

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

COMMENTARY NUMBER 950

April Retail Sales, Industrial Production, Housing Starts, Freight and Benchmark Revisions

May 20, 2018

Benchmark Revisions Knocked Off Roughly Two-Percent Real Growth from Manufacturers' Shipments and Related Economic Activity Since 2015

Monthly Gains of 0.7% in Both March and April 2018 Industrial Production Were a Decline of 0.1% (-0.1%) and a Gain of 0.1%, Net of Prior Months' Revisions

First-Quarter Industrial Production and Manufacturing Revised Sharply Lower: Production Now 0.43% (-0.43%) Below Fourth-Quarter 2014 Peak (Previously Recovered); First-Quarter Manufacturing Now 6.07% (-6.07%) Below Its Pre-Recession Peak

April Manufacturing Hit a Record 124 Months of Economic Non-Expansion

April Freight Index Rose to a Post-Recession High, With Strong Annual Growth, Albeit Off Peak, with Activity Still Shy by 6.65% (-6.65%) of a Full Recovery

April Real Retail Sales Gained 0.08% in the Month, 2.20% Year-to-Year, With Likely Major Downside Benchmark Revisions Looming on May 25th

Despite Upside Revisions to February and March Real Retail Sales, the Somewhat-Narrowed First-Quarter Contraction of 2.05% (-2.05%) Still Was Deepest Since the 2009 Depths of the Great Recession

Given No Apparent Improvement in Reporting Quality, Annual Revisions to Nonsensically-Volatile Housing Starts Were Nil; Inconsistent Building Permits Revised Higher by 2.1% Only in 2017

Starts and Permits Continued in Low Level, Non-Recovering Stagnation, Still Down by 43.4% (-43.4%) and 40.3% (-40.3%) from Pre-Recession Highs

PLEASE NOTE: The next missive (Commentary No. 951), targeted for Friday, May 25th, will cover April 2018 New Orders for Durable Goods (including full analysis of related benchmark revisions), New- and Existing-Home Sales and summary headlines from the Retail Sales benchmark revision of that date (full benchmark coverage will follow in Commentary No. 952). Where May 25th is getaway day for Memorial Day Weekend, release of No. 951 should follow shortly the publication of the Retail Sales benchmarking.

Best wishes — John Williams (707) 763-5786

Today's (May 20th) Opening Comments and Executive Summary. The *Opening Comments* reviews the significant benchmark revisions to the Manufacturers' Shipments and related New Orders for Durable Goods Series, as well as the unusually-severe monthly revisions accompanying April 2018 Industrial Production reporting. Although touched upon, the annual benchmark revisions to New Residential Construction were nil and are covered in the *Executive Commentary and Reporting Detail*. Also covered here is the April 2018 Cass Freight Index™. The **Executive Summary** (page 12) highlights reporting of April 2018 Retail Sales, Industrial Production and Housing Starts (with related annual-revision graphs).

The **Reporting Detail** (page 26) reviews in greater depth the April Retail Sales, Industrial Production and New Residential Investment (Housing Starts and Building Permits) and further annual-revision graphs.

The **Consumer Liquidity Watch** (page 56) has been updated with new detail on monthly real Median Household Income from [Commentary No. 948](#), April Real Average Weekly Earnings from [Commentary No. 949](#), and the University of Michigan's early-May estimate of Consumer Sentiment measure.

The **Week, Month and Year Ahead** (page 71) provides background on recent *Commentaries* and previews next week's releases of April 2018 New Orders of Durable Goods, New- and Existing-Home Sales and the pending annual benchmark revisions to Retail Sales.

OPENING COMMENTS

Benchmark Revisions to Manufacturers' Shipments and Monthly Revisions to Industrial Production Were Meaningful, Not So the Annual Revisions to New Residential Construction. The May 17, 2018 annual benchmarking of Manufacturers' Shipments and the subsidiary reporting of New Orders for Durable Goods series showed that a broad segment of U.S. real economic activity had grown about two-percent less than previously estimated and headlined in the period 2015 to 2017. The downside revisions to these series showed a continuing pattern of successive, negative annual benchmarkings, a pattern also seen in the March 23, 2018 annual benchmark revisions to Industrial Production ([Commentary No. 942-B](#)). Where the Production and the Shipments/Orders series have meaningful overlap in their benchmarking sources, related patterns of revision usually follow (see *Graphs OC-3 to OC-8*). Preliminary coverage here of the revised Manufacturers' Shipment and New Orders data is summary in nature. More-complete detail will follow along with the initial reporting of April 2018 New Orders for Durable Goods, to be covered in *Commentary No. 951* of May 25th.

Looming May 25th Retail Sales Benchmarking Also Should Be to the Downside. The May 25th annual benchmark revision to Retail Sales activity also should be on the downside, given some related overlap of underlying benchmarking sources with the Shipments series, albeit not as meaningful as seen between Shipments and Production. More fundamentally, discussed in the *Reporting Detail* (see also [Special Commentary No. 885, Numbers Games that Statistical Bureaus, Central Banks and Politicians Play](#)), the government's statistical Bureaus tend to use overly-optimistic assumptions, when hard data are not available for headline economic reporting. For various reasons, the Bureaus prefer to overstate rather than understate, economic activity. Benchmark revisions enable updated historical estimates, with better-quality, underlying detail than initially available, often with implications for current headline reporting.

Annual Benchmark and Seasonal-Adjustment Revisions to New Residential Construction Were Negligible. Annual revisions to Housing Starts and Building Permits were published by the Census Bureau and the Department of Housing and Urban Development on May 16th, as incorporated into the monthly release of headline April 2018 data. Discussed and graphed in the *Executive Summary* and *Reporting Detail*, net revisions to the Housing Starts were nil, with an inconsistent, one-year (2017) 2.1% upside revision to Building Permits, unrelated to the purportedly-dependent Housing Starts series.

Housing Starts graphs, showing activity both “before” and “after” revisions, generally show little or no visible “before” line, because series so closely overlie each other, while the plots of Building Permits show the one-year’s inconsistent revisions (see *Graphs 7 to 12* in the *Executive Summary* and *Graphs 37 to 39* in the *Reporting Detail*).

Importantly, there appears to have been no meaningful improvement in reporting quality for the Housing Starts series, where statistical confidence intervals around the headline monthly and annual changes have not narrowed noticeably, if at all. Accordingly, the regular nonsense-volatility seen in the monthly reporting of the Housing Starts series, coming into the benchmarking, likely will continue.

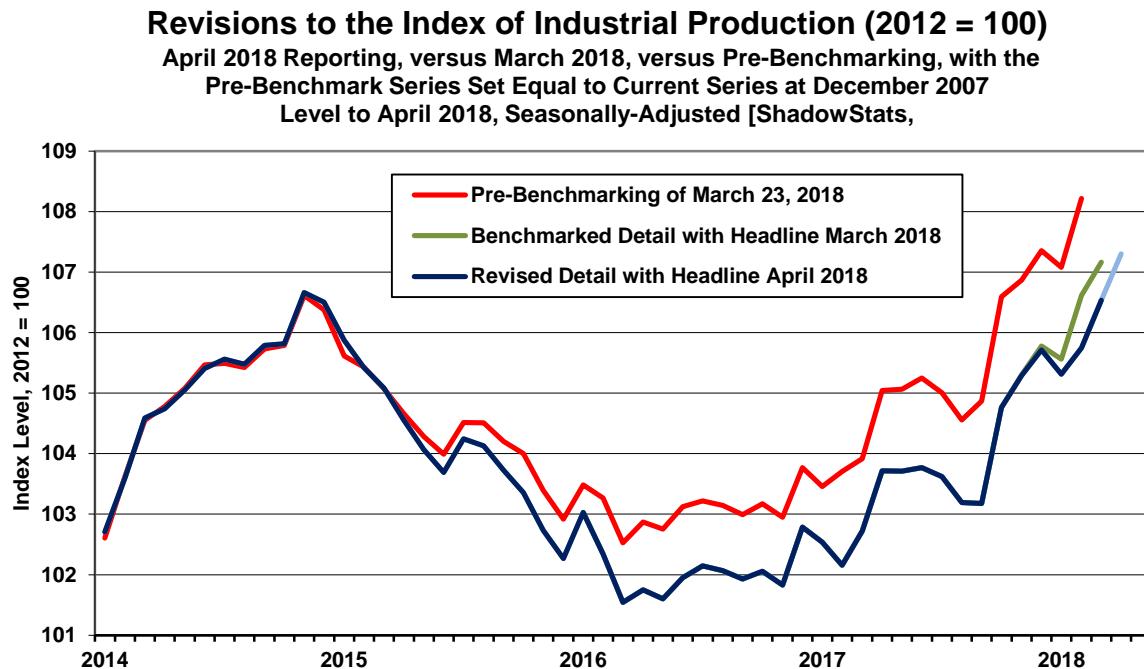
April 2018 Industrial Production Showed Major Downside Revisions of Almost-Benchmarking Scope. April 2018 production and manufacturing reporting reflected massive downside revisions to monthly activity from December 2017 through March 2018, significantly weakening the recent economic environment and current outlook, as discussed in the *Reporting Detail* and plotted here in *Graph OC-1*, with the new headline detail also reflected in *Graphs OC-2* and *OC-3*. The headline monthly gain of 0.7% in April 2018 was created simply by a sharp downside revision to March activity, otherwise the April gain would have been just 0.1%, noted in the opening headlines to this *Commentary*.

Industrial Production/Manufacturing Benchmarking Set the Tone for Manufacturers’ Shipments and New Orders for Durable Goods. The functional sequence for these data would be from orders, to manufacturing (production) to shipments. Yet, with headline production reporting always before the reporting of the orders and shipments, headline production data tend to set expectations for the subsequent shipments and orders reporting. *Graphs OC-1 to OC-3* reflect the March 23rd benchmark revisions to Industrial Production and Manufacturing (see the *Opening Comments of Commentary No. 942-B*). The Pre-Benchmarking lines in red show the headline February 2018 detail as initially published on March 16th, and the Current Series lines in blue showing the benchmark revisions of March 23rd updated for the March 2018 details of April 17th, and subsequent April 2018 detail published on May 16th.

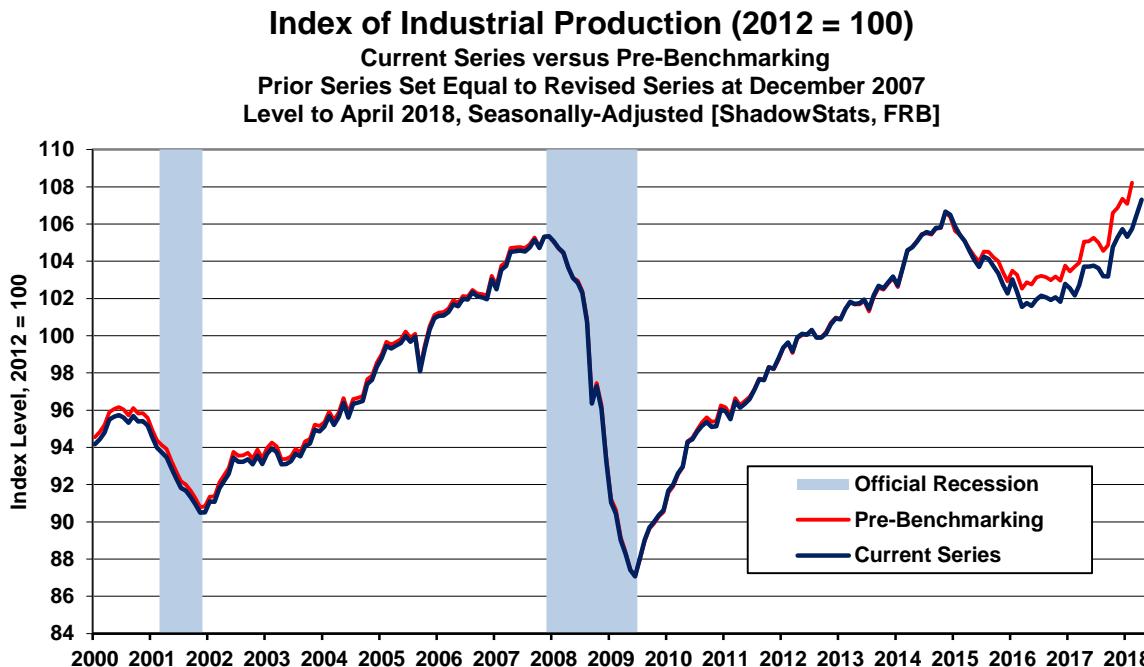
Graphs OC-1 to OC-3 tied to Production/Manufacturing are shown as complements to the *Graphs OC-4 to OC-8* of Manufacturers’ Shipments and New Orders for Durable Good. Note the dark blue line in

Graph OC-3 breaks to a light blue line at March 2018, so as to highlight the relative March downside revision. [Text continues on page 6.]

Graph OC-1: Industrial Production Revisions: April vs. March vs. Pre-Benchmarking)

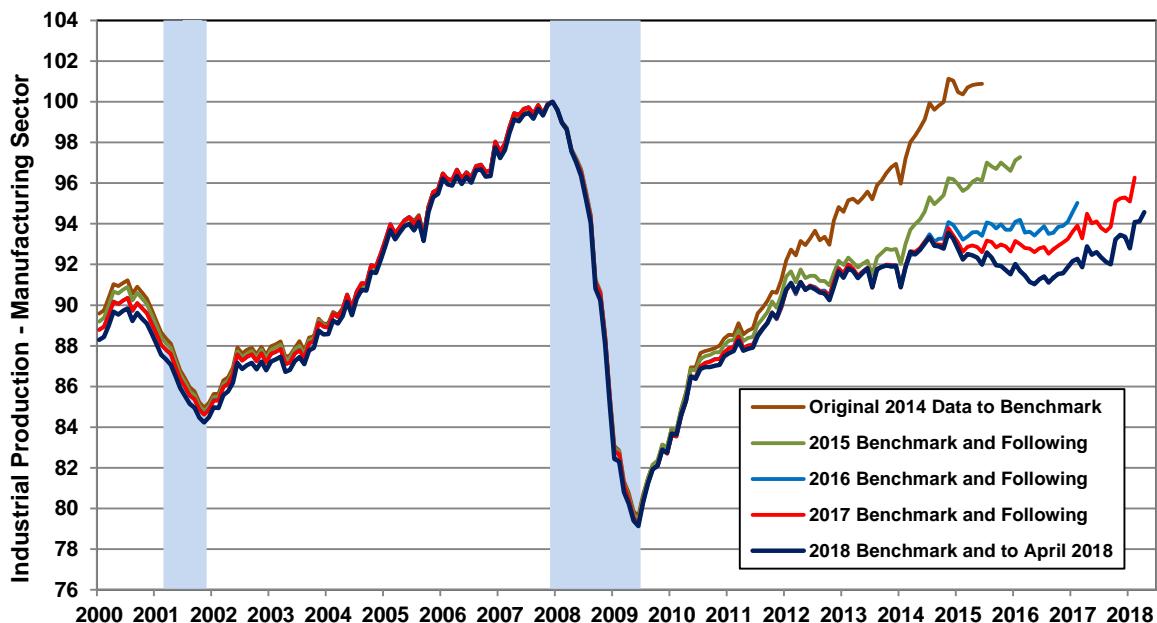


Graph OC-2: Current Industrial Production versus pre-March 23, 2018 Benchmarking



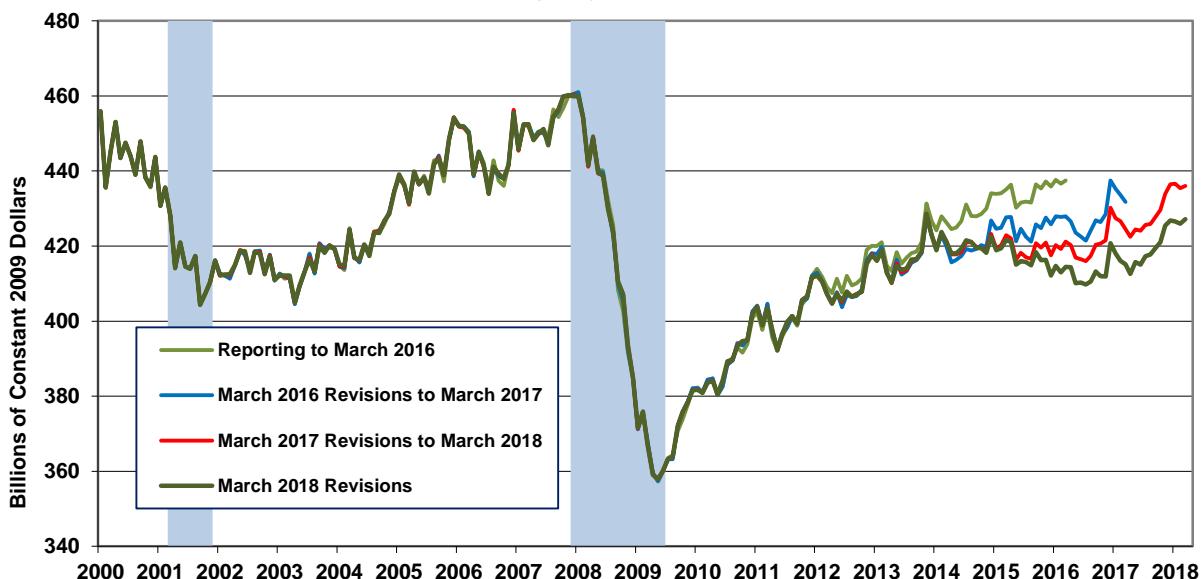
Graph OC-3: Current Manufacturing Sector versus pre-March 23, 2018 and Earlier Benchmarkings

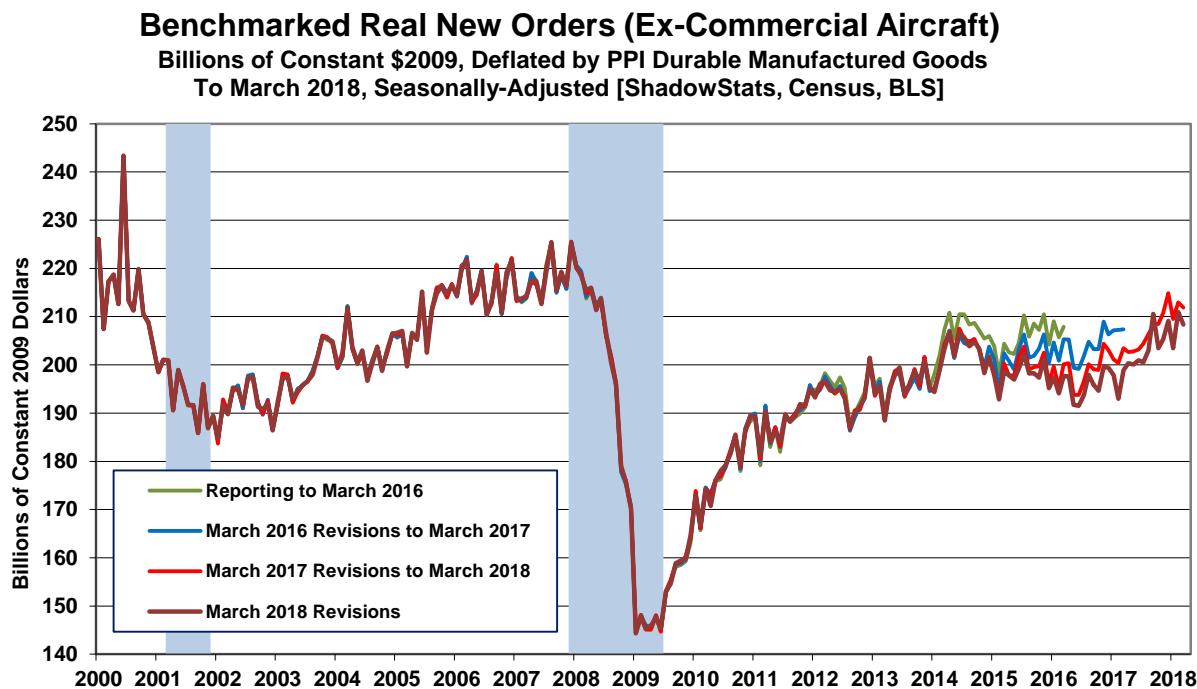
Manufacturing-to-Date vs. Annual Benchmark Revisions
December 2007 = 100, Sources: ShadowStats, FRB, St Louis Fed



Graph OC-5: Real Manufacturers' Shipments versus pre-May 17, 2018 and Earlier Benchmarkings

Benchmarked Manufacturers' Real Shipments, All Industries
Billions of Constant 2009 Dollars, Deflated by PPI Manufactured Goods
To March 2018, Seasonally-Adjusted [ShadowStats, Census, BLS]



Graph OC-6: Real New Orders Ex-Commercial Aircraft versus pre-May 17, 2018 and Earlier Benchmarkings

Annual Real Growth in Shipments Revised Lower by 0.5% (-0.5%) in 2015, by 1.2% (-1.2%) in 2016 and by 0.5% (-0.5%) in 2017. Manufacturers' shipments represent roughly 46% of Gross Domestic Product (GDP), so downside revisions here should have some parallel impact on the July 27th GDP benchmark revision, consistent with the ShadowStats contention of underlying economic reality being weaker than the headline economic numbers. Where the benchmark revisions to these series went back to 2002, the most significant changes were seen in 2015 to 2017.

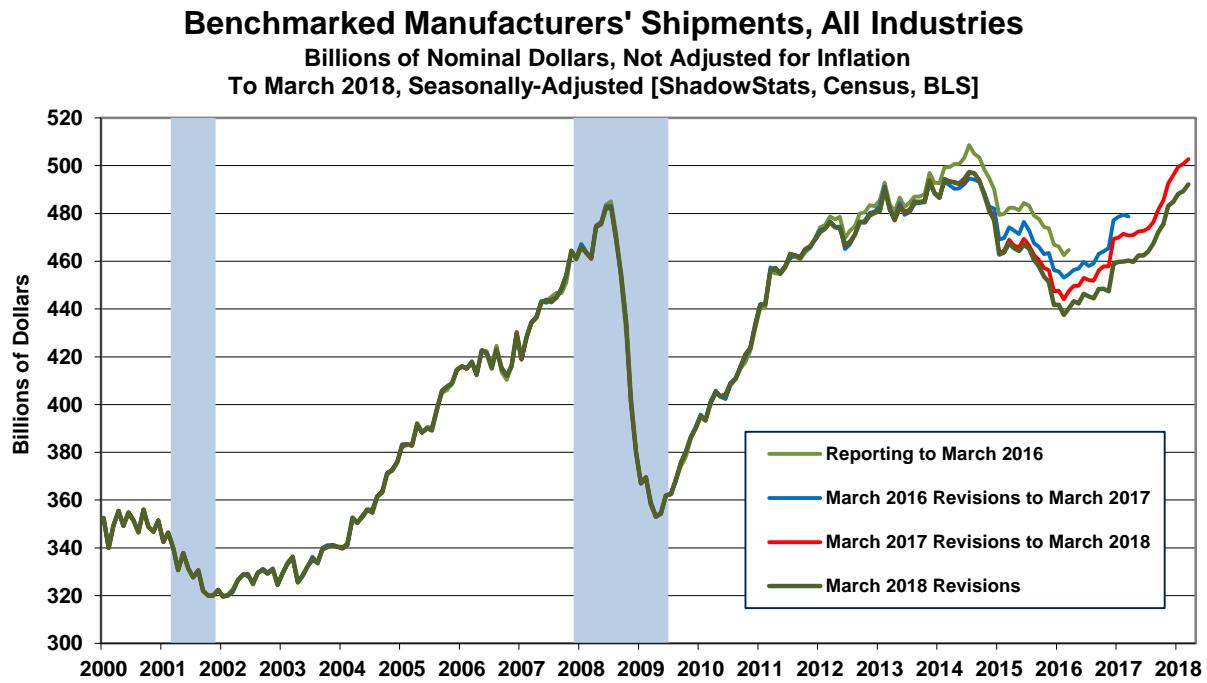
The table provides summary detail of the benchmarked revisions to the level of inflation-adjusted real activity in 2017, along with the revisions to year-to-year real growth for 2015 to 2017. Durable Goods accounts for roughly 50% of the total shipments, or 48% ex-commercial aircraft (the series used by ShadowStats as a leading indicator to broad activity, see [Commentary No. 947](#)).

May 17, 2018 Annual Benchmark Revisions	Revised Change in			
	Real Level 2017	Year-to-Year Real Growth		
	2015	2016	2017	
Manufacturer's Shipments	-2.1%	-0.5%	-1.2%	-0.4%
New Orders for Durable Goods, Ex-Commercial Aircraft	-1.8%	-0.4%	-0.9%	-0.4%

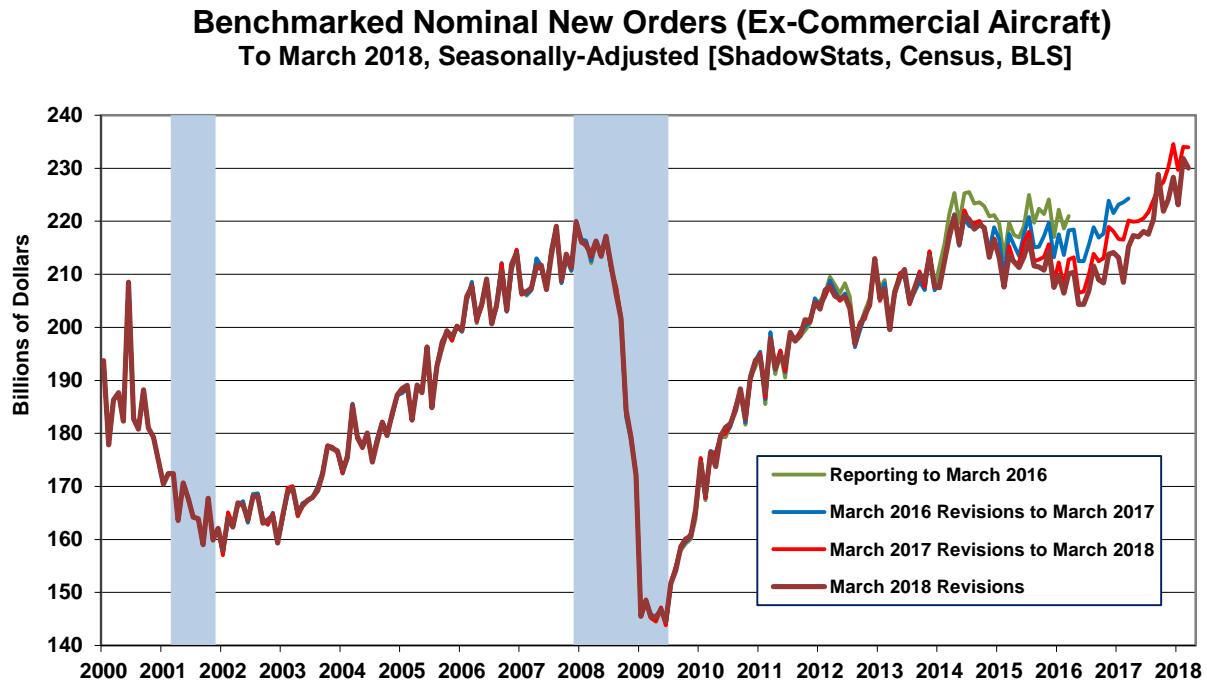
There are two notes to the accompanying graphs. *Graph OC-3* of comparative benchmarkings of the Manufacturing Sector from the March 23, 2018 benchmarking of Industrial Production ([Commentary No. 942-B](#)) includes an extra line of early detail from 2014, not currently available in parallel for the graphs of Shipments and Orders. *Graph OC-6* of Real New Orders Ex-Commercial Aircraft shows 2017 briefly jumping above 2016 activity. That point was September 2017, with the post-disaster recovery/replacement orders surging for automobiles, for example. Again, further detail will follow with the

coverage of April 2018 New Orders for Durable Goods in *Commentary No. 951*. *Graphs OC-7* and *Graph OC-8* plot the current and historical benchmark revisions to the nominal (before inflation adjustment) Manufacturers' Shipments and New Orders for Durable Goods.

Graph OC-7: Nominal Manufacturers' Shipments versus pre-May 17, 2018 and Earlier Benchmarkings



Graph OC-8: Nominal New Orders Ex-Commercial Aircraft versus pre-May 17, 2018 and Earlier Benchmarkings



Cass Freight Index™ (April 2018)—Trending Higher at a Post-Recession Peak High, but Still Non-Expanding; Shy by 9.6% (-9.6%) of Recovering Its Pre-Recession Peak. An independent, reliable private indicator of real-world economic activity and shifting business patterns, the April 2018 [Cass Freight Index™](#) was published May 17. Although uptrending, the improving series still remains shy of full economic recovery. The headline detail here remains as published, not seasonally adjusted and not subject to annual benchmark revisions, unlike some of the better-quality government numbers, such as Industrial Production and New Orders for Durable Goods that still are heavily modeled and gimmicked, (see the prior section and [Commentary No. 942-B](#)).

The April 2018 Cass Freight Index numbers continued in low-level economic non-expansion as otherwise reflected in some elements of broad economic and general business activity, although showing a pattern of positive, uptrending headline activity. The pace of year-to-year growth remained strong, albeit down from last month and slightly weaker than the near-term January 2018 peak. The unadjusted monthly level of activity hit a new post-recession high, but still held well below its pre-recession peak activity.

The 12-month trailing average of activity also hit a post-recession high, yet it remained meaningfully shy of recovering its pre-recession peak. Activity reflected in the 12-month trailing average—used to eliminate seasonality in the unadjusted series (see the *General Background to the Freight Index*)—remained in low-level, albeit uptrending stagnation, down by 6.65% (-6.65%) from recovering its formal pre-recession high, and down by 9.61% (-9.61%) from its precursor peak (see *Graph OC-9*).

For the seventeenth consecutive month, the eighteenth month in the last nineteen, year-over-year change in the unadjusted monthly index was positive. It notched minimally lower in April 2018 to a still robust 10.18%, down from its near-term peak of 12.54% in January 2018, which had surged, having started to pick up in year-to-year change with November 2017 after several months of slowing growth (see *Graph OC-11*). Annual growth had hit a near-term peak of 7.06% in May 2017, falling back to 4.77% in June 2017, slowing to 1.35% in July 2017, rebounding to 3.86% in August 2017, falling back anew to 3.24% in September 2017 and to 2.85% in October 2017. Then it began rebounding to 6.26% in November 2017, 7.17% in December 2017, peaking at 12.54% in January 2018, easing back to 11.44% in February 2018, up to 11.94% in March 2018 down to 10.18% in April 2018.

A consecutive string of nineteen months of annual contraction in the Freight Index began in March 2015. That was consistent with the “new” recession signal following the near-term Industrial Production peak in November 2014 (recovered anew in initial March 2018, reporting, then lost again for March with the April revisions, only to be regained once more with the headline April 2018 level).

Before the headline April production reporting, first-quarter 2018 Industrial Production had topped its fourth-quarter 2014 peak by all of 0.12%. Yet, that first quarter 2018 detail just revised lower and now is shy of its fourth-quarter 2014 peak by 0.43% (-0.43%). Headline industrial production showed a string of twenty consecutive months of year-to-year contraction beginning April 2015, a pattern never seen outside of formal economic recession in the 100-year history of the Industrial Production series. Such has fair shot now of being recognized as a formal recession, based on increasingly-likely negative GDP comprehensive benchmark revisions on July 27th, back to 1929, and the fluttering near-recovery of the headline production series versus its pre-2015 downturn.

Comparative growth patterns of the Freight Index versus the never-recovered, dominant Manufacturing Sector of Industrial Production are shown in *Graphs OC-0* and *OC-10* as to level and in *Graphs OC-11* and *OC-12* as to year-to-year change.

The recent, strengthening pattern of monthly year-to-year gains in the Cass Index has excited trucking-industry speculation that the recession in freight activity has hit bottom, and that activity is moving higher. That certainly appears to be the case. Even with the high levels of annual gain in the first four months of 2018, though, the current patterns of smoothed levels of activity and year-to-year gains have yet to break out of the non-recovery pattern of the last ten-plus years and to enter a period of new economic expansion. Again, as shown in *Graphs OC-9* and *OC-10*, monthly activity is uptrending, although not recovered.

No Economic Expansion. When economic activity starts to recover, such happy growth traditionally is not clocked formally as new economic “Expansion,” until the level of the series breaks above its prior, pre-recession high. This is reviewed in [Commentary No. 875](#) and expanded upon in [Commentary No. 876](#) on the nature of the business cycle.

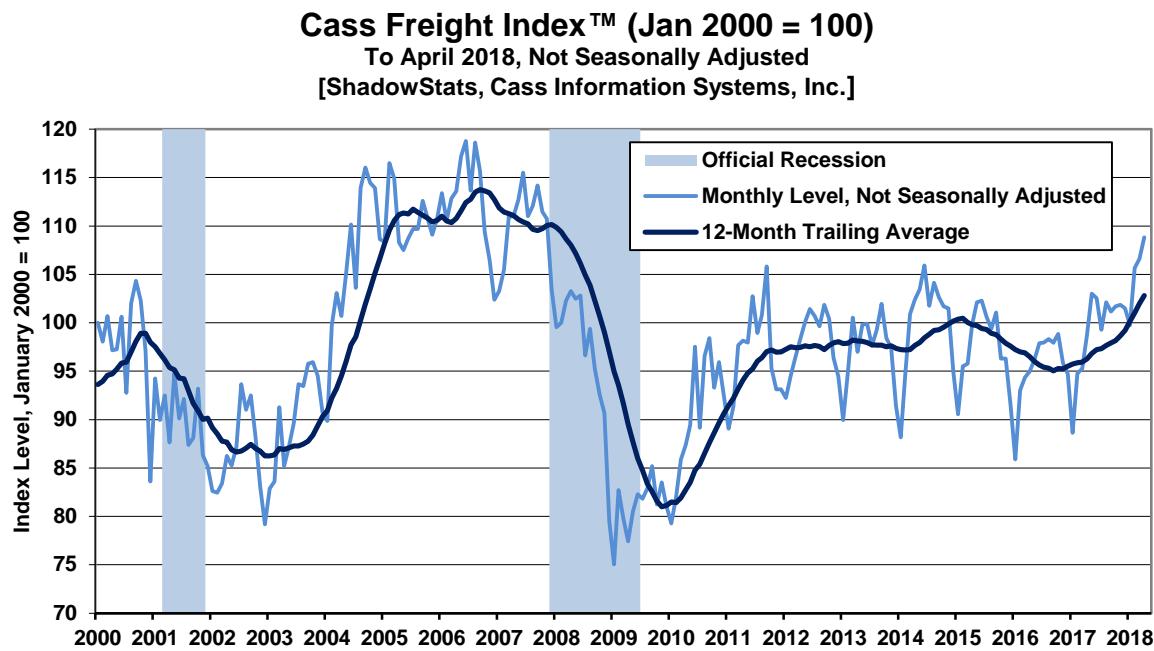
Noted earlier, the ShadowStats smoothed (12-month trailing average) headline reading on the Cass Freight Index, through April 2018 (*Graph OC-9*) remained down by 9.61% (-9.61%) from “Recovering” its preliminary pre-recession peak of September 2006, down by 6.65% (-6.65%) from recovering its formal “Pre-Recession Peak” of December 2007 (Fourth-Quarter 2007), which was coincident the Industrial Production, Manufacturing and GDP series. While the “Recovery” receives the benefit of growth off low levels of activity—the recession “Trough”—the deficit in current activity versus the pre-recession peak has to be overcome, before formal, economic “Expansion” begins.

Economic downturns eventually hit bottom. The official collapse in aggregate economic activity (as measured by the inflation-adjusted, real Gross Domestic Product or GDP), which formally has been recognized from peak activity in December 2007 to a trough in June 2009, appears to be accurate in terms of timing the trough.

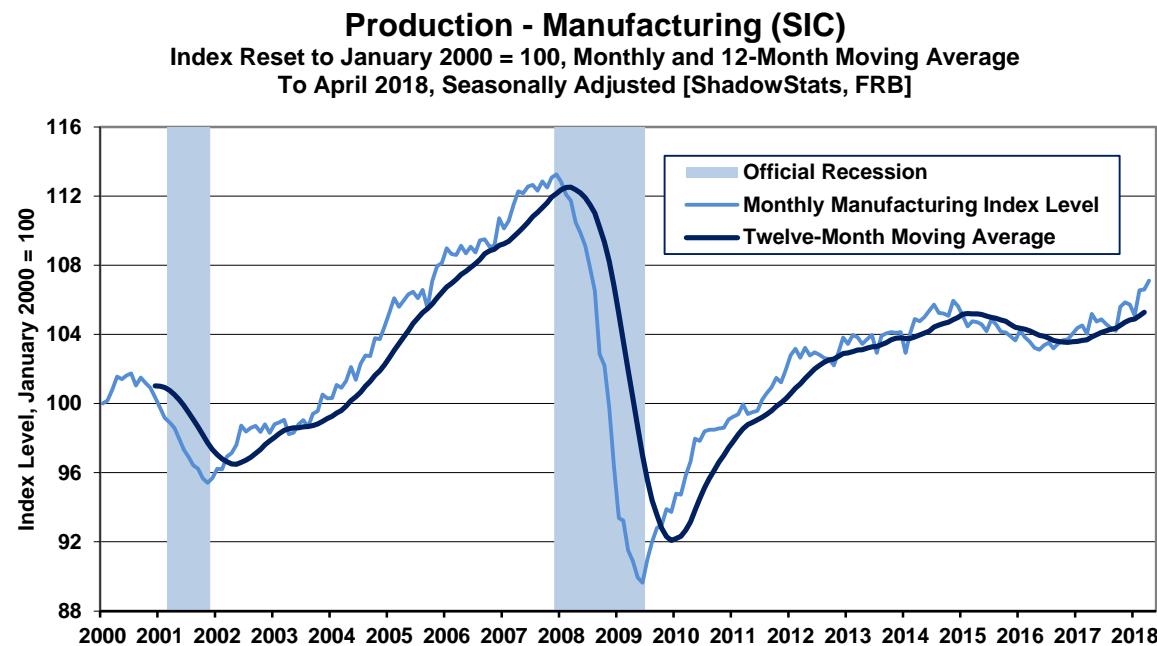
The official contention remains, though, that the GDP fully recovered thereafter, entering a period of new and ever-expanding economic growth, “Expansion,” in second- or third-quarter 2011. ShadowStats contends that the broad economy never recovered fully, moving instead into a period of protracted, low-level stagnation, which began to turn down anew in December 2014. Such still was reflected in latest Industrial Production Benchmarking and subsequent reporting (see [Commentary No. 942-B](#) and the *Reporting Detail*), as well as the current benchmark revisions to Manufacturers’ Shipments and New Orders for Durable Goods (see the prior section). These charts of freight activity also will be compared to, and contrasted with, the April 2018 New Orders for Durable Goods in the next *Commentary No. 951*.

General Background to the Freight Index. *[This section largely is repeated from its prior version in [Commentary No. 946](#).]* Beginning with [Commentary No. 782](#) (further information is available there), ShadowStats published the detail on the Cass Index, a measure of North American freight volume as calculated by, and used with the permission of Cass Information Systems, Inc. Freight activity is a basic, underlying indicator of commercial activity and broad GDP. Of the combined U.S. and Canadian (North American) GDP in 2017, roughly 92% was attributable to the United States. *[Text continues on page 11].*

Graph OC-9: CASS Freight Index™ Moving-Average Level (2000 to April 2018)



Graph OC-10 Industrial Production-Manufacturing, 12-Month Moving-Average Level (2000 to April 2018)

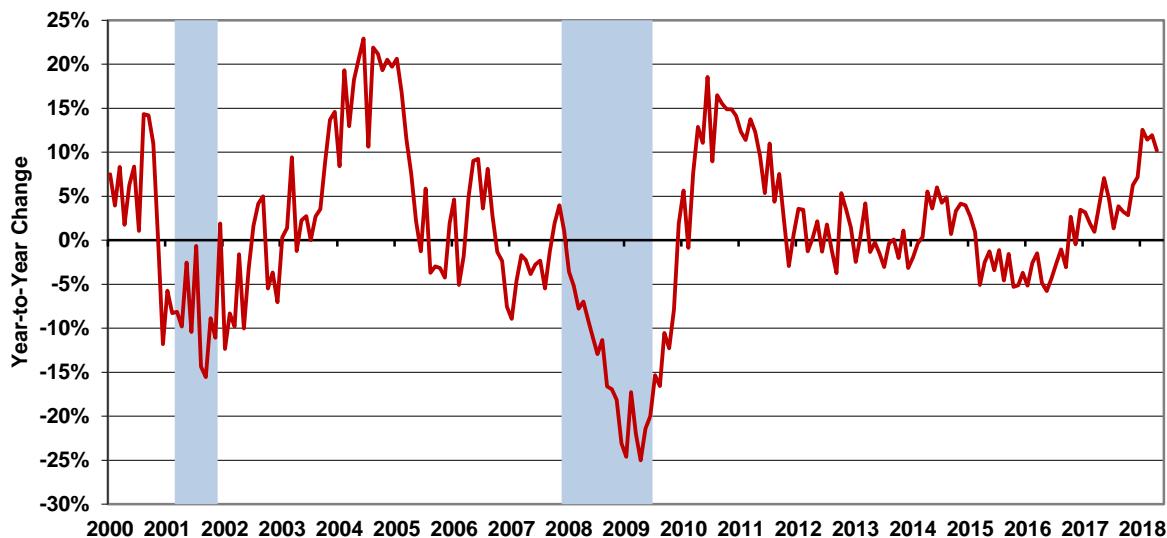


Graph OC-11: CASS Freight Index, Monthly Year-to-Year Percent Change (2000 to April 2018)

Cass Freight Index™ (Year-to-Year Percent Change)

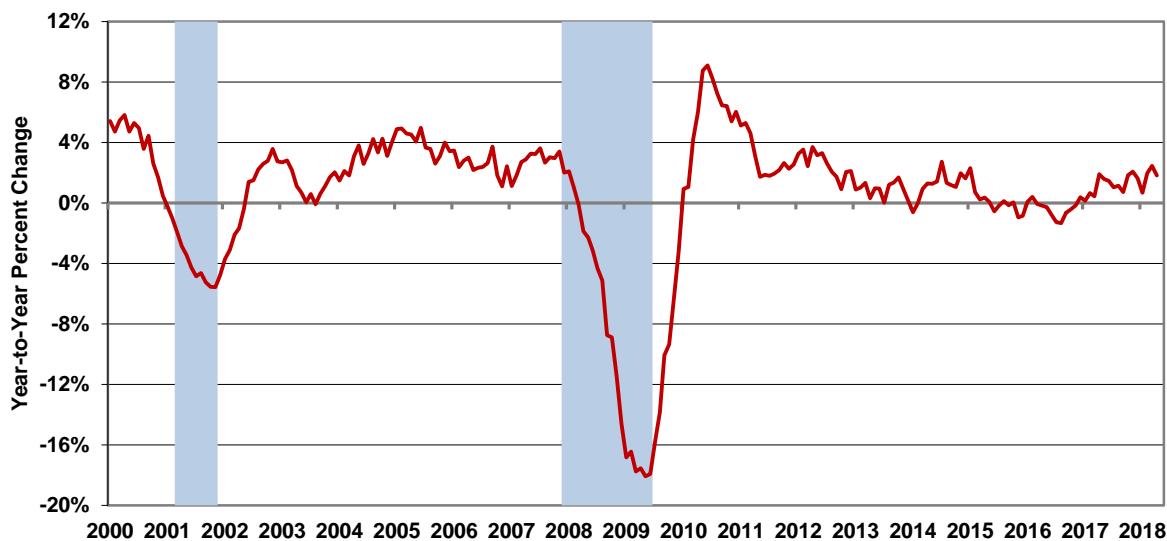
Monthly to April 2018, Not Seasonally Adjusted

[ShadowStats, Cass Information Systems, Inc.]



Graph OC-12: Manufacturing, Year-to-Year Percent Change (2000 to March 2018)
(Same as Graph 23 in the Reporting Detail)

Production - Manufacturing (Year-to-Year Percent Change)
To April 2018, Seasonally-Adjusted [ShadowStats, FRB]



Graph OC-9 reflects the monthly freight numbers updated through April 2018. While adjusted for factors such as days in a month, the headline monthly detail is not adjusted for broad seasonality patterns, such as

retailers stocking for the holiday shopping season. Accordingly, ShadowStats plots the series using a trailing twelve-month average, which tends to neutralize regular seasonal patterns over the period of a year, along with the unadjusted monthly detail plotted in the background. ShadowStats also re-indexed the series to January 2000 = 100, consistent with other graphs used here. The headline Cass Index plot is based on January 1990 = 100. The plot of the trailing twelve-month average of the freight index shows it hit a near-term peak in February 2015, consistent with the onset of a “new recession” in December 2014. It slowed through September 2016, then flattened out and turned back to the upside through the current April 2018 reading, its highest level of the post-recession period, although still shy of its pre-recession peak (again, see *Graph OC-9*).

Another approach to assessing not-seasonally-adjusted monthly detail is to look at year-to-year change by individual month, as plotted in *Graph OC-11*. The unadjusted monthly detail had been in continual year-to-year decline since March of 2015, down at an intensified annual rate of 3.05% (-3.05%) in September 2016. It rallied to an annual gain of 2.66% in October 2016, but fell back into year-to-year contraction of 0.05% (-0.05%) in November 2016, coming back to the plus-side by 3.46% in December 2016. Annual growth fluctuated thereafter in direction until rebounding to 6.26% in November 2017, 7.17% in December 2017, 12.54% in January 2018, with easing back 10.18% in April 2018.

Again, consider for comparison purposes *Graphs OC-9* and *OC-10* of freight and manufacturing activity, all smoothed with twelve-month moving averages and the comparative *Graphs OC-11* and *OC-12* of the monthly, not-smoothed, year-to-year changes in freight and manufacturing. With the headline, smoothed freight numbers through April 2018 down by 6.7% (-6.7%) versus the December 2007 pre-recession high, which on a quarterly basis for first-quarter 2018 was down by 8.1% (-8.1%) from its Fourth-quarter 2007 peak. Again, that is the growth deficit that still has to be overcome, ten-plus years after the fact, before formal economic “Expansion” in freight activity begins again.

In parallel, seasonally-adjusted April 2018 Manufacturing was down by 5.4% (-5.4%) from its December 2017 pre-recession peak; seasonally-adjusted First-Quarter 2018 Manufacturing was down by a revised deeper 6.1% (-6.1%) from its Fourth-Quarter 2007 peak. In happy, ever-incredulous conflict, headline First-Quarter 2018 real GDP detail was up by 16.0%, over the same period, against its fourth-quarter 2007 pre-recession peak.

In combination, *Graphs OC-9* to *OC-12* remain consistent with a pattern of collapsing economic and business activity into 2009, low-level, non-recovering stagnation thereafter and a renewed downturn effectively coincident with a “new” recession, which, again, likely will be timed from December 2014, whether or not it has bottomed and currently is uptrending. There was nothing in recently-published benchmark revisions to the Manufacturing sector in Industrial Production (again, see [Commentary No. 942-B](#)) or to Manufacturers’ Shipments and New Orders for Durable Goods (see the prior section) that alters that near-term, double-dip recession story, other than possibly intensifying it, once again.

EXECUTIVE SUMMARY: Retail Sales—April 2018—Tepid Monthly Real Sales Gain on Top of Upside Revisions; 2.1% (-2.1%) First-Quarter Contraction Still Worst Since Depths of Recession. Inflation-adjusted real Retail Sales gained 0.08% month-to-month in April, on top of positively-revised activity in February and March, boosted, again by the inconsistent, selective reporting of shifting seasonal-adjustment patterns.

The headline, nominal monthly gain of 0.30% in April 2018, was 0.61%, net of upside revisions to February and March activity, but that 0.61% becomes 0.35% net of the regular 0.26% faux monthly boost from the seasonal-factor inconsistencies. Where that was relatively consistent with consensus expectations for a 0.3% to 0.4% monthly gain, net of headline monthly inflation of 0.22%, that left a real monthly gain for the month of April at about 0.13% above where March initially had been reported.

Reporting gimmicks aside, the upside revisions to February and March activity narrowed the headline quarterly contraction in first-quarter 2018 Real Retail Sales. The initial reporting showed an annualized quarterly pace of 2.61% (-2.61%), which now has revised to a contraction of 2.05% (-2.05%), still the deepest quarterly downturn since a drop of in first-quarter 2009 of 5.80% (-5.80%), at the depths of the Great Recession. Annual real growth also revised to 2.05% from an initial estimate of 1.83% in first-quarter 2018, still generating a revised recession-warning signal.

While the contraction in quarterly real growth reflected an easing from fourth-quarter 2017 natural-disaster-recovery boosts, discussed regularly here, the slowing of first-quarter 2018 annual real growth to 2.05%—deep into recession-signal territory—versus 2.50% in first-quarter 2017 was based solely on the relatively merits of first-quarter 2018 activity, which likely still was spiked by some lingering disaster-recovery effects. The comparison with year-ago annual growth bypasses the comparative issues with the latter-2017 disaster distortions.

Nominal Sales Rose at Weaker Pace in April, In the Context of Some Upside Revisions and Continued Shifting of Seasonal Adjustments. Headline, nominal April 2018 Retail Sales rose by a 0.3% in the month, on top of upside revisions to monthly February and March activity. Nearly all that headline gain could be attributed to a relative monthly boost from inconsistently-applied, seasonal-adjustment calculations affecting headline April and February details.

Month-to-month, April 2018 nominal Retail Sales rose by 0.30%, at the second decimal point, versus strongly upwardly revised gains of 0.75% in March and 0.43% in February, against an unrevised contraction of 0.15% (-0.15%) in January. Seasonally-adjusted annual growth in the nominal series was 4.68% in April 2018, down from an upwardly-revised 4.97% in March 2018, 4.19% in February 2018 an unrevised 3.83% in January 2018.

Adjusted for April 2018 CPI-U inflation increasing by 0.22%, headline real monthly sales rose by 0.08% in April, a revised gain of 0.82% in March and monthly contractions of a revised 0.11% (-0.11%) in February an unrevised 0.69% (-0.69%) in January. Seasonally-adjusted real annual growth was 2.20% in April 2018, down from upwardly-revised annual gains of 2.50% in March 2018, 1.89% in February 2018 and an unrevised 1.65% in January 2018.

Real Retail Sales Graphs, Corrected and Otherwise. In the *Reporting Detail*, *Graphs 13* and *15* show the level of real retail sales activity (deflated by the CPI-U), while *Graphs 14* and *16* show year-to-year percent change. The apparent “recovery” and subsequent “expansion” of headline real retail sales shown in the following *Graph 1* (see *Graph 13* 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, then an uptick in fourth-quarter 2016 and ongoing upturn into 2017. A post-hurricane-induced or related surge of activity followed in September through November, where it peaked. Real sales declined in December 2017 and

dropped at an accelerating pace into January and February 2018, but now have shown some revised relative pickup March and a gain in April.

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 used here) results in the deflated series overstating inflation-adjusted economic growth.

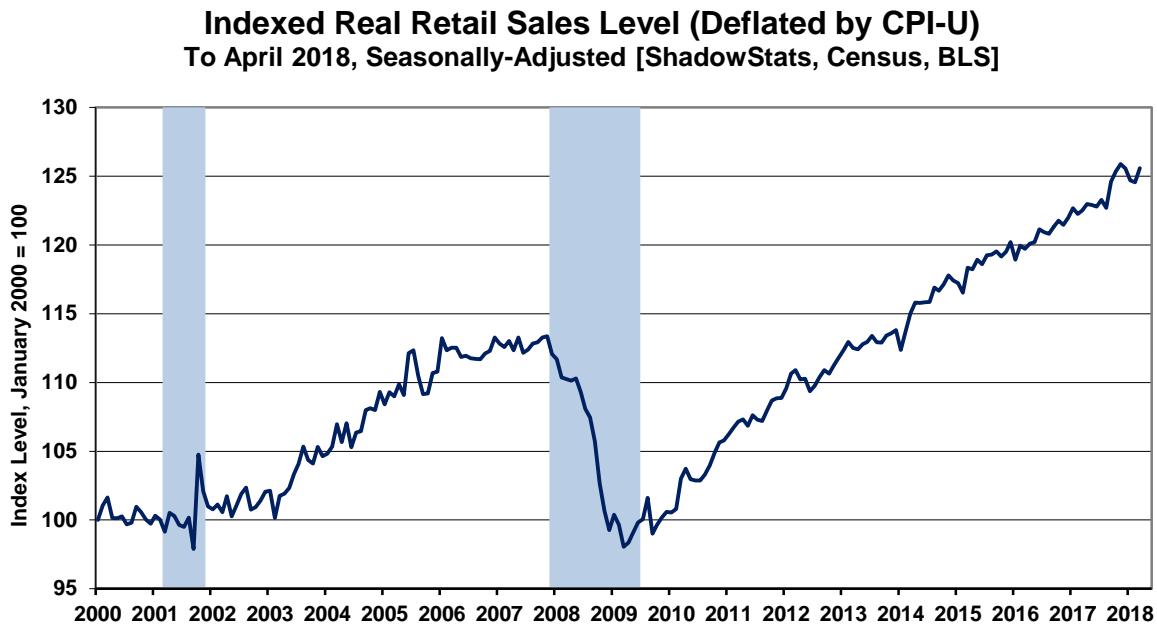
Both of the accompanying graphs are indexed to January 2000 = 100.0 to maintain consistency in the series of graphs related to corrected inflation-adjustment. Parallel, regular plots of the ShadowStats “corrected” Industrial Production Index are found in the next subsection (see *Graphs 3 and 4*) and in *Commentary No. 947* for graphs of “corrected” New Orders for Durable Goods and the “corrected” GDP.

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 1* with *Graph 13* in the *Retail Sales—Nominal and Real* in the *Reporting Detail* section.

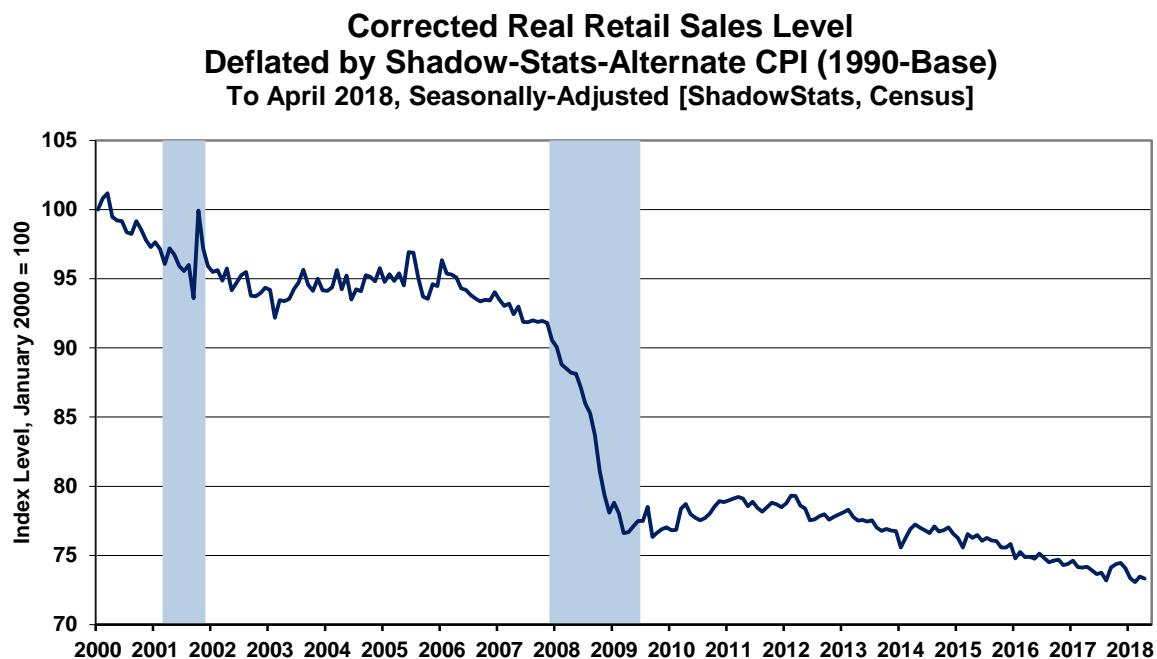
Instead of being deflated by the CPI-U, the “corrected” Real Retail Sales numbers—in *Graph 2*—use the ShadowStats-Alternate Inflation Measure (1990-Base) for deflation. With the higher inflation of the ShadowStats measure, the revamped numbers show a pattern of plunge and stagnation and renewed downturn. That pattern generally is more 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*) than is seen with headline Real Retail Sales detail.

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

Graph 1: Headline Real Retail Sales Level, Indexed to January 2000 = 100



Graph 2: "Corrected" Real Retail Sales Level, Indexed to January 2000 = 100



Note: More-extensive analysis and graphs of Retail Sales follows in the *Reporting Detail*.

Industrial Production—April 2018—Hit by Heavy Downside Revisions, First-Quarter 2018

Production No Longer Has Recovered Its Fourth-Quarter 2014 Peak. Sharply negative revisions to recent months' activity left initial monthly gains in April and March production looking strong. Yet, the headline monthly gain of 0.7% in April 2018, on top of an upwardly-revised 0.7% March gain, left April just 0.1% above the initial March headline reporting, and left March's level 0.1% (-0.1%) below February's headline reporting of last month. Further, first-quarter 2018 production no longer has recovered its fourth-quarter 2014 peak activity, which it had in the initial March 2018 reporting (see the *Opening Comments and Graphs OC-1 to OC-3*).

On the dominant Manufacturing side, the headline 0.5% monthly gain in April Manufacturing also was 0.1% (-0.1%) below initial March 2018 reporting, again thanks to heavy downside revisions of recent months, along with the headline April 2018 detail. With April Manufacturing still shy of recovering its precession peak by 5.42% (-5.42%), the series just logged a record string of 124 straight months of economic non-expansion, a circumstance never seen in the 100-year history of the Industrial Production reporting.

Where the March 23rd annual benchmarking ([Commentary No. 942-B](#)) sharply reduced the historical growth rates and activity levels of headline Industrial Production and its dominant Manufacturing sector, the April revisions took that circumstance a step further. First-quarter 2018 Manufacturing now is shy by 6.1% (-6.1%) [previously 5.6% (-5.6%)] of recovering its fourth-quarter 2007 pre-recession peak, again having completed an unprecedented 41-plus quarters, of economic non-expansion.

Headline Monthly and Annual Details. The May 16th publication of headline April 2018 activity, included related downside revisions to the prior five months (back to November 2017), including aggregate activity for both fourth-quarter 2017 and first-quarter 2018. Headline April 2018 production rose by 0.72%, following an upwardly-revised gain of 0.75% in March and downwardly-revised monthly gains of gain of 0.45% in February.

Net of prior-period revisions, April 2018 industrial production gained 0.13%, instead of the headline 0.72%, March declined by 0.07% (-0.07%), instead of gained 0.75%, and February gained 0.17%, instead of the headline 0.41%. Year-to-year, April 2018 industrial production gained 3.46%, which was down from the initial prior reporting of 4.33% in March 2018. March 2018 gained 3.71% [previously 4.33%] year-to-year, while February 2018 gained 3.51% [previously 4.37%].

Growth by Major Sector. Detailed by major industry group, the April 2018 aggregate industrial production monthly gain of 0.72% [0.13% net of prior-period revisions] reflected monthly gains of 0.42% [down by 0.07% (-0.07%) net of prior period revisions] in the dominant Manufacturing Sector, 1.06% [0.88% net of prior period revisions] in the Mining Sector (including oil and gas production) and 1.91% [0.47% net of prior period revisions] in Utilities.

For the same sectors, the April 2018 year-to-year aggregate industrial production gain of 3.46% was down from a revised 3.71% [previously 4.33%] in March 2018.

The April 2018 annual gain of 1.83% in the dominant Manufacturing Sector was down from a revised 2.46% [previously 3.03%] in March 2018.

The April 2018 annual gain of 10.59% in Mining (including oil and gas production) was down from 10.63% [previously 10.82%] in March 2018.

The April 2018 annual gain of 6.05% in Utilities was up from 3.85% [previously 5.34%] in March 2018.

Production Activity and Graphs—Corrected and Otherwise. Reflecting the broadly-negative, March 23rd annual benchmark revisions to Industrial Production, and subsequent monthly revisions through the headline April 2018 detail of May 17th, index-level and annual-growth production details are found in and plotted in the *Reporting Detail (Graphs 18 to 21)*, along with the drill-down graphs of major subcomponents of the production series (*Graphs 22 to 35*).

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 into second-quarter 2016, 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 reporting outside of periods that eventually were recognized formally as recessions. Looking at the accompanying post-benchmarking *Graph 3*, and the longer-term *Graphs 18* and *19* in the reporting detail, it looks like there is a missing recession call beginning at the end of 2014.

With the reporting of quarterly details in 2017 and first-quarter 2018, production showed both annual and quarterly gains, except for a hurricane-disrupted quarterly contraction in the third-quarter. The headline activity had remained below pre-recession highs seen in 2007, except for a brief recovery in third-quarter 2014, and one-quarter's expansion in fourth-quarter 2014, below which first-quarter 2018 just fell anew.

On a monthly basis, the pre-recession high of November 2007 was recovered briefly in June of 2014, with October and November 2014 a short-lived peak. October 2017 reporting recovered the monthly pre-recession high, for a second time, with a reset to December 2017, in the context of the recent benchmark revisions. Given that benchmarking and subsequent headline March 2018 detail, fourth-quarter 2017 Industrial Production now had regained the fourth-quarter 2007 pre-recession peak for a third time, up by 1.26%, but that now has eased back to 0.71%.

With the initial first-quarter 2018 Industrial Production reporting, the series had regained the fourth-quarter 2014 recovery peak for second time, albeit only by 0.12%, having lost that status in the benchmarking. Yet, first-quarter 2018 reporting just lost that recovery, again with the headline April 2018 revisions, now down by 0.43% (-0.43%) from the fourth-quarter 2014 peak.

The following *Graphs 3* and *4* address reporting-quality issues tied just to the overstatement of headline growth in the total Industrial Production 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; this overstates 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 3 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 (see *Graphs 1* and *2* in the prior subsection), and covered and in [Commentary No. 947](#) for graphs of "corrected" New Orders

for Durable Goods and the “corrected” real GDP. The indexing does not affect the appearance of the graph or reported growth rates (as can be seen with a comparison of *Graph 3* here to *Graph 21* in the *Reporting Detail* section).

Graph 4 is a recast version of *Graph 3*, 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 4* 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 [Special Commentary No. 935](#)). Unlike the headline Industrial Production data and the headline GDP numbers, “corrected” Industrial Production levels never recovered their 2007 pre-recession highs, although, again, the headline aggregate Production index quickly backed off its official “recovery” in late-2014 in last month’s benchmarking, only to recover the 2014 highs again with the headline March 2018, and to lose them anew with the April 2018 detail. That said, the dominant manufacturing sector of industrial production never has recovered its December 2007 pre-recession peak, a record period of 10-plus years of economic non-expansion in the 100-year history of the Industrial Production series.

As of April 2018, the now 124 straight months of economic non-expansion, indeed remains unprecedented in its duration within the 100-year history of the Industrial Production series. While first-quarter 2018 real GDP reporting showed that series to have expanded by 16.0% above its pre-recession peak, the dominant manufacturing sector of industrial product still held shy of recovering its pre-recession high by 6.1% (-6.1%) as of first-quarter 2018.

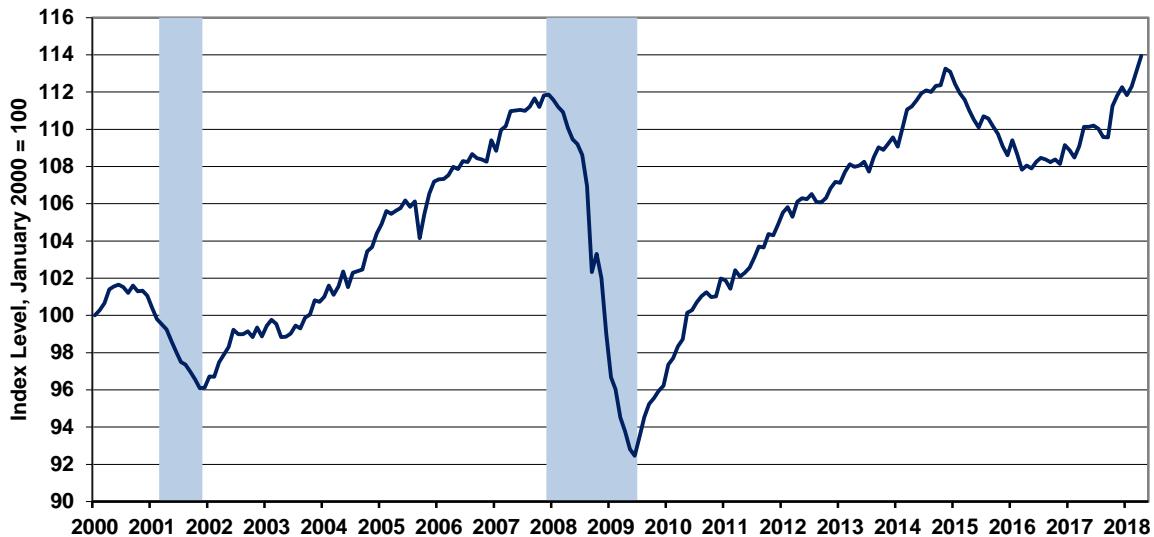
Instead, the “corrected” production series here entered a period of protracted low-level, but up-trending, stagnation in 2010, with irregular quarterly contractions seen through 2013, an irregular uptrend into 2014, a topping-out in late-2014, generally turning lower through fourth-quarter 2016 and into early-2017, with a small upturn, then downturn, with high volatility aggravated by natural-disaster impact of recent months, jumping in recent months with recovery activity in oil production and manufacturing activity to replace hurricane damaged automobiles.

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 production grew both quarter-to-quarter and year-to-year, as did second-quarter 2017, with third-quarter 2017 activity down quarter-to-quarter, partially due to the disruptions from natural disasters, but up year-to-year, with disaster-boosted fourth-quarter 2017, against the disaster-depressed third-quarter, still boosted into April 2018. Increasingly post-disaster recovery boosts have been working out of the system with later data and the benchmark revisions.

On a corrected basis, headline first-quarter 2018 Industrial Production remained shy of recovering its pre-recession peak by 16.2% (-16.2%). Ironically, that is about a direct opposite of the headline “recovery” currently in play for the GDP. Let us see where that GDP stands post 2018 benchmarking (July 27th).

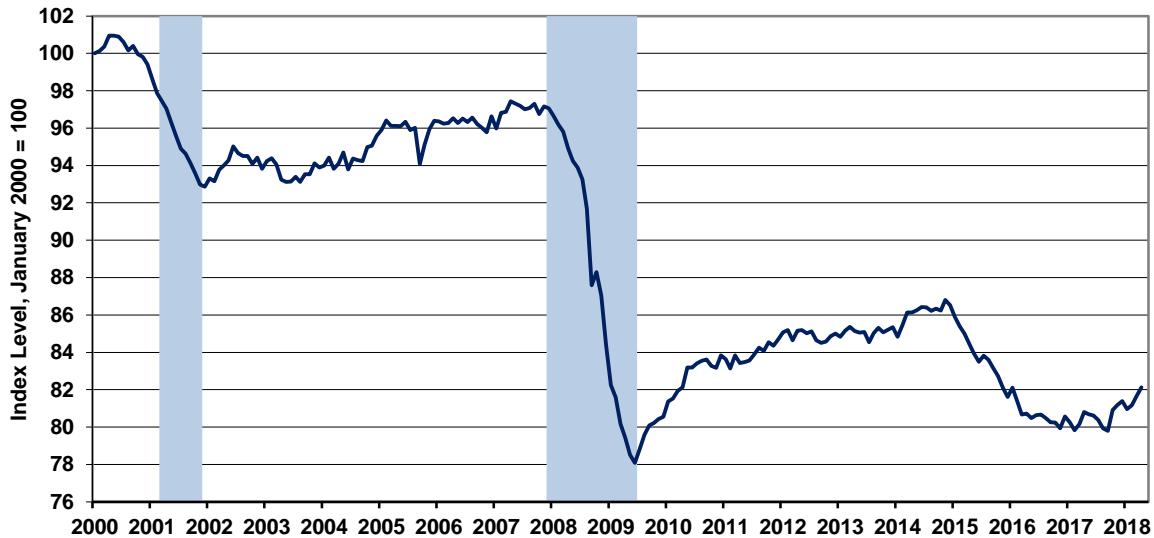
Graph 3: Indexed Headline Level of Industrial Production (Jan 2000 = 100)

Industrial Production, Re-Indexed to Jan 2000 = 100
 Through April 2018, Seasonally-Adjusted [ShadowStats, FRB]



Graph 4: Headline ShadowStats-Corrected Level of Industrial Production (Jan 2000 = 100)

ShadowStats-Corrected Industrial Production
 Hedonic-Adjusted Inflation Understatement Removed, Index Jan 2000 = 100
 Through April 2018, Seasonally-Adjusted [ShadowStats, FRB]



Note: More-extensive analysis of Industrial Production follows in the *Reporting Detail*.

New Residential Construction—April 2018 and Annual Revisions—Starts and Permits Remained Shy by 43.4% (-43.4%) and 40.3% (-40.3%) of Recovering Pre-Recession Peaks. In the context of the May 16th publication of annual revisions and benchmarking, nonsense monthly volatility in the Housing Starts sector of New Residential Construction continued. Despite indications from the Census Bureau that its extended, new seasonal-adjustment patterns would tend to stabilize the month-to-month reporting, there was no indication of a significant tightening in the confidence intervals placed around the reported headline monthly changes. The revised series are plotted in *Graphs 5 to 12* in this *Executive Summary* and in *Graphs 36 to 41* in the *Reporting Detail*. The net revisions were negligible and barely noticeable in graphs where both the current and prior series were plotted, except for an irregular upside revision to Building Permits in 2017, discussed and seen in *Graphs 36* and *38* in the *Reporting Detail*.

The headline reporting-quality of this series remains as bad as it gets, with none of the headline monthly or annual changes in April 2018 Housing Starts or its major components statistically-significant at the 95% confidence level. Where that has been the usual monthly experience, the purported pending improvement in the statistical significance of changes to monthly activity was not apparent in the annual revisions, discussed in both the *Opening Comments* and *Reporting Detail*.

The always-unstable and highly-volatile reporting in aggregate Housing Starts had been exacerbated in recent headline details by disaster-recovery effects. Those distortions most likely have worked out of the system, despite ongoing data gyrations, although recovery from the late-2017 California wildfires still may have lingering impact.

April Housing Starts Plunged 3.7% (-3.7%), Having Jumped by 3.6% in March. Headline aggregate Housing Starts plunged month-to-month by a statistically-insignificant, seasonally-adjusted 3.7% (-3.7%), following an upwardly benchmark-revised gain of 3.6% in March.

The 3.7% (-3.7%) drop in aggregate activity encompassed a monthly gain in Single-Unit starts (one-unit structures) of 0.1% and a monthly decline of 11.3% (-11.3%) in Multiple-Unit starts (two-units-or-more, including the five-units-or-more category). By itself, the headline five-units-or-more category dropped by 12.6% (-12.6%) in the month. None of the aggregate or subsidiary monthly or annual gains was statistically significant. Level-of-activity detail is plotted in accompanying *Graphs 5 to 12*, and in *Graphs 37, 39, 40* and *41* in *Reporting Detail*.

Year-to-year change in the seasonally-adjusted April 2018 aggregate housing-starts was a statistically-insignificant gain of 10.5%, following annual gains of 13.3% in March 2018 and 0.1% in February 2018.

With the headline April reporting, the six-month smoothed trends are now relatively flat to uptrending, across-the-board for Housing Starts and Building Permits. Nonetheless, those still-broadly stagnant New Construction activity series, showed April 2018 Building Permits activity down by 40.3% (-40.3%) from recovering its pre-recession peak (see *Graphs 36* and *37* in the *Reporting Detail*). Aggregate Housing Starts activity (see *Graphs 7* and *8*) is down similarly by 43.4% (-43.4%), with Single-Unit Starts (*Graphs 9* and *10*) down by 51.0% (-51.0%).

Multiple-Unit Starts (*Graphs 11* and *12*) had fallen back sharply, after first having recovered its 2005 pre-recession peak in early-2015. A temporary jump in January 2018 monthly activity wiped out virtually all of the most-recent deficit, but activity fell off sharply, again, with the level of April 2018 total multiple-unit starts now down 12.7% (-12.7%) from its pre-recession peak.

The headline details are reflected in accompanying *Graphs 5 to 12* and are reviewed in the *Reporting Detail*. Broadly, the various series (including the often, statistically-significant Building Permits) remain in low-level, slightly-uptrending stagnation, non-recovery and non-expansion.

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 1,287,000 in April 2018, versus a benchmark-revised 1,336,000 [previously 1,319,000] in March 2018. The scaling used in the aggregate Housing Starts and Building Permits *Graphs 36 to 41* in the *Reporting Detail* reflects those annualized numbers in millions.

Nonetheless, given the frequent 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 107,250 units in April 2018, instead of the annualized headline level of 1,287,000 units, is used in the scaling (monthly units in thousands) of accompanying *Graphs 5 to 12*. 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 7* versus *Graph 37* in the *Reporting Detail*.

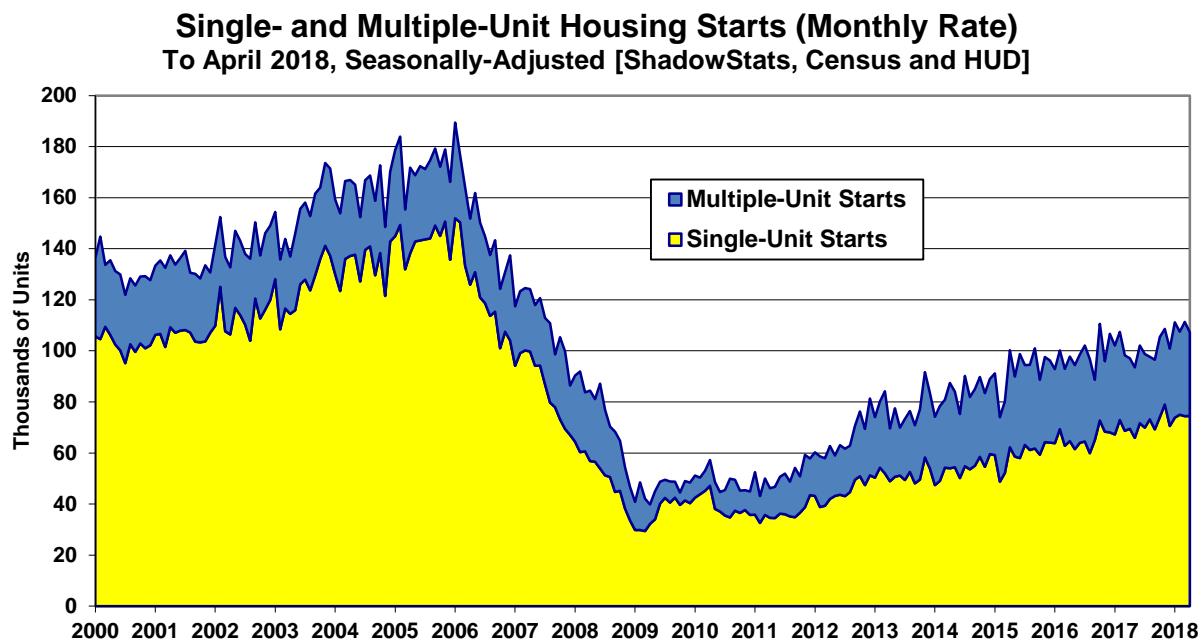
The record monthly low level of activity seen for the present aggregate series was in April 2009, where the annualized monthly pace of housing starts then was down by 79% (-79%) from the January 2006 pre-recession peak for the series. Against that downside-spiked low in April 2009, the April 2018 headline monthly number was up by 169%, but it still was down by 43% (-43%) 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-plus years, as reflected in *Graphs 40 and 41* at the end of the *Reporting Detail*. In fact, as can be seen there in *Graph 41*, 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.

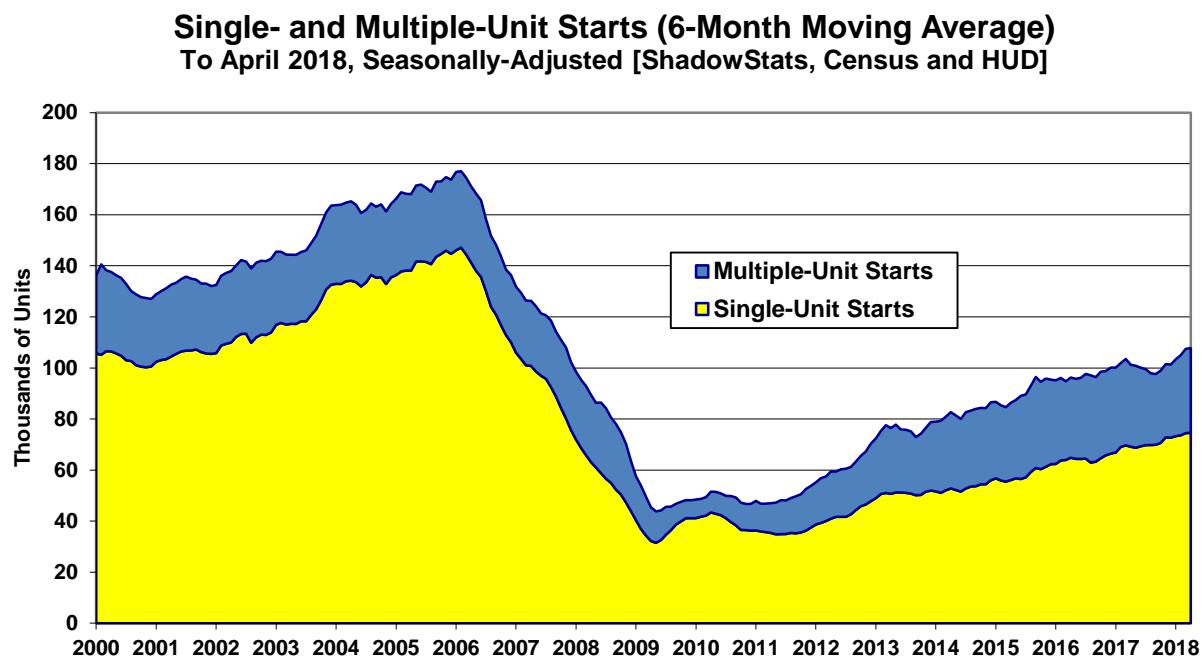
Note: More-extensive analysis of the New Residential Construction follows in the *Reporting Detail*

[Graphs 5 to 12 begin on the next page.]

Graph 5: Benchmarked Single- and Multiple-Unit Housing Starts (Monthly Rate of Activity)

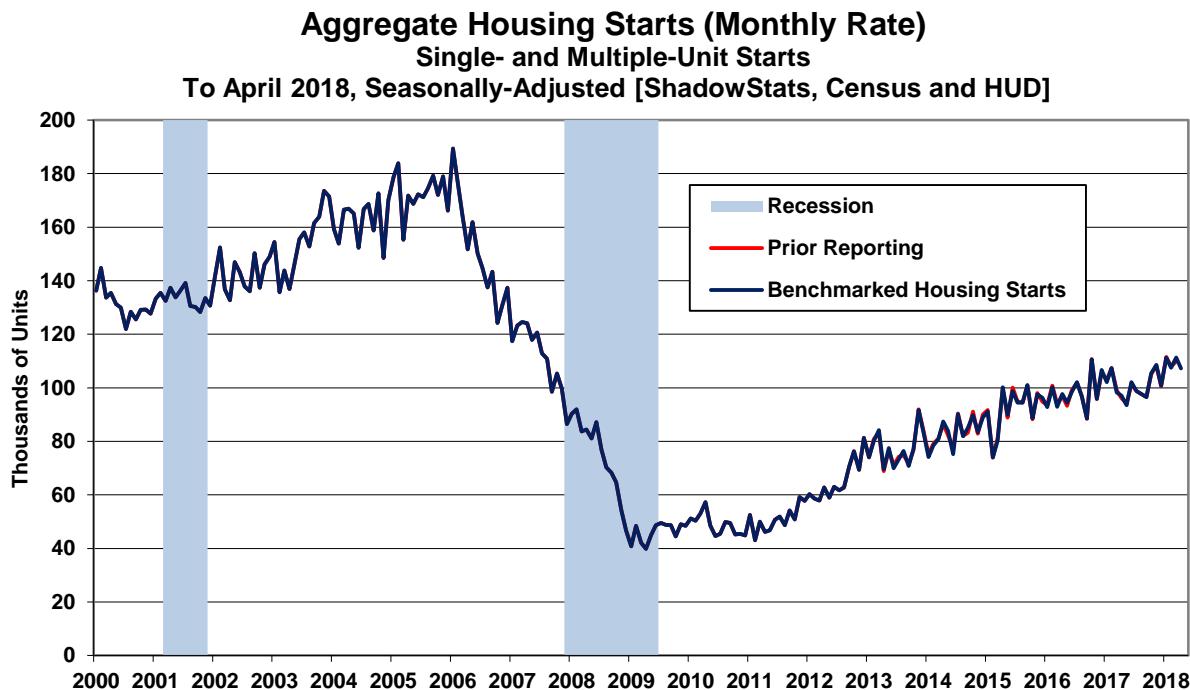


Graph 6: Benchmarked Single- and Multiple-Unit Starts (Six-Month Moving Average, Monthly Rate of Activity)

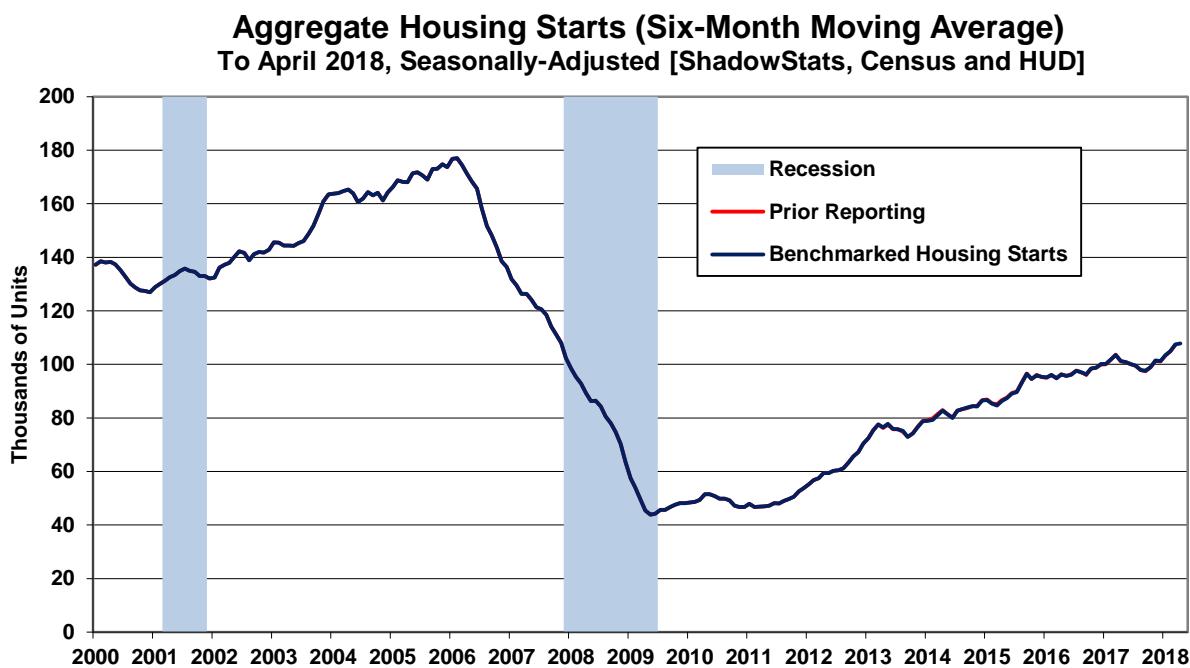


NOTE: The May 16th Annual/Benchmark Revisions: The net Housing Starts revisions were negligible, rarely noticeable in these plots (prior detail is plotted in red, behind the new detail in dark blue). Prior numbers show up minimally, here, except for Graphs 36 and 38 of the Reporting Detail, which reflect a one-time, inconsistent and distorting upside revision to Building Permits in 2017.

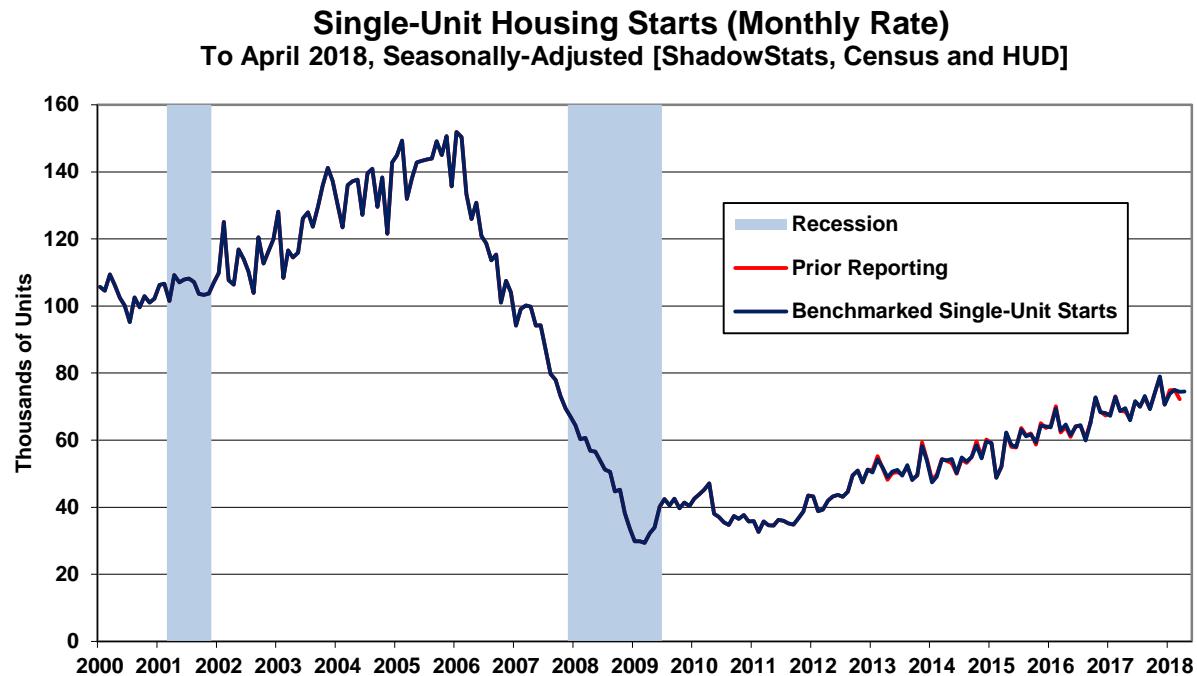
Graph 7: Benchmarked Aggregate Housing Starts (Monthly Rate of Activity) – Revisions Were Negligible



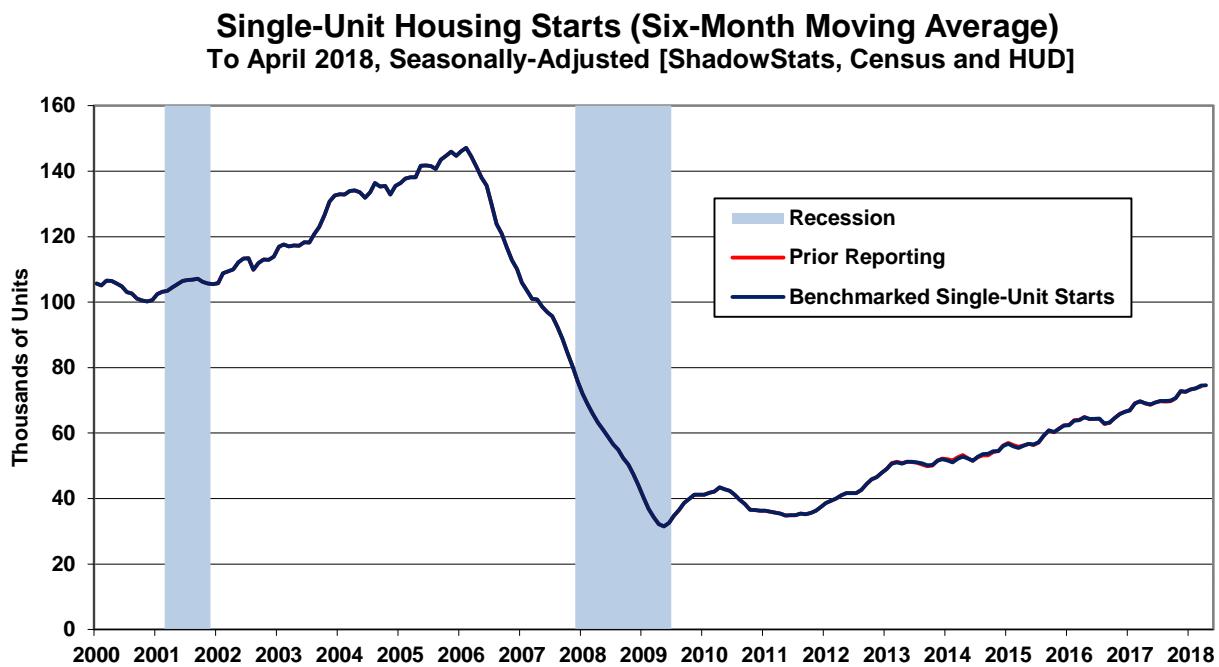
Graph 8: Benchmarked Aggregate Housing Starts (Six-Month Moving Average, Monthly Rate of Activity)



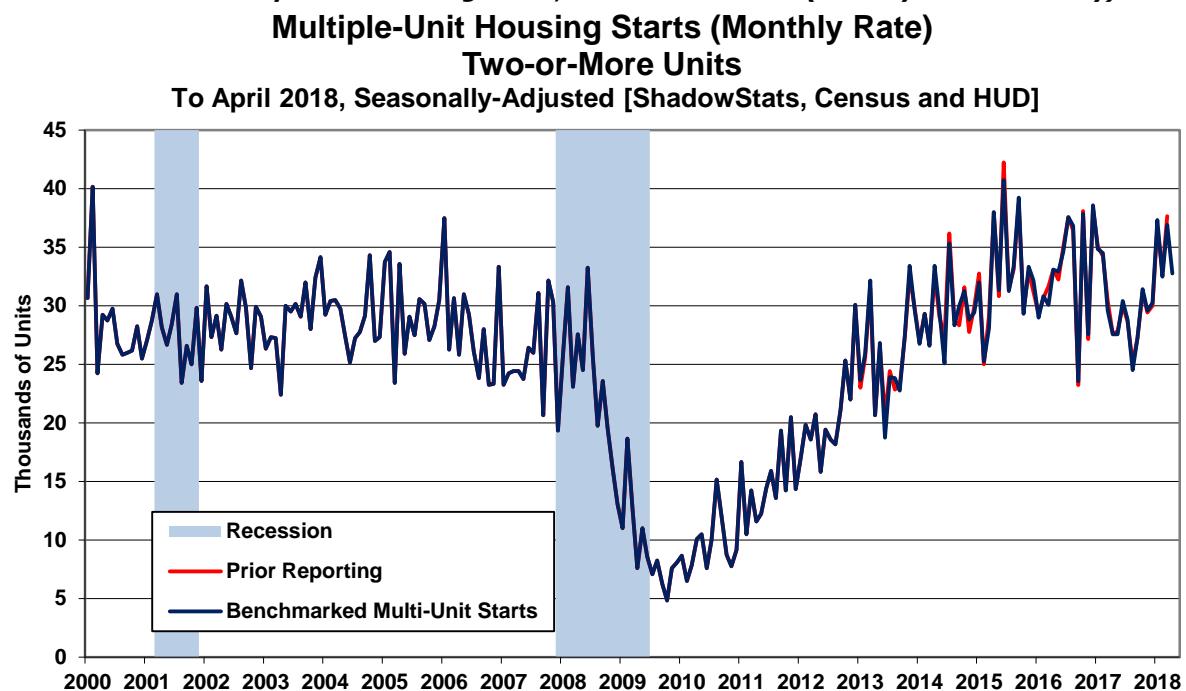
Graph 9: Benchmarked Single-Unit Housing Starts (Monthly Rate of Activity)



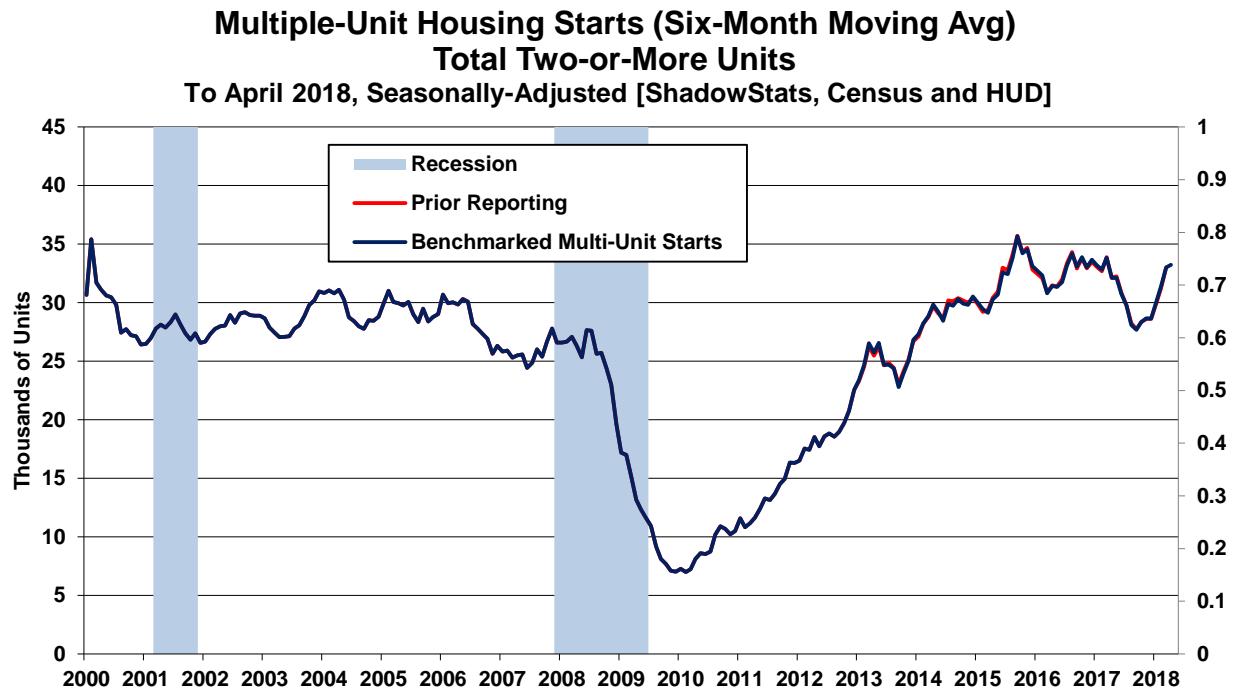
Graph 10: Benchmarked Single-Unit Housing Starts (Six-Month Moving Average, Monthly Rate of Activity)



Graph 11: Benchmarked Multiple-Unit Housing Starts, Two-or-More Units (Monthly Rate of Activity)



Graph 12: Benchmarked Multiple-Unit Housing Starts (Six-Month Moving Average, Monthly Rate of Activity)



[Extended analysis and graphs of the Retail Sales, Industrial Production and Residential Investment series follow in the Reporting Detail, beginning on the next page.]

REPORTING DETAIL

RETAIL SALES—Nominal and Real (April 2018)

First-Quarter Real Retail Sales Held in Sharpest Quarterly Contraction Since 2009 Depths of the Great Recession, Despite Upside Revisions to February and March; Recession Signal Still in Play. Headline April 2018 Retail Sales rose month-to-month by 0.3% (0.30% at the second decimal point), which was the consensus expectation, but really was far from that in terms of upside, prior-period revisions, gimmicked seasonal-factor reporting distortions and adjustments for understated headline consumer inflation.

Net of an upside revisions to February and March 2018 activity, the April 2018 nominal Retail Sales gain would have been 0.61%, but even that was nonsense. That 0.61% became 0.35% net of a 0.26% faux monthly boost from seasonal-factor inconsistencies, which would have been relatively consistent with consensus expectations for a 0.3% to 0.4% monthly gain.

Seasonal-Factor Games and Inconsistencies Added 0.26% to April's Headline Retail Sales Growth. Discussed regularly here, headline details published for economic series ranging from Employment and Unemployment to Retail Sales and New Orders for Durable Goods use “concurrent-seasonal-factor adjustments.” Those adjustments reflect historical data being revised each and every month, so as to reflect new seasonal factors calculated based on the new headline month’s data. There is nothing wrong with that, except that the neither the Commerce Department nor the Bureau of Labor Statistics publishes the consistently-revised historical data along with the new headline detail.

Discussed most recently in *Headline Distortions from Shifting Concurrent-Seasonal Factors* on page 33 of [Commentary No. 948, Supplemental Labor-Detail Background](#), only the headline retail sales data for February to April 2018, and March to April 2017 were published on a consistent basis, using the concurrent seasonal factors based on April 2018. The new seasonal adjustments for the March and April 2018 data showed the impact of the new seasonals on with downside revision to March 2017 and an upside revision to April 2017, which had the effect of boosting the headline, relative, seasonally-adjusted month-to-month growth for April 2018 by 0.26%.

Where consistent seasonals would have boosted headline April 2018 growth in parallel, those numbers were inflated versus current months by not being on a consistently reported basis.

Net of revisions and the faux seasonal-adjustment boost, that headline nominal growth of 0.30%, net of headline monthly inflation of 0.22%, left a real monthly gain for April 2018 at about 0.08% above where March 2018 was reported initially.

Against the headline nominal gain of 0.30%, ignoring the revisions, but net of the seasonality-gimmicked gain of 0.26%, the nominal gain would have been reported at 0.04%, or would have been a real contraction of 0.18% (-0.18%), net of the headline 0.22% inflation. Such is the nature of the headline reporting games being played here.

The nature of the pending May 25th annual revisions to the Retail Sales series would be to eliminate any of these headline distortions, by restating all the reported historical detail on a consistent, seasonally adjusted basis. Those revisions also will incorporate annual surveys and other benchmarking detail not otherwise available when the current headline numbers were “finalized.” Historical downside revisions are a good bet (see the *Opening Comments* and the *Week, Month and Year Ahead* sections).

Headline Nominal Retail Sales—April 2018. The Census Bureau reported its “advance” estimate of April 2018 Retail Sales on Tuesday, May 15th. The headline, seasonally-adjusted monthly gain of 0.30% +/- 0.59% was not statistically-significant, based on Census Bureau definitions (all confidence intervals are expressed at the 95% level). The revised headline March monthly gain of 0.75% [previously 0.56%] +/- 0.23%, however, was a statistically-significant gain.

That March gain was on top of the revised monthly gain in February of 0.04% [previously a decline of 0.08% (-0.08%), initially 0.07% (-0.07%)], following unrevised monthly declines of 0.15% (-0.15%) in January and 0.05% (-0.05%) in December. Net of the prior-month’s revision, the April 2018 monthly sales gain was 0.61%.

Year-to-Year Annual Change. The April 2018 nominal year-to-year change in Retail Sales showed a statistically-significant increase of 4.68% +/- 0.82%, versus an upwardly revised 4.92% [previously 4.49%] in March 2018, a revised 4.19% [previously 4.07%, initially 3.99%] in February 2018. Again, keep in mind that the adjusted annual growth rates for April 2018 and March 2018 headline numbers were based on inconsistent, adjusted reporting versus February 2018. Unrevised annual growth in January 2018 was 3.83%, versus 5.11% in December 2017.

Inflation-Adjusted Series Showed a Severe Quarterly Contraction, and a Deepening Recession Signal, Even Allowing for Relative Boosts to Fourth-Quarter Activity from Natural-Disaster Recovery. As reported by the Saint Louis Federal Reserve in its regular deflation of nominal retail sales using the CPI-U ([Commentary No. 949](#)), the headline, inflation-adjusted or real first-quarter 2018 Retail Sales contracted at a revised annualized quarterly pace of 2.05% (-2.05%) [previously 2.61% (-2.61%)]. Despite the headline upside revisions to nominal February and March detail, that still was the deepest quarterly downturn since the depths of the Great Recession, when first-quarter 2009 real retail sales contracted at an annualized pace of 5.80% (-5.80%). Separately, first-quarter 2018 real annual growth slowed sharply to a revised 2.01% [previously 1.83%] from 3.17% in fourth-quarter 2017, triggering a recession warning.

The contraction in quarter-to-quarter real growth at least partially reflected a sharp easing from fourth-quarter natural-disaster-recovery boosts, discussed regularly here. Ignoring the disaster-boosted annual real growth in fourth-quarter 2017, for the moment, the slowing of annual first-quarter 2018 real growth to 2.05%, back into recession signal territory, from a downwardly-revised 2.46% [previously 2.50%] in the disaster-free first-quarter 2017, was based solely on the relative merits of first-quarter 2018 activity. Even so, first-quarter 2018 retail sales activity likely included some lingering spike from disaster-recovery effects.

Irrespective of traditional Holiday Season shopping patterns, real retail sales peaked in November 2017, contracting month-to month in December, and falling in relative real first-quarter 2018 activity versus fourth-quarter 2017 activity.

April 2018 “Core” Retail Sales, Net of Food and Gasoline. In theory, the April 2018 environment should have been positive for grocery stores, with seasonally-adjusted food prices gaining 0.27%, and positive for gasoline stations, with seasonally-adjusted gasoline prices jumping by 3.04%, per the Bureau of Labor Statistics (BLS). Adjusted retail sales grocery-store sales gained month-to-month by 0.51%, per the Census Bureau, with seasonally-adjusted gasoline-station sales up by 0.79%.

Given the extreme volatility in headline gasoline prices, seasonally-adjusted and otherwise, one has to wonder as to the nature and consistency of the headline reporting and seasonal adjustments being used between these two series, as combined by the Saint Louis Fed in its monthly calculations of Real Advance Retail Sales. Consistent reflection of headline gasoline prices versus gasoline-station sales would have resulted in weaker Real Retail Sales growth. When they do not, presumably annual benchmark revisions (such as those due on May 25th) will tend to catch up.

That said, under normal conditions, the bulk of non-seasonal variability in fundamental food and gasoline sales is in pricing, instead of demand. Consistent with the Federal Reserve’s historical preference for ignoring food and energy prices (as though people can live without consuming same), when “Core” inflation is lower than full inflation (at times when the Fed is looking to downplay inflation), “Core” retail sales are estimated using two approaches:

Version I: Nominal April versus March 2018 seasonally-adjusted retail sales series—net of total grocery store and gasoline-station sales—rose by 0.22%, versus the official headline aggregate sales gain of 0.30%.

Version II: Nominal April versus March 2018 seasonally-adjusted retail sales series—net of the monthly *change* in grocery store and gasoline-station revenues—rose by 0.18%, versus the official headline aggregate sales gain of 0.30%.

Real Retail Sales—April 2018—With Some Pickup in Headline CPI-U Inflation, Real Sales Gained by 0.08% with Annual Growth at 2.20%. The April 2018 Consumer Price Index showed the seasonally-adjusted CPI-U up month-to-month 0.22% in April 2018, versus a decline of 0.06% (-0.06%) in March and gains of 0.15% in February and 0.54% in January (see the *Consumer Price Index* section of prior [Commentary No. 949](#) for detail).

Deflated by the CPI-U, April 2018 Real Retail Sales gained by 0.08% month-to-month, following a real monthly gain of 0.82% in March and declines of 0.11% (-0.11%) in February, 0.69% (-0.69%) in January. That headline real monthly gain in April 2018 Retail Sales at 0.08%, was a gain of 0.39% net of prior-period revisions. Again, that gain would shrink to 0.13%, net of the shifting and inconsistent seasonal-factor adjustments.

In the context of year-ago revisions for April and March 2017, year-to-year real growth was 2.20% April 2018, versus 2.50% in March 2018, versus 1.89% in February 2018 and 1.65% in January 2018, 2.94% in December 2017 and what had been a three-year high of 3.62% in November 2017. Accordingly, as discussed in [Commentary No. 936](#), the upside boost to real retail sales activity from the late-2017 natural-

disaster-recovery distortions appeared to have peaked in November 2017. The underlying ShadowStats outlook of non-recovering broad economic activity and renewed downturn in recent years, based on partially on key headline reporting being systematically overstated, has not changed (see the *Opening Comments*).

Recession Signal Intensifies. 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 (a “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. Disaster-recovery boosts since October 2017 had pushed that signal into abeyance, for a second time, but that abeyance ended with the initial January 2018 detail.

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

That August 2017 reading has revised to 1.56%, in the context October 2017 monthly retail sales revisions and the annual CPI-U revisions in January 2018. As a result, June 2017 stands now at the near-term low of 1.35%. In the context of the most-recent reporting and revisions, with April 2018 up by 2.20%, March 2018 at 2.50%, February 2018 at 1.6=89% and January 2018 at 1.65%, the more-significant real annual changes by quarter are as follows: 1q2018 = 2.01%, 4q2017 = 3.17% [disaster-recovery spiked], 3q2017 = 2.07%, 2q2017 = 2.00%, 1q2017 = 2.46%. Real annual growth likely will revise lower, again, with the pending 2018 retail sales benchmarking of May 25th.

Importantly, the return of the largely post-disaster annual real quarterly growth to 2.0% or below is a recession signal, where, if anything, the first-quarter’s real annual growth still may be seeing lingering overstatement from the disaster-recovery boosts.

Annualized Real First-Quarter 2018 Contraction of 2.05% (-2.61%). Reflecting revisions, and inconsistent seasonal adjustments to retail sales, first-quarter 2017 annualized (with year-ago adjustment shifts) revised to 2.40% [previously 2.60 %, 2.66%, 2.68% and initially 1.89%], second-quarter 2017 revised to 1.35% [previously 1.00%, 0.94%, 0.92% and 1.68%], third-quarter 2017 was revised at 2.08 [previously 2.30%], with fourth-quarter 2017 unrevised at 6.88%.

Based on the first revision to first-quarter 2018, annualized real quarterly change was a contraction of 2.05% (-2.05%) [previously 2.61% (-2.61%)], still the steepest quarterly drop since 5.80% (-5.80%) in first-quarter 2009, at the depths of the Great Recession.

Structural Liquidity Issues Continue to Impair Retail Sales. An extreme consumer-liquidity bind increasingly constrains retail sales and other consumer activity (see particularly the earnings and consumer credit details in the *Consumer Liquidity Watch*, page 56). Without sustainable growth in, and with intensified patterns of consecutive quarterly contractions in real earnings, and without the ability and/or willingness to take on meaningful new credit 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 ten-plus years of economic collapse and

stagnation—has continued to prevent a normal recovery in broad, inflation-adjusted U.S. economic activity, 72.9% of which (first-quarter 2018 real GDP activity) is dependent on personal spending and residential real estate.

Of note, the consumer-dependent 72.9% portion of first-quarter GDP shrank from 73.1% of fourth-quarter 2017 real GDP activity, reflecting mounting constraints on consumer activity. The consumer drives the economy, and pullback there will increasingly be seen in almost all other sectors.

As headline consumer inflation continues its upside climb in the year ahead, and as overall headline Retail Sales continue to suffer from the ongoing consumer liquidity squeeze, real Retail Sales growth should continue trending meaningfully lower. That likely still will gain recognition as a formal “new” recession, another down-leg in the economic collapse that began in 2006, known formally as the 2007 recession or the Great Recession.

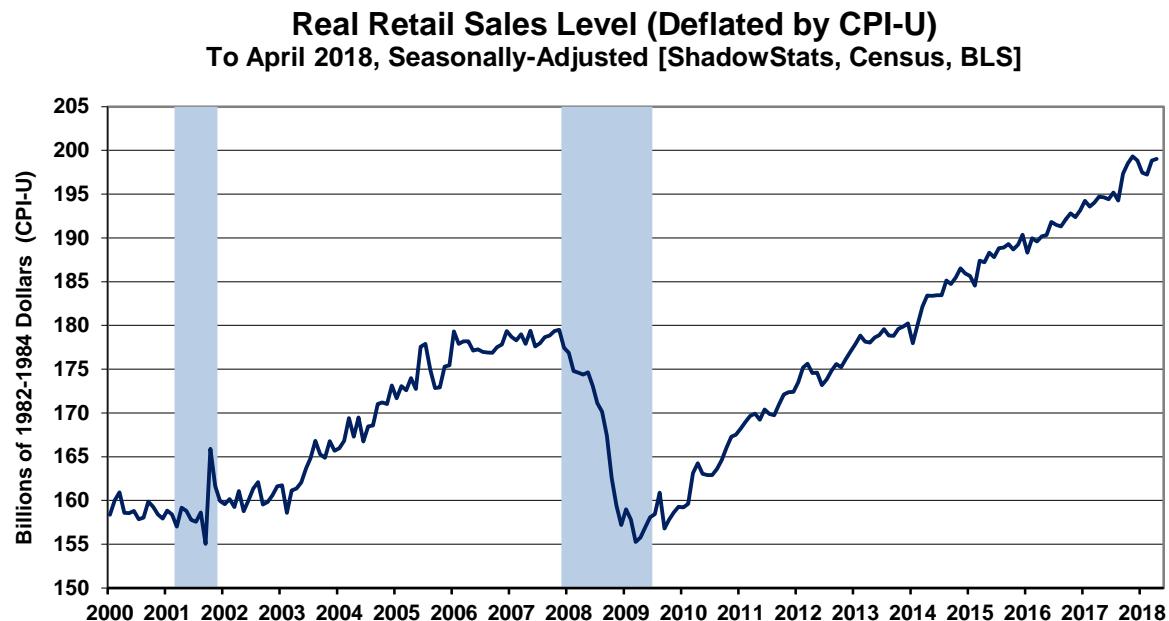
Real Retail Sales Graphs. The first of the four graphs following, *Graph 13* shows the level of real retail sales activity (deflated by the CPI-U) since 2000; *Graph 14* shows the year-to-year percent change for the same period. Annual real growth had slowed markedly into fourth-quarter 2015 and 2016, generating an intense recession signal. Again, with recent volatility, including natural-disaster-recovery activity and the near-term peak in annual real growth in November 2017, that recession signal had been put in temporary abeyance. Yet, with first-quarter 2018 real annual growth now at a revised 2.1% (dropping initially to 1.8%) and April 2018 at 2.2%, a solid recession signal has been restored. *Graphs 15* and *16* show the level of, and annual growth in, real retail sales (and 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 2* 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 had turned increasingly negative, before the hurricane-related spikes of late-2017, and appears headed lower, once again, as the disaster distortions have waned. 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 (see [Commentary No. 945](#)).

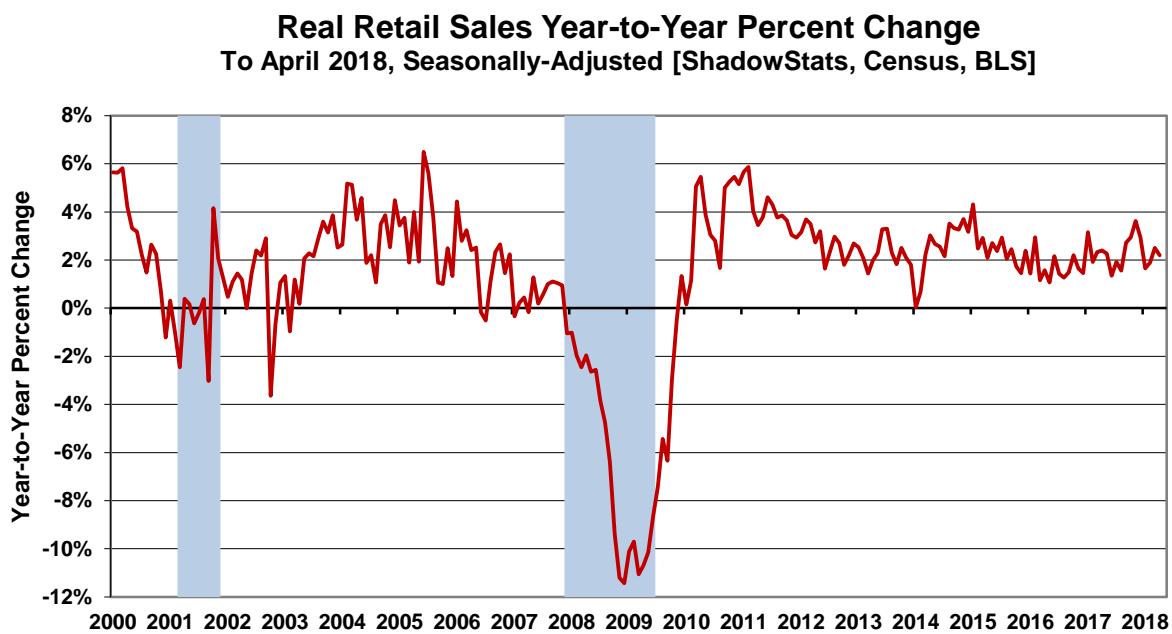
Annual Benchmark Revision Loom for May 25th. Noted again in its May 15th [Press Release](#), the Census Bureau will publish its annual benchmarking to the Retail Sales series on May 25, 2018 “to reflect the introduction of a new sample, new seasonal factors, and the results of the 2016 Annual Retail Trade Survey.” Such follows the headline April 2018 monthly detail of May 15th. As with the recent benchmark revisions of Industrial Production (March 23rd), and Manufacturers’ Shipments and New Orders for Durable Goods (May 17th), most series going through these benchmarkings suffer net downside revisions to the history of recent years, as reviewed in today’s *Opening Comments*. Often, meaningful detail is not available when the Census Bureau puts together its monthly survey or guesstimate of retail trade activity, so it is forced to make underlying assumptions. Discussed in [Special Commentary No. 885, Numbers Games that Statistical Bureaus, Central Banks and Politicians Play](#), the nature of those assumptions usually leans to the overly-optimistic. Outside of truly booming economies, better-quality

reporting usually results in downside revisions to the guesstimated detail, as likely will be seen in the pending 2017 revisions, also in parallel with the numbers reviewed, again, in the *Opening Comments*.

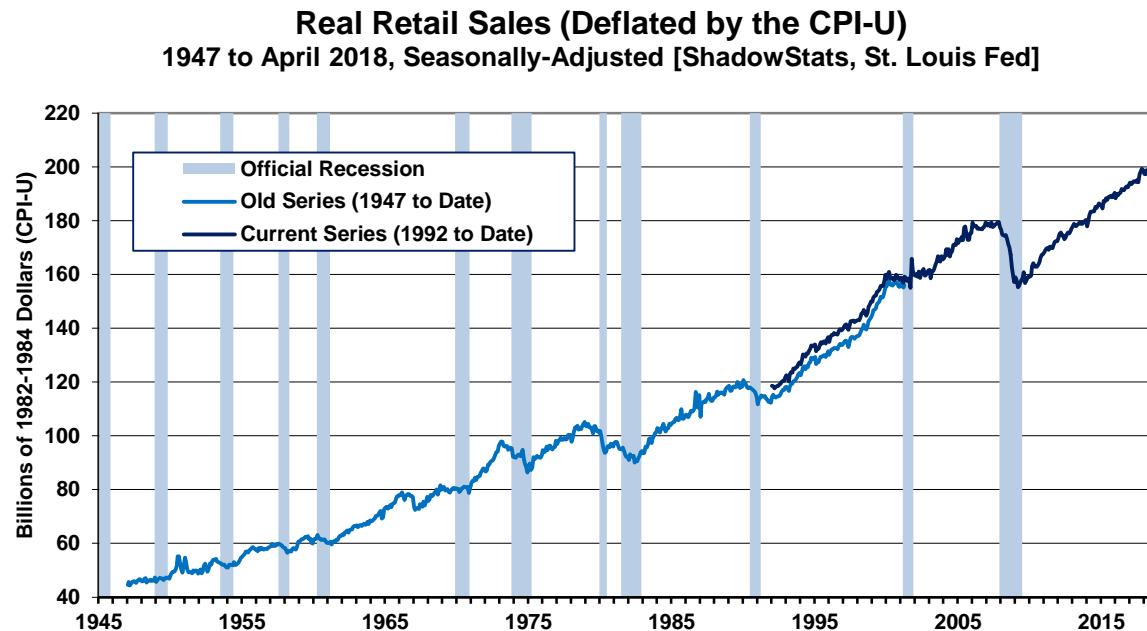
Graph 13: Level of Real Retail Sales (2000 to Date)



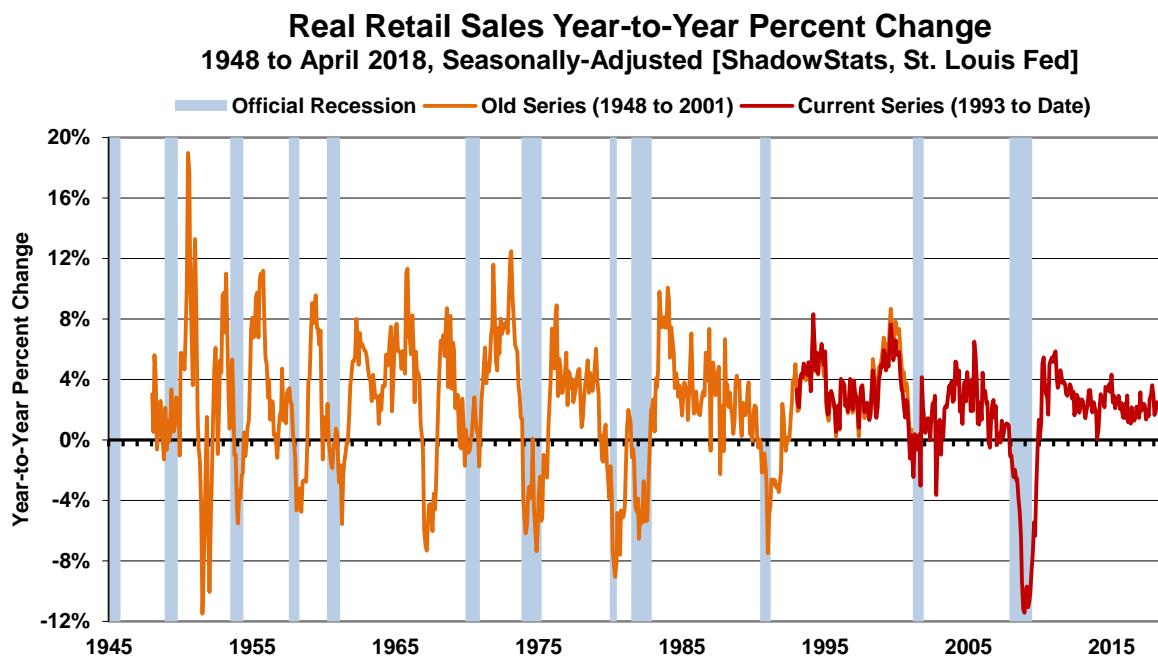
Graph 14: Real Retail Sales (2000 to Date), Year-to-Year Percent Change



Graph 15: Level of Real Retail Sales (1947 to Date)



Graph 16: Real Retail Sales (1948 to Date), Year-to-Year Percent Change



INDUSTRIAL PRODUCTION (April 2018)

Heavy Downside Revisions to Production and Manufacturing Artificially Spiked Relative Headline Monthly Growth in March and April, and They Pummeled First-Quarter 2018 Activity. In the context of broadly-based, major-downside benchmark revisions to Industrial Production (March 23rd), see the *Opening Comments* of [Commentary No. 942-B](#), minimal revisions with the headline March 2018 detail (April 17th), major downside revisions in headline April 2018 reporting (May 16th) further pummeled the earlier headline reporting, albeit just to the prior five months. Discussed and plotted in today's *Opening Comments* (see *Graphs OC-1 to OC-3* there) these production revisions were of a scope and magnitude more commonly seen in annual benchmarkings, than in regular monthly revisions.

Headline reporting of April 2018 production and manufacturing reflected massive downside revisions to monthly activity from December 2017 through March 2018 detail, significantly weakening the recent, headline economic environment and ultimately should have negative impact on the current "rosy" consensus outlook. Looking just at the new headline monthly production gains of 0.72% in April 2018, and 0.75% in March 2018, it is easy to see where some in the popular media could proclaim that Industrial Production finally had moved out of the economic doldrums. One needs, however, to consider the underlying detail.

The "strong" monthly production gains were due solely to sharp downside revisions to prior month's activity. The headline 0.72% April gain, versus March 2018, would have been just 0.13%, but for the coincident, sharp downside revision to March activity. Nonetheless, that downwardly-revised level of March 2018 showed a gain of 0.75% versus February 2018, only because there was an even sharper downside revision to February 2018 activity. Without the February revision, the new headline monthly growth for March of 0.75% would have been a month-to-month contraction of 0.07% (-0.07%).

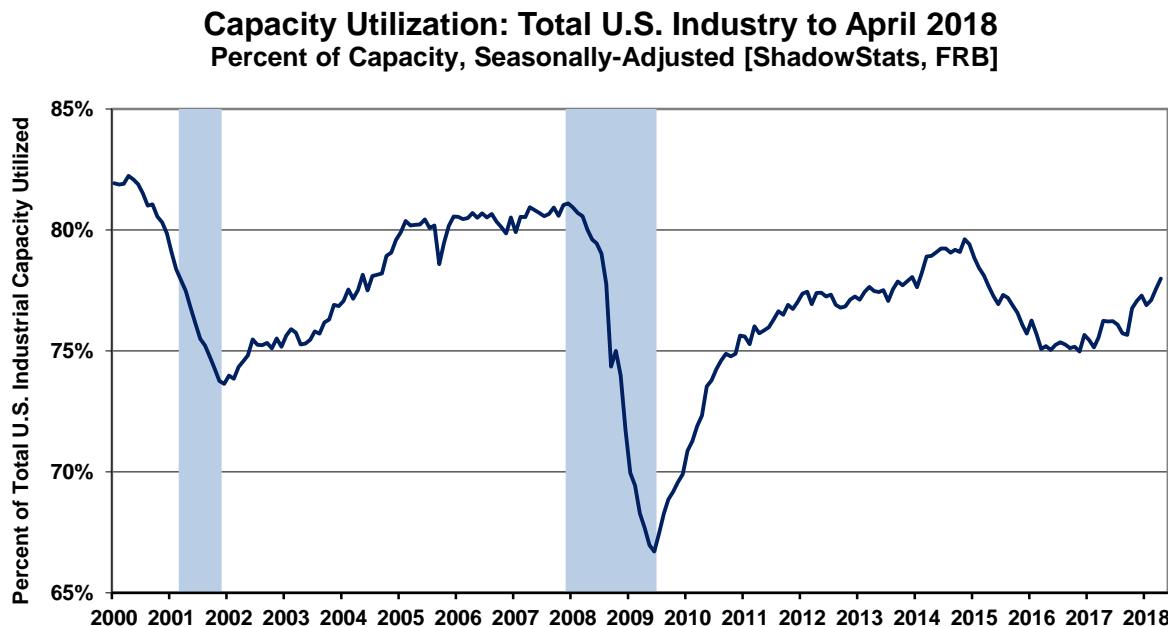
Consider that before the April revisions, first-quarter 2018 Industrial Production had just recovered its fourth-quarter 2014 peak by 0.18%, a trough and cycle suggestive of a double-dip recession as a second phase to the Great Recession of 2007. After those April revisions, however, headline first-quarter 2018 Industrial Production had fallen back, still shy of recovering that fourth-quarter 2014 peak activity by 0.43% (-0.43%).

At the same time, the dominant Manufacturing sector of Industrial Production sector, which has not seen any economic expansion for 124 months (a new record in the 100-year history of the Industrial Production series) revised lower. As of the March 2018 reporting, first-quarter 2018 Manufacturing had been shy of recovering its pre-recession high by 5.42% (-5.42%). As of the April 2018 reporting, that quarterly shortfall had deepened to 6.07%.

Having Improved in March, Revised Total U.S. Industrial Capacity Utilization Also took a Relative Hit in April. Beginning with [Commentary No. 927](#), ShadowStats has provided regular coverage of the Federal Reserve's measure of Capacity Utilization, an estimate of total Industrial Production versus total Productive Capacity of the United States. Despite reservations about the Fed's ability to measure productive capacity adequately, as reinforced by the revised plots of Capacity Utilization in the benchmark revisions of [Commentary No. 942-B](#), the series has been updated for the April 2018 detail in *Graph 17*. While the April number of 77.8% appears as a near-term peak in *Graph 17*, up from 77.6% in March 2018, the prior reporting for March 2018 had been at 78.0%

Sharp downturns in Capacity Utilization usually signal the onset of a recession, which would support the concept that a renewed economic downturn began at the end of 2014, as indicated by the Industrial Production series. That is the ShadowStats' estimate for the timing of what likely still will gain formal recognition of a new or deepening multiple-dip downturn, in the economic crisis that formally began at the end of December 2007. That recognition could come out of the pending comprehensive benchmark revisions—back to 1929—for Gross Domestic Product (GDP), due for release on July 27th. Contrary to the consensus hype of a fully recovered and expanding economic activity, however, as seen with the Manufacturing Sector, much of the U.S. economy never has recovered fully from that downturn.

Graph 17: Utilization of Total U.S. Industrial Production and Manufacturing Capacity (2000 to Date)



Reported along with the headline April 2018 Industrial Production, Capacity Utilization rose to 77.99%, from a downwardly revised 77.56% [previously 78.02%] in March, and from a revised 77.10% [previously 77.73%] in February. Against its benchmarked December 2007 pre-recession peak level of 81.10%, the April 2018 Capacity Utilization reading—still spiked in level by hurricane disruptions and boosts from weather-distorted utility usage—held shy of recovering that peak *level* by 3.11% (-3.11%), or by 311 (-311) basis points in terms of the *percentage number*. That is despite April 2018 Industrial Production holding at 1.90% above, and with Manufacturing remaining shy of recovering its pre-recession peak level of December 2007 by 5.42% (-5.42%).

Manufacturing Sector Has Continued in Non-Expansion for a Record 124 Months, 41-Plus Quarters. In the March 23rd benchmark revisions to the Industrial Production series, activity in both the aggregate Production series and the dominant Manufacturing series revised meaningfully lower for recent years (see *Graph OC-3* in today's *Opening Comments*). That is a pattern of downside revisions seen repeatedly, benchmarking after benchmarking, as shown in the *Opening Comments* of [Commentary No. 942-B](#), which covered that latest benchmarking detail (see *Graph Benchmark-1* and *Graph Benchmark-2* on pages 4 and 11, there, and the accompanying text).

Despite April 2018 Industrial Production holding above its pre-recession peak of December 2007 by 1.90%, and above its November 2014 interim peak by 0.60% (it has dropped back below the fourth-quarter 2014 interim peak, in April's reporting, as just recently discussed), the dominant Manufacturing sector (75.5% of aggregate production) in April 2018, again, remained shy by 5.42% (-5.42%) of recovering its pre-recession peak of December 2007.

On a quarterly basis, first-quarter 2018 Manufacturing, again held shy of recovering its fourth-quarter 2007 pre-recession peak by 6.17% (-6.17%), with first-quarter 2018 Industrial Production just 0.71% (last month it was 1.26%) above its pre-recession high. In contrast, headline real first-quarter 2018 GDP stood 15.97% above its pre-recession high of fourth-quarter 2007, a circumstance not matched by any other major economic series.

The Manufacturing Sector is in the longest stretch of economic non-expansion seen in the 100-year history of Industrial Production, now at 124-months and counting, 4-plus quarters and 10-plus years. In contrast, the second-longest period of non-expansion was the 96-months to needed retool the post-war U.S. economy towards consumer activity, to rebuild domestic manufacturing to its World War II peak. The third longest was the first down-leg of the Great Depression, it took 88-months to recover the pre-collapse high.

One of the Better-Quality Series, Industrial Production Still Overstates Headline Activity. Irrespective of annual benchmark revisions, and despite recent years' downside revisions, which hit historical production detail hard, current headline production reporting still overstates economic activity tied to understated inflation (see *Graph 4* and related comments in the *Executive Summary*). With the benchmarked 2017 industrial production, including work-in-progress, representing 51% of the nominal value of Gross Domestic Product (GDP), the broad economy likely remains in the harsh reality of ongoing recession or economic non-expansion, a circumstance that has continued from somewhat before 2007. In particular, headline production remains troubled by its dominant Manufacturing Sector (75.5% of aggregate production), which, again, never has recovered its pre-recession peak, continuing in low-level, non-recovered economic stagnation (see *Graph 22*).

Headline Industrial Production—April 2018. The Federal Reserve Board released its first estimate of seasonally-adjusted April 2018 Industrial Production on May 16th. The new detail reflected a series of major downside revisions to headline March 2018 reporting as well as to the recent Annual Benchmark Revisions. New detail included downside revisions to the prior five months (back to November 2017), including aggregate activity for both fourth-quarter 2017 and first-quarter 2018.

Headline April 2018 production rose by 0.72%, following an upwardly-revised gain of 0.75% in March and downwardly-revised monthly gains of gain of 0.45% in February. Yet, net of prior-period revisions, April 2018 industrial production gained 0.13%, instead of the headline 0.72%, and March declined by 0.07% (-0.07%), instead of having gained 0.75%, and February gained 0.17%, instead of the headline 0.41%. Year-to-year, April 2018 industrial production gained 3.46%, which was down from the initial prior reporting of 4.33% in March 2018. March 2018 gained 3.71% [previously 4.33%] year-to-year, while February 2018 gained 3.51% [previously 4.37%].

Growth by Major Sector. Detailed by major industry group (see *Graphs 20, 22, 27 and 29*), the April 2018 aggregate industrial production monthly gain of 0.72% [0.13% net of prior-period revisions] reflected monthly gains of 0.42% [down by 0.07% (-0.07%) net of prior period revisions] in the dominant

Manufacturing Sector, 1.06% [0.88% net of prior-period revisions] in the Mining Sector (including oil and gas production), and 1.91% [0.47% net of prior period revisions] in Utilities.

For those same sectors, the April 2018 year-to-year aggregate industrial production gain of 3.46% was down from a revised 3.71% [previously 4.33%] in March 2018:

- The April 2018 annual gain of 1.83% in the dominant Manufacturing Sector was down from a revised 2.46% [previously 3.03%] in March 2018.
- The April 2018 annual gain of 10.59% in Mining (including oil and gas production) was down from 10.63% [previously 10.82%] in March 2018.
- The April 2018 annual gain of 6.05% in Utilities was up from 3.85% [previously 5.34%] in March 2018.

Headline Month-to-Month Change. Month-to-month April 2018 industrial production gained 0.72%, versus a revised gain of 0.75% [previously 0.51% in March], a revised 0.41% [previously a gain of 1.00%, initially 0.95%] in February, a revised contraction of 0.38% (-0.38%) [previously and initially down by 0.20% (-0.20%)] in January and a revised gain of 0.40% [previously 0.45%, initially 0.43%] in December 2017, and an unrevised gain of 0.51%, at the second decimal point, in November 2017 .

Headline Year-to-Year Change. Year-to-year April 2018 industrial production gained 3.46%, versus downwardly-revised gains of 3.71% [previously 4.33%] in March 2018, 3.51% [previously 4.37%, initially 4.26%] in February 2018, 2.71% [previously 2.95%, initially 2.90%] in January 2018, 2.85% [previously 2.91% [initially 2.90%] in December 2017, and 3.40% [previously 3.41%] in November 2017.

Quarterly and Annual Production Changes. In the context of March 23, 2018 benchmark revisions sharply to the downside for annual growth and annualized quarterly growth, and the initial first-quarter 2018 numbers, year-to-year growth rates in quarterly production had continued to slow and then decline, ranging from a positive 1.76% in first-quarter 2015, to year-to-year declines of 0.92% (-0.92%) in second-quarter 2015, 1.49% (-1.49%) in the third-quarter 2015 and 3.37% (-3.37%) in fourth-quarter 2015.

Annual declines continued, down by 2.99% (-2.99%) in first-quarter 2016, by 2.25% (-2.25%) in second-quarter 2016 and by 1.91% (-1.91%) in third-quarter 2016. Fourth-quarter 2016 production contracted year-to-year for the seventh-straight quarter by 0.55% (-0.55%).

First-quarter 2017 annual change rose by 0.16%, the first annual gain since first-quarter 2015. Second-quarter 2017 production gained year-to-year by 1.93%, with third-quarter 2017 showing a hurricane impaired at annual gain of 1.20%.

Reflecting new detail published with the headline April 2018 numbers, fourth-quarter 2017 growth was a revised hurricane-boosted 2.97% [previously 2.99%], with first-quarter 2018 reporting showing revised annual growth of 3.31% [previously 3.88%].

Annualized Quarter-to-Quarter. Going back to first-quarter 2015 industrial production contracted at an annualized quarterly pace of 3.22% (-3.22%), having gained by 2.74% in fourth-quarter 2014. That was followed by a quarterly contraction of 5.04% (-5.04%) in second-quarter 2015, with a third-quarter 2015

contraction of 0.27% (-0.27%) [previously a gain], followed by a fourth-quarter 2015 contraction of 4.71% (-4.71%).

The first-quarter 2016 annualized quarterly contraction was 1.86% (-1.86%), with second-quarter 2016 down at an annualized 2.09% (-2.09%). Third-quarter 2016 gained at an annualized pace of 1.11%, the first quarterly gain in seven quarters, followed by a gain of 0.70% in fourth-quarter 2016.

The first-quarter 2017 annualized quarterly gain was 0.98%. The second-quarter 2017 gain was 5.01%, with hurricane-disrupted third-quarter 2017 growth now showing an annualized quarterly contraction of 1.54% (-1.54%).

Reflecting new detail published with the headline April 2018 numbers, the fourth-quarter activity was up by a revised, disaster-recovery-boosted 7.68% [previously 7.77%], with the first-quarter 2018 easing back to a revised 2.33% [previously 4.51%].

Production Graphs. The regular two sets of long- and short-term plots of industrial production levels and annual growth rates (*Graphs 18 to 21*) set the background for the drill-down detail graphs of various components of the aggregate industrial series (*Graphs 22 to 35*).

Graphs 18 and 19, and *Graphs 20 and 21* show headline industrial production activity to date. *Graph 19* shows the monthly year-to-year percent change in the aggregate series, in historical context since World War II. Post annual benchmarking revisions of recent years, annual growth has slowed consistently as seen in *Graphs Benchmark-1 to 4* in [Commentary No. 942-B](#).

Graph 18 here 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 and now, benchmark-revised into second-quarter 2016, turning to the plus-side in second-half 2016 into second-quarter 2017 and the recent third-quarter 2017 hurricane disruptions and accompanying near-term volatility, with relative boosted activity into April 2018. Such patterns of monthly and quarterly year-to-year declines post late-2014 to the onset of 2017 (see *Graph 19*) were seen last in the economic collapse into 2009, and historically never seen outside of what would be recognized as formal recessions. *Graphs 20 and 21* show the same series in near-term detail, beginning in January 2000. Such remains in the context of a hurricane-impaired third-quarter reading and a hurricane-boosted fourth-quarter 2017 into slowing first-quarter 2018.

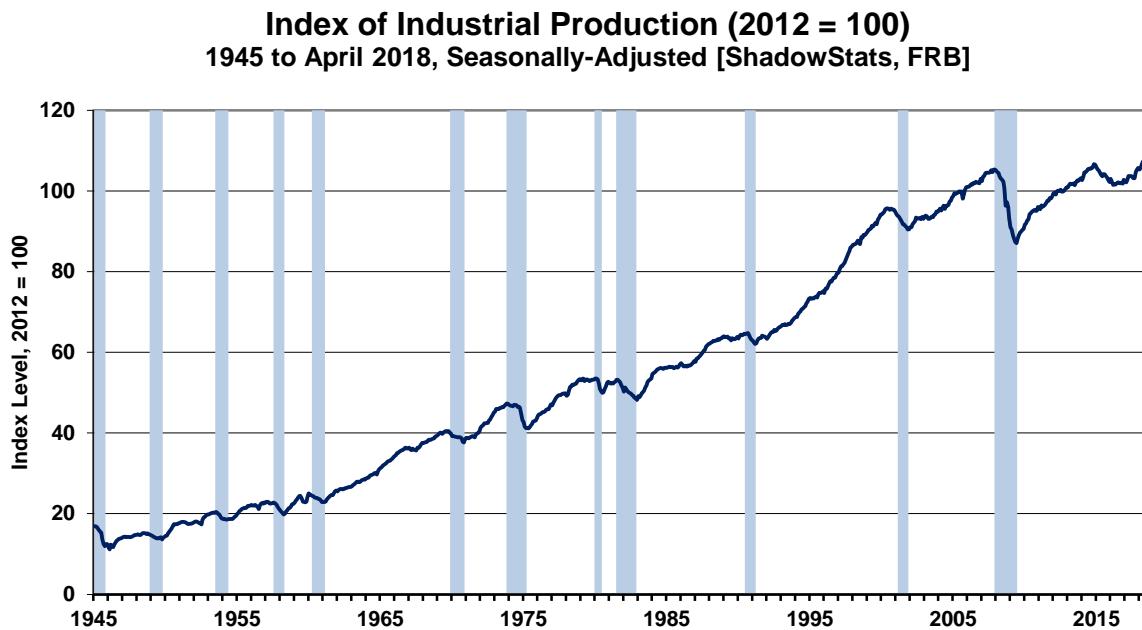
Seen most clearly in *Graph 21*, year-to-year activity dipped anew in 2013, to levels usually seen at the onset of recent recessions, bounced higher into mid-2014, fluctuated thereafter, turning negative, again, into 2015 and through 2016 as seen only in formal recessions. Such suggests a “missing recession call” with a pre-recession peak of fourth-quarter 2014. Such well may surface in the July 27th comprehensive GDP benchmark revisions back to 1929. In the context of the 2018 production benchmark revisions, year-to-year growth remains well off the recent relative peak for the series, which was 8.46% in June 2010 [previously 8.55% in 2017 benchmarking], going against the official June 2009 trough of the economic collapse. Indeed, as shown in *Graph 19*, the June 2009 (the end of second-quarter 2009) year-to-year contraction of 15.33% (-15.33%) [previously 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

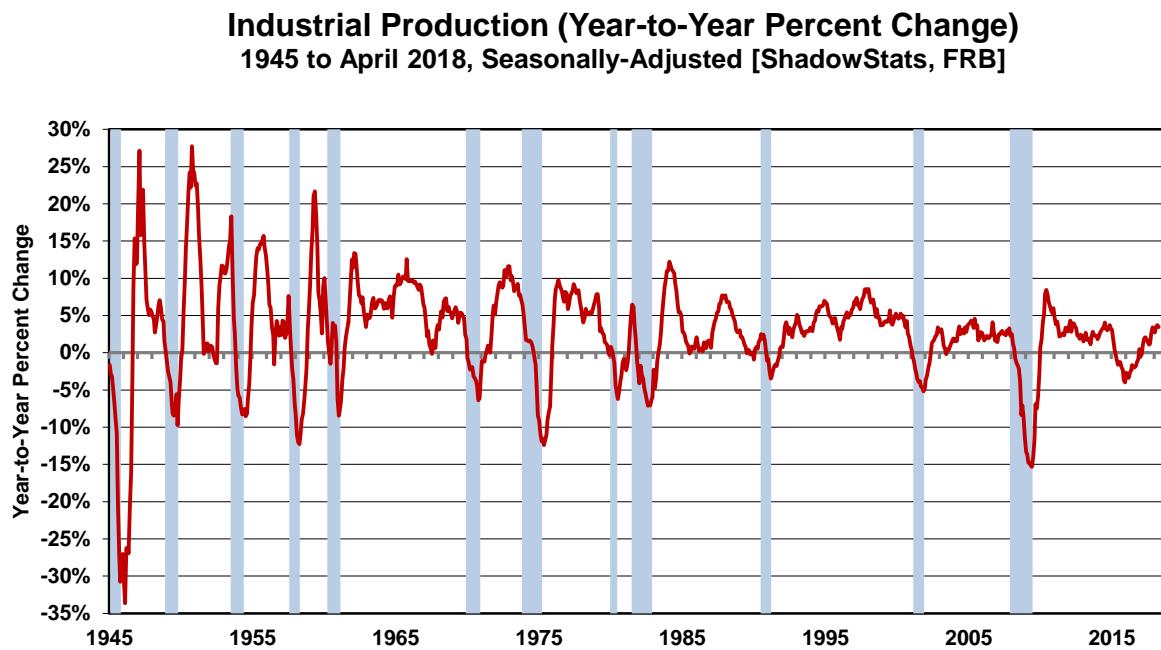
production index (see the *Executive Summary* section, *Graph 4*). That series has shown more of a pattern of stagnation with a slow upside trend, since 2009, with irregular quarterly contractions interspersed. The slow uptrend continued into a topping out pattern in late-2014. Headline growth—purportedly already neutered of any inflation impact—contracted in both first- and second-quarter 2015, moved minimally higher into 2016 through mid-2017, then generally boosted into late-year, by hurricane-recovery boosted activity into March 2018. 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, now with an upturn in the post-disaster recovery.

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

Graph 18: Index of Industrial Production (Aggregate), Since 1945



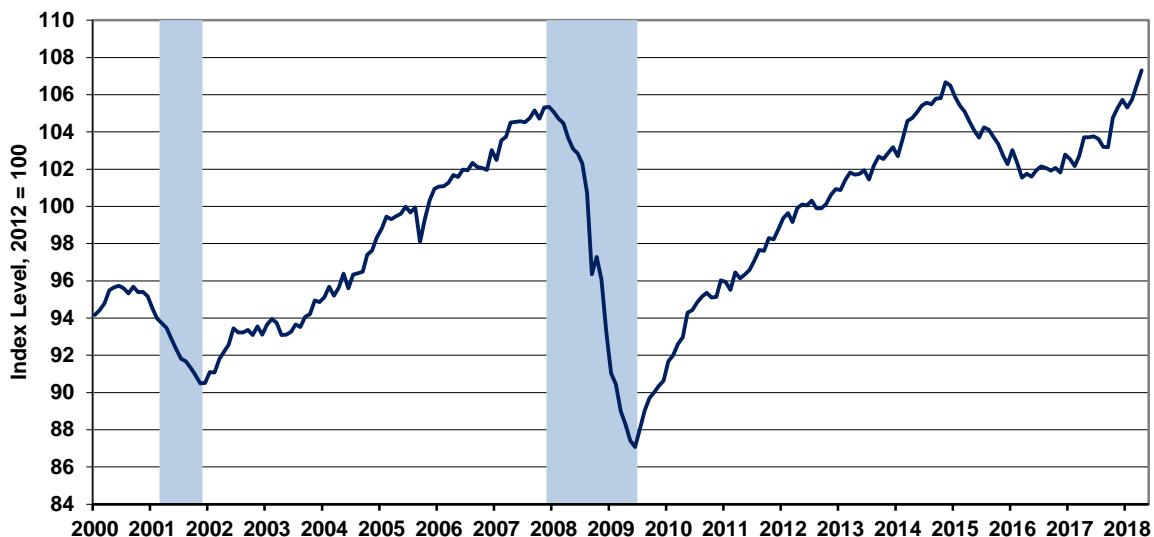
Graph 19: Industrial Production, Year-to-Year Percent Change, Since 1945



Drilling Down into the April 2018 U.S. Industrial Production Detail. Graphs 20, 22, 27 and 29 show headline reporting of industrial production and its major components.

Graph 20: Index of Aggregate Industrial Production, Since 2000

Index of Industrial Production (2012 = 100)
Level to April 2018, Seasonally-Adjusted [ShadowStats, FRB]



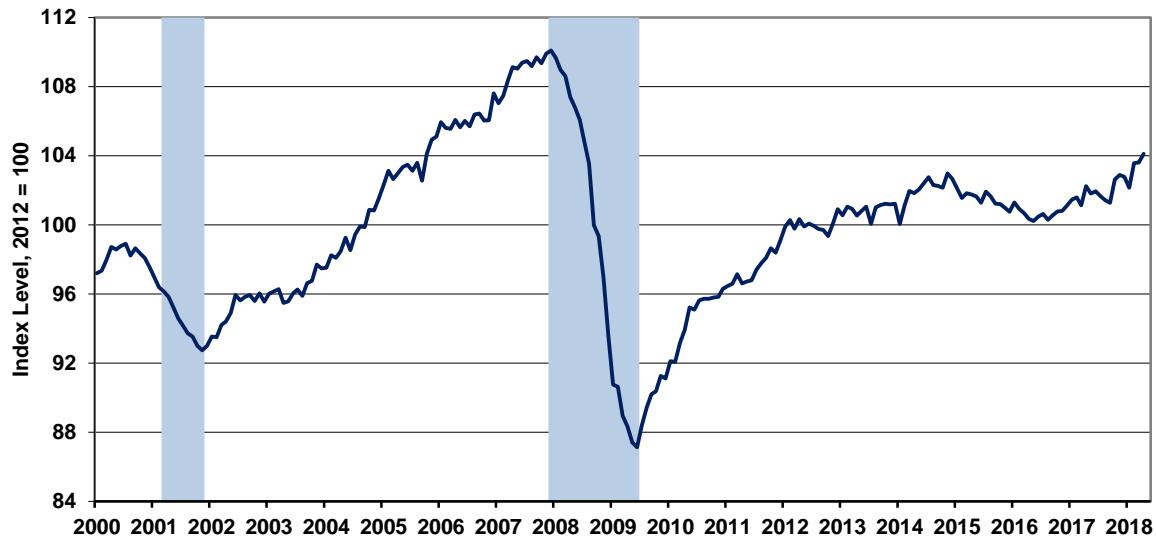
Graph 21: Aggregate Industrial Production, Year-to-Year Percent Change, Since 2000

Industrial Production (Year-to-Year Percent Change)
To April 2018, Seasonally-Adjusted [ShadowStats, FRB]



Graph 22: Industrial Production - Manufacturing (75.5% of the IIP in 2017), Since 2000

Production - Manufacturing (SIC) (2012 = 100)
Level to April 2018, Seasonally-Adjusted [ShadowStats, FRB]



Graph 23: Industrial Production - Manufacturing, Year-to-Year Percent Change, Since 2000
(Same as Graph OC-12 in the Opening Comments)

Production - Manufacturing (Year-to-Year Percent Change)
To April 2018, Seasonally-Adjusted [ShadowStats, FRB]



Graph 24: Consumer Goods (28.0% of the Aggregate in 2017), Since 2000

Production - Consumer Goods (2012 = 100)
Level to April 2018, Seasonally-Adjusted [ShadowStats, FRB]



Graph 25: Durable Consumer Goods (6.3% of the Aggregate in 2017), Since 2000

Production - Consumer Durable Goods (2012 = 100)
Index Level to April 2018, Seasonally-Adjusted [ShadowStats, FRB]



Graph 26: Nondurable Consumer Goods (21.7% of the Aggregate in 2017), Since 2000

Production - Consumer Nondurable Goods (2012 = 100)
Level to April 2018, Seasonally-Adjusted [ShadowStats, FRB]



The aggregate production index (*Graph 20*) contracted quarter-to-quarter for six consecutive quarters, from first-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, flipped to fluctuating monthly and quarterly volatility and gains by lingering and varied hurricane disruptions and the now-waning recovery from same.

Shown in *Graphs 22, 27 and 30* are the levels of activity in three major industry sectors, Manufacturing, Utilities and Mining, all of which were spiked higher in April 2018 by sharp downside revisions to previously-reported March activity. Consider again, the April 2018 aggregate Industrial Production monthly gain of 0.72%, was 0.13% net of prior-period revisions [March's headline gain of 0.75% was a contraction of 0.07% (-0.07%)], Manufacturing reflected a headline monthly gain of 0.42%, which was down by 0.07% (-0.07%) net of prior period revisions. The Mining sector (including oil and gas production) gained 1.06%, 0.88% net of prior-period revisions, while Utilities gain 1.91%, 0.47% net of prior period revisions.

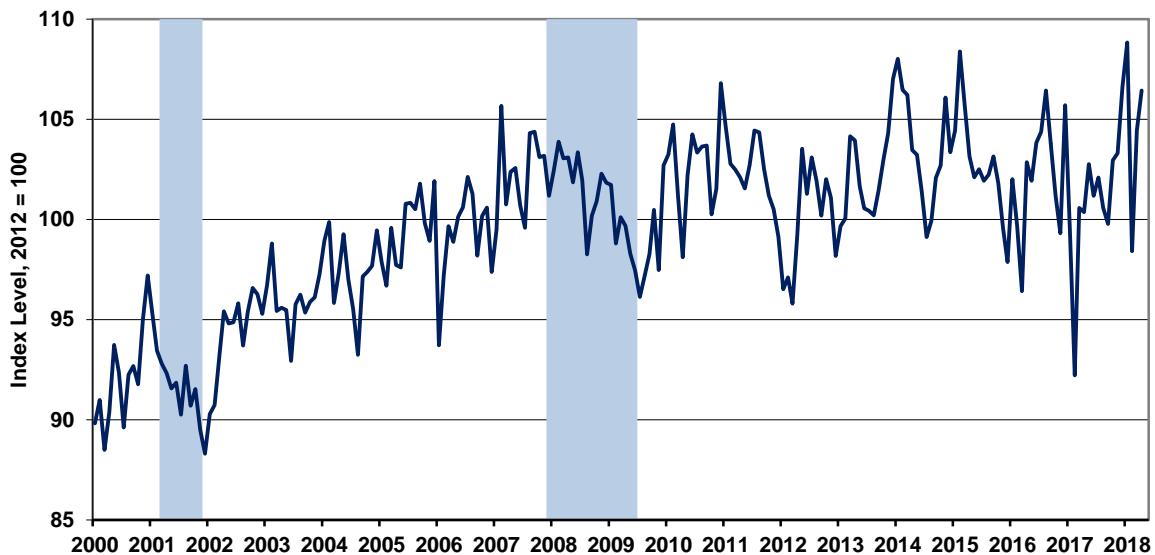
For those same sectors, the April 2018 year-to-year aggregate industrial production gain of 3.46% was down from a revised 3.71% [previously 4.33%] in March 2018, the annual gain of 1.83% in the dominant Manufacturing Sector was down from a revised 2.46% [previously 3.03%] in March 2018, the annual gain of 10.59% in Mining (including oil and gas production) was down from 10.63% [previously 10.82%] in March 2018, and the annual gain of 6.05% in Utilities was up from 3.85% [previously 5.34%] in March 2018.

The Manufacturing graphs precede this, while the graphs of Utilities and Mining follow, all updated for the latest detail. *Graphs 23, 28 and 30*, show the respective plots of year-to-year change for those series. The preceding Manufacturing *Graphs 22 to 26* include various levels of consumer goods production

(Graphs 24 to 26). The next two Graphs 27 and 28 reflect Utilities activity massively distorted by unseasonably-cold weather this winter.

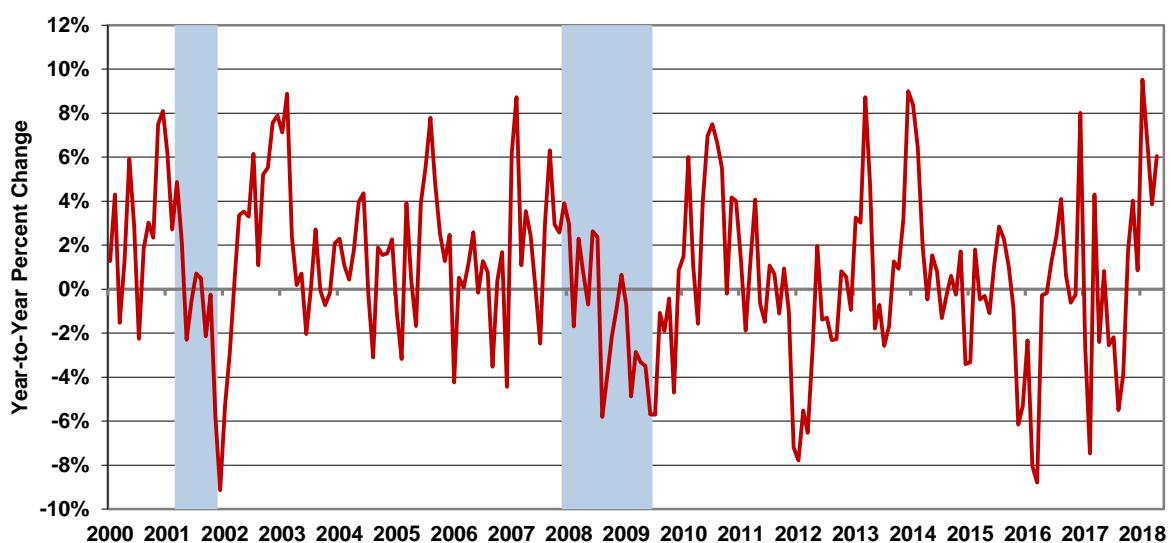
Graph 27: Industrial Production - Utilities (10.4% of the Aggregate in 2017), Since 2000

Industrial Production - Utilities (2012 = 100)
Level to April 2018, Seasonally-Adjusted [ShadowStats, FRB]

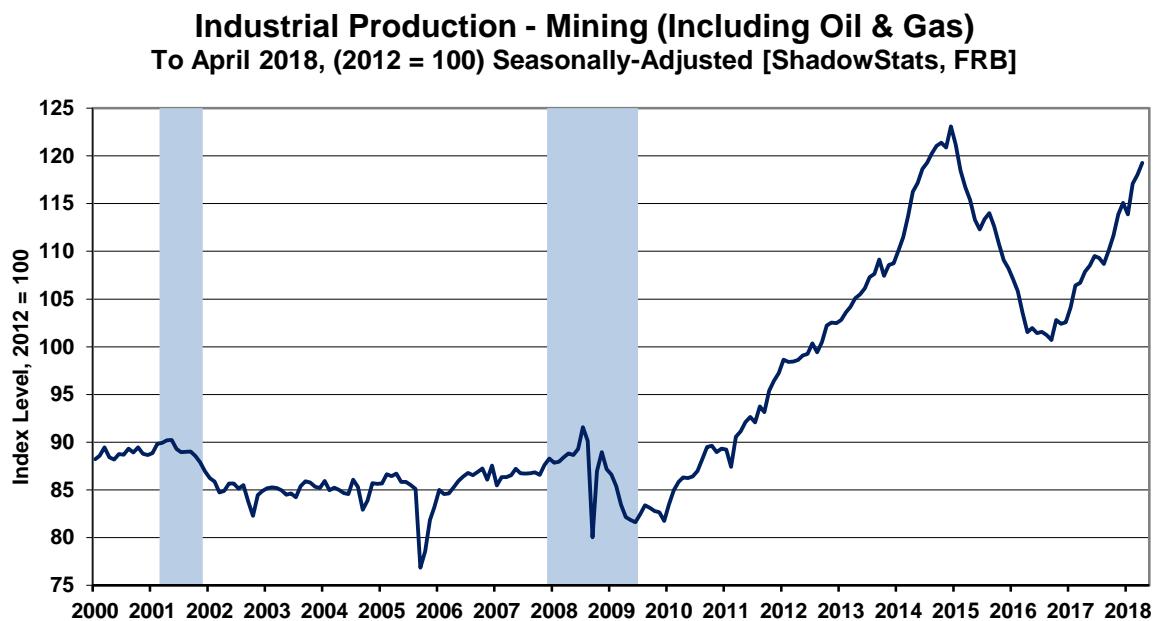


Graph 28: Industrial Production - Utilities, Year-to-Year Percent Change, Since 2000

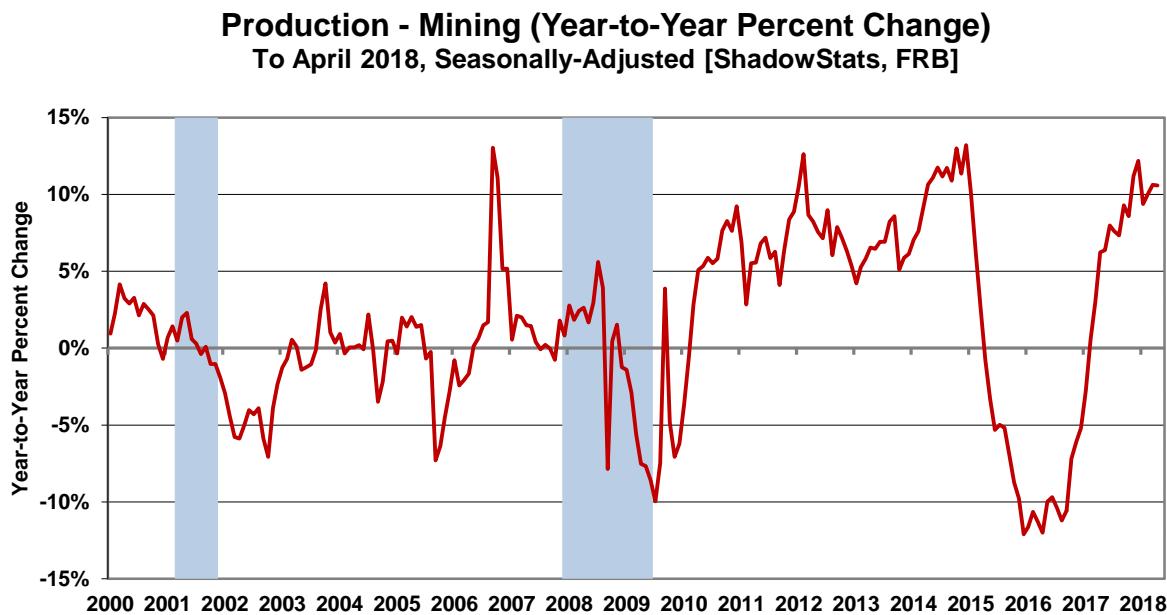
Production - Utilities (Year-to-Year Percent Change)
To April 2018, Seasonally-Adjusted [ShadowStats, FRB]



Graph 29: Industrial Production - Mining, Including Oil and Gas (14.1% of the Aggregate in 2017), Since 2000



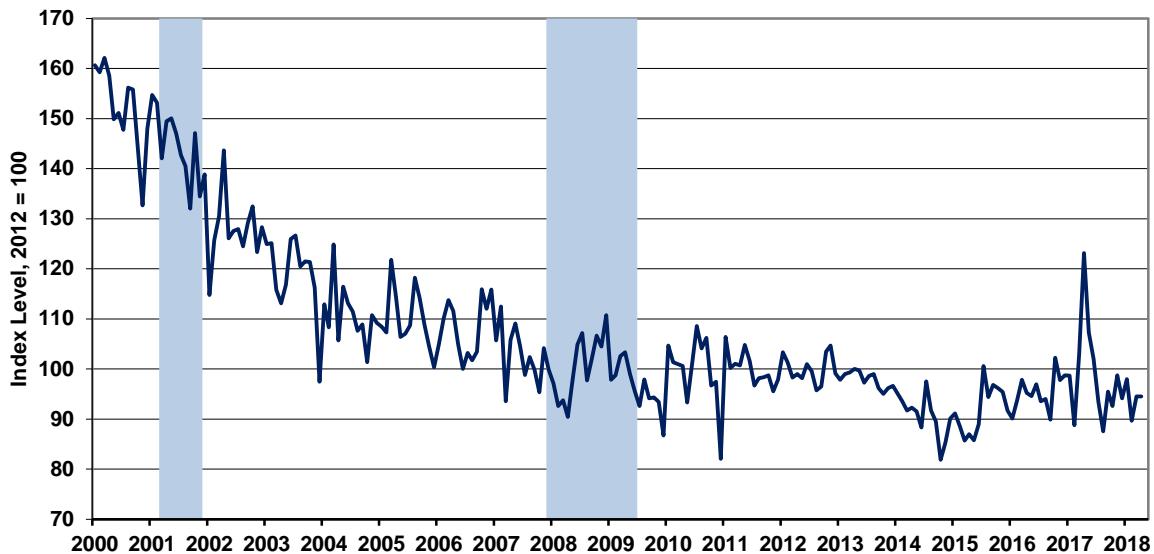
Graph 30: Industrial Production - Mining, Year-to-Year Percent Change, Since 2000



The final set of Mining *Graphs 29 to 35*, encompasses plots of related mining/oil production or exploration activity. Gold and Silver mining was flat at a 0.1% monthly gain in April, but it was down by an unusually-severe 23.23% (-23.23%) year-to-year. Although Coal Mining activity purportedly declined in April, per the Federal Reserve's press release, the actual detail for April has not been released. Accordingly, the plot is through March 2018 (*Graph 32*).

Graph 31: Mining – Gold and Silver Mining (0.2% of the Aggregate in 2017), Since 2000

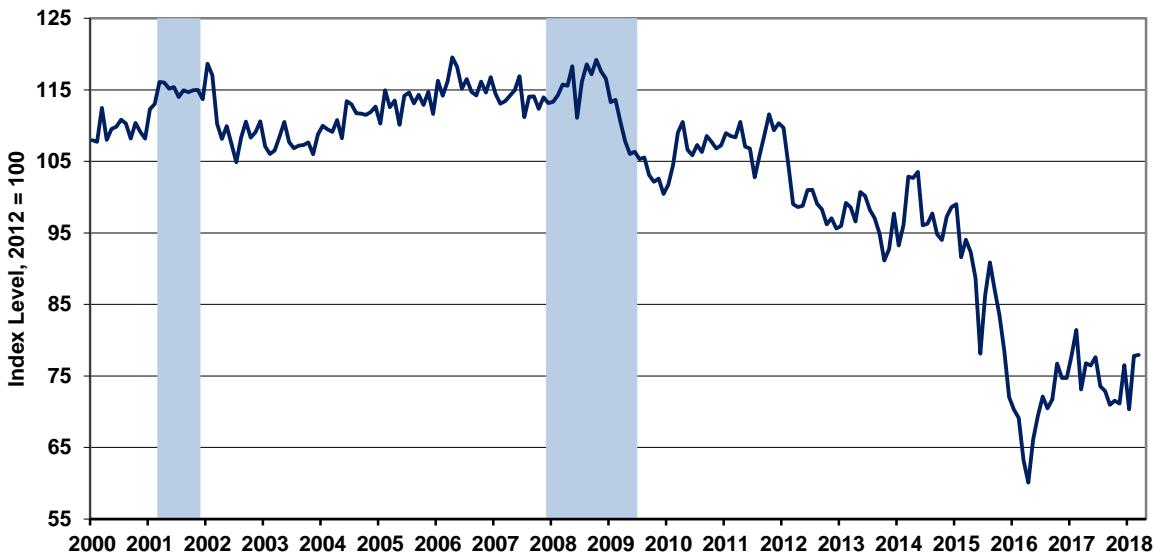
Mining - Gold and Silver (2012 = 100)
Level to April 2018, Seasonally-Adjusted [ShadowStats, FRB]



Graph 32: Mining - Coal Mining (0.8% of the Aggregate in 2017), Since 2000

NOTE: Although the Federal Reserve Board indicated in its *Press Release* that Gold Mining was down in April, the hard numbers had not been published as went to press. Hence, here is the March detail:

Mining - Coal (2012 = 100)
Level to March 2018, Seasonally-Adjusted [ShadowStats, FRB]



The dominant oil and gas mining sector rose across-the-board in April activity (see *Graphs 33 to 35*), with Oil and Gas Extraction up by 0.99% for the month [13.97% year-to-year], while Oil and Gas Drilling was up by 3.00% for the month [13.09% year-to-year].

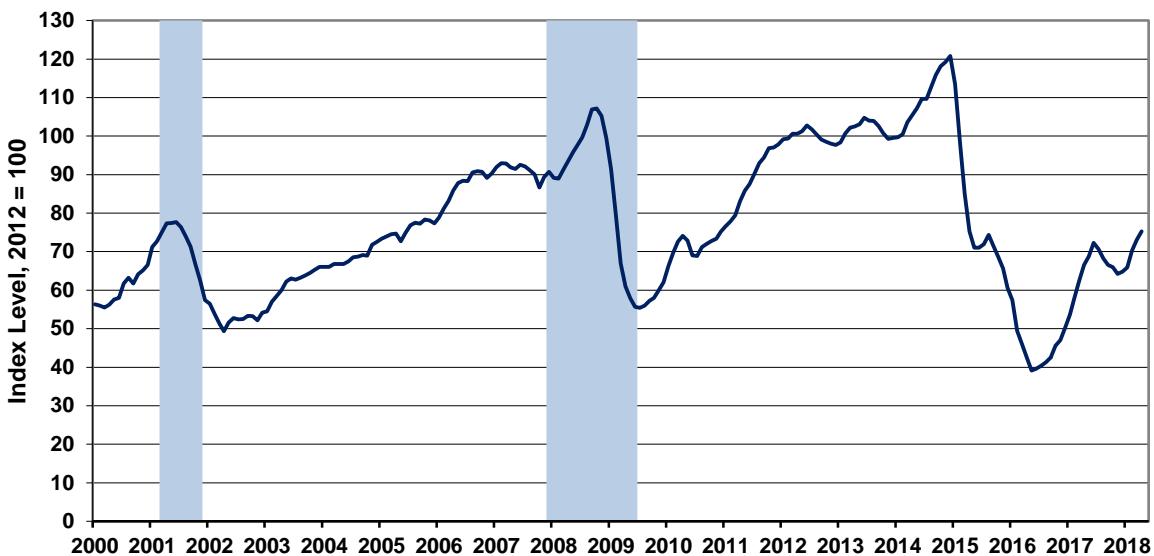
Graph 33: Mining – U.S. Oil & Gas Extraction (10.3% of the Aggregate in 2017), Since 2000

Mining - Oil & Gas Extraction (2012 = 100)
Level to April 2018, Seasonally-Adjusted [ShadowStats, FRB]



Graph 34: U.S. Drilling for Oil & Gas - Exploration (0.5% of the Aggregate in 2017), Since 2000

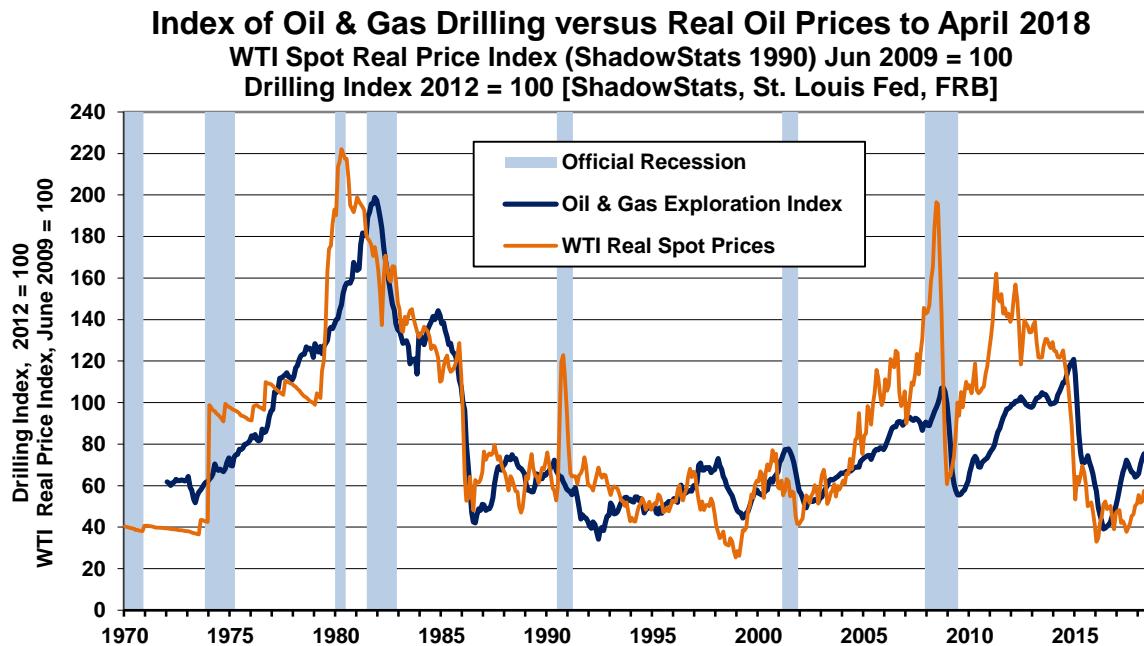
Mining - Drilling for Oil & Gas (2012 = 100)
Level to April 2018, Seasonally-Adjusted [ShadowStats, FRB]



With some lag following sharp movements in oil prices (Graph 35), oil and gas exploration tends to move in tandem, and an upswing in exploration had been in place with what was at least a short-term bottoming in oil prices in early-2016. Prices rallied into mid-2016, but moved lower into 2017, 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. Yet, oil prices have risen strongly in recent months and are in an uptrend, at present. Nonetheless, hurricanes and their after effects disrupted exploration in August through November 2017. That turned with an uptick in exploration in December 2017, with surging monthly growth into April 2018. 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).

Graph 35: Mining – U.S. Drilling for Oil & Gas versus Real Oil Prices (WTI ShadowStats 1990 Base), Since 1970



Indeed, rising oil prices tend to increase oil and gas exploration. When the dollar weakens, dollar-denominated oil prices also begin to strengthen, as had been seen recently, even in circumstances with excess supply conditions. With the U.S. dollar currently in a broad downtrend, oil prices had been firming, although now more heavily impacted by intensified political tensions in the Middle East. At such time as the U.S. dollar declines meaningfully—ShadowStats looks for a massive sell-off in the dollar in the year ahead—U.S. dollar-denominated oil prices should rally sharply in response (see the *Hyperinflation Watch* of [Commentary No. 945](#)). Yet, again, beyond the dollar, recent movement in oil prices appears most-heavily impacted by, and reflective of political developments at home and abroad. Oil prices have risen sharply at the moment, on top of having rallied enough and for a long-enough period to induce continuing increases in domestic exploration and extraction activity, in the near future, as also has been seen at present.

NEW RESIDENTIAL CONSTRUCTION—(April 2018 and Annual Revisions)

Annual Revisions to Housing Starts Were Negligible, with No Evidence of Improved Reporting Quality; Building Permits Revised Higher Only in January 2017 to Date. As promised by the Census Bureau, seasonal-adjustment factors were shifted around in the annual revisions to Housing Starts in the

New Residential Construction series, back through January 2012, but only the Building Permits series received any benchmark revisions.

An Increasingly Inconsistent Series. Beginning abruptly in January 2017, Building Permits revised higher in a one-shot benchmarked increase that added 2.1% to 2017 annual average growth. There was no consistency to the revision, just a one-shot inconsistent break in the series (a frequent occurrence). Seasonal adjustments also were revised here back to January 2012.

Consider that pre-benchmarking, month-to-month change in the seasonally-adjusted Building Permits revised from a gain of 0.9% to 1.1% in December 2016, based just on revised seasonal adjustments (annual change revised from 3.9% to 3.8%). The benchmark-revised monthly gain for January 2017, however, jumped from 2.7% to 5.2%, reflecting the one-time data break and boost to the ongoing activity level (annual change revised from 9.0% to 12.7%). In February 2017, monthly activity returned to normal, revising from a decline of 6.2% (-6.2%), to a decline of 6.1% (-6.1%), yet, with the one-time spike to January 2017 in place, annual growth revised from 2.0% to 4.4%. For the full year of 2017, annual growth revised from 3.4% to 5.5%.

This circumstance is symptomatic of regular, major consistency and comparability issues for the historical Building Permits series. The unexplained one-time change was abrupt and had no parallel in the Housing Starts series, which the Building Permits numbers purportedly lead.

Seasonal-adjustment shifts aside, what did not happen was any indication of improved reporting quality for the Housing Starts series. At least there was no meaningful narrowing reflected in the statistical confidence intervals around the estimated monthly and annual changes. In its description of the pending series overhaul in the last several monthly press releases, the Census Bureau had indicated, “With each April release, seasonally adjusted data will now be revised for an additional five years beyond the revision period for unadjusted data. Research has shown that this revision span should produce more reliable seasonally adjusted time series.”

While those seasonality changes were made, again, there was no noticeable change of the estimates of statistical significance surrounding headline monthly or annual change, as is discussed with the April 2018 headline numbers.

Odds Were Not Strong that Housing Starts Activity Actually Decreased in April 2018. As standardly has been the circumstance, though, the headline monthly changes in Housing Starts tend to reflect the extraordinary volatility and uncertainty in the series, with the 95% confidence intervals around all of the current monthly headline changes encompassing zero or “no change.” Those intervals account only for sampling error. As defined by the Census Bureau, “If a range does not contain zero, the change is statistically significant. If it does contain zero, the change is not statistically significant; that is, it is uncertain whether there was an increase or a decrease [within the probability estimate of the confidence interval].” The Census Bureau uses a 90% confidence interval by choice (outside the prescribed range on average 1-in-10 months), ShadowStats uses a 95% confidence interval by choice (outside the prescribed range on average 1-in-20 months).

With the indicated confidence interval (ShadowStats always uses a 95% confidence interval, for purposes of consistency, unless otherwise indicated), such allows for the potential of an actual gain or a loss, being

weighted in favor of the indicated direction of change, when the confidence includes zero, as seen in the current circumstance.

Such means that the actual monthly change for headline April 2018 Housing Starts, indicated at a contraction of 3.7% (-3.7%) +/- 13.3%, was within a range from a contraction of 17.7% (-17.7%) to a gain of 9.6% with 95% confidence, with the decline of 3.7% (-3.7%) the most likely increase, although not a very solid bet. The revised new system has not done anything, yet, to narrow the confidence intervals.

California Wildfire Disruptions Still May Have Impact to Play Out. The complicating hurricane- and wildfire-recovery distortions pretty much should have run their course on new residential construction by the April reporting. Impact from storm-generated new housing starts largely should be out of the system with the current detail, although destruction from the California wildfires still may have some lingering impact to play out. As noted regularly here, however, this series has been so unstable and meaningless in its headline reporting, that clarity as to what has happened often awaits an annual benchmark revision or two, maybe three. Again, that reporting-quality circumstance does not appear to have improved.

Headline Activity Has Not Recovered, Starts and Permits Have Yet to Enter a Period of Economic Expansion. In the context of a headline monthly decline in aggregate April 2018 detail, with flat single-unit starts and declining multiple-unit starts, on top of limited revisions to aggregate March, February and January 2018 details, the six-month smoothed, moving averages of these series, as seen in *Graphs 6, 8, 10 and 12* in the *Executive Summary*, have tended to flatten out or notch higher. Irrespective of near-term reporting instabilities, the six-month trends in those series has remained broadly stagnant-to-uptrending. Current levels of headline monthly activity, however, still hold well below pre-recession peaks for the aggregate and single-unit series. The exception has been the extraordinarily-volatile, multiple-units category, which has been fluttering around its pre-recession high in recent months, having backed off that peak in 2017, and again in April 2018, having regained it previously in 2015 and in recent months.

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 largely remained flat in the last several years, in ongoing, low-level stagnation, with a recent uptrend (see accompanying *Graphs 36 to 41* of the Building Permits and Housing Starts series). Again, also see *Graphs 5 to 12* in the *Executive Summary*, covering all of the major Housing Starts series.

Building Permits activity also has seen a broad pattern of non-recovery. The headline, monthly decline in April 2018 of 1.8% (-1.8%) +/- 1.5% was statistically-significant at the 95% confidence interval (again, all confidence intervals expressed here are at the 95% level), however, ***the problem with the Building Permits series remains that the data are not reported on a consistent basis over time, as noted in the opening paragraphs of this section. Such is why ShadowStats concentrates on the more-volatile, but also more-consistent Housing Starts series.*** Headline gains in recent months had turned the broadly stagnant six-month moving average of the series from minimally-downtrending to minimally-uptrending, once again, now enhanced further by the inconsistent annual revisions (see *Graph 38*).

Plotted with just the seasonally-adjusted monthly data in *Graphs 36 and 37*, the pattern of low-level, uptrending stagnation in the various New Construction Activity series, showed headline April 2018 Building Permits activity still down by 40.3% (-40.3%) from recovering its pre-recession peak.

Aggregate Housing Starts activity (see also *Graphs 7 and 8* in the *Executive Summary*) is down similarly by 43.4% (-43.4%), with Single-Unit Starts (*Graphs 9 and 10* in the *Executive Summary*) down by 51.0% (-51.0%).

Multiple-Unit Starts (*Graphs 11 and 12* in the *Executive Summary*) had fallen back sharply, after first having recovered its 2005 pre-recession peak in early-2015, recovering again in recent months. In the context of the benchmark revisions, that series has been gyrating between near pre-recession peak activity, to down about thirteen percent, down by 12.7% (-12.7%) with the headline April 2018 detail.

Annualized First-Quarter 2018 Growth in Housing Starts Boomed by 20.7%, if the Numbers Could Be Believed, with Second-Quarter on Early Track for a 9.6% (-9.6%) Hit. In this highly volatile and unstable series of recent years, the total Housing-Starts count fell at a benchmark-revised annualized quarterly pace of 23.2% (-23.2%) [previously 23.7% (-23.7%)] in first-quarter 2015, rose at a 92.1% [previously 87.7%] pace in second-quarter 2015, by 1.4% [previously 1.9%] in third-quarter 2015 and contracted at an annualized pace of 9.8% (-9.8%) [previously 12.0% (-12.0%)] in fourth-quarter 2015.

First-quarter 2016 activity showed an annualized quarterly gain of 4.9% [previously 10.7%], while Second-quarter 2016 rose by 6.9% [previously 1.5%]. Third-quarter 2016 activity contracted on both an annual and quarterly basis, down year-to-year by 0.8% (-0.8%) [previously 1.0% (-1.0%)], the first annual decline since first-quarter 2014, and down at an annualized quarterly pace of 4.4% (-4.4%) [previously 2.7% (-2.7%)]. Fourth-quarter 2016 housing starts showed annualized quarterly growth of 40.8% [previously 39.0%], up by 10.9% [previously 11.0%] year-to-year.

First-quarter 2017 annualized quarterly change was a contraction of 6.7% (-6.7%) [previously down by 3.4% (-3.4%)], with year-to-year change slowing to 7.6% [previously 7.3%]. Second-quarter 2017 showed an annualized quarter-to-quarter contraction of 18.2% (-18.2%) [previously 21.0% (-21.0%)], with year-to-year change slowing to 0.7% [previously 0.8%]. Third-quarter 2017 Housing Starts activity was an annualized gain of 0.3% [previously 1.8%], with annual growth of an unrevised 1.9%. Fourth-quarter 2017 activity was an annualized gain of 33.5% [previously 31.8%], with a year-to-year gain of 0.5% [previously 0.6%].

First quarter 2018, annualized quarter-to-quarter growth slowed to 20.7% [previously 21.8%], with annual growth up to 7.2% [previously 6.5%]. Given the meaningless volatility in the headline April 2018 details, the early trend (just for April) was for an annualized second-quarter 2018 contraction of 9.6% (-9.6%), up year-to-year by 9.9%.

Reflecting the apparent, independent one-time upside revisions to Building Permits, beginning in January 2017 consider the greater magnitude of changes here. In comparison/contrast, Building Permits (the theoretically-leading series to Housing Starts) showed benchmark-revised annualized quarterly gain of 7.4% [previously contraction of 2.8% (-2.8%)] in first-quarter 2017 (see the earlier comment on consistency), with year-to-year change of 10.8% [previously 7.9%]. Second-quarter 2017 showed an annualized contraction of 8.4% (-8.4%) [previously 11.0% (-11.0%)], with year-to-year growth of 6.3% [previously 3.9%]. Third-quarter 2017 showed an annualized gain of 4.3% [previously 6.2%], with a year-to-year gain of 4.3% [previously 2.2%]. Fourth-quarter 2017 showed an annualized gain of 19.5% [previously 22.3%], with annual gain of 5.4% [previously 3.0%].

First-Quarter 2018, annualized quarterly growth was 8.3% [previously 14.3%], up by 5.4% [previously 7.2%] year-to-year. The early-trend, based just on the April 2018 detail, was for annualized an second-quarter 2018 contraction of 1.0% (-1.0%), up year-to-year by 7.5%.

April 2018 Housing Starts, Headline Detail. The always-unstable and highly-volatile reporting in the aggregate Housing Starts series was exacerbated in recent reporting by hurricane-recovery effects. Those distortions most likely largely have worked out of the system, despite the latest data gyrations, although recovery from the late 2017 California wildfires still could be kicking in. That said, headline April 2018 declined month-to-month, again, in the context of the annual benchmark revisions.

The Census Bureau and Department of Housing and Urban Development (HUD) reported May 16th, a statistically-insignificant, seasonally-adjusted, headline monthly decline in April 2018 Housing Starts of 3.7% (-3.7%) +/- 13.3% (again, all confidence intervals are expressed at the 95% level). That followed a benchmark-revised monthly of a gain of 3.6% in March, a decline of 3.3% (-3.3%) in February and a gain of 10.2% in January. Level-of-activity aggregate detail is plotted in *Graphs 5 to 12* of the *Executive Summary*, and in *Graphs 37, 39, 40 and 41* at the end of this section.

Year-to-year change in the seasonally-adjusted, April 2018 aggregate housing-starts measure was a statistically-insignificant gain of 10.5% +/- 11.3%, with benchmark-revised gains of 13.3% in March 2018, 0.1% in February 2018 and 8.9% in January 2018.

The April 2018 headline monthly decline of 3.7% (-3.7%) in total Housing Starts encompassed a monthly gain of 0.1% in Single-Unit starts and a decline of 12.6% (-12.6%) in the Multiple-Unit “Five Units or More” starts category. There is a missing balance in the “Two to Four Units” category, which gained by 26.7% in April. Where that latter category is considered too small to be meaningful and is not reported directly, it did affect the aggregates to the extent that total multiple units actually declined by 11.3% (-11.3%), as discussed later in the broadest, aggregate “multiple unit” category. As usual, none of the monthly or annual headline changes was statistically significant.

Housing Starts by Unit Category. [See *Graphs 5 to 12* 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 April 2018 gained month-to-month by a statistically-insignificant 0.1% +/- 13.8%, following a benchmark-revised decline of 0.8 (-0.8%) and gains of 1.6% in February and 4.6% in January. April 2018 single-unit starts showed a statistically-insignificant annual gain of 7.2% +/- 10%, versus benchmark-revised annual gains of 8.4% in March 2018, 2.9% in February 2018 and 9.8% in January 2018 (see *Graphs 5, 6, 9 and 10* in the *Executive Summary*).

Housing starts for apartment buildings, condominiums, etc. (generally 5-units-or-more) declined sharply in April 2018, down month-to-month by a statistically-insignificant 12.6% (-12.6%) +/- 28.1%, versus benchmarked monthly changes of a gain of 15.1% in March, a decline of 14.5% (-14.5%) in February and a gain of 21.2% in January. A statistically-insignificant annual gain of 19.0% +/- 37.6% in April 2018 followed benchmark-revised changes of a gain of 23.7% in March 2018, a decline of 5.8% (-5.8%) in February 2018 and a gain of 4.8% in January 2018.

Expanding the multiple-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 monthly estimates of the 2-to-4-units category, due to statistical significance problems (a general issue for the aggregate series). Nonetheless, the total multiple-unit category can be estimated by subtracting the single-unit category from the total category (see *Graphs 5, 6, 11 and 12* in the *Executive Summary*).

Accordingly, the statistically-insignificant April 2018 monthly decline of 3.7% (-3.7%) in aggregate starts was composed of a statistically-insignificant gain of 0.1% in one-unit structures and a statistically-insignificant decline of 11.3% (-11.3%) in the multiple-unit structures category (two-units-or-more, including the five-units-or-more category). In contrast, again, ex-two-units-or-more, the multiple-unit category declined by 12.6% (-12.6%). Again, these series are graphed in the *Executive Summary*.

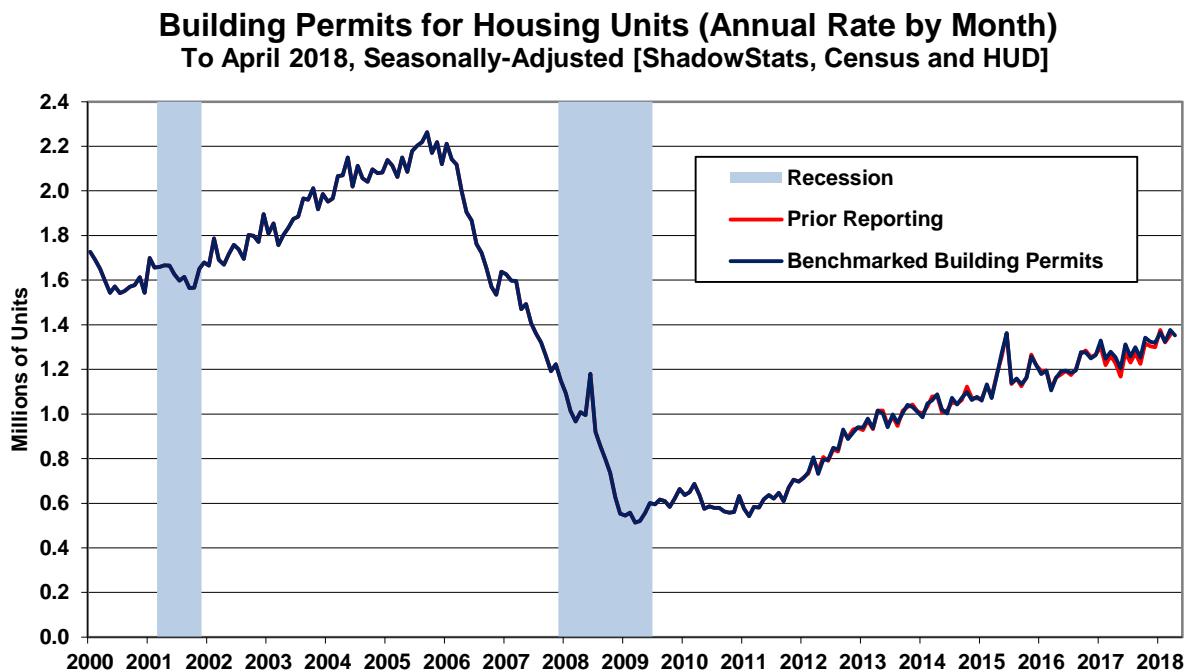
Consumer Liquidity Problems Continue to Impair Residential Construction Activity. Discussed in the *Consumer Liquidity Watch*, the extreme liquidity bind besetting consumers continues to constrain residential real estate activity. Without sustainable growth in real income or credit, including mortgages, 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% of which is dependent on real personal spending, including residential construction.

Please see the *Note on the Housing Starts Graphs* on page 21.

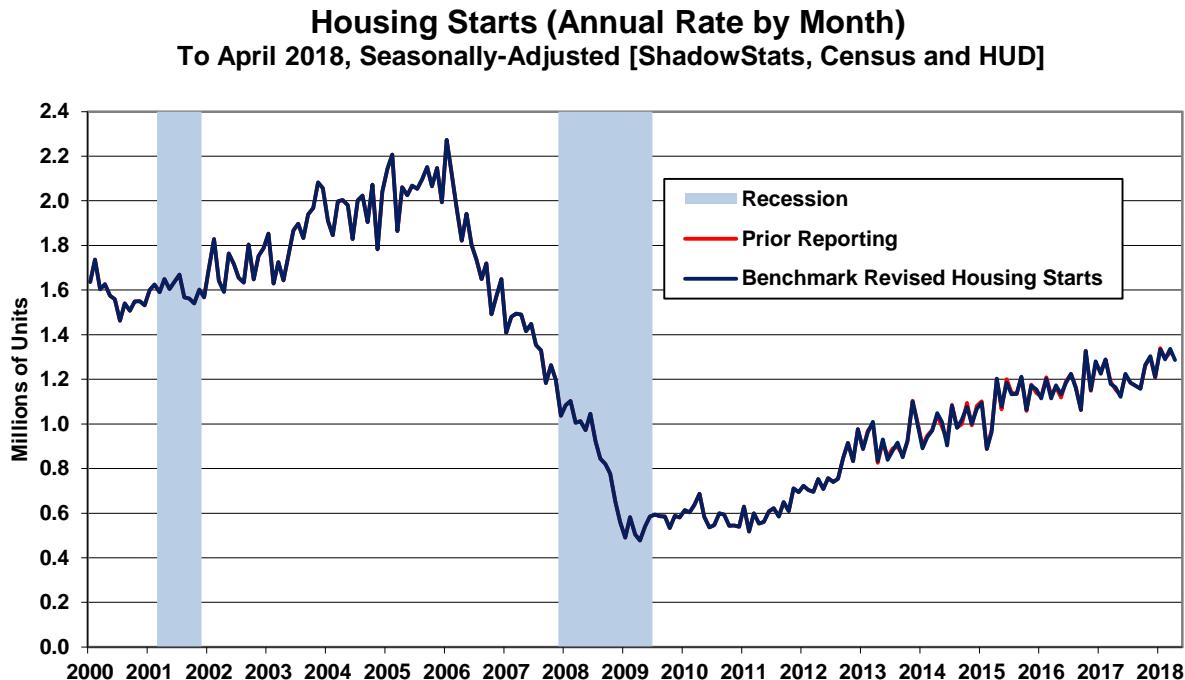
[Graphs 36 to 41 begin on the next page.]

NOTE: The May 16th Annual/Benchmark Revisions: Net Housing Starts revisions were negligible and rarely noticeable in *Executive Summary* graphs or in Graphs 37 and 39 here. Prior detail is plotted in red, behind the new detail in dark blue. Prior numbers show up minimally in Graphs 36 and 38, which reflect a one-time, inconsistent and distorting upside revision to Building Permits in 2017.

Graph 36: Benchmarked Building Permits (Annualized Monthly Rate of Activity), 2000 to Date

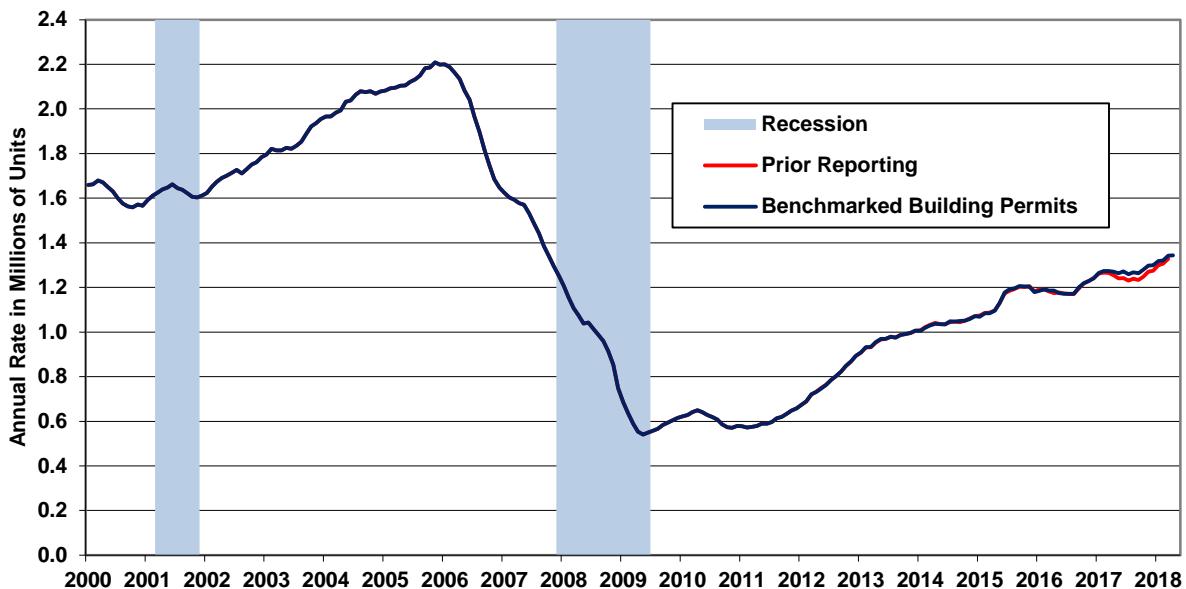


Graph 37: Benchmarked Housing Starts (Annualized Monthly Rate of Activity), 2000 to Date



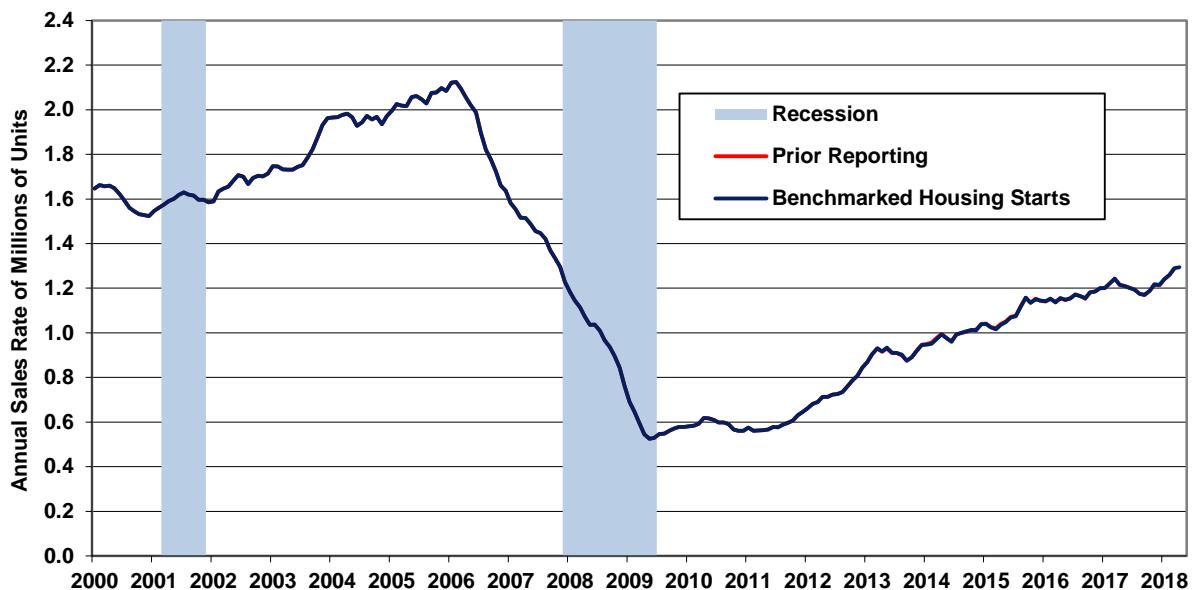
Graph 38: Benchmarked Building Permits (Six-Month Moving Average), 2000 to Date

Building Permits for Housing Units (Six-Month Moving Average)
To April 2018 Seasonally-Adjusted [ShadowStats, Census and HUD]



Graph 39: Benchmarked Housing Starts (Six-Month Moving Average), 2000 to Date

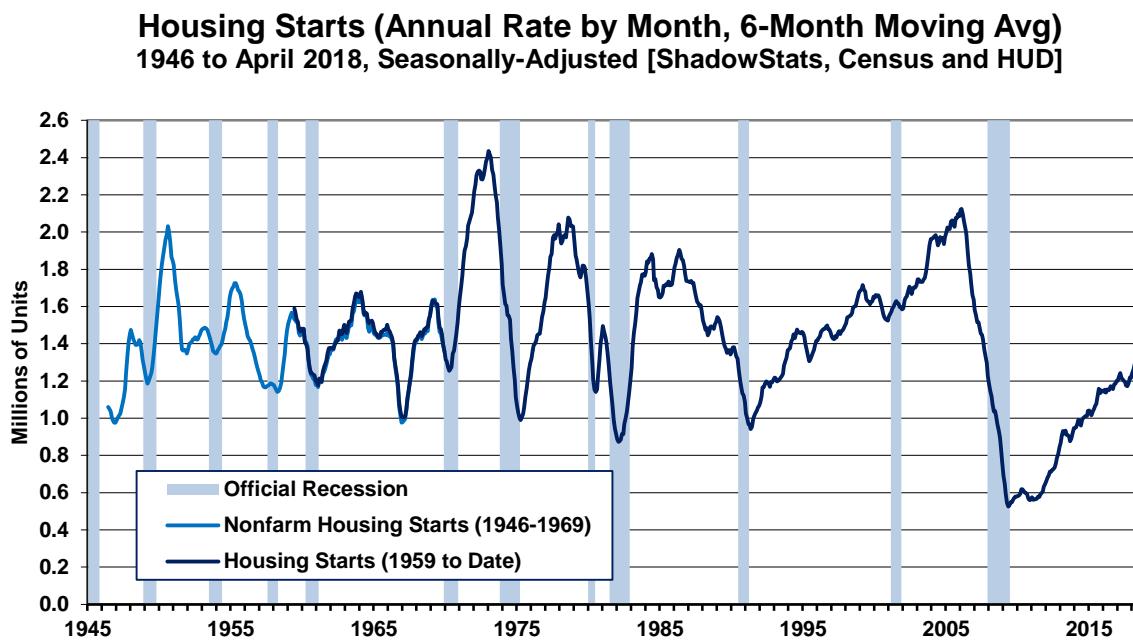
Aggregate Housing Starts (Six-Month Moving Average)
To April 2018, Seasonally-Adjusted [ShadowStats, Census and HUD]



Graph 40: Benchmarked Housing Starts (Annualized Monthly Rate of Activity), 1946 to Date



Graph 41: Benchmarked Housing Starts (Annualized Monthly Rate of Activity, 6-Mo Moving Avg), 1946 to Date



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

CONSUMER LIQUIDITY WATCH

CONSUMER LIQUIDITY, INCOME, CREDIT AND RELATIVE OPTIMISM. *[Updated for Sentier Research's re-introduction of their monthly series of Real Median Household Income, through March 2018, April 2018 Real Average Weekly Earnings ([Commentary No. 949](#)) and the early-May estimate of the University of Michigan's Consumer Sentiment measure.]*

Consumer Liquidity Constraints Have Intensified, Given Tightening Real Growth in Consumer Earnings and Credit along with Weakening Employment and Consumer Optimism. Today's *Consumer Liquidity Watch* incorporates by reference the *Opening Comments* of the May 9th [Commentary No. 948](#), which reviewed a various economic signals ranging from tightening systemic liquidity tied to sinking, inflation-adjusted real annual growth in M3 money supply, to Sentier Research's reintroduction of monthly Real Median Household Income, incorporated later in this text.

Mounting financial stress on the U.S. consumer bodes poorly for pending domestic economic growth. Noted in the *Executive Summary* of [Commentary No. 947](#), mounting liquidity issues likely already have taken some hit on real first-quarter 2018 GDP activity, where consumer real consumption of goods actually declined and real investment growth in residential real estate was nil. See also the *Opening Comments* in [Commentary No. 948](#) and [Commentary No. 949](#).

Liquidity conditions have been tightening for consumers, with Real Consumer Credit Outstanding having continued to falter in March 2018, with headline Real Average Weekly Earnings contracting quarter-to-quarter in first-quarter 2018 and with monthly Real Median Household Income in March 2018 up by only 1.8% from what appears to have been be a near-term series peak eighteen-plus years ago, in January of 2000. These factors are among the likely elements driving the early signs of a downturn in consumer optimism and consumer consumption and residential investment (a shrinking 72.9% of First-Quarter 2018 GDP). In combination, these various factors should exacerbate financial-market, policy-maker and FOMC concerns as to any ongoing, positive direction in broad U.S. economic activity.

Weakening consumer liquidity conditions previously had been mirrored in weakening, headline economic activity coming into the series of major natural disasters that disrupted the economy, beginning in August 2017. Intensifying weakness had included Payroll-Employment, Real Retail Sales, Housing and Construction, and the Manufacturing/Production sector, generally pre-natural disaster activity.

Net of what have been mixed, but significant, hurricane and later-wildfire distortions, initial hits to activity were followed by related and transient economic boosts from recovery, replacement and restoration activity, particular in fourth-quarter 2017. Funded by insurance payments and savings

liquidation, those distortions increasingly had passed into the recent headline economic data and now begun to recede. Against artificially bloated third- and fourth-quarter 2017 activity of 3.2% and 2.9%, first-quarter 2018 economic activity slowed to 2.3% and likely will revise sharply lower as better-quality numbers become available. Such effects are discussed in the separate analyses of relevant series in covered in the regular *ShadowStats Commentaries*. Where there are current signals of faltering consumer liquidity (again see Consumer Credit Outstanding and Real Earnings), headline consumer optimism has begun to move off recent highs, along with softening underlying economic reality. The April 2018 releases of the Conference Board's Consumer-Confidence Index® and the advance-estimate of the University of Michigan Consumer Sentiment for May 2018 both were off recent peak activity.

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 underlying pocketbook 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 2001, let alone 2007. Yet, underlying liquidity conditions, economic reality and lack of positive actions out of the government to turn the economy meaningfully, so far, all have continued to remain shy of consumer hopes, and those numbers have begun to stumble in recent detail.

The temporary liquidity boost fueled by recent disaster effects, such as insurance payments or savings drawdowns to fund replacement of storm-damaged assets, was of a one-time nature and short-lived in terms of ongoing economic impact. The underlying, fundamental longer-term liquidity issues remain in place. Nonetheless, mirroring the disaster-fueled economic hype in the popular press, consumer optimism had rallied strongly, albeit, again, now faltering or mixed, as discussed shortly.

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 fundamental 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 average consumer hopes and needs, irrespective of the new tax laws.

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, Fourth-Quarter 2017 U.S. GDP.

Net of short-lived disaster distortions (insurance payments, savings liquidations), 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 boosts

from disasters or political gimmicks, discussed recently in [*General Commentary No. 929*](#) and the *Executive Summary* of [*Commentary No. 928*](#).

Anecdotal Evidence of Business and Consumer Uncertainty Continue to Indicate a Seriously-Troubled Economy and Very Dangerous Financial Markets. Against what appears to be a headline economic consensus that all is right again with the U.S. economy and financial markets, underlying real-world common experience suggests a much different outlook. Regularly discussed here, ongoing non-recovery, low-level stagnation and signs of renewed downturn remain patterns common to key elements of headline U.S. economic activity. Consider factors ranging from housing sales and broad construction activity, to headline reporting of domestic manufacturing (and revisions), as well as those series that are heavily gimmicked, such as the Gross Domestic Product (GDP), also regularly discussed and dissected here.

Similar signals of such economic stress are seen in patterns of activity that move along with the real-world broad economy. They range from indicators such as freight volume and domestic consumption of petroleum to factors such as levels of real consumer debt outstanding, real average weekly earnings and measures of employment stress in the broad economy. Those stresses are reflected in historically-low levels of the employment-population ratio and the labor-force participation rate. With the liquidity-starved U.S. consumer driving three-quarters of the GDP, there is no way for the broad economy to boom—happy Retail Sales headlines aside—with some meaningful shift in underlying consumer circumstances. Links to background discussions in these various areas are found in the *Recent Commentaries* section of the *Week, Month and Year Ahead*, along with links to background discussions on the quality of the more-politicized GDP ([*Commentary No. 938*](#)) and employment/unemployment details discussed in the *Supplemental Labor-Detail Background* of [*Commentary No. 939*](#).

Beyond assessing headline economic numbers, ShadowStats also looks at anecdotal evidence, including comments by subscribers and clients, who live in the real world. Two broad observations have come from a number of recent conversations. First, real estate activity appears to be slowing in recently strong areas. Second, a number of major companies are “sitting on their hands,” holding back on issuing new contracts to third-party vendors in areas such as upgrading computer systems and other consulting. The companies cite the slowdown in contracts as “due to uncertainty,” an issue, as well with the U.S. consumer, where that uncertainty encompasses:

- Unfolding circumstances in the Washington, D.C. political arena.
- Where the manic financial markets are headed.
- Ultimately, what is, or will be, happening to near-term business activity?

Economic reporting, and business and financial-market stories sometimes receive happy year-end spikes in the press. That circumstance was supplemented in late-2017 by near-term hurricane boosts to, and distortions of, some current economic activity, such as the November Retail Sales reporting. The latter circumstance should prove fleeting. The underlying, broadly-faltering U.S. economy should be dominating headline economic reporting, once again, and all too soon, most likely in the next couple of months. That said, albeit reflecting some of the headline economic hype in the popular press, headline consumer optimism remains strong.

Consumer Optimism: Consumer Sentiment and Confidence Have Backed Off Recent Peak. Having hit peak activity in February 2018 the Conference Board’s Consumer-Confidence Index® (Confidence) measure pulled back in March and remained lower in its initial April 2018 (released April 24th). The

University of Michigan's Consumer Sentiment Index (Sentiment) peaked in March 2018 turning down in its full reporting for April 2018. Though revised slightly higher in its final April estimate, on April 27th, Sentiment remained down sharply month-to-month and did not revise in its early May 2018 estimate.

Reflected in *Graphs CLW-1* and *CLW-2*, Confidence and Sentiment monthly readings had jumped sharply to multi-year highs in February 2018, despite mounting financial-market and economic uncertainties, with early-March Sentiment jumping anew. Following a downside revision to the February 2018 reading, which still remained at its strongest reading since 2000, the March 2018 reading fell back below its level of November 2017. The still-strong numbers here for both Confidence and Sentiment remain above their, pre-2007 recession peaks. Other than for the recent months of stronger Confidence readings, Confidence is at its highest level since May 2000, but remain down from that May 2000 peak by 11.1% (-11.1%).

On a monthly basis the final April 2018 Sentiment measure has backed off sharply and held in early-May. Although still at a high level, it is below a number of monthly levels seen back over the last year, currently down from what once was its comparative prior peak of January 2004 by 4.8% (-4.8%).

For both 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*), the three-month moving averages also remain above pre-2007 recession highs, yet the still-high moving averages have slowed in their gains, having begun to falter along with the softening detail and related headline consumer activity.

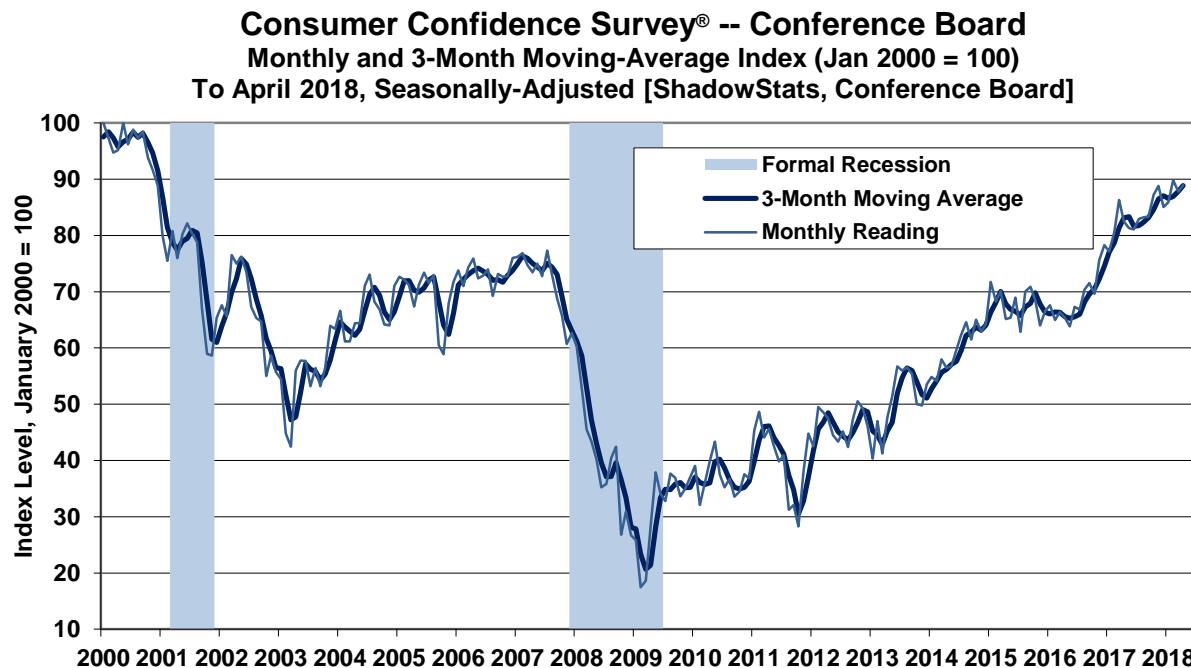
Pre-election, September 2016 Confidence and Sentiment jumped and then plunged in October 2016, likely reflecting concerns as to the direction of the presidential race. Post-election, both measures rallied sharply, reflecting surges in consumer optimism into early-2017. Both series then topped and pulled back, with mixed numbers into August and September 2017, but with the October 2017 Sentiment measure showing a large jump, purportedly because consumers were willing to accept diminished prospects for their living standards (see [Commentary No. 916](#))? Nonetheless, the Sentiment measure retrenched in November and December. The Conference Board blamed hurricane impact in Texas and Florida for its downturn in September 2017 Confidence, but those numbers exploded into October and November 2017, again reversing largely with December's headline downturn.

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.

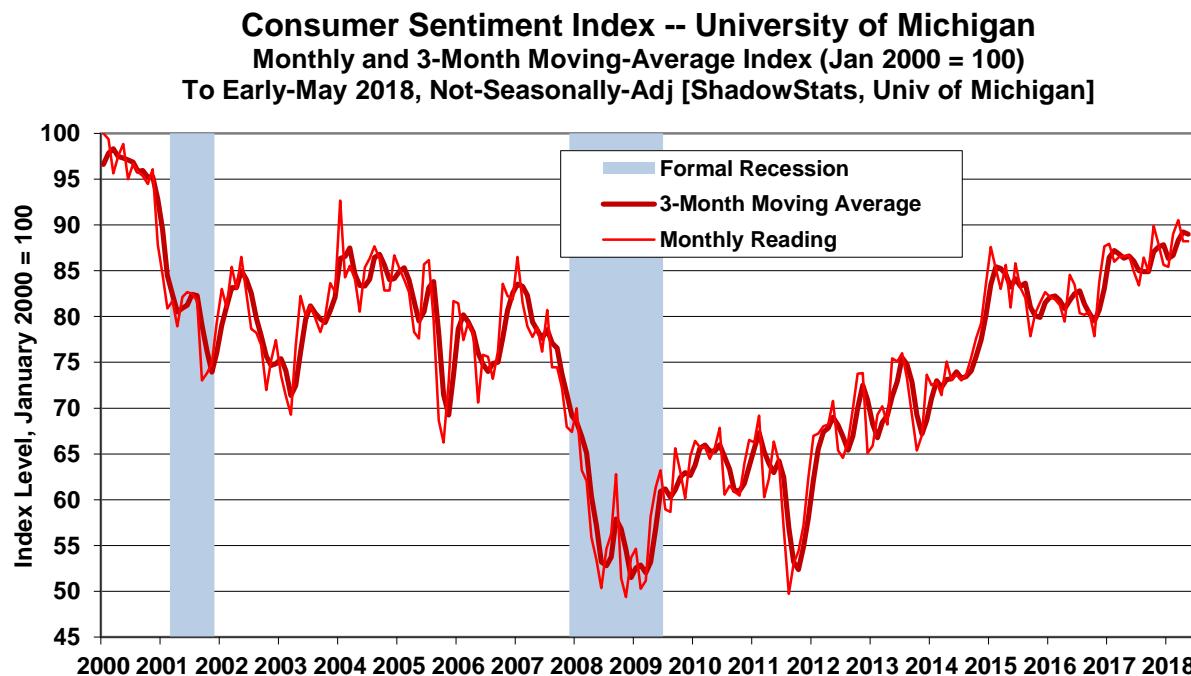
The Confidence and Sentiment series tend to mimic the tone of headline economic reporting in the press (see discussion in [Commentary No. 764](#)), and often are highly volatile month-to-month, as a result. Recent press has been highly positive on the headline economic and employment news, reflecting short-lived hurricane boosts to activity particularly on unemployment (not payroll employment), retail sales and industrial production. As headline financial and economic reporting in the next month or two turn increasingly-negative and unstable, so too should the surging "optimism." Increasingly, a downturn in consumer outlook should take hold, despite any euphoric headlines, reflecting some deep-seated consumer liquidity issues.

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 into fourth-quarter 2017, although various consumer measures to hits in the initial first-quarter 2018 GDP. In the current environment of what had been surging optimism, 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 2018)

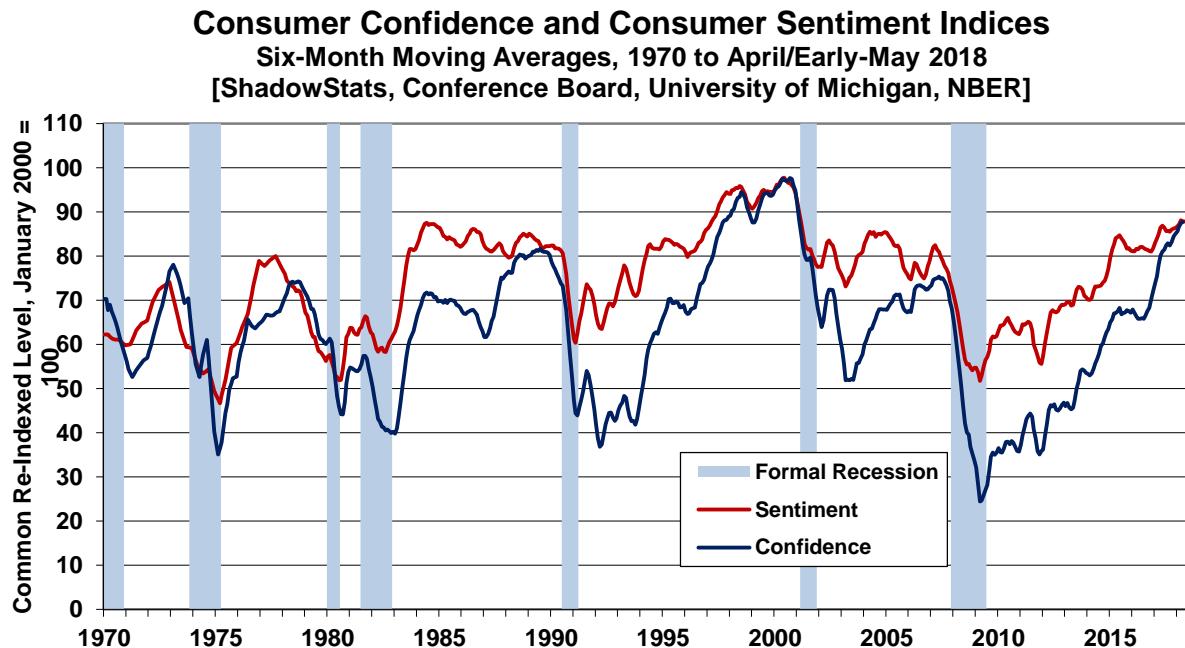


Graph CLW-2: Consumer Sentiment (2000 to 2018)



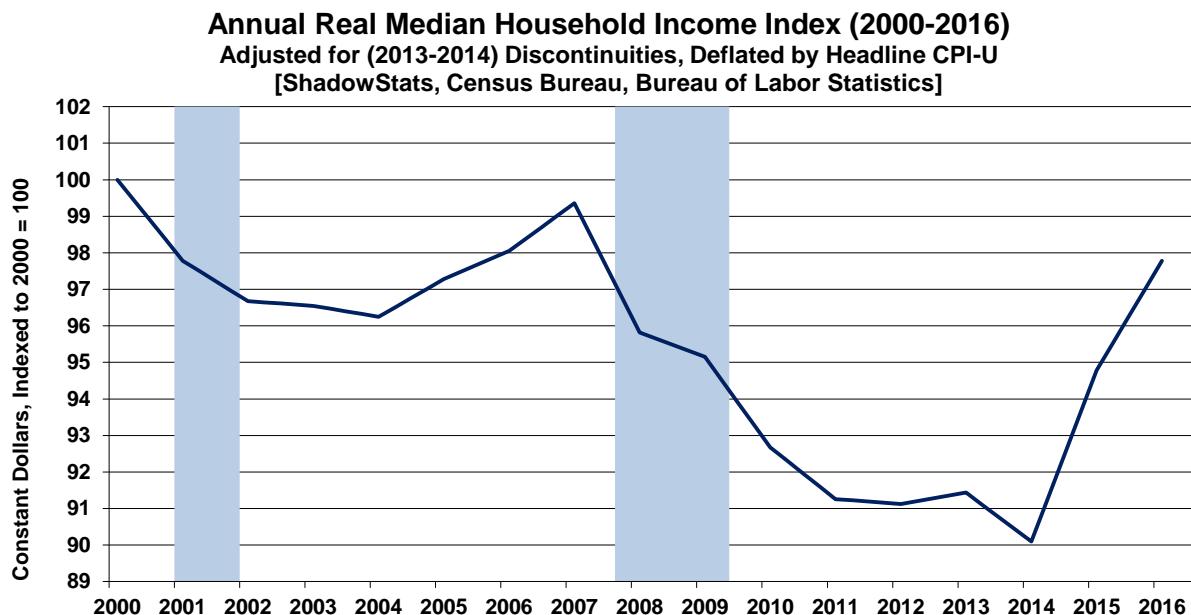
Smoothed for irregular, short-term volatility, the two series still generally had held at levels seen typically in recessions, until the post-2016 election circumstance. Suggested in *Graph CLW-3*—plotted for the last 48 years—the latest readings of Confidence and Sentiment recently have recovered levels 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 increasingly, they appear to be topping out.

Graph CLW-3: Comparative Confidence and Sentiment (6-Month Moving Averages, 1970 to 2018)

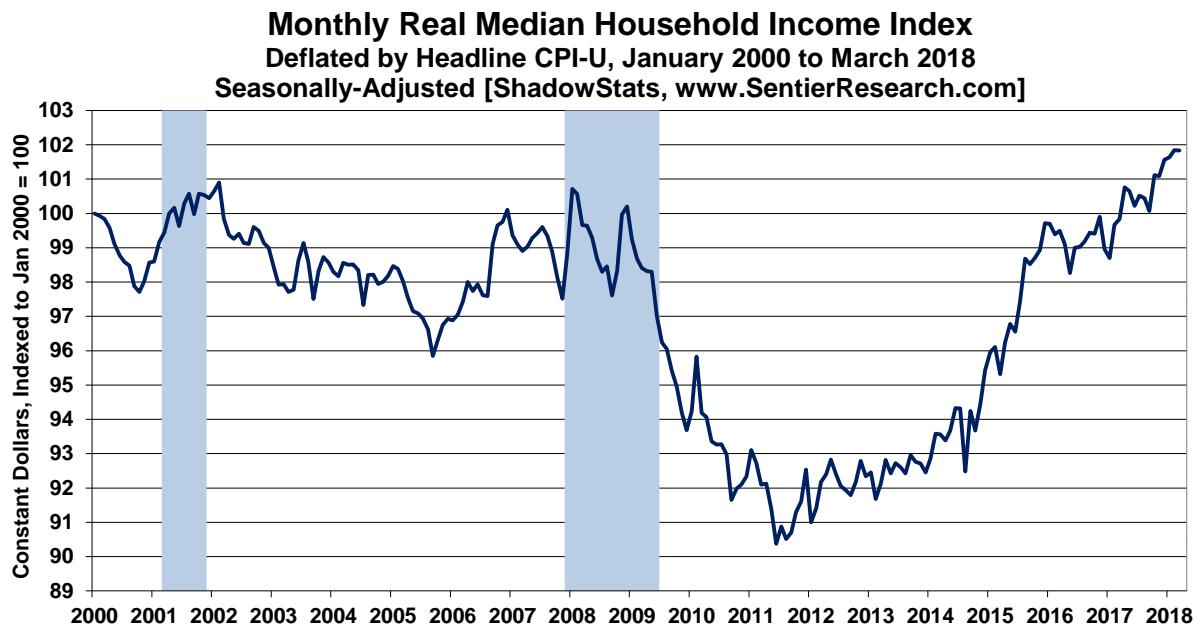


Annual Real Median Household Income in 2016 Held Below Its 2007 Pre-Recession Peak, Below Late-1990s Activity and About Even with the Mid-1970s, Monthly Activity Has Been Broadly Stagnant. Graphs CLW-4 and CLW-5 show the latest plots of annual and monthly Real Median Household Income.

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

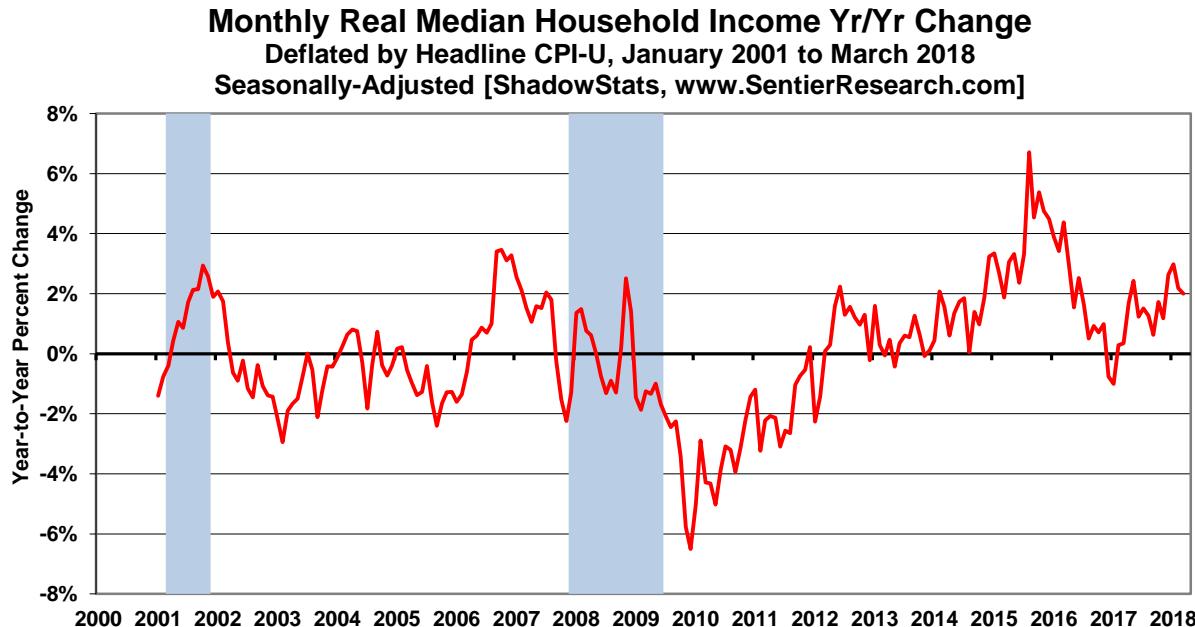


Graph CLW-5: Monthly Real Median Household Income (2000 to March 2018) Index, January 2000 = 100



Monthly Real Median Household Income, provided by Sentier Research (*Graph CLW-5*) generally can be considered a monthly version of the annual detail shown in preceding *Graph CLW-4*, based on the most-recent (2016) release by the Census Bureau in September 2017, and as discussed in the *Opening Comments* of [Commentary No. 948](#) (see also [Commentary No. 909](#)).

Graph CLW-6: Monthly Real Median Household Income (2000 to March 2018) Year-to-Year Change



The Reinstated Sentier Research Monthly Series Showed Stagnant Monthly Real Growth. Discussed in the *Opening Comments* of [Commentary No. 948](#), Sentier Research (www.SentierResearch.com) has

reinstituted its monthly reporting of Real Median Household Income (the Household Income Index or HII), where publication had been suspended, temporarily, following the release of May 2017 headline detail. The series has been updated, monthly, through March 2018, with minor revisions incorporating recent benchmark revisions to the CPI-U, which is used in deflating the series. The current monthly series is plotted here, both as to level (*Graph CLW-5*) and as to year-to-year change (*Graph CLW-6*).

Methodological understatement of the CPI-U by the Bureau of Labor Statistics broadly has had the effect of overstating the growth in headline real or inflation-adjusted income series (see the [Public Commentary on Inflation Measurement](#)). In a related area, recent extreme volatility in monthly gasoline prices has had varying impact on the headline data. Details were reviewed the *Opening Comments of Commentary No. 948*, where monthly change in the March 2018 HII was nil, and where annual average growth in the series since its January 2000 onset has been roughly 0.1% per year. Given the independence and quality of the Sentier research, and the known definitional biases and gimmicks used by Bureau of Economic Analysis (BEA) in its income and economic measures, the Sentier numbers suggest that actual activity is not as robust as suggested by the headline BEA reporting of Gross Domestic Product (GDP), for example.

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 have 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.

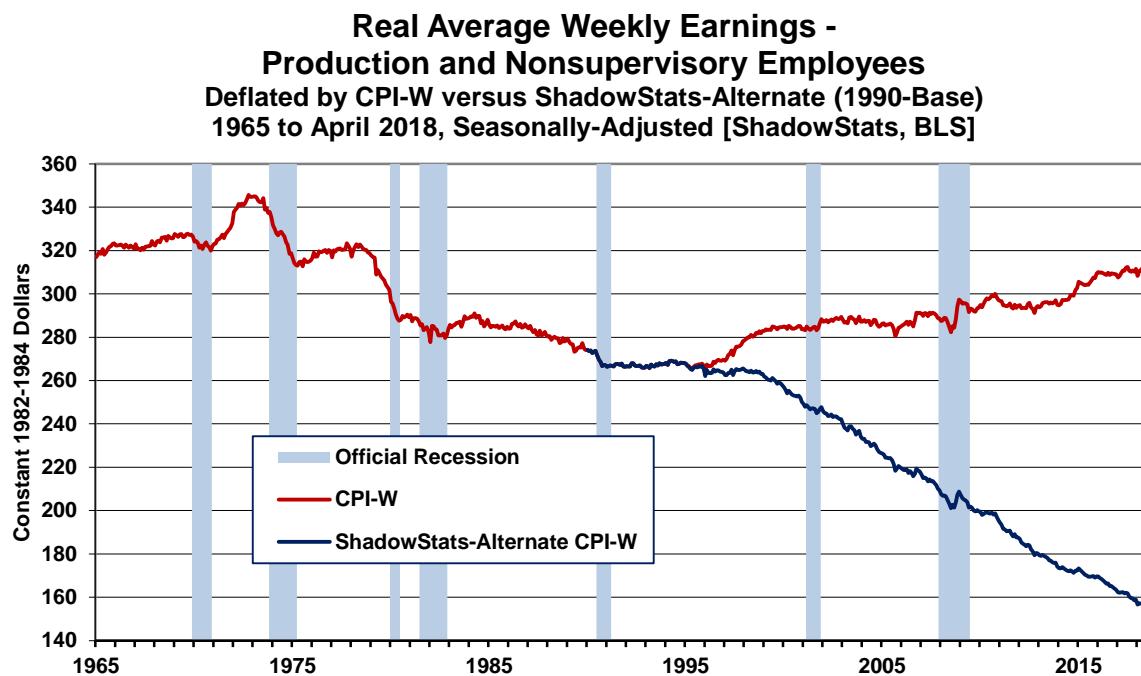
Where Sentier uses monthly questions surveying current annual household income, the headline annual Census Bureau detail is generated by a once-per-year question in the March CPS survey, as to the prior year's annual household income. The Median Household Income surveying results are broadly consistent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

Real Average Weekly Earnings—April 2018—Third-Consecutive Quarterly Contraction Held in Place. For the production and nonsupervisory employees category—the only series for which there is a meaningful history (discussed in [Commentary No. 949](#) and plotted here in *Graph CLW-7*), real average weekly earnings rose in April. Despite near-term monthly volatility, often triggered by unstable monthly inflation numbers, real earnings contracted quarter-to-quarter in first-quarter 2018 for the third-consecutive quarterly decline in real earnings for the production and nonsupervisory employees category, the fifth real quarterly contraction of the last six quarters. Separately, real quarterly earnings for the broader all-employees category had contracted in first-quarter 2018, for the second consecutive quarterly contraction, but it also was down in April 2018

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, 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.

Graph CLW-7: Real Average Weekly Earnings, Production and Nonsupervisory Employees, 1965-to-Date
(Same as Graph 1 in [Commentary No. 949](#))



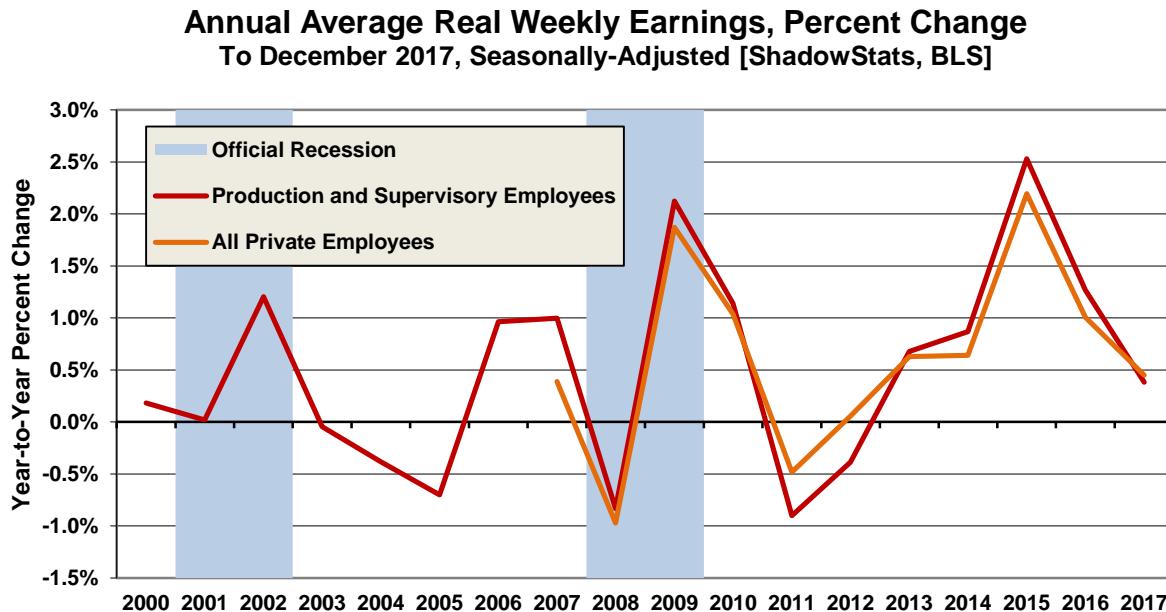
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Shown in *Graph CLW-8*, and as discussed in [Commentary No. 931](#), both the “all-employees” and “production and nonsupervisory employees” categories showed a sharply slowing pace in annual growth in 2017. Presumably coming off more-positive economic circumstances, the patterns there are consistent with a renewed economic downturn, not with a new economic boom, and the current pace of decline is greater than the average tax reduction to be seen by consumers in the year ahead.

Not all economic downturns are reflected in the headline economic data. For example, industrial production indicated the U.S. economic downturn intensified in fourth-quarter 2014, enough to qualify as

a new recession, which is consistent with the plot in *Graph CLW-8*. See the related discussions in [Commentary No. 928](#) and [Commentary No. 936](#).

Graph CLW-8: Annual Average of Weekly Earnings, Annual Percent Change (2000 to 2017)



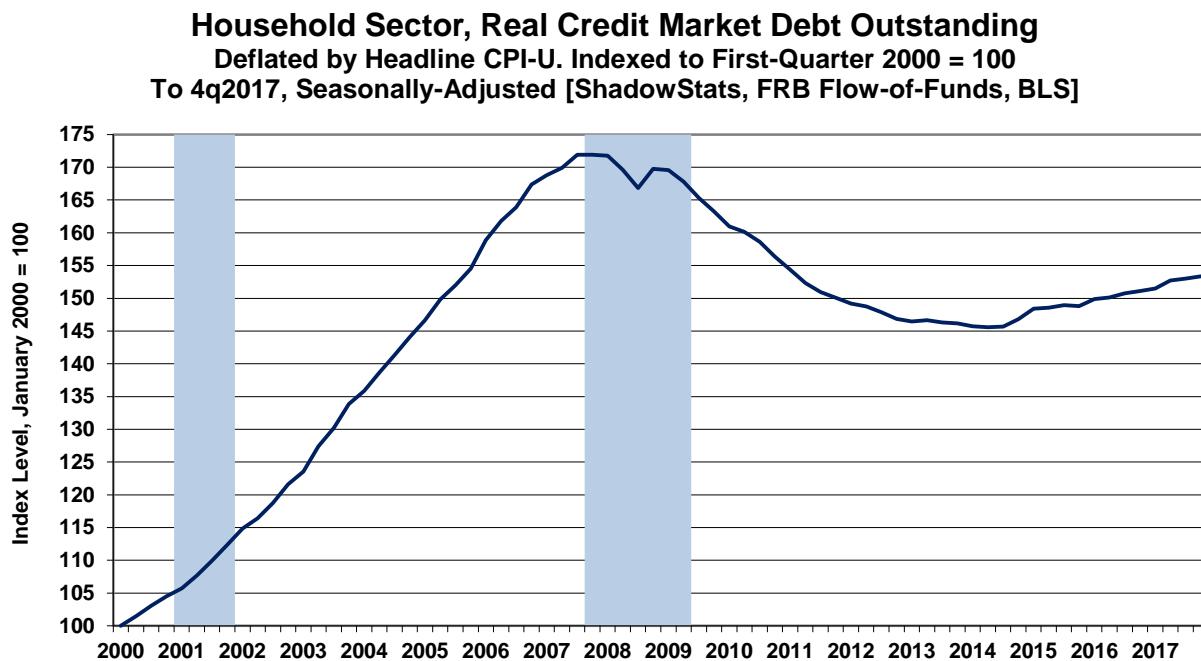
When income growth is inadequate to support consumption growth, consumers often make up the difference in debt expansion. Yet, real Consumer Credit Outstanding has shown a pattern of declining annual real growth for the last several quarters, irrespective of the specific series, as reflected in the plots of real monthly year-to-year change in *Graph CLW-13*.

Consumer Credit: Lack of Expansion in Real Consumer Credit Constrains Economic Growth. The final five graphs on consumer conditions address consumer borrowing. Where debt expansion can help make up for a shortfall in income growth, expansion of consumer debt, which would help fuel expansion in personal consumption, has been nonexistent.

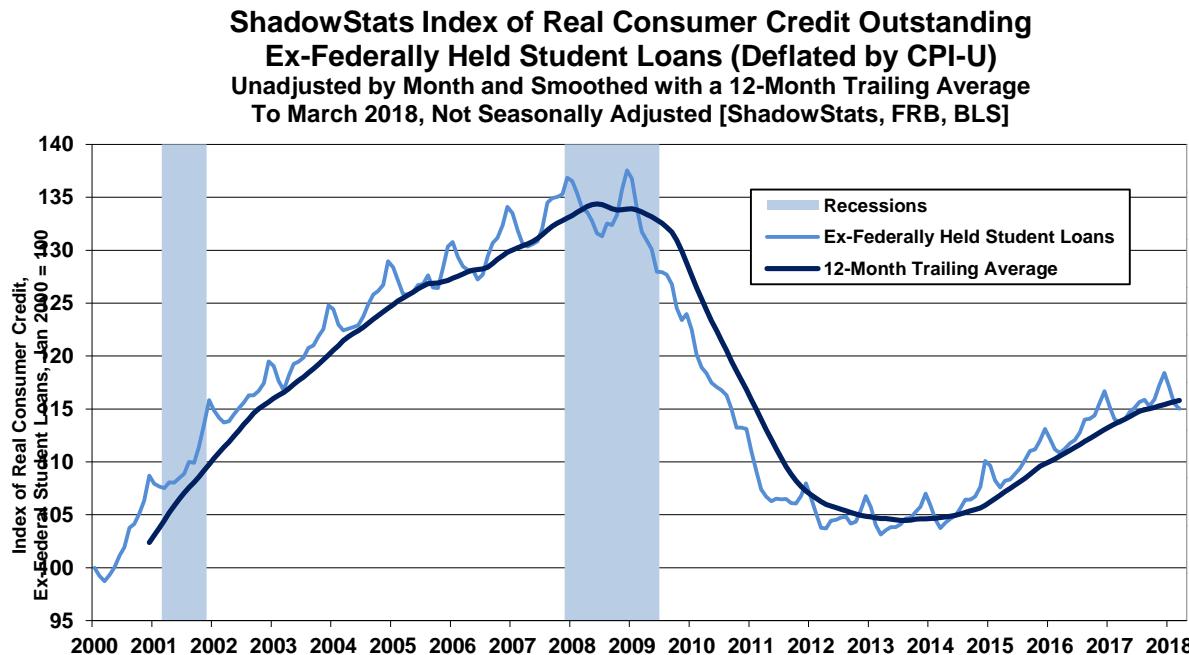
Quarterly Series. Consider *Graph CLW-9* of *Household Sector, Real Credit Market Debt Outstanding*. The level of real household debt declined in the period following the Panic of 2008, reflecting loan defaults and reduced banking lending, and it has not recovered fully, based on the Federal Reserve's flow-of-funds accounting through fourth-quarter 2017, released on March 8th. Household Sector, Real Credit Market Debt Outstanding in fourth-quarter 2017 still was down by 10.8% (-10.8%) from its pre-recession peak of third-quarter 2007. That was against a revised third-quarter 2017 decline of 11.0% (-11.0%) [previously 10.9% (-10.9%)]. The flattened visual uptick at the latest point in *Graph CLW-9* reflected a slowing in real year-to-year change from 1.72% [previously 1.70%] in second-quarter 2017, to 1.48% [previously 1.55%] in third-quarter 2017 and to 1.47% in fourth-quarter 2017. Such completes 41 straight quarters—a full decade-plus—of credit non-expansion, versus its pre-recession peak.

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 and intermittently into fourth-quarter 2017. Current activity also has reflected continuing relative strength from student loans, as shown in the *Graphs CLW-10 to CLW-13*.

Graph CLW-9: Household Sector, Real Credit Market Debt Outstanding (2000 through Fourth-Quarter 2017)



Graph CLW-10: Real Consumer Credit Outstanding, Ex-Federal Student Loans (2000 to 2018)



Shown for comparative purposes is *Graph CLW-10*, real, not-seasonally-adjusted Consumer Credit Outstanding, Ex-Federally-Held Student Loans, has not recovered on a monthly, let alone the 12-month trailing-average basis used as a surrogate for seasonal adjustment. Discussed in the next section, this measure of consumer credit now has been through 123 months 41 quarters of non-expansion. That is reflected on a parallel basis through fourth-quarter 2017 reporting shown in *CLW-9*. Please note that the scale in *Graph CLW-10* is indexed to Consumer Credit Outstanding Ex-Federal Student Loans equal to 100 in January 2000. In *Graphs CLW-11 to 13*, that indexing is applied to the total Consumer Credit Outstanding number, which is greater in amount than its dominant Ex-Federal Student Loans subcomponent.

Monthly Series. Indeed, the ShadowStats analysis usually focuses on the particular current and continuing weakness in monthly levels of consumer credit, net of what has been rapidly expanding government-sponsored student loans. Where detail on that series only is available not-seasonally-adjusted, the following three related graphs and the preceding *Graph CLW-10* are so plotted.

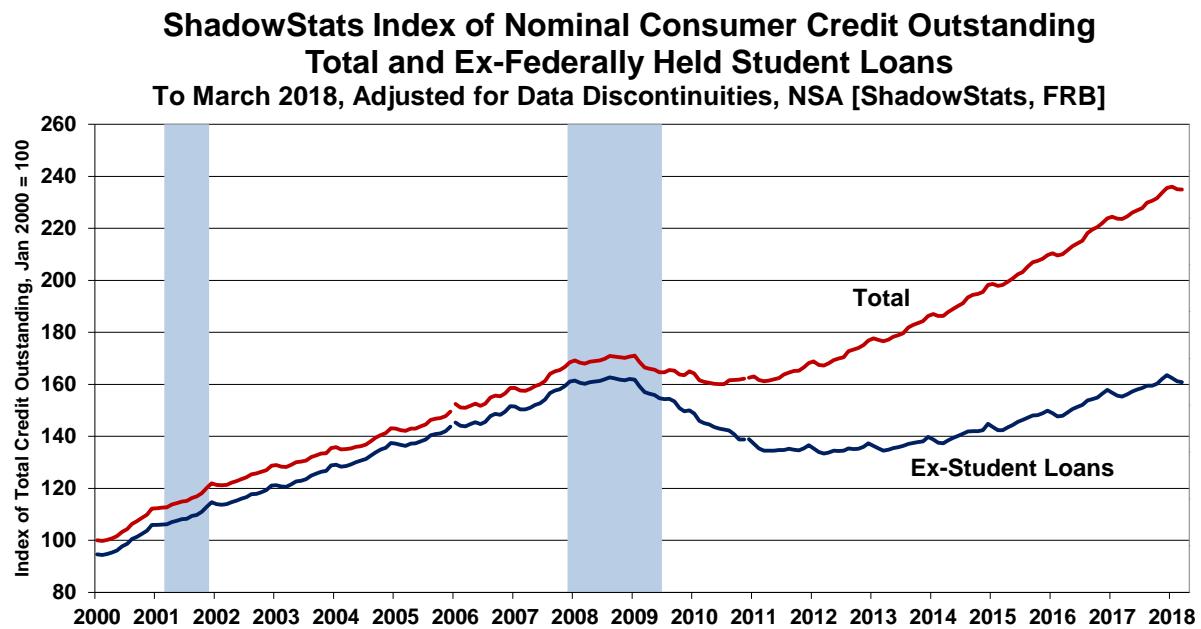
Shown through the March 2018 reading (released May 7th), the headline nominal monthly Consumer Credit Outstanding (*CLW-11*) is a subcomponent of the nominal Household Sector debt. Where *Graph CLW-12* reflects the real or inflation-adjusted activity for monthly Consumer Credit Outstanding terms of both level (*Graph CLW-12*) and year-to-year change (*Graph CLW-13*). *Graphs CLW-12* and *CLW-10* are comparable to the inflation-adjusted Household Sector plot in *Graph CLW-9*.

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 have fueled 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.

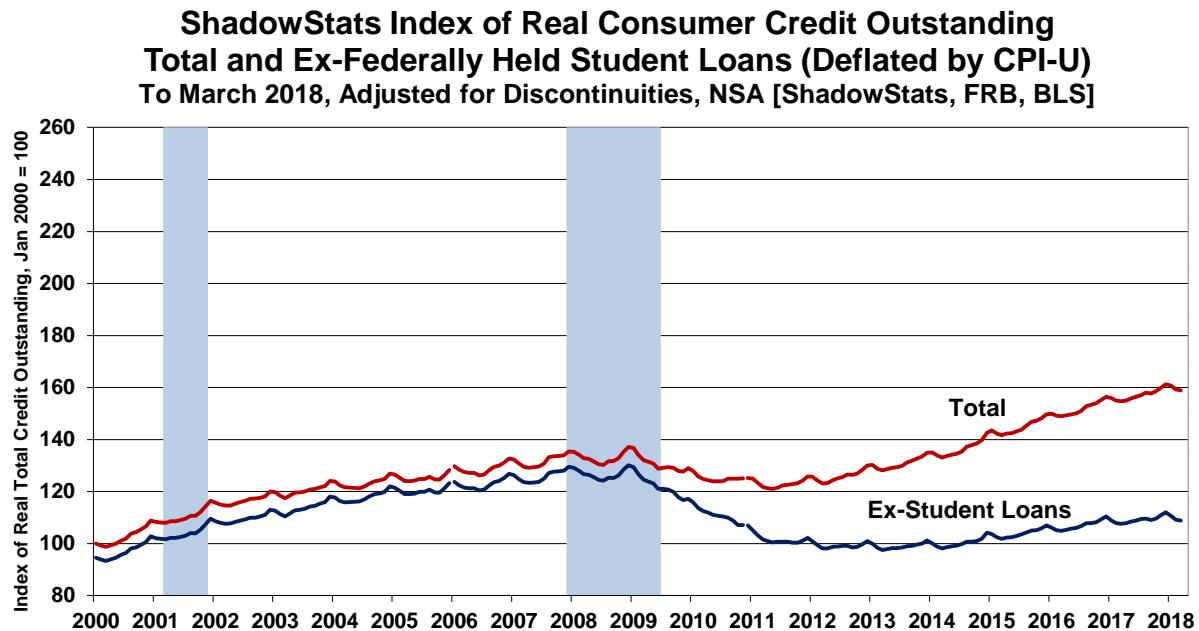
Adjusted for inflation, the lack of recovery in the ex-student loan area is more obvious. Where the recent monthly downside move in the not-seasonally-adjusted real consumer credit reflected something of a seasonal pattern, the pattern of year-to-year growth has been in downtrend, suggesting some tightening of credit conditions. Adjusted for discontinuities and inflation, ex-student loans, consumer credit outstanding in March 2018 was down from recovering its pre-recession peak of December 2007 by 16.0% (-16.0%). That is 123 months, 41 quarters or ten-plus years of non-expansion of credit. Year-to-year real growth shown in *Graph CLW-13* tends to resolve most monthly seasonal distortions in the not-seasonally-adjusted data.

[Graphs CLW-11 to CLW-13 begin on the next page.]

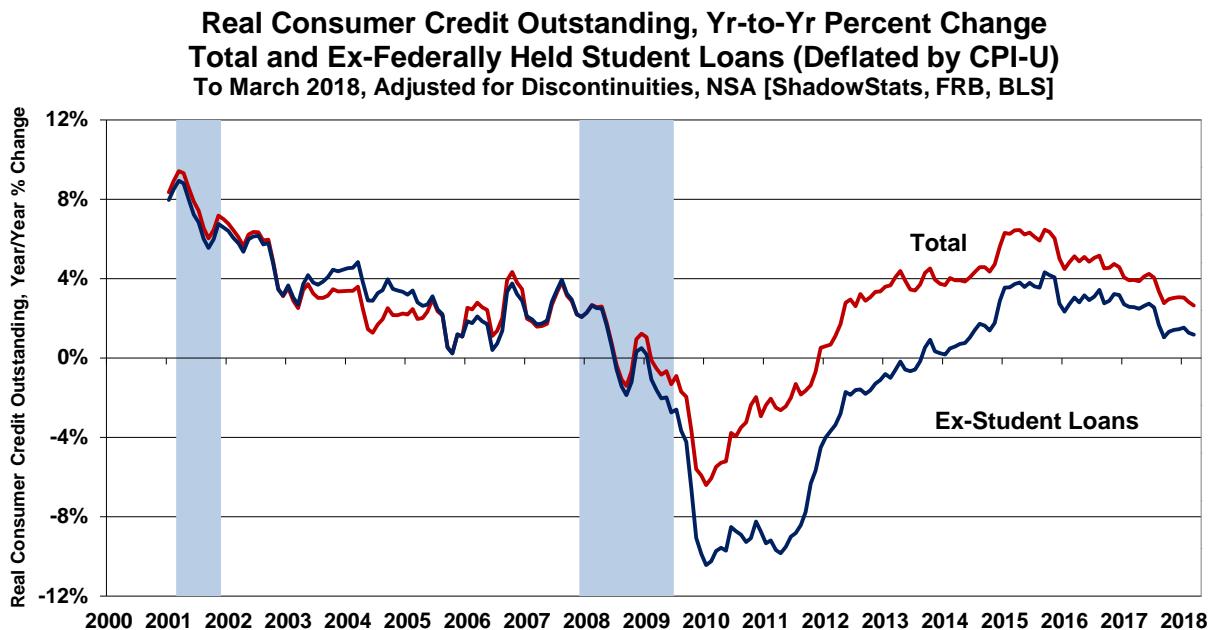
Graph CLW-11: Nominal Consumer Credit Outstanding (2000 to 2018)



Graph CLW-12: Real Consumer Credit Outstanding (2000 to 2018)



Graph CLW-13: Year-to-Year Percent Change, Real Consumer Credit Outstanding (2000 to 2018)



[The Week, Month and Year Ahead begins on the next page.]

WEEK, MONTH AND YEAR AHEAD

U.S. Dollar and Financial-Market Turmoil Continue at High Risk, Amidst Mounting Fiscal Concerns, Consumer Liquidity Issues and Non-Expanding, Real-World Economic Activity. In the context of intensified weakening of underlying fundamental drivers of broad economic activity and negative stresses on basic consumer-liquidity conditions, discussed respectively in the today's *Opening Comments* and *Consumer Liquidity Watch*, the recent headline first-quarter GDP ([Commentary No. 947](#)) reflected difficult economic times beginning to hit U.S. consumer activity, where the U.S. consumer remains the fundamental driving force behind domestic business conditions. Continuing negative surprises likely will follow in the regular economic reporting and annual benchmark revisions of key economic series in the next couple of weeks and months. The broad outlook has not changed. Weaker economic growth and renewed, faltering economic headlines should follow.

Broad outlooks for the U.S. economy, the U.S. dollar, gold, silver and the financial markets were reviewed in [Special Commentary No. 935](#), covered there in the *Executive Summary* beginning on page 2, with *Contents* and links to *Major Sections* and *Graphs* beginning there on page 6. The faltering economic outlook also was reviewed in the *Opening Comments* and *Industrial Production Benchmark Revisions* sections of [Commentary No. 942-B](#). The circumstances broadly have not changed from the related financial market vulnerabilities discussed in the *Hyperinflation Watch* of [Commentary No. 945](#), incorporated here by reference. U.S. dollar and related market conditions are updated in today's *Open Comments* and *Hyperinflation Watch*.

The U.S. dollar and financial markets remain at extraordinarily-high risk of intense, panicked declines, still likely in the very near term. Holding physical gold and silver remain the ultimate hedges—stores of wealth—for preserving the purchasing power of one's U.S. dollar assets, during times of high inflation and currency debasement, and/or political- and financial-system upheaval. Please call (707) 763-5786, if you would like to discuss current circumstances, or otherwise.

Best wishes – John Williams

PENDING ECONOMIC RELEASES: Existing- and New-Home Sales (April 2018). Reporting of April 2018 New-Home Sales from the Census Bureau is scheduled for Tuesday, May 23rd, while April 2018 Existing-Home Sales is due for release on Wednesday, Mat 24th, from the National Association of Realtors (NAR). Both series will be covered in *Commentary No. 951* of May 25th.

The release of the April 2018 New-Home Sales will be accompanied by annual revisions of the nature of those seen with April Housing Starts annual revision covered in today's *Opening Comments* and *Reporting Detail*.

In the context of intensifying consumer weakness and the extreme reporting volatility seen in recent months for both these series, reflecting unusually-unstable, seasonal-factor distortions and prior-period revisions, consensus expectations appear to be on the downside for both series. Where anything is possible here, the reporting trends should turn increasingly negative.

Indeed, with a deteriorating liquidity bind besetting consumers and generally continuing to constrain residential real estate activity (see the *Consumer Liquidity Watch* and [Special Commentary No. 935](#)), odds generally favor weaker-than-expected numbers for both series. With softening growth in real income credit, reflecting inability and/or unwillingness 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 residential real estate activity and related demand for residential construction. 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. Smoothed for month-to-month variability, patterns of low-level downtrending stagnation should continue in play for both the Existing- and New-Home Sales series. Reporting risks remain to the downside of consensus for both series.

New Orders for Durable Goods (April 2018). The Census Bureau will report April 2018 New Orders for Durable Goods on Friday, May 25th, to be covered in *Commentary No. 951* of that date. That detail will be the first of the post-benchmarking era. The downside, annual benchmark revisions published May 17th, are discussed in general terms and graphed in today's *Opening Comments*, to be expanded upon in the next and related *Commentary No. 951*. Where expectations appear to be reasonably positive, net of the volatile commercial aircraft orders, chances for a downside "surprise" are strong.

Net of those irregular activity in commercial aircraft orders, aggregate orders likely continued in a pattern of intensifying, downtrending real stagnation, as seen with the benchmarking. Residual positive impact on order activity from hurricane disruptions largely has passed through the system. Given the heavy downside revisions seen in this last week's headline/revised reporting of orders, production and shipments, orders likely will surprise market expectations on the downside.

Where commercial aircraft orders are booked for the long-term—years in advance—they have only limited impact on near-term production. Further, by their nature, these types of orders do not lend themselves to seasonal adjustment. As a result, the durable goods measure that best serves as a leading indicator to broad production—a near-term leading indicator of broad economic activity and the GDP—is the activity in new orders, ex-commercial aircraft, adjusted for inflation. Again, with expectations on the plus-side, ex-aircraft, the headline change in month-to-month activity remains a fair bet to be in unexpected contraction, particularly in real terms, net of rapidly-spiking headline inflation.

In inflation-adjusted or real terms, reflecting PPI-related inflation for “manufactured durable goods,” relative month-to-month and year-to-year order New Orders activity will be dampened on a monthly and annual basis by the largest inflation adjustments seen month-to-month since November 2014 (tied with March 2018), and year-to-year not since January 2012, at 2.13%. Indeed, month-to-month inflation for April 2018 was a gain of 0.41%, following gains of 0.41% in March, 0.23% in February and 0.41% in January. Year-to-year annual inflation rose to 2.13% in April, versus 1.96% in March 2018, 1.72% in February 2018 and 1.79% in January (see prior [Commentary No. 949](#)).

Retail Sales Annual Benchmark Revision. The Census Bureau will publish its annual benchmark revision of Retail Sales on Friday, May 25th, with headlines to be covered briefly in *Commentary No. 951* of that date. Full coverage will follow in a likely Commentary on May 30th or May 31st.

The general benchmarking trend was reviewed in today’s *Opening Comments*, while the basic rationale as to why the benchmarking should be negative was discussed in [Special Commentary No. 885](#), entitled *Numbers Games that Statistical Bureaus, Central Banks and Politicians Play*

If the Commerce Department were going to put out a weak benchmarking report on Retail Sales, Friday, May 25th would be the day. Any stock-market reaction to the Retail Sales revamping likely would be muted by the release of any bad news on the getaway day for the Memorial Day Weekend.

LINKS TO PRIOR COMMENTARIES AND SPECIAL REPORTS

Prior Writings Underlying the Current Special Commentaries and a Sampling of Recent Regular Commentaries. Underlying the recent [Special Commentary No. 935](#) (*Part One*) and the pending *Special Commentaries (Part Two)* on Inflation, and (*Part III*) on the Federal Reserve and U.S. banking system, are [Commentary No. 899](#) and [General Commentary No. 894](#), along with general background from regular *Commentaries* throughout 2017.

These missive also are built upon writings of prior years, including [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). In turn, they updated the long-standing 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 several months or so, 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).] These regular Commentaries usually are published at least weekly and update the general economic and financial o-market outlook, as circumstances develop.

[Commentary No. 949](#) (May 11th) reviewed inflation as reported with the April 2018 Consumer and Producer Price Indices (CPI and PPI), Real Average Weekly Earnings, along with the latest *Hyperinflation Watch* on the U.S. dollar and financial markets.

[Commentary No. 948](#) (May 9th) explored unusual circumstances with April 2018 Employment and Unemployment numbers, along with the April Conference Board Help Wanted OnLine® Advertising, April Monetary Conditions, the March Trade Deficit and Construction Spending, along with the reintroduction of Sentier Research's monthly Real Median Household Income to March 2018.

[Commentary No. 947](#) (April 27th) detailed the first estimate of First-Quarter 2018 GDP and the related Velocity of Money, March New Orders for Durable Goods, New- and Existing-Home Sales and the “advance” estimate of the March 2018 merchandise goods deficit.

[Commentary No. 946](#) (April 22nd) covered March 2018 Retail Sales, Industrial Production, New Residential Construction (Housing Starts and Building Permits), the Cass Freight Index™ and a review of the current state of the GDP reporting and an outlook for first-quarter 2018 activity.

[Commentary No. 945](#) (April 11th) reviewed the March 2018 Consumer and Producer Prices Indices (CPI and PPI), Real Average Weekly Earnings, along with the latest *Hyperinflation Watch* on the U.S. dollar and financial markets.

[Commentary No. 944](#) (April 8th) covered March 2018 Employment and Unemployment, the March Conference Board Help Wanted OnLine® Advertising, March Monetary Conditions and the full February Trade Deficit and Construction Spending.

[Commentary No. 943](#) (March 29th) covered the third-estimate of, second-revision to Fourth-Quarter 2017 GDP and the only estimates to be made in current reporting of the GDI and GDP, as well as the “advance” estimate of the February merchandise trade deficit.

[Commentary No. 942-B](#) (March 27th) reviewed the Industrial Production annual benchmark revisions, general reporting-quality issues, February 2018 New Orders for Durable Good, New- and Existing-Home Sales and the Cass Freight Index™.

[Commentary No. 942-A](#) (March 23rd) provided a very brief summary of the much more extensive details covered in *Commentary 942-B*.

[Commentary No. 941](#) (March 19th) covered February Industrial Production and New Construction Spending (Housing Starts and Building Permits), along with a general discussion in the *Opening Comments* on economic conditions and a preview of the Industrial Production benchmark revisions.

[Commentary No. 940](#) (March 15th) covered February 2018 Retail Sales, CPI, PPI and related Real Average Weekly Earnings, real Annual Growth in M3 and updated financial market prospects.

[Commentary No. 939](#) (March 9th) covered the February 2018 Employment and Unemployment details, the full-reporting of the January 2018 Trade Deficit, February Conference Board Help Wanted OnLine® Advertising and February Monetary Conditions.

[Commentary No. 938](#) (March 1st) reviewed January 2018 Construction Spending and the second estimate of Fourth-Quarter 2017 GDP.

[Commentary No. 937](#) (February 27th) covered January 2018, New Orders for Durable, New- and Existing-Home Sales, the “advance” estimate of the January 2018 Merchandise Trade Deficit and the Cass Freight Index™.

[Commentary No. 936](#) (February 19th) covered the January 2018 CPI and PPI, Retail Sales, Industrial Production and New Residential Construction (Housing Starts and Building Permits).

[Special Commentary No. 935](#) (February 12th) was the first part of a three part-series reviewing economic and financial conditions of 2017 and the year-ahead, inflation and the U.S. government's balance sheet and conditions in the U.S. banking system and Federal Reserve options.

[Commentary No. 934-B](#) (February 6, 2018) provided extended coverage on the January 2018 Employment and Unemployment details, the 2017 benchmark revisions to Payroll Employment and the January annual recasting of population, along with coverage of the December 2017 Trade Deficit.

[Commentary No. 934-A](#) (February 2, 2018) provided initial detail on the January 2018 Employment and Unemployment details and the 2017 benchmark revisions to Payroll Employment, along with coverage of January Conference Board Help Wanted OnLine® Advertising, January Monetary Conditions and December 2017 Construction Spending.

[Commentary No. 933](#) (January 26, 2018) covered December New Orders for Durable Goods, the Cass Freight Index™ and the first estimate of Fourth-Quarter 2017 GDP.

[Commentary No. 932](#) (January 18, 2018) covered December Industrial Production and New Residential Construction (Housing Starts and Building Permits).

[Commentary No. 931](#) (January 15, 2018) reviewed December 2017 Retail Sales and the CPI and PPI, along with an update on the U.S. dollar, the financial markets and gold graphs.

[Commentary No. 930-B](#) (January 8th) expanded upon the December 2017 Employment and Unemployment numbers and Household Survey benchmarking, Conference Board Help Wanted OnLine® Advertising, December Monetary Conditions and the November 2017 Trade Deficit and Construction Spending, otherwise headlined in *No. 930-A*.

[Advance Commentary No. 930-A](#) (January 5, 2018) provided a brief summary and/or comments (all expanded in *Commentary No. 930-B*) on December 2017 Employment and Unemployment numbers, Household Survey benchmarking, Conference Board Help Wanted OnLine® Advertising, December Monetary Conditions and the November 2017 Trade Deficit and Construction Spending.

[General Commentary No. 929](#) (December 28, 2017) reviewed current economic and market conditions at year-end 2017.

[Commentary No. 928](#) (December 22, 2017) covered November 2017 New Orders for Durable Goods, New- and Existing-Home Sales and the third estimate of Third-Quarter 2017 GDP.

[Commentary No. 927](#) (December 19, 2017) reviewed November 2017 New Residential Construction (Housing Starts and Building Permits) and Cass Freight Index™, along with an expanded discussion on underlying economic reality and the financial markets.

[Commentary No. 926](#) (December 15, 2017) reviewed the headline November 2017 numbers for Retail Sales (both real and nominal), and Industrial Production, along a discussion on the dampening economic impact of business and consumer "uncertainty."

[Commentary No. 925](#) (December 13th) reviewed November 2017 headline detail on the CPI and PPI, along with an update on the FOMC actions and the regular U.S. dollar, gold graphs.

[Commentary No. 924](#) (December 8, 2017) discussed the November 2017 Employment and Unemployment details and Conference Board Help Wanted OnLine® Advertising, the October Trade Deficit and Construction Spending and updated Monetary Conditions in November.

[Commentary No. 923](#) (November 29, 2017) covered the second estimate of Third-Quarter 2017 GDP, including initial estimates for Third-Quarter GNP, GDI and Per Capita Real Disposable Income, the October Trade Deficit, Cass Freight Index and New-Home Sales.

[Commentary No. 919-B](#) (November 6, 2017) provided more in-depth detail on the October 2017 labor detail.

[Commentary No. 919-A](#) (November 3, 2017) provided initial detail and background on October labor data, and reviewed the October 2017 Conference Board Help Wanted OnLine® Advertising, the September Cass Freight Index™, Trade Deficit and Construction Spending, and updated Monetary Conditions.

[Special Commentary No. 918-B](#) (October 30, 2017) provided a more comprehensive review of the initial third-quarter 2017 GDP detail, along with update versions of the *Hyperinflation Watch* and *Consumer Liquidity Watch*.

[Commentary No. 917](#) (October 26/27, 2017) reviewed September Industrial Production, New Orders for Durable Goods, New Residential Construction (Housing Starts and Building Permits) and New- and Existing-Home Sales.

[Commentary No. 916](#) (October 20th) reviewed the September 2017 Retail Sales details along with the headline Consumer and Producer Price Indices for September.

[Commentary No. 915](#) (October 6, 2017) reviewed the September 2017 Employment and Unemployment details, along with September 2017 monetary conditions.

[Commentary No. 913](#) (September 28, 2017) reviewed the third-estimate of second-quarter 2017 GDP, with a further consideration of some unusual economic reporting in the near future.

[Commentary No. 910](#) (September 15, 2017) reviewed the August 2017 releases of Industrial Production and nominal and real Retail Sales.

[Commentary No. 909](#) (September 14, 2017) 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 updated *Alert* on the financial markets

[Commentary No. 908-B](#) (September 6, 2017) 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.

[Special Commentary No. 904](#) (August 14, 2017) 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. 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. 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™.

[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. 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.
