Economics Group



Special Commentary

Mark Vitner, Senior Economist

mark.vitner@wellsfargo.com • (704) 410-3277

Charlie Dougherty, Economist

charles.dougherty@wellsfargo.com • (704) 410-6542

Matthew Honnold, Economic Analyst

matthew.honnold@wellsfargo.com • (704) 410-3059

Penn State vs. Ohio State

Big Battle in the Big Ten

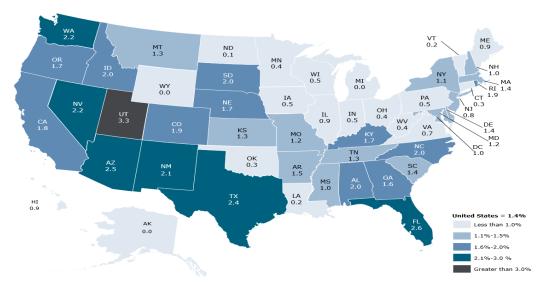
Saturday brings one of the final top-ten matchups of the regular season, as the #9 Penn State Nittany Lions take on the #2 Ohio State Buckeyes, with the Big Ten East title and a berth to the Big Ten Championship Game on the line. Penn State comes to Columbus with only one loss, against a then-undefeated Minnesota team that played one of their best games of the season. Undefeated Ohio State is often described as the most complete team in the nation. This is an understatement. The Buckeyes have the #1 scoring offense (51.5 points per game) and #1 scoring defense (9.8 points per game) in the nation, and an average margin of victory of 42 points.

The Big Ten
East title is on
the line in
Columbus this
weekend.

Penn State will certainly have their hands full in the Horseshoe in front of 102,780 fans, some of which will have attended ESPN College GameDay earlier that morning. The pregame show is a regular at both schools—it has been to Ohio State 19 times and Penn State seven times, and the matchup between the schools has been the subject of the show 10 times, the second most behind Alabama-LSU. Every show features host Lee Corso donning the headgear of the team he expects to win, a tradition that began on October 5, 1996, when he picked Ohio State to defeat Penn State. Since then, his record is 225-119, and he will be hard-pressed not to pick the 18-point favorite Buckeyes. That said, this series has been incredibly competitive lately. Ohio State won by one point both of the last two seasons, overcoming a 12-point deficit with eight minutes left last year and an 11-point deficit with just five minutes remaining the year before.

Ohio and Pennsylvania are relatively more exposed to the struggling manufacturing and tradable goods sectors, and one can clearly see the resulting slowdown in job growth across the region.

Figure 1 — Year-over-Year Employment Growth, October 2019



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

Together we'll go far



Penn State History & Football

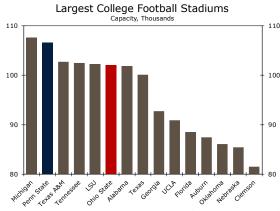
Penn State was founded in 1855 with the goal of developing and applying scientific principles to agriculture, and it became Pennsylvania's only land grant university in 1863 after the passage of the Morrill Act of 1862. President George Atherton led the expansion into liberal arts and engineering in the 1880s, and the graduate school was founded in 1922. The hospital and medical school were founded in 1967, with the help of a \$50 million grant from the estate of chocolatier and philanthropist Milton Hersey, in the town of Hershey, 100 miles southeast of State College. The main campus is located in State College, but today there are 24 campuses throughout Pennsylvania, a system that dates back to the 1930s when various branches were established to meet the needs of Pennsylvanians who were location-bound by the hard times of the Great Depression.

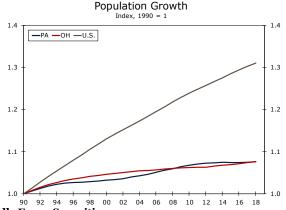
Penn State is the economic engine of State College. The flagship campus is the economic engine of the State College Metropolitan Statistical Area (MSA), which is roughly halfway between Philadelphia and Pittsburgh. The region is also known to many as 'Happy Valley,' which corresponds roughly to Centre County and the Nittany Valley. The origin of the name is not perfectly clear. It may reflect the relative peace of mind of the region's residents during the Great Depression, when the presence of the massive state university shielded them from some of the economic hardships sweeping the rest of the country. It may also reflect a similar state of mind of students and residents of any generation—and in any phase of the economic cycle—who study and live in the isolated, idyllic valley away from the busy urban life of Philadelphia and Pittsburgh. Either way, the name spread in the 1960s, as the school's football program rose to national prominence.

Pennsylvania is aiming to transform its economy.

While Penn State continues to be the center of the economy of Centre County, its 24 campuses and over \$900 million in annual research expenditures are key for promoting innovation and entrepreneurship across Pennsylvania, particularly as the state angles to transition from manufacturing, energy and tradable sectors to education, healthcare and other related service industries. The school receives the bulk of its funding from the federal government, and its largest research emphases are defense, engineering and agricultural sciences. The most recent year of data indicates that the research resulted in 158 inventions, 64 U.S. patents and eight start-ups. Invent Penn State was launched in 2015 to redefine "the university's land grant mission to include entrepreneurship and innovation," and it provides students with access to business accelerators, co-working space, legal and technical advice and seed funding. Perhaps an even more important asset to students are the more than half a million fiercely loyal alumni.

Figure 2 Figure 3





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

Penn State has a large alumni network across the nation.

Much of that loyalty can be attributed to the campus life and traditions of Penn State. The football program, which was independent from 1892 until joining the Big Ten in 1992, has 896 victories and two national championships, in 1982 and 1986. They play in Beaver Stadium, the second largest stadium in the country with a capacity of 106,572, which hosts the annual "Whiteout" game. Program alumni include Heisman Trophy winner John Cappelletti, Jack Ham, Franco Harris,

Mike Michalske, Robbie Gould, NaVorro Bowman, Sean Lee and 2018 NFL Rookie of the Year Saquon Barkley.

Students also participate in an annual dance marathon called THON, which is the largest studentrun philanthropy event in the country and has raised over \$168 million for childhood cancer
support and research. Another State College mainstay is Berkey Creamery, which has operated
since 1865. The beloved establishment churns out cheese, butter and ice cream, and is also heavily
integrated with the Department of Food Science's dairy research and education efforts. In fact, Ben
Cohen and Jerry Greenfield—of Ben and Jerry's fame—learned their craft partly by paying the
\$5 registration fee to receive a textbook in the mail as part of Penn State's ice cream-making
correspondence course. Even Pittsburgh legend Mister Rogers filmed an episode of *Mister Rogers' Neighborhood* at the Creamery, which demonstrated for the television audience how to make
strawberry ice cream. The Creamery has two strict rules—only blue and white sprinkles, and no
mixing flavors. Only one customer has ever been allowed to combine flavors—President Bill Clinton
visited in 1996 and combined Peachy Paterno with Cheery Quist. He tried his luck again in 2000
when he was out of office, but he was not allowed to repeat his prior dairy delinquency.

Figure 4

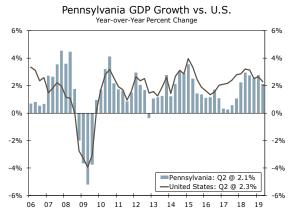
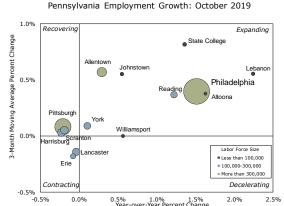


Figure 5



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

Pennsylvania Economic Outlook

Recently released state GDP data revealed that Pennsylvania's economy expanded at a 1.7% annualized pace in the second quarter, slightly below the national rate of 2.0%. The largest contributors to economic growth were mining, oil & gas (added 0.51 percentage points to the headline growth rate of real GDP), professional, scientific & technical services (+0.51), government (+0.26), utilities (+0.26), management (+0.25) and finance & insurance (+0.21), while wholesale trade dragged on growth (-0.36).

Much of the growth in professional, scientific & technical services is centered in Philadelphia and Pittsburgh, which both boast extensive higher education networks. This is no accident, as the research dollars and pipeline of talent have been instrumental in the transition of the metros into the new knowledge and innovation-based economy. Pittsburgh in particular, with major Uber and Google presences as well as a burgeoning healthcare sector, was a major success story earlier in this recovery but has since cooled off, and employment is actually down 0.2% over the past year. Philadelphia is seeing stronger growth, with payrolls rising 1.5%, as it continues to develop its growing tech and life sciences clusters. Employment statewide is rising 0.5%, while payrolls are up 1.4% in State College.

The unemployment rate in State College has been steady around 3% for the past couple of years. Even in the depths of the Great Recession, it only reached 6.5%, indicative of the relative insulation of Happy Valley from the national economy, where the unemployment rate crested at 10.0% in October 2009. Statewide the unemployment rate is 4.2%, up from 3.8% in June but equal to the

Philadelphia and Pittsburgh both boast extensive higher education networks.

The unemployment rate is rising across Pennsylvania.

rate from last October. Over the past 12 months, 11 of the state's 67 counties have seen their unemployment rates rise. Over the past six months, however, the number rises to 41 counties.

Ohio State & Ohio Economic Outlook

This is the second time this season we have covered Ohio State. For more background on Ohio, please see our first <u>report</u>.

Coach Ryan Day has the Buckeyes performing at a very high level in his first season, and we suspect he would like to capture some of the spirit of legendary coach Woody Hayes, who explained his decision to go for a two-point conversion despite being up 50-14 against rival Michigan in 1968 by saying, "because I couldn't go for three." The veracity of the quote is certainly in doubt, but it has been repeated enough, including by Lou Holtz, who was on the Buckeyes coaching staff in 1968, to enter into college football lore.

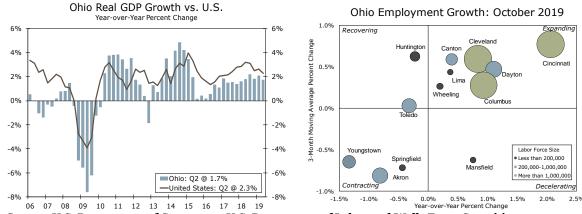
Cincinnati is leading the Ohio economy.

Ohio's economy expanded at a 1.3% annualized pace in Q2, lagging the national rate. Mining and oil & gas (+0.46 percentage point contribution to the headline rate of real GDP growth), professional, scientific & technical services (+0.41) and government (+0.30) were the biggest drivers, while wholesale trade was the largest drag (-0.57). Payrolls are rising very modestly across the state at a 0.5% year-over-year pace, with Cincinnati significantly outperforming (see Figure 7). Payroll growth in Columbus has slowed but employment is still rising about 0.8% year-over-year.

The unemployment rate in the state capital remains low at 3.6%, while the statewide rate has ticked up a bit to 4.2% from 4.0% in July, but it is still down from the 4.6% rate last October. Of Ohio's 88 counties, only eight have seen their unemployment rate rise over the past year. And, unlike Pennsylvania, if you adjust the timeframe, the number stays low—only ten counties' unemployment rates have risen over the past six months.

88 cou

Figure 6 Figure 7



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

Football Outlook

Assuming that Penn State will beat Rutgers next weekend, the winner of this Saturday's game will play the winner of the Big Ten West, which will either be #11 Minnesota, #14 Wisconsin or Illinois, and have a great shot at making the College Football Playoff.

Penn State is led by Cincinnati, Ohio native and St. Xavier High School graduate Sean Clifford, who has thrown for 22 touchdowns and only six interceptions this season. The Nittany Lion defense is also stout, allowing only 13 points per game, but it will be heavily challenged by the Buckeyes offense, led by quarterback and Georgia transfer Justin Fields. Fields was the second highest rated quarterback recruit in his class, behind Clemson's Trevor Lawrence, and has thrown for 31 touchdowns and just one interception, while adding 10 more scores on the ground, in his first season with the Buckeyes.

Ohio States leads the series 19-14 and has won six of the past seven, but ten of the past 18 meetings have been decided by just one score. The "Other Border War" was first played in 1912, but the two teams met only sporadically until Penn State joined the Big Ten in 1992, initiating the annual clash. During that time, the schools have combined for 17 Big Ten titles. Penn State will be eager to avenge its one-point losses the past two years, and it desperately needs a victory to revive its Playoff hopes. Ohio State is a heavy favorite but cannot afford to slip up at home, before heading to Ann Arbor to close out the season versus Michigan.

Ohio States leads the series 19-14.

Wells Fargo Securities Economics Group

Jay H. Bryson, Ph.D.	Acting Chief Economist	(704) 410-3274	jay.bryson@wellsfargo.com
Mark Vitner	Senior Economist	(704) 410-3277	mark.vitner@wellsfargo.com
Sam Bullard	Senior Economist	(704) 410-3280	sam.bullard@wellsfargo.com
Nick Bennenbroek	Macro Strategist	(212) 214-5636	nicholas. bennen broek @wells fargo.com
Tim Quinlan	Senior Economist	(704) 410-3283	tim.quinlan@wellsfargo.com
Azhar Iqbal	Econometrician	(212) 214-2029	azhar.iqbal@wellsfargo.com
Sarah House	Senior Economist	(704) 410-3282	sarah.house@wellsfargo.com
Charlie Dougherty	Economist	(704) 410-6542	charles.dougherty@wellsfargo.com
Erik Nelson	Macro Strategist	(212) 214-5652	erik.f.nelson@wellsfargo.com
Michael Pugliese	Economist	(212) 214-5058	michael.d.pugliese@wellsfargo.com
Brendan McKenna	Macro Strategist	(212) 214-5637	brendan.mckenna@wellsfargo.com
Shannon Seery	Economic Analyst	(704) 410-1681	shannon.seery@wellsfargo.com
Matthew Honnold	Economic Analyst	(704) 410-3059	matthew.honnold@wellsfargo.com
Jen Licis	Economic Analyst	(704) 410-1309	jennifer.licis@wellsfargo.com
Hop Mathews	Economic Analyst	(704) 383-5312	hop.mathews@wellsfargo.com
Coren Burton	Administrative Assistant	(704) 410-6010	coren.burton@wellsfargo.com

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