In parallel, heavy selling in the U.S. equity and credit markets would follow. As consensus economic forecasts have begun to soften, so too has the U.S. dollar exchange rate, while gold prices generally have firmed.

The circumstances here and the outlook still remain as broadly outlined in *No. 859 Special Commentary*; currently shifting headlines only reflect the continued movement and evolution forward in time of the Fed's difficulties discussed in that missive.

The problem for the Federal Reserve remains that faltering domestic economic activity stresses banking-system solvency. Aside from formal obligations of the Fed to maintain healthy domestic economic and inflation conditions, the central bank's primary function (in practice) always has been to keep the banking system afloat. The near-absolute failure of that function in 2008 remains the primary ongoing and unresolved problem for the Fed, and it continues as one of the ongoing primary issues preventing the return of U.S. economic activity to normal functioning. Contrary to the recent purported headline comments of "not in our lifetime" by Federal Reserve Chair Janet Yellen, the continued unfolding of "unexpected" economic deterioration suggests that the next major systemic financial crisis is likely to break in the next several months.

Separately, recent benchmark revisions to Construction Spending (see *Commentary No 897*), the Trade Deficit (*Commentary No. 890*), Industrial Production (*Commentary No. 877*), Manufacturers' Shipments (*Special Commentary No. 888*), Housing Starts (*Commentary No. 887*) and Retail Sales (*Commentary No. 882*), and reporting subsequent to the benchmarks, broadly have confirmed that historical activity in recent years has been overstated and/or that it is turning down anew, particularly in 2015, with the availability of better-quality historical detail. Again, that is despite recent near-term improvement in some headline details, such as the headline unemployment rate, which increasingly suffers from dysfunctional definitional and sampling issues, and the latest headline GDP detail.

The reporting patterns of the better-quality, less-gimmicked series likely will continue to weaken with increasing intensity in the weeks and months ahead. Adding a negative uncertainty to unfolding financial-market risks remains potential political surprise, discussed in *Special Commentary No. 888*. Otherwise, the broad outlook has not changed. Reflected in common experience, actual U.S. economic activity generally continues in stagnation or downturn, never having recovered its level of pre-economic-collapse (its pre-2007-recession peak), while the latest GDP reporting shows an otherwise unconfirmed economic expansion of 13.7%.

Discussed in *No. 859 Special Commentary*, the Trump Administration continues to face extraordinarily difficult times, but still has a chance to turn the tide on factors savaging the U.S. economy and on highly negative prospects for long-range U.S. Treasury solvency and stability. Any forthcoming economic stimulus faces a nine-month to one-year lead-time, once in play, before it meaningfully affects the broad economy. Increasing delays from political discord continue to push targeted programs back in time. Needed at the same time are a credible plan for bringing the U.S. long-term budget deficit (sovereign solvency issues) under control and action to bring the Federal Reserve under control and/or to reorganize the banking system. These actions broadly are necessary to restore domestic-economic and financial-system tranquility (see *No. 859*), but they cannot happen without the meaningful participation and cooperation of Congress. The financial crisis at hand likely will intensify well before the 2018 Congressional Election will have a chance to stabilize the outlook for economic policy objectives.

No. 859 Special Commentary updated the post-election, near-term economic and inflation conditions, including general economic, inflation and systemic distortions, which had evolved out of the Panic of 2008, have continued in play and, again, need to be addressed by the Trump Administration and Congress (see also the *Hyperinflation Watch* of *Commentary No. 862* and *Commentary No. 869*).

Contrary to the official reporting of an economy that collapsed from 2007 into 2009 and then recovered strongly into ongoing expansion, underlying domestic reality remained and remains that the U.S. economy started to turn down somewhat before 2007, collapsed into 2009 but never recovered fully. While the economy bounced off its 2009 trough, it entered a period of low-level stagnation and then began to turn down anew in December 2014, a month that eventually should mark the beginning of a "new" formal recession (see *General Commentary No. 867*). Formal economic expansion does not begin until economic recovery breaks above its pre-recession high.

Coincident with and tied to the economic crash and the Panic of 2008, the U.S. banking system moved to the brink of collapse, a circumstance from which U.S. and global central-bank policies never have recovered. Unwilling to admit its loss of systemic control, the Federal Reserve has made loud noises in the last year or so of needing to raise interest rates, in order to contain an "overheating" economy, but that "overheating" activity—never recognized by Main Street, U.S.A.—has been fading quickly. As this ongoing crisis evolves towards its unhappy end, the U.S. dollar ultimately should face unprecedented debasement with a resulting runaway domestic inflation.

Broad economic and systemic conditions are reviewed regularly, with the following *Commentaries* of particular note: *Commentary No. 902-B*, *General Commentary No. 894*, *Special Commentary No. 885*, *Commentary No. 869*, *No. 859 Special Commentary*, *No. 777 Year-End Special Commentary* (December 2015*)*, *No. 742 Special Commentary: A World Increasingly Out of Balance* (August 2015) and *No. 692 Special Commentary: 2015 - A World Out of Balance* (February 2015). Those publications updated hyperinflation and economic outlooks published in *2014 Hyperinflation Report—The End Game Begins – First Installment Revised* (April 2014) and *2014 Hyperinflation Report—Great Economic Tumble – Second Installment* (April 2014). The two *Hyperinflation* installments remain the primary background material for the hyperinflation circumstance. Other references on underlying economic reality are the

Public Commentary on Inflation Measurement and the *Public Commentary on Unemployment Measurement*.

Recent Commentaries. *[Listed here are* Commentaries *of the last month, plus recent* Special Commentaries *and others covering a variety of non-monthly issues, including annual benchmark revisions, dating back through the beginning of 2017. Please Note: Complete ShadowStats archives back to 2004 are found at www.ShadowStats.com (left-hand column of home page).]*

Commentary No. 909 (September 14th) assessed the annual release of 2016 Real Median Household Income, along with a review of August Consumer Price Index (CPI) and the Producer Price Index (PPI) and an update *Alert* on the financial markets

Commentary No. 908-B (September 6th) provided extended detail of the August 2017 Labor and Monetary conditions and July 2017 Construction Spending, along with coverage of the July 2017 Trade Deficit and the initial estimate of the 2017 Payroll Employment benchmarking.

Advance Commentary No. 908-A (September 1st) provided summary coverage of the headline reporting on August 2017 Labor and Monetary conditions and July 2017 Construction Spending.

Commentary No. 907 (August 30th) reviewed the second estimate of, first revision to Second-Quarter 2017 GDP and initial quarterly reporting of the related GDI and GNP series.

Commentary No. 906 (August 25th) covered July 2017 New Orders for Durable Goods and New- and Existing-Home Sales, with further discussion of the unfolding "new" downturn in economic activity.

Commentary No. 905 (August 17th) reviewed the headline detail of for July 2017 Industrial Production, Retail Sales (Nominal and Real), New Residential Construction and the Cass Freight Index™.

Special Commentary No. 904 (August 14th) issued an "Alert" on the financial markets (including U.S. equities, the U.S. dollar gold and silver, as well as FOMC policy), in the context of historical activity and unfolding circumstances of deteriorating economic and political conditions. Separately, headline details were reviewed for the July Consumer Price Index (CPI) and the Producer Price Index (PPI).

Commentary No. 903 (August 7, 2017) discussed new signals of economic deterioration in terms of political and FOMC considerations, along with headline coverage of the July labor data, M3 and The Conference Board Help Wanted OnLine®, and June trade deficit and construction spending.

Commentary No. 902-B (July 31, 2017) reviewed the 2017 annual benchmark revisions of GDP and related series, along with the "advance" estimate of second-quarter 2017 GDP.

Commentary No. 901 (July 27, 2017) discussed possible financial-market impact on continuing political discord in Washington, and reviewed the June 2017 Cass Freight Index, New Orders for Durable Goods and New- and Existing Home Sales.

Commentary No. 900 (July 19, 2017) reviewed June 2017 New Residential Investment (Housing Starts and Building Permits), and previewed the upcoming annual GDP benchmark revisions and the coincident "advance" estimate of second-quarter 2017 GDP.

Commentary No. 899 (July 17, 2017) covered headline June 2017 Retail Sales, Industrial Production, the Consumer Price Index (CPI) and the Producer Price Index (PPI), along with a review of current circumstances affecting the markets, U.S. dollar, gold and silver and the FOMC.

Commentary No. 897 (July 6, 2017) reviewed the headline May 2017 Construction Spending and the annual revisions to same, along the May Trade Deficit, and June The Conference Board Help Wanted OnLine® Advertising and the May Cass Freight Index™.

Commentary No. 896 (June 29, 2017) reviewed the third estimate of first-quarter 2017 GDP.

General Commentary No. 894 (June 23, 2017) reviewed unfolding economic, financial and political circumstances in the context of market expectations shifting towards an "unexpected" headline downturn in broad economic activity, along with headline details on May 2017 Real Median Household Income (Sentier Research) and New- and Existing-Home Sales.

Commentary No. 892 (June 15, 2017) reviewed May 2017 Industrial Production and assessed current circumstances and likely pending shifts in FOMC policy, in the context of rapidly-deteriorating, headline economic data.

Commentary No. 890 (June 5, 2017) covered the negative-downside annual benchmark revisions to the trade deficit, the May 2017 estimates of labor conditions, ShadowStats Ongoing Money Supply M3, The Conference Board Help Wanted OnLine® Advertising and April 2017 estimates of the Cass Freight Index™, and the monthly trade deficit and construction spending.

Special Commentary No. 888 (May 22, 2017) discussed evolving political circumstances that could impact the markets and the economy, reviewed the annual benchmark revisions to Manufacturers' Shipments and New Orders for Durable Goods and updated Consumer Liquidity Conditions.

Commentary No. 887 (May 18, 2017) reported on the April 2017 detail for Industrial Production and Residential Construction (Housing Starts), with some particular attention to historic, protracted periods of economic non-expansion, of which the current non-recovery is the most severe.

Special Commentary No. 885, entitled *Numbers Games that Statistical Bureaus, Central Banks and Politicians Play*, (May 8, 2017) reviewed the unusual nature of the headline reporting of the April 2017 employment and unemployment details.

Commentary No. 882 (April 27, 2017) summarized the annual benchmark revisions to Retail Sales and reviewed the March 2017 releases of New Orders for Durable Goods and New- and Existing-Home Sales.

Commentary No. 877 (April 2, 2017) outlined the nature of the downside annual benchmark revisions to industrial production, along with implications for pending annual revisions to Retail Sales, Durable Goods Orders and the GDP.

Commentary No. 876 (March 30, 2017) current headline economic activity in the context of formal definitions of the business cycle (no other major series come close to the booming GDP, which is covered in its third revision to fourth-quarter activity. Also the February 2017 SentierResearch reading on real median household income was highlighted.

Commentary No. 875 (March 24, 2017) assessed and clarified formal definitions of the U.S. business cycle, which were expanded upon significantly, subsequently, in *No. 876*. It also provided the standard review of the headline February 2017 New Orders for Durable Goods, New- and Existing-Home Sales and the Cass Freight Index™.

General Commentary No. 867 (February 24, 2017) assessed mixed signals for a second bottoming of the economic collapse into 2009, which otherwise never recovered its level of pre-recession activity. Such was in the context of contracting and faltering industrial production that now rivals the economic collapse in the Great Depression as to duration. Also covered were the prior January 2017 New- and Existing Home Sales.

Commentary No. 864 (February 8, 2017) analyzed January 2017 Employment and Unemployment detail, including benchmark and population revisions, and estimates of December Construction Spending, Household Income, along with the prior update to Consumer Liquidity.

Commentary No. 861 (January 13, 2017) covered the December 2016 nominal Retail Sales, the PPI, with a brief look at some summary GAAP reporting on the U.S. government's fiscal 2016 operations.

No. 859 Special Commentary (January 8, 2017) reviewed and previewed economic, financial and systemic developments of the year passed and the post-election year ahead.

Note on Reporting-Quality Issues and Systemic-Reporting Biases. In the context of historical background provided in *Special Commentary No. 885*: *Numbers Games that Statistical Bureaus, Central Banks and Politicians Play*, significant reporting-quality problems remain with most major economic series. Beyond the pre-announced gimmicked changes to reporting methodologies of the last several decades, which have tended both to understate inflation and to overstate economic activity meaningfully—as generally viewed in the common experience of Main Street, U.S.A.—ongoing, near-term headline reporting issues often reflect systemic distortions of monthly seasonal adjustments.

Data instabilities—induced partially by the still-evolving economic turmoil of the last eleven years—have been without precedent in the post-World War II era of modern-economic reporting. The severity and ongoing nature of the downturn provide particularly unstable headline economic results, with the use of concurrent seasonal adjustments (as seen with retail sales, durable goods orders, employment and unemployment data). While historical seasonal-factor adjustments are revised every month, based on the latest, headline monthly data, the consistent, revamped historical data are not released or reported at the same time. That issue is discussed and explored in the labor-numbers related *Supplemental Commentary No. 784-A* and *Commentary No. 695*.

Further, discussed in *Commentary No. 778*, a heretofore unheard of spate of "processing errors" surfaced in 2016 surveys of earnings (Bureau of Labor Statistics) and construction spending (Census Bureau). This is suggestive of deteriorating internal oversight and control of the U.S. government's headline economic reporting. That construction-spending issue now appears to have been structured as a gimmick to help boost the July 2016 GDP benchmark revisions, aimed at smoothing the headline reporting of the GDP business cycle, instead of detailing the business cycle and reflecting broad economic trends accurately, as discussed in *Commentary No. 823*.

Combined with ongoing allegations in the last several years of Census Bureau falsification of data in its monthly Current Population Survey (the source for the BLS Household Survey), these issues have thrown into question the statistical-significance of the headline month-to-month reporting for many popular - economic series (see *Commentary No. 669*). Investigative-financial/business reporter John Crudele of the *New York Post* has written extensively on such reporting irregularities: *Crudele Investigation*, *Crudele on Census Bureau Fraud* and *John Crudele on Retail Sales*.

PENDING ECONOMIC RELEASE: New Residential Construction—Housing Starts, Building Permits (August 2017). The Census Bureau will release the August 2017 estimate of New Residential Construction, including Housing Starts and Building Permits on Tuesday, September 19th, with detail covered in *Commentary No. 911* of that date.

In line with common-reporting experience of recent years, monthly results are likely to be unstable, heavily revised and not statistically meaningful, holding in a general pattern of down-trending stagnation, as seen increasingly in recent months (see *Commentary No. 905*). That said, in the wake of frequent, although irregular extreme monthly swings, almost anything remains possible in this unstable series in a given month, despite what usually are positive, consensus expectations for the headline detail.

Irrespective of the usual lack of significance in the headline numbers, the broad pattern of Housing Starts should remain consistent with the low-level, stagnant-to-downtrending activity, seen at present. Both Housing Starts and Building Permits showed patterns of deepening quarter-to-quarter contractions for both first- and second-quarter 2017, with third-quarter activity initially trending lower, and with respective headline activity down by 53.0% (-53.0%) and by 46.0% (-46.0%) from recovering pre-recession highs. Such low-level stagnation is particularly evident with headline detail viewed in the context of a six-month moving average. Again, this series remains subject to regular and extremely-large, prior-period revisions.

Discussed in today's *Consumer Liquidity Watch*, 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 liquidity-strapped U.S. consumer remains unable to sustain growth in broad economic activity, including demand for residential construction.