## DELTA COUNTY ECONOMIC UPDATE

COLORADO MESA

Second Quarter 2019

Provided by the Business Department of Colorado Mesa University

## **Economic Summary**

- Delta County's economy is holding steady at a 4.77% unemployment rate.
- The employment and labor force growth of the last two years has stalled this quarter, however it has not reversed.
- Real estate prices continue to climb, with median sales prices increasing from \$186,400 to \$235,483 since the same quarter last year, or a 26% increase. The real estate market continues to be strong, but some indicators are softening.
- The national economy continues to be strong with the lowest unemployment rate in 50 years. Some cracks are starting to show, with the yield curve inverting in both March and May. Yield curve inversions are strong predictors of coming recessions.

The Delta County Economic Update is provided by the Business Department of Colorado Mesa University and is published quarterly. Please direct all correspondence to Dr. Nathan Perry, Associate Professor of Economics, 970.248.1888, naperry@coloradomesa.edu.

## CONTENTS

Local Economic Indicators	1
The Local Labor Market	2
Sales and Lodging Taxes	2
Yearly Indicators and Confidence	3
QCEW Employment Data	4
Local Real Estate Indicators	5
Regional Energy	6
Oil/Natural Gas/Gasoline Prices	
Delta/Gunnison Coal	
Economic Contribution of Oil/Gas	
Economic Contribution of On/Gas	0
National Economic Indicators	9
National Economic Performance	
What could turn the economy?	

## LOCAL ECONOMIC INDICATORS

	Q1 2019	Q4 2018	Q1 2018	% change since last quarter	% change since last year (comparable quarters
Local Labor Market					
Unemployment Rate Delta County- NSA	4.77%	4.00%	4.47%	0.77%	0.30%
Unemployment Rate Colorado - NSA	3.60%	3.60%	3.20%	0.00%	0.40%
Unemployment Rate U.S NSA	4.10%	3.60%	4.30%	0.50%	-0.20%
Labor Force	14,355	15,184	14,282	-5.46%	0.51%
Employed	13,667	14,574	13,645	-6.22%	0.16%
Unemployed	688	610	637	12.79%	8.01%
Business Confidence			,		
Leeds Colorado Business Confidence Index	52.7	50.1	61.3	5.19%	-14.03%
Sales/Use Taxes					
City of Delta Sales/Use Taxes (Quarterly)	\$1,470,857	\$1,504,534	\$1,388,980	-2.24%	5.89%
City of Delta Sales/Use Taxes (YTD)	\$1,470,857	•••••	\$1,388,980		5.89%
Delta County Sales Tax (Quarterly)	\$1,229,820	\$1,305,212	\$1,128,027	-5.78%	9.02%
Delta County Sales Tax (YTD)	\$1,229,820		\$1,128,027		9.02%
Lodging Tax (Quarterly)	\$19,942	\$43,074	\$23,110	4.00%	-13.71%
Lodging Tax (YTD)	\$19,942	•	\$23,110		-13.71%

Yearly Indicators	2017	2016	2015	% change since 2016	% change from 2015
Median Household Income	\$43,528	\$41,798	\$42,586	4.14%	2.21%
Percent of Population Below Poverty Line	16.5%	16.8%	16.3%	-0.30%	0.20%
Population	30,568	30,346	29,902	0.73%	2.23%
Personal Income (in thousands)	\$1,145,549	\$1,019,053	\$1,016,121	12.41%	12.74%
Personal Income Per Capita	\$37,475	\$33,581	\$33,982	11.60%	10.28%

SOURCES IN ORDER OF LISTING: State and Local Unemployment rates: Bureau of Labor Statistics (LAUS); National Unemployment rate: Bureau of Labor Statistics; Labor Force, Employed, and Unemployed: Colorado Department of Labor and Employment; Leeds Colorado Business Confidence Index: Leeds School of Business; Sales/Use Tax information: City of Delta and Delta County; Population, poverty, and median household income: U.S. Census Bureau; Personal income: Bureau of Economic Analysis. Note that in all rows where percentages are presented the % change since last quarter and % change since last year represents the difference between the two percentages, not the actual percentage change.

#### The Local Labor Market

Delta County's unemployment rate moved higher in Q1 of 2019 from both last quarter and last year, moving from 4% in Q4 of 2018 to 4.77% in Q1 2019. In Q1 of 2018, the unemployment rate was 4.47%, so unemployment has creeped slightly higher even in the same season. 4.77% is still a relatively low unemployment rate, however, several Western Slope economies have seen their unemployment rates slightly creep up recently. Since Q1 2018, the labor force has increased by 73, while unemployment has incrased by 51. This increase is quite small and not cause for alarm, and the unemployment increase is accompanied by a labor force increase which indicates more people are moving into the workforce, which is a positive thing. Employment numbers are up by 22 since the same time last year. Delta's positive economic growth in 2017 and 2018 is showing signs of taking a pause. Q2 and Q3 numbers will help determine if Delta's employment growth has plateaued.

Employment is up 1,497 compared to five years ago, while the labor force is up 920. Compared to 10 years ago employment is down 1,796 and the labor force is down 2,168. However, as previously argued in these newsletters, the 2008 bubble was a double bubble here on the Western Slope, with both a real estate and energy boom. Comparing to 10 years ago is not a fair comparison.

#### Sales and Lodging Taxes

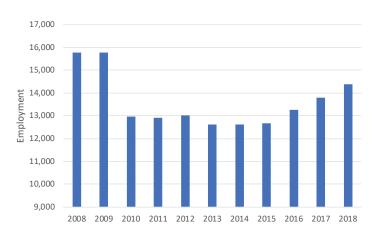
City and County sales taxes are up from last quarter and from last year. This is a result of the strong national and local economy, strong consumer confidence, and a result of growing employment in the county and region. Lodging taxes are down by approximately \$3,000 from last year, although graphically the trend for lodging taxes is still definitely positive. Lodging taxes fluctuate on a seasonal basis.

Table 1:

1, 5, and 10 Year Employment Comparison (Based on Q1 comparisons)

	Labor Force	<b>Employed</b>	Unemployed
Annual	73	22	51
5-Year	920	1,497	-577
10-Year	-2,168	-1,769	-399
Annual %	0.5%	0.2%	8.0%
5-Year %	6.8%	12.3%	-45.6%
10-Year %	-13.1%	-11.5%	-36.7%

Figure 1: **Delta County Yearly Employment** 



## **Yearly Indicators and Business Confidence**

Business confidence has fallen in Colorado since the same time last year. The Leeds Colorado Business Index shows a large drop in the index from 61 to 50 from Q1 2018 to Q1 2019. Businesses may be anticipating late stage business cycle and the potential for slower growth in the medium term.

Yearly economic indicators have not changed from last quarter's newsletter. Figure 3 illustrates median household income for Delta County. The numbers are slightly volatile, which is common in areas with small job markets and populations, however the trend line since 2007 is positive, and 2017 increased by a large amount. I expect 2018 median household income numbers to be higher than the 2017 numbers based on all of the 2018 data so far.

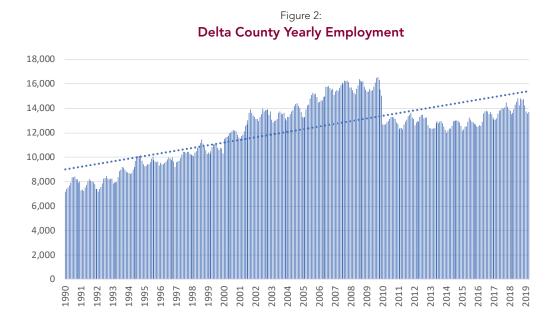
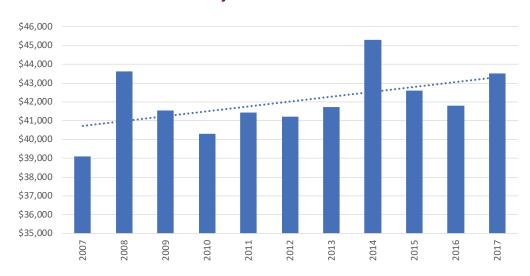


Figure 3: Delta County Median Household Income



#### **Delta County Employment Trends**

Delta employment trends from Q4 2017 to Q4 2018 are stagnant, with QCEW data showing a small loss of 30 jobs. Healthcare uncharacteristically shows a loss of 146 jobs over the year. Growth in construction, manufacturing, and public administration almost compensated for these job losses. QCEW data is collected from unemployment insurance data, and captures larger firms that have employees. QCEW does not capture data on self employed, and tends to undercount farm employment. However the data it collects on industry employment is very detailed and provides insight into industry changes. The asterisks indicate that QCEW classified a large employer differently in 2018, switching categories from finance/insurance to real estate. There were not actually significant changes in those industries. Farm employment from the Bureau of Economic Analysis is noted in table 3.

Table 2: Quarterly Census of Employment and Wages Q4 2018 Compared to Q4 2017

Sector	Average Employment Q4 2018	Total Quarterly Wages (Q4 2018)	Average Weekly Wage (Q4 2018)	Total Wage Change (Q4 2017 to Q4 2018)	Total Employment Change (Q4 2017 to Q4 2018)
Total, All Industries	8,570	\$78,313,845	\$703	\$3,558,299	-30
Health Care and Social Assistance	1,929	\$17,956,411	\$716	-\$316,225	-146
Retail Trade	1,181	\$8,697,428	\$566	\$129,898	-25
Public Administration	715	8,020,604	863	\$480,605	24
Construction	506	\$6,221,415	\$946	\$826,483	42
Manufacturing	520	\$5,422,367	\$802	\$776,598	46
Real Estate and Rental and Leasing	236	\$3,481,385	\$1,135	\$2,648,445*	139*
Accommodation and Food Services	763	\$3,219,252	\$325	\$150,566	-34
Agriculture, Forestry, Fishing & Hunting	325	\$2,852,418	\$675	\$186,647	-14
Finance and Insurance	221	\$2,645,345	\$921	-\$1,703,647*	-117*
Professional and Technical Services	197	\$2,333,703	\$911	\$8,387	19
Other Services, Ex. Public Admin	223	\$1,786,616	\$616	\$112,131	12
Mining	116	\$1,739,673	\$1,154	-\$124,335	-9
Administrative and Waste Services	171	\$1,447,326	\$651	\$40,135	-3
Transportation and Warehousing	126	\$1,375,285	\$840	\$216,266	10
Wholesale Trade	124	1,288,155	799	-\$132,328	14
Information	146	\$1,259,851	\$664	-\$48,509	0
Utilities	47	\$718,206	\$1,175	\$4,278	-4
Management of Companies and Enterprises	23	\$245,413	\$821	\$40,730	3
Arts, Entertainment, and Recreation	13	\$63,013	\$373	-\$129,279	-3
Educational Services	N/A	N/A	N/A	N/A	N/A

SOURCE: Colorado Department of Labor and Employment (QCEW). The most recent quarterly data available is reported.

Table 3: Farm Employment

Agriculture	2017	2016	2015	% change since 2016	% change from 2015
Farm Employment	1,072	1,073	1,087	-0.1%	-1.4%

#### LOCAL REAL ESTATE

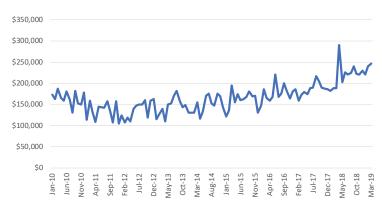
	Q1 2019	Q1 2018	% change since last year
Real Estate			
Current Residential Listings (3 month avg)	201	212	-5.35%
New Residential listings (3 month total)	145	205	-29.27%
Sold Residential Listings (3 month total)	103	130	-20.77%
Median Sales Price	\$235,483	\$186,400	26.33%
Average Sales Price	\$264,096	\$213,143	23.91%
Days on Market	140.67	110.23	27.61%
Months Supply of Inventory	4.43	4.09	8.39%
Total Building Permits	30	31	-3.23%
Total Building Permit Valuation	\$3,482,750	\$2,380,423	46.31%
Single Family Home Permits	12	5	140.00%
Single Family Home Permit Valuation	\$2,322,689	\$853,217	172.23%
Foreclosures			
Foreclosure Filings	12	15	-20.00%
Foreclosure Sales	11	11	0.00%
Mortgage Rates			
15 Year Mortgage Rate	3.82%	3.74%	0.08%
30 Year Mortgage Rate	4.37%	4.28%	0.09%

SOURCES IN ORDER OF LISTING: Real Estate Data: Colorado Association fo Realtors Market Trends Program through ShowingTime; Building Permits and Valuation: City of Delta and Orchard City totals; Foreclosure Filings and Sales: Delta County; Mortgage rates: Freddie Mac.

#### **Local Real Estate Indicators**

The Delta real estate market data continues to give mixed signals. The data shows that the market continues to climb in value, but other data shows signs that indicate the market is softening. Median sales prices for Delta County increased from \$186,400 to \$235,483 since the same quarter last year, or a 26% increase. Average sales prices also increased from \$213,143 to \$264,096. This is quite an increase in home values, especially given income levels in Delta County. No measure of income has moved in accordance with these home value changes. To make matters more confusing, there are less new residential listings, which means the supply of housing units available to be bought is falling, which should push prices up (provided that demand stays constant). Building permits are holding steady, while building permit valuation are up for total permits and single family permits. Housing prices are rising, but other real estate market indicators show some signs of weakening. Days on market has increased from 110 to 140, while months supply of inventory has also increased, indicating that homes are sitting longer before they sell. A movement higher in days on market indicates a move towards a buyers market. Under 4 months is considered a sellers market and over 6 months a buyers market (generally).

Figure 4: **Delta County Median Home Price** 



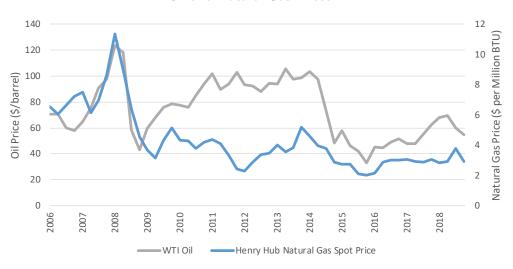
## **REGIONAL ENERGY**

	Q1 2019	Q4 2018	Q1 2018	% change since last quarter	% change since last year (comparable quarters)
Energy Prices					
WTI Crude Oil	\$54.82	\$59.97	\$62.91	-8.59%	-12.86%
Henry Hub Natural gas	\$2.92	\$3.80	\$3.08	-23.16%	-5.19%
Retail Gasoline Price	\$2.27	\$2.54	\$2.48	-10.49%	-8.50%
Drilling Permits	2019 YTD	2018 YTD	2018 total	% Change since same time last year	
Drilling Permits (Mesa County)	0	3	215	-100.00%	
Drilling Permits (Rio Blanco County)	27	52	118	-48.08%	
Drilling Permits (Garfield County)	67	161	612	-58.39%	
Drilling Permits (Moffat County)	0	0	5	N/A	
Total Permits (Mesa, Rio Blanco, Garfield, Moffat)	94	216	950	-56.48%	
Total Permits (Colorado)	1,103	898	3,909	22.83%	
Local Rig Count	May-19	Jan-19			
Rig Count (Western Colorado, Mesa, Rio Blanco, Garfield, Moffat)	4	7			

Delta/Gunnison Coal Industry	Q1 2019	Q1 2018	% Change
Delta/Gunnison Average Monthly Employment for Coal Mining	298	254	17.04%
Delta/Gunnison Coal Production (tons)	1,080,895	1,281,343	-15.64%

SOURCES: All energy prices: Energy Information Agency; All permit data from Colorado Oil and Gas Conservation Commission (COGCC); Local Rig Count: Baker Hughes Rig Count as of January, 2019; Coal: Colorado Division of Reclamation and Safety.

Figure 5:
Oil and Natural Gas Prices



#### **Natural Gas Prices**

The Henry Hub price of natural gas fell to \$2.64/MMBtu in April, down significantly from the short term highs of \$4.09 in November. EIA notes that continued high natural gas output, higher than normal temperatures have led to high levels of natural gas inventory. Strong growth in natural gas production is expected to keep downward pressure on the price of natural gas. EIA estimates that the price of natural gas will average 2.79/MMBtu in 2019, down 36 cents from 2018. The average price for Q1 of 2019 was \$2.92/MMBtu.

Source: https://www.eia.gov/outlooks/steo/report/natgas.php

#### Oil and Gasoline Prices

Crude oil prices rose for the fourth straight month, reaching \$63.86 in April from recent lows in December. Oil prices are rising based on perceived international risks in Venezuela and Iran. Venezuela's political situation is tenuous and Iran and U.S. tensions are rising. OPEC is expected to offset the loss of Iranian crude oil but perceived market risks are still pushing oil prices higher.

April through September is driving season and the EIA expects gasoline prices to hover around \$2.92, slightly higher from last year due to high gasoline refining margins. Gasbuddy.com shows that gas prices in Mesa County range from \$2.82 to \$3.21as of late May.

Source: https://www.eia.gov/outlooks/steo/

#### Western Slope Drilling Activity

Drilling activity is lower in 2019, with 4 active rigs compared to the 7 rigs that have been in use the last several quarters. Lower rig count reflects industry expectations of lower prices due to the current natural gas supply glut. Drilling permits are also down from the same time last year, although permits for the State of Colorado are up significantly from last year. Although the lower drilling permit numbers do not look good it is important to note that drilling permit activity is very volatile and can catch up quickly. However, with lower rig counts and downward pressure on natural gas prices it is unlikely.

#### **Coal Industry**

Total production for Delta/Gunnison coal from the West Elk mine is down 15.64% from Q1 of 2018 to Q1 of 2019. However, average monthly employment in the same time period is up 17% from 254 miners per month to 298 miners per month. Both coal production and coal employment seem to have reduced their volatility since 2016, as emloyment changes have been slow but positive.

1,800,000 1,200 1,600,000 1,000 1,400,000 1,200,000 800 Production (tons) Employment 1,000,000 600 800,000 400 600,000 400,000 200 200.000 0 0 2019 2018 2008 2009 2010 2013 2015 2016 2017 2012 2014 2011

Figure 6:

Delta/Gunnison Coal Production and Employment (Q1 2008 through Q1 2019)

#### Economic Contribution of the Oil and Gas Industry in the Western Slope

I recently concluded a study that determined the economic contribution of the oil and gas industry in the Piceance Basin. The study was conducted through the Unconventional Energy Center at Colorado Mesa University. The goal of the research was twofold: 1) To determine the impact on employment resulting from changes in rigs and the price of natural gas, and 2) To determine the total economic contribution to regional GDP that the oil and gas industry contributes. The study can be downloaded from the Colorado Mesa University Unconventional Energy Center here: https://www.coloradomesa.edu/energy/index.html. Below are some highlights from the two part study.

We know from above that rig counts have fallen from 7 to 4, and that the price of natural gas has fallen from the 2018 average of \$3.20 to \$2.64, with the EIA expecting prices to average \$2.79. For simplicity purposes, let's suppose natural gas prices will be \$0.50 less than 2018. Based on this potential change in natural gas prices, the model I developed predicts a change of approximately 707 jobs in the Western Slope, most of which are in Mesa and Garfield County. Using the same predictive method, except using rigs instead of natural gas shows that moving from 7 to 4 rigs would create an employment loss of 624, which again would mostly fall in Mesa and Garfield Counties. The impact on Delta County is much smaller, but still significant. Delta county should expect a loss of 45 or so jobs based on these downward trends in this industry. The hope is that growth in other industries will offset these potential losses.

#### Executive Summary Part 1: The Relationship Between Rigs, Natural Gas Price, and Employment

- Part 1 of this report studies the relationship between rigs, natural gas price, and employment in the Piceance Basin using both a panel and aggregated autoregressive distributed lag (ADL) regression model.
- Each change in rig count changes employment by 208 people within the five county area of Mesa, Garfield, Rio Blanco, Delta, and Moffat Counties.
- At the county level, Mesa County experiences a change in employment of 122 per rig, while Garfield County experiences a change of 70 per rig. Rio Blanco (16), Delta (15), and Moffat (18) have much smaller effects per rig.
- From 1999-2009, the effect of rigs on employment is much more pronounced, changing employment by 373 per rig.
   From 2010-2017 the effect on employment is 91 per rig, reflecting changing technology in drilling.
- For every change in \$1.00 of natural gas price as measured by the Rocky Mountain Opal Hub, employment changes by 1,183. For the three county area (Mesa, Garfield, and Rio Blanco), a \$1.00 change in the price of natural gas changes employment by 1,415. Conducting the same analysis with Henry Hub gas prices for the five county area shows a change of employment of 1,289.
- At the individual county level, changes in the price of natural gas effect Garfield County the most, changing employment by 828, while the effect in Mesa County is 646.
- Every dollar change in the price of natural gas changes rig count by 8.8.

# Executive Summary Part 2: The Economic Contribution of the Oil and Gas Industry in the Piceance Basin

- This section studies the economic contribution of the oil and gas industry in a six county area that represents the Piceance Basin (Mesa, Garfield, Rio Blanco, Delta, Gunnison, and Moffat Counties).
- The economic contribution analysis takes into account employment and wages, severance and Federal Mineral Lease royalties, ad valorem taxes, sales taxes, and royalties that are spent or distributed in this region.
- This economic contribution report uses multipliers to estimate the supply-chain and household spending effects associated with an industry, while adjusting for leakages to imports, commuting, taxes, profits, and savings, to determine the total economic contribution of the oil and gas industry in the Piceance.
- The regional GDP contribution of the oil and gas industry in the Piceance Basin is \$1,083,361,743. For scale purposes, the total GDP of the study region is \$11,819,208,415, equating to 9.2% of total regional GDP.
- The total contribution in terms of labor income (which is a part of the overall total) as a result of the oil and gas industry is \$737,240,560.
- The total number of jobs supported by direct employment in the industry, supply chain effects, and induced (multiplier) effects is 10,959. For scale purposes, there are 164,956 total jobs estimated by IMPLAN equating to 6.6% of total jobs.

## NATIONAL ECONOMIC INDICATORS

	Q1 2018	Q4 2018	Q1 2018	% change since last period	% change since last year (comparable quarters)
Business Cycle Indicators					
Real GDP	3.20%	2.20%	2.20%	1.00%	1.00%
Personal Consumption Expenditures	1.20%	2.50%	0.50%	-1.30%	0.70%
Gross Private Domestic Investment	5.10%	3.70%	9.60%	1.40%	-4.50%
National Consumer Confidence	94.5	98.1	98.9	-3.67%	-4.45%
Industrial Production Index	109.8	110.3	106.7	-0.48%	2.88%
Initial Weekly Unemployment Claims (4 week MA)	222,442	220,058	228,077	1.08%	-2.47%
Non Farm Payroll Change (in thou- sands)	629,000	649,333	641,000	-3.13%	-1.87%
Unemployment					
Unemployment Rate-U3-SA	3.90%	3.80%	4.10%	0.10%	-0.20%
Unemployment Rate-U6-SA	7.60%	7.60%	8.10%	0.00%	-0.50%
Interest Rates					
Federal Funds Rate	2.40%	2.21%	1.44%	0.19%	0.96%
10 Year U.S. Treasury	2.65%	3.03%	2.76%	-0.38%	-0.11%
30 Year U.S. Treasury	3.01%	3.27%	3.03%	-0.26%	-0.02%
Inflation Measures					
Inflation Rate (CPI)	1.63%	2.22%	2.22%	-0.59%	-0.59%
Core Inflation Rate (All Items Less Food and Energy)	2.09%	2.21%	1.92%	-0.12%	0.17%
Inflation Rate (Shelter)	3.32%	3.21%	3.22%	0.11%	0.10%
Producer Price Index (PPI)	0.32%	3.54%	3.96%	-3.22%	-3.64%
Employment Cost Index	2.79%	2.89%	2.71%	-0.10%	0.08%
Stock Prices					
S&P 500	2,721	2,699	2,733	0.82%	-0.46%
Dow Jones Industrial Average	25,147	24,916	25,127	0.93%	0.08%
Trade Balance and Debt					
USD Exchange Rate (trade weighted)	127	128	118	-0.64%	7.89%
Trade Balance (% of GDP)	-603.362	-658.947	-639.161	-8.44%	-5.60%
Federal Debt (% of GDP)*	105.3%	104.2%	103.3%	1.2%	2.0%

SOURCES: GDP, Consumption, Investment, and Trade Balance: Bureau of Economic Analysis; Consumer Confidence: University of Michigan; Industrial Production, Interest Rates and USD Exchange Rate: Board of Governors of the Federal Reserve System; Weekly Unemployment Claims: U.S. Employment and Training Administration. Non-Farm Payroll, Unemployment Rates, Inflation Measures: Bureau of Labor Statistics; Stock Prices: S&P Dow Jones Indices, LLC.; USD Exchange Rate: Board of Governors of the Federal Reserve; Trade Balance: BEA; Federal Debt: U.S. Office of Management and Budget. \* indicates data is lagged by one quarter.

Figure 7: **Real GDP** 

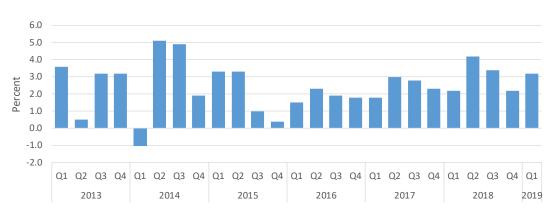
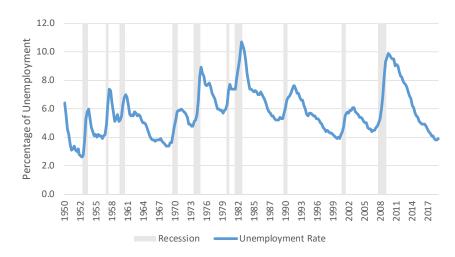


Figure 8: **U.S. Unemployment: 1950-Q1 2019** 



#### **National Economic Performance**

The Q1 GDP estimate came in at a strong 3.2%, surprising many who thought growth would slow. The national unemployment rate hit a 50 year low falling to 3.6% for the month of April (which is not in the Q1 numbers). The Q1 unemployment rate is at 3.9%. Industrial production is holding steady, while initial weekly unemployment claims are down since the same time last year. Non farm payrolls (figure 10) continue to be strong. A drop in non-farm payrolls can be a leading indicator for the labor market weakening. National consumer confidence dropped from last quarter and from last year.

CPI inflation continues to stay low at 1.63%, while core inflation (the rate the Federal Reserve focuses on and subtracts energy and food) also remains low at 2.09%. The producer price index (PPI) fell from last year, falling to 0.32%. The PPI can be a leading indicator of the CPI. The employment costs index, which is used as a proxy for employee wage compensation, is holding steady right below 3%. Wage growth is still low for how well the economy is performing and where we are at in the business cycle. Although employment keeps gaining, wages are not gaining at

the rate seen through most of post WWII history. This is bad for workers, but good news for inflation as wage inflation is a large contibutor to actual inflation.

As expected stock prices have cooled in 2019, with both indices holding steady from 2018. The U.S. dollar exchange rate has increased since last year, making imports cheaper and exports more expensive. Despite this, the trade balance has fallen from last quarter and from last year. Federal debt as a percentage of GDP is currently at 105%.

#### Interest Rates and the Inverted Yield Curve

The Federal Reserve is expected to keep interest rates the same. If we start to see inflation in the next year we could see a rate increase, however there are still no signs of inflation, so there is a higher probability that as growth slows over the next year we would see an interest rate decrease. As stock markets slow and global growth slows, investors will see the end of the business cycle coming and move into bonds. This will push the price of bonds up and their interest rate (yield) down.

Figure 9: Inflation Rate and 10 Year Treasury Yield

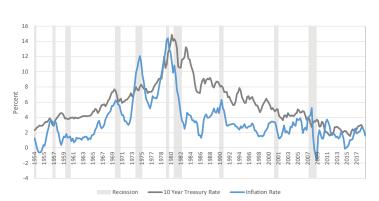
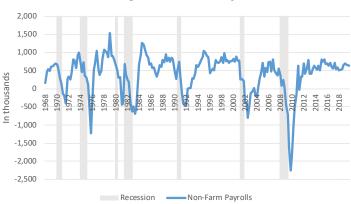


Figure 10:
Change in Non-Farm Payrolls



This is typical near the end of business cycles. As long as inflation stays low, the intermediate outlook for interest rates is for them to stay low. Current threats to low inflation include wage growth and a trade war causing prices to jump.

The more important point for interest rates is the inverted yield curve. This was discussed several newsletters ago. When long term interest rates (say the 10 year treasury) fall below the yield of a shorter term bond (say the 3 month t-bill or the 2 year bond) it indicates that financial markets see recession coming, and people are moving into long term treasuries. An inverted yield curve on average signals the end of unemployment lows by 9 months, and signals recession by 16 months (see "Recession Signals: The Yield Curve vs. Unemployment Rate Troughs" by K. Kliesen). An inverted yield curve has correctly signaled all nine recessions since 1955, although there has been a false positive. The 10 year bond and 3 month t-bill inverted shortly in March, recovered, and in May have inverted to a higher degree, which is a sign that financial markets predict slower growth in the near future.

#### What Could Turn the Economy?

The consensus among economists is that the economy is in late stage business cycle. What this means is that growth is expected to slow, with the implication that recession may follow at some point. This has been the case historically (see figure 8). Some recessions have been preceded by high inflation creating stagnation (for example the 1970's). In other recessions there have been financial bubbles that popped that facilitated economic downturn (2001 tech bubble, 2008 housing bubble). International turmoil can affect economic conditions as well (1991 Iraq war and recession). The current threats to our economcy include international turmoil in the form of conflict with Iran and trade disputes with China. Although the U.S. is more insulated than in the past from middle east conflict and the impact on oil prices, any conflict itself would cause a high degree of financial risk and could facilitate a downturn. A continued or escalated trade war with China could throw off supply chains, hurt farmers, and slow growth (although China would likely be hurt more). The stock market seems to have taken a pause, not rising, not falling, indicating that perhaps investors are being careful not to overvalue stocks. Housing continues to rise, but many housing economists believe it is fueled by healthy demand. The economy so far seems very healthy, but signs like the inverted yield curve show that some cracks are starting to show.





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