



# PITTSBURGH ECONOMY IN A SNAPSHOT

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Carnegie  
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# PITTSBURGH, PENNSYLVANIA

## ONE OF AMERICA'S GREAT RIVER CITIES

Pittsburgh is located at the confluence of the Monongahela and Allegheny Rivers, which merge to form the Ohio River.

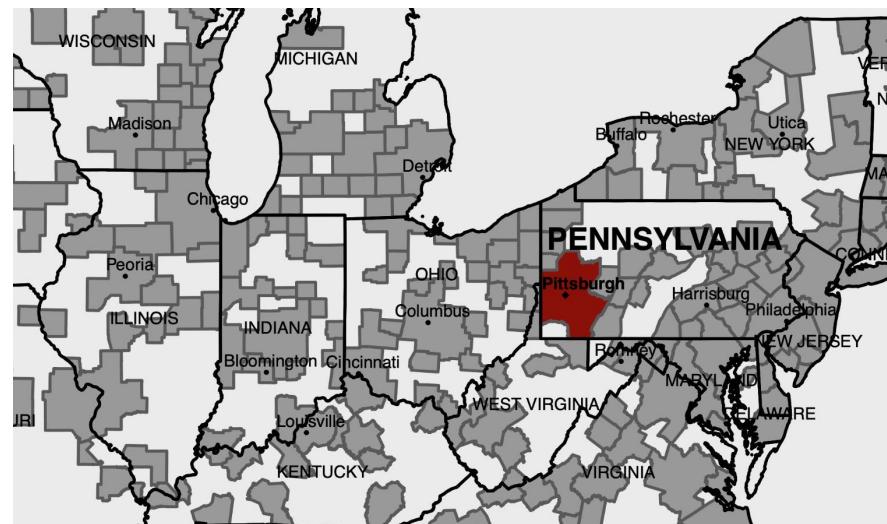
- Traditionally an industrial powerhouse dominated by the steel industry, Pittsburgh has reinvented itself as a diversified economy spanning health and educational services, banking, high tech manufacturing, tourism, and many industries in between.



## THE PITTSBURGH METROPOLITAN STATISTICAL AREA (MSA)

The Pittsburgh MSA consists is comprised of seven counties that surround the City of Pittsburgh

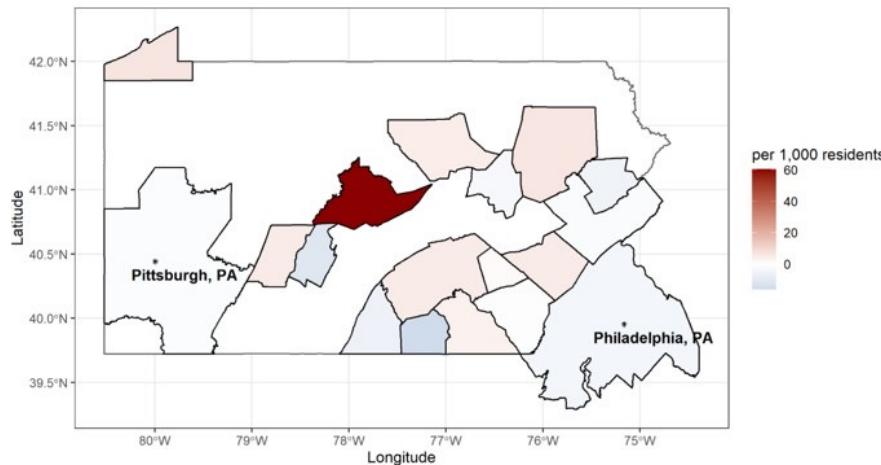
- Allegheny, Armstrong, Beaver, Butler, Fayette, Washington, and Westmoreland Counties
- Total population: 2,309,246,28 largest of the 384 U.S. MSAs



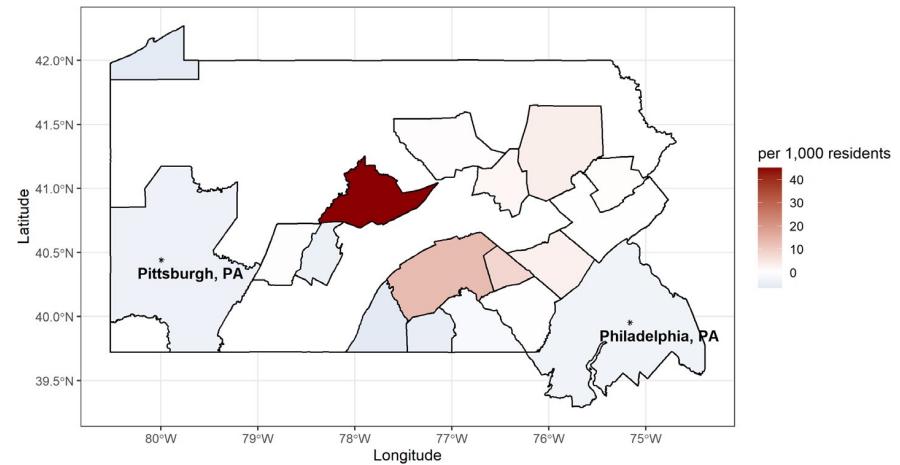
# NET MIGRATION, BY METRO STATISTICAL AREA (INFLOW)

Net migration into the Pittsburgh Metro area has been slightly negative between 2010 and 2014 (-1.22 per 1,000 residents). This tendency has accelerated slightly during the 2014-2018 period (-3.73 per 1,000 residents).

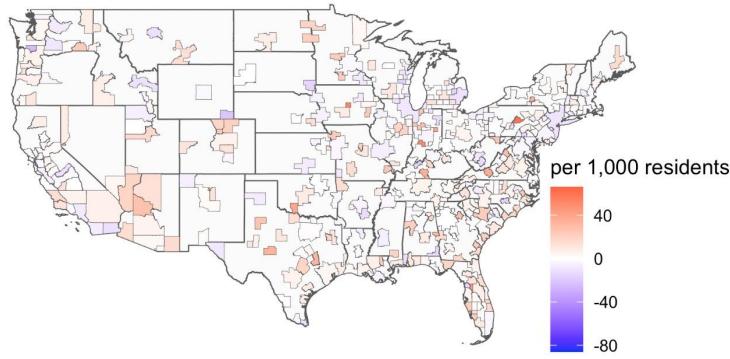
2010--2014



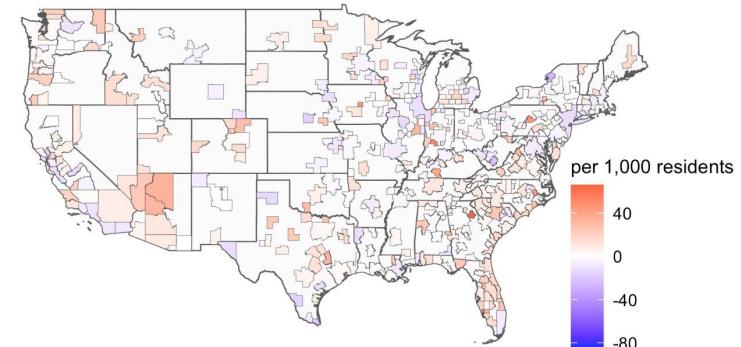
2014--2018



2010-2014



2014-2018



Source: 2010-2014 and 2014-2018 Metro-to-Metro Migration Flows from U.S. Census; The maps show the net migration into the metro statistical areas.

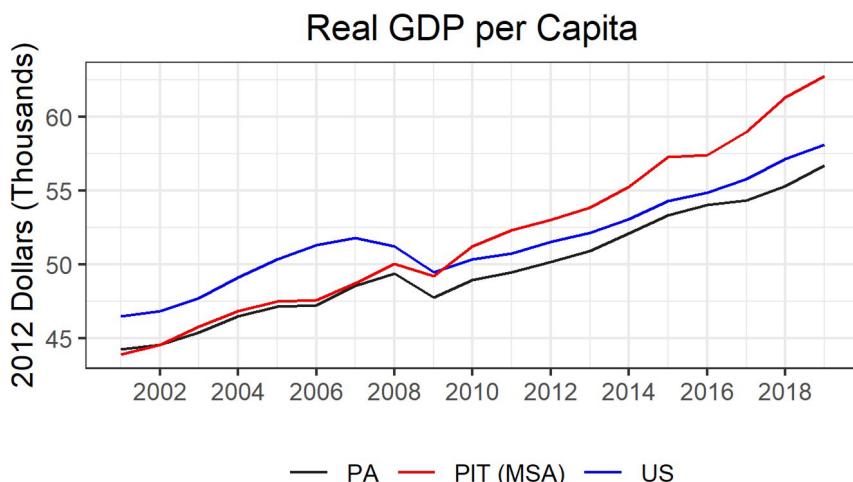


# MACROECONOMY AND HOUSING MARKET

## PIT (MSA): GDP

**Post Great Recession, growth in real GDP for the PIT MSA has outstripped its PA and U.S. counterparts**

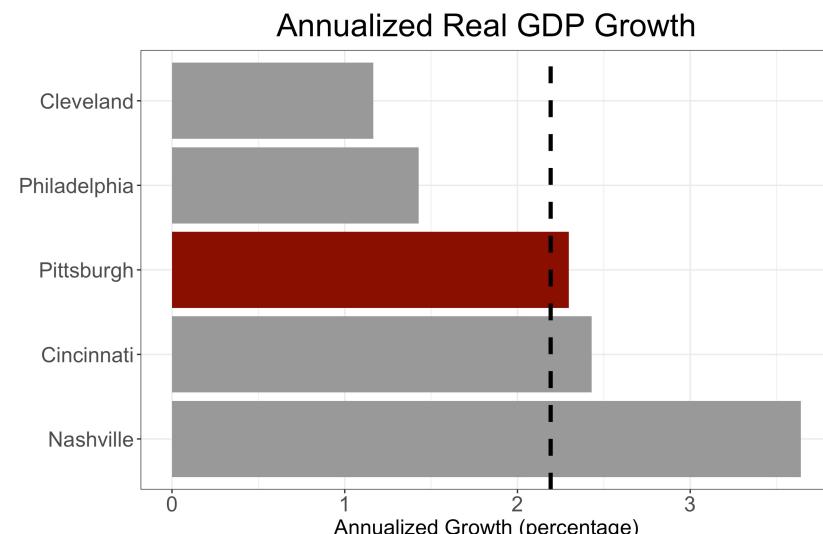
- In 2001, the Pittsburgh region's real GDP per capita was \$43,908.39, \$2,588.61 less than national GDP per capita. By 2019, this relationship strongly reversed itself with a PIT value of \$62,784.90, compared to its national counterpart of \$58,113.
- A shrinking Pittsburgh population accounts for some of its growing GDP per capita, but the effect is not large. Of the 43 percentage points increase between 2001 and 2009, just 6 percentage points are attributable to population decline.



Source: BLS via Federal Reserve Bank of St. Louis (FRED)

**Pittsburgh's annualized real GDP growth rate since the Great Recession is closest to the benchmark average**

- Out of the 5 similar MSAs, Pittsburgh had the third highest annualized real GDP growth of about 2.3%.
  - There was a 2.3% annualized growth in the real GDP as the real GDP for Pittsburgh increased from about \$50k to \$63k over the 10-year period from 2009-2019.
- Pittsburgh and Cincinnati were slightly above the benchmark average annualized real GDP growth of 2.19% with annualized GDP growths of roughly 2.30% and 2.43% respectively.
  - Nashville was roughly 1.5% greater than the benchmark average with an annualized real GDP growth of 3.64%.



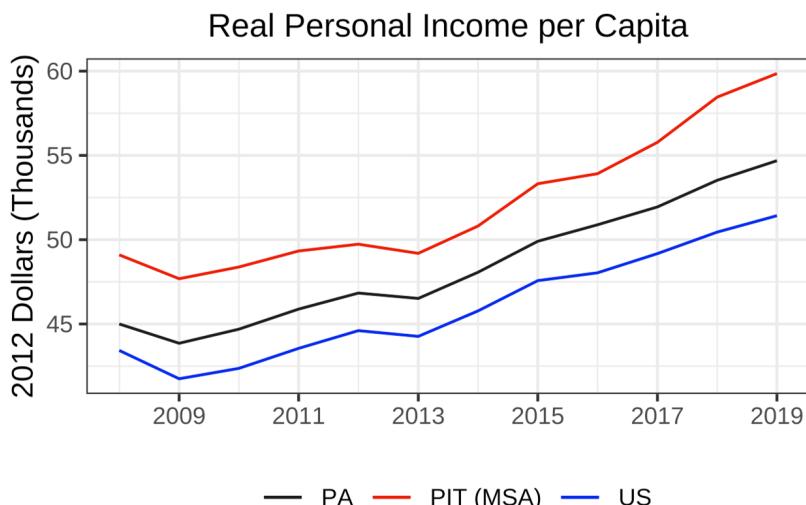
Source: BLS via Federal Reserve Bank of St. Louis (FRED); Dotted line is the benchmark average of 2.19%; Formula for annualized growth, based on 10-year growth rate:

$$\left(\frac{Y_{2019}}{Y_{2009}}\right)^{1/10} - 1 * 100$$

## PIT (MSA): Personal Income

### Pittsburgh's real personal income per capita exceeds state and national levels and is growing more rapidly

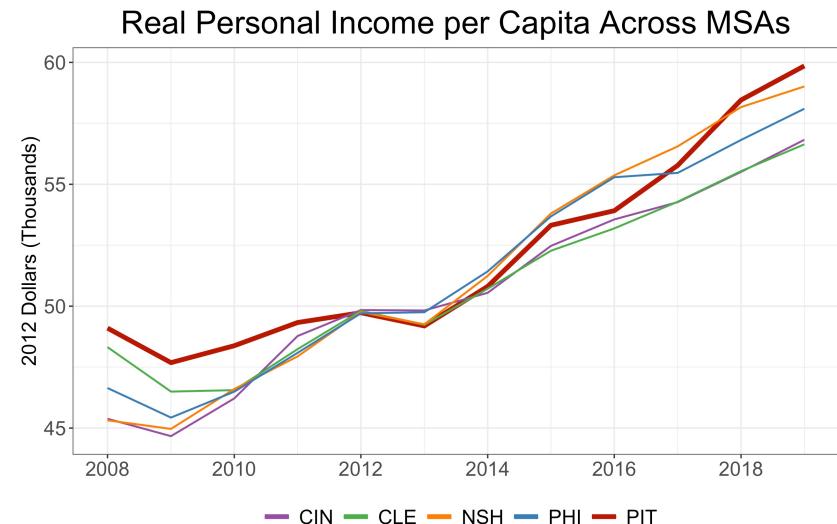
- Real personal income per capita (RPIPC) is greatest in PIT and lowest in the United States.
  - In 2016, RPIPC in PIT began to grow at a faster rate than State and National levels. In 2019, RPIPC in PIT exceeded Pennsylvania by \$5,169 and the United States by \$8,432.
- RPIPC increased by over 15% for all three regions (the United States, Pennsylvania, and PIT MSA) from 2012 to 2019.
  - The average increase since 2012 is \$6,819 for the United States, \$7,853 for Pennsylvania, and \$10,124 for PIT, with RPIPC exhibiting the greatest percentage increase on the regional level.



Source: BLS via Federal Reserve Bank of St. Louis (FRED)

### Real personal income per capita follows similar trends across 5 comparable MSAs

- The trend in real personal income per capita (RPIPC) for PIT begins to pull ahead of the other 4 MSAs in 2015.
  - As a result, 2019 PIT RPIPC exceeds Cincinnati by \$3,031, Cleveland by \$3,217, Nashville by \$843, and Philadelphia by \$1,757.
- Growth rates from 2008 to 2019 varied across the 5 MSAs, with Pittsburgh exhibiting the fourth most net growth.
  - Since 2008, RPIPC has grown 25.2% in Cincinnati, 17.2% in Cleveland, 30.2% in Nashville (the city with the highest net growth), 24.6% in Philadelphia, and 21.9% in Pittsburgh.

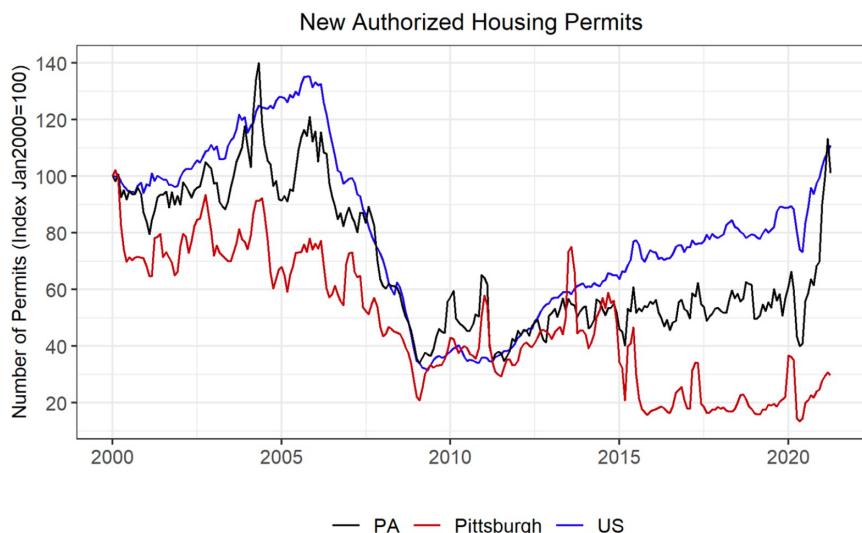


Source: BLS via Federal Reserve Bank of St. Louis (FRED)  
Note: Personal income data only extends back to 2008.

# New Housing Construction

## The U.S. and PA issued more permits than before pandemic. Pittsburgh is still below pre-pandemic levels

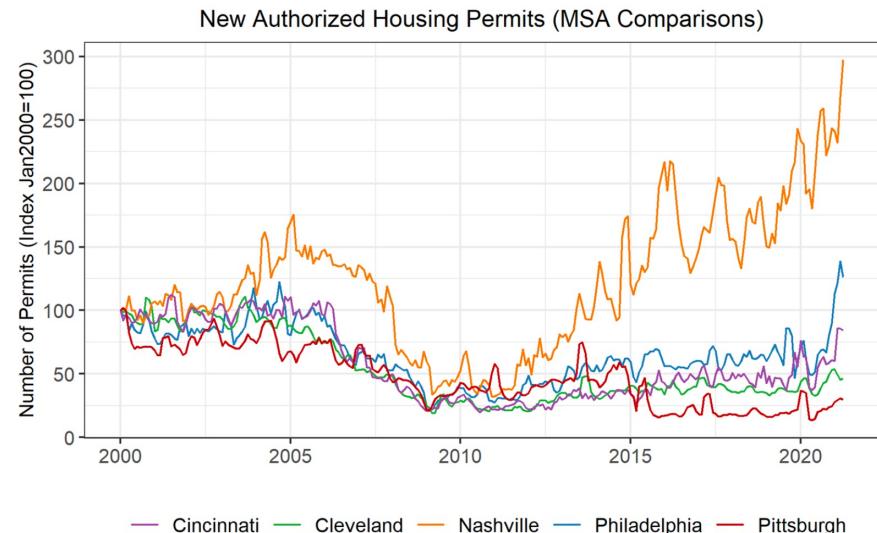
- Post Great Recession, new house construction in both PA and the U.S. has seen robust growth. Not so for Pittsburgh, where the 2010-2019 average is 32.9% lower than the 2000-2019 average.
- At the onset of the pandemic, the amount of housing permits issued per month fell significantly in the U.S., PA, and Pittsburgh.
- On average, the U.S. and PA have issued more permits during the last year than before the pandemic, eclipsing their pre-pandemic average level in 2019 by 13.5% and 29.9% respectively.
  - Pittsburgh still has not fully recovered. The average number of permits issued monthly for the last year is only 82.3% of its 2019 level.



Source: Bureau of Labor Statistics and U.S. Census via Federal Reserve Bank of Philadelphia; Lines are 3 month moving averages.

## Growth in the number of housing permits issued is lower in Pittsburgh compared to other MSAs

- On average, Philadelphia, Cincinnati, and Nashville have issued more permits during the last year than before the pandemic, now eclipsing their pre-pandemic average level in 2019 by 24.4%, 26.9%, and 23.9% respectively.
  - Cleveland's recovery has not been as robust as Philadelphia's or Nashville's, only seeing a 18.9% increase in the average number of housing permits issued since the onset of the pandemic from their 2019 average level.
- Over the last two decades, Pittsburgh and Cleveland have both experienced negative growth, with both having similar reactions to the Great Recession, and similar long-term trends.
  - Philadelphia, Cleveland, and Pittsburgh have all had net negative migration flows for the last decade. Combined with Pittsburgh's rising housing prices (as seen in next section), it can be concluded that Pittsburgh is underbuilt.

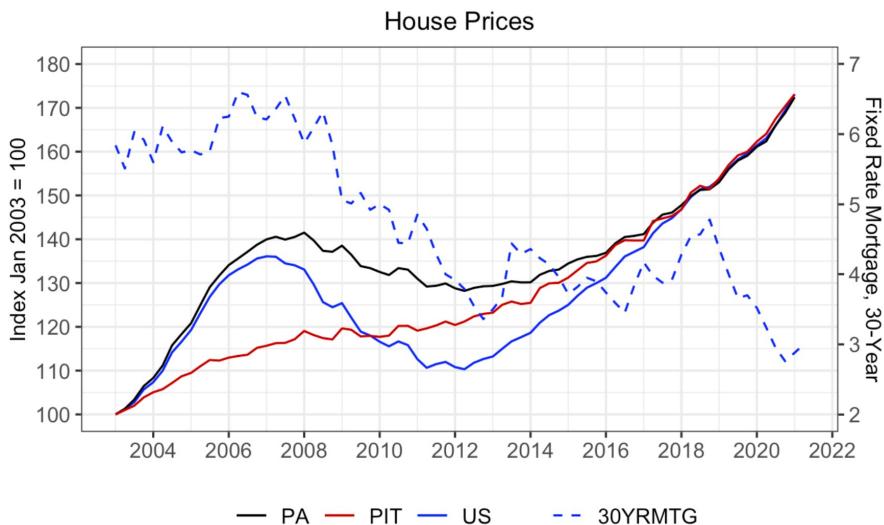


Source: U.S. Census via Federal Reserve Bank of St. Louis (FRED); Lines are 3 month moving averages.

# House Prices

## House prices in Pittsburgh has steadily increased through the COVID-19 Pandemic

- House prices in both PA and the U.S. saw rapid growth leading up to the Great Recession, followed by almost equally-rapid housing depreciation. PIT, in sharp contrast, saw neither a “run-up” nor a “sell-off.”
- Pittsburgh has had steadily increasing housing prices since 2003, with an average annual increase of roughly 3%, that appears to be accelerating in recent years.
- House price appreciation in PIT has converged to that of both PA and the U.S. since April 2018 partially due to decreasing fixed rate mortgages.

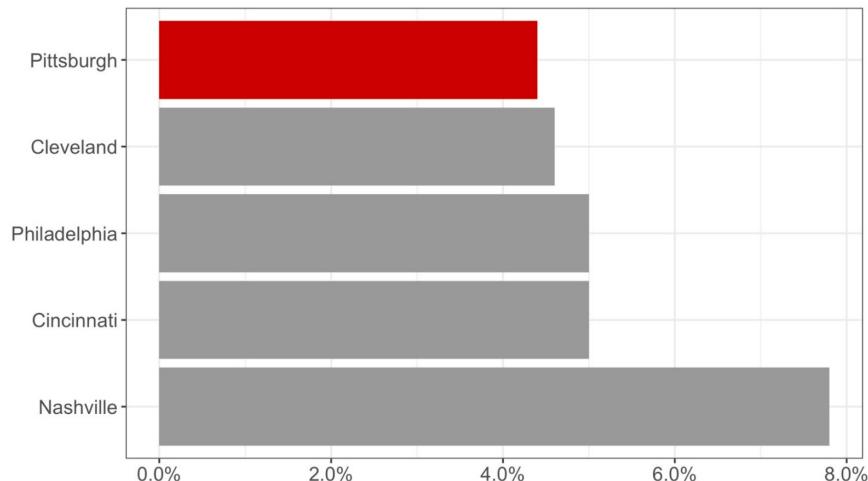


Source: Quarterly data from Freddie Mac via Federal Reserve Bank of St. Louis (FRED); Primary axis reflects the Housing Price Index; Secondary axis reflects the 30-Year Fixed Rate Mortgage Average across the U.S.

## Pittsburgh showing slower growth than similar cities

- Pittsburgh's house price appreciation has demonstrated a growth rate of roughly 4% per year since 2015.
- Pittsburgh's house prices' rate of appreciation is lower than other benchmark U.S. cities, but has been within 1% of the state and national average since 2015.
- Over the past 5 years, house prices have on average been increasing in all benchmark cities with Nashville having a particularly high price increase.

Average Annual Percent Change of HPI by MSA (2015 to 2020)



Source: Federal Reserve Bank of St. Louis (FRED)



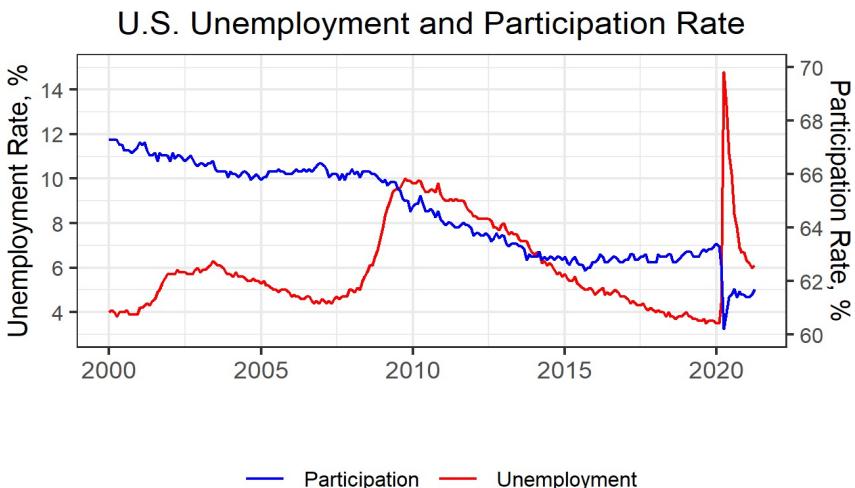
# LABOR MARKET



# Unemployment and Participation Rates

## National unemployment has recovered from COVID-19 while labor force participation remains problematic

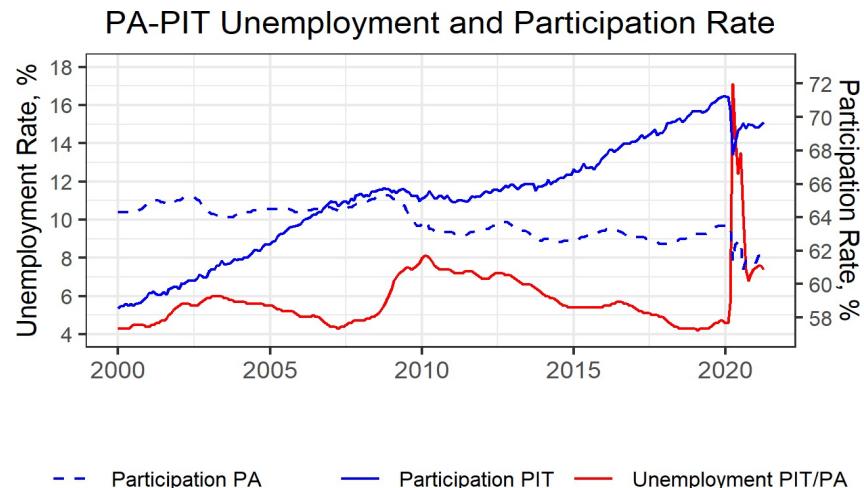
- The unemployment rate has fallen from a pandemic high of 14.8% to 6.1%, a level that, while elevated, is more in line with a typical business downturn.
- The labor-market participation has recovered only half of its COVID-19 collapse of 3 percentage points.
- Even though the economy has returned to relative normalcy, the participation rate is lower than it has been for many years, which can be a problem for labor markets.



Source: BLS via Federal Reserve Bank of St. Louis (FRED)

## Pandemic-related labor market behavior for Pennsylvania and the Pittsburgh-MSA is similar to what we see nationally

- Before the pandemic, Pittsburgh's labor force participation rate increased steadily while Pennsylvania's showed a negative trend.
- Pennsylvania labor market participation is particularly problematic, having regained only 1/2 of a percentage point after having fallen by 3 points at the onset of the pandemic

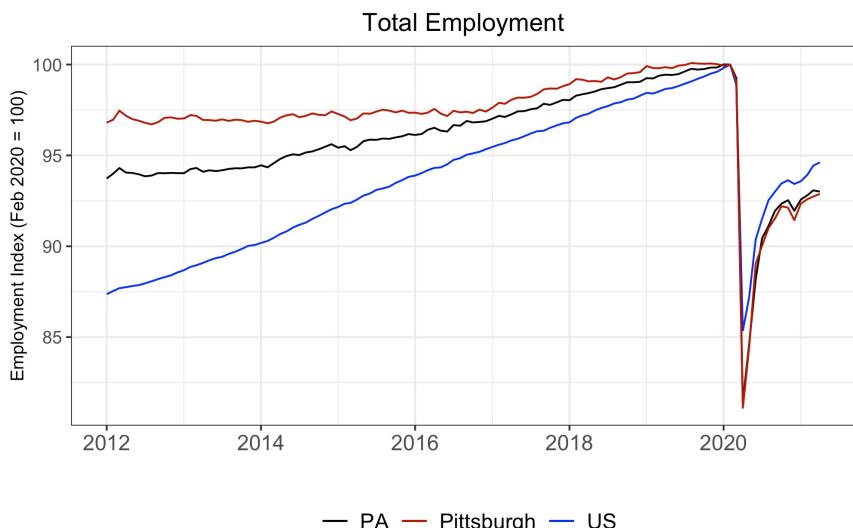


Source: BLS via Federal Reserve Bank of St. Louis (FRED); The PA and PIT unemployment rates are visually indistinguishable, hence only one line is reported; The PIT-MSA participation rate was calculated by dividing the BLS measure of the civilian labor force by the resident population of the PIT MSA; Data on the working-age population for PIT MSA were not available.

# Payroll Employment

## Total employment is 5% - 7% below its pre-pandemic level

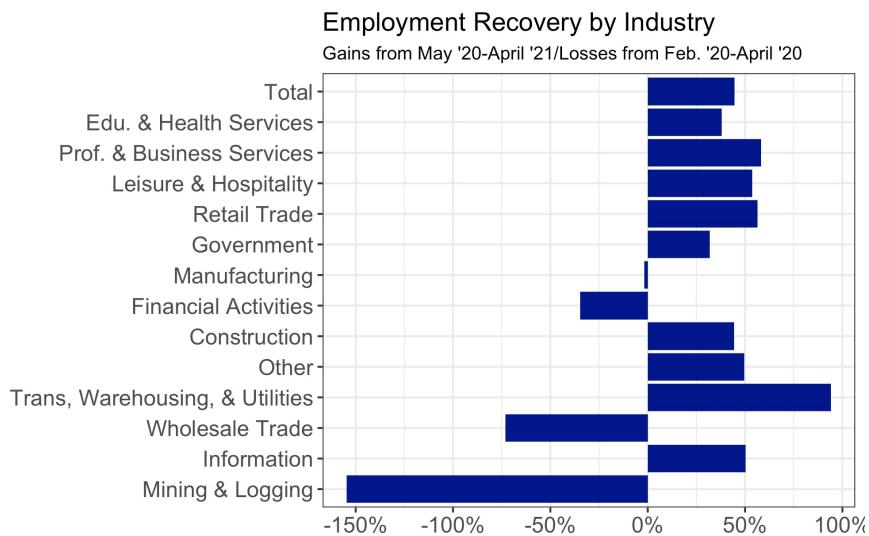
- All regions (U.S., PA, Pittsburgh MSA) have gained about 60% of employment losses from the Pandemic.
  - The U.S. remains down 11 million jobs.
  - The state of PA remains down 618,000 jobs.
  - The PIT MSA remains down 125,000 jobs.
- Relative to PA and the PIT MSA, the U.S. had a faster employment growth rate prior to the pandemic, and it has rebounded at a greater rate since then.



Source: BLS via Federal Reserve Bank of St. Louis (FRED)

## Pittsburgh industries have recovered half of pandemic-related job losses

- The Pittsburgh MSA has recovered 100,800 jobs after losing 225,900 jobs during the Pandemic.
- The Leisure & Hospitality Industry experienced the greatest number of job losses (68,000), but also the greatest number of job gains (36,000).
- The industries that are Pittsburgh's 4 largest employers lag their national counterparts in employment recovery 15% to 25%.

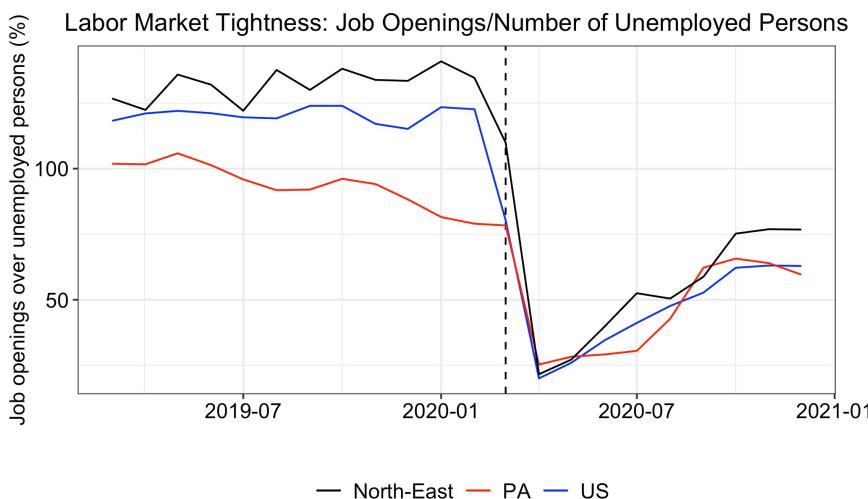


Source: BLS via Federal Reserve Bank of St. Louis (FRED);  
Industries are arranged in descending proportion of total employment.

# Labor Market Tightness

## In spite of elevated unemployment, labor-market tightness has regained roughly half of its 2019 level

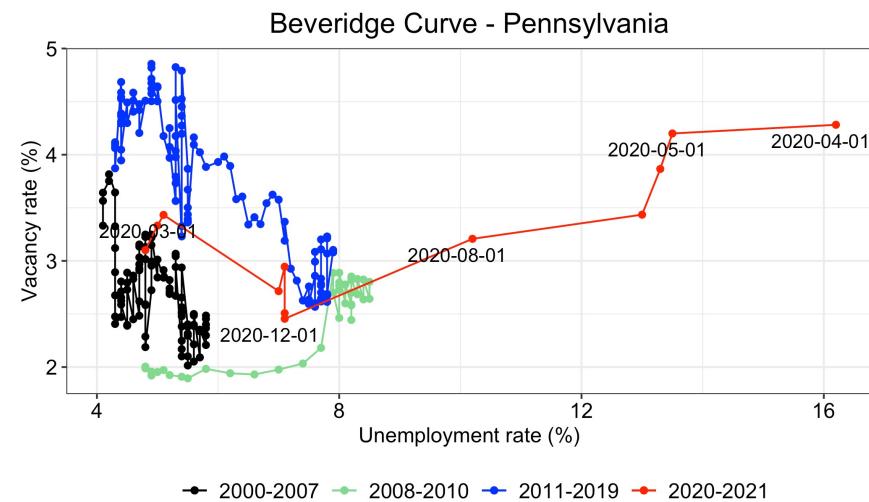
- Labor market tightness may have anticipated the pandemic by one or two months (similar to Open Table Reservations). Subsequently it collapsed due to widespread layoffs.
- While still far short of its 2019 level, labor market tightness has steadily increased throughout the pandemic as unemployment has decreased and firms have gradually begun to create job openings to replace those that were lost.
- Different from the fairly constant labor market tightness in the U.S. and the North-East region, the labor market tightness in Pennsylvania has shown a worrying downward trend starting from May 2019.



Source: BLS via Federal Reserve Bank of St. Louis (FRED);  
Vertical line indicates March 2020.

## The Beveridge curve has shifted to the right

- The Beveridge curve describes the dynamics of the labor market through the business cycles.
- A curve that is far from the origin indicates that labor-market frictions are inhibiting firms and workers from making good matches.
- From March 2020 to April 2020, the vacancy rate increased slightly while the unemployment rate rose sharply.
- We expect the Beveridge Curve to shift back to the left as the health crisis abates. However, an open question involves how pandemic-related career changes will attenuate this effect.

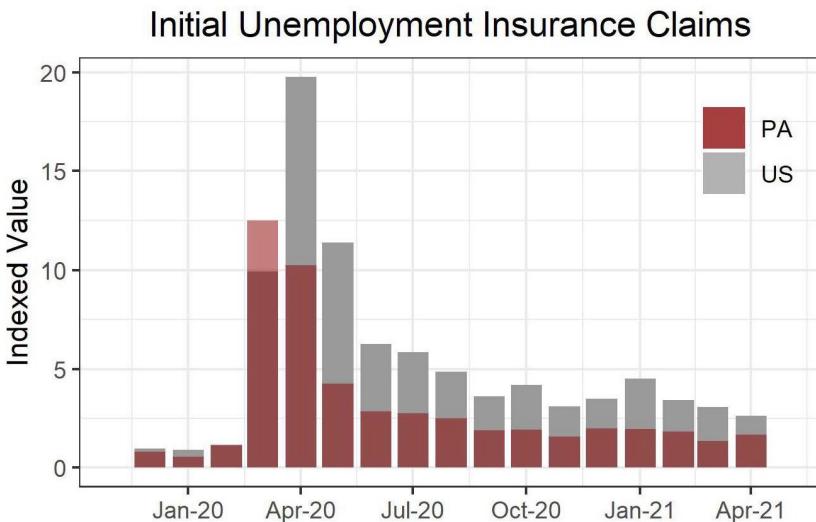


Source: BLS via Federal Reserve Bank of St. Louis (FRED); The vacancy rate is job openings divided by the sum of job openings and employment. Beveridge curves for additional geographic regions are provided in the appendix.

# Unemployment Insurance

## Layoffs in Pennsylvania have been proportionally less severe than the U.S. as a whole

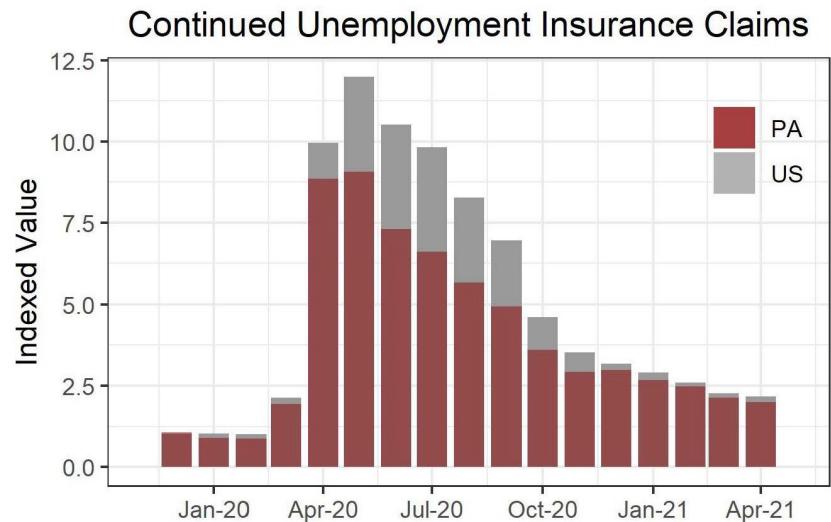
- An *initial unemployment insurance claim* is a claim filed by an unemployed individual immediately after a job separation from an employer.
- At the onset of the COVID-19 pandemic, the number of initial UI claims filed nationally increased by a factor of almost 20 relative to the 2019 average, going from just over 1 million per month to almost 20 million in April 2020. Initial claims filed in Pennsylvania showed a similarly dramatic increase, increasing by a factor of 10, from a 2019 average of 61,400 per month to 618,857 in April 2020.



Source: BLS via Federal Reserve Bank of St. Louis (FRED);  
The series are indexed so that the average of 2019 = 1.

## Persistent unemployment continues to be a concern at the both state and national levels

- *Continued unemployment insurance claims* is the number of people who have already filed an initial claim and who have experienced at least one week of unemployment and then filed a continued claim to claim benefits for subsequent weeks.
- Like initial claims, continued claims for the U.S. increased at a faster rate than for Pennsylvania on the onset of the pandemic. Since then, the U.S. continued claims have decreased at a faster rate, such that the PA state level and its national counterpart are roughly the same (proportionally).



Source: BLS via Federal Reserve Bank of St. Louis (FRED);  
The series are indexed so that the average of 2019 = 1.

## APPENDIX

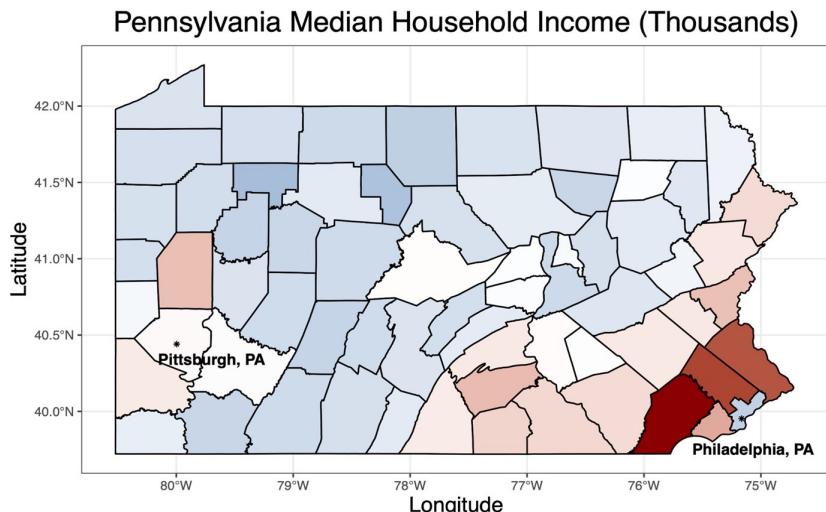
## PA County Data

**Counties in MSAs with large urban areas have higher median household income. The urban core reverses this.**

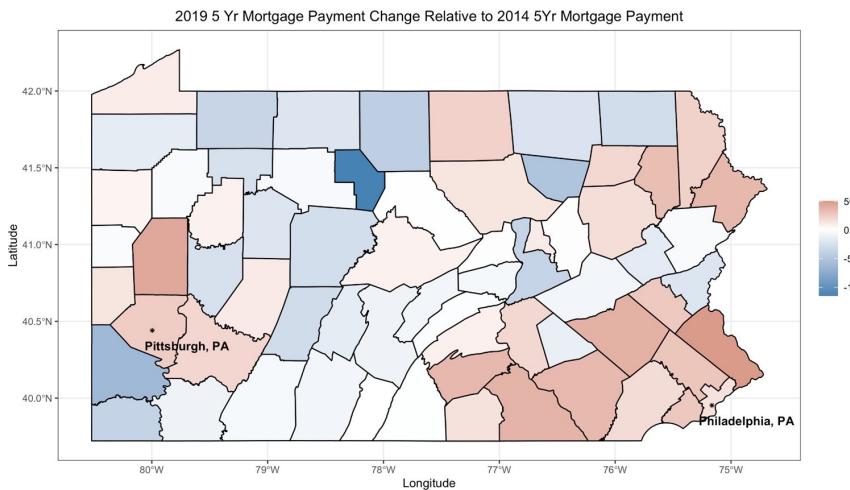
- Forest County has the lowest median household income at roughly \$39,717, while Chester County has the highest median household income at roughly \$100,214.
- Despite Pittsburgh and Philadelphia being the two biggest cities in Pennsylvania, Allegheny County has a median household income of \$64,871 while Philadelphia County has a median household income of \$45,927.

**Counties have experienced great disparity in average owner costs changes across Pennsylvania**

- Monthly owner costs defined as the sum of payments for all debts on a property.
- Bucks County had the highest monthly owner cost appreciation while Cameron County had the highest monthly owner cost depreciation. Allegheny County had the 12th highest appreciation at a 26.07% increase.
- Changes in imply changes in migration to and from the county - Bucks County had an 18,000 person influx while Cameron County had an influx of 2 (source: US Census 2014-2018 ACS).
- House prices and owner costs have been increasing since 2012. Population, economic, and job growth are fueling the changes in the demand for mortgages in Pennsylvania.



Source: 2019 American Community Survey (ACS)

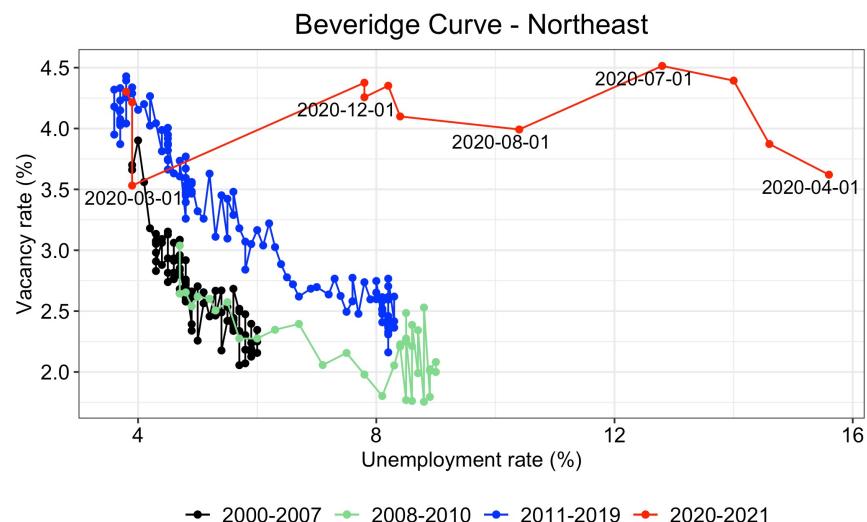
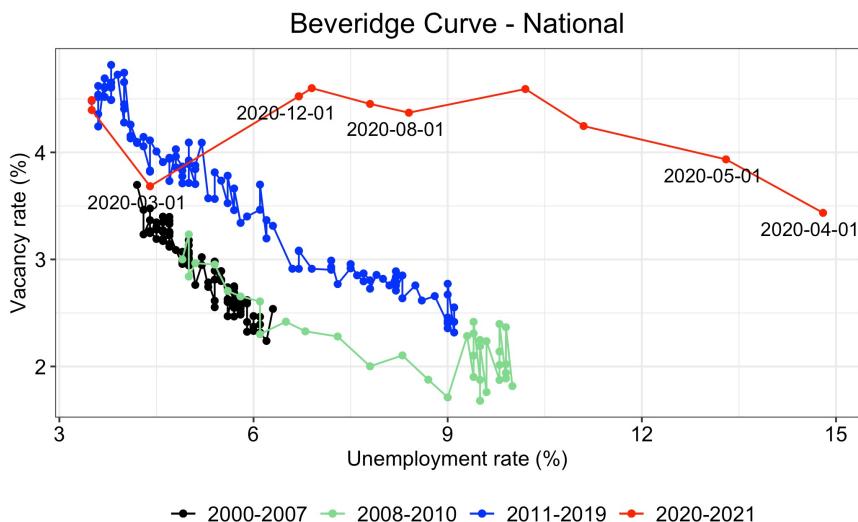


Source: 2019 American Community Survey (ACS)

# National and NorthEast Beveridge Curves

## Additional Beveridge Curves

The Beveridge curves that appear below are meant to supplement the information provided on Page 12.



Source: BLS via Federal Reserve Bank of St. Louis (FRED); The vacancy rate is job openings divided by the sum of job openings and employment.

Source: BLS via Federal Reserve Bank of St. Louis (FRED); The vacancy rate is job openings divided by the sum of job openings and employment.