Current Employment Statistics
Houston-The Woodlands-Sugar Land
Special Report: 2018 Benchmark Revisions

March 2019

Workforce Solutions is an affiliate of the Gulf Coast Workforce Board, which manages a regional system that helps employers solve their workforce problems and residents build careers so both can compete in the global economy. The workforce system serves the City of Houston and the surrounding 13 Texas Gulf Coast counties including: Austin, Brazoria, Chambers, Colorado, Fort Bend, Galveston, Harris, Liberty, Matagorda, Montgomery, Walker, Waller, and Wharton.

Total Nonfarm Employment and the Impacts of 2018 Benchmark Revisions

- In addition to the release of January 2019's initial estimated employment, 2018 benchmark revisions impacting previous estimates in some cases as far back as 1990 were also issued by the Texas Workforce Commission, however the most significant revisions affected estimated employment for years 2017 and 2018.
- Earlier reports of year-end job growth in 2017 (+62,900 jobs) and 2018 (+108,300 jobs) were revised to show smaller gains of 54,200 and 73,300, respectively. 2015 saw no further revisions while 2016 saw only a slight revision from -2,200 to -2,400 jobs lost. In each case, these figures represent the over-the-year net change from the previous December.
- December 2018 reported 35,000 fewer jobs added than previously estimated. These downward revisions were spread across eight sectors: Professional and Business Services; Construction; Trade, Transportation, and Utilities; Manufacturing; Educational and Health Services; Financial Activities; Mining and Logging; and Other Services. Collectively these sectors accounted for 43,800 jobs and of those Professional and Business Services comprised one-third with another quarter attributed to Construction.
- The remaining three sectors saw either smaller losses (Information, 400 fewer jobs lost, yet still negative year over year) or larger gains (Leisure and Hospitality, an additional 5,400 jobs gained and Government, an additional 3,000 jobs) for a combined 8,800 jobs. These jobs offset the 43,800 job referenced above resulting in the net over-estimation of 35,000. (See Charts 1 and 2. And Exhibit 1.)
- One major consequence of the 2018 benchmark revisions was the erasure of what was previously believed to be a new all-time record high for over-the-year job growth in September 2018 of 128,000 jobs, at the time surpassing the previous record of 116,700 jobs recorded in December 2014. After revisions, over-the-year growth for September 2018 was a respectable, but not record-setting, 82,800 jobs for a difference of over 45,000. This earlier pace of job growth was generally considered to be out of line with other surveys and forecasts throughout the year and furthermore suggested that job growth in late-2018 was stronger than what was observed during the best years of the shale boom between 2011 and 2014 when oil averaged $96 per barrel.[i]
- As already noted, estimates for 2016 saw little change before and after 2018 benchmark revisions. This was also true of October of that year, which remains the low for the most recent local economic downturn with -7,300 jobs lost revised to a larger decline of -7,800 jobs.
- **NOTE:** Some of the employment series referenced in this report reflect negative distortions in September 2017 as a result of Hurricane Harvey, particularly Trade, Transportation, and Utilities and Leisure and Hospitality. These temporary declines were followed by comparably positive distortions in September 2018. While the use of over-the-year changes is a standard technique for analyzing data of this type in order to minimize the effects of seasonality, this method has the unintended consequence of exaggerating trends, particularly those occurring during or immediately after the disruptive event. The reader should be aware of this possibility and use additional caution when interpreting labor market developments occurring in late-2018.

Line Chart Color Key

Sector Over-the-year Net Change	
Sub-sector/Industry Group within Sector Over-the-year Net Change	
Implied/Unpublished Detailed Industry within Industry Group Over-the-year Net Change	
Denotes September 2017 - Hurricane Harvey	

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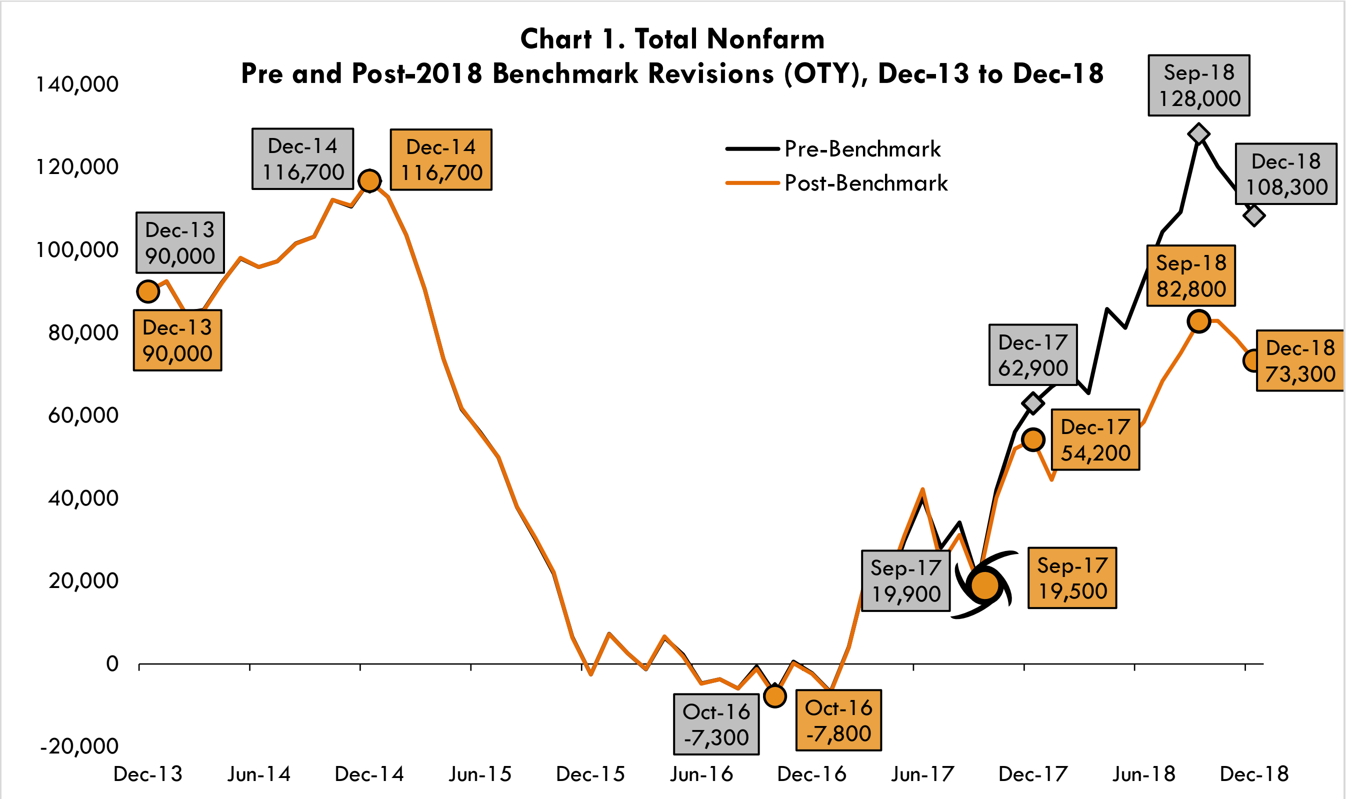

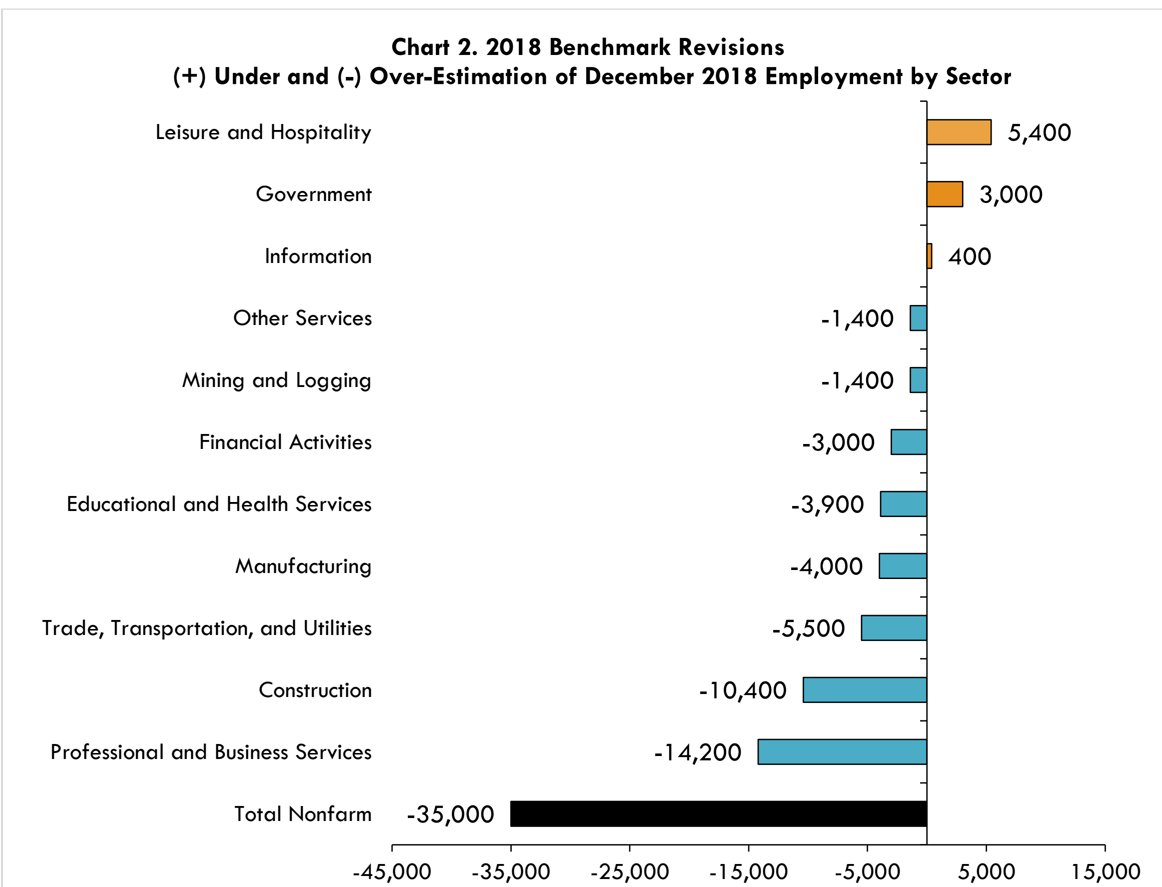

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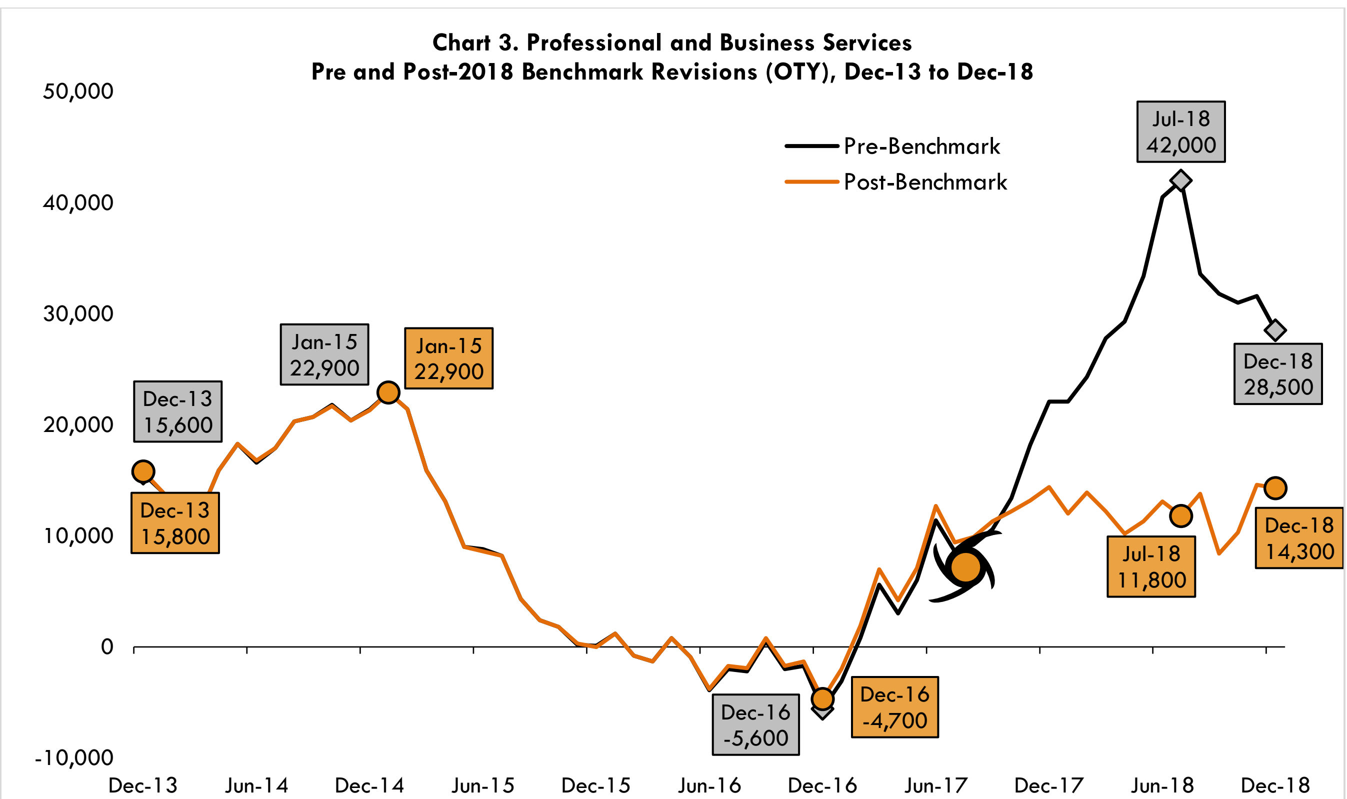
SECTORS WITH OVER-ESTIMATED EMPLOYMENT

Professional and Business Services

- As a result of benchmark revisions, Professional and Business Services demonstrated notably more modest job growth from October 2017 onward. (See Chart 3.)
- Prior to benchmark revisions, this sector saw a sharp rise in over-the-year growth culminating in July 2018 at 42,000 jobs added, which at the time set a new record in this sector. In reality, job growth during this month was only 11,800 for an over-estimation of 30,200 jobs.
- Ultimately, for the 12-month period ending December 2018, Professional and Business services added 14,200 fewer jobs than originally thought and furthermore this sector dropped from third-fastest growing to fifth as a result of the revisions.
- The bulk of the over-estimation in Professional and Business Services occurred in its sub-component Administrative and Support and Waste Management and Remediation Services, in the amount of 11,800 jobs. Mirroring the overall sector, initial estimates of job growth in this industry group indicated strong growth throughout 2018 peaking at 24,000 jobs added year-over-year in June. After revisions, this figure was lowered to just 1,400 jobs and furthermore this industry group now shows a slight downward trend marked by a dip into negative territory in September 2018 (-100 jobs) and rebound in December (+5,000 jobs). (See Chart 4.)
- After Administrative and Support, the next largest driver of over-estimated growth in Professional and Business Services was Professional, Scientific, and Technical Services in the amount of 3,800 jobs. The overall shape of the trend observed before revisions remained afterwards albeit with a much lower magnitude. (See Chart 5.)
- Lastly, in contrast to the other industry group sub-components of Professional and Business Services, Management of Companies and Enterprises was under-estimated by 1,400 jobs as of December 2018. (See Chart 6.)



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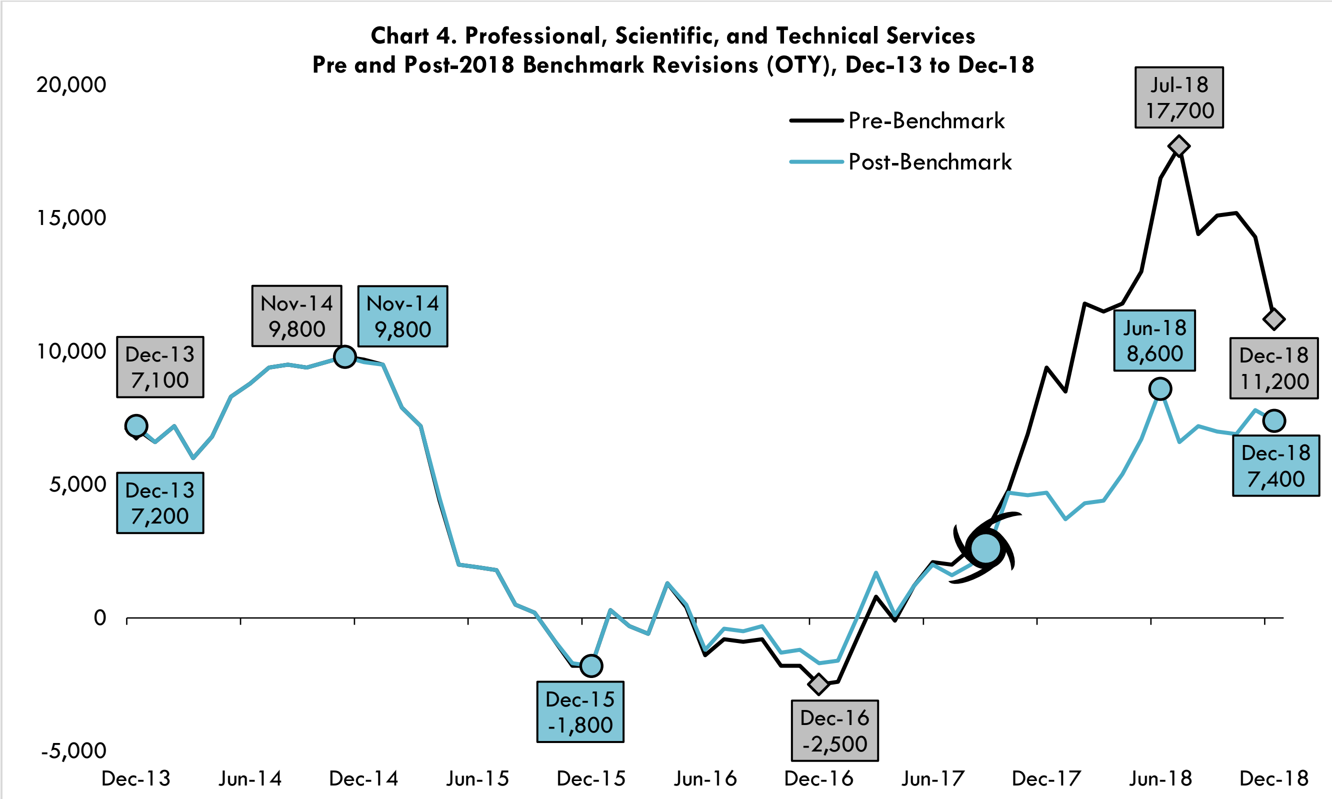


Chart 4. Professional, Scientific, and Technical Services
Pre and Post-2018 Benchmark Revisions (OTY), Dec-13 to Dec-18
Pre-Benchmark
Post-Benchmark
20,000
15,000
10,000
5,000
0
-5,000
Dec-13
Jun-14
Dec-14
Jun-15
Dec-15
Jun-16
Dec-16
Jun-17
Dec-17
Jun-18
Dec-18
Dec-13 7,100
Dec-13 7,200
Nov-14 9,800
Nov-14 9,800
Dec-15 -1,800
Dec-16 -2,500
Jul-18 17,700
Jun-18 8,600
Dec-18 11,200
Dec-18 7,400

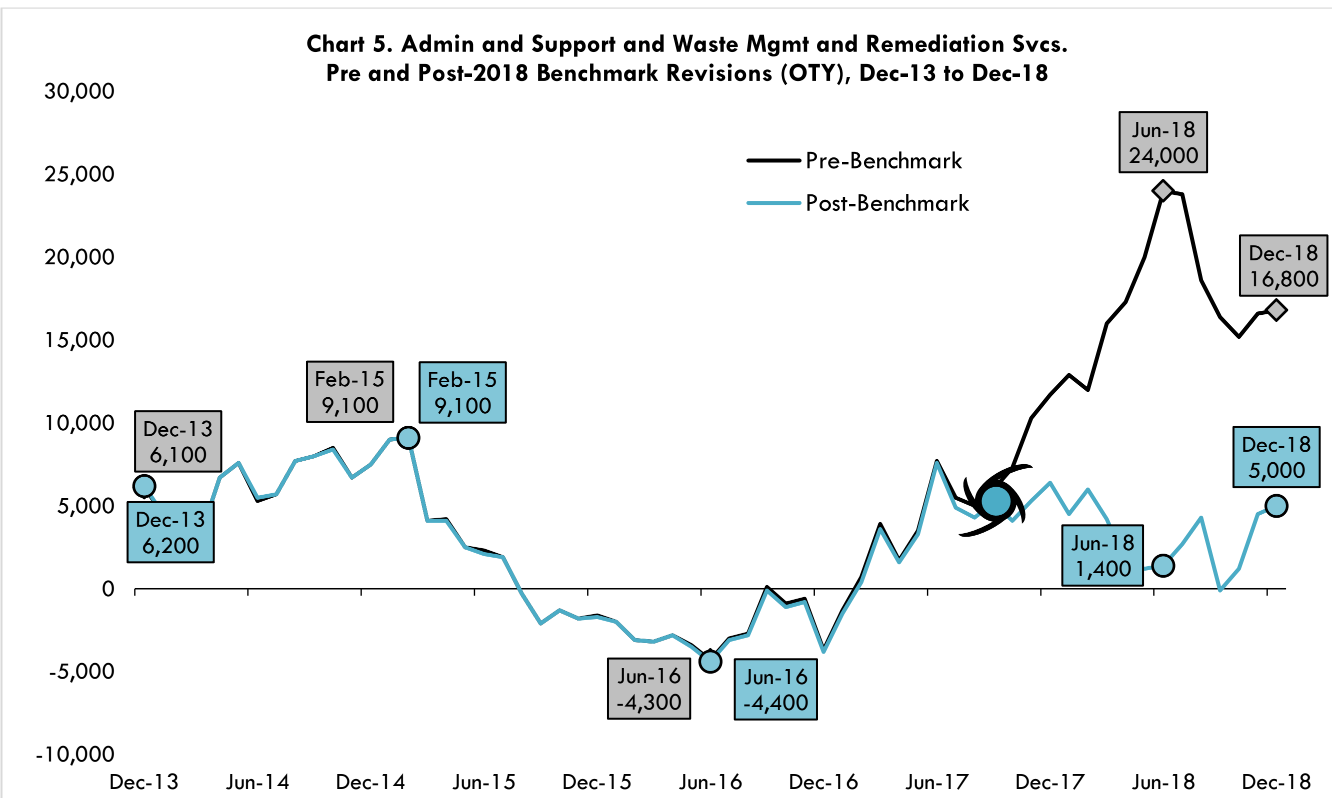
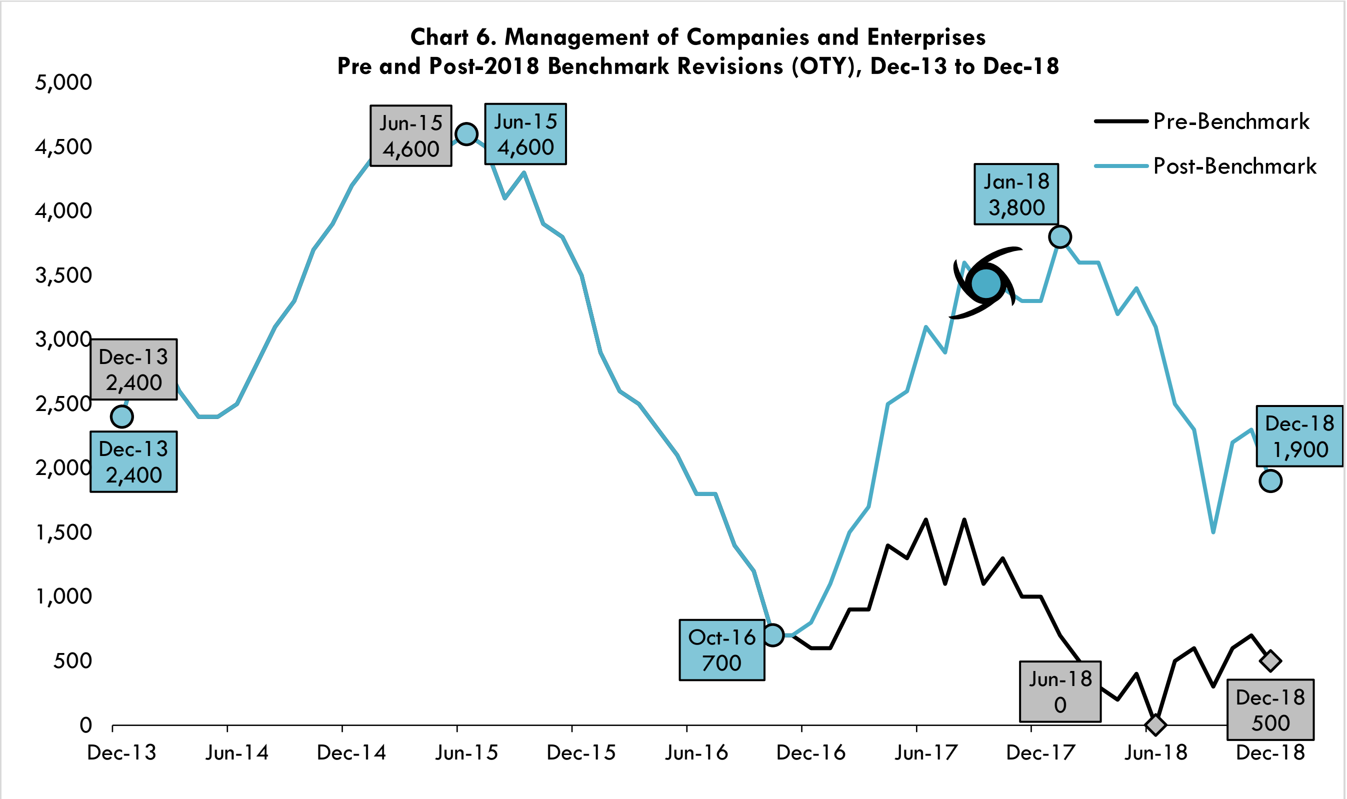


Chart 5. Admin and Support and Waste Mgmt and Remediation Svcs.
Pre and Post-2018 Benchmark Revisions (OTY), Dec-13 to Dec-18
Pre-Benchmark
Post-Benchmark
30,000
25,000
20,000
15,000
10,000
5,000
0
-5,000
-10,000
Dec-13
Jun-14
Dec-14
Jun-15
Dec-15
Jun-16
Dec-16
Jun-17
Dec-17
Jun-18
Dec-18
Dec-13 6,100
Dec-13 6,200
Feb-15 9,100
Feb-15 9,100
Jun-16 -4,300
Jun-16 -4,400
Jun-18 24,000
Jun-18 1,400
Dec-18 16,800
Dec-18 5,000



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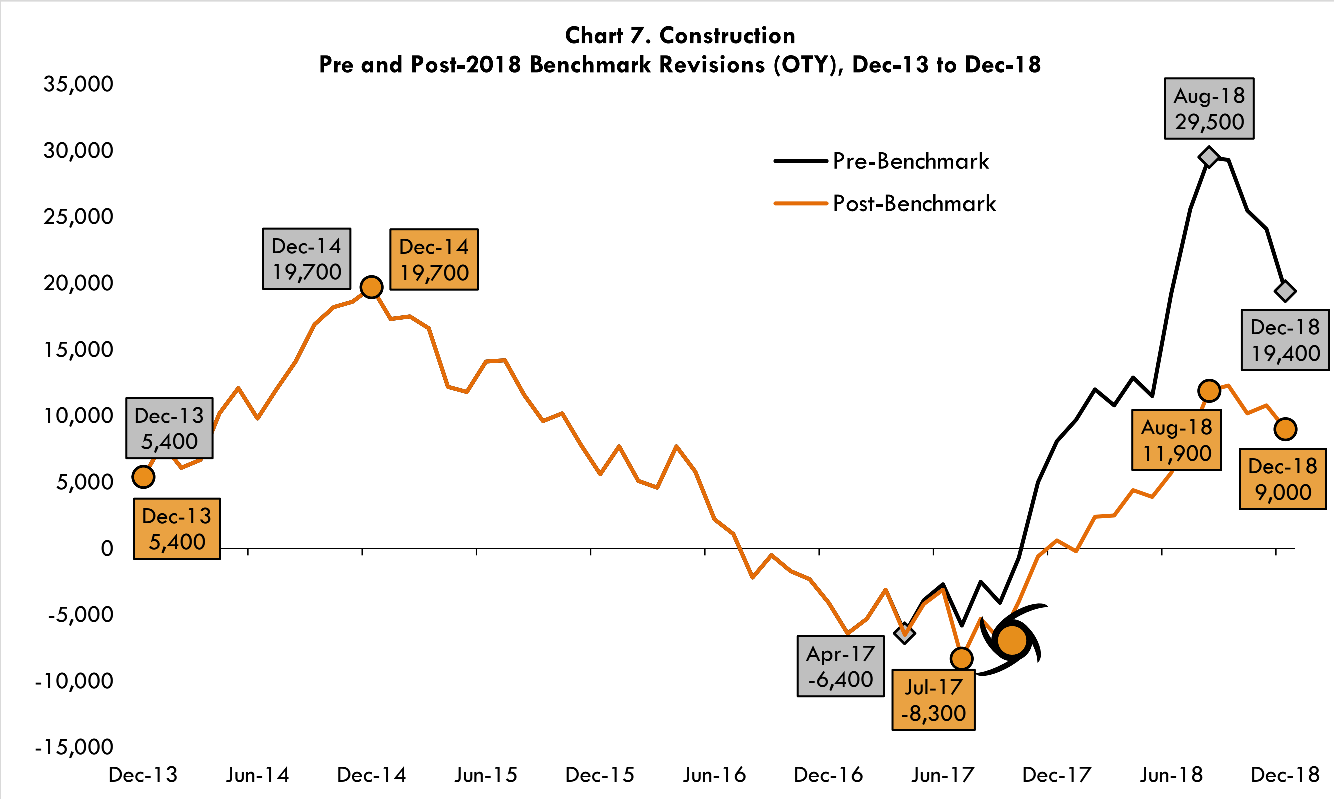
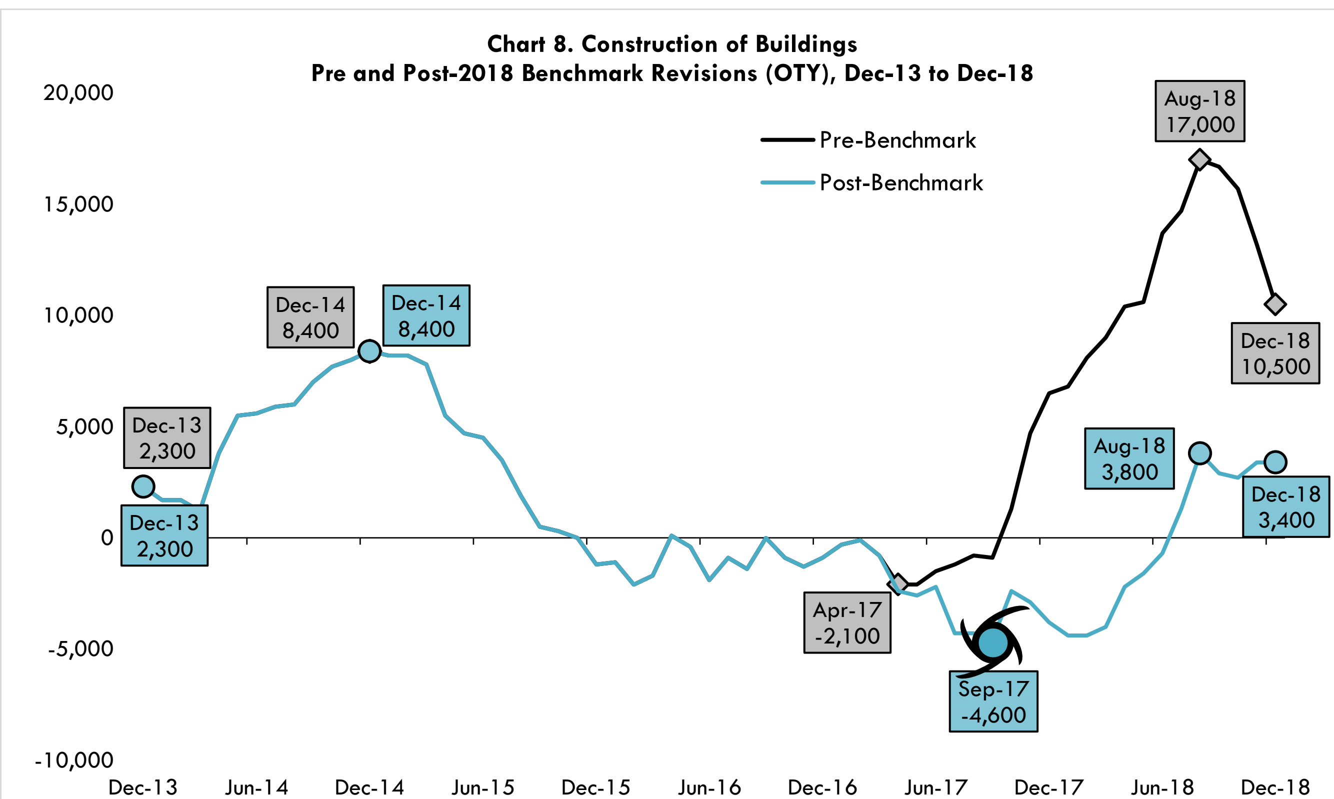
Construction

- Given the occurrence of Hurricane Harvey between late-August and early-September 2017, Construction was expected to show some degree of job growth after the storm. This was in fact the case as evidenced by a return to growth in November 2017 after extended period of decline over the previous two years. Pre-benchmark estimates for 2018 showed a sharp second-wave of growth between May 2018 and August 2018 peaking at 29,500 jobs added year over year, the reason for which was unclear. Employment figures reported by the Quarterly Census of Employment and Wages (QCEW) indicated a surge in pipeline construction activity far surpassing residential construction, the latter of which was presumed to be the source of construction growth due to the storm. Regardless, there was little to suggest that the sudden rise in pre-benchmark estimates could be wholly explained by either pipeline or residential construction. With the release of revisions, it appears that Construction job growth in the year after Hurricane Harvey was decidedly more muted. While the shape of both the pre- and post-benchmark trends remains somewhat similar, the magnitude of the latter was much smaller. In short, despite the roughly 100,000 residential dwellings damaged by the storm, recovery and repair work failed to ignite a new construction boom. Moreover, the slope of the recovery in this sector beginning in July 2017, which currently marks the most recent inflection point, mirrors the slope of the decline of the previous two years suggesting a normal cyclical pattern rather than a sudden exogenous shock leading rapid employment gains.
- Ultimately, the difference in estimates for December 2018 resulted in an over-estimation of job growth of 10,400 for the year, the second-largest over-estimation of the 8 major sectors for which employment gains were over-stated. The bulk of the over-estimation came from the sub-sector Construction of Buildings (7,100 jobs) and Specialty Trade Contractors (4,600 jobs). (See Chart 7.)
- The over-estimation in Construction of Buildings prior to 2018 benchmark revisions proved puzzling. Given that the damage from Hurricane Harvey was primarily the result of flooding, causing significant but largely cosmetic damage to dwellings, rather than wind which would have resulted in structural damage necessitating demolition and rebuilding, there was no logical explanation for the sharp growth in Construction of Buildings relative to Specialty Trade Contractors. Benchmark revisions indicate that suspicions were correct that the described pre-benchmark pattern failed to capture an arguably more intuitive trend. While growth in Specialty Trade Contractors was also revised lower, it did display modest growth from 2017 onward after revisions, consistent with a reasonable amount of storm recovery, in contrast to Construction of Buildings which turned positive only after July 2018, nearly a year after the storm. (See Charts 8 & 9.)
- Lastly, Heavy and Civil Engineering Construction comprising the remaining one-third of the overall Construction sector saw under-estimated growth throughout 2018 ending the year up 4,700 jobs versus an initial estimate of 3,400. As noted, QCEW indicated growth in this industry group was driven by pipeline construction. Further analysis of QCEW, which is generally regarded to be more accurate but less timely, suggests that even after benchmark revisions of CES data, job growth in Heavy and Civil Engineering Construction may be understated as year-over-year growth as of September 2018 per QCEW stood at 8,052 compared to a CES-reported 6,700 jobs. (See Chart 10.)





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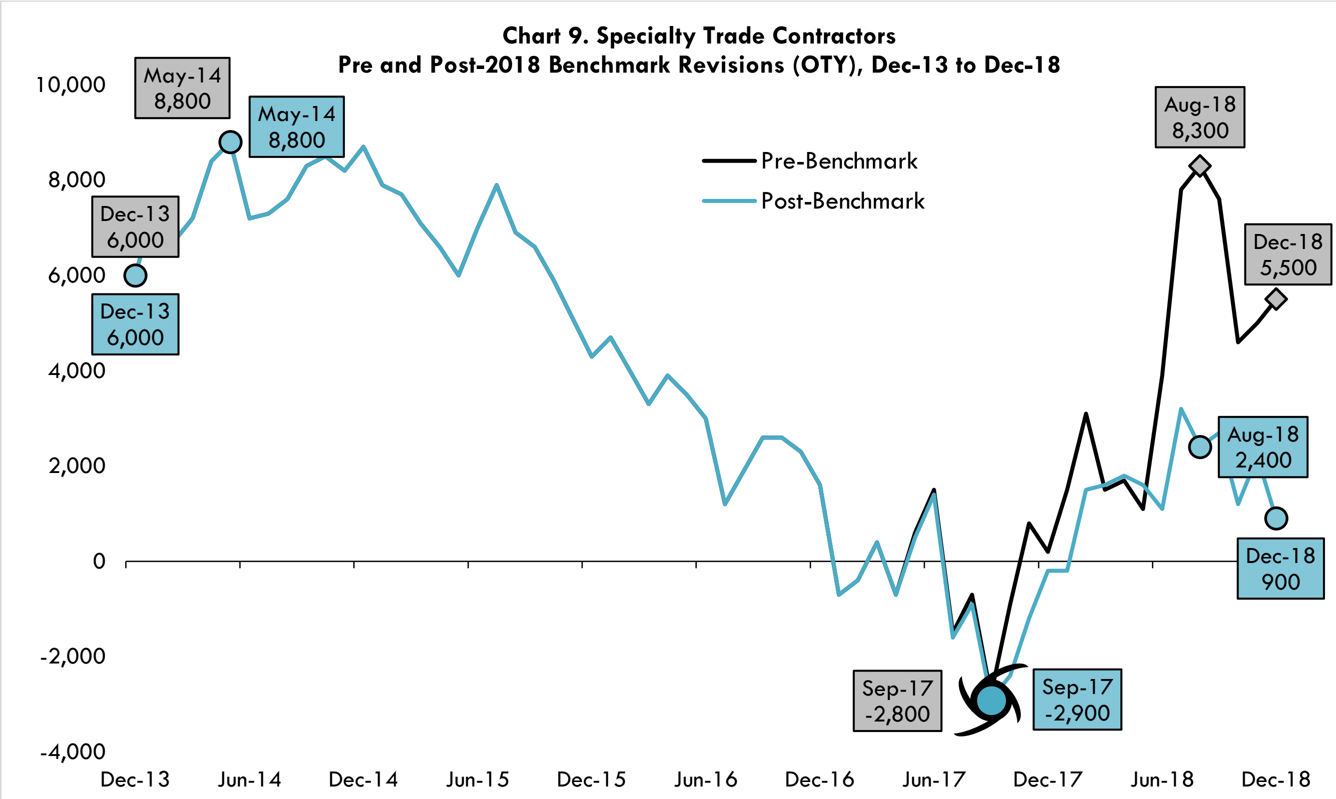

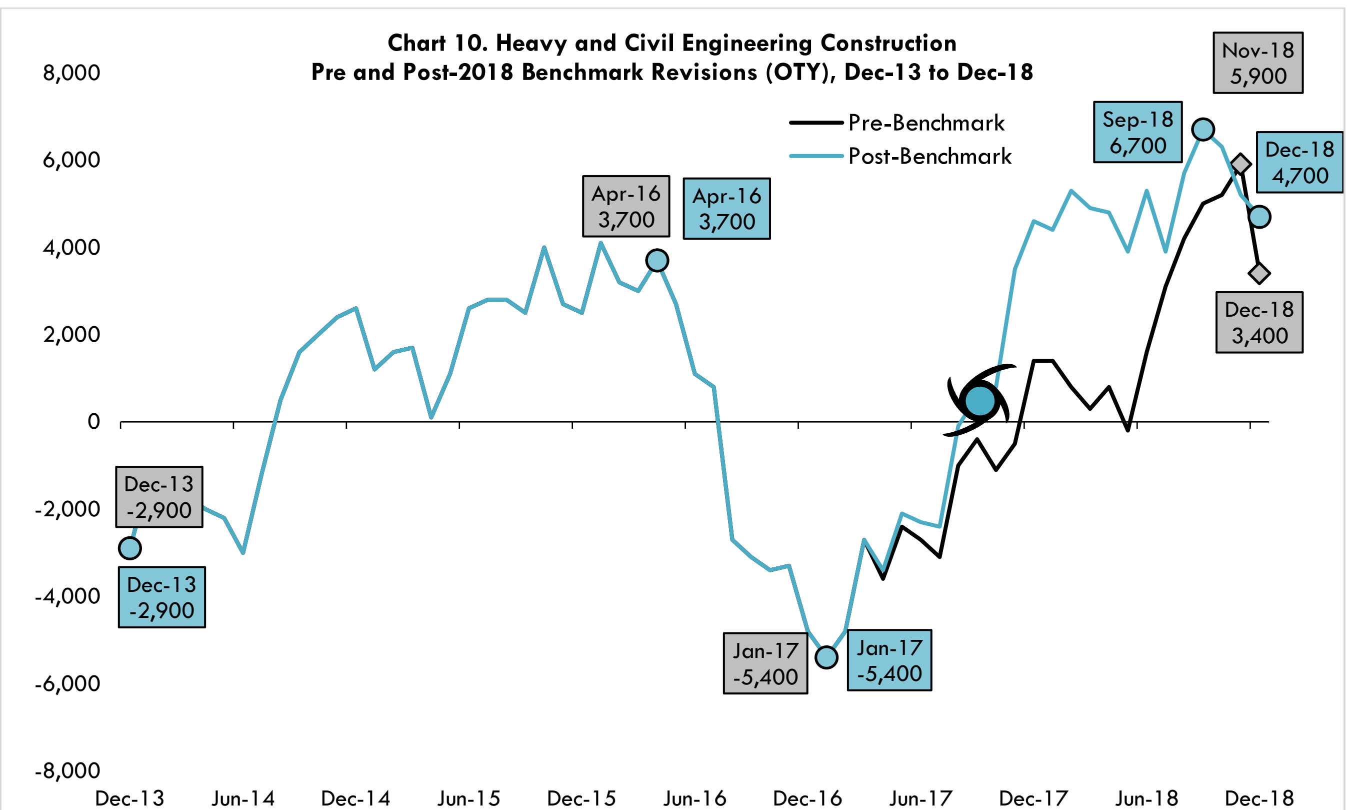

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Trade, Transportation, and Utilities

- Whether before or after benchmark revisions, year-over-year job growth in Trade Transportation and Utilities, peaked in December 2014 along with the overall job market and began to slow, turning negative in May 2016 for the first time since the recession after which it bottomed in September 2016 (See Chart 11.)
- While a slight divergence can be seen from September 2016 onward, it widened significantly in 2018 resulting in an over-estimation of year-end employment of 5,500 jobs.
- The main driver of the over-estimation was Retail Trade in contrast to Wholesale Trade and Transportation Warehousing and Utilities, which were relatively consistent before and after benchmark revisions. Retail displayed a local trough in September 2017, likely due to Hurricane Harvey. However, before revisions this subsector showed strong job growth through 2018, and similar to other sectors reported in a spike in growth in September likely exaggerated by the storm, after which there was an equally sharp decline. The shape of that trend remained but now tells a different story post revision. It appears Retail saw little to no growth throughout 2018 except for the September spike that was then followed by a deep decline into negative territory concluding the year down -5,800 jobs. The end result was an over-estimation of jobs in this subsector by 6,600. (See Charts 12, 13, & 14.)
- While the bulk of the over-estimation of job growth in Trade, Transportation, and Utilities can be explained by Retail, the source of Retail's over-estimation was more ambiguous. An examination of the six types of Retail reported by CES for the Houston MSA: Motor Vehicle and Parts Dealers; Building Material and Garden Equipment and Supplies Dealers; Food and Beverage Stores; Health and Personal Care Stores; Clothing and Clothing Accessories Stores; and General Merchandise Stores, revealed that the largest *known* source of the over-estimation occurred within Food and Beverage Stores, a category primarily composed of supermarkets and grocery stores. This segment of Retail accounted for approximately 27 percent of its over-estimation. All other published components of Retail contributed comparatively little (a combined 21 percent) to its over-estimation as evidenced by modest revisions after the 2018 benchmark. This implied that all other types of Retail not published by CES: Furniture and Home Furnishings Stores; Electronics and Appliance Stores; Gasoline Stations; Sporting Goods, Hobby, Musical Instrument, and Book Stores; Miscellaneous Store Retailers; Non-store Retailers, collectively were responsible for just over 50 percent of Retail's over-estimation. (See Chart 15.)
- The appearance of Retail strength prior to the 2018 benchmark revisions was largely presumed to be a reflection of the need to hire additional frontline staff in order to expedite the replacement of consumer goods damaged during the storm. However, after revisions this does not appear to be the case and in fact suggests that local trends continue to follow widely-reported slowing Retail job growth at the national level.

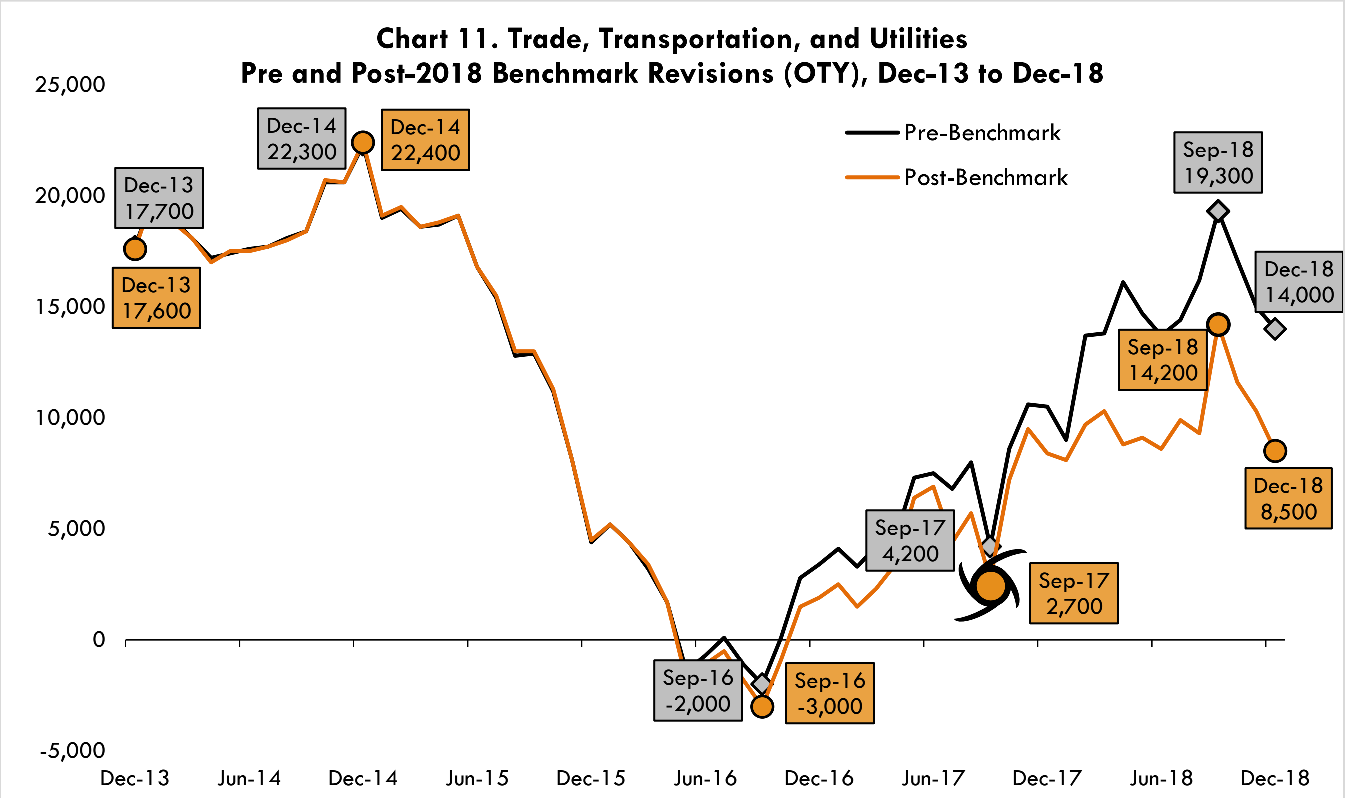
Chart 11. Trade, Transportation, and Utilities
Pre and Post-2018 Benchmark Revisions (OTY), Dec-13 to Dec-18
Pre-Benchmark
Post-Benchmark
Dec-13 17,700
Dec-13 17,600
Dec-14 22,300
Dec-14 22,400
Sep-16 -2,000
Sep-16 -3,000
Sep-17 4,200
Sep-17 2,700
Sep-18 19,300
Sep-18 14,200
Dec-18 14,000
Dec-18 8,500
25,000
20,000
15,000
10,000
5,000
0
-5,000
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Jun-17
Dec-17
Jun-18
Dec-18

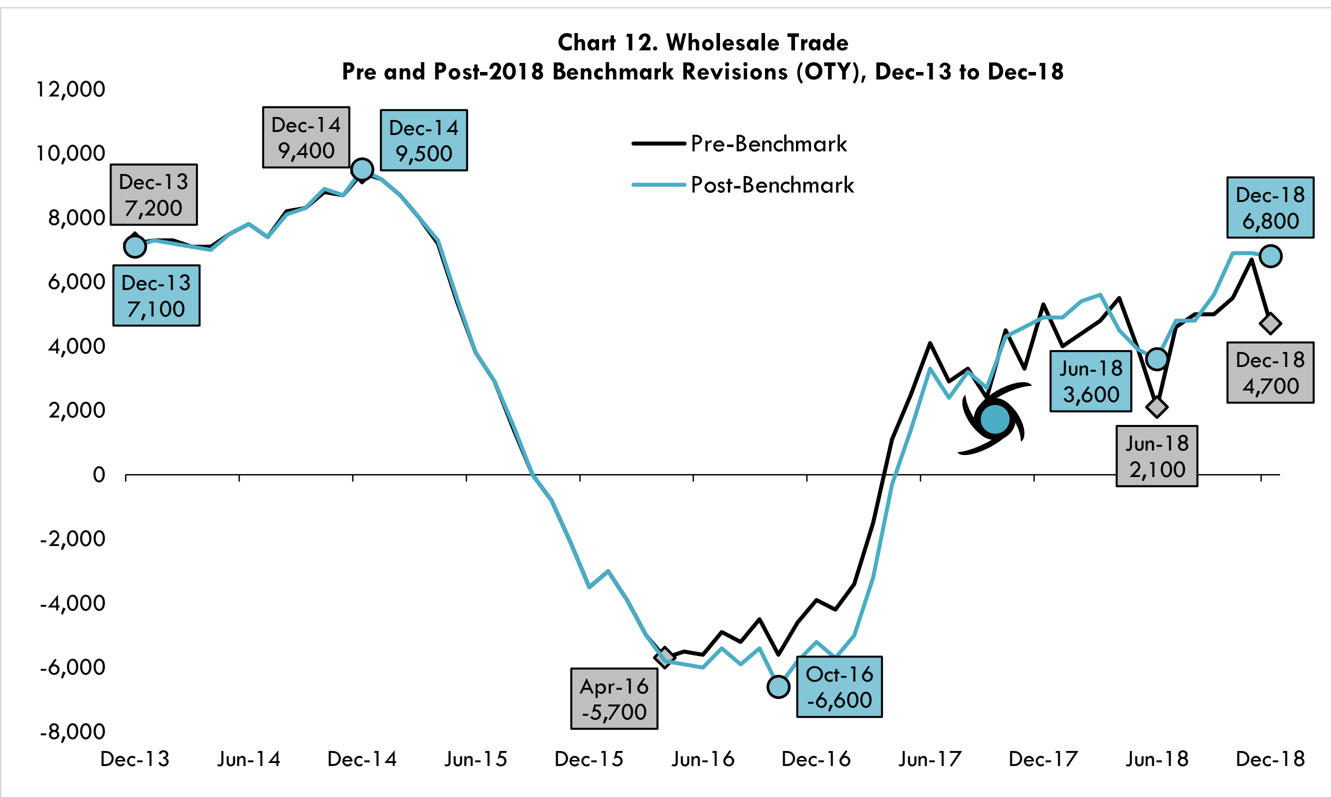
Chart 12. Wholesale Trade
Pre and Post-2018 Benchmark Revisions (OTY), Dec-13 to Dec-18
Pre-Benchmark
Post-Benchmark
Dec-13 7,200
Dec-13 7,100
Dec-14 9,400
Dec-14 9,500
Apr-16 -5,700
Oct-16 -6,600
Jun-18 3,600
Jun-18 2,100
Dec-18 6,800
Dec-18 4,700
12,000
10,000
8,000
6,000
4,000
2,000
0
-2,000
-4,000
-6,000
-8,000
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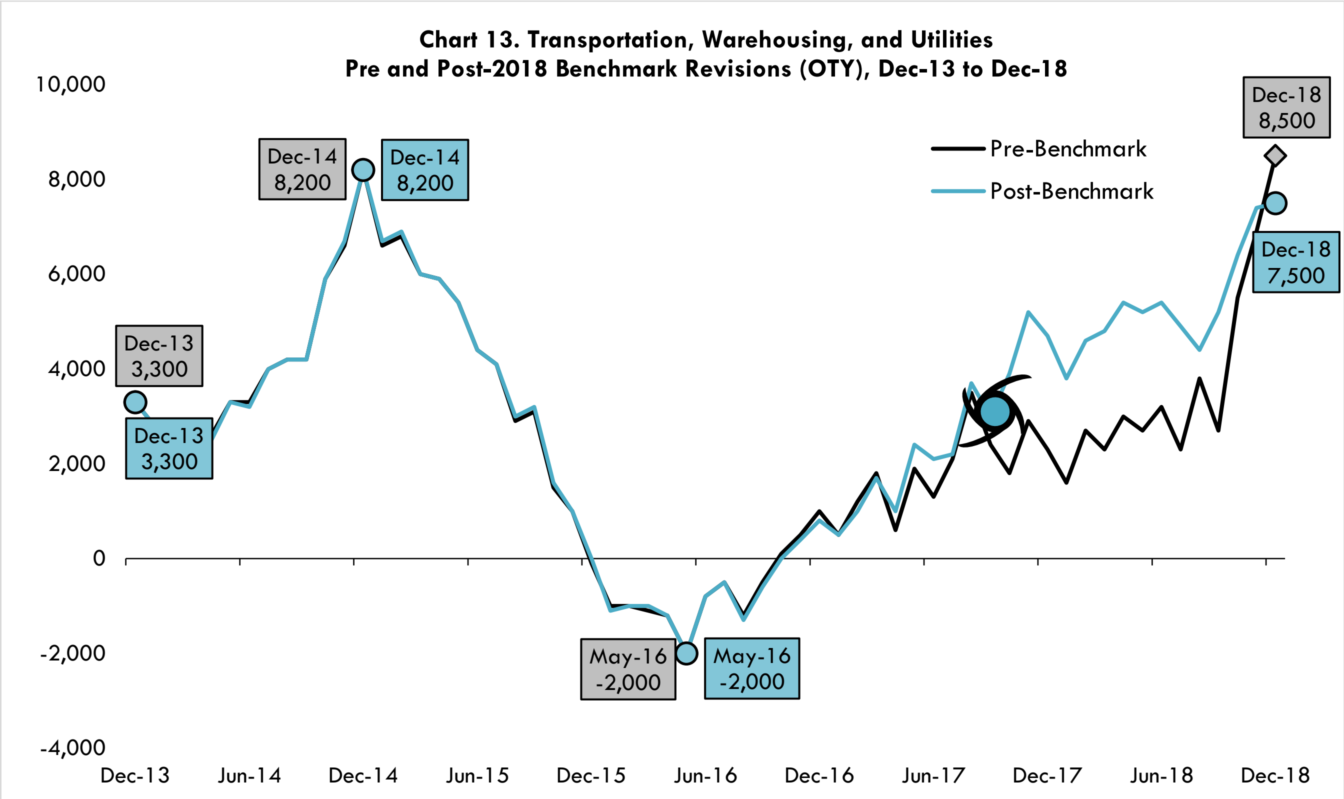
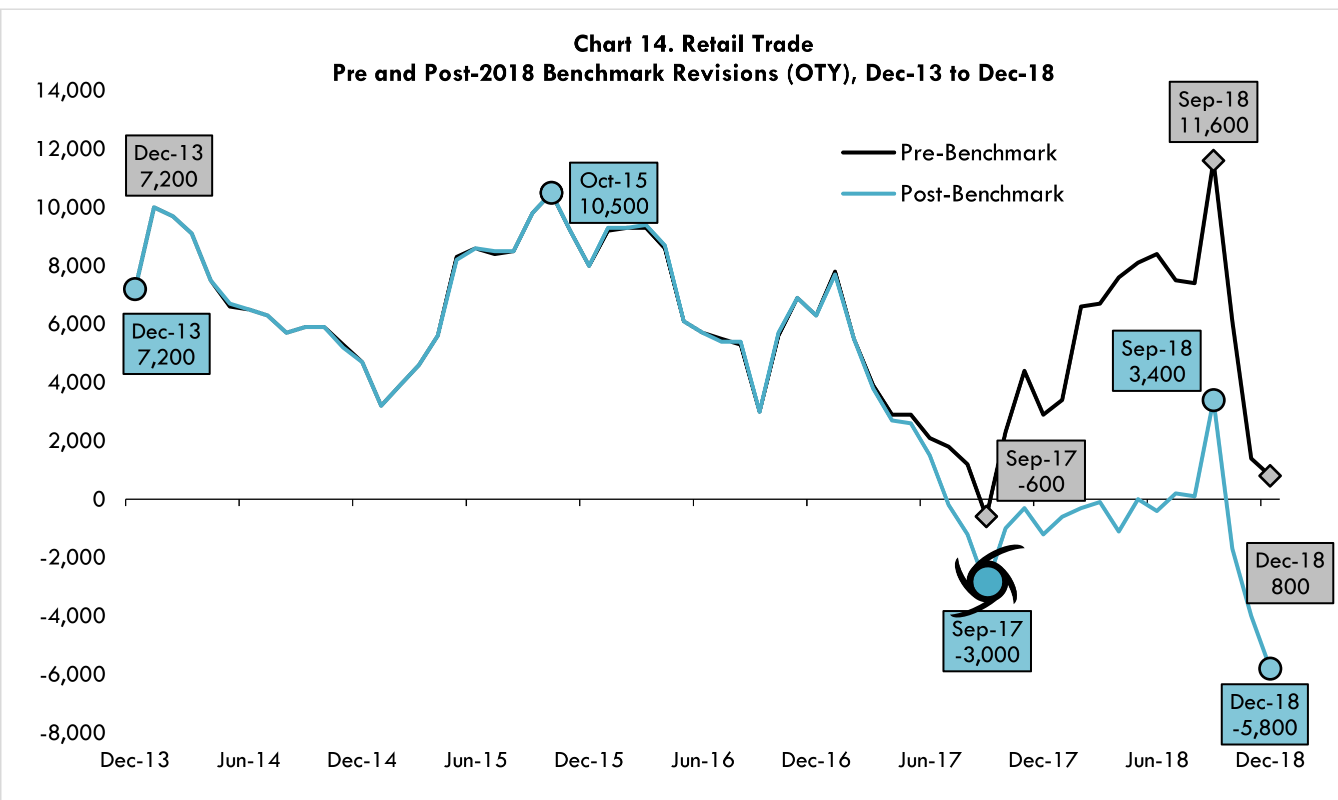
Dec-14
Jun-15
Dec-15
Jun-16
Dec-16
Jun-17
Dec-17
Jun-18
Dec-18





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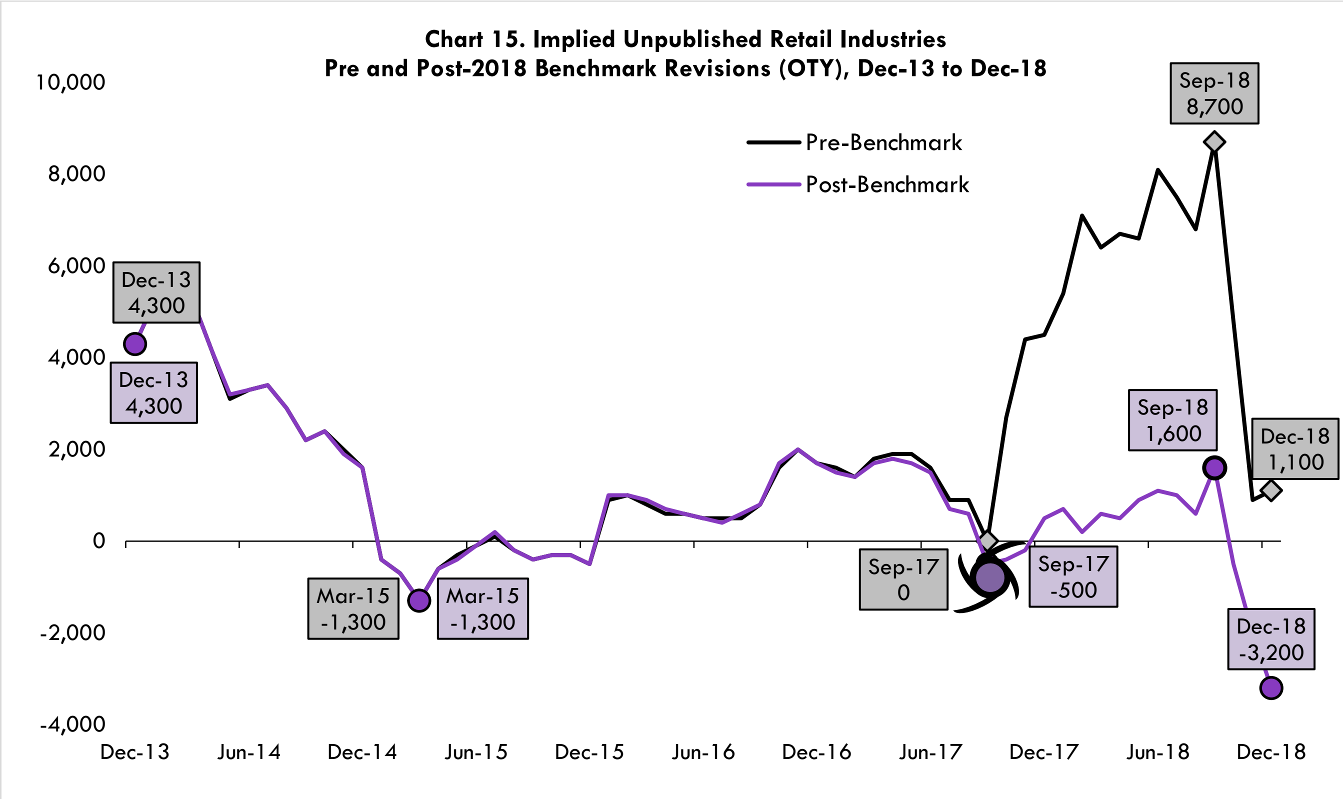

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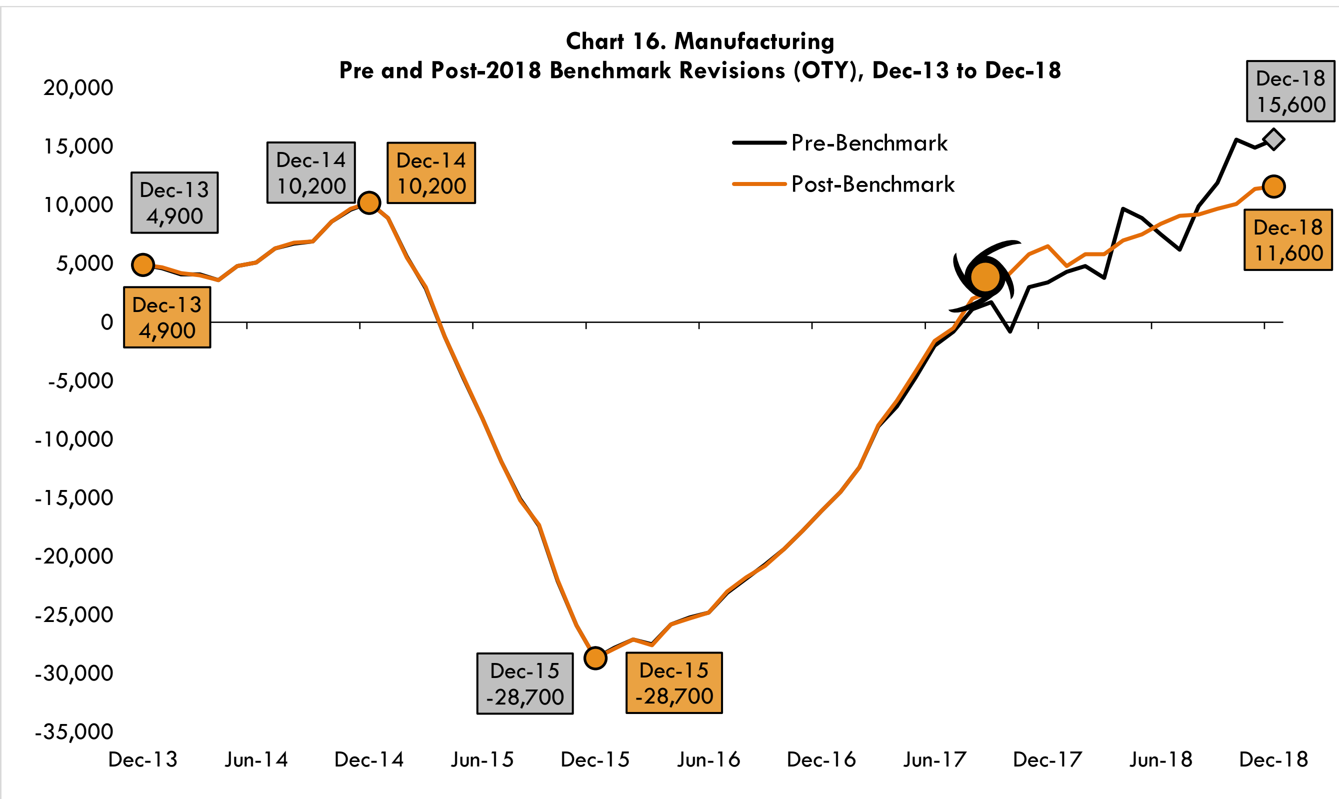
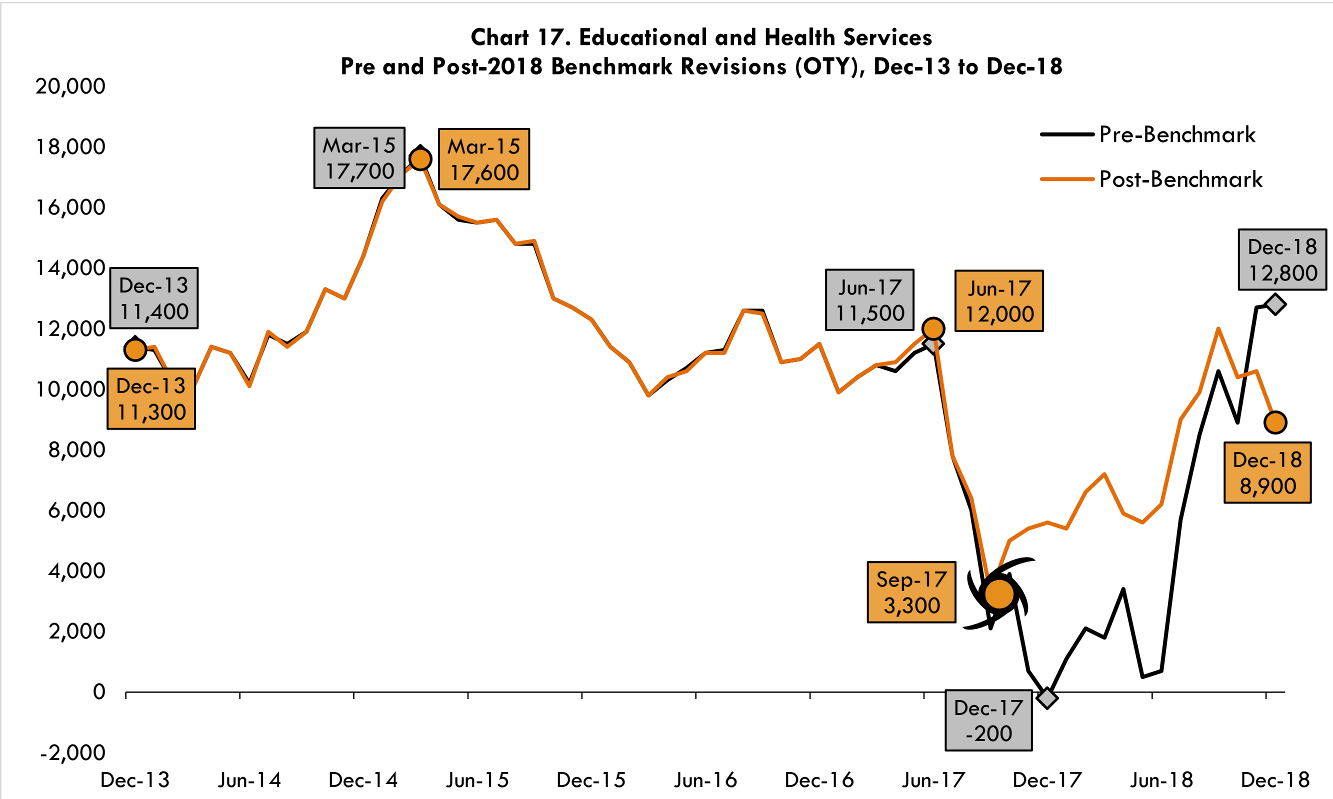
Manufacturing

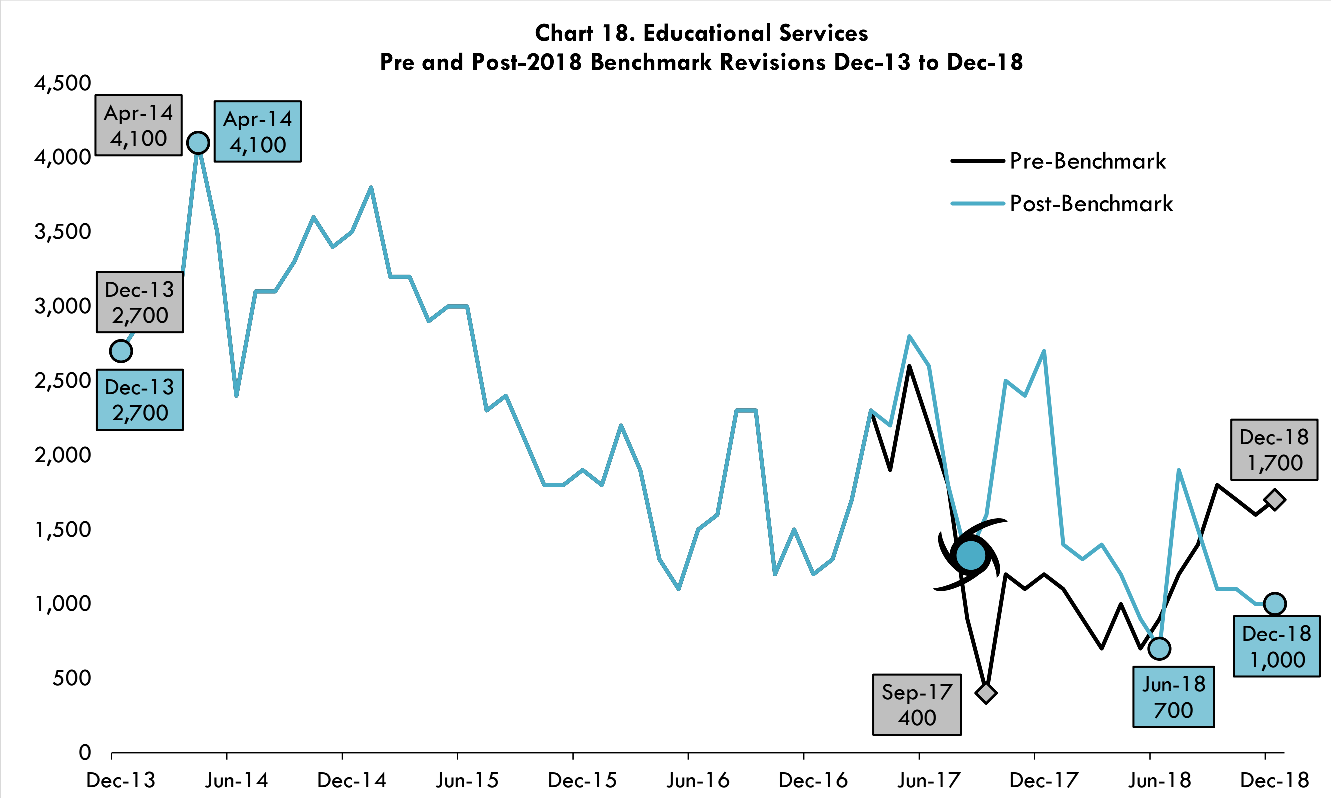
- Pre- and post-benchmark Manufacturing data show little deviation from one another until October 2017 where before revisions a brief, shallow dip occurred. Given the timing, the most plausible source of the decline was a delayed effect of Hurricane Harvey. However, this explanation proved lacking as locally-conducted surveys after the storm indicated that manufacturing operations generally were offline for only a few days at most. While not impossible, the capture of such a short period of suspended activity in the data would be unlikely.
- With the release of revisions, it appears this skepticism was warranted. The data now show that the storm had virtually no impact on the sector as evidenced by no discernible change in trend, even short-term, in September or October 2017. Moreover, what little deviation that occurred between the two estimates remained fairly limited resulting in an over-estimation of 4,000 jobs for December 2018.
- The vast majority of the over-estimation occurred within Fabricated Metal Products (2,100 jobs) and to a lesser extent and Machinery Manufacturing (500 jobs) and Petroleum Manufacturing (400 jobs) with the former two dictating the overall shape of Manufacturing's trend given their outsized contribution to the sector's employment. In contrast, Chemical Manufacturing saw a slight under-estimation of December 2018 job growth in the amount of 300 jobs. (Charts not shown.)

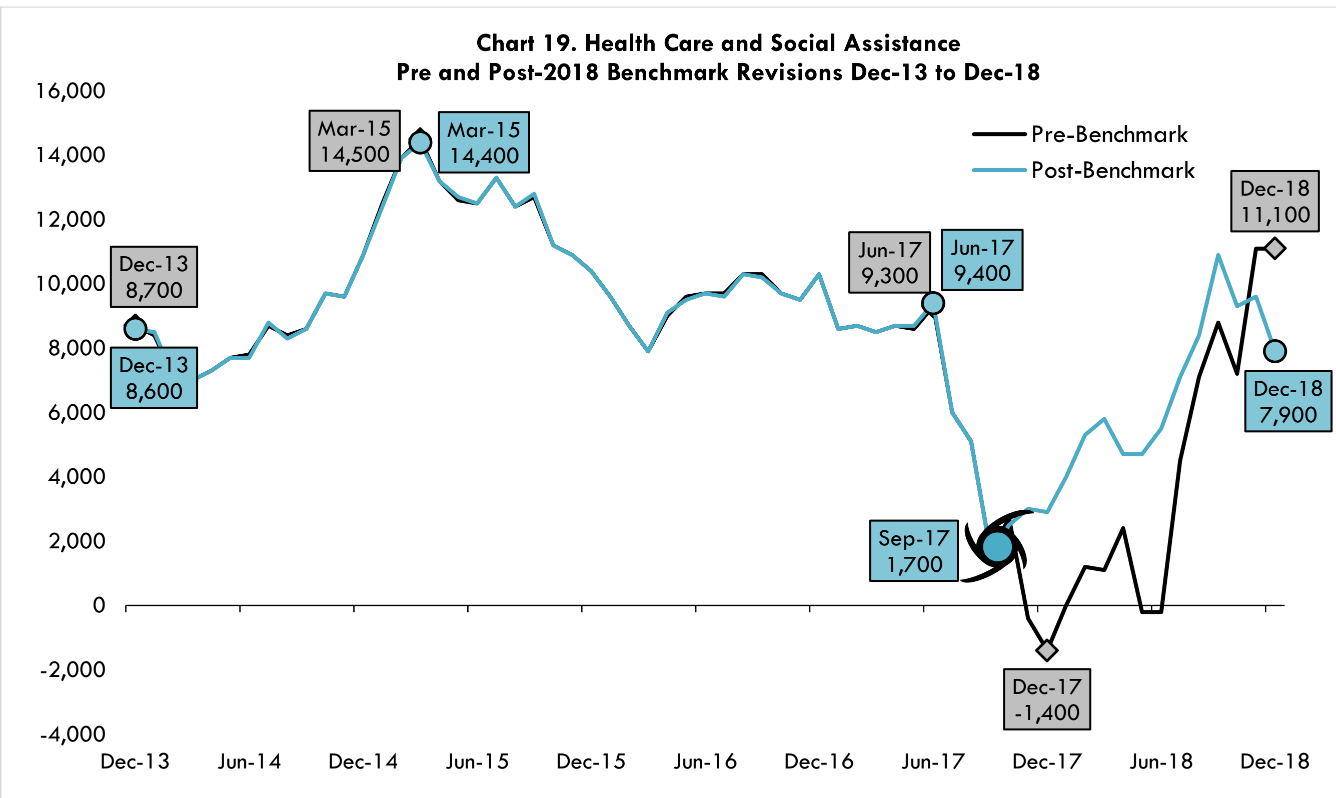


Educational and Health Services

- Despite the year-end over-estimation by 3,900 jobs, Educational and Health Services performed better throughout 2018 than the impression given by pre-benchmark estimates. The Healthcare and Social Assistance industry group was the largest driver of the revisions to the overall sector, which is logical given that it comprises 80 percent of the sector's employment, whereas (Private) Educational Services had little impact. However, within Healthcare and Social Assistance, it appears that the two other major components of this industry group, Nursing and Residential Care Facilities and Social Assistance, which are not published as a part of Houston area monthly CES estimates, were responsible for the revisions, particularly between September 2017 and October 2018. This was determined to be the case given that Hospitals and Ambulatory Healthcare Services, which are published by CES, showed little change before or after 2018 benchmark revisions. (See Charts 17-20.)







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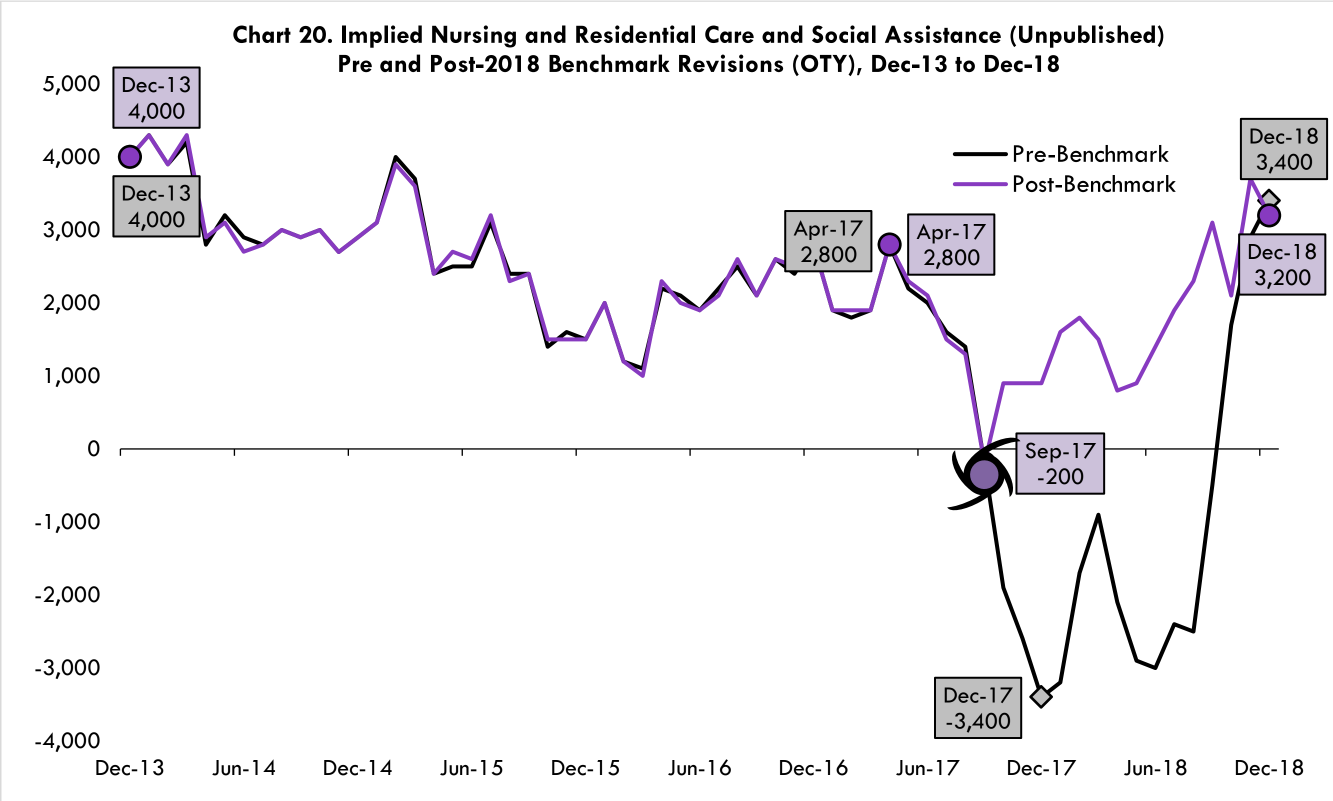

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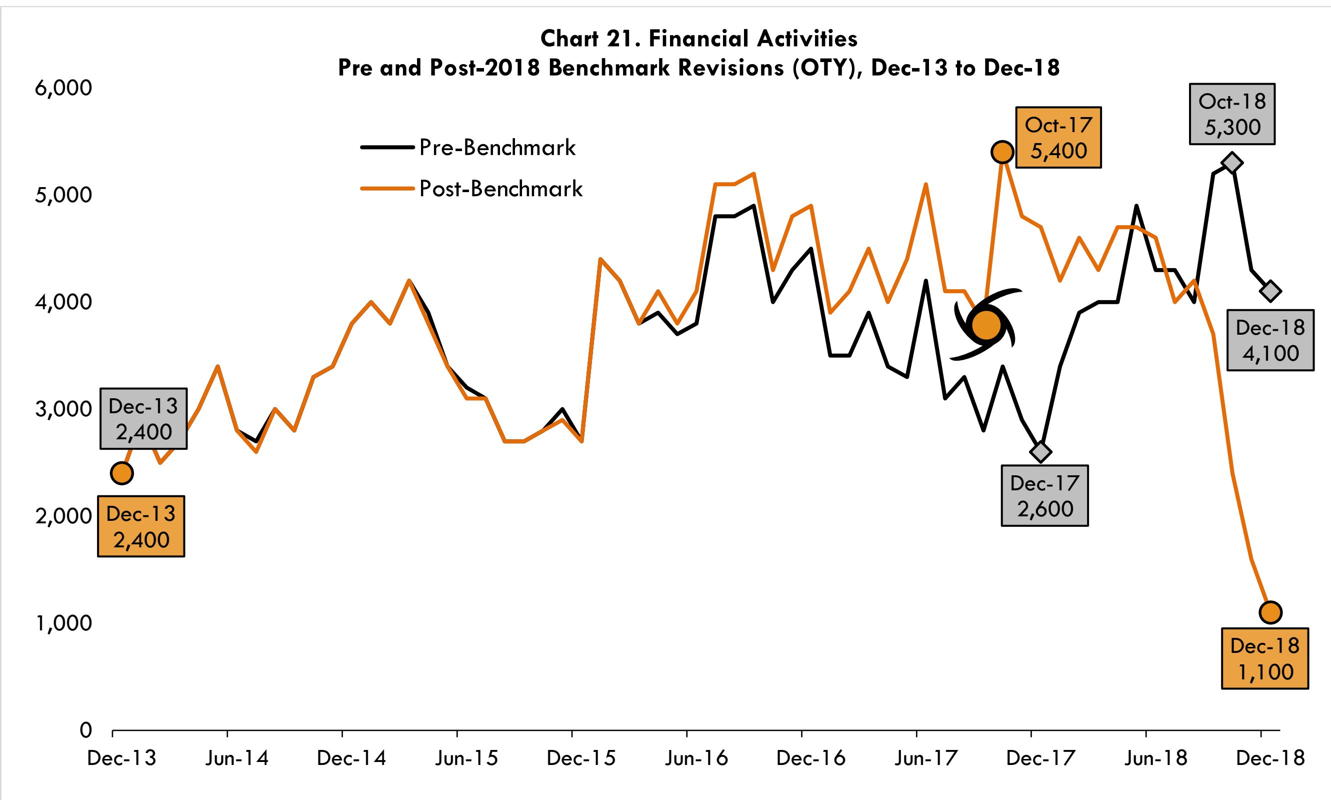
Financial Activities

- From September 2016 through December 2017, it appeared that job growth in Financial Activities had entered a period of slowing year-over-year growth going from 4,900 jobs to a low of 2,600 jobs added. From the latter point onward, this sector staged a rebound, reaching a pre-benchmark revision estimated 5,300 jobs in October 2018 before settling at 4,100 jobs in December 2018. After benchmark revisions, Financial Activities spent much of this same window range-bound between gains of 3,800 and 5,400 before plunging into the end of year, up only 1,100 jobs. The net effect of this drop compared to pre-benchmark figures from December 2018 was an over-estimation of job growth by 3,000 jobs. (See Chart 21.)
- Of the two components that make up Financial Activities: Finance and Insurance and Real Estate and Rental and Leasing, the latter was responsible for the bulk of the over-estimation as well as the sharp decline into the end of 2018. Earlier estimates showed this industry group posting sharp increases through September 2018 however it now appears that growth began to moderate from October 2017 until August 2018 when the pace of growth began to slow. As a result, job growth in this sector was over-estimated by 2,800 jobs for the year ended in December 2018 suggesting a material weakening of this segment of Houston's job market. (See Chart 22.)



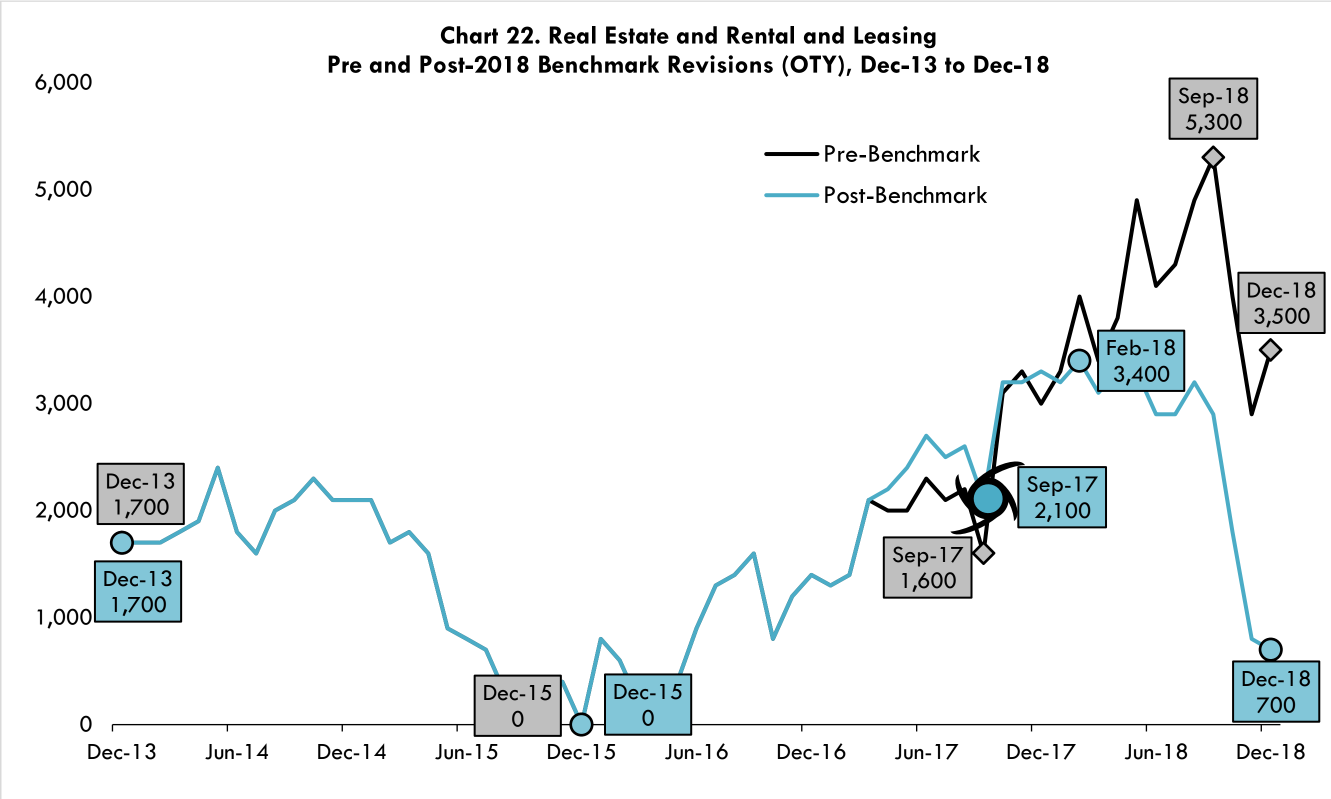
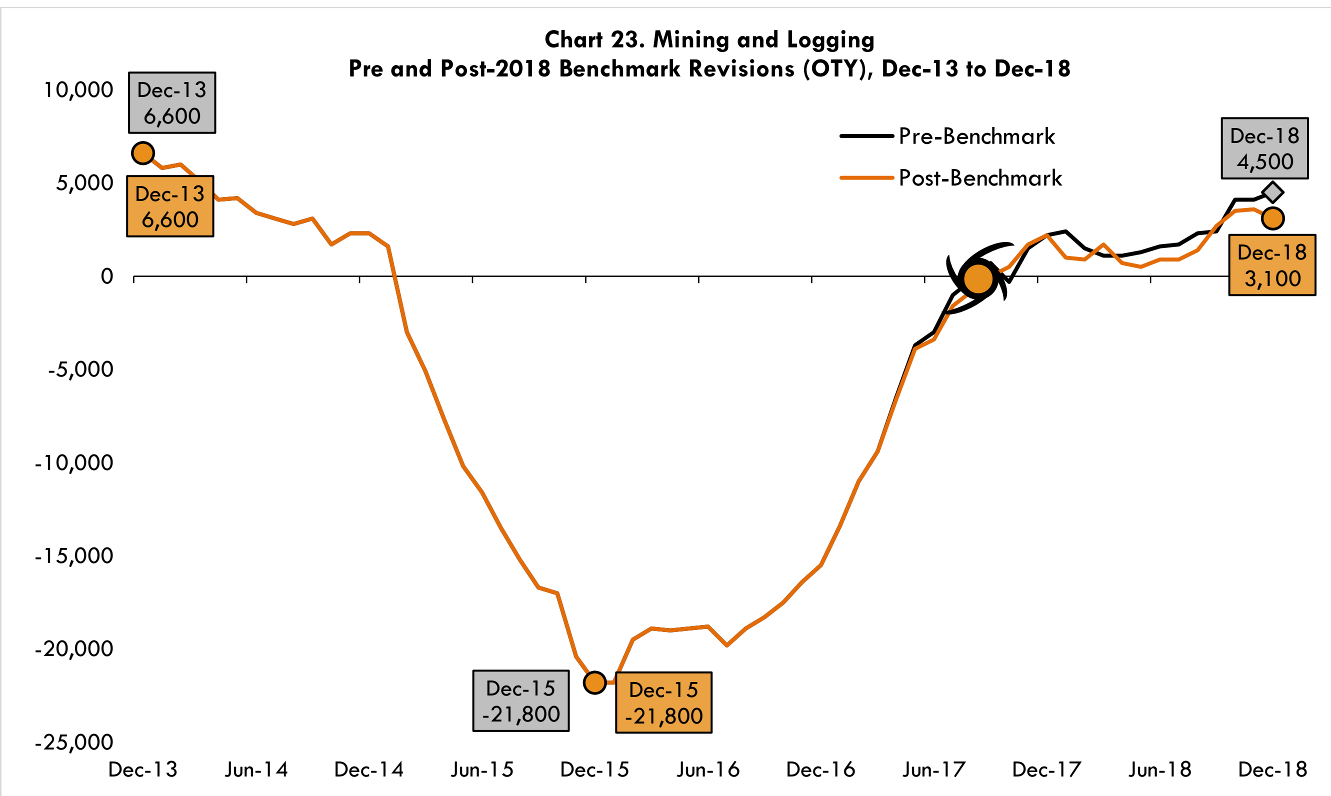
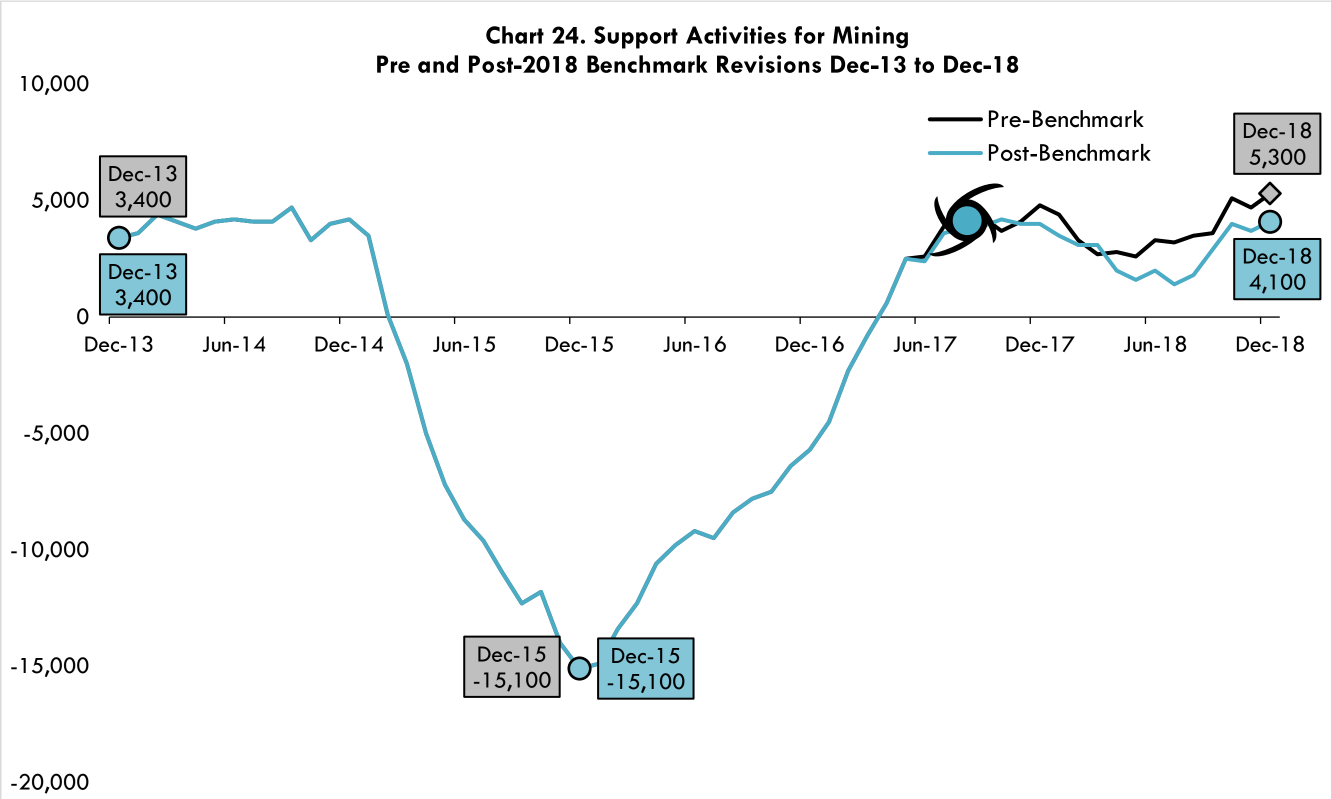


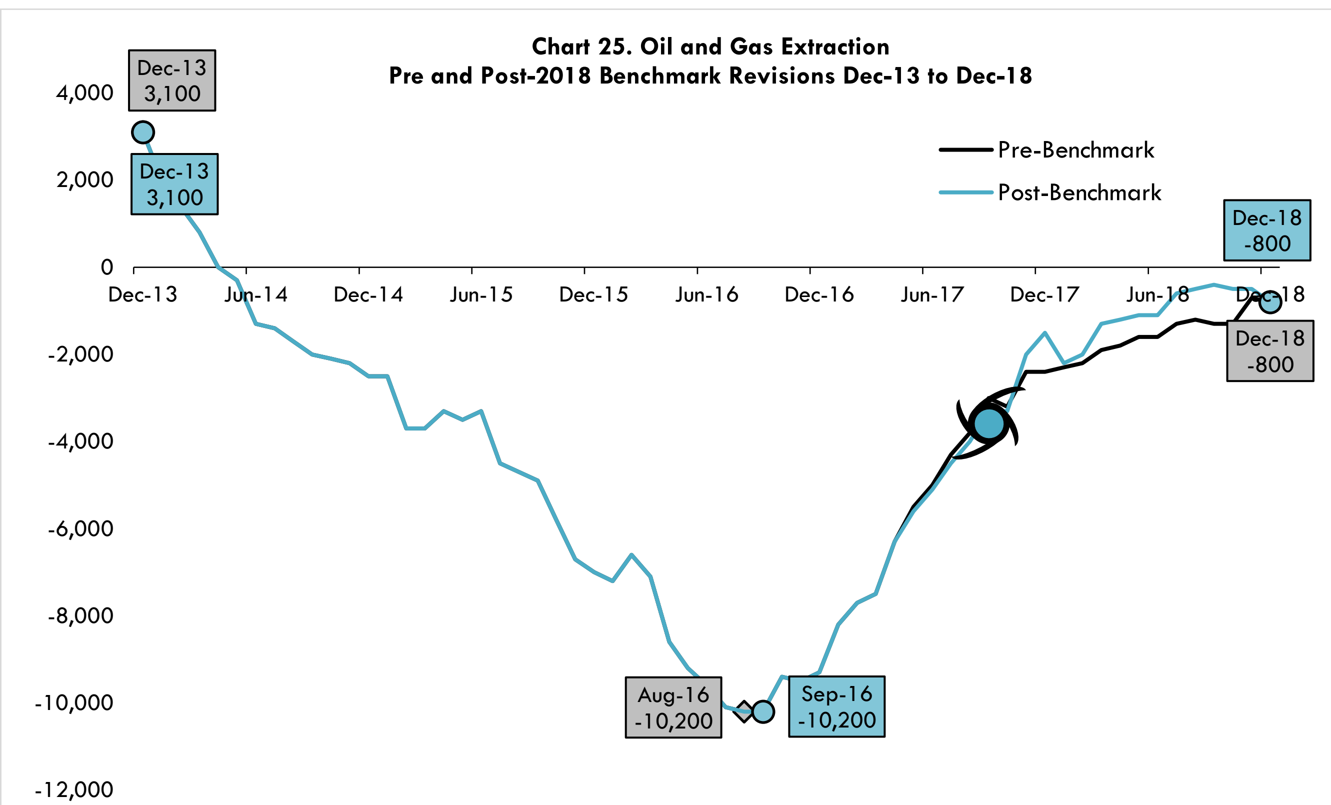
Chart 22. Real Estate and Rental and Leasing
Pre and Post-2018 Benchmark Revisions (OTY), Dec-13 to Dec-18
6,000
5,000
4,000
3,000
2,000
1,000
0
Pre-Benchmark
Post-Benchmark
Dec-13 1,700
Dec-13 1,700
Dec-15 0
Dec-15 0
Sep-17 1,600
Sep-17 2,100
Feb-18 3,400
Sep-18 5,300
Dec-18 3,500
Dec-18 700
Dec-13
Jun-14
Dec-14
Jun-15
Dec-15
Jun-16
Dec-16
Jun-17
Dec-17
Jun-18
Dec-18

Mining and Logging

- Much like Manufacturing, a comparison of pre- and post-benchmark revisions in Mining and Logging revealed little difference in estimates throughout 2018 indicating that the currently observed gradual upward trend is representative of actual job market dynamics within this sector. Ultimately, over-estimation of job growth as of December 2018 was small with a difference of only 1,400 fewer jobs added. (See Chart 23.)
- The cause of Mining and Logging's modest over-estimation of job growth could be found in Support Activities for Mining and Logging, whose growth was over-estimated by 1,200 jobs. In contrast, Oil and Gas Extraction saw no revisions for the December 2018 figure, maintaining its year-over-year loss of 800 jobs.
- Leaving aside the discussion of benchmark revisions, two significant trends remain across Support Activities and Oil and Gas Extraction. The former industry group has enjoyed 21 consecutive months of year-over-year employment gains since April 2017 reflecting higher oil prices and increased drilling activity. In contrast, Oil and Gas Extraction continues to languish having experienced 57 consecutive months without a year-over-year increase in employment. Note that some of this decline appears to be part of a longer-term structural change in the industry given that job growth began to slow as far back as mid-2013, well before the most recent local downturn that began in late-2014. In fact, as of December 2018, there are 21,400 fewer jobs in absolute terms in Oil and Gas Extraction since employment levels peaked in August 2013 and furthermore there is little evidence that the absolute number of jobs is poised to rebound in the foreseeable future. Support Activities for Mining, on the other hand, peaked in January 2015 at 55,900 jobs after which absolute employment declined by 20,800 to 35,100 jobs and followed by a recovery of 8,100 to a current level of employment of 43,200. Analysis of peak to trough to current employment indicates this industry group has regained nearly 40 percent of the jobs lost during the most recent local downturn. (See Charts 24 & 25.)
- Like Manufacturing, Hurricane Harvey distortions in Mining and Logging previously observed in September 2017 have largely disappeared with the release of the 2018 benchmark revisions.







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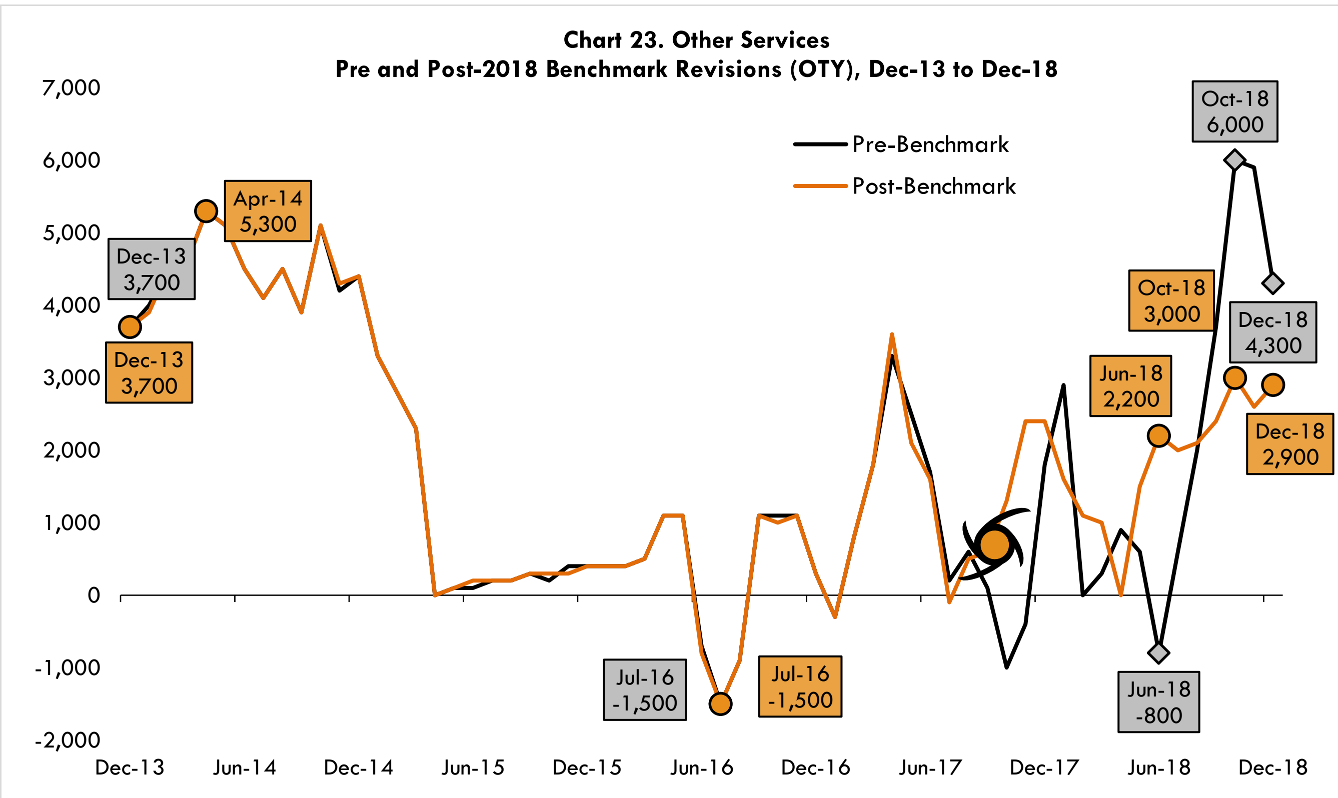
Other Services

- As per the title, Other Services acts as a catchall category for services that do not fit into the 10 remaining sectors that comprise the labor market. An analysis of Quarterly Census of Employment and Wages data revealed that Automotive Repair and Maintenance (23 percent), Personal Care Services (16 percent), and Commercial Machinery Repair and Maintenance (12 percent) were the three largest components of Other Services as of third quarter 2017. Note that the data included in this report are the product of monthly employment estimates known as Current Employment Statistics (CES), which does not publish data on the components of Other Services. (See Chart 23.)
- Overall, estimates show signs of extreme volatility and a possible lag in short-term changes in trend when comparing pre- and post-benchmark revisions. While not outside the realm of possibility, the pre-benchmark reversal from -800 jobs lost year-over-year in June 2018 to an increase of 6,000 in just four months seemed unlikely. Revisions have proven this skepticism warranted as both extremes are no longer present in the data.
- Ultimately this sector saw an over-estimation of job growth for 2018 in the amount of 1,400 fewer jobs added than originally reported.



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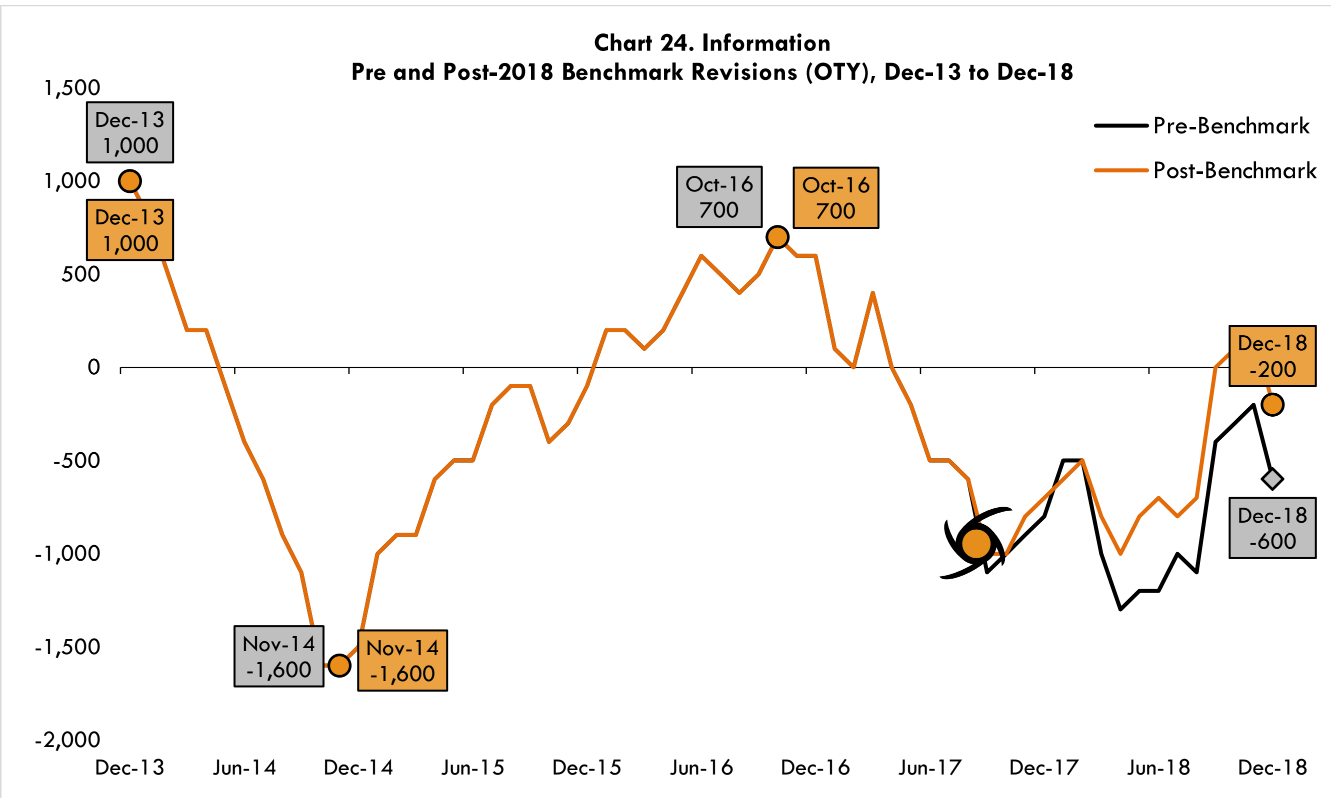
SECTORS WITH UNDER-ESTIMATED EMPLOYMENT

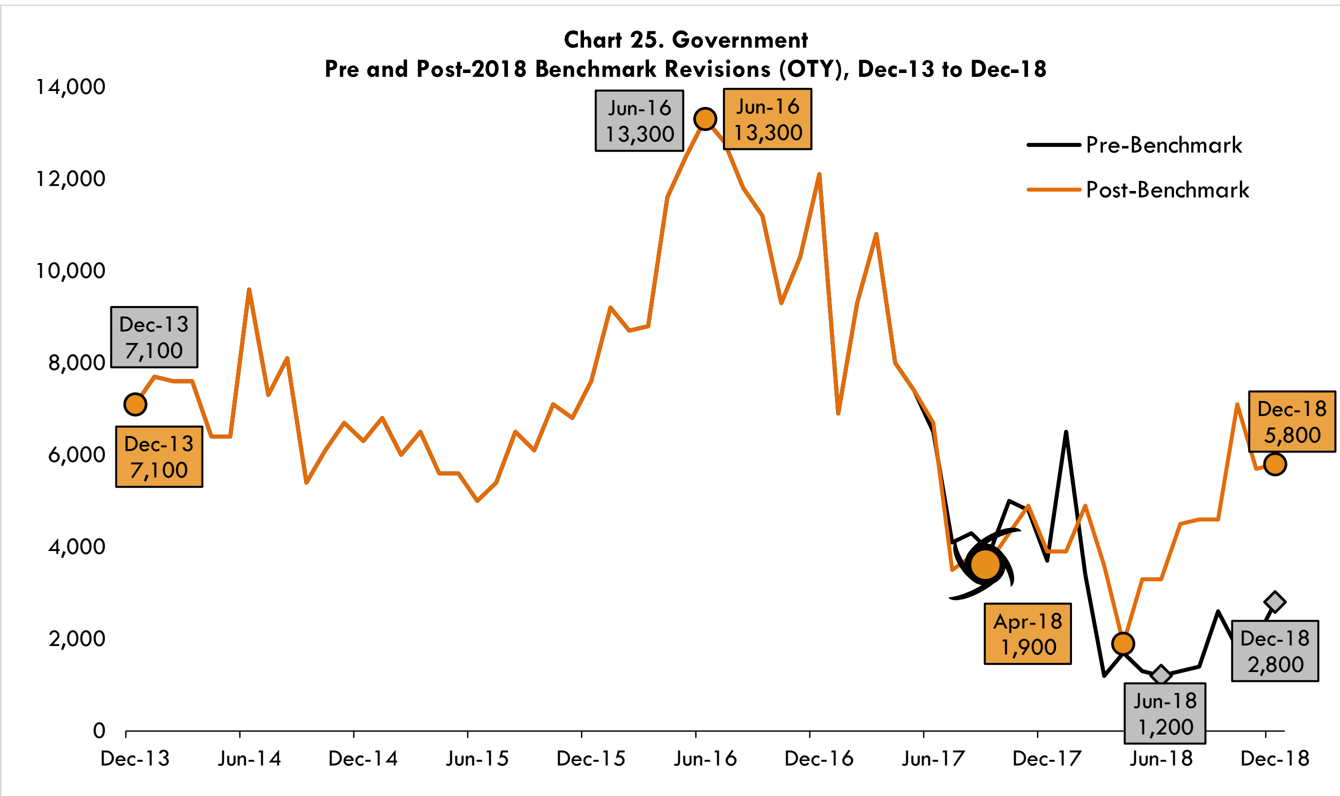
Information

- Information, the smallest of Houston's 11 sectors, remains on a long-term structure decline given the proliferation of the Internet, however it has experienced brief periods of growth in 2007, 2013, and most recently 2016. At the time of writing, this sector has returned to a period of job losses and furthermore is the only sector to have ended 2018 with a year-over-year decline in employment. (See Chart 24.)
- Prior to benchmark revisions, this sector was estimated to have lost 600 jobs year over year and furthermore had remained in negative territory since April 2017. Revisions reduced the end-of-year losses to 200 indicating they were over-estimated by 400 jobs. In other words, losses were somewhat less than originally estimated.



Government

- As a share of the region's total employment, Government consistently ranks among the top-three largest sectors largely due to its inclusion of public educational services. Given that growth in this sector is typically a function of state finances and population growth, Government tends to exhibit acyclical trends in contrast to other Houston area sectors that follow the price of oil.
- By and large, pre- and post-benchmark estimates were similar until March/April 2018. Before revisions growth had settled into a range of 1,200 to 2,800 jobs added year over year. After revisions, job growth began to accelerate from April 2018 onward concluding the year up 5,800 jobs. As result, Government employment growth was under-estimated by 3,000 jobs, the second-largest under-estimation of any sector. (See Chart 25.)
- Given that public sector employment should be easily verifiable, it is unclear why significant revisions should occur at all. Most Government employment in the Houston area actually refers to public schools, officially referred to as Local Government Educational Services. This subcomponent was largely responsible for under-estimation of overall Government employment growth. Furthermore, Local Government Ed. saw massive revisions in the latter-half of 2018 and the first half of 2018 where at one point it was estimated to up 5,500 jobs in January 2018 when in reality it was only up 700 jobs. The divergence between pre- and post-benchmark revisions continued with year-end estimates coming in at 200 and 4,200, respectively, for an under-estimation of 4,000 jobs added in 2018. (See Chart 26.)



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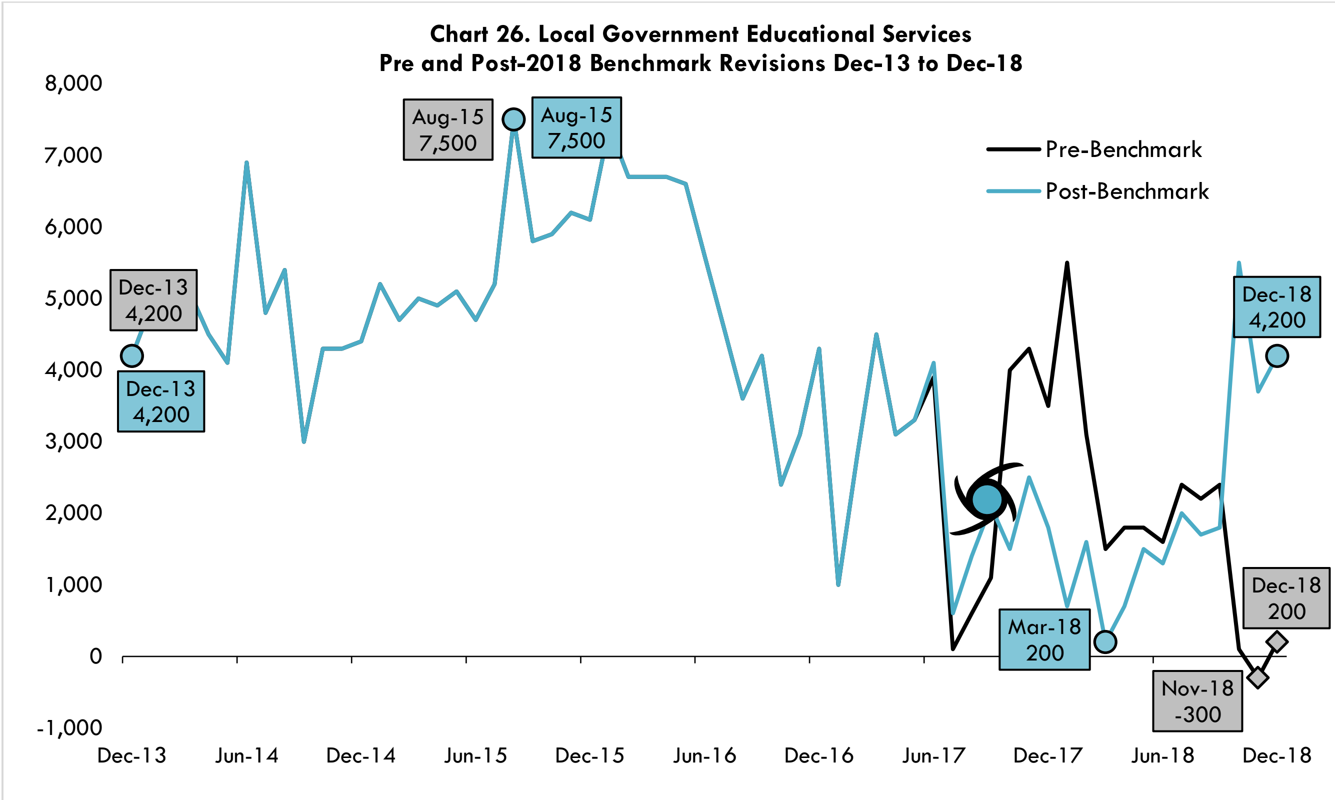
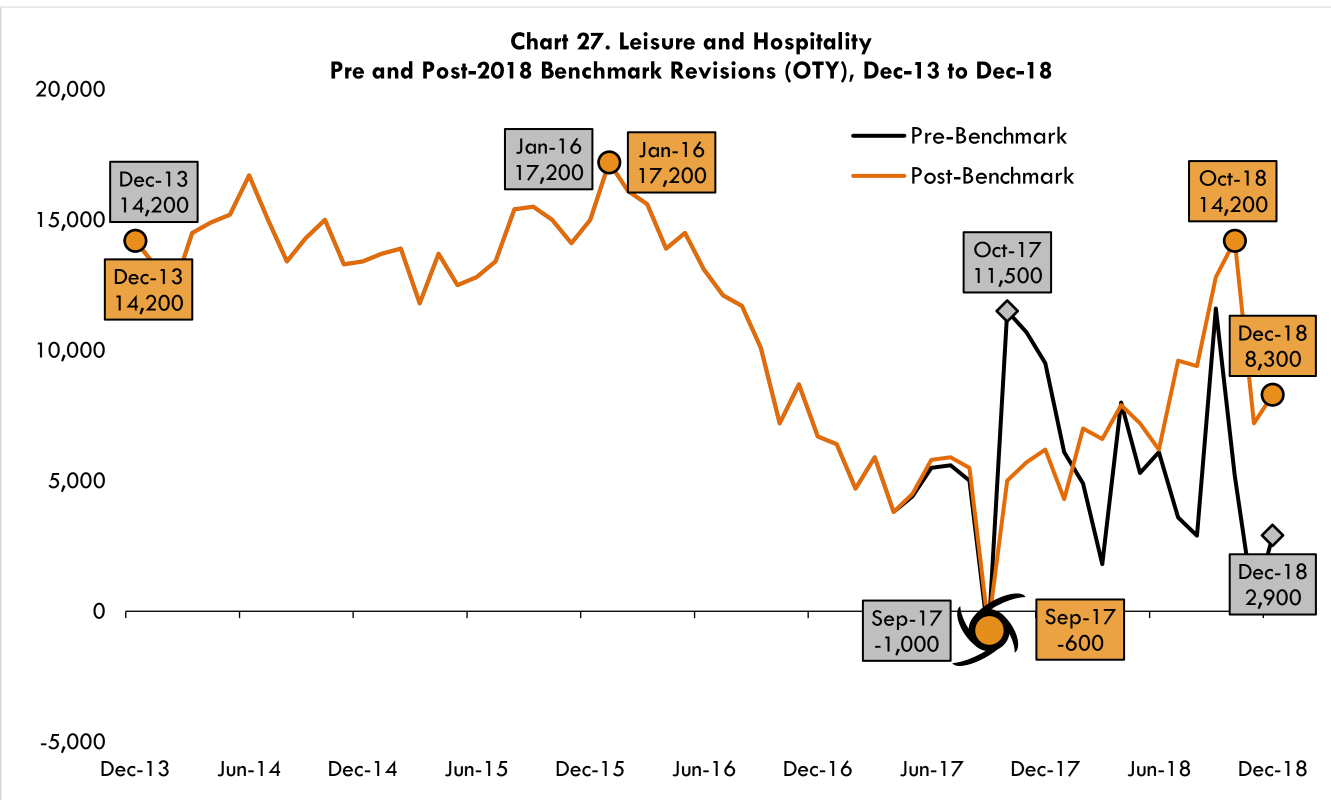


Chart 26. Local Government Educational Services
Pre and Post-2018 Benchmark Revisions Dec-13 to Dec-18
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
-1,000
Dec-13
Jun-14
Dec-14
Jun-15
Dec-15
Jun-16
Dec-16
Jun-17
Dec-17
Jun-18
Dec-18
Pre-Benchmark
Post-Benchmark
Dec-13 4,200
Dec-13 4,200
Aug-15 7,500
Aug-15 7,500
Mar-18 200
Nov-18 -300
Dec-18 200
Dec-18 4,200

Leisure and Hospitality

- Leisure and Hospitality experienced the largest under-estimation of any sector in 2018, with year-end growth under-counted by 5,400 jobs as a result of post-revision December 2018 growth of 8,300 compared to an earlier estimate of 2,900. (See Chart 27.)
- The defining feature of recent Leisure and Hospitality estimates was the sharp drop in growth in September 2017 followed by an equally sharp rebound in October of the same year. The prevailing explanation for these extremes was that the storm briefly suspended operation of restaurants, reported under the category Food Services and Drinking Places, throughout the region while simultaneously damaging food preparation facilities in affected residential dwellings. This damage necessitated increased use of restaurants in the wake of the storm as a temporary source of prepared meals. However, benchmark revisions have removed the October rebound entirely leaving only a somewhat shallower September decline (-1,000 jobs pre-revision vs. -600 post-revision). From October 2017 onward, we began to observe an upward trend in Leisure and Hospitality employment peaking with October 2018's 14,200 jobs added over the previous year after benchmark revisions. It should be noted that the magnitude of September 2018's increase leading up to October 2018's peak is likely to be exaggerated as a result of the aforementioned Hurricane Harvey-related decline in September of the previous year. (See Chart 28.)
- Lastly, another major subcomponent of Leisure and Hospitality, Accommodation representing hotels, had a negligible impact on the overall sector's revisions. (See Chart 29.)



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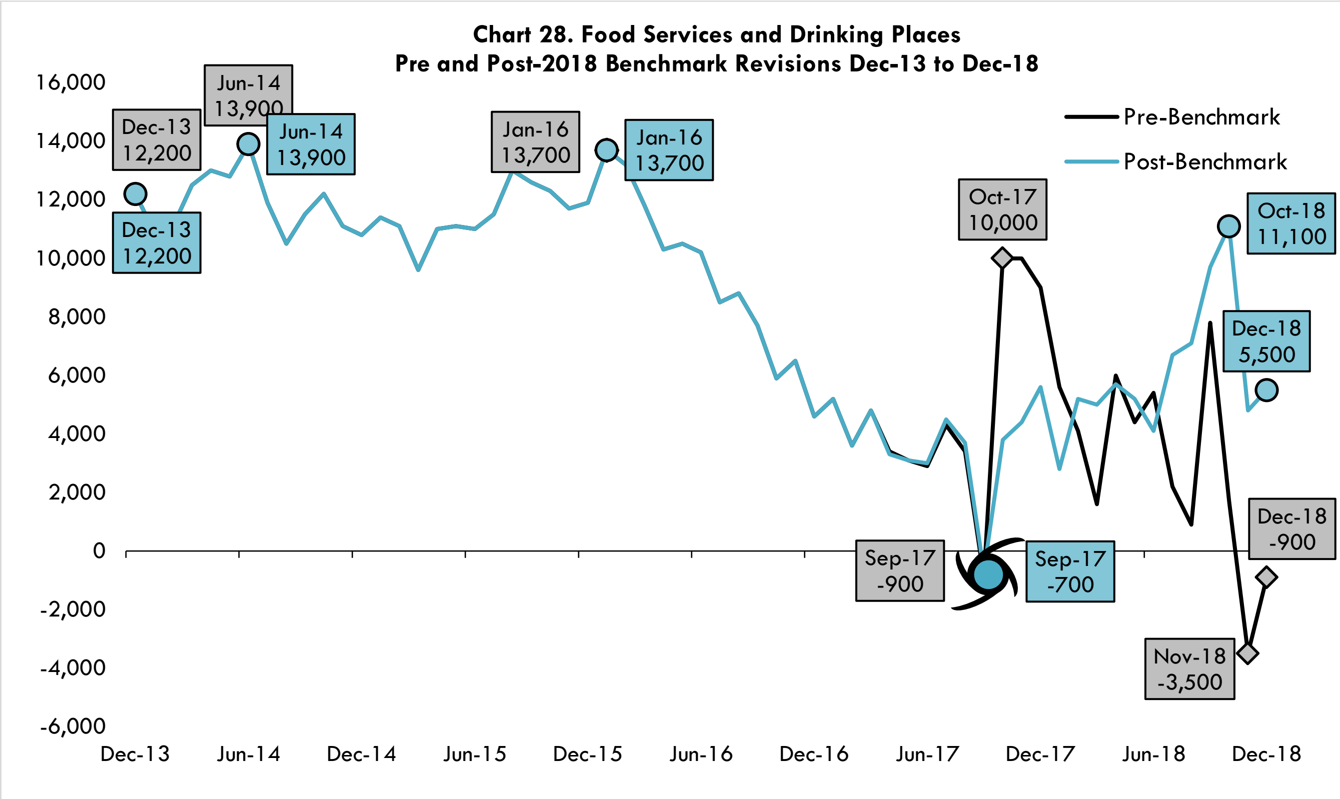

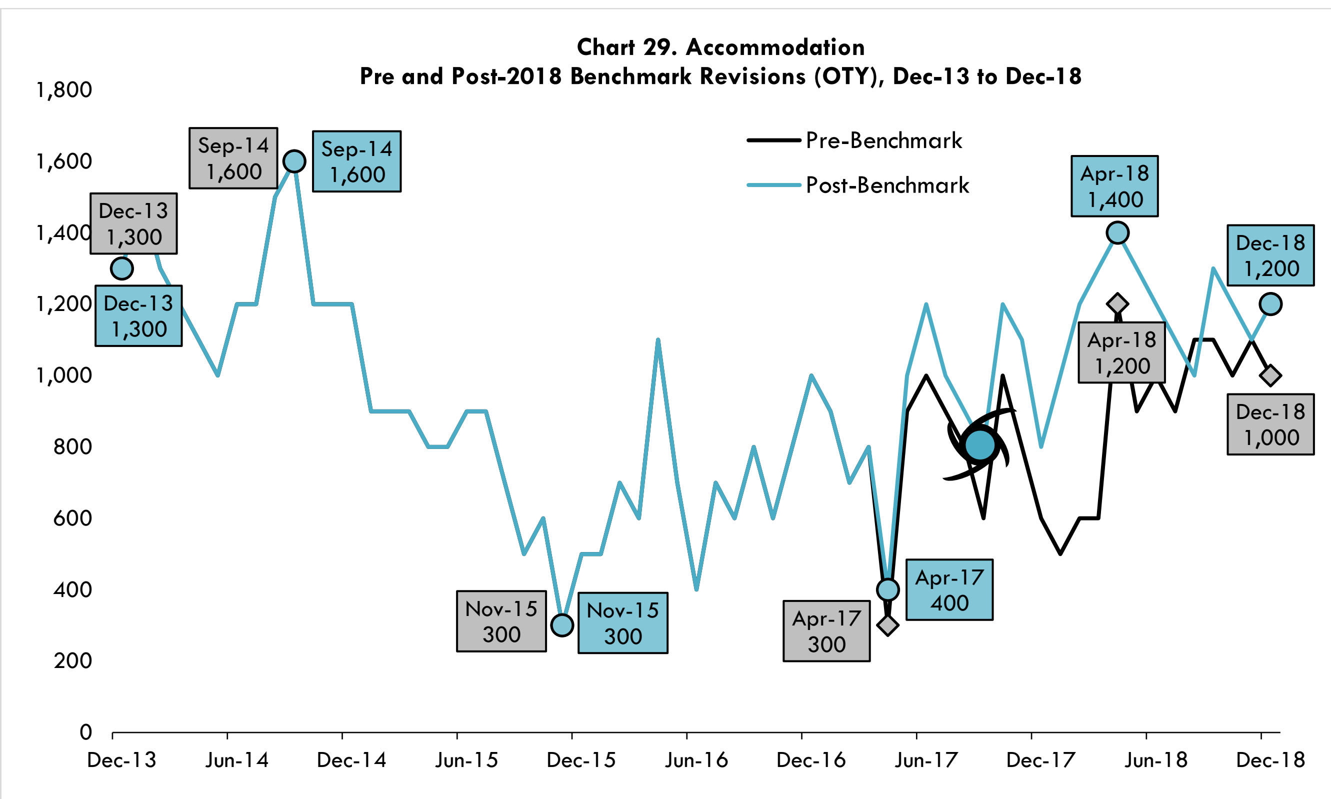

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Exhibit 1. 2018 Benchmark Revisions, Over and Under-Estimation of December 2018 Over-The-Year Employment Growth by Sector

Sectors with fewer jobs lost after revisions	
Information	400
	400
Sectors that saw no revisions	
None	0
	0
Sectors with more jobs added after revisions	
Leisure and Hospitality	5,400
Government	3,000
	8,400
Sectors with fewer jobs added after revisions	
Professional and Business Services	-14,200
Educational and Health Services	-3,900
Other Services	-1,400
Mining and Logging	-1,400
Construction	-10,400
Manufacturing	-4,000
Trade, Transportation, and Utilities	-5,500
Financial Activities	-3,000
	-43,800
Sectors with more jobs lost after revisions	
None	0
	0
fewer jobs lost + more jobs added =	8,800
fewer jobs added + more jobs lost =	-43,800
net over estimation =	-35,000

Exhibit 2. 2018 Benchmark Revisions, Over and Under-Estimation of December 2017 Over-The-Year Employment Growth by Sector

Sectors with fewer jobs lost after revisions	
Educational and Health Services	5,800
Information	100
	5,900
Sectors that saw no revisions	
Mining and Logging	0
	0
Sectors with more jobs added after revisions	
Other Services	600
Government	200
Manufacturing	3,100
Financial Activities	2,100
	6,000
Sectors with fewer jobs added after revisions	
Professional and Business Services	-7,700
Leisure and Hospitality	-3,300
Construction	-7,500
Trade, Transportation, and Utilities	-2,100
	-20,600
Sectors with more jobs lost after revisions	
None	0
	0
fewer jobs lost + more jobs added =	11,900
fewer jobs added + more jobs lost =	-20,600
net over estimation =	-8,700

Exhibit 3. 2018 Benchmark Revisions, Over and Under-Estimation of December 2016 Over-The-Year Employment Growth by Sector

Sectors with fewer jobs lost after revisions	
Professional and Business Services	900
	900
Sectors that saw no revisions	
Educational and Health Services	0
Leisure and Hospitality	0
Other Services	0
Government	0
Information	0
Mining and Logging	0
Construction	0
Manufacturing	0
	0
Sectors with more jobs added after revisions	
Financial Activities	400
	400
Sectors with fewer jobs added after revisions	
Trade, Transportation, and Utilities	-1,500
	-1,500
Sectors with more jobs lost after revisions	
None	0
	0
fewer jobs lost + more jobs added =	1,300
fewer jobs added + more jobs lost =	-1,500
net over estimation =	-200

[i] www.eia.gov/ Cushing, OK WTI Spot Price FOB, retrieved March 14, 2019