Brennan Barometer

Analysis of the Economy of Wyoming Valley of Northeastern Pennsylvania

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Foreword

In the third issue of Brennan Barometer, we continue to provide in-depth analysis of the regional economy of the Wyoming Valley. As this is the first issue of the year, we take a look back at how the local economy has been performing over the past year. We also examine the national economy since the two are closely connected.

We would like to take this opportunity to extend a special thanks to Steven Zellers from the Center for Workforce Information & Analysis, PA Department of Labor & Industry for his valuable insights and suggestions. However, we solely are responsible for our analysis and any errors or omissions.

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Executive Summary

Labor Markets

During 2022, the behavior of the labor markets in the region was consistent with the national trend. The labor market for the Scranton-Wilkes-Barre-Hazleton Metropolitan Statistical Area (SC-WB-HZ MSA) experienced record or near-record low unemployment rates. In the local markets during this period, as the labor force increased, so did the number of employed. Not only did the unemployment rate fall, but the number of unemployed also fell in the MSA and the two largest counties, Lackawanna and Luzerne. Four out of every five new jobs were created in the private services sector, with transportation, warehousing, and utilities sub-sectors leading the way. The leisure and hospitality sector and retail trade also added new jobs. The MSA ranked 7th out of the 18 MSAs in the state in terms of new job creation. However, employment in the Healthcare Sector, especially Hospitals, continued its downturn and declined an additional 2% over the year. In spite of the impressive low unemployment rate, the MSA's recovery is not yet complete. While the level of employment in the goods-producing sectors, especially manufacturing, has surpassed the pre-pandemic level, the service sector still shows a substantial shortfall of employment, with the healthcare sector recording the largest number of job losses.

Housing Markets

Throughout 2022, the national and regional real estate markets have experienced a cooling trend following the boom during and immediately after the COVID-19 pandemic. This cooling has been influenced by the Federal Reserve's monetary policy, higher mortgage and borrowing rates, and the alleviation of supply-chain and labor shortage issues. The same dynamics are evident in the Scranton-Wilkes Barre-Hazleton metropolitan statistical area, where growth in housing prices and rents has slowed, and the inventory of housing units for sale has increased. However, in comparison to the national and regional markets, the real estate market conditions in the Wyoming Valley region have remained strong. Growth in building permits has remained significantly above historical averages, properties in the area have been viewed online at a higher rate than the national average, and real estate prices and rents have grown at a faster pace than the national and state averages.

Credit Conditions

Throughout 2022, the subprime credit population of Wyoming, Lackawanna, and Luzerne counties remained relatively low and unchanged, after declining sharply at the beginning of the pandemic.

Inflation

Throughout 2022, inflation remained very high, fueled by a combination of supply side and demand side factors. The disruption of supply chains, rise in energy and grain prices due to the war in Ukraine, and increased consumer spending all contributed to the current inflation. Much of the inflation is driven by an increase in service costs, and especially of shelter. The Federal Reserve's demand-side policy of raising the interest rate and borrowing costs has had some moderating effect on inflation. However, because a significant proportion of consumer spending goes toward services, inflation persists.

The Big Picture

In January 2023, although CPI-based inflation declined for the seventh consecutive month, the rate of inflation and core rate of inflation remains very high. The full effects of the seven interest rate increases in 2022 have not yet been felt due to lags in monetary policy. However, the Federal Reserve will certainly continue to raise interest rates to cool down the economy and reduce inflationary pressure. With the labor market showing exceptional resilience, it is not impossible that unemployment will not increase significantly, and the economy may achieve a "soft landing" without going into a recession as inflation is brought under control.

Labor Market: Employment, Unemployment in the Local Economy

Satyajit Ghosh

The Scranton - Wilkes-Barre - Hazleton Metropolitan Statistical Area (SC-WB-HZ MSA) is currently experiencing historically low unemployment rates. According to the Pennsylvania Department of Labor and Industry's report on January 31, 2023, the seasonally adjusted unemployment rate for the region remained at its record low of 4.8 percent in December 2022, the same as in November. The last time the MSA's rate was 4.8 percent was in April through June 2000. Regional records have been maintained since January 1976. Since our previous report (Brennan Barometer, October 2022), the unemployment rate in the MSA has steadily declined between September and November 2022.

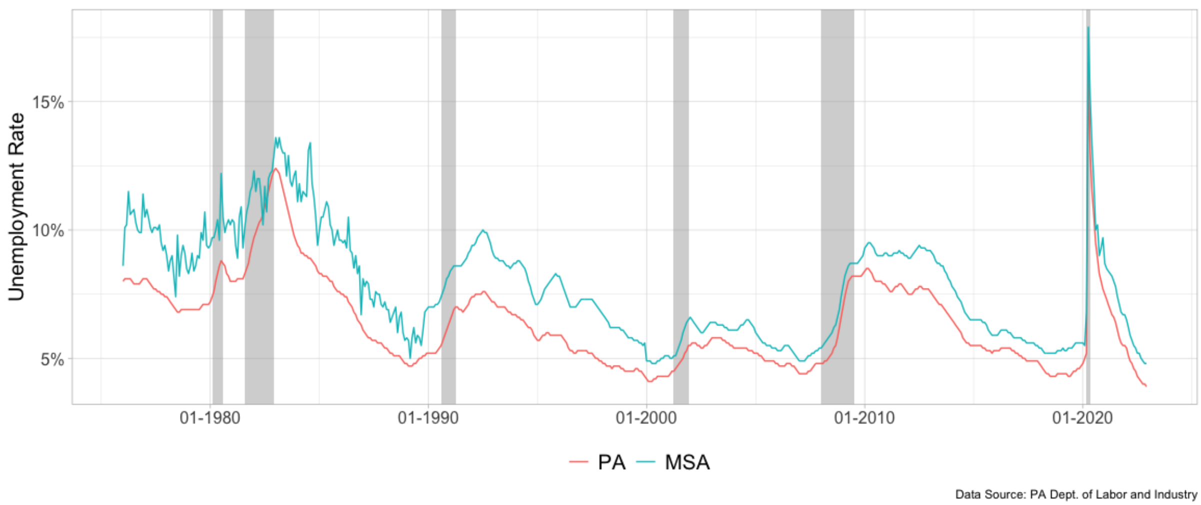

Figure 1: Unemployment Rate in Pennsylvania and the SC-WB-HZ MSA

As Figure 2 indicates, the three counties in the MSA also recorded near record low unemployment rates. In Lackawanna county, the unemployment rate in December 2022 was at 4.4 percent. In the recorded history of 47 years, the lowest unemployment rate in the county (4.2 percent) was observed in September and October of 2022 and prior to that only in April 2000. The MSA's largest county, Luzerne also had very strong unemployment number. It was 5.1 percent in December. It was lower only once in April 2000 when it reached 4.9 percent. The MSA's smallest county, Wyoming also had a very strong showing in December when the unemployment rate stood at 4.2 percent. In its recorded history, the county reached a lower unemployment rate of 4.1 percent only in January and February of 2001.

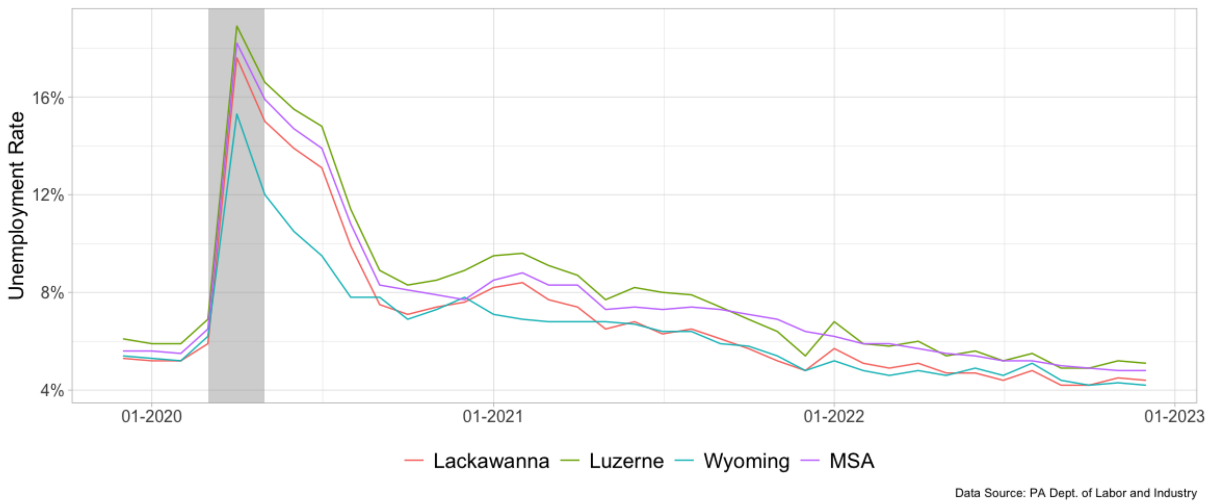

Figure 2: Unemployment Rates in the Lackawanna, Luzern, Wyoming Counties, and SC-WB-HZ MSA

Continuing its downward trend, the unemployment rate in Pennsylvania fell to a record low 3.9 percent in December. All these are consistent with the national experience. The unemployment rate for the nation fell to 3.5 percent, its lowest level since 1969. In January 2023, the national unemployment rate fell further to 3.4 percent, its lowest level since 1953. For the Scranton-Wilkes- Barre-Hazleton MSA, the turnaround from a historic high unemployment rate of 17.9 percent in April 2020 to a record low unemployment of 4.8 percent in 33 months is truly remarkable if not miraculous. We should remember that the Congressional Budget Office (CBO) predicted on February 1, 2021 that the national unemployment rate may return to the pre-pandemic level in 2024-25. At that time, this prediction was viewed to be too "optimistic." And to put in perspective, locally the pre-pandemic (February 2020) unemployment rate for the SC-WB-HZ MSA was 5.5 percent, a benchmark that we surpassed in June 2022! In the first issue of this newsletter (Brennan Barometer, May 2022) we discussed in detail the impact of Covid-19 on this region's labor market and the ensuing turnaround through 2021. So, to get a better understanding of the state of the region's labor market, let us focus on the year 2022 .

Statewide, in Pennsylvania, when its unemployment rate fell by 1.6 percentage point, from 5.5 percent in December 2021 to 3.9 percent in December 2022, its labor force increased by 88,000 or 1.38 percent. By December 2022, the unemployment rate in the Scranton-Wilkes- Barre-Hazleton MSA fell by 1.9 percentage point, resulting from a steady decline from 6.7 percent in December 2021 to 4.8 percent in December 2022. During the same time period, the MSA's labor force increased by 2,300 or 0.84 percent, from 272,000 in December 2021 to 275,000 . The three counties in the MSA also showed similar trends. During the same time period, Lackawanna County registered nearly 1 percentage point (0.9 percent) reduction in the unemployment rate (from 5.5 percent in December 2021 to 4.4 percent in December 2022). Its labor force increased by 1.34 percent. In Luzerne county the unemployment rate fell by 1.2 percentage point (from 6.3 percent in December

2021 to 5.1 percent in December 2022) and its labor force increased by 0.96 percent. In Wyoming county, the unemployment rate fell by more than half a percentage point (0.6 percent)–from 4.8 percent in December 2021 to 4.2 percent in December 2022, while its labor force increased by 2.29 percent. The increase in the size of labor force in all three counties of the MSA indicates the sustained perception that the local economy is turning around and the regional labor markets continue to be strong.

The three largest cities in the MSA also recorded reduction in the unemployment rates in December, compared to the previous month, with Scranton reaching an unemployment rate of 3.5 percent followed by Wilkes- Barre (4.6 percent) and Hazleton (5.5 percent).

Table 1: Labor Market Indicators in the Cities, December 2022
(Data not seasonally adjusted)

City	Unemployment rate	Total Unemployment	Total Employment	Labor Force
Scranton	3.5%	1300	34500	35800
Wilkes Barre	4.6%	800	17300	18100
Hazleton	5.5%	600	10600	11200

In all three cities between November and December 2022, the total number of unemployed workers fell, and, with the exception of Hazleton where the total volume of employed workers stayed the same, in the bigger cities of Scranton and Wilkes- Barre, the total number of employed workers increased.

Between December 2021 and December 2022, not only the labor force increased in the Scranton-Wilkes Barre-Hazleton MSA, the level of unemployment also fell - a pattern that was also observed in the two bigger counties in the MSA: Luzerne and Lackawanna.

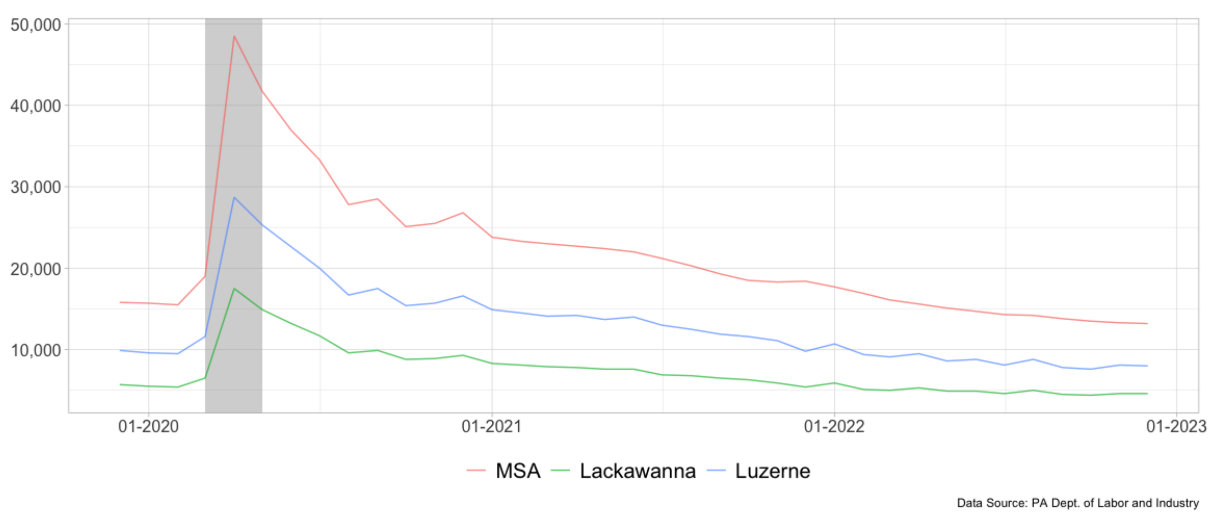

Figure 3: Number of Unemployed in the SC-WB-HZ MSA and Lackawanna and Luzern Counties

Thus, it must not be surprising that the volume of employment, i.e., the number of employed workers increased in the MSA. It is interesting to note that while the S-WB-H MSA is not regarded as a "new jobs driver" in the state and in December 2022 in spite of its low unemployment rate, it ranked the third highest in terms of unemployment rate among the 18 MSAs in the state it ranked 7th. in new job creation, when it added (seasonally adjusted) 4500 new non-farm jobs during December 2021 and December 2022.

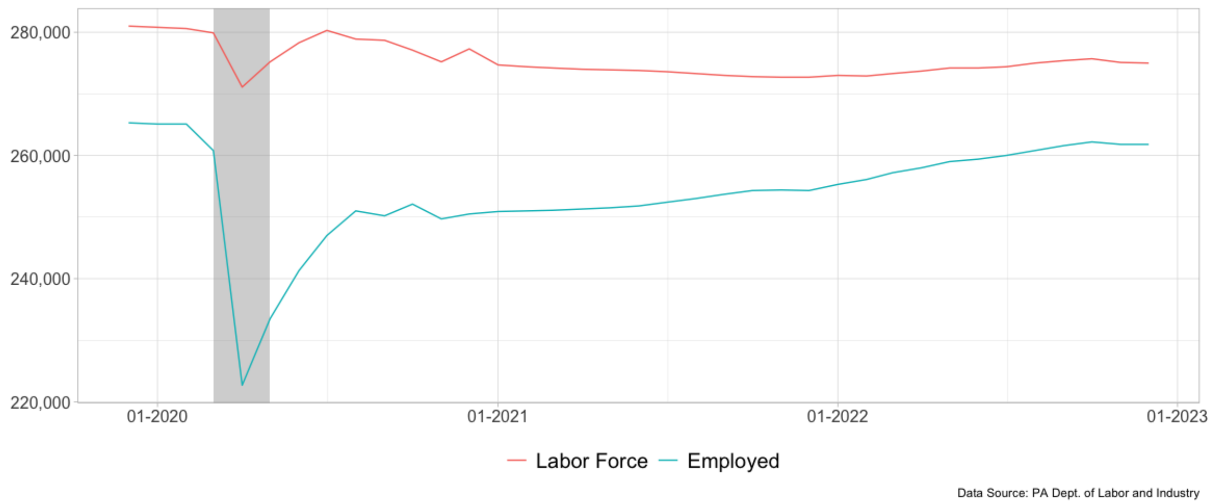

Figure 4: Labor Force and Number of Employed in the SC-WB-HZ MSA

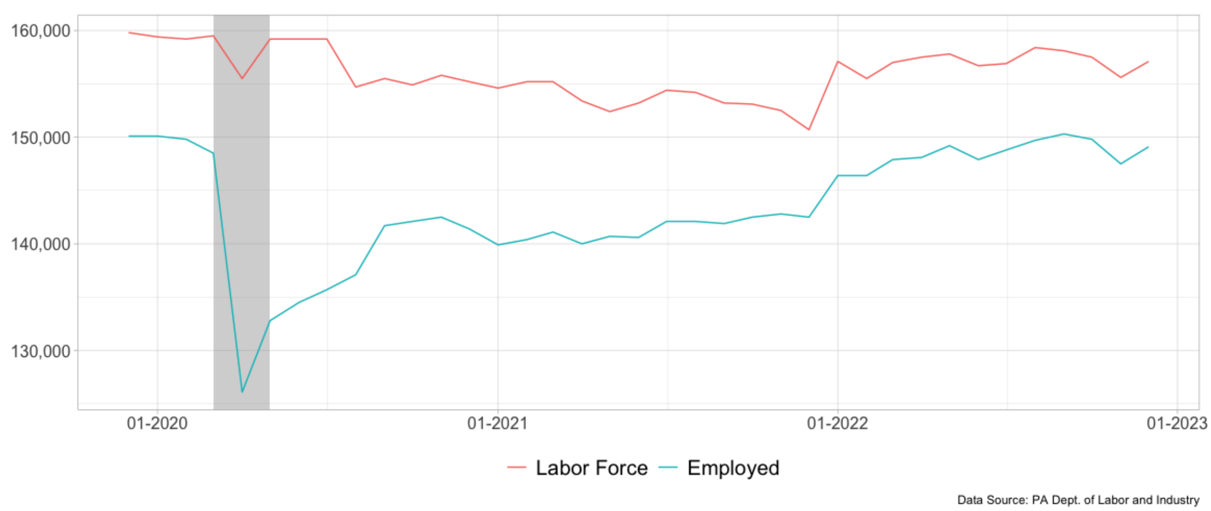

Figure 5: Labor Force and Number of Employed in the Luzerne County

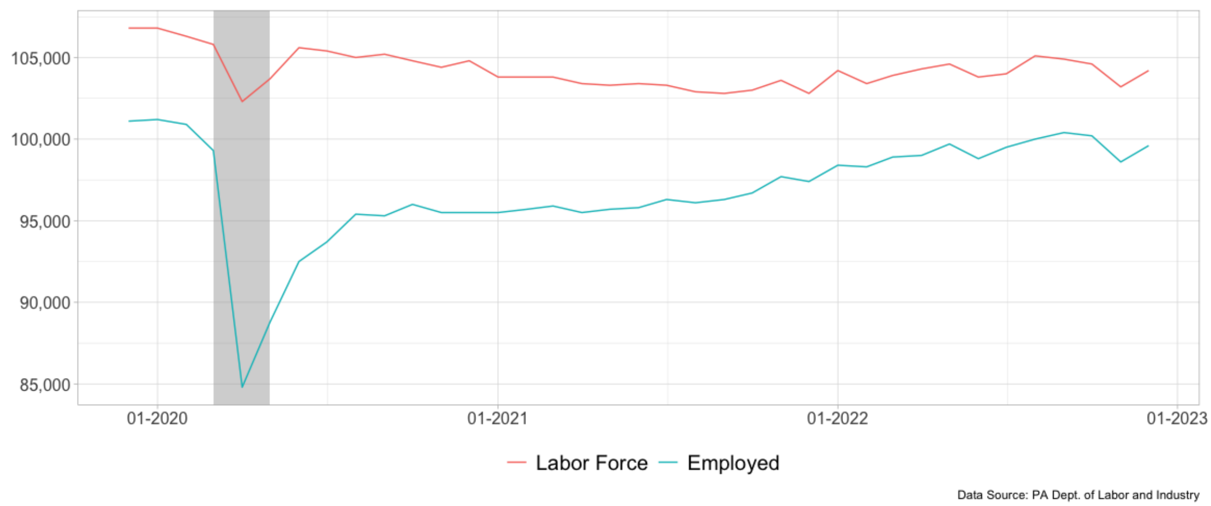

Figure 6: Labor Force and Number of Employed in the Lackawanna County

The goods-producing sector that includes manufacturing, mining, logging and construction created 1000 (22%) new jobs, out of which the manufacturing sector contributed 90% of the goods-producing sector's new jobs. But most of the jobs in this service-oriented region were created in the private service-providing sector that created the remaining 3500 (78%) new jobs. There was no addition in government service jobs. In the service providing sectors most of the jobs were created in the Trade, Transportation, and Utilities sector that added 3900 jobs. Because of the growing importance of warehousing, dating back to the Covid-19 pandemic period, within this sector, Transportation, Warehousing and Utilities contributed to 2600 of these new jobs – accounting for 74% of the new service jobs and 58% of the total new non-farm jobs. Retail trade added 1000 new jobs.

Leisure and Hospitality sector that includes accommodations and food services has become one of the most important job providers in the region. Between December 2021 and December 2022, this industry added 1500 jobs in the MSA, accounting for 42% of the new service jobs and 33% of the new non-farm jobs.

But not all industries shared the good fortune of the region. Of these, two are particularly important. Between December 2021 and December 2022, the Professional and Business Services lost 1700 jobs - a 6% decline from its December 2021 level. This loss of employment is somewhat perplexing, because it cannot be explained as a continuation of the effect of the Covid-19 pandemic, as the industry had added 11% jobs between December 2020 and December 2021. Health Care and Social Assistance sector, that includes Hospitals, continued its downturn. Once believed to be a pillar in the region as a source of employment, lost another 700 jobs – almost a 2% decline from the December 2021 level. In spite of the opening of a new hospital in Lackawanna County, hospital employment fell by 200 – or 2.6% compared to December 2021. After the pandemic, there was a sharp reduction in national employment in the health care sector, as many health care workers preferred to switch to jobs in the retail and leisure and hospitality sectors for better working conditions. The same trend appears to be continuing also in this region.

Is the Region's Recovery Complete?

The sharp increase in the unemployment rate during the Covid-19 pandemic is still fresh in our memory. In April 2020, the unemployment rate shot up to 17.9%. The unemployment rate stayed at a double-digit level until October 2020. Noting that in December 2022, the unemployment rate stayed at 4.8% for two months in a row, which is the lowest in the MSA's recorded history, it is tempting to conclude that the recovery from the Covid-19 recession must be complete.

But the comparison of unemployment rates between a pre-recession and a post-recession dates may not be sufficient nor desirable to determine if the recovery is complete. The unemployment rate is measured as the number of unemployed workers (those who are jobless, but actively seeking work and available to take a job) as a percentage of the labor force (the sum of the employed in full-time, part-time, or temporary employment and unemployed). If the labor force stays unchanged over time, a reduction in the unemployment rate implies an increase in employment and job creation and, hence, points to economic recovery or expansion. However, labor force is not a fixed number, as is evident from the experience of our region's labor markets. Every month, a few unemployed workers stop looking for jobs, perhaps because they have not had any luck for a long time to get a job, or for some other job market related reasons. They are classified as "discouraged workers" and are no longer counted as unemployed and are not regarded as a part of the labor force. This reduces the size of the labor force and at the same time it reduces the number of unemployed individuals by a much larger percentage. Thus, even if the number of employed workers does not change, the unemployment rate declines. But clearly, this reduction in the unemployment rate is just the result of how this metric is calculated and does not necessarily indicate any improvement in the labor market or the state of the economy as a whole.

The Size of the labor force usually increases when the economy starts to recover or expand. As job opportunities improve, more individuals, previously not in the labor force, start actively looking for jobs. Labor force may also increase due to a natural increase in population or immigration. However, when the labor force expands, if the rate of job creation cannot keep up with the rate of increase of the labor force, the unemployment rate increases. In such a scenario, an increase in the unemployment rate may send the wrong signal that the conditions in the labor market and the economy are weaker than what they actually are. Thus, for a proper examination of the labor market and the economy, it is best to consider the volume of employment while keeping an eye on the movement on the unemployment rate as well as the size of the labor force.

In order to better assess the improvement of the local labor market and the regional economy, we compare the data of December 2022 with the pre-pandemic month December 2019. The reason for comparing the December 2022 data with December 2019 instead of February 2020, the month immediately preceding the Covid-19 recession, is mostly due to empirical convenience. At the MSA level, the industry data are not seasonally adjusted. Usually, non-seasonally adjusted data are not suitable for comparison over different time periods. But as we are picking the same month of two different years, December 2019 and December 2022, the use of non-seasonally adjusted data for comparison is not inappropriate, since the data between these two months are not subject to large seasonal fluctuations.

Comparing to December 2019, the labor force in December 2022 was down by 6000 or more than 2%. While in the MSA, as in the entire country where labor force was already showing a declining trend due to demographic factors, a large part of the reduction in the labor force can be attributed to Covid-19 pandemic. Labor force continued to fall in the MSA until December 2021 when it fell by nearly 3% or 8300, and started to increase gradually in 2022. While the level of unemployment actually fell by 2600 to 13,200, total employment, which stood at 261,800 in December 2022, was lower by 3500 compared to December 2019.The level of non-farm jobs is the key to employment and job creation. At 261,800 it was 5800 less in December 2022 than it was in December 2019.

To understand the functioning of the labor market and the state of the economy, it is important to determine how to different sectors have contributed to job creation. Goods producing sector that includes manufacturing, mining, logging and construction is no longer the focal point of the economy. However, in December 2022, it created 1200 more jobs than in December 2019, out of which manufacturing created 1000 more jobs. The local economy is now primarily service oriented. The shortfall of service jobs compared to the pre-pandemic period is mostly due to the lingering weakness of the service providing sectors which cannot be compensated by strong showing of the goods producing sector or manufacturing. In December 2022, all service providing sectors accounted for 7000 fewer jobs than in December 2019, out of which government service had a shortfall of 1600 jobs, perhaps dispelling the notion that government is the source of wasteful employment. It is the private service providing sector that recorded a very large drop of 5400 jobs.

Within the private service providing sector, transportation, warehousing and utilities generated most jobs, primarily due to the growing importance of warehousing that predates the pandemic but became critically important during the pandemic. Compared to December 2019, this sector added 27.3% jobs. Retail trade also added a modest 1.3% jobs. The professional and business services suffered during the pandemic because these services needed personal contact. In spite of showing some improvement during 2021, this industry lagged behind its pre-pandemic level and the number of jobs in this sector was 6.5% less than its pre-pandemic level of December 2019. Another sector that suffered significantly during Covid-19 and the subsequent lockdown of the economy is Leisure and hospitality. Although it made up a lot of lost jobs, still in December 2022 it had 6.9% fewer jobs than it did in December 2019. But it is the health care sector, which, not long ago, was regarded as one of the main sources of employment in this region, suffered the most during Covid-19 and the decline of the sector continued even now. Between December 2019 and December 2022, employment in the health care and social assistance sector fell by 13.5% and within this sector hospitals suffered 13.8% job loss.

Table 2 provides the employment levels in December 2022 for selected industries and the net changes in employment from December 2019.

As we compare the December 2022 data of the Scranton-Wilkes-Barre-Hazleton MSA with December 2019, it becomes clear that although in the 2022 we made considerable

Table 2: Employment in Selected industries in SC-WB-HZ MSA in December 2022
(Data not seasonally adjusted)

Industry	Employment level	Net change from December 2019
Manufacturing	29,300	+1000
Transportation, Warehousing, Utilities	32,200	+6900
Retail trade	31,000	+400
Professional and business services	27,300	(-)1900
Leisure & hospitality	21,600	(-)1600
Health care and social assistance	39,700	(-)6200
Hospitals	7,500	(-)1200

progress and the unemployment rate reached a record low, we still have a long way to go reach the pre-pandemic level. Recovery of the regional economy is not yet complete.

Housing Markets

Aram Balagyozyan

Building Permits and Housing Starts

The number of approved housing permits is one of the ten components of the Index of Leading Economic Indicators computed by the Conference Board, and is a leading indicator closely tied to consumer confidence.

The graph in Figure 7 illustrates the number of housing permits approved in the US, Northeast, and Pennsylvania. Throughout 2022, the number of approved housing permits in the US has been declining and in December 2022, it reached a level lower than any observed after the COVID recession. This decline is likely due to the tighter monetary policy, higher interest and mortgage rates, and cooling housing market and economy. While a similar decline has not occured in the the Northeast and PA, the sharp increase in permits observed at the end of 2021 did not persist throughout 2022. As of December 2022, the number of housing permits approved in Pennsylvania and the Northeastern region were 2,241 and 9,831 respectively. These numbers are in line with with the long-term trends.

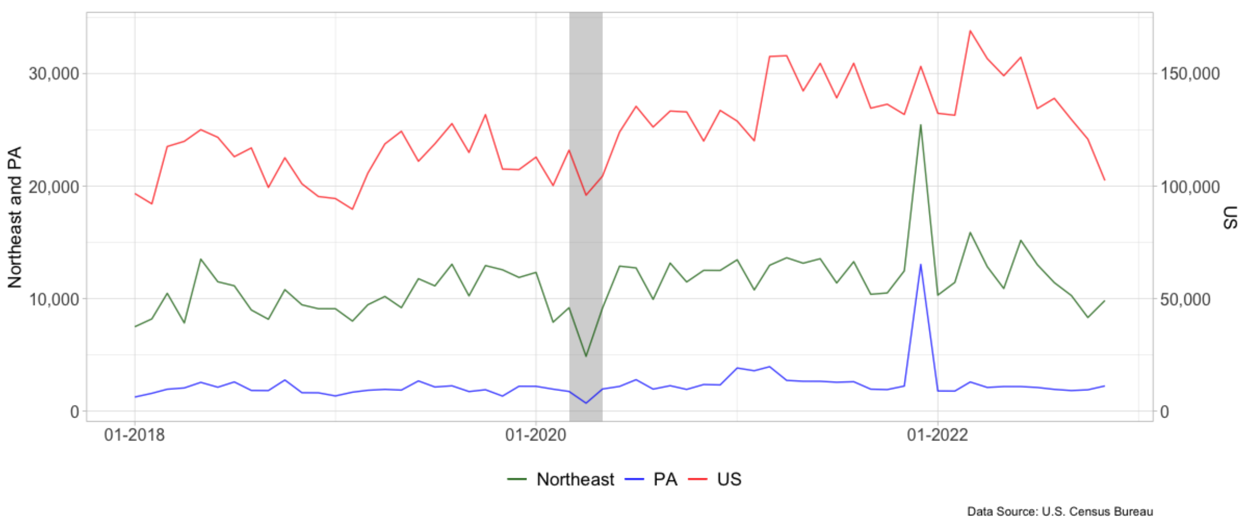

Figure 7: Total Number of Housing Permits in the Northeast, PA, and the US

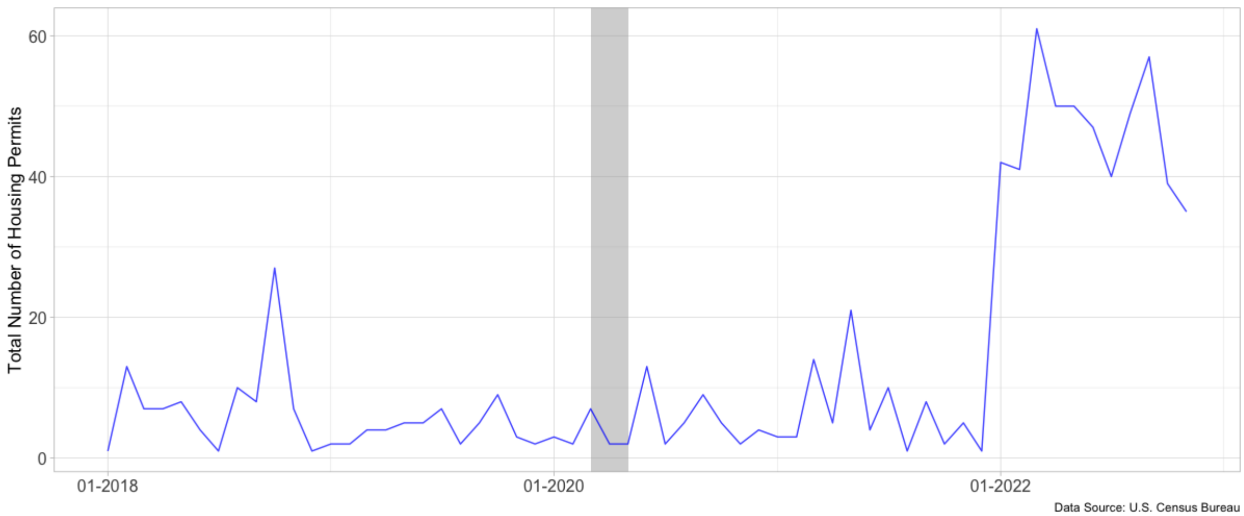

Figure 8: Total Number of Housing Permits in the Scranton – Wilkes-Barre – Hazleton MSA

The data presented in Figures 8 and 9 demonstrate the number of approved housing permits and year-over-year changes in the Scranton - Wilkes-Barry - Hazleton Metropolitan Area (SC-WB-HZ MSA). The figures indicate that in 2022, the SC-WB-HZ MSA has experienced more robust and sustained relative growth in housing permits than Pennsylvania, the Northeast, and US. It is encouraging that this growth was not impacted by increased borrowing costs.

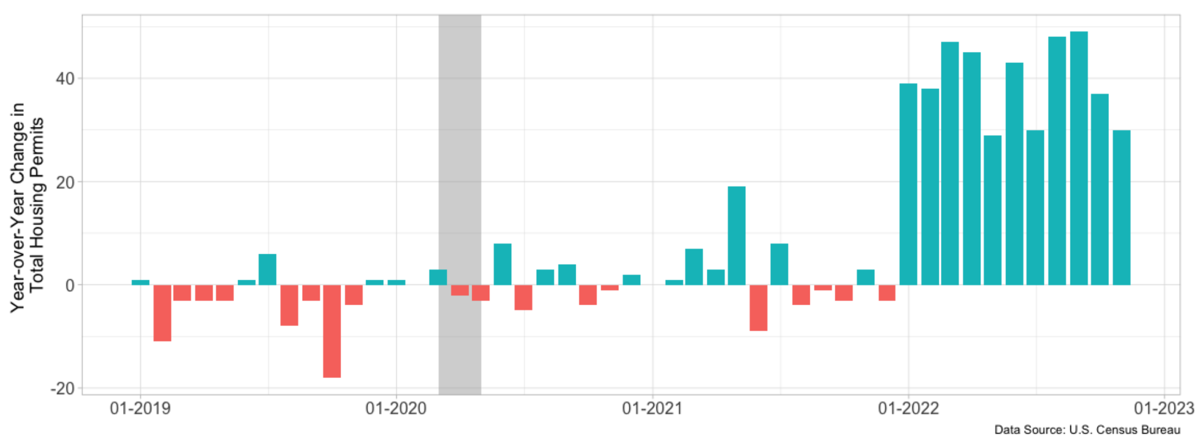

Figure 9: Year-over-year Change in Total Number of Housing Permits in the Scranton – Wilkes-Barre – Hazleton MSA

Real-Estate Market Hotness

Realtor.com publishes data on the market hotness index. The index (shown on Figure 10) is an equally-weighted composite metric of a market's supply score (based on days on market) and demand score (based on Realtor.com listing views). In December 2022, the value of the index was 66.22, down nearly 20 points compared to November 2022 and up 1 point compared to December 2021. This means that in December 2022, the real-estate market in the SC-WB-HZ MSA area was cooler than a month before but marginally hotter than a year before. According to Realtor.com, the median number of days that a for-sale housing property remained in the market was 66 with the housing inventory moving 15% slower than last year and 1% faster than the US overall. Properties in the area were viewed on average 1.6 times more than the US average. With the December score of 66.22, the area ranked number 72 out of 300 metropolitan areas in the country.

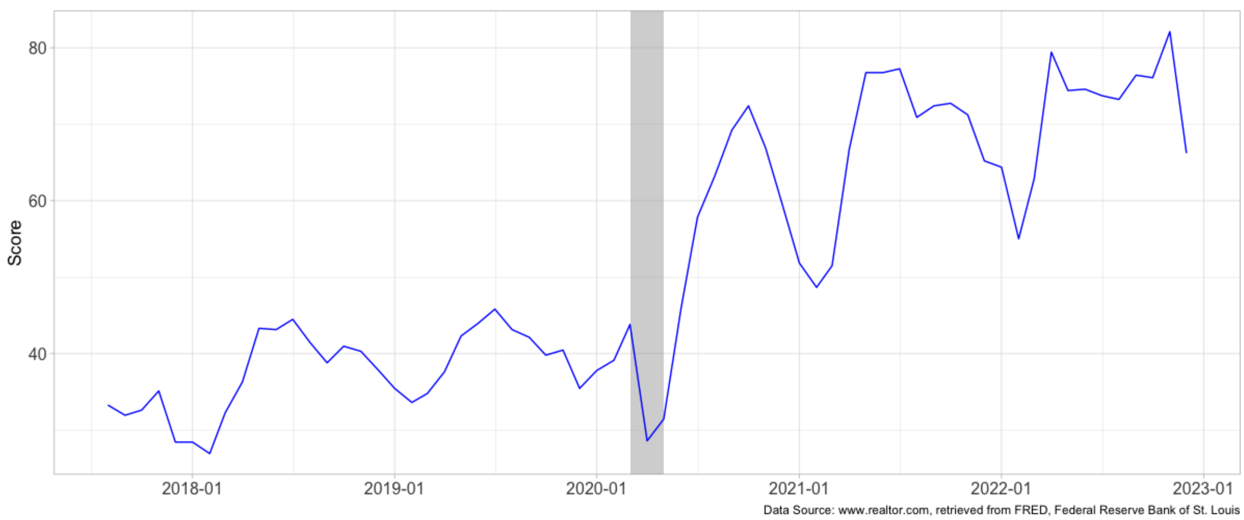

Figure 10: Real-Estate Hotness Score

Home Sales Inventory

Realtor.com also publishes the count of active single-family and condo/townhome listings for a given market during the specified month (excludes pending listings). [1] With lower numbers representing fewer houses listed for sale, this statistic is often viewed as an overall indicator of the tightness of the housing supply. One resounding trend of the COVID pandemic was a greater demand for larger housing spaces and units driven by an increasing number of workers switching to remote work. By looking at Figure 11 that shows the monthly for-sale housing inventory in the United States and the SC-WB-HZ MSA, one can easily spot a downshift in housing supply, and therefore tightening of the housing market, that occurred after the pandemic. However, by looking at Figure 12 that shows the year-over-year percent change in housing inventory, one can conclude that

[1] https://www.realtor.com/research/data/

during the last months of 2022, both the SC-WB-HZ MSA and the US had more for-sale inventory than a year before. Again, this is a clear indication of a softening housing market.

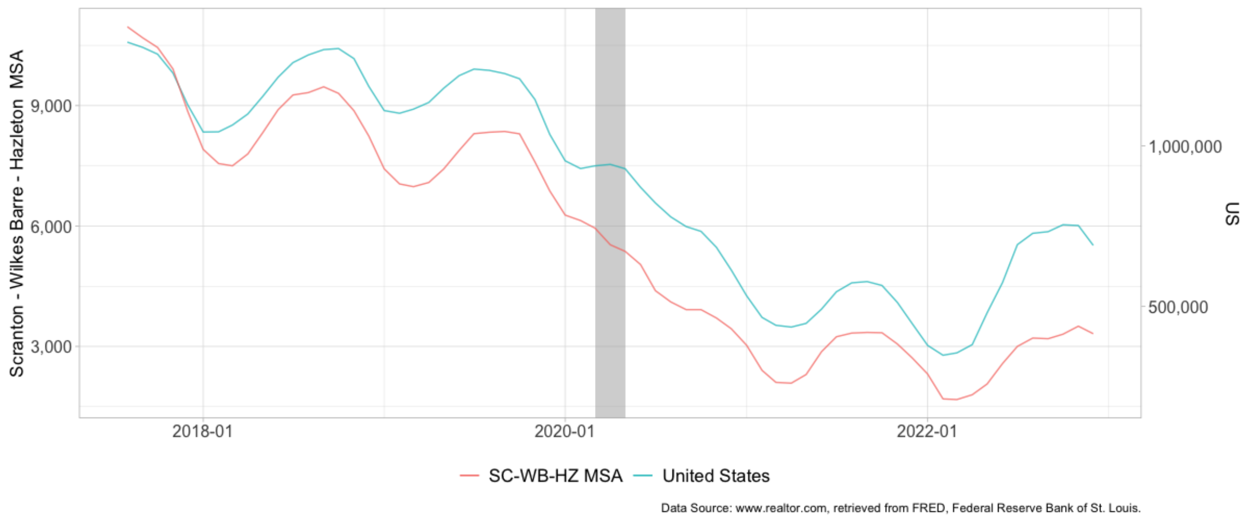

Figure 11: Monthly Number of For-Sale Housing Inventory

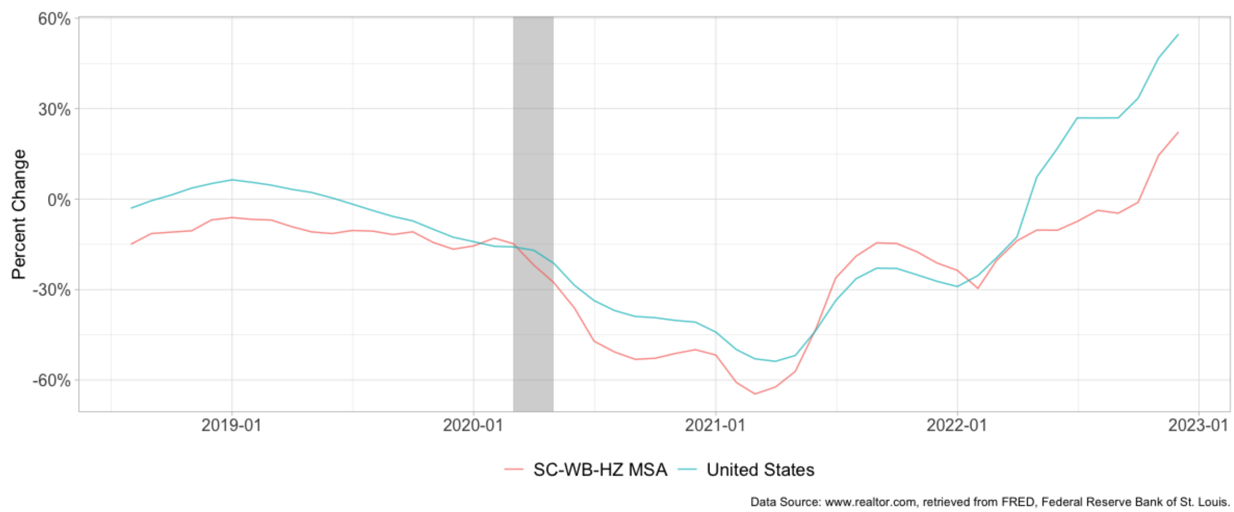

Figure 12: Year-over-Year Percent Change in Monthly Number of For-Sale Housing Inventory

Home Prices and Rents

While an increase in home prices is welcomed news among current homeowners, it is inversely related to housing affordability and a cause for concern for perspective home buyers. It should not come as a surprise that as a result of the recent softening of the housing demand (largely caused by a tighter FED's policy and higher mortgage rates) and loosening of the post-COVID supply-chain pressures, growth of home prices across the United States and Northeast has been cooling. Figure 13 exhibits year-over-year growth of the quarterly housing price index published by the Federal Housing Finance Authority (FHFA) for the SC-WB-HZ MSA, Pennsylvania, and the US. The data reflect all metro-area transactions. It must be obvious from the chart that housing price growth in 2022 in all three areas has remained very strong (between 10 and 25%), well outpacing CPI inflation. However, between the second and third quarters of 2022, this growth has declined, again, most likely due to higher borrowing costs and improved supply-chain conditions. It is worth noting that while historically growth of housing prices in Pennsylvania exceeded that of the SC-WB-HZ MSA, since the beginning of the pandemic in 2020 and especially in 2022, housing prices in the local area grew at a significantly faster pace than in Pennsylvania.

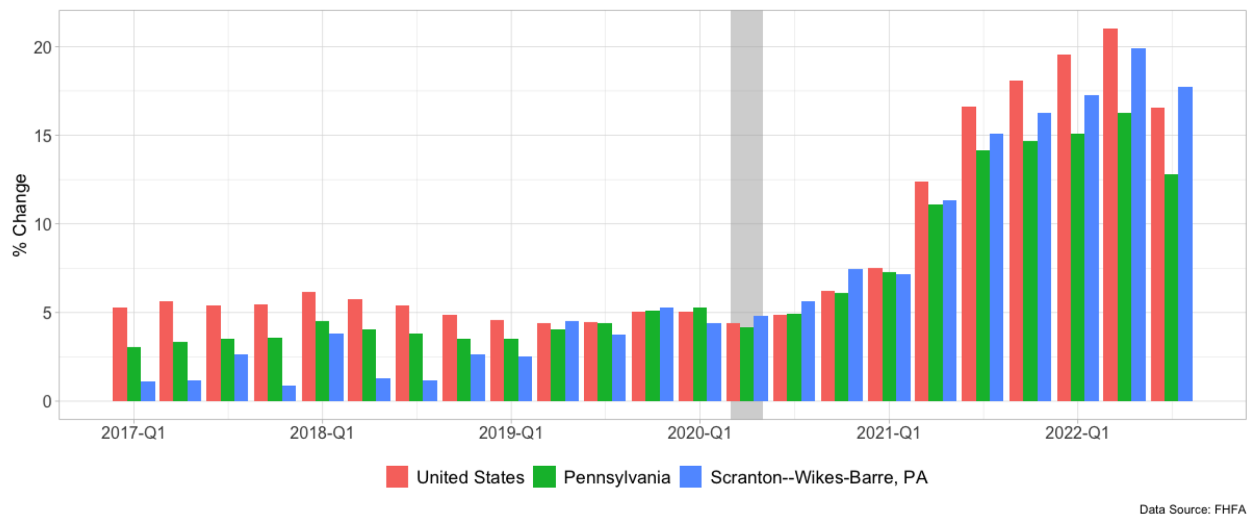

Figure 13: Year-over-Year Percent Change of the FHFA Quarterly Housing Price Index

Still, housing in the SC-WB-HZ MSA remains much more affordable. Realtor.com also publishes historical data on the median listing price of single-family and condo/townhome housing within the specified geography during the specified month.[2] Figure 14 exhibits the historical monthly data of this metric for the SC-WB-HZ MSA, Pennsylvania, and the United States. In December 2022, the median home value in the SC-WB-HZ metropolitan area was $289,054, around three quarters of the median house price in Pennsylvania ($399,899) and less than half of the median house price in the United States ($693,996). However, as it can be observed in Figure 15 (that exhibits year-over-year percent change of the median house price) since early 2021, growth of housing prices in the SC-WB-HZ MSA slightly outpaced growth of housing prices in Pennsylvania and the US.

[2]ibid. see the footnote on page 13.

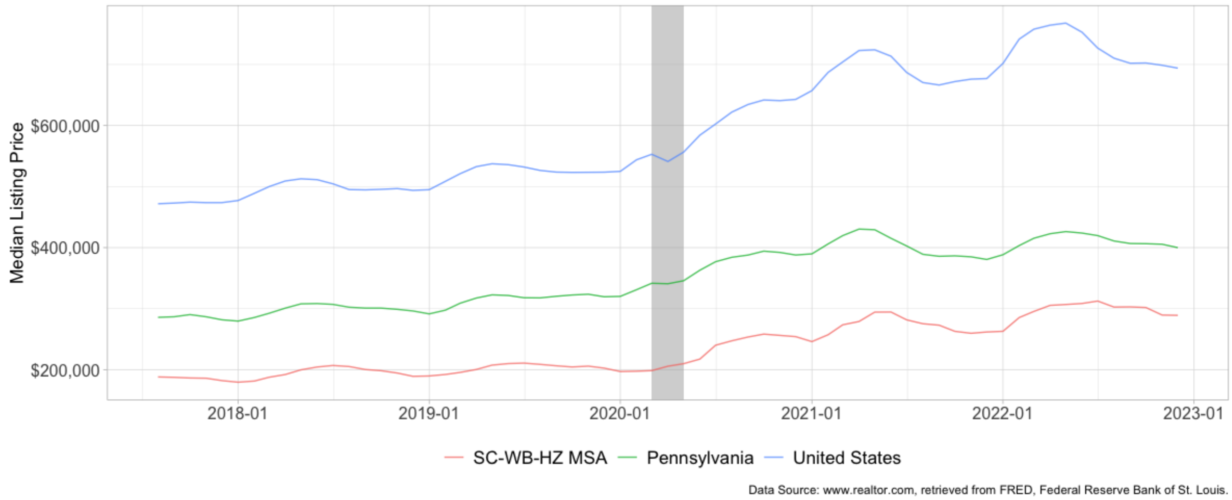

Figure 14: Median Housing Listing Price on Realtor.com

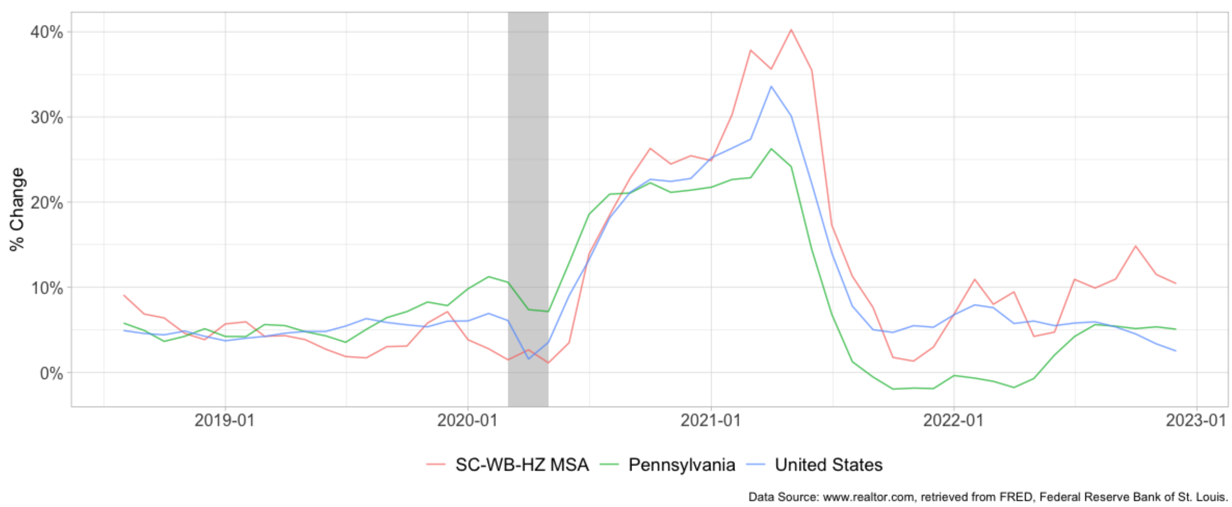

Figure 15: Year-over-Year Percent Change of the Median House Price Index

A similar conclusion can be reached regarding rental prices in the area. We source our data on rents in the Scranton metro area from zillow.com, that publishes its Observed Rent Index (ZORI) for different types of geographies (metro area, city, ZIP code, etc.).[3] ZORI is a measure of typical observed market rent in a region; it represents repeat rents as well as the rents of those homes that are currently listed for-rent. The index is computed by considering the mean of listed rents that fall into the 40th to 60th percentile range for all homes and apartments in a given region. Figure 16 shows the mean rents in Scranton, PA, Philadelphia, PA, and the US over time. The chart reveals that rents in the Scranton metro area on average have been and still are much lower than in the Philadelphia metro

[3] https://www.zillow.com/research/data/

area or in the US in general. In December 2023, the average rent in Scranton, Philadelphia, and across the US were $1,182, $1,777, and $1,981 respectively. One may wonder whether the relatively lower rent in the Scranton area is directly translatable into a more affordable rental housing? The answer depends on the counterpart in the comparison group. According to the 2020 US Census data, the median annual household income in Scranton, Philadelphia, and the US were $41,687, $49,127, and $67,000 respectively. These numbers imply that in December 2022, a median household in both, the Scranton area and the US spent about 35% of their 2020 income on rent, while the same measure of rental affordability for Philadelphia was around 43%. This means renting a house in the Scranton metro area was as affordable as in the US on average but more affordable than in Philadelphia, PA.

Figure 17 plots the year-over-year growth rate of the Zillow Rent Index. As the Figure indicates, the post-COVID rent boom that we observed in the Scranton metro area has abated a bit and in 2022, fell more in line with rent growth in Philadelphia and the US.

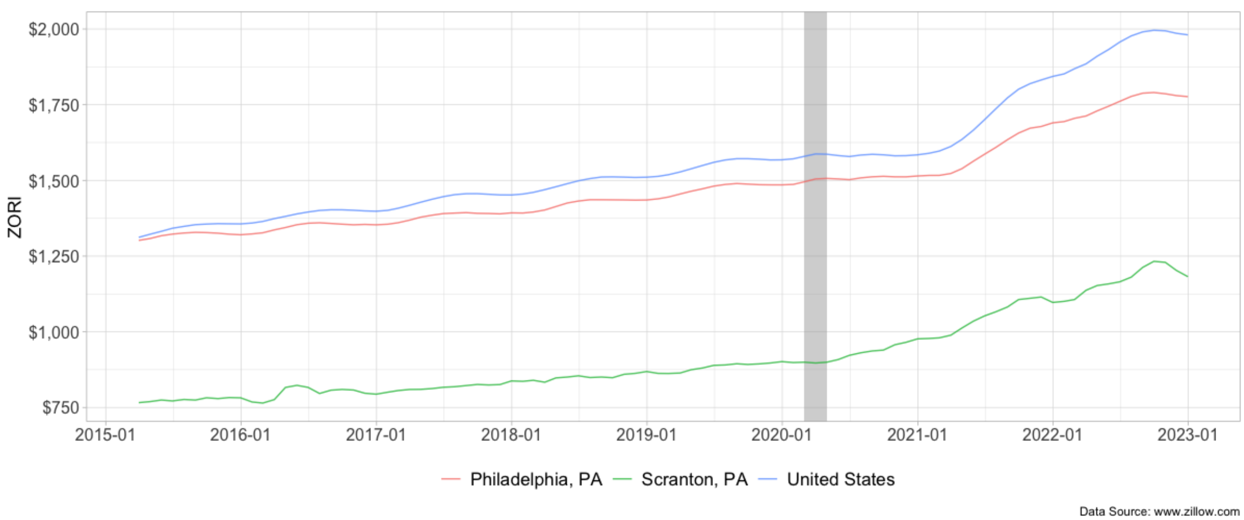

Figure 16: The Zillow Monthly Observed Rent Index (ZORI)

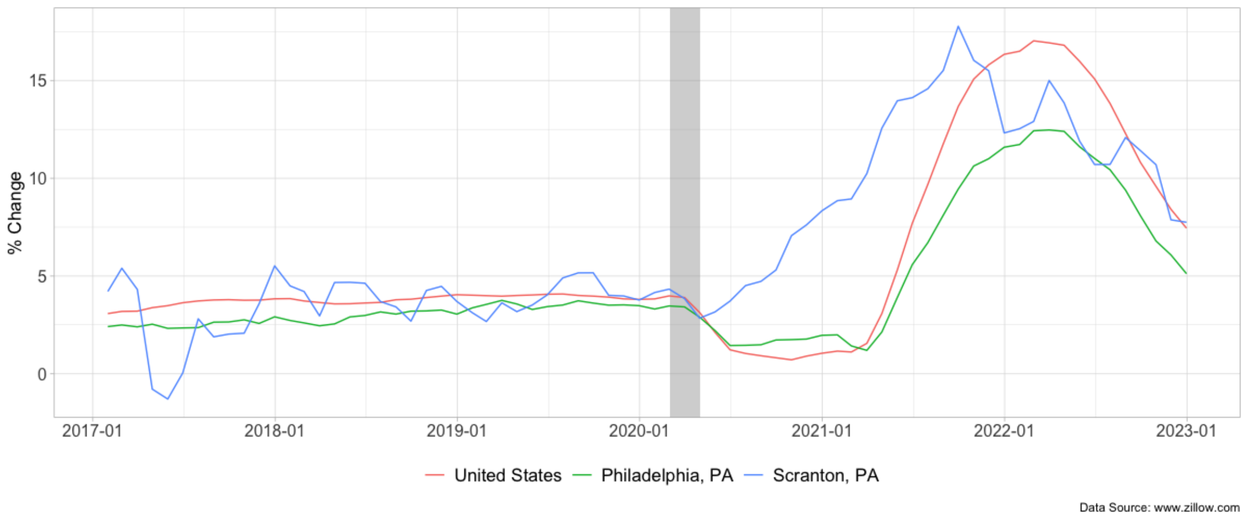

Figure 17: Year-over-Year Percent Change of the Zillow Monthly Observed Rent Index (ZORI)

Credit Conditions

Aram Balagyozyan

The state of consumer credit is an important coincident indicator of how well households are doing financially. It is also a leading indicator of economic conditions in the region as it predicts consumer spending on goods and services. One metric that allows us to gauge consumer credit conditions in the region is the estimate of "subprime population," percentage of population with a credit score below 660. This quarterly metric is produced by Equifax and Federal Reserve Bank of New York, and we retrieve these data for Lackawanna, Luzerne, and Wyoming counties from FRED, Federal Reserve Bank of St. Louis. As Figure 18 indicates, in the first three quarters of 2022, credit conditions in these three counties remained relatively low and unchanged, after declining sharply through the beginning of the pandemic. In the third quarter of 2022, subprime population of Wyoming, Lackawanna, and Luzerne counties were 18.43, 21.83, and 23.69 percent respectively. This disparity and recent trend appear to be a mirror reflection of the recent unemployment rates in the region (in November 2022, the unemployment rates in Wyoming, Lackawanna, and Luzerne counties were 3.6, 3.8, and 4.5% respectively)

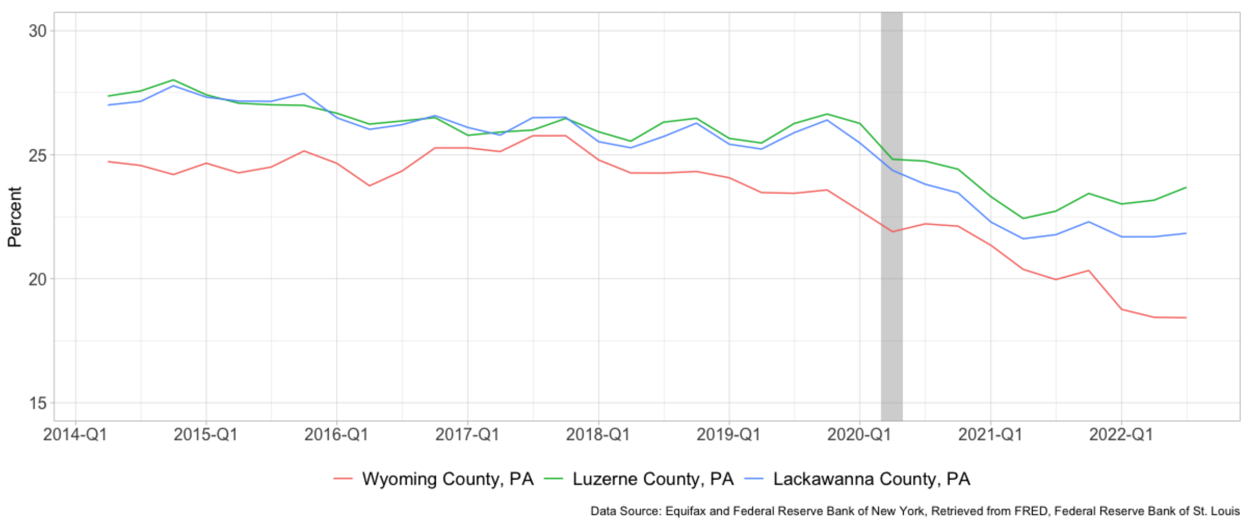

Figure 18: Equifax Subprime Credit Population

Inflation, Eggflation, and the Burden of Rising Prices

Satyajit Ghosh

In a very closely watched report on February 14, the Bureau of Labor Statistics revealed that in January Consumer prices increased at an annual rate of 6.4% - a slight reduction from the 6.5% inflation in December 2022. On an annual basis, inflation fell for seventh straight months, but inflation still remained high and the January rate was higher than the 6.2% analyst forecast.

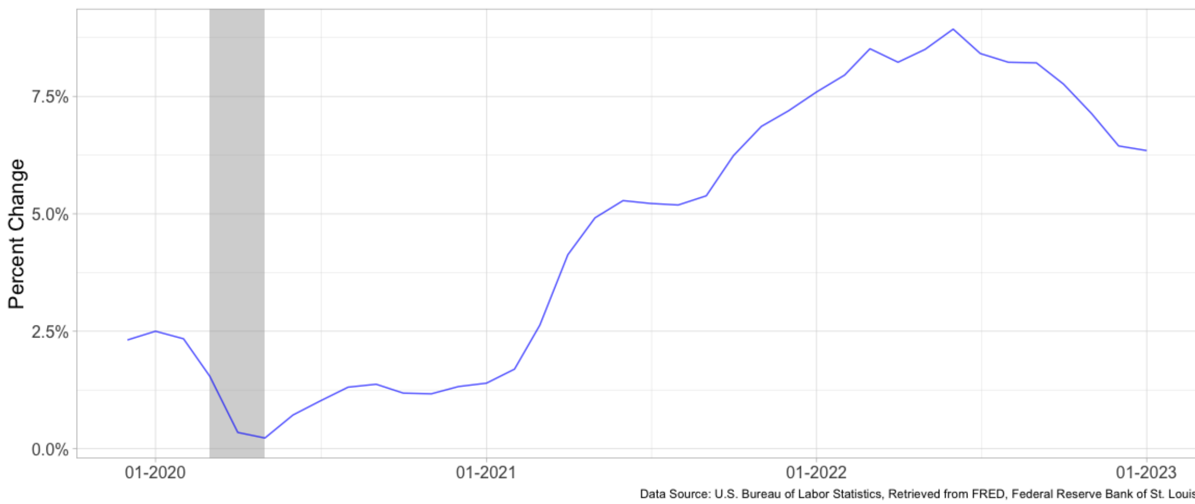

Figure 19: Monthly Inflation in the US Consumer Price Index

In the Middle Atlantic Division of the Northeast region of the country that includes Pennsylvania, consumer prices went up by 6%. According to a survey of the American Psychological Association, inflation continued to be a source of stress for a significant majority of the adults. The anxiety about inflation can be captured in the growing concern about the rising price of - no not of gasoline, but of - eggs, what is now described as "eggflation." According to Instacart, in Pennsylvania between December 2021 and December 2022, prices of eggs increased by 89% and the average price of a dozen of grade A large eggs stood at $4.52. Nationwide the price jumped by 8.5% between December 2022 and January 2023. Locally, by the end of February the price is between $3.50 and $4.00.

Why is the price of eggs so high? The price of any product or a service depends on the interaction of forces of demand and supply. On the demand side, during the holiday season demand for eggs increased sharply, as it does every year. Furthermore, lately, many Americans have switched from red meat to eggs for their source of protein, and the demand for eggs have become quite insensitive to changes in its price. But several supply side factors are mostly the reasons for sharp increase in the price of eggs. Throughout 2022, the combination of Covid-19 supply chain issues and the increase in cost of fuel and chicken feed due to inflation raised the cost of egg production. But perhaps what was the most important supply side factor was the Avian flu, commonly known as the bird flu, that killed roughly 44 million egg-laying hens since February 2022, causing a major disruption of egg production. Combination of these factors have led to the sharp increase in price of eggs, which is expected to level off and start to fall from March 2023. The increase in the price of eggs may seem like a curiosity, but it helps explain how inflation affects different income groups.

In January 2023, the Consumer Price Index (CPI) that measures the change in prices paid by consumers for goods and services, increased by 0.5% over the previous month. Prices for commodities increased at the monthly rate of 0.4%, while the prices of services increased by 0.7%. Food prices went up 0.5% Cost for food at home increased in the month by 0.4%. Prices of fruits and vegetables fell by 0.5%. Prices of new cars and trucks increased by 0.2%, at a lower rate than the previous two months. But the prices of used cars and trucks continued their downward trend of the previous months and fell by 1.9% in the month of January. Price of gasoline (all types) increased by 2.4% after it fell by 7% between November and December and by 2.3% between October and November. But the biggest contributor to inflation in January was shelter, the cost of which increased over December 2022 by 0.7%. Among other services, cost of health insurance fell by 3.6%, while the cost of day care and preschool increased by 0.7% and the cost of hospital services increased by 0.5%. Cost of public transportation fell by 1.8%, much of which was driven by a 2.1% fall in airline fares. Prices of wireless telephone service did not change, while the cost of vehicle repair went up by 2.7% and the cost of motor vehicle insurance increased by 1.4%.

While inflation adversely affects all consumers, there is little doubt that the low income earners have been affected disproportionately more than other income groups. A very large part of their income is spent on food (and grocery items or food at home) and shelter. In addition, increase in the repair cost of motor vehicles and motor vehicle insurance had a strong negative effect on them. On the other hand, reduction in the price of used motor vehicles and the reduction in airfare benefited middle- or upper income- groups.

January's 6.4% annual rate of inflation was down slightly from 6.5 percent in December, and was much lower than a peak of 9.1 percent last summer. But given our history of last thirty years, this is still considerably high. But more importantly, the core rate of inflation - the CPI based inflation less the volatile food and fuel inflation - was 5.6%, a far cry from the Federal Reserve's target 2% core rate.

The question is what is causing this inflation and why it is so persistent? Just like the price of eggs, overall inflation depends on both demand and supply side factors. On the supply side, the supply bottlenecks due to shipping problems and worker shortages caused by Covid-19 and its lingering effect initially played a very important role. Increase in the energy prices and disruption of supply of grains due to the war in Ukraine was also an important supply-side factor in 2022. On the demand side, helped by the government assistance during Covid-19, expenditures on commodities went up during 2021. But now, the strong labor market and income generated from employment is the source of consumer expenditure. On the supply side, the higher wage cost due to very tight labor market is also leading to some increase in production cost. The producer price index, a measure of the change in costs of suppliers' goods and services, rose 0.7% in January, the largest monthly jump since last summer. The index is considered a leading indicator of what might happen down the road to the consumer costs, as businesses pass higher costs down to their customers.

The pattern and persistence of this inflation can be better understood if we focus on the patern of consumers' spending that reflects the measurement of CPI. In the aftermath of Covid-19, spending was concentrated on goods rather than services. Now, as the economy is fully open, consumers are spending more on services rather than goods. Services account for the bulk of our spending. While food accounts for less than 14% of all our spending, services excluding energy services (such as electricity and piped gas services) account for the bulk of our spending, in excess of 58% of total spending. The supply side bottlenecks from Covid-19 are mostly gone now. We are no longer facing any unexpected fall out from Russian invasion of Ukraine. So, consumer spending is the primary demand side factor fueling inflation. But since most of the spending is on services, demand for such services is not likely to change in response to an increase in their price. Shelter, for example, is the most important of all services that accounts for more than 34% of all spending. But it is difficult to reduce spending on shelter. So, it is not surprising that inflation which is now largely based on "service inflation" is so persistent. It is likely that consumer prices will continue to increase for a considerable time in future. As per the Survey of Consumer Expectations of the Federal Reserve Bank of New York, consumers expect inflation to be at the level of 5% over the next year.

The Big Picture

Satyajit Ghosh

While the labor market, both locally and nationally remains exceptionally strong, persistent high inflation that is eroding the purchasing power of consumers is currently perhaps one of the most important economic problems that faces us. As we have already explained, current inflation is caused by a combination of supply side and demand side factors. On the supply side, there were supply chain bottlenecks resulting from labor shortage caused by Covid-19, shipping disruptions along with significant reduction in computer chip supply. In addition, the surge in energy prices and disruption of global grain supply caused by the war in Ukraine led to a significant cost increase. On the demand side, increased consumer spending, which was initially in part due to various government assistance programs during Covid-19 and later cause by the persistently strong labor market, all led to a sharp increase in prices. But the supply chain issues are mostly resolved and there is no further surprise in energy or grain supply due to the war. The main reason for lingering inflation is perhaps the high level of spending.

In order to control inflation, the Federal Reserve aggressively raised the key interest rate, the federal funds rate, seven times in 2022, from 0-0.25 to 4.50-4.75 percent. The Fed cannot affect the supply chain issues or the fallout from the Russian invasion of Ukraine. Its goal was to slowdown the growth of spending by raising the cost of borrowing which in turn would reduce interest sensitive spending and other capital spending and cause employment and income to fall. In other words, the Fed took measures to manage inflation by slowing down the economy, which increased the chances of it slipping into a recession.

Is the Federal Reserve succeeding in reducing spending and lowering inflation? In 2022, Real GDP (Gross Domestic Product, the measure of the country's total production of final goods and services, adjusted for inflation) increased by 2.1%. compared to 5.9% in the previous year. Growth of Real GDP is commonly regarded as the rate of economic growth. The Real Disposable Income, the after-tax income adjusted for inflation, fell by 6.4% compared to an increase of 6.2% in the year before. The Real personal consumption expenditure that accounts for nearly 70% of the GDP increased by 2.8% compared to 8.3% in 2021. All of these are already an indication that the economy is slowing down.

The data for the last quarter of 2022 are particularly interesting. In the fourth quarter of 2022, Real GDP increased at the annual rate of 2.9%, which was higher than what most economists expected. The Real Disposable Income, increased at a robust rate of 3.3%, at a much higher rate than the previous six quarters, and the Real Personal Consumption expenditure increased at the annual rate of 2.1%. Since personal consumption expenditure is the largest component of GDP, it is not a surprise that it contributed to 1.42 percentage point of the quarterly economic growth. However, in the fourth quarter of 2022, a reduction in trade deficit or an increase in net exports contributed to 0.56 percentage of the growth. But the reduction in net exports was caused by a substantial reduction in imports (in addition to a small reduction in exports) which weakened spending mostly by consumers and businesses. Furthermore, a substantial increase in inventory, contributing to a 1.46 percentage point of the growth, was accompanied by a large reduction in housing investment. Furthermore, in December 2022, while the Real Disposable Income increased by 0.2% from the previous month, the Real Personal Consumption Expenditure fell by 0.3% compared to November 2022.

Compared to 2021, the economy has slowed down considerably, although the labor market has remained very strong. In January 2023, nationwide 517,000 jobs were added. The softening of spending has had a moderate effect on inflation, since much of the inflation is driven by increase in prices of services. In January 2023, CPI-based inflation, or the headline inflation, fell by 6.4% which was slightly lower than the inflation in December 2022. But it is the core rate of inflation, inflation excluding volatile food and energy prices, that the Federal Reserve considers to set its interest rate policy. In January 2023, the core inflation rate was 5.6% for the 12-month period ending in January 2023 as compared to 5.7% in December 2022. While just as the CPI inflation, the core inflation also fell slightly in January, it is still much higher than the Federal Reserve's desired core rate of 2%. The Fed's policy of increasing interest rate works with a lag. So all the effects of the interest rate hikes have not played out yet and they will likely reduce spending and inflation further in the upcoming months. Although the current core rate of inflation is high, it is dwarfed by the core rate in 1980 when for the entire year it averaged in excess of 13%. This prompted Paul Volcker, then Chair of the Federal Reserve, to increase interest rate sharply which eventually brought down inflation but at the cost of a deep and long recession from July 1981 to November 1982, when the unemployment rate shot up to 10.8%. We don't anticipate such a dramatic increase in the interest rate by the current Federal Reserve. But due to the persistence of current inflation, it is certain that the Federal Reserve will continue to raise interest rate in 2023.

Is recession the inevitable cost of controlling inflation? Since the Federal Reserve wants to reduce spending by increasing the cost of borrowing, it will likely cause a slow down of the economy. However, since the labor market is very strong, the cyclical slowdown may avoid a recession or lead to a shallow and a short recession when the unemployment rate may still continue to be low. Economists at JP Morgan have recently revised their growth projection for the first quarter of 2023 to 2% from 1%. In a speech on February 14, 2023, Patrick Harker, the President of the Philadelphia Fed, expressed his optimism that because of the Fed's rate hikes in 2023, the core rate of inflation will fall to 3.5% in 2023 and 2.5% in 2024, finally settling at 2% in 2025. As for GDP, he expected the GDP growth rate to be 1% before rising to the trend rate of 2% in 2024-2025.[4]

But in a paper presented on February 24, 2023, at the Annual Conference of the US Monetary Forum, the authors argued that painless reduction in inflation is not feasible.[5] Drawing from historical data, the authors of the paper argued that disinflation or a reduction in inflation caused by interest rate hikes by the Fed or any other central bank in the major countries in the world, is always associated with significant increase in unemployment and reduction in GDP. Such increase in unemployment or loss of output to bring about one percentage point reduction in inflation is defined as the Sacrifice Ratio. The authors of the paper have calculated that between 1951 and 2007 in the U.S., the unemployment rate increased (compared to the full employment rate) by an average of 0.8 percentage point point for one percentage point reduction in the headline (CPI based) inflation and by 1.5 percentage point for one percentage point reduction in the core rate inflation. As a result, GDP fell by 1.3 percent (again compared to the full employment GDP) for one percentage reduction in headline inflation and by 2.8 percent for one percentage point reduction in the core rate of inflation. However, the authors observed that during the latest disinflationary period, starting in 2007, the unemployment rate increased by a considerably larger amount, 1.4 percentage point for one percentage point reduction in the headline inflation and 3.8 percentage point for one percentage point reduction in the core rate of inflation. As evidenced by the Volcker disinflation in the early 1980s, when the sacrifice ratio was about half of the average, increase in the unemployment rate and the associated loss of GDP can be substantial due to the large amount of disinflation even when the sacrifice ratio is large. Thus, the authors concluded that there will be a substantial increase in unemployment and reduction in GDP due to the future rate hikes of the Fed.

Of course, history can help us understand what may happen in the future, but this time it may indeed be different. In the past disinflationary periods, we were never at such a

[4] Patrick Harker: Region's Economy "Maintains Significant Strengths, Particularly in Labor Market" (Speaking to the audience at La Salle University's 22nd Annual Economic Outlook,)

[5] Stephen G.Gecchetti, Michael E.Feroli, Peter Hooper, Frederic Mishkin, and Kermit L. Schoenholtz with Matthew Luzzetti and Justin Weidner:"Managing Disinflations", paper presented at the Annual Conference of the U.S. Monetary Forum, in the University of Chicago, February 24, 2023.

low unemployment rate as we are now. So, the current inflation may be stubborn and the Fed may have to raise interest rate considerably, but the strong labor market may be able to absorb much of the negative impacts of the interest rate hikes. As a result, it is not unlikely that when inflation is finally brought under control, the unemployment rate may still be quite low and even if the economy slips into recession, it may turn out to be shallow and short.

Is it possible to maintain a low inflation rate such as 2% along with reasonably high wage growth? In the short run, it is possible if the profit margin of the businesses falls. But to sustain a healthy wage growth in the long run, when the profit margin is stable and inflation is low, labor productivity needs to grow at a high rate. Currently, the labor productivity is growing at the rate 1-1.25%. In the long run, to maintain a 5% wage growth, inflation needs to be at the rate of about 4%. To maintain a 5% wage growth, along with a 2% inflation rate, labor productivity needs to increase at the rate of about 3%. This is a tall order, but may not be impossible. Well-designed government policy can help to achieve such increase in productivity. For example, the Inflation Reduction Act of 2022, with its proposed investments in fighting climate change and in clean energy production, has the potential of bringing about substantial improvements in productivity and, at the same time, grow the economy and reduce inflationary pressures in the long run.