

Western New York ECONOMIC NEWS

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The primary risk to the national economy at present is the acceleration in the rate of inflation. The University of Michigan's consumer survey showed expectations of CPI inflation amounting to 4.9% over the coming year. Real GDP advanced at an annual rate in the 4th quarter of 6.9% and a 5.5% increase for the year. Regionally and nationally, neither employment, labor force participation nor the unemployment rate have recovered fully from their pre-recession levels. Concurrently, there have been increases in wages and the price level, both for the producer and consumer. One can only speculate if the Fed is willing to trigger another recession to slow the expected rate of inflation.

The National Economic Outlook

At present, the primary risk to the national economy is the acceleration in the rate of inflation. Since March 2021, CPI inflation has crept upward from 2.6% to 7% in December 2021 (www.bls.gov). The opinion espoused by the Federal Reserve that inflation was a transitory phenomenon and would ebb once supply chain issues were resolved has changed. The Fed now sees inflation as a more serious issue and have been preparing markets for coming monetary policy changes. They have announced their intention of reducing their purchases of U.S. Treasury and mortgage-backed securities prior to raising interest rates. In our view, overly expansionary fiscal policy and the monetization of the huge deficits by the Fed, coupled with pandemic-related issues in the supply chain, have been largely responsible for the inflation problem. Annual inflation rates since 2007 based on the monthly CPI are shown in Figure 1.

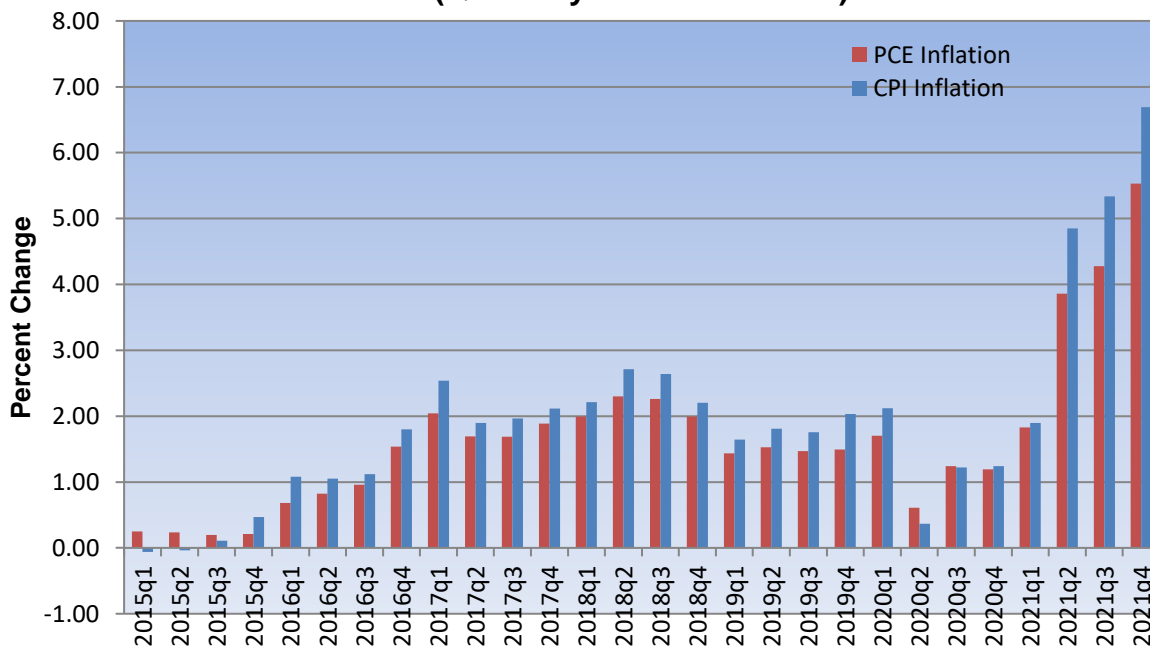
If the current acceleration in the rate of inflation continues, consumers and firms may begin to expect higher inflation rates and may behave in a way that produces higher inflation through higher wage demands and increased retail prices. The University of Michigan's consumer survey showed expectations of CPI inflation amounting to 4.9% over the coming year. Figure 2 shows quarterly inflation rates based on both the Consumer Price Index and the Personal Consumption Expenditures deflator over the period 2015 through 2021:Q4. Placing the CPI on a quarterly basis makes it comparable to the PCE deflator, which is only available quarterly. In December 2021, the Livingston survey of professional forecasters showed expectations of CPI inflation at 4.5% for the period 2021-2022, an uptick of 2 percentage points from June 2021 survey. Since both

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**Figure 1. CPI Inflation Rates 2007-2021
(% Change from a Year Earlier)**



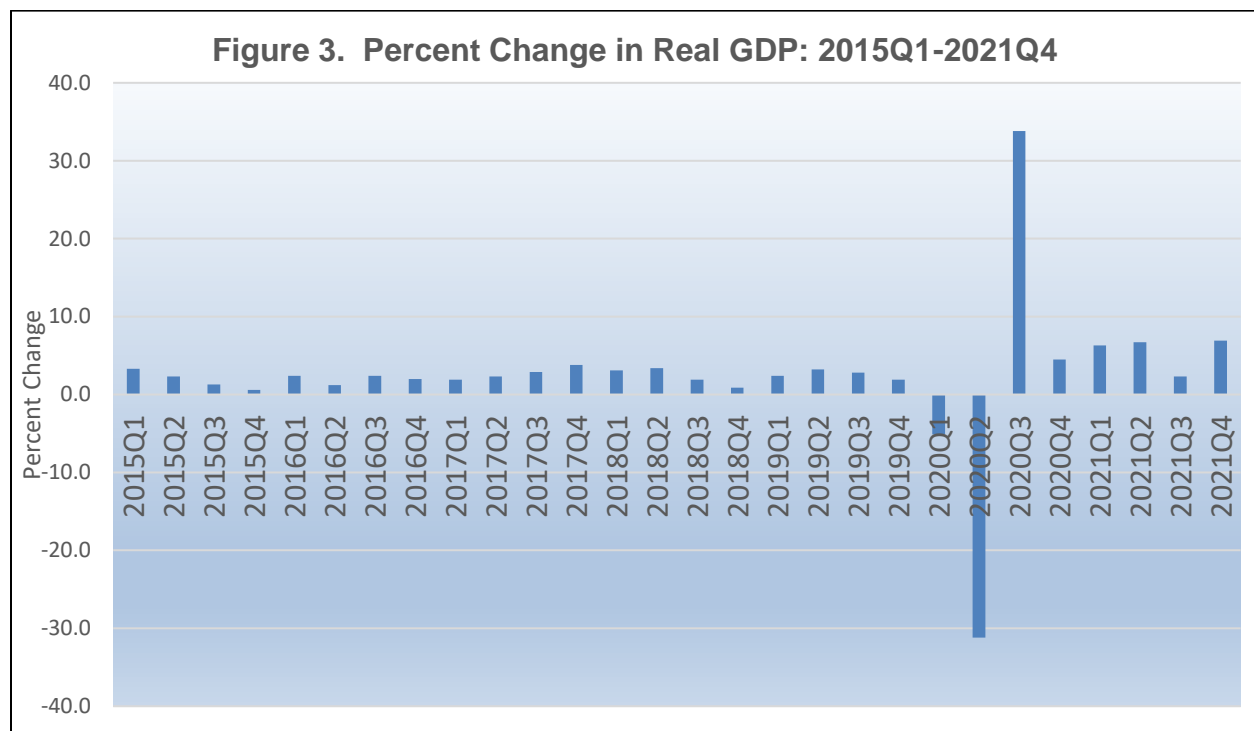
Figure 2. CPI & Personal Consumption Expenditure Inflation Rates (Quarterly Data: 2015-2021)



inflation surveys appeared prior to data from the December CPI becoming available, it is likely the inflation expectations will continue to rise.

The most recent run-away inflation problem in the U.S. occurred during the OPEC oil shocks of the late 1970's. The cure for this problem were interest rates in excess of 20% as a result of monetary policy tightening and the Fed engineered twin recessions of 1980 and 1981-1982. It is noteworthy that the preceding decade was marked by strong growth of aggregate expenditures associated with the Vietnam War, the Great Society programs and international exchange rate instability.

Real GDP grew strongly over the period 2020:Q4 – 2021:Q4, increasing by 4.5%, 6.3%, 6.7%, 2.3% and 6.9%. On an annual basis, the economy saw a 3.4% reduction in real GDP between 2019 and 2020 followed by a 5.7% increase from 2020 to 2021. Figure 3 shows quarterly real GDP growth rates since the first quarter of 2015 (www.bea.gov).



While real GDP surpassed its pre-COVID recession peak during 2021:Q2, payroll employment did not. Figure 4 shows the level of U.S. non-agricultural payroll employment and the unemployment rate since January 2015. Payroll employment in December 2021 remains almost 3.6 million below its February 2020 pre-recession peak. The unemployment rate stood at 3.9%, but this figure is misleading due to the precipitous drop in the labor force participation since 2019:Q4, brought about by COVID. Quarterly labor force participation rates since 2011 are shown in Figure 5. Prior to the onset of the 2020 COVID recession (2019:Q4), the labor force participation rate stood at 63.3% of the

working age population. By 2020:Q2, this rate declined to 60.8% but has recovered to 61.8% during 2021:Q4.

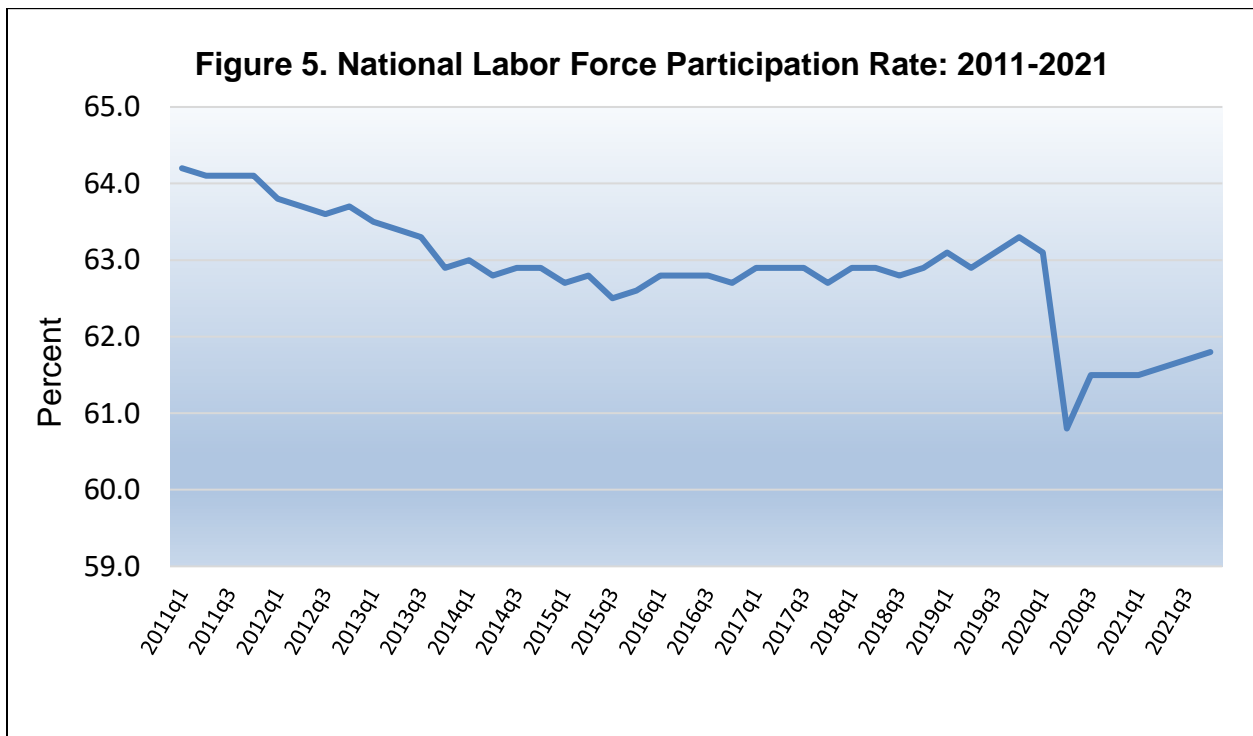
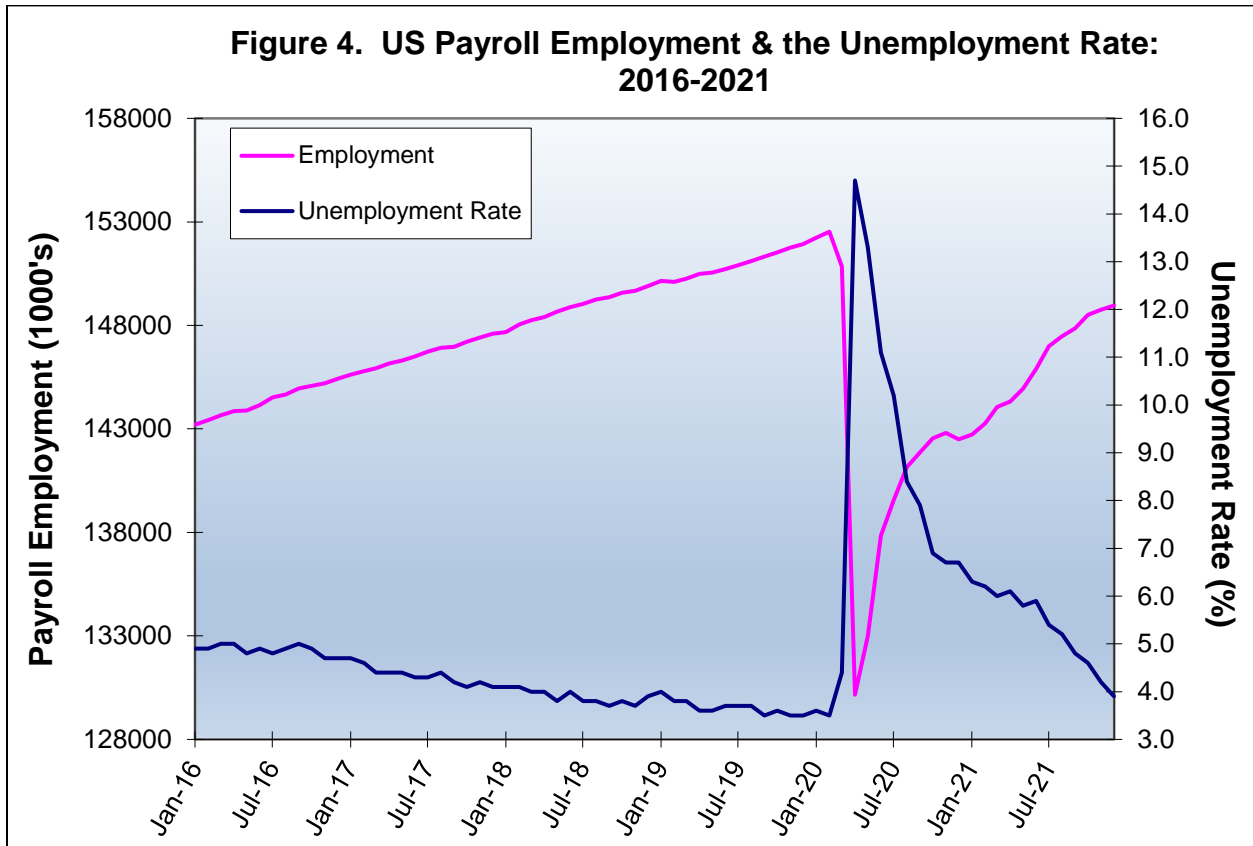


Table 1. Change in the Size of the US Labor Force by Age and Gender

Age	Dec. 2019 – Dec. 2020			Dec. 2020 – Dec. 2021			Dec. 2019 – Dec. 2021		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
16-19	-105	38	-143	24	-4	20	-81	34	-47
20-24	-119	-177	-296	93	63	156	-26	-114	-140
25-34	-567	-685	-1,252	200	410	610	-367	-275	-642
35-44	-82	-403	-485	242	484	726	160	81	241
45-54	-493	-354	-847	11	-193	-182	-482	-547	-1,029
55-64	-355	-223	-578	-91	-13	-104	-446	-236	-682
65-69	-61	-121	-182	94	185	279	33	64	97
70+	-75	-207	-283	122	52	174	47	-155	-108
Total	-1,857	-2,132	-3,989	695	984	1,679	-1,162	-1,148	-2,311

To better understand the changes in labor force participation, Table 1 shows the change in the size of the U.S. labor force by age and gender. As measured from December 2019 through December 2020, the labor force lost 3.99 million individuals. Of these losses, 1.25 million individuals were in the 25-34 age group and 2.1 million were women.

Substantial recovery took place between December 2020 and December 2021 with almost 1.7 million individuals re-entering the labor force, resulting from an increased perception of safety due to medical advancements to prevent and treat Covid-19 and the elimination of federal unemployment compensation subsidies. Nearly 900 thousand women between 25 and 44 years of age came back into the labor force in 2021. It is likely that many were able to return to work after schools reopened for in-person learning and child-care services became easier to find.

At the end of 2021, there were 782 thousand fewer individuals between 20 and 34 years of age in the labor force than there were in December 2019. It is reasonable to expect that many of these individuals will re-enter the labor force in the coming year.

Less promising are the trends seen in the 45-54 and 55-64 age groups. It is in those age categories that we observed further losses in the labor force in 2021. More than 1.7 million of the 2.3 million that remain out of the labor force in December 2021 are between 45 and 64 years of age. With the environment created by the pandemic and the gains seen in equity markets over the last two years, it is likely that some fraction of individuals in that age range have opted for early retirement and will not return to the labor force -- a longer-term consequence of the pandemic.

The smaller labor force has caused widespread work force shortages and has contributed to higher wage profiles to attract employees. Although we anticipate further recovery in the labor force, it is unlikely to return to the level seen before the pandemic, and as a result, we expect that rising wage trends will continue.

Table 2. US Wages from QCEW**

	Annual Level 2018	Annual Level 2019	Annual Level 2020	First Half 2021	Growth 2018-2019	Growth 2019-2020	Growth First Half 2020-2021*
Total Private	\$57,200	\$59,200	\$64,200	\$33,400	3.5%	8.5%	10.8%
Construction	\$62,700	\$64,800	\$67,400	\$33,200	3.3%	3.9%	5.9%
Manufacturing	\$68,500	\$69,900	\$73,400	\$37,300	2.0%	5.0%	6.6%
Wholesale Trade	\$77,900	\$80,200	\$84,200	\$43,700	3.0%	5.0%	8.7%
Retail Trade	\$32,400	\$33,600	\$36,800	\$18,900	3.9%	9.4%	11.6%
Transportation and Warehousing	\$53,200	\$54,400	\$55,300	\$27,300	2.2%	1.8%	2.2%
Information	\$113,800	\$119,600	\$136,300	\$77,300	5.1%	14.0%	19.9%
Finance and Insurance	\$109,200	\$112,700	\$121,500	\$70,300	3.1%	7.9%	9.1%
Professional and Technical Services	\$97,100	\$100,700	\$107,200	\$55,100	3.7%	6.4%	9.1%
Administrative and Support Services	\$41,000	\$43,000	\$46,500	\$24,000	5.0%	8.0%	12.1%
Education	\$51,300	\$52,700	\$57,200	\$28,500	2.7%	8.6%	8.6%
Ambulatory Health	\$62,400	\$64,100	\$67,500	\$33,200	2.7%	5.3%	9.0%
Hospitals	\$64,200	\$66,100	\$69,200	\$34,300	2.9%	4.7%	3.6%
Nursing Homes	\$32,300	\$33,500	\$37,000	\$18,100	3.9%	10.4%	3.7%
Social Assistance	\$24,200	\$25,200	\$27,500	\$14,000	4.0%	9.0%	9.7%
Arts, Entertain, Rec	\$38,900	\$40,100	\$45,700	\$23,000	3.0%	14.0%	35.4%
Accommodation	\$32,100	\$33,400	\$35,400	\$19,200	4.1%	1.3%	39.8%
Food Services	\$19,800	\$20,600	\$21,000	\$11,600	4.3%	1.7%	29.0%
Other Services	\$38,500	\$39,900	\$44,100	\$22,600	3.8%	10.4%	14.4%

* Growth rate reflects average wages in the first half of 2021 as compared with average wages in the first half of 2020

**QCEW data from bls.gov -- available through 2021:Q2

Table 2 shows average wages by industry at the national level. The total private wage growth rate in 2019 was consistent with historical patterns. The growth rates of 8.5% in 2020 and 10.8% in 2021 (through the 2nd quarter) were more noteworthy. One can see that the higher rates of wage growth occurred in typically lower-paying industries, including food services, accommodation, retail trade, other services, and administrative and support services. These were the industries that sustained the brunt of the pandemic's impact on the economy. The information and arts, entertainment and recreation industries also experienced sizeable wage increases, but those were concentrated in certain sub-industries, like motion picture and sound recording, and performing arts and spectator sports.

Some of the 8.5% wage growth in 2020 can be explained by a combination of hazard pay and a disproportionate loss of jobs at the low end of the wage spectrum. So, it is possible that some of the wage growth during 2020 was short-term as conditions became safer and jobs returned. In addition, it is unlikely that the second half of 2021 grew at the same rate as the first half (10.8%), primarily because of the higher level of wages in the second half of 2020, the base of our growth rate calculation for the second half of 2021. Labor shortages have produced an environment in which wages can only be expected to increase at a robust pace. To better understand the scope and differences of the various measures of employment and unemployment, one should look at the comparison provided in <https://www.bls.gov/opub/hom/cew/concepts.htm#comparisons-of-related-data-series>

The Economic Outlook for the Buffalo Region

The unemployment rate in the Buffalo MSA hit a pandemic-era low in December 2021 at 3.3 percent. As we observed at the national level, we must also consider the size of the local labor force. The local labor force included only 522.3 thousand individuals in December 2021 -- the second lowest level since at least 1990 (the earliest year that the BLS provides local CPS data). The only month in which CPS data indicated a smaller labor force in the Buffalo MSA was April 2020, the first full month of the lockdown and a month in which a sizeable number of furloughed workers were not counted among the unemployed.

A similar story of local employment trends is told by (CES) data, seen in Table 3. The number of payroll jobs in the Buffalo MSA has essentially stagnated over the last 6 months at a level more than 30 thousand below the pre-pandemic level. The distribution of those jobs across industries changed slightly by season, but the health care and social assistance industry continues to be more than 5 thousand jobs short of the 2019 values, with the majority of them in the nursing home and social assistance sub-industries. The four industries that have seen growth since 2019 are construction, manufacturing, administrative and support services, as well as transportation and utility. This occurred as demand for housing and home improvements, and consumer goods and services has increased, as has the reliance on home delivery of both internet and local sales.

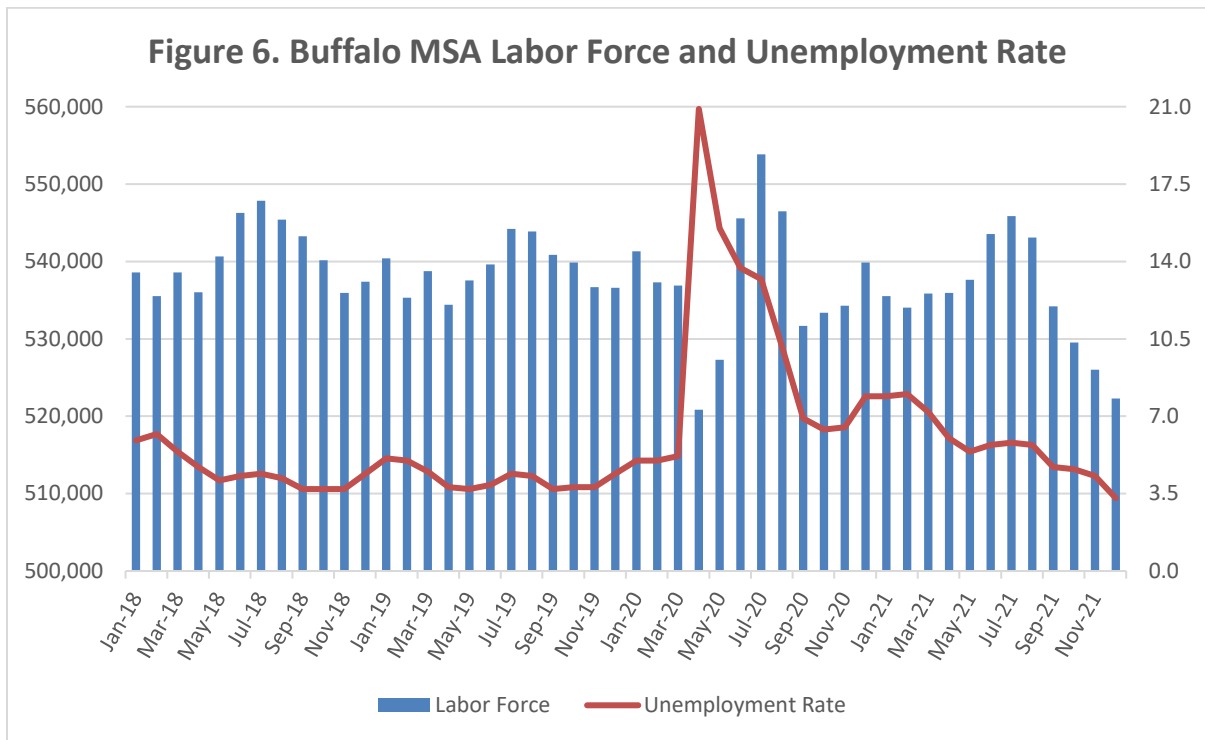


Table 3. Buffalo MSA Payroll Employment Changes

	June 2019- June 2021	Sept. 2019- Sept. 2021	Dec. 2019- Dec. 2021
Total	-32.0	-32.6	-31.1
Construction	0.4	0.7	1.7
Manufacturing	-1.6	-0.9	0.2
Wholesale Trade	-1.2	-1.3	-1.3
Retail Trade	-1.6	-3.2	-2.0
Transportation and Utility	0.5	1.0	0.8
Information	-1.0	-1.1	-1.2
Financial Activities	-1.1	-1.2	-1.3
Professional and Technical Services	-1.9	-1.7	-2.0
Management of Companies	-2.1	-2.1	-1.7
Administrative and Support Services	-2.0	-1.2	1.0
Education	-1.9	-2.4	-2.4
Health and SA	-6.6	-5.2	-5.8
Arts, Entertainment, and Recreation	-1.7	-2.0	-2.4
Accommodation and Food Services	-4.5	-2.0	-4.6
Other Services	-2.4	-1.7	-1.6
Government	-3.3	-8.3	-8.5

Regardless of the source of local employment data, local firms' challenges in finding (and keeping) workers are evident. This labor shortage has contributed to the rising profile of wages in the Buffalo MSA, just as it did at the national level.

Table 4a. QCEW Annual Pay Upstate MSAs by Industry: 2020

Industry	Buffalo MSA \$	Rochester MSA \$	Syracuse MSA \$	U.S. Average \$
Total, all industries	\$55,756	\$55,679	\$56,303	\$64,021
Total, Federal Government	80,305	66,058	75,827	85,467
Total, State Government	75,573	66,626	66,328	65,762
Total, Local Government	60,596	54,414	56,413	56,884
Total Private all industries	53,587	55,455	55,156	64,247
Goods-producing*	67,375	66,603	68,884	70,297
Natural resources & mining*	42,578	39,925	39,260	61,162
Construction*	64,446	67,053	66,308	67,357
Manufacturing*	69,380	68,920	72,303	73,397
Service-providing*	50,776	52,703	52,370	62,931
Trade, transportation & utilities*	45,122	45,769	51,259	52,382
Information*	73,858	73,669	64,165	136,324
Financial activities*	72,467	80,176	78,258	106,698
Professional & business services*	64,760	67,690	65,863	84,512
Education & health services*	50,038	54,728	52,839	55,335
Leisure & hospitality*	30,325	21,622	21,830	25,874
Other services*	32,574	36,088	36,194	44,084
Unclassified*	45,816	43,818	33,164	66,211

*Private employment only

Table 4b. Average Pay in Upstate MSAs by Industry: 2nd Quarter 2021

Industry	Buffalo MSA \$	Rochester MSA \$	Syracuse MSA \$	U.S. Average \$
Total, all industries	\$14,182	\$14,354	\$14,784	\$16,129
Total, Federal Government	\$21,799	\$18,955	\$20,795	\$23,306
Total, State Government	\$22,464	\$22,036	\$22,030	\$16,526
Total, Local Government	\$16,847	\$14,753	\$16,073	\$15,047
Total Private all industries	\$13,288	\$14,065	\$13,990	\$16,067
Goods-producing*	\$16,540	\$16,592	\$16,848	\$17,419
Natural resources & mining*	\$10,013	\$10,643	\$10,406	\$14,300
Construction*	\$15,543	\$16,576	\$16,288	\$16,675
Manufacturing*	\$17,190	\$17,112	\$17,660	\$18,329
Service-providing*	\$12,619	\$13,457	\$13,406	\$15,778
Trade, transportation & utilities*	\$11,480	\$12,106	\$13,260	\$13,561
Information*	\$17,663	\$18,589	\$16,055	\$35,624
Financial activities*	\$17,981	\$19,637	\$19,117	\$24,854
Professional & business services*	\$15,740	\$16,856	\$17,191	\$21,117
Education & health services*	\$13,104	\$14,528	\$13,836	\$14,064
Leisure & hospitality*	\$7,290	\$5,700	\$5,902	\$6,841
Other services*	\$8,333	\$8,932	\$9,379	\$11,257
Unclassified*	\$9,677	\$9,619	\$8,039	\$16,495

*Private employment only

**QCEW data from bls.gov -- available through Q2:2021

As has been the case for many years, average annual pay per worker in 2020 continued to be lower in the Buffalo MSA than in the rest of the country in most private employment sectors. However, local pay for state and local government employees remained higher than the rest of the nation. While the state employment earnings per worker might be caused by the occupational mix of state workers in Buffalo compared to the rest of the nation, the local government wage differentials are still a mystery. One wonders how long lower than average local wage earners can continue to pay local government workers higher than national average wages.

Table 5 presents a comparison of the change in earnings per worker between 2019 and 2020, before the nation and the region began to “return to normal”. The growth rate in the earnings of all employees in the Buffalo MSA exceed those that occurred in the rest of the nation, and were substantially higher than pre-pandemic levels. The change in

average annual earnings per worker between 2018 and 2019 were 3.2% and 3.3% for the Buffalo MSA and the nation respectively. It is difficult to determine whether these new wage increases reflect a reconfigured pandemic workforce or underlying labor market conditions. The annual report for 2021 should help establish the root causes.

Table 5. Percent Change Average Annual Pay Upstate MSAs by Industry: 2019 - 2020

Industry	Buffalo MSA % Change 2019 to 2020	Rochester MSA % Change 2019 to 2020	Syracuse MSA % Change 2019 to 2020	U.S. % Change 2019 to 2020
Total, all industries	9.5%	8.7%	8.2%	8.1%
Total, Federal Government	1.3%	-0.6%	1.3%	1.4%
Total, State Government	1.6%	1.5%	1.4%	4.7%
Total, Local Government	7.9%	9.0%	8.0%	7.1%
Total Private all industries	10.1%	9.0%	8.8%	8.5%
Goods-producing*	3.7%	4.0%	3.0%	4.1%
Natural resources & mining*	4.8%	1.2%	7.7%	-1.1%
Construction*	7.8%	7.5%	9.3%	3.9%
Manufacturing*	2.3%	2.8%	0.5%	5.0%
Service-providing*	11.6%	10.3%	10.1%	9.6%
Trade, transportation & utilities*	11.9%	10.4%	9.0%	6.3%
Information*	10.2%	8.2%	11.2%	14.0%
Financial activities*	7.7%	9.7%	9.3%	8.3%
Professional & business services*	6.1%	7.7%	6.6%	7.8%
Education & health services*	9.0%	7.6%	5.4%	6.6%
Leisure & hospitality*	17.2%	8.8%	10.0%	3.2%
Other services*	10.9%	8.5%	10.6%	10.4%
Unclassified*	22.7%	7.1%	0.5%	8.8%

*Private employment only

**QCEW data from bls.gov

**Figure 7. CES Employment in the Buffalo MSA:
Seasonally Adjusted Monthly Data: 2011 – 2021**

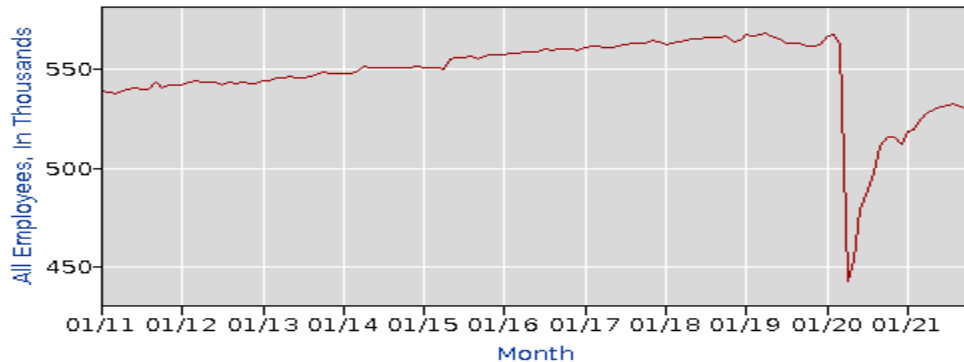


Figure 7 presents the most recent employment data for the Buffalo MSA on a seasonally adjusted monthly basis <https://data.bls.gov/cgi-bin/dsrv?sm>. While total employment levels have recovered from the nearly cataclysmic declines of spring 2020, the region remains in a deficit position compared to pre-pandemic levels. The monthly employment deficit declined from approximately 49 thousand fewer jobs in January 2021 than in January 2020 to about 31 thousand fewer in December of 2021 than in the December of 2019. Thus, both regionally and nationally, employment levels, the labor force and the unemployment rate have not recovered to their pre-recession levels.

Both real compensation and real wages have exhibited positive growth over the past two decades. Table 6 shows that both employment compensation and its wages & salaries component (based on the Employment Cost Index) increased faster than economy-wide inflation based on the CPI over the last 20 years and in each individual decade of this century. In 2021, however, inflation outpaced the increase in both compensation and wages and salaries. In the last half of 2021, the CPI rose 1.5 percentage points faster than total compensation and 0.8 percentage points faster than wages, resulting in lower real compensation for labor. This is consistent with the cost-push inflation episode experienced in the U.S. over the period 1974-1983.

Table 6. Average Real Growth (%) of Total Compensation, Wages & Salaries

	ECI: Total Compensation	CPI	ECI: Total Compensation - CPI	ECI: Wages & Salaries	ECI: Wages & Salaries - CPI
2001-2021	2.7	2.2	0.6	2.6	0.4
2001-2009	3.2	2.5	0.7	2.9	0.4
2010-2021	2.4	1.9	0.5	2.3	0.5

Original Data Value <https://www.bls.gov/opub/hom/ncs/concepts.htm>

NATIONAL, STATE & LOCAL BUSINESS INDICATORS

NATIONAL INDICATORS	2020:IV	2021:II	2021:III	2021:IV	% change
					2020:IV - 2021:IV
Real GDP (billions of chained 2012\$) (1)(a)	18,767.8	19,368.3	19,478.9	19,806.0	5.5
US Personal Income (billions of \$) (1)(a)	19,542.0	20,669.9	20,797.8	20,904.1	7.0
	Dec-20	Oct-21	Nov-21	Dec-21	% change
					Dec-20 - Dec-21
Annual CPI Inflation Rate (%) (2)	1.36	6.22	6.81	7.04	5.67
Exchange Rate Canadian cents/US \$ (3)(b)	127.42	123.86	127.80	126.40	0.30
10 Year Treasury Note Yield (%) (3)(b)	0.92	1.560	1.450	1.514	0.53
3 Month Treasury Bill Yield (%) (3)(b)	0.08	0.058	0.055	0.050	-0.02
S&P 500 Stock Index (3)(b)	3,756.07	4,605.38	4,567.00	4,766.18	26.89
Dow-Jones Industrial Average (3)(b)	30,606.48	35,819.56	34,483.72	36,338.30	18.73
LABOR MARKET TRENDS (2)					
Nonag Civilian Employment					
US (1000's)(a)	142,503	148,503	148,752	148,951	4.52
Change from previous month	(306)	648	249	199	
NY State (1000's)(a)*	8,723.3	9,025.6	9,056.2	9,101.5	4.34
WNY (1000's)(a)*	511.8	529.4	533.7	534.2	4.38
Unemployment Rate (%)					
US (a)	6.7	4.6	4.2	3.9	-2.8
NY State(a)	8.7	6.9	6.6	6.2	-2.5
WNY	7.5	4.6	4.2		
Ave. Weekly Hours in Mfg. US (a)	41.3	41.3	41.4	41.4	0.1
Ave. Weekly. Earnings in Mfg. US \$(a)	954.9	997.0	1,002.7	1,007.3	5.49
US Private Employment (1000's)(a)	121,047.0	126,562.0	126,832.0	127,043.0	4.95
WNY EMPLOYMENT BY SECTOR					
Mining, Logging & Construction	20.8	24.0	23.6	22.2	6.73
Manufacturing	49.2	51.6	52.1	52.8	7.32
Trade, Transportation & Utilities	96.6	97.4	99.3	100.8	4.35
Durable Goods	29.6	30.5	30.9	31.2	5.41
Finance Activities	35.6	35.5	35.6	35.5	-0.28
Government	86.2	83.6	83.8	83.4	-3.25
(1) US Dept. of Commerce	(a) Seasonally Adjusted				
(2) US Dept. of Labor	(b) End of month data				
(3) Wall Street Journal					