

recession and recovery

By Luke A. Tilley, Ardy L. Wurtzel, and Noelle Risser

Given the challenges presented across all sectors of the economy by the recession, it is not surprising that recovery has been long and arduous. But firms continue to invest, expand, and hire, while households are increasingly finding jobs and returning to more normal spending patterns. There is much more work to be done to bring the tri-state economies back to the levels achieved before the recession, but we are moving in the right direction.

INTRODUCTION

Luke A. Tilley is a regional economic advisor for the Federal Reserve Bank of Philadelphia.

Ardy L. Wurtzel is a senior research assistant for the Federal Reserve Bank of Philadelphia.

Noelle T. Risser is an outreach analyst for the Federal Reserve Bank of Philadelphia.

the 2007-2009 recession was extremely sharp and severe, with the impacts still being felt several years later. The impacts differed for different states and regions in the United States, as would be expected since they differ in economic structure. The economies of the states in the Federal Reserve's Third District, which includes the tri-state area of Pennsylvania, New Jersey, and Delaware, have many similarities to the U.S. economy but some differences as well.¹

This article details the economic performance in the tri-state area and contrasts the states' performance with that of the overall U.S. economy. The economic structure of the area is similar to that of the U.S. in terms of its contributions to GDP from the various sectors of the economy. Notable differences include the large Finance and Real Estate sector in Delaware and the relatively large Education and Health Services sector in Pennsylvania. Despite similarities in structure, the overall U.S. economy has outperformed the three states, as measured by the Philadelphia Fed's coincident indexes.

In terms of employment, the tri-state area has, in the

aggregate, tracked fairly well with the U.S., but there are internal differences. Pennsylvania fared better in terms of job losses and in subsequent growth, while Delaware and New Jersey have performed worse. The combined unemployment rate of the three states remained below the U.S. rate throughout the recession and during most of the recovery until 2012, when the nationwide rate fell gradually and the tri-state rate rose.

Housing markets remain a trouble spot for all geographies. Mortgage delinquencies remain high but have come down from their peaks. New Jersey has the worst housing market in the tri-state area; the rate of seriously delinquent mortgages there has yet to peak and continues to rise. Home values in each area surged during the housing boom but declined sharply and remain well below their peaks, greatly affecting household wealth in the three states.

ECONOMIC STRUCTURE AND PERFORMANCE

Economic Structure

To compare the structure of the U.S. economy with the economic structure of the three states, it is useful to examine the sector contributions to gross domestic product (GDP) published by the Bureau of Economic Analysis (BEA). GDP for the states is available only on an annual basis, with 2011 being the most recent data available.

The table reveals differences between the states and the U.S. as well as similarities. At the national level, the largest sector share of GDP is that of the Finance and Real Estate (Finance) sector at 20.1 percent. The second largest is the Trade, Transportation and Utilities (Trade) sector's share at 16.2 percent, followed by Business and Professional Services (Business) at 12.7 percent.

The economic composition of the three states closely resembles that of the U.S., as the Finance sector contributes the largest share to the states' GDP. Pennsylvania's share is 19.4 percent and New Jersey's is 24.0 percent. Delaware's GDP also gets its biggest share from

ECONOMIC PERFORMANCE IN THE THIRD FEDERAL RESERVE DISTRICT

The 2007 - 2009 recession was the sharpest economic downturn in the United States since the Great Depression, and the impacts varied across the 50 states. Accordingly, states have experienced various levels of economic growth since the recovery began, due to fundamental differences in their economic structures. This article details the economic performance and structure of the tri-state area and contrasts the states' performance with that of the overall U.S. economy by reviewing the three states' GDP growth, coincident indices, employment/unemployment dynamics, and housing sector conditions.

the Finance sector, with nearly half of the state's total economic output coming from Finance. This shows the significant impact of several large financial service firms that conduct operations in the state, particularly credit card processing.

Both Pennsylvania and New Jersey mirror the U.S. economy in that the second and third largest contributing sectors to GDP are Trade, Transportation and Utilities and Business and Professional Services, respectively. In Delaware, those sectors also rank as the second and third largest economic contributors, but in reverse order.

Pennsylvania's sector shares bear the strongest resemblance to the U.S. sector share values, especially in manufacturing, an important source of job loss during the recession. For Pennsylvania, the most noticeable difference is the Education and Health Services (Health) sector, which contributes 12.6 percent of total GDP for the state compared with only 8.8 percent for the nation. Both New Jersey (9.0 percent) and Delaware (6.7 percent) are closer to the U.S. in that respect.

Coincident Indexes

State GDP data are convenient for comparing the economic structure and relative performance of sectors, but they lack the timeliness and frequency of monthly or even quarterly data.² The delay in their release creates the need for an alternative source for tracking state economic activity in a more timely fashion.

The state coincident indexes from the Federal Reserve Bank of Philadelphia are designed to accomplish that task. The indexes combine four state-level indicators to summarize current economic conditions in a single statistic. The four state-level variables in each coincident index are nonfarm payroll employment, average hours worked in manufacturing, the unemployment rate, and real wage and salary disbursements. The trend for each state's index is set to the trend of its gross domestic product (GDP), so long-term growth in the state's index matches long-term growth in its GDP. The Philadelphia Fed also compiles a coincident index for the U.S.³

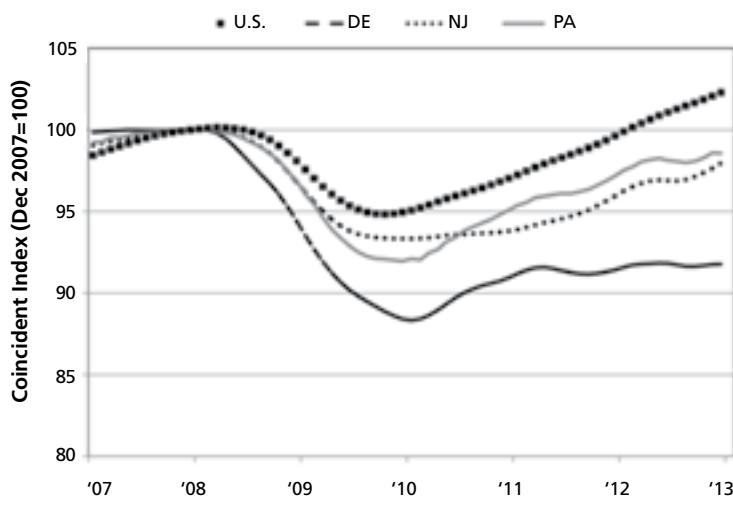
To illustrate the usefulness of the coincident indexes for measuring output, one can compare the behavior of the U.S. index to GDP.⁴ U.S. GDP peaked in the fourth quarter of 2007 and then fell 4.7 percent to its trough in the second quarter of 2009. The U.S. coincident index peaked in the first quarter of 2008, one quarter later than GDP, and reached a trough in the fourth quarter of 2009, two quarters later than GDP, falling 5.3 percent over that period. So the two measures move similarly, with the index reaching turning points later than GDP. This is not surprising given that the four components of the index are all driven in part by labor market factors, and the labor market often lags turning points in GDP. Although not exact, these two measures of changes in economic activity for the U.S. produce similar results. Thus, the U.S. coincident index is a good proxy for GDP.

2011 SECTOR SHARES OF TOTAL GDP (%)

Sector	U.S.	PA	NJ	DE
Agriculture, Forestry, & Fishing	1.2	0.6	0.2	0.5
Mining & Construction	5.4	4.7	3.0	2.6
Manufacturing	12.3	12.3	7.8	6.8
Trade, Transportation & Utilities	16.2	16.4	19.0	9.5
Information	4.4	3.9	4.4	1.6
Finance & Real Estate	20.1	19.4	24.0	48.6
Business & Professional Services	12.7	13.9	16.0	10.7
Education & Health Services	8.8	12.6	9.0	6.7
Leisure & Hospitality Services	3.9	3.5	3.2	2.5
Other Services	2.5	2.5	2.1	1.5
Government	12.6	10.2	11.2	9.1

Source: Bureau of Economic Analysis

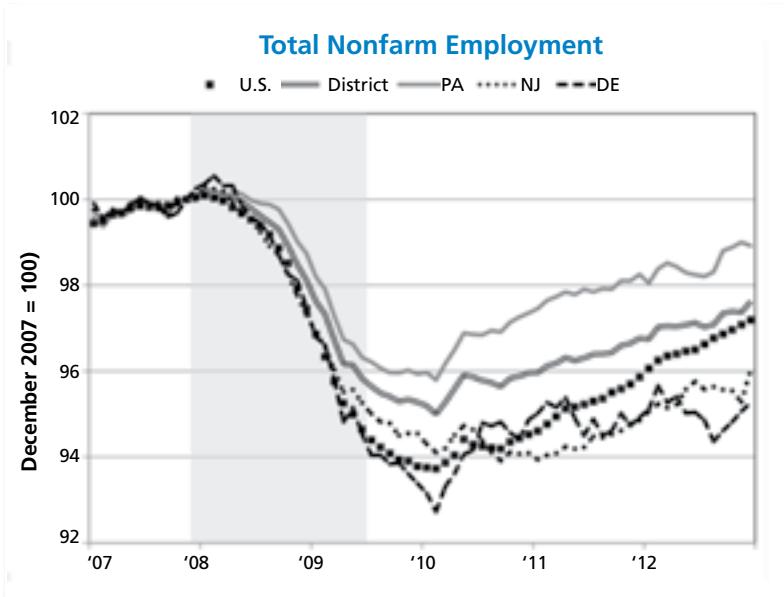
Philadelphia Fed's Coincident Indexes



In analyzing the state coincident indexes for Pennsylvania, New Jersey, and Delaware over the same time period, we see that all three states have performed worse than the U.S. as each state experienced larger percentage declines from their respective peaks to troughs and smaller percentage increases from their respective troughs to peaks.

Pennsylvania's index declined 8.0 percent from its peak in December 2007 to its trough in December 2009. After the recession, the index increased 7.2 percent from the trough to December 2012, the largest of the three states' post-recession increases. Overall, Pennsylvania's index is 1.4 percent below its peak level.⁵

The coincident index for New Jersey experienced a 6.8 percent decline from its peak in February 2008 to its trough in December 2009. After the recession, New Jersey's index increased 5.0 percent from the trough to December 2012, worse than Pennsylvania and the na-



tion, but better than Delaware. Overall, New Jersey's index is 2.1 percent below its peak level.

Delaware's coincident index experienced the largest decrease, -11.7 percent, from its peak in January 2008 to its trough in January 2010. Additionally, Delaware has had the smallest post-recession rebound, just 3.9 percent. Overall, the index remains 8.2 percent below its peak level, the largest post-peak decline when compared with Pennsylvania, New Jersey, and the U.S.

JOB LOSSES AND GAINS

The figure shows total nonfarm employment in the relevant geographies. As with the coincident indexes, the series are indexed to equal 100 in December 2007, the official starting month of the recession. Each series, then, can be interpreted as percentage changes from the December 2007 level.⁶

As shown in the figure, firms in the three states as well as nationwide continued to add jobs into the first months of the recession. Employers started cutting jobs a few months after the declines in economic activity. This delay in job losses at the start of a recession is common, and the reverse occurs at the start of an economic recovery. As is shown, the official end of the recession is June 2009, but job losses continued for several months and job growth did not start until early 2010.

The nation and the tri-state area experienced sharp job losses in the face of the recession. From the peak of employment in early 2008 to the trough, employers cut nearly 8.8 million jobs nationwide, a decline of 6.4 percent. Employers in the tri-state area also cut jobs, although not quite as many in percentage terms. From peak to trough, net job losses totaled nearly 540,000 for a percentage decline of 5.2. The timing of the trough was identical, with both the national economy and the tri-state area bottoming out in February 2010 before starting to add jobs.

Of the three states, Pennsylvania fared the best, with total job declines of 4.4 percent (255,000), and reached its trough in the same month as the national economy. New Jersey fared considerably worse, with employers shedding a net 6.4 percent of jobs (261,000). Job losses at private employers in the state leveled off at the same time as the nation and Pennsylvania, but sharp cuts in the government sector protracted overall job losses until September 2010, a much later trough. Employers in Delaware reached their employment nadir at the same time as Pennsylvania and the nation, but the cuts were proportionally more drastic. Job losses amounted to 7.8 percent (34,400).

National job growth resumed eight months after the recession ended. It is not uncommon for this delay in hiring to occur. For employers to start hiring, they must first believe that the economic rebound will be sustained. Instead of hiring right away, firms often respond to increased business activity by asking existing employees to be more productive or to work longer hours. Only once employers believe the recovery is lasting do they increase hiring.

During the recovery, overall U.S. job growth surpassed that of the combined tri-state area. Nationwide, net job growth of nearly 4.8 million is more than half (54 percent) of the total jobs lost. In the Third District, growth has been slightly slower, with 50 percent (271,000) of lost jobs regained. Pennsylvania has by far outperformed its neighbors, regaining 73 percent (186,000) of lost jobs. New Jersey and Delaware have regained just 33 percent (86,000) and 38 percent (13,000), respectively, of the number of jobs lost.⁷

Construction and Manufacturing

The character of the job declines, in terms of sector breakdown, is very similar in the nation and the Third District, with the Construction and Manufacturing sectors experiencing the biggest losses. Of the 8.8 million net job losses nationwide from December 2007 to February 2010, 4.7 million (54 percent) were in the Manufacturing and Construction sectors. The figure is nearly identical for the tri-state area: 53 percent (285,000) of net losses were in those two sectors.

CONSTRUCTION JOB LOSSES

December 2007 to December 2012

	Thousands	(%)
U.S.	1,926.0	25.7
Third District*	78.0	16.2
Pennsylvania	41.7	16.1
New Jersey	45.8	26.8
Delaware*	8.8	33.0

* Construction jobs in Delaware are reported as a combined sector with Natural Resources & Mining

At the national level, the Construction sector had already been cutting jobs for two years before the start of the recession as housing starts plummeted. The three states did not experience a boom in housing construction nearly to the degree as other parts of the country, so losses in construction jobs did not start in earnest until the national recession slowed all activity in the sector. Only Pennsylvania showed any appreciable job gains in the sector during the recovery in 2010-2011, but even here, the course was reversed in 2012. The table shows total losses in the sector since the start of the recession.

The Manufacturing sector was also sharply affected by the recession in terms of employment. It is important to note that employment in manufacturing at the national and District levels has been declining as a structural trend for decades as some operations have moved overseas and as the industry is continually becoming more mechanized and more productive. But recessions tend to accelerate declines in this sector. In this recession, manufacturing employment declined by 18.2 percent (2.5 million) nationwide, while states in the Third District fared similarly, with losses of 17.1 percent (173,000). During the recovery, manufacturing firms nationwide have added nearly half a million jobs, recouping about one-fifth of the losses, while the tri-state area in the aggregate has essentially been flat, with Pennsylvania adding jobs in the sector while declines have continued in New Jersey and Delaware.

Other Sectors

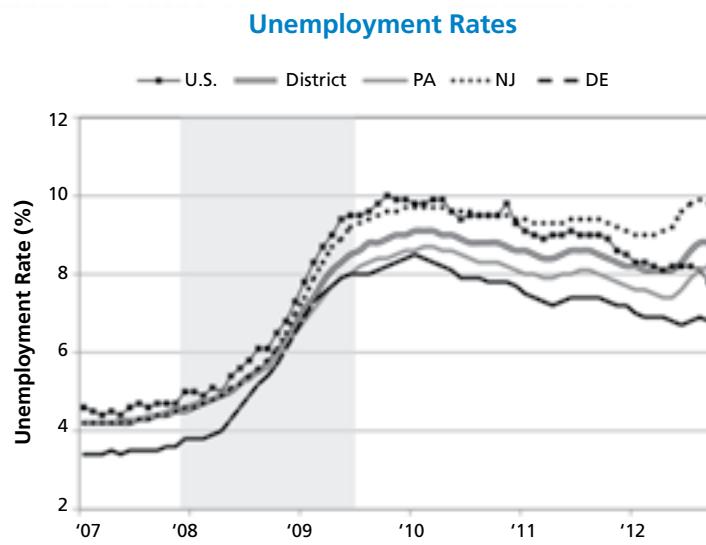
The jobs picture is strikingly more encouraging outside the Construction and Manufacturing sectors. The strongest growth at both the national and the local level has been in Education and Health Services. That sector is driven much more by demographics than by the business cycle, and it is the only nongovernment sector to add jobs over the course of the recession. Nationwide, employers in the sector have added nearly 2.0 million jobs since the start of the recession, an increase of 10.7 percent. In the tri-state area, Pennsylvania added 7.9 percent (86,000) in the sector, New Jersey added 9.7 percent (56,000), and Delaware added 14.1 percent (8,600).

In each state there are other sectors that have performed well in the recovery. In particular, jobs in the Professional and Business Services sector declined by a total of 100,000 across the three states, but the sector regained all of them. Firms in the Leisure and Hospitality sector cut 30,000 jobs during the recession and have hired double that amount in the recovery. Aggregating all nonmanufacturing and nonconstruction sectors across the three states, the total number of jobs is 8.9 million, the same as at the start of the recession. So the private sector, excluding construction and manufacturing, has fully regained the net number of jobs that were lost.

UNEMPLOYMENT

As would be expected with sharp job cuts, unemployment rates increased dramatically over the course of the recession, both nationwide and in the tri-state area. For decades, the combined unemployment rate of Pennsylvania, New Jersey, and Delaware tracked very closely with the national rate, both in terms of the level and the magnitude of fluctuations during recessions and recoveries. That dynamic changed over the course of the recent recession and the recovery. In the 214 months from January 1990 to December 2007, the difference between the two rates was less than half a percentage point in all but eight of those months. This is due to the economic structure of the tri-state area, which is very similar to the nation in terms of the share of jobs in each sector.

This tight relationship was broken in early 2009 in the depths of the recession. Job losses were more rapid and the unemployment rate rose more quickly in the nation than in the Third District, peaking at 10 percent in October 2009. The combined rate of the tri-state area peaked later but did not soar as high, maxing out at 9.1 percent in January, February, and March of 2010.

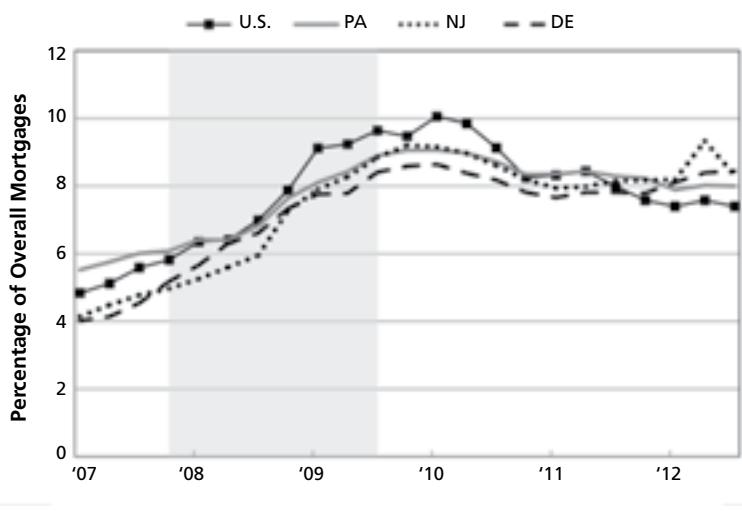


But while the tri-state area performed relatively better than the nation during the recession, the roles were reversed during the recovery. Both rates have declined since their peaks, but as the overall U.S. economy has generated jobs more quickly, the unemployment rates once again converged and were identical at 8.1 percent by April 2012. Increased labor force participation in the tri-state area in the second half of 2012, almost entirely in Pennsylvania, drove up the unemployment rate in the tri-state area, which exceeded the U.S. rate by more than a full percentage point by the end of the year.

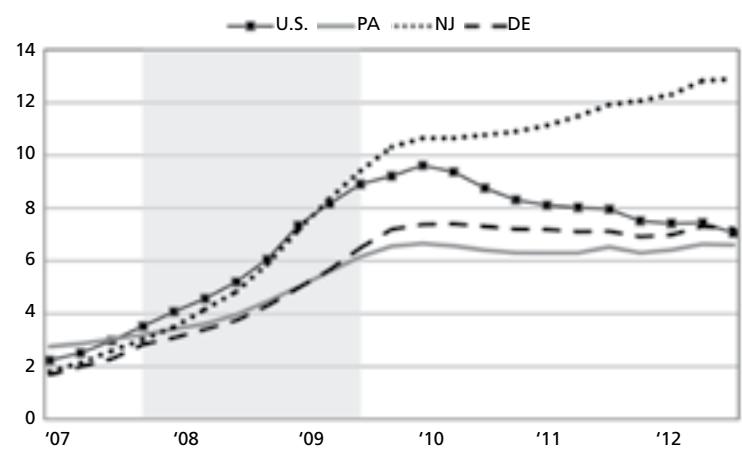
HOUSING MARKETS

The recent recession was in large part driven by overinvestment in the housing sector, both in terms of new construction and inflated values of existing homes. As the housing market slowed in 2006-07, many households that could not afford their mortgages began missing payments and delinquency rates rose. As the recession started and then intensified, many more households became delinquent due to job and income losses, even if they were not recent buyers. The ensuing impacts on all areas of the housing sector including construction, home sales, and home values have been dramatic in the U.S. and in Pennsylvania, New Jersey, and Delaware. The decline in home values has reduced household wealth. For all areas, this decline in household wealth greatly affects saving and spending decisions.

Total Past Due Mortgages



Seriously Delinquent Mortgages



Mortgage Delinquency

The figure shows the percentage of past due mortgages in each of the three states and the U.S.⁸ At the height of the recession and well into the start of the recovery, delinquency rates in the tri-state area were below the U.S. total. In 2010, rates improved for all three states and the nation. Over the course of 2011, however, the U.S. rates continued to decline, while rates in the three states either leveled off or worsened. By the end of 2011 and into 2012, all three states had higher delinquency rate figures than the U.S.

Seriously Delinquent Mortgages

Another important measure of the housing market is seriously delinquent mortgages, a category that includes mortgages 90 or more days delinquent as well as those already in the foreclosure process. Similar to the discussion of the overall percentage of mortgages past due, in the period leading up to the recession, the three states reported figures under or around the national average.

Over the course of the recession, the U.S. rate and New Jersey's rate increased more quickly than Pennsylvania's or Delaware's. Since the start of the recovery, the overall U.S. figures have declined significantly, while Pennsylvania's and Delaware's are still hovering around their respective peaks of 6.6 percent and 7.4 percent. The rate of seriously delinquent mortgages has worsened significantly in New Jersey, even over the course of several years of economic recovery. In the third quarter of 2012, 12.9 percent of mortgages in New Jersey were more than 90 days past due or in foreclosure.

Foreclosure Inventory

The mortgage foreclosure inventory is a measure of the percentage of overall mortgages that have entered or were previously in foreclosure in a given quarter. This figure gives a measure of the inventory of homes on the market through foreclosure. Additionally, these homes likely put downward pressure on home prices.

Current national figures estimate that over 4 percent of mortgages in the country are in foreclosure, more than double the average figure over the past 40 years. The current foreclosure inventory in New Jersey is the most striking at nearly 9 percent of all mortgages and is more than double the national average. Through the recession and since the start of the recovery, Pennsylvania and Delaware have reported numbers under the U.S. figures; however, Pennsylvania is continuing to see an upward trend in this data series and is currently reporting nearly 4 percent of mortgages in foreclosure, which is a peak for the state.

Prime and Subprime Mortgages Past Due

As may be expected, the delinquency rate for subprime mortgages is significantly higher than that for prime mortgages, both nationwide and in the tri-state area. Prime mortgages are those conventional loans for which the borrower has an above-average credit rating and, consequently, a lower risk of defaulting on

the loan. Subprime mortgages are given to borrowers with credit ratings that indicate to the lender that they have a higher risk of defaulting on the loan. Subprime mortgages usually carry a higher interest rate in order to compensate for the higher risk to the lender.

Of the three states, New Jersey had the largest portion of prime loans in past due status, 5.4 percent, as of the third quarter of 2012. However, for subprime loans, Pennsylvania and Delaware have higher delinquency rates than New Jersey, at 22.5 percent and 24.0 percent, respectively.

Home Prices

The housing market boom between the 2001 and 2007 recessions not only provided a surge in the construction of new homes but also boosted the values of existing homes. The impact on existing homes can be seen in the Federal Housing Finance Agency's (FHFA) home price index (HPI), which is available at the national and state levels. The overall HPI tracks the average change in home values as indicated by purchases of homes as well as when a home is refinanced and the updated home value is determined by an appraisal.

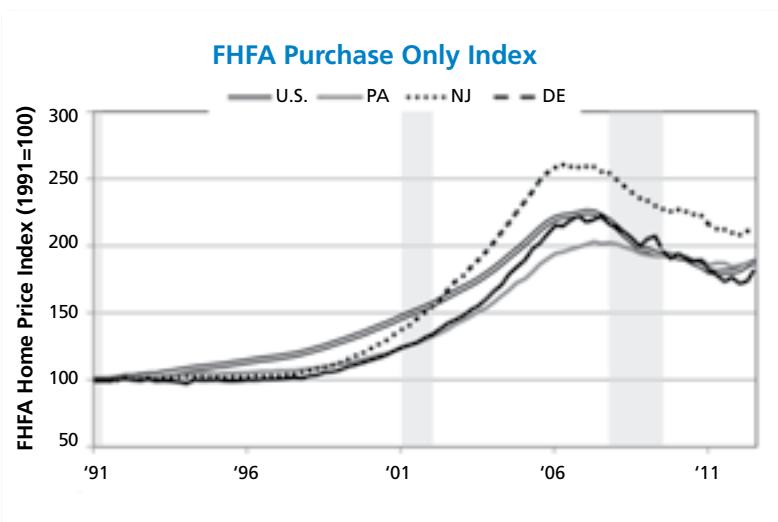
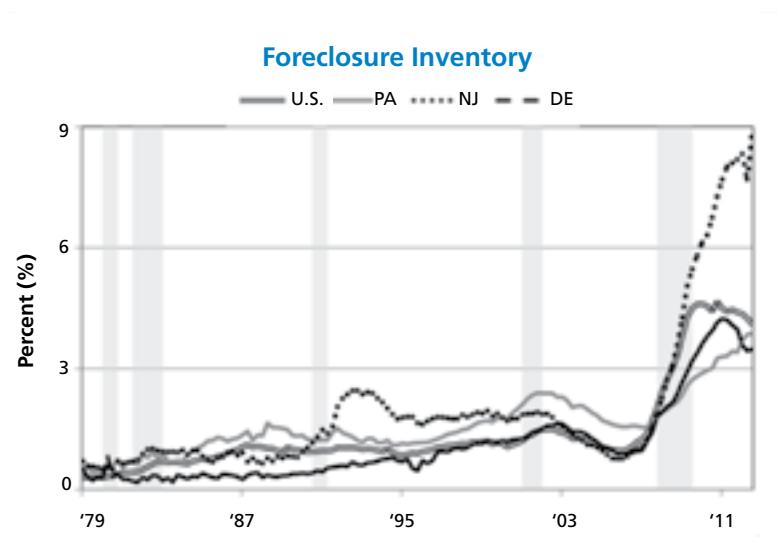
The figure shows the more restrictive purchase only HPI, which uses only the data for homes that are purchased on the market. This series is indexed to equal 100 in January 1991. From the end of the previous recession to the fourth quarter of 2007, the average increase in home values was significant nationally and in the Third District states.

The highest appreciation was in New Jersey (74 percent), a peak reached in the second quarter of 2006. Delaware's appreciation was slightly lower (69 percent), reaching that peak in the fourth quarter of 2007. Although not quite as rapid, Pennsylvania's appreciation of 57 percent and the nationwide appreciation of 46 percent were also significant. Pennsylvania peaked in the second quarter of 2007, and nationwide prices peaked one quarter earlier. This appreciation gave homeowners a significant boost in wealth, which fed economic growth until the housing market collapsed.

Since peaking, each area has had a marked decrease in home values. Average home values in the U.S. finally started to increase in 2012, but as of the third quarter, they remained 16.6 percent below their peak. Home values in Pennsylvania also started to turn around in 2012 but remain 7.7 percent below peak levels as of the third quarter. Delaware's markets showed the strongest turnaround in 2012, but through the third quarter were still well below (17.4 percent) the peaks. New Jersey has the largest net decline at 19.4 percent and is the only area not showing signs of a turnaround in the HPI data.

CONCLUSION

The recent recession was sharp at both the national level and in the tri-state area. The recovery has been underway since mid-2009, and the economies of Penn-



sylvania, New Jersey, and Delaware have improved, albeit slowly, by nearly every measure, including economic activity, job growth, unemployment, and housing market indicators. But by nearly all measures, the regional economies remain below their previous peaks. In addition, high unemployment rates, high mortgage delinquencies, and decreased home values are often the economic indicators most visible to the public and the ones felt most personally, and a lack of improvement in these indicators may cause many people to feel as though the economy is still in recession.

There are reasons to be optimistic about the future. Data from the Federal Reserve Board of Governors show that consumers have substantially reduced their debt burdens after debt levels rose to historic peaks before the recession. Specifically, monthly debt payments as a share of disposable income are at their lowest level since the mid-1980s. The lower debt burden should support continued consumer spending going forward.

The Philadelphia Fed's Business Outlook Survey also reveals optimism in the tri-state manufacturing sector.

According to that survey, manufacturing activity has increased in 32 of the 42 months since emerging from declines in 2009. Moreover, firms participating in that survey consistently report they expect future activity to be higher than the current level.

Given the challenges presented across all sectors of the economy by the recession, it is not surprising that

recovery has been long and arduous. But firms continue to invest, expand, and hire, while households are increasingly finding jobs and returning to more normal spending patterns. There is much more work to be done to bring the tri-state economies back to the levels achieved before the recession, but we are moving in the right direction. ☺

ENDNOTES

- 1 The Federal Reserve Bank of Philadelphia helps formulate and implement monetary policy, supervises banks and bank and savings and loan holding companies, and provides financial services to depository institutions and the federal government. It is one of the 12 regional Reserve Banks that, together with the Board of Governors in Washington, D.C., make up the Federal Reserve System, the nation's central bank. The Philadelphia Fed serves eastern Pennsylvania, southern New Jersey, and Delaware. Although the Bank is responsible only for portions of Pennsylvania and New Jersey, all discussion of state economies in this article refers to data for the entire state.
- 2 The BEA has not yet published a release schedule for 2013 regional data. The 2011 data were released in June 2012, six months after the close of the year.
- 3 Historical data and the methodology for the coincident indexes are available on the Regional Economy section of the Philadelphia Fed's website: <http://www.philadelphiahed.org/research-and-data/regional-economy/>.
- 4 GDP data are released at quarterly frequency and the coincident indexes are monthly. For this comparison we collapse the U.S. Coincident Index to quarterly frequency by taking the average value of the relevant three months.
- 5 The original data for the coincident indexes are calculated so that January 1992 is set equal to a value of 100. For this analysis we have rescaled each index so that December 2007 is equal to 100 in order to more easily compare performance during the past five years.
- 6 Nonfarm employment data are from the Bureau of Labor Statistics.
- 7 This accounting of the percentage of lost jobs regained are updates of figures given by Loretta Mester, director of research at the Philadelphia Fed, in "Economic Developments and the Outlook," a keynote speech at the 2012 New Jersey Commissioner's Banking Symposium on November 28, 2012: <http://www.philadelphiahed.org/publications/speeches/mester/>.
- 8 Data are from the Mortgage Bankers Association and Haver Analytics.

Reinventing How You Market Your Region

Content Marketing Program for EDOs

- Tools to promote your region's strengths to site selectors, relocating businesses and talent prospects
- Turnkey content production services for print, Web, digital and mobile applications
- National exposure on businessclimate.com location and economic development portal
- Targeted distribution of print and digital products
- Social media promotion strategy



businessclimate.com

JOURNAL
COMMUNICATIONS
CUSTOM MEDIA. CUSTOM CONTENT.
CELEBRATING 25 YEARS.