

Pennsylvania Economic Insights

August 2018

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Please see the disclosure appendix of this publication for certification and disclosure information. All estimates/forecasts are as of 08/08/2018 unless otherwise stated.

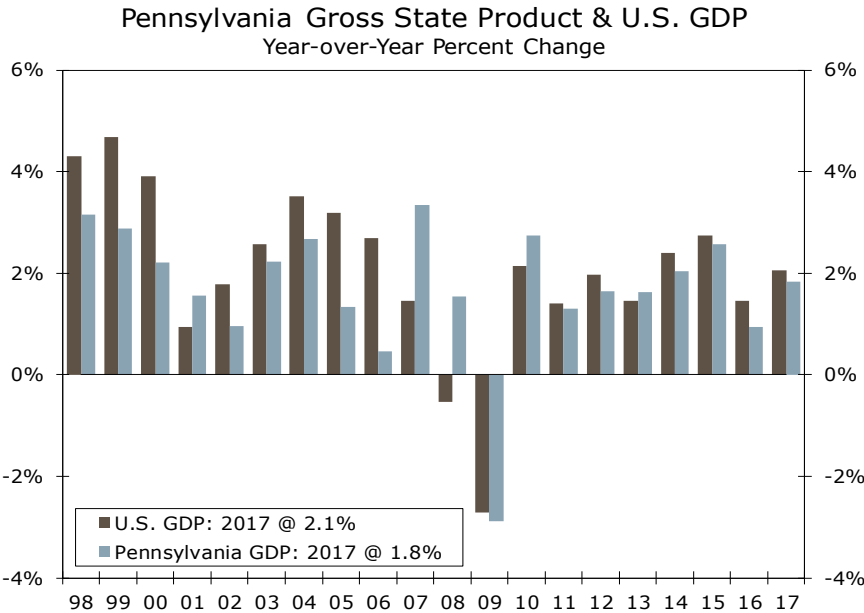
Together we'll go far



- **Pennsylvania's economy rebounded in 2017**, with real GDP growing 1.8 percent for the year, **double the pace seen in 2016** and the strongest among Mid-Atlantic states.
 - Continued solid growth in education and health services was complemented by **a rebound in the energy sector off of its 2016 lows**.
 - Pennsylvania's educated workforce and low cost of living relative to many other major metro areas in the Northeast have helped build **a growing technology and life sciences employment base**.
 - With energy prices rebounding, this volatile sector should pair well with the state's slower-but-steadily growing service sector, leading to a relatively firm short-term outlook for Pennsylvania's economy.
 - Much like the rest of the Northeast, **the structural challenges related to an aging population and fiscal headwinds are unlikely to abate anytime soon**.

Pennsylvania Outperforms Its Regional Peers in 2018

- Pennsylvania's economy rebounded in 2017, with real GDP growing 1.8 percent, double the pace seen in 2016 and the strongest among Mid-Atlantic states. Growth gained momentum in the second half of the year and real GDP grew at a 2.0 percent pace in the first quarter of 2018.
- Mining & quarrying contributed 0.4 percentage points to headline growth in Pennsylvania, and the information sector added 0.3 percentage points, **both best among states in the Mid-Atlantic/New England areas.**

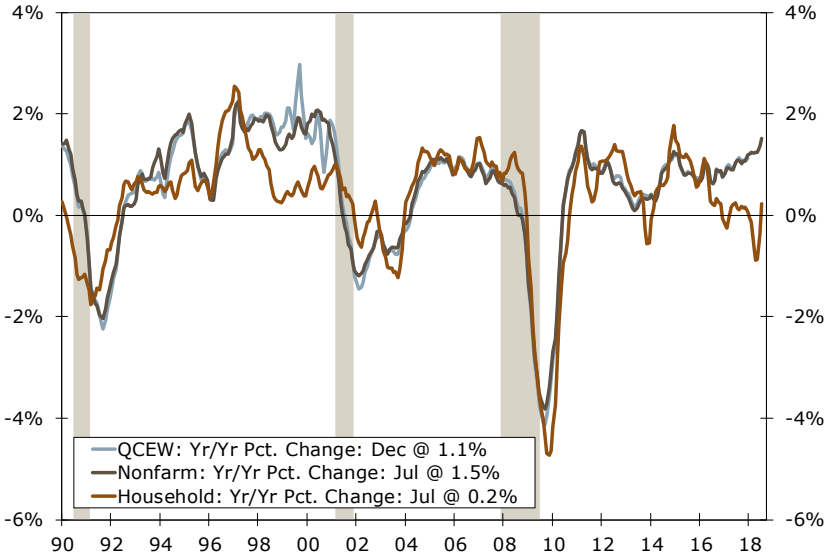


Source: U.S. Department of Commerce and Wells Fargo Securities

Eds & Meds Lead in PA...

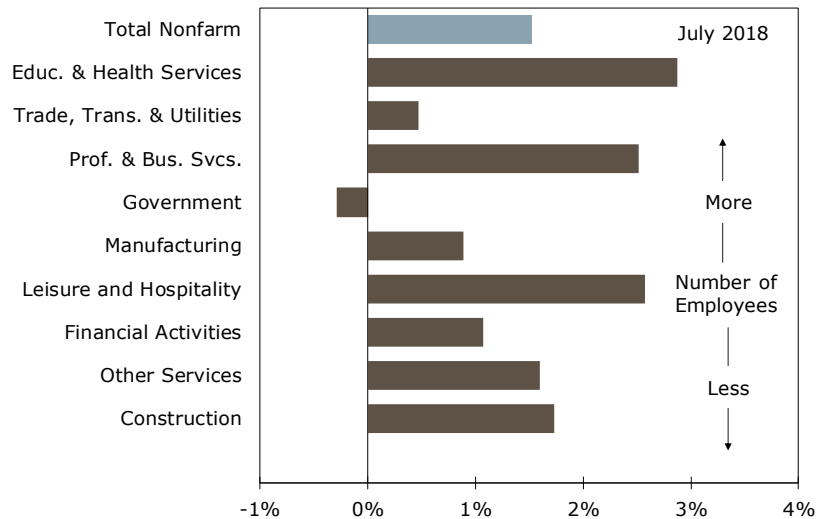
- Continued solid growth in education and health services employment has been complemented by a rebound in the energy sector off of its 2016 lows.
- The future employment component of the Philadelphia Fed’s May Manufacturing Business Outlook Survey touched the highest level since 1983 – **a weaker dollar, higher commodity prices and stronger global growth are benefitting PA manufacturers.** Activity has held strong through the summer.
- Commodity extraction, pipeline construction and warehouse development have also helped **boost construction employment.**

Pennsylvania Nonfarm Employment
3-Month Moving Averages



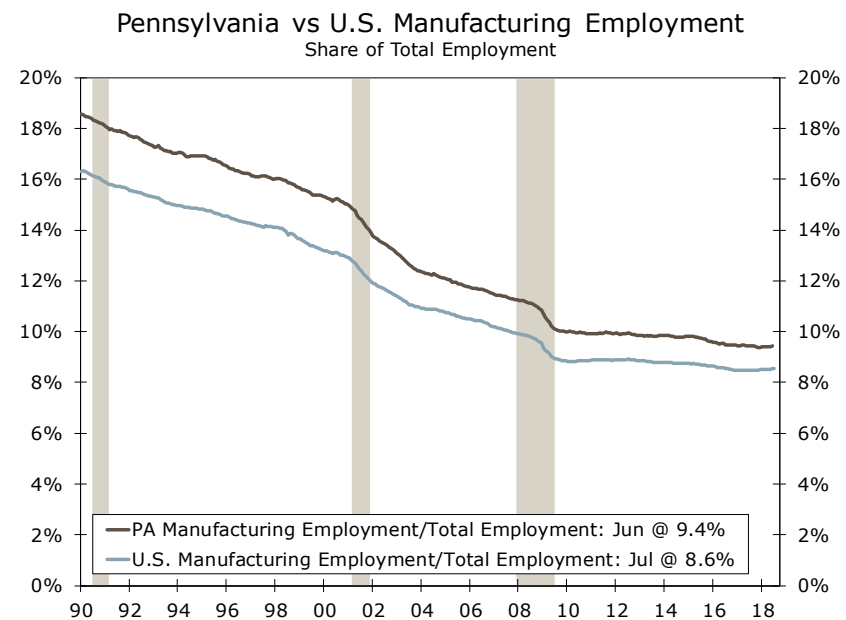
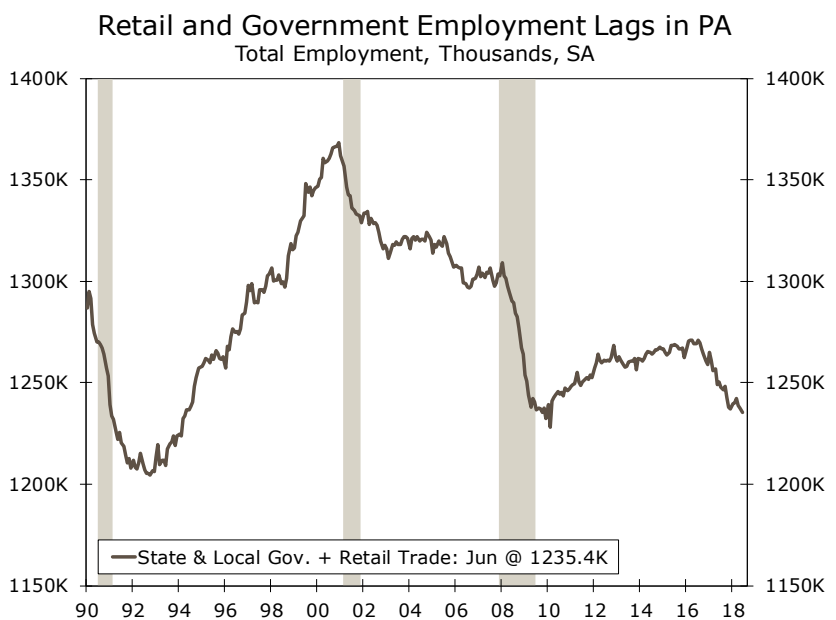
Source: U.S. Department of Labor and Wells Fargo Securities

Pennsylvania Employment Growth By Industry
Year-over-Year Percent Change, 3-MMA



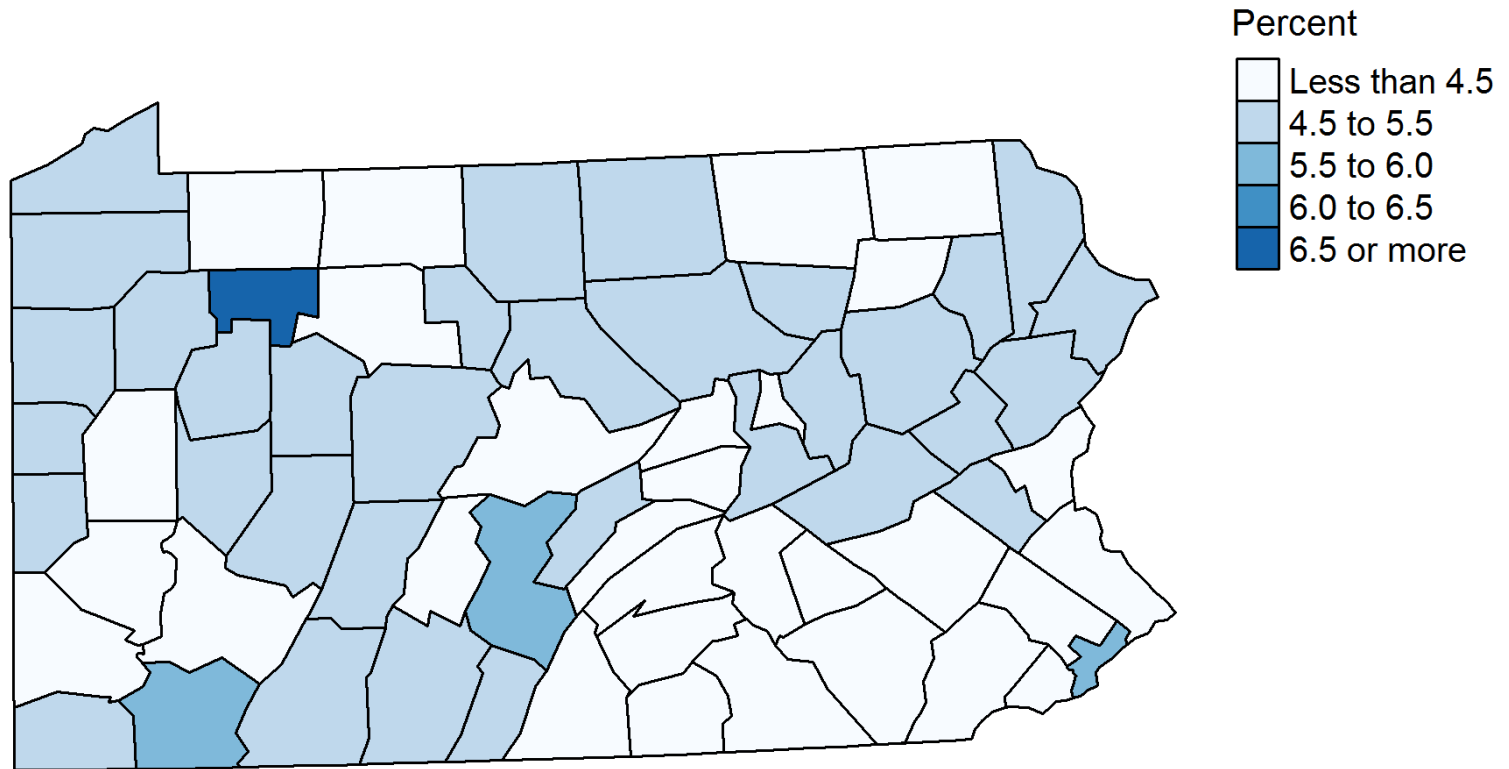
...but Government & Retail Lag

- State and local employment remains constrained by tight budget conditions, and the retail sector in Pennsylvania has shed employment in-line with much of the United States.
- Total headcount in these two sectors today is roughly the same as it was nearly 25 years ago.
- Even in manufacturing, which has seen some strength of late, Pennsylvania mirrors the secular decline that has occurred in the United States.



Source: U.S. Department of Labor and Wells Fargo Securities

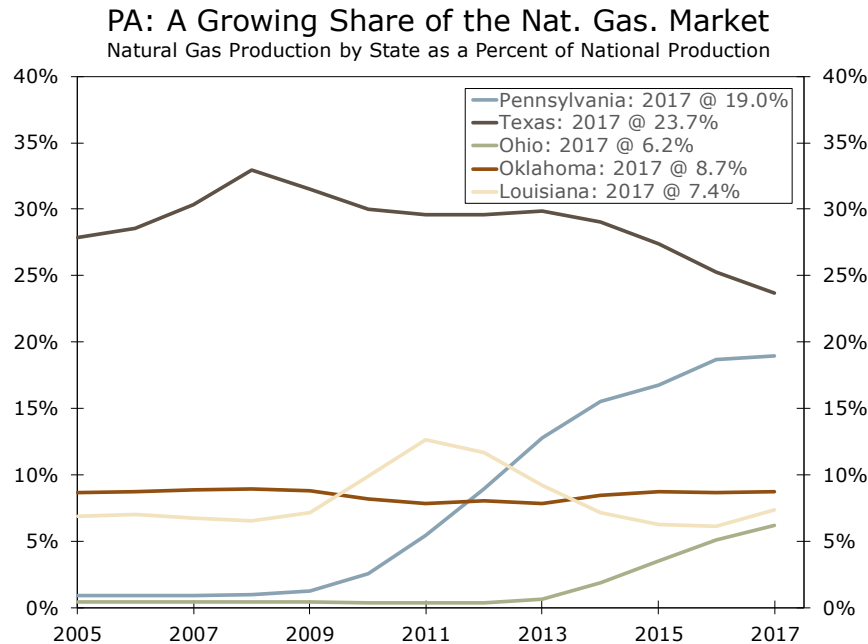
Unemployment in PA: June 2018



Source: U.S. Department of Labor and Wells Fargo Securities

Pennsylvania Is a Force to Be Reckoned with in the Natural Gas Market

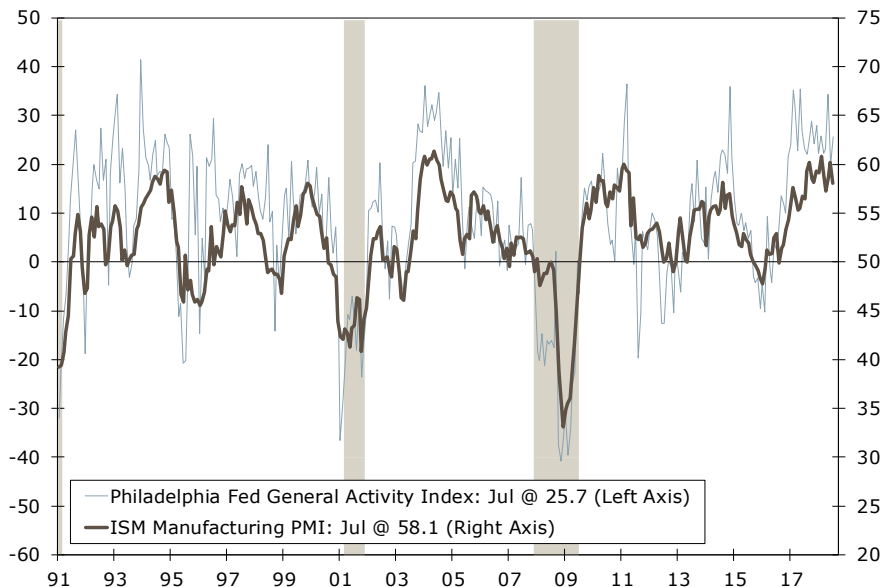
- Natural gas production in the state rose 3 percent in 2017 to a new record of 15 billion cubic feet per day.
- Pennsylvania accounted for 19 percent of total U.S. marketed natural gas production in 2017 and produced more gas than any other state except Texas.
- Production in 2018 looks likely to rise once again, as natural gas drilling permits rose a striking 51 percent last year.



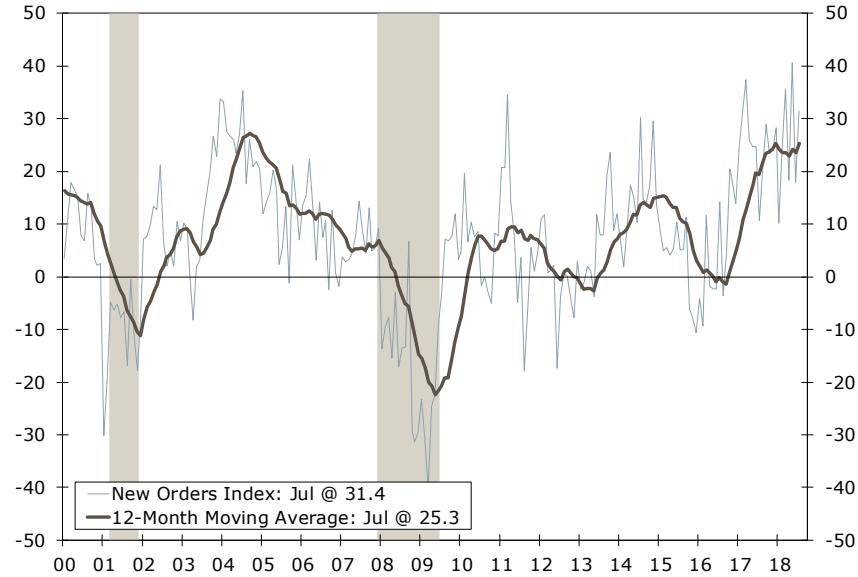
Source: U.S. Department of Energy and Wells Fargo Securities

- The Philly Fed's new orders component hit the highest level since 1983 in **May**, highlighting a consistently upward trend over the past 18 months.
- The survey's general activity index also spiked on the month, reaching 34.4 points. Activity pulled back in June and July but remains at a high level.
- Strength in mining and manufacturing has helped drive these gains, as have the lower dollar and stronger global growth.

Philadelphia Fed Survey vs. ISM Manufacturing PMI
Seasonally Adjusted



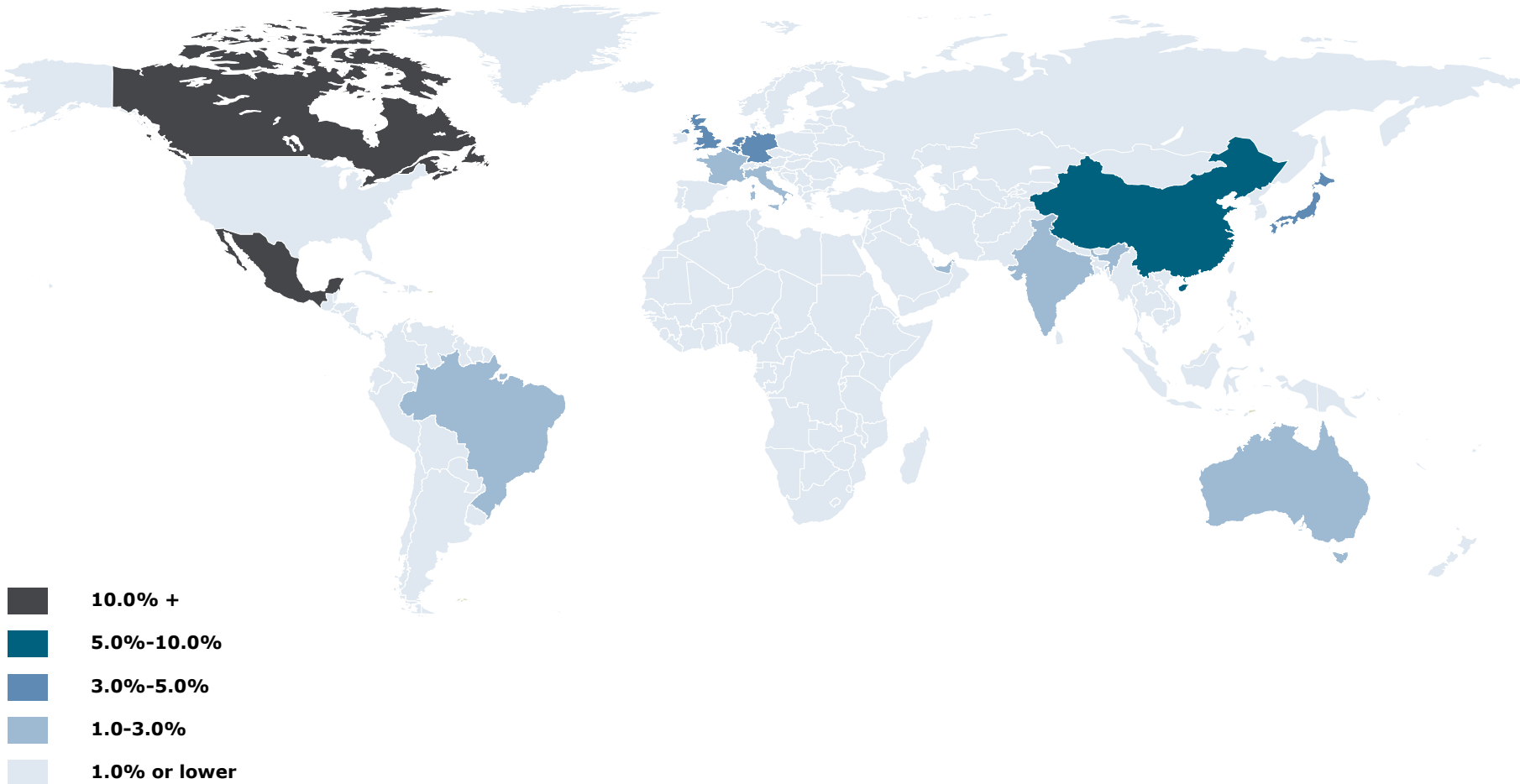
Philadelphia Fed New Orders Index
Diffusion Index



Source: Philadelphia Federal Reserve Bank and Wells Fargo Securities

Trade: NAFTA Key to Pennsylvania

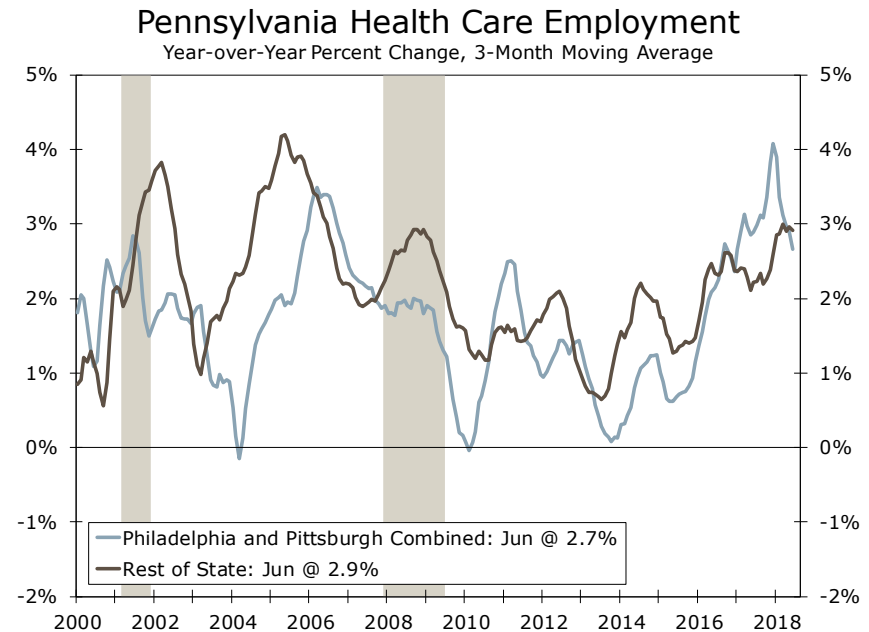
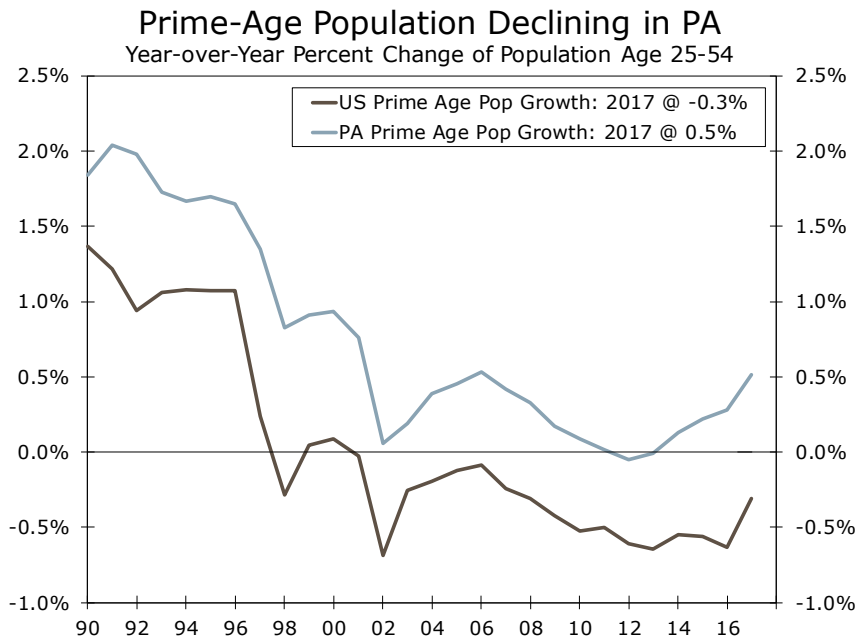
- Canada and Mexico account for more than one-third of Pennsylvania's exports, making a potential NAFTA renegotiation important to the state.



Source: U.S. Department of Commerce and Wells Fargo Securities

Structural Challenges: An Aging Population

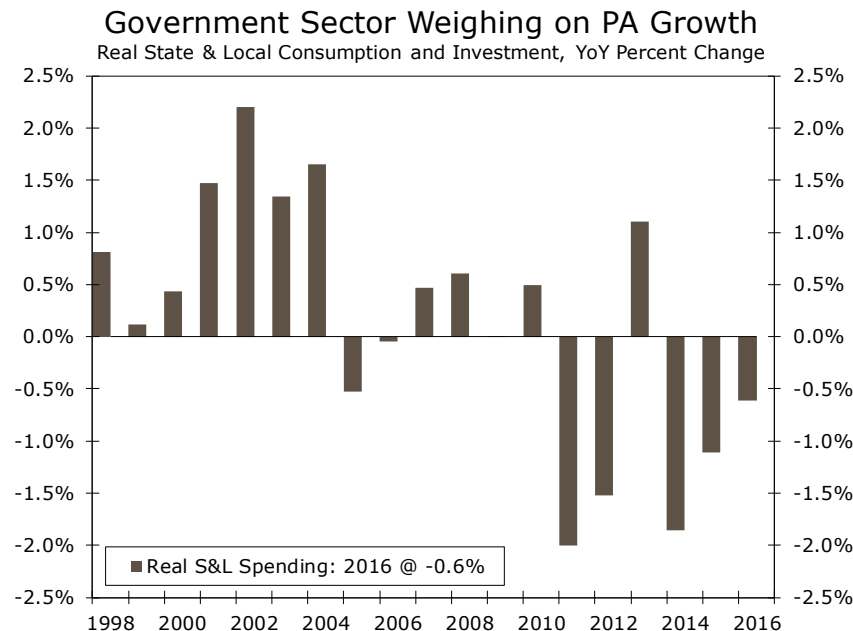
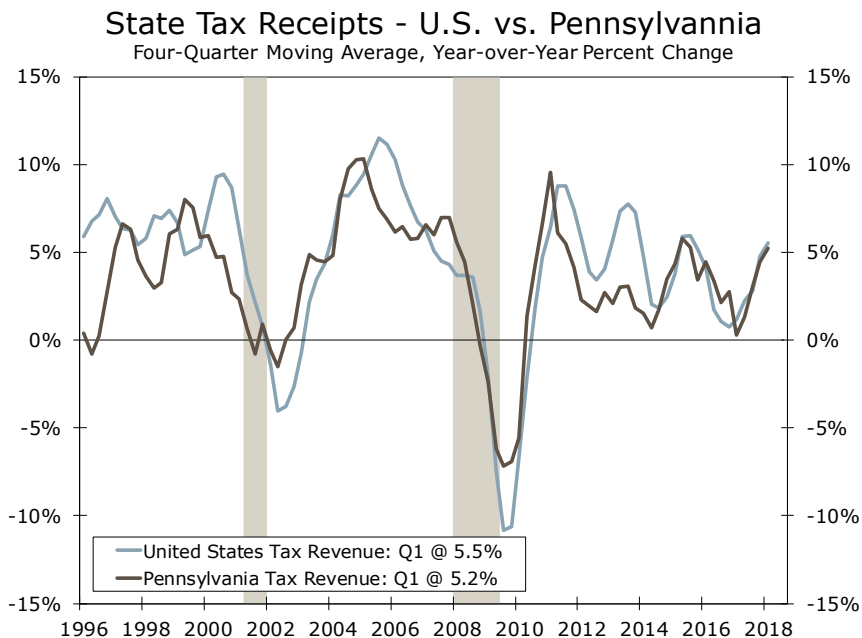
- Potential GDP growth in Pennsylvania is slower than the nation as a whole, partially due to an aging and slow-growing population
- Pennsylvania's prime-age population, or those between the ages of 25 and 54, continues to contract. **As of 2016, 17.4 percent of Pennsylvania's population was over the age of 65 compared to 15.2 percent nationally.**
- An aging population has benefited parts of the healthcare industry, however.



Source: U.S. Department of Commerce, U.S. Department of Labor and Wells Fargo Securities

Structural Challenges: Fiscal Constraints

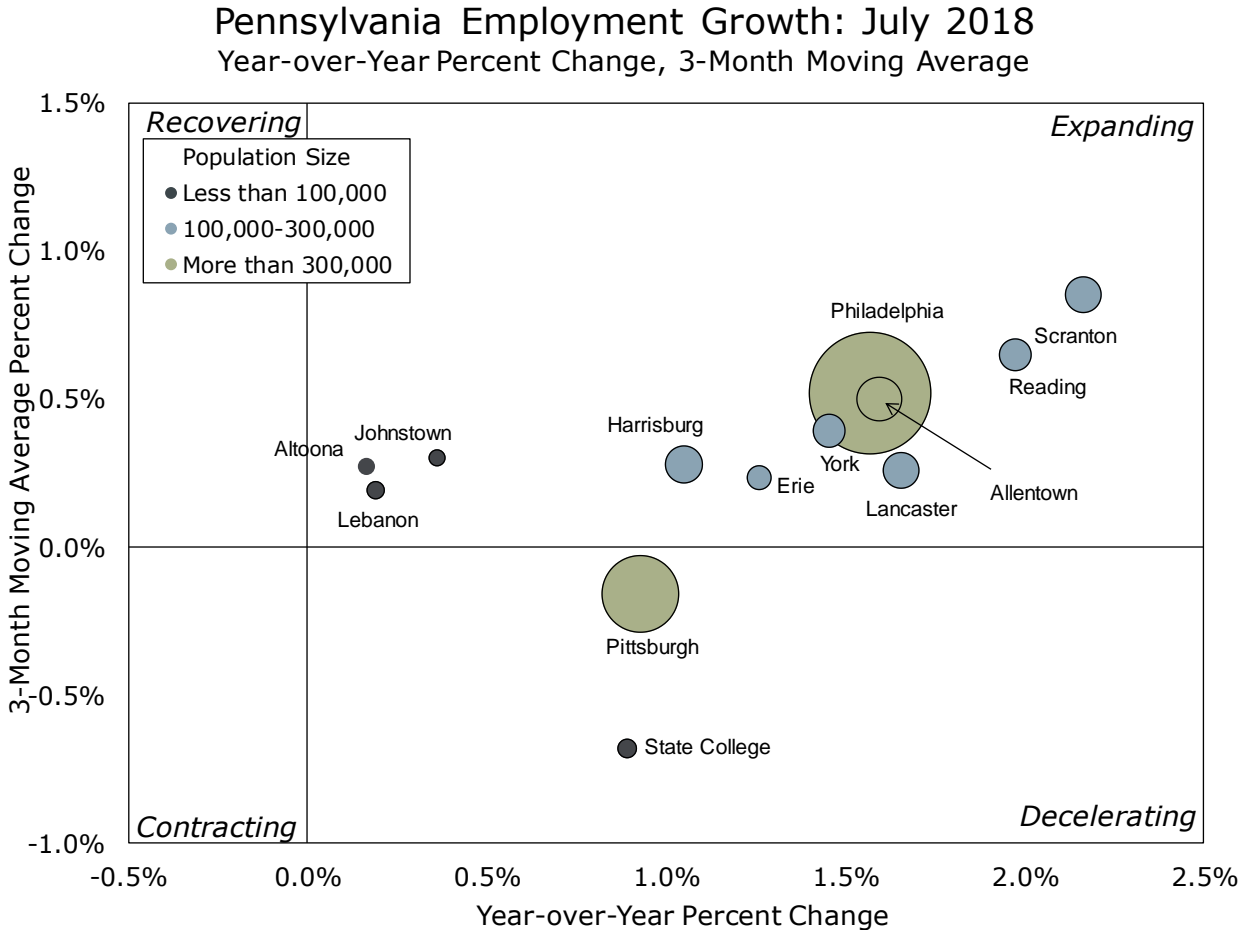
- Pennsylvania faces one of the nation's largest state pension funding gaps, and state tax receipt growth has averaged just 2.5 percent over the past five years.
- Escalating health care costs, an aging population and rising enrollment have also created Medicaid-related budget strains.
- Against this backdrop, real state and local consumption and investment in Pennsylvania has declined every year but one since 2010.



Source: U.S. Department of Commerce and Wells Fargo Securities

Slow but Steady Growth in Philadelphia, Pittsburgh Employment

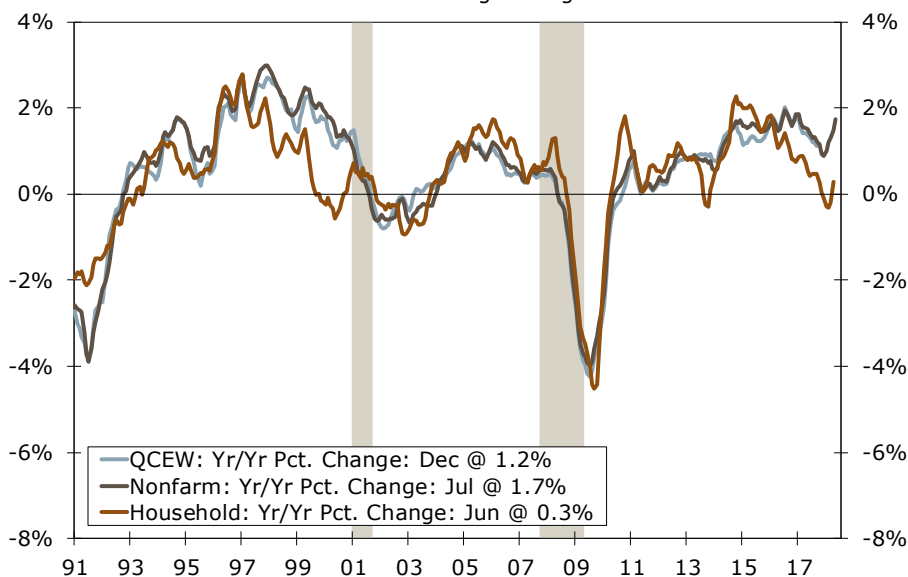
- Most Pennsylvania metros added jobs over the past year, led by the two heavyweight cities and a surprise to the upside from Scranton.



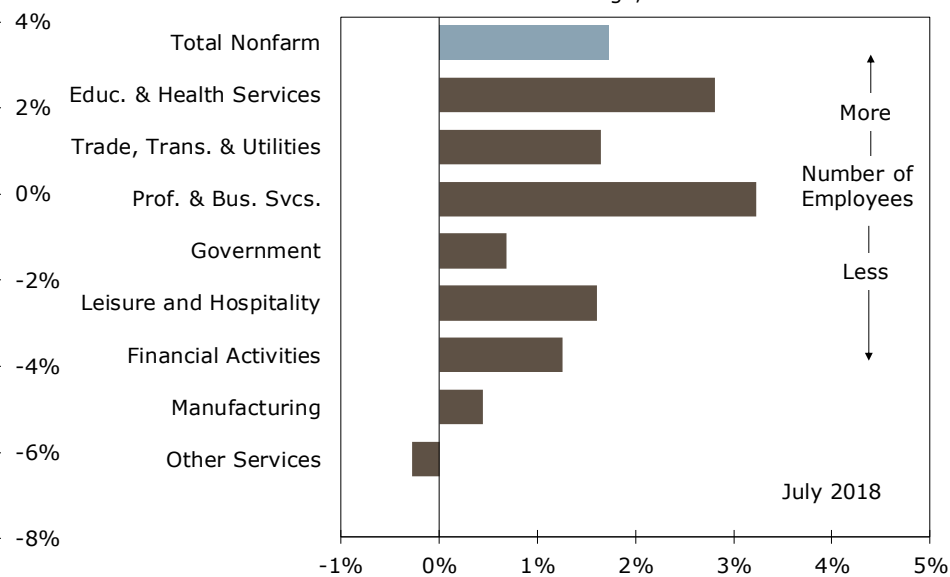
Source: U.S. Department of Labor and Wells Fargo Securities

- Overall payroll growth has slowed in Philadelphia, but nearly all sectors are adding jobs. Education & health services is the largest employment sector and the second fastest growing in Philadelphia. Outpatient services are growing the fastest within the sector.
- Home prices are generally lower in Philadelphia than most major Mid-Atlantic/New England metro areas, which could help attract workers as affordability concerns spread nationwide.

Philadelphia MSA Nonfarm Employment
3-Month Moving Averages



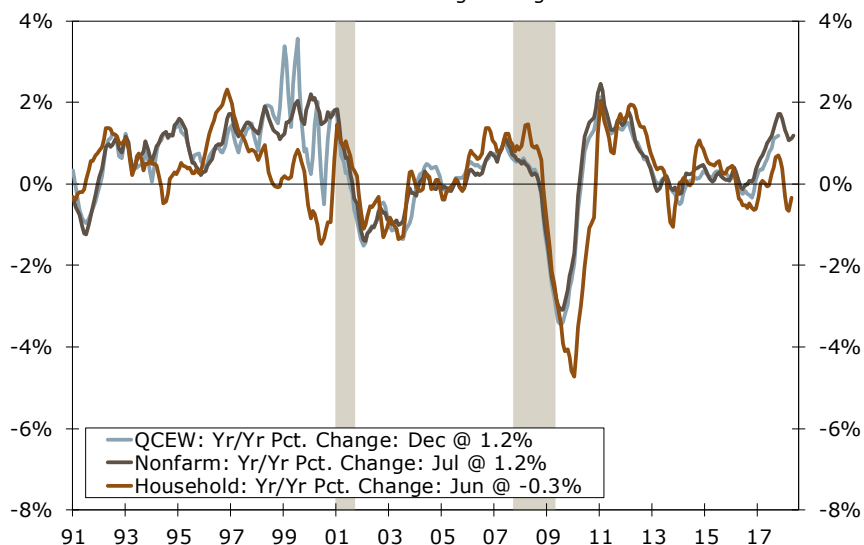
Philadelphia MSA Employment Growth By Industry
Year-over-Year Percent Change, 3-MMA



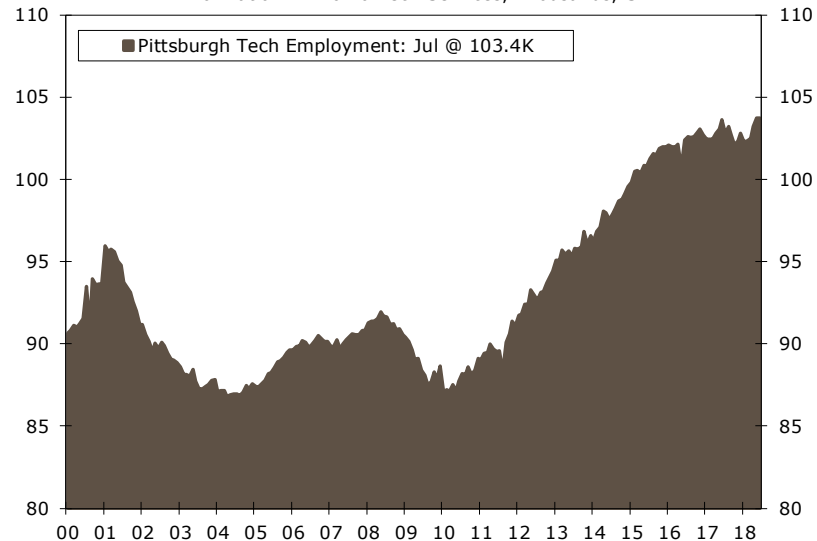
Source: U.S. Department of Labor and Wells Fargo Securities

- Pittsburgh job growth has been sluggish compared to the rest of the nation, largely due to its older and slower growing labor force.
- The metro area has had success in attracting technology firms thanks to a robust higher education system. Industry leaders such as Google, Amazon and Uber have expanded in the city, driving technology-related employment growth and spurring demand for commercial space and apartments.

Pittsburgh MSA Nonfarm Employment
3-Month Moving Averages



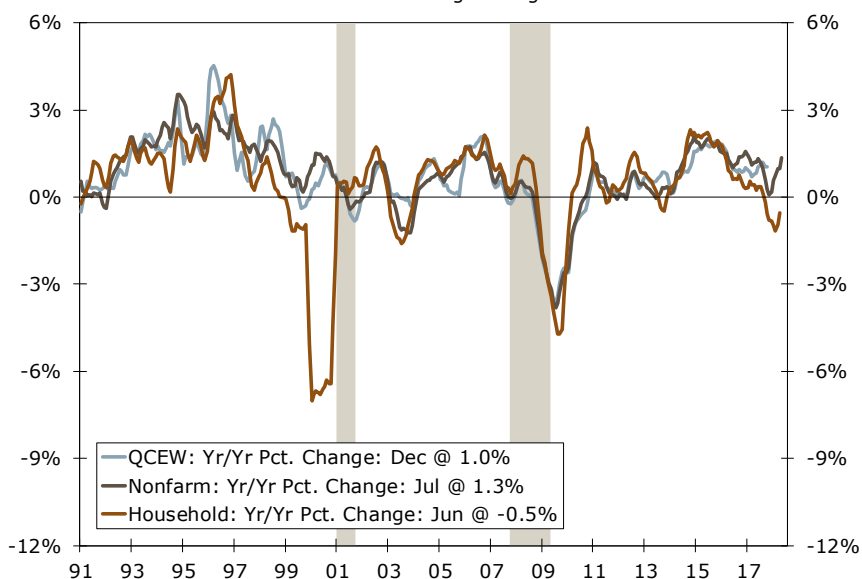
Pittsburgh Tech Employment
Information + Prof. & Tech Services, Thousands, SA



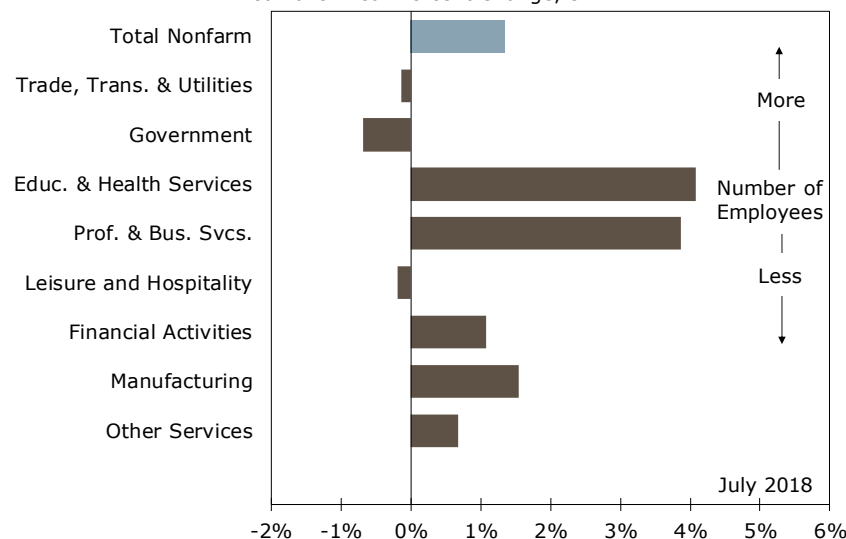
Source: U.S. Department of Labor and Wells Fargo Securities

- Harrisburg employment is up just 0.7 percent over the year, though education & health services jobs are up more than 4 percent. This speaks to the aging population in the area as well as the fiscal challenges facing the state.
- Construction employment is up solidly, partially due to the continued expansion of the Hershey Medical Center and the state's favorable location for transportation & warehousing.

Harrisburg MSA Nonfarm Employment
3-Month Moving Averages



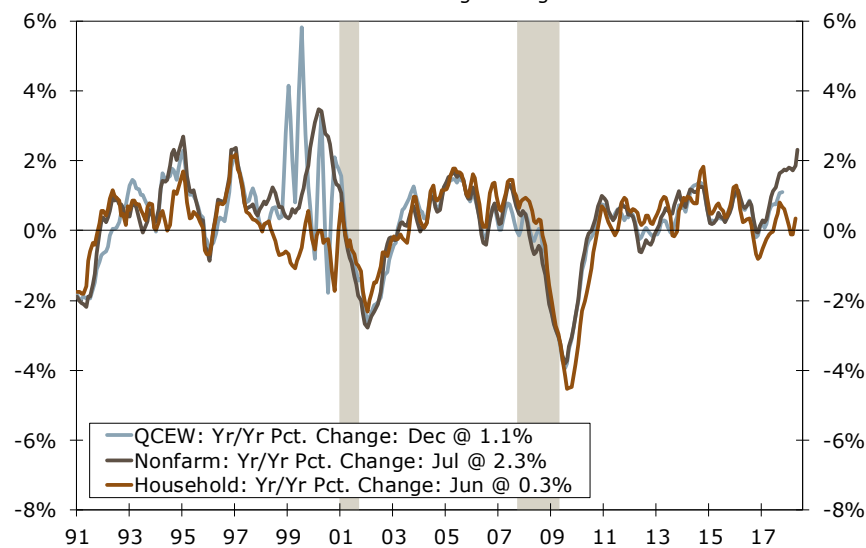
Harrisburg MSA Employment Growth By Industry
Year-over-Year Percent Change, 3-MMA



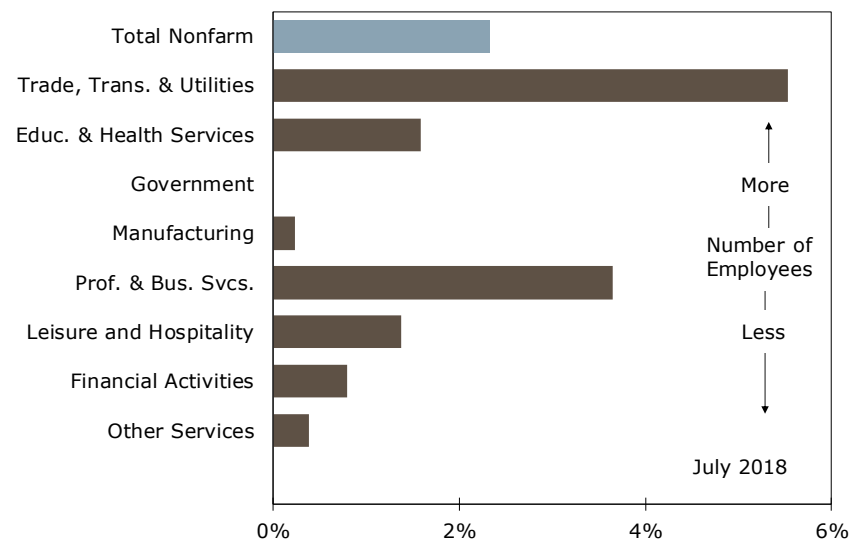
Source: U.S. Department of Labor and Wells Fargo Securities

- Scranton has been one of the better performing job markets in the state of late after being hit particularly hard during the downturn and recovery.
- Professional & business services has added the most jobs to the area's economy, while manufacturing and trade activity have also provided a boost.
- Amid this improvement, Scranton eked out a small population increase that marks the largest gain since 2010.

Scranton MSA Nonfarm Employment
3-Month Moving Averages



Scranton MSA Employment Growth By Industry
Year-over-Year Percent Change, 3-MMA



Source: U.S. Department of Labor and Wells Fargo Securities

Wells Fargo U.S. Economic Forecast

	Actual				Forecast				Actual			Forecast	
	2017				2018				2015	2016	2017	2018	2019
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q					
Real Gross Domestic Product ¹	1.8	3.0	2.8	2.3	2.2	4.1	3.2	3.3	2.9	1.6	2.2	2.9	3.0
Personal Consumption	1.8	2.9	2.2	3.9	0.5	4.0	2.6	2.8	3.7	2.7	2.5	2.6	2.7
Inflation Indicators ²													
PCE Deflator	2.0	1.6	1.6	1.8	1.9	2.2	2.3	2.2	0.3	1.1	1.8	2.1	2.4
Consumer Price Index	2.6	1.9	2.0	2.1	2.3	2.6	2.7	2.4	0.1	1.3	2.1	2.5	2.5
Industrial Production ¹	1.0	5.0	-1.5	7.7	2.4	6.0	2.7	2.4	-1.0	-1.9	1.6	3.7	2.7
Corporate Profits Before Taxes ²	3.0	3.6	2.8	3.3	5.9	4.1	3.2	0.8	-2.9	-1.1	3.2	3.5	-0.6
Trade Weighted Dollar Index ³	94.0	90.5	88.1	87.5	86.3	90.0	90.0	90.3	91.0	91.5	91.1	89.1	87.1
Unemployment Rate	4.7	4.3	4.3	4.1	4.1	3.9	3.9	3.8	5.3	4.9	4.4	3.9	3.6
Housing Starts ⁴	1.23	1.17	1.17	1.26	1.32	1.26	1.31	1.32	1.11	1.17	1.20	1.30	1.38
Quarter-End Interest Rates ⁵													
Federal Funds Target Rate	1.00	1.25	1.25	1.50	1.75	2.00	2.25	2.50	0.27	0.52	1.13	2.13	2.75
Conventional Mortgage Rate	4.20	3.90	3.81	3.94	4.44	4.57	4.65	4.80	3.85	3.65	3.99	4.62	5.08
10 Year Note	2.40	2.31	2.33	2.40	2.74	2.85	3.05	3.20	2.14	1.84	2.33	2.96	3.48

Forecast as of: August 8, 2018

¹ Compound Annual Growth Rate Quarter-over-Quarter

² Year-over-Year Percentage Change

³ Federal Reserve Major Currency Index, 1973=100 - Quarter End

⁴ Millions of Units

⁵ Annual Numbers Represent Averages

Source: IHS Markit and Wells Fargo Securities

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