2017 Annual Report

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The College of St. Scholastica

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Executive Summary

The Regional Economic Indicators Forum (REIF), sponsored by the National Bank of Commerce, focuses on the economic performance of a 15-county region that includes Northeastern Minnesota and Northwestern Wisconsin. As part of this forum, the College of St. Scholastica (CSS), University of Minnesota-Duluth (UMD) and University of Wisconsin-Superior (UWS) collect and monitor data related to county-level economic performance, business and consumer confidence, and regional stock performance. In addition to results presented by the colleges at this year's biannual forums, special topics on the economics of tourism and water resources were presented. The information below summarizes the research findings from the colleges.

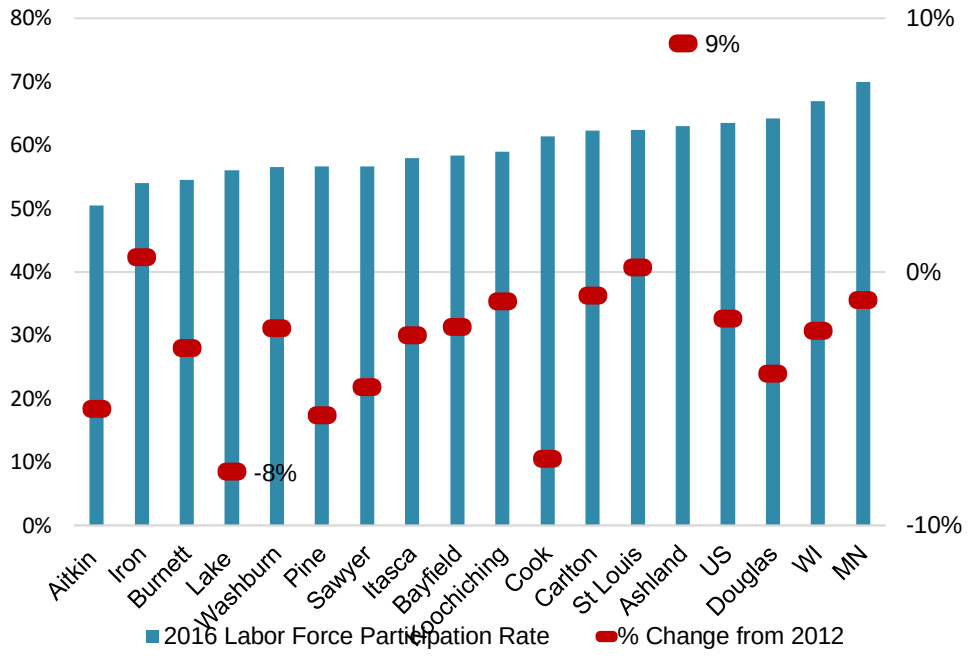
Economic Indicators Affecting REIF Region

UMD was tasked with the responsibility of collecting and reporting on the economic performance of the 15-county REIF Region. The indicators in this portion of the report track economic trends throughout the region and compare county-level performance to state and regional averages. The indicators selected include measures of employment, demographics, income, housing, and poverty.

While there are definitely bright spots in the regional economy, as shown by the falling unemployment rate, population growth in a number of counties, and recent employment growth in the tourism and water resources sectors, overall the regional economy seems to be experiencing slow to moderate growth.

One of the region's most concerning trends is its shrinking labor force participation rates. From 2012 to 2016, nearly every county in the region saw a decline in labor force

Figure 1: Labor Force Participation by County



Source: ACS 5 year data 2012-2017

participation. The decline is likely the result of Baby Boomers coming into retirement age, as roughly 20% of the REIF's population is 60 years or older. This occurrence is not unique to the REIF region, as Minnesota, Wisconsin, and the U.S. all experienced declines in labor force participation rates. But while those areas have been able to counteract the losses with population gains, population growth in the REIF region has been mostly flat.

Despite the decline in the region's labor force, a number of industries have added significant numbers of jobs in the past five years. Healthcare, Accommodation and Food Services, Construction, and Transportation have all seen growth since 2012. Transportation also represents a bright spot in terms of wages. It is one of only two industries (the other being Agriculture, Forestry, Fishing and Hunting) where regional wages are higher than the national average. IT and Finance, on the other hand, have the lowest wages compared with national averages. Finally, while the Mining industry has rebounded slightly from its recent downturn, overall employment in that industry continues to be lower than it was in 2012, by about 17%.

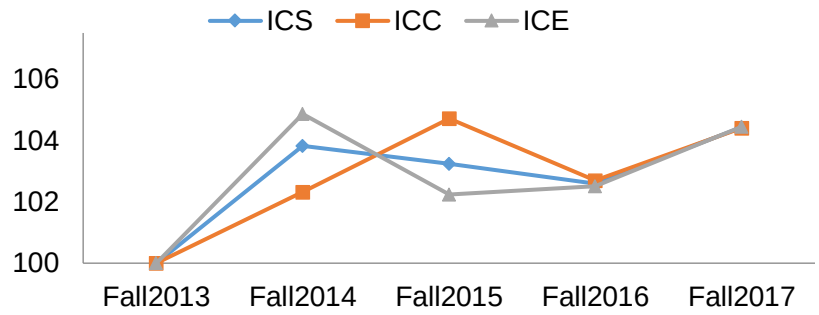
With the topics of tourism and water resources being our special focus for 2017, UMD also examined the recent performance of these industries in our region. Both industries have seen growth in recent years, particularly since 2014. Employment in the tourism industry grew by approximately 4% between 2014 and 2016, and employment in water resources grew by 9%, also in 2014. While these are positive developments for our area, the growth still lags behind that of Minnesota and Wisconsin.

Consumer Confidence Indicators: Predicting the Business Cycle

Consumer confidence indicators are useful tools in predicting the future economic conditions in a region. In order to construct these indicators the University of Wisconsin-Superior (UW-S) student research team surveyed randomly chosen households, 154 in spring 2017 and 155 in fall 2017, in 8 Minnesota and 7 Wisconsin counties via telephone and previous REIF participants, 131 in spring 2017 and 112 in fall 2017 via email. Using survey responses, three indices were computed: Index of Consumer Sentiment (ICS), Index of Current Conditions (ICC), and Index of Consumer Expectations (ICE). According to the random, phone survey results, in 2017 general public felt that current economic condition was stronger. They displayed positive sentiments and were optimistic about future economic outlook (Figure 1). According to past REIF participants' survey results, in 2017 local government, business people, and academics thought current economic condition was weaker and had negative sentiments but optimistic in their future economic outlook (Figure 2). These mixed trends are due to diverse demographic, economic, and educational backgrounds of randomly surveyed households and previous REIF participants.

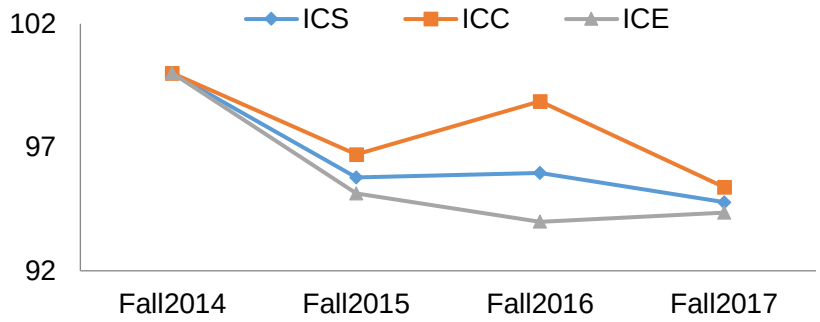
Key Point: Overall, during 2017 the survey findings suggest that there is a growing optimism about future economic conditions.

Figure 2: Public Survey (Random Sample)



Source: University of Wisconsin-Superior

Figure 3: Survey of REIF Participants (Non-Random Sample)



Source: University of Wisconsin-Superior

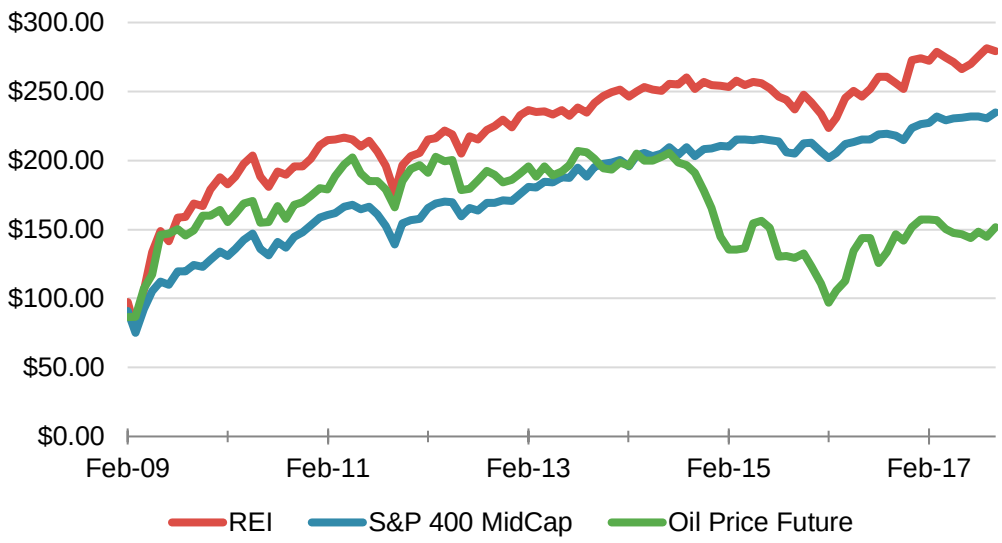
Regional Equity Index: An Analysis of the Equity Performance of Stocks of Local Interest

For this portion of the research, UWS provides information and a financial analysis on the equity performance of companies of local interest in the REIF region. All in all, fourteen (14) companies, in the REIF region are considered to construct the Regional Equity Index (REI). Selection criteria of the companies are based on their significant presence in the REIF region as indicated by the number of local employees or the significance of operations in the REIF region to the overall contributions of the firm. Currently, the list of fourteen (14) companies under REI includes Allete, Ascena Retail Group, Calumet, Canadian National Railway, Charter Communications, Cleveland-Cliffs, Enbridge Energy Partners, Louisiana-Pacific, Marriott International, Morgan Stanley, Polymet, UnitedHealth, USG, and US Steel. This ongoing research project tracks the companies' equity performance, creates an index of local stocks to measure economic activity in the region,

examines measures of future performance, and makes comparisons to industry averages and market indices. This sixth report extends the timeframe from the fifth REIF report to 10/02/2017.

Of note, the Regional Equity Index (REI) outperforms the benchmark index and investors are more bullish than bearish on the majority of the stocks. The Figure below illustrates the growth trend of a $100 investment in the REI on January 2009 and held until October 3, 2017. This is compared to the trend of $100 invested in the S&P 400 and the Crude Oil Futures over the same time period. The Figure shows that the REI trends somewhat with the market, but has significantly outperforms relative to the S&P 400 during the period between October 1, 2015 (the fourth report ending period) and October 2, 2017 (the sixth report ending period). Compared to REI and S&P 400 values from the last report, REI is up 9.08%; whereas, S&P 400 is up by 7.69%. Considering the Crude Oil Futures, the REI has continued to show significant movement in response to changes in oil price, which indicates that the REI is more sensitive to fluctuations in commodities pricing than the diversified S& P 400.

Figure 4: REI, S&P 400, and Oil Futures



Source: Yahoo Finance and Market Insider

The Value Line® Measures indicate that short term expectations of future performance for the majority of stocks in the REI is that they will perform similar to the overall stock market , or are expected to perform better. Over the longer term, Allete, Canadian National Railway, Louisiana-Pacific, Morgan Stanley, UnitedHealth, and US Steel are expected to outperform the market. Calumet, Charter Communications, Polymet, USG Corporation, and Marriott International are expected to mirror the market. However, rest of the companies, Ascena Retail Group, Cleveland-Cliffs, and Enbridge Energy partners are expected to underperform the market in long term. The Morning Star® Measures show that the REI's Price-to-Earnings ratio is below the benchmark market average. Of the companies that had data about the Forward Price-to-Earnings ratios, the earnings of the majority of them are expected to grow. The Short Interest ratio shows that investors have positive short-term expectations of performance for most of the index stocks. Eight

stocks have a short interest ratio less than five, an indication that investors believe stock prices will rise for these companies.

Business Confidence Survey

During 2017, the research team at the College of St. Scholastica conducted two business confidence surveys – one in March and one in October.

There was a slight increase in business confidence for the October survey and the overall local businesses remain confident both about their company outlook and the business activity in the region. Only 15% believe that their firms will see worse conditions in the next six months, and only 41% believe that business activity will experience growth.

We are confident that these results are meaningful as we compared this springs data with our current data. Looking at what businesses reported when we gathered data in the spring, we found people's expectations to resemble real events closely. For example, in the spring of 2017, 50% of businesses said they anticipate improvement business activity, the predictions based on business confidence were accurate at 47% of improvement in the fall of 2017.

The results of a national business confidence survey showed a rise in business confidence over the past four months. However, the level of business confidence in our survey is significantly higher than the national business confidence survey.

From our survey results, it appears the region is experiencing growth but struggling to find enough potential employees with the desired skills and experiences to help their business expand. As seen in other school's study, we also found it interesting that wages in the region, for many sectors, are below the national average. From an economic supply/demand perspective, the high demand for labor would increase wages, but they have only seen moderate growth in the last couple years. It will be interesting to see the future of the region's employment and how it continues to affect the overall economy.

Overview

National Bank of Commerce, in cooperation with the College of St. Scholastica, University of Minnesota-Duluth and University of Wisconsin-Superior, initiated a long-term study of our area's economic indicators. The research is ongoing and focuses on trends for a territory that covers 15 counties in Minnesota and Wisconsin.

Participating sponsors of the study are NE MN Small Business Development Center (SBDC) and UW-Superior Small Business Development Center, the Development Association of Superior-Douglas County, APEX, BusinessNorth and the Development Association.

Project Goals

- Support business owners in their business decisions by gathering key local economic indicators and trend information
- Develop specific economic indicators for this region that are not readily available to decision makers
- Develop tools to assess our progress in economic growth. Prepare baseline measures that will allow comparison with other regions and measure future progress of the region
- Track the region's participation in the "new economy" and development in the high tech arena
- Bring professionals together with business owners for discussion about the local economy and related critical issues in a collaborative, non-political environment
- Create a business recruitment and retention tool by publishing the information

Stoplights

Throughout this report, you will see colored circles that provide a quick way of identifying how a specific measure is performing. The guide below helps interpret the meanings of the three colors.

Green: Positive trend/performance for the REIF region. Indicates that the region is improving or performing better than other parts of the state and/or country.

Yellow: Neutral or stable trend/performance (or no value judgment is placed on the measure).

Red: Negative trend/performance for region.

Economic Indicators Affecting REIF Region

Monica Haynes, Director, University of Minnesota Duluth (UMD), Bureau of Business and Economic Research (BBER)
Gina Chiodi Grensing, Editor/Writer, UMD – BBER
Alexander Hook, Undergraduate Research Assistant, UMD – BBER

The University of Minnesota Duluth was tasked with the responsibility of collecting the data for different economic indicators throughout the region. Gathering data for the REIF region as a whole and by individual county can help in understanding what is happening throughout the region and can highlight important trends. Observing a regular set of economic indicators can also help to anticipate future economic activity in the region. The economic indicators provided in this report include unemployment rate, demographics, median household income, housing units, poverty rates, employment growth, and many more. These indicators were observed over periods ranging from a few months to more than ten years. Typically, to predict economic activity, economic indicators must be watched and analyzed for many months, depending on the indicator.

The report refers to the aggregate 15-county REIF region and the individual counties that comprise the region. However, to put the data of the REIF region into proper context, state-level and United States data were also collected. This data will allow the reader to contrast the REIF region from the broader regions. Along with the comparisons of Minnesota, Wisconsin, and the United States is the combined value for the states of Minnesota and Wisconsin. The legend below shows the corresponding colors that represent each respective region seen in the figures throughout this section of the report.

Legend

- Individual REIF counties and industries
- REIF Region as a whole
- State of Minnesota
- State of Wisconsin
- United States
- States of Minnesota and Wisconsin

Population Change

Smallest Communities Continue to Shrink, Larger Communities Continue to Grow

Description

Different geographic locations in the U.S., such as states, counties, and metropolitan statistical areas, have population estimates conducted each year. Persons who are considered to be a usual resident of that specific location are counted in the population data. According to the United States Census Bureau, a usual resident is a person who considers himself/herself to reside at a specific address for the majority of his/her time. County level population data was collected for each of the REIF counties. The percentage change was calculated by dividing the growth (or decline) from 2002 to 2017 by the population in the base year (2002).

Why is It Important?

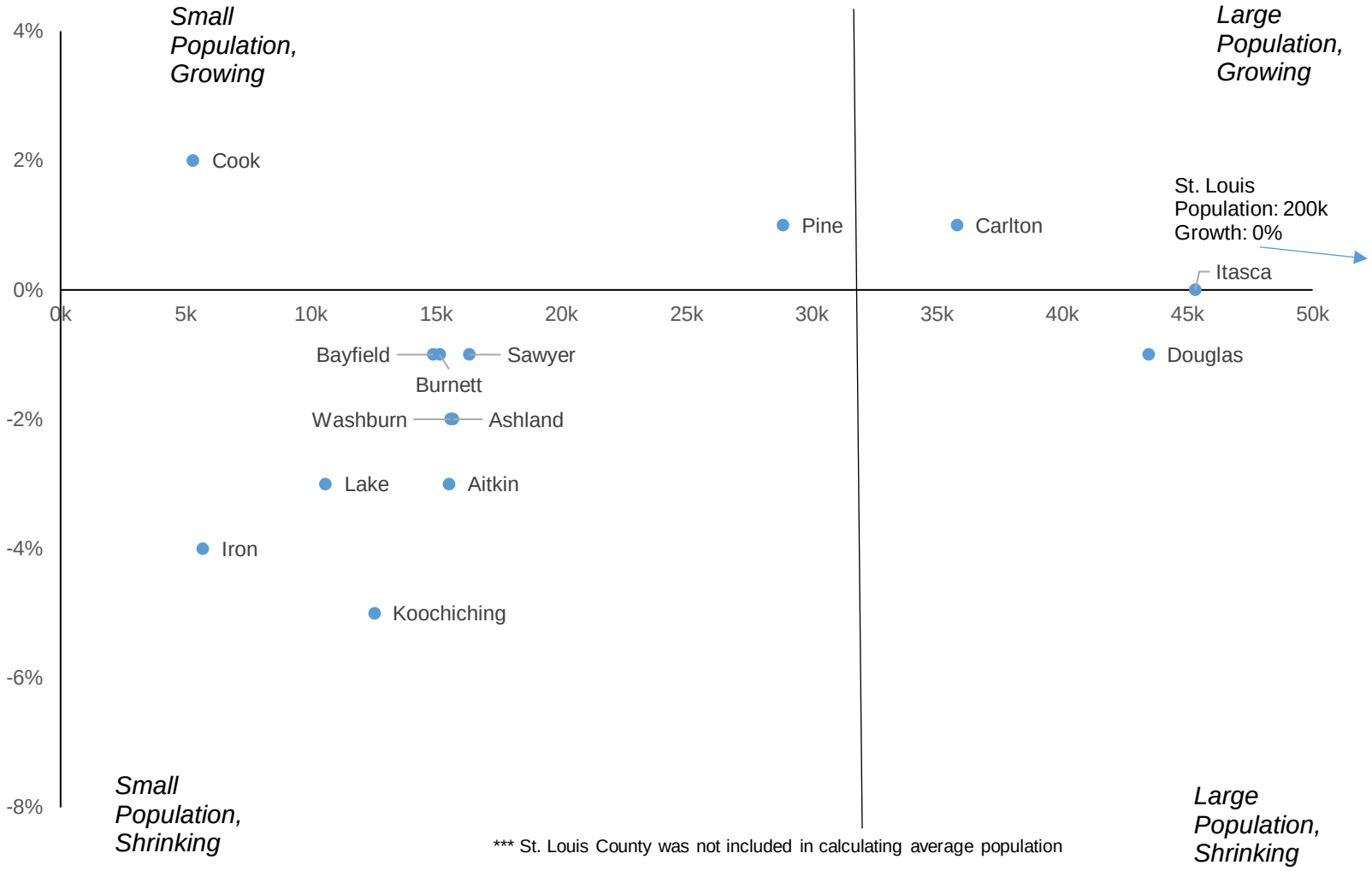
A location's population is its immediate labor source, and both are vitally connected with its economic activity and capacity for growth. While the issues associated with over population or rapid growth are often the most obvious, the opposite can be equally detrimental. The phenomenon known as human capital flight, or "brain drain," and depopulation is increasingly affecting towns and whole counties across the nation, as residents of rural locations move to pursue more favorable employment opportunities and accessibility in metropolitan areas. Tracking a location's population and how it changes over time can be an effective indicator for spotting such trends and gaining a better understanding of how those trends interact with other facets of the local economy.

How is Our Region Doing?

Figure 5 shows the 2017 population estimate for each county in the REIF region (horizontal axis) as well as the percentage change in population from 2001 to 2015 (vertical axis). Also included in the figure is the average for all 15 counties in the REIF region. Overall, the REIF region experienced a stagnation of population growth over the last 15-year period.

While the population change in the REIF region as a whole has not been very substantial, there have been some large changes at the county level. The "Small Population, Shrinking" quadrant of Figure 5 shows that two of the biggest population changes occurred in Iron County in Wisconsin and Koochiching County in Minnesota with a decrease of roughly -5% and -4% respectively. Conversely, small levels of growth were seen in Cook and Pine Counties in Minnesota at 2% and 1%, respectively.

Figure 5. Population Growth and Percent Change by County, 2002-2017



Source: EMSI

Demographics

Population significantly older than US average

Description

Persons who are considered to be usual residents of a given geography (county, metropolitan statistical area, state, etc.) are counted in census population data. These population estimates are then subdivided into smaller groups according to three different demographics: age, sex, and ethnicity.

Why is It Important?

Having a diverse population and, thus, a diverse labor force is a benefit to employers, as it increases the variety of skills, knowledge, and backgrounds available from potential employees. Diversity can include many different factors, such as age groups, racial and ethnic backgrounds, and gender. By leveraging this broader range of perspectives and skill sets, diversity in the workforce can help employers toward greater success.

How is Our Region Doing?

Table 1 includes demographic statistics by gender and age for the REIF region in 2017. In most counties, the region's two largest age groups are the 60-69 and 70+ age ranges. In the United States, the 60-69 year cohort makes up 11% of the population and the 70+ cohort makes up one tenth of the population. In the REIF region, the two cohorts represent 17% and 16% of each county, respectively. Not only is the region's older population larger, the 20-29 year cohort makes up a significantly smaller proportion of the population compared to the national average. For a majority of counties in the region, the 20-29 year age cohort is significantly smaller than the average for the United States. These counties are highlighted in red.

When it comes to racial diversity in the REIF region, very little has changed throughout the recent years. Caucasian individuals make up nearly 92% of the population. Of the 8% of individuals who are minorities in the region, nearly half are American Indian. Individuals of two or more races make up nearly 2.5% of the population, while Black and Asian individuals make up roughly 1% each of the total REIF population.

Table 1. Percentage of Population by Age Cohort and Ethnicity Data.

	Under 10	10 -19	20-29	30-39	40-49	50-59	60-69	70+	Men	Women
Aitkin	9%	10%	7%	9%	9%	16%	20%	21%	51%	49%
Carlton	12%	13%	11%	13%	13%	15%	13%	11%	52%	48%
Cook	9%	8%	9%	11%	10%	16%	20%	17%	50%	50%
Itasca	11%	12%	9%	11%	11%	14%	16%	15%	51%	49%
Koochiching	9%	11%	9%	10%	11%	16%	18%	16%	50%	50%
Lake	10%	10%	9%	10%	10%	15%	17%	19%	51%	49%
Pine	10%	12%	10%	12%	12%	16%	14%	13%	53%	47%
St Louis	10%	12%	15%	12%	10%	14%	14%	12%	50%	50%
Ashland	12%	13%	12%	11%	10%	15%	15%	13%	51%	49%
Bayfield	9%	10%	8%	9%	10%	17%	20%	17%	51%	49%
Burnett	10%	10%	8%	9%	10%	16%	19%	19%	51%	49%
Douglas	12%	12%	11%	12%	10%	14%	14%	16%	50%	50%
Iron	8%	9%	7%	8%	10%	17%	19%	21%	51%	49%
Sawyer	11%	11%	9%	9%	10%	16%	18%	17%	51%	49%
Washburn	10%	11%	8%	9%	10%	16%	18%	17%	51%	49%
REIF Region	11%	12%	12%	11%	11%	15%	15%	14%	51%	49%
United States	13%	13%	14%	13%	13%	13%	11%	10%	51%	49%

Highlighted in red = 5% difference, higher or lower, than national average

Ethnicity	White	American Indian	Two or more Races	Black	Asian	Native Hawaiian and Pacific Islander
REIF Region	91.5%	4.0%	2.5%	1.25%	0.75%	0.05%

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Source: EMSI

Labor Force Size

Labor Force Continues to Decline in the Region

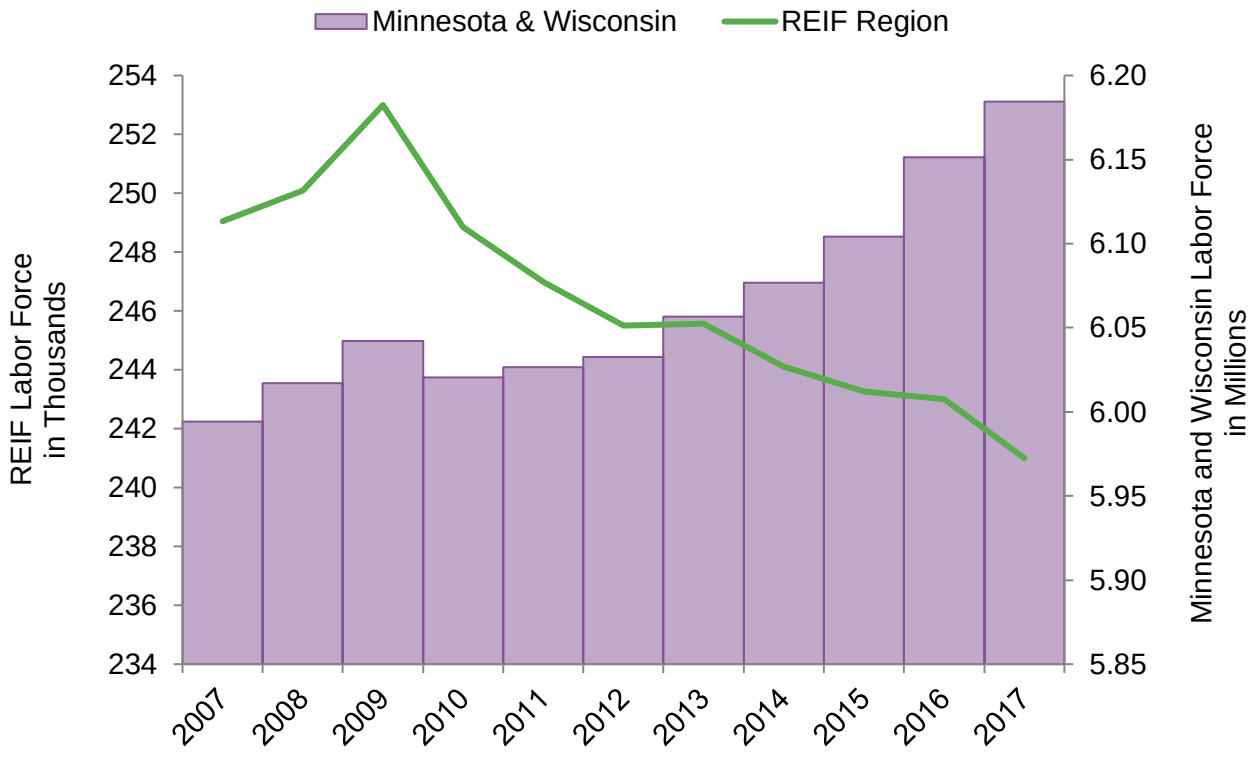
Description
According to the U.S. Bureau of Labor Statistics, the labor force is defined as the actual number of people who are available for work. The labor force of an area includes the employed and the recently unemployed who are at least 16 years old or older, not serving in the military, and not institutionalized.

Why is It Important?
Labor force numbers are used for two very important calculations, the labor force participation rate and the unemployment rate. Because of each one's substantial influence in indicating the strength of the economy, both the labor force participation rate and the unemployment rate are two of the most highly watched economic indicators by economists and by individuals in general. Furthermore, the size of the labor force impacts the economy's capacity for growth. A decline in the size of the labor force (whether individuals are leaving due to retirements, family obligations, or other circumstances) directly impacts a region's ability to find and hire skilled workers, especially if the regional economy is growing or even simply remaining steady.

How is Our Region Doing?
As shown in Figure 6 below, the labor force size in the REIF region has continued to decline since 2009. The current size of the labor force in the REIF region is roughly 242,000. This decline in the labor force may be related to the previous chart, which showed the age cohorts for the region. The decline in the labor force in the REIF region is likely caused by the fact that as the largest groups of the population (60-69 and 70+) begin to retire, the region will naturally see declines in the number of individuals who are either employed or currently looking for work

Conversely, the size of the labor force for Minnesota and Wisconsin has continued to follow an increasing trend since 2007. The current size of the labor force for Minnesota and Wisconsin is nearly 6.2 million individuals and has seen consistent growth since 2010.

Figure 6. Labor Force Size



Source: MN DEED, WI LAUS

Labor Force Participation

Declining Labor Force Participation

Description

According to the U.S. Bureau of Labor Statistics, the labor force is defined as the actual number of people who are available for work. The labor force of an area includes the employed and the recently unemployed who are at least 16 years old or older, not serving in the military, and not institutionalized. The labor force participation rate refers to the number of individuals who are in the labor force, as a percent of noninstitutionalized population.

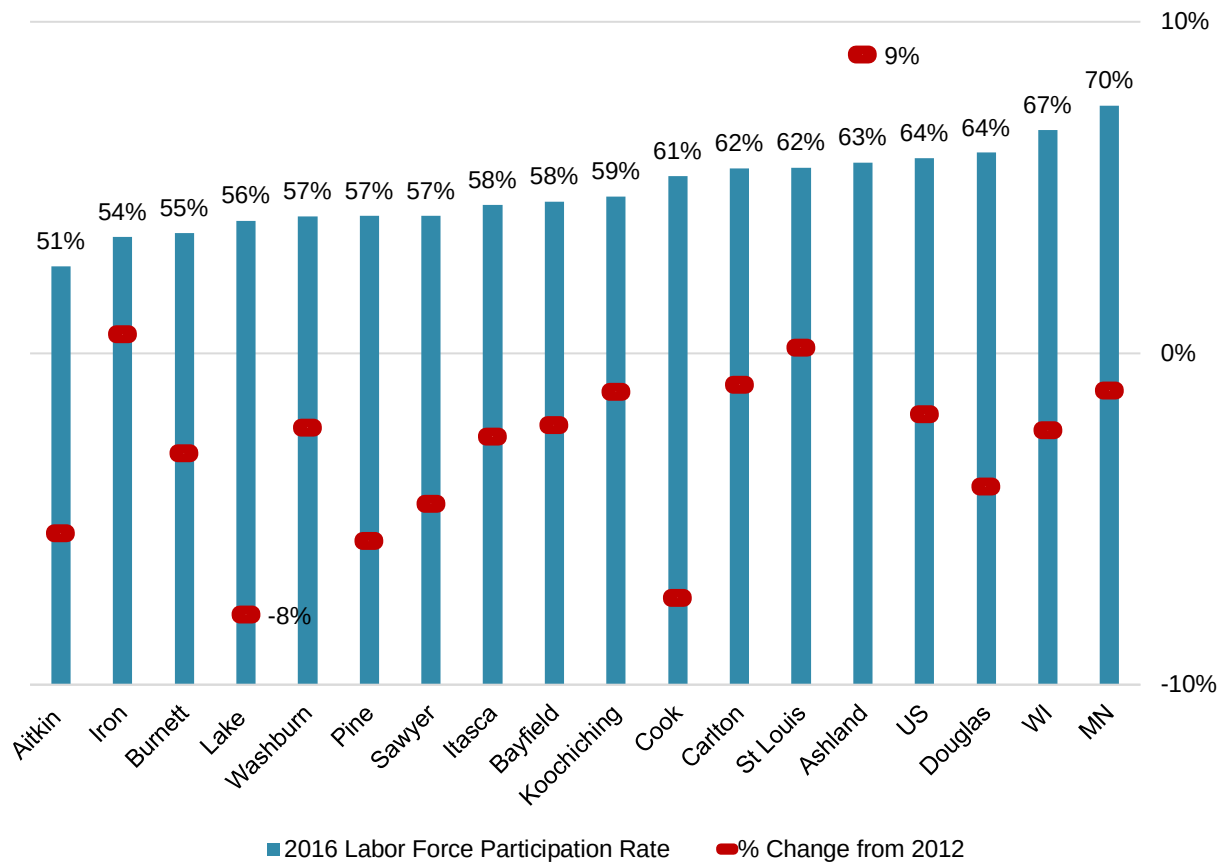
Why is It Important?

The labor force participation rate is a very common economic indicator used by individuals to measure the health of a regions' workforce. The labor force participation is impacted by individuals employed and unemployed who are actively looking for work. It is important to note the idea of the "discouraged worker." This concept refers to the idea that if an unemployed individual stops looking for work because they are discouraged by prospects, the labor force participation rate would rise, as one less person is considered unemployed and looking for a job. This provides an increase in the participation rate even though one fewer individual is looking for work or working. Nevertheless, when combined with the unemployment rate, the labor force participation rate can be used to better analyze the behavior of workers in the region.

How is Our Region Doing?

Figure 7 shows labor force participation rates for each of the region's counties, as well as the change in labor force participation from 2012 to 2016. Counties are shown with the lowest labor force participation rates on the left and the highest rates on the right. The State of Minnesota has the highest participation, at 70%, followed by Wisconsin (67%), and Douglas County (64%). Aitkin County has the lowest labor force participation rate, with roughly half of the working age population participating in the labor force. The red lines in Figure 7 indicate the percentage change in labor force participation between 2012 and 2017. For most of the regions shown (including Minnesota, Wisconsin, and the U.S.) labor force participation rates have declined since 2012 (red lines fall below 0%). Only Iron, St. Louis, and Ashland counties have seen an increase in participation during that period. Also, most of the counties in the REIF region have seen higher losses in total labor force participation when compared to state and national averages. This decline in labor force growth can be attributed to many factors, such as the overall aging of the REIF region's population. One outlier in the data, Ashland County, enjoyed a 9% increase in overall participation in the labor force. It is important to note, however, that Ashland County had one of the lowest rates as of 2012, and the growth that has been seen now mean that Ashland County is slightly above average in labor force participation.

Figure 7. Labor Force Participation by County



Source: ACS 5 year data 2012-2017

Unemployment Rate by Month

Unemployment Decreasing, but Slightly Larger and Greater in Variance than Minnesota and Wisconsin

Description

According to the U.S. Bureau of Labor Statistics, a person is considered to be unemployed when he/she does not currently have a job, has actively looked for work in the past four weeks, and is currently available to work. People who are temporarily laid off and waiting to be called back to their job are also counted as unemployed. Unemployment, which is reported monthly, is a measurement of the total number of people unemployed. The unemployment rate was calculated by dividing the number of people unemployed by the total number of people in the labor force.

Why is It Important?

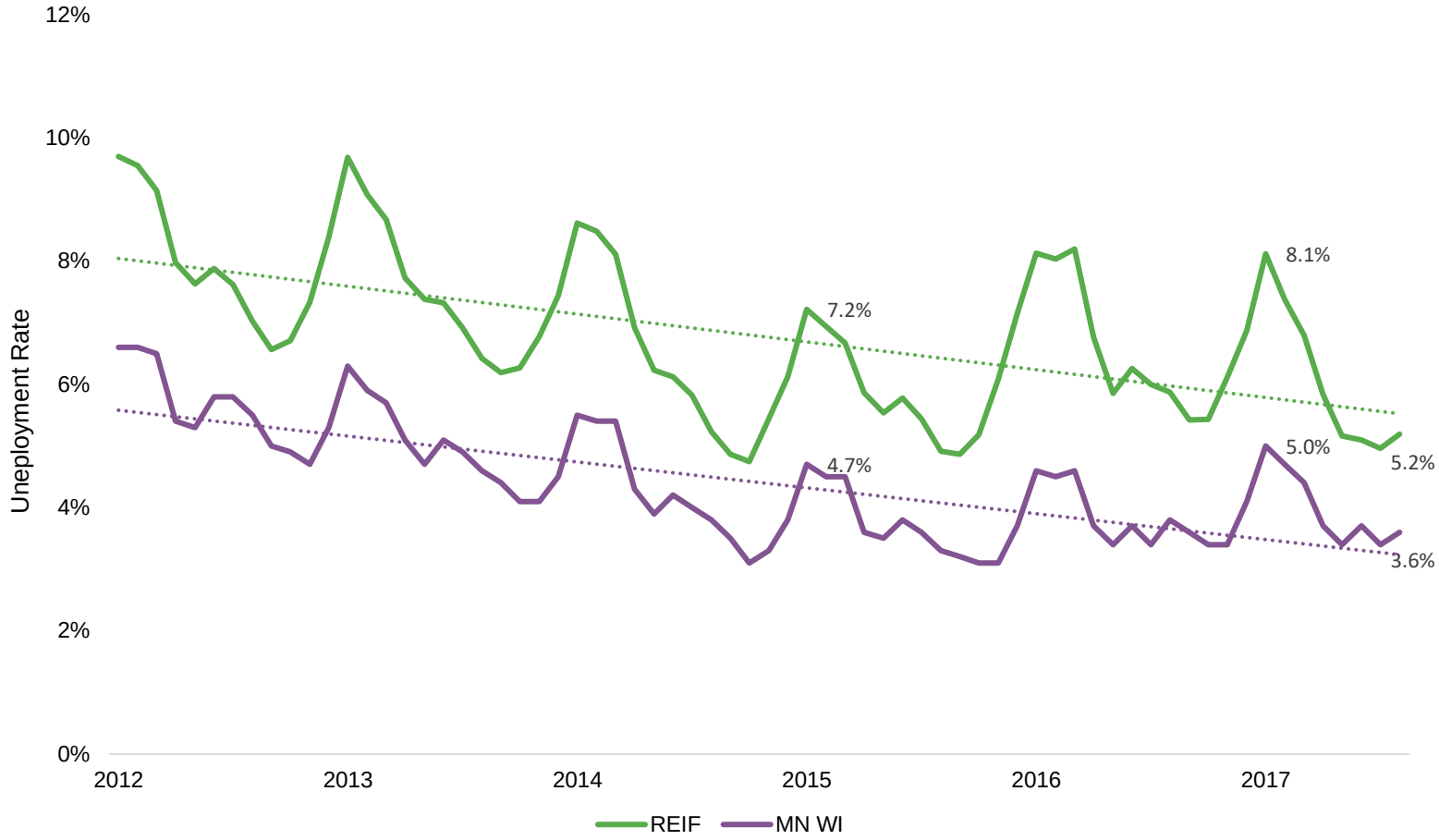
The unemployment rate is another highly watched economic indicator, especially since the financial crisis caused it to increase to about 10% nationally in 2009. Unemployment is strongly tied to consumer spending; typically, when a person is not working, he/she spends far less money, particularly on non-essential items and services. Likewise, high unemployment corresponds to a reduced amount of production (lower GDP). A rising unemployment rate indicates weakness in the economy, whereas a falling unemployment rate indicates the economy is growing stronger.

How is Our Region Doing?

Figure 8 shows the unemployment rate by month from October 2012 to October 2017. As shown, the unemployment rate tends to exhibit seasonal cycles of increases and decreases, as hiring practices vary widely from one season to the next. However, the overall trend, shown as a dotted line in Figure 8, has followed a steady decline during the five-year period. In the most recent years, after adjusted for seasonal differences, we have seen a leveling off of unemployment rates in the REIF region and statewide.

Compared to Minnesota and Wisconsin's combined unemployment rate, the REIF region's rate was consistently higher and displayed greater sensitivity to seasonal factors of unemployment. These seasonal fluctuations are likely due to the region's industry mix, which is weighted more heavily in areas such as construction and tourism. This less diversified industry mix can also help explain why the REIF region has larger overall unemployment in comparison to the states of Minnesota and Wisconsin. Lastly, when considering variations in the unemployment rate it is important to consider labor force participation rates (shown in the previous section), as decreases in unemployment can be caused by individuals simply exiting the labor market, rather than being able to find work.

Figure 8. Unemployment Rate



Source: MN DEED, WI LAUS

Employment Location Quotient

Mining, Utilities More Concentrated, Lacking Professional and Scientific and Technical Occupations

Description

According to the U.S. Bureau of Labor Statistics, a location quotient can be described as a ratio that allows the distribution of employment by industry of one area to be compared to another reference or base area's distribution across the same industries. By quantifying the level of industry concentration in this way, a point of equal comparison can be made between two different regions. The REIF counties were compared to a base region of the United States.

Why is It Important?

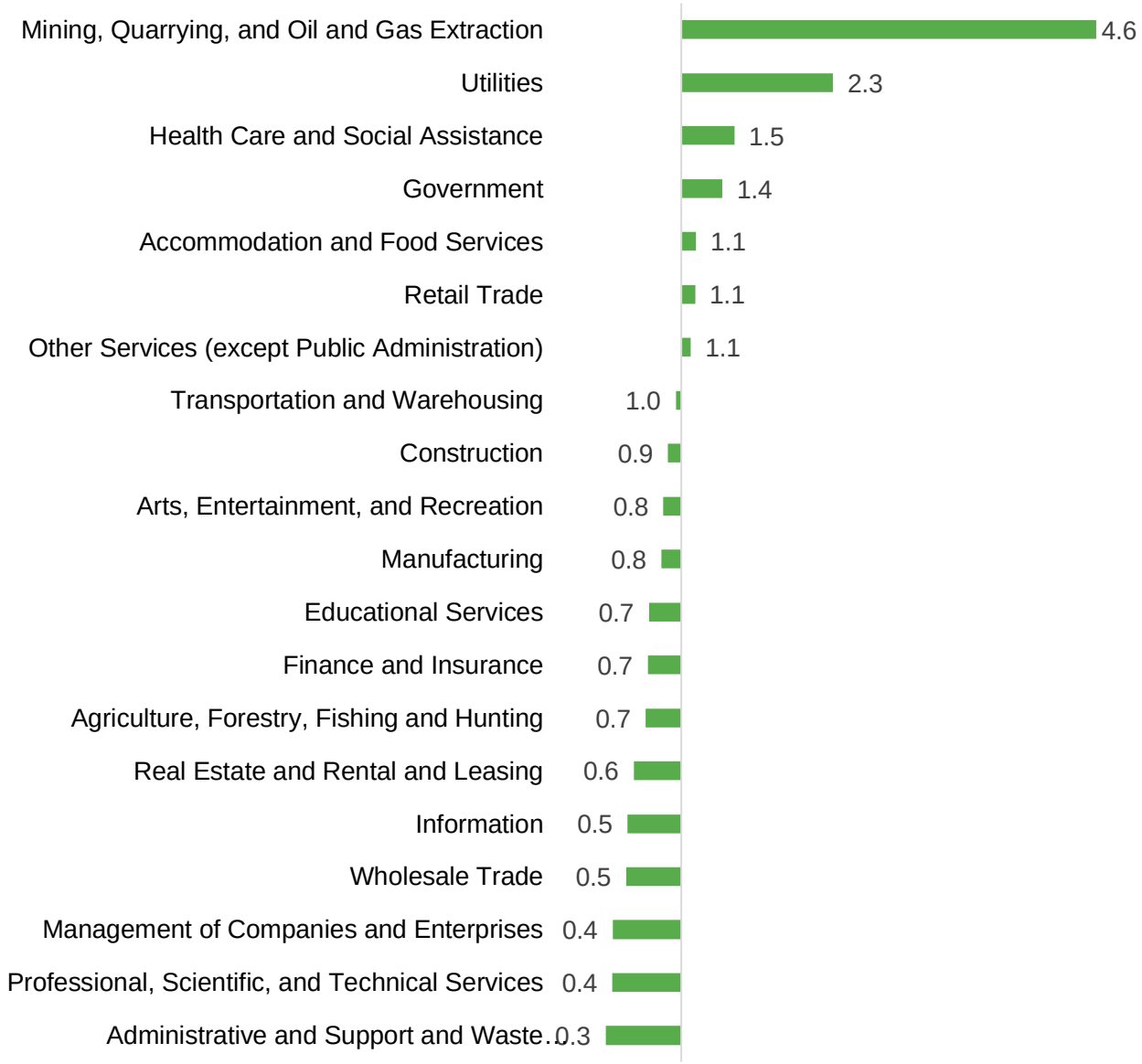
Examining the relative concentration of employment by industry can be a useful tool to understanding which industries contribute the most to a region's employment and ostensibly its economy more broadly. Comparing those percentages of employment by industry within one specific region to those in another region can reveal the particular subtleties in the composition of a region's economy or what makes that region unique. Knowing which industries more heavily weight a region's employment compared to another region can provide valuable insight into where that region excels and where it could improve.

How is Our Region Doing?

Figure 9 shows the location quotient for the primary industry sectors in the REIF region. All industries are grouped by the first two digits of their North American Industry Classification System (NAICS) code, equaling twenty sectors.

A location quotient is determined by dividing the percentage employed within the REIF region for each sector by the percentage employed in the same sector in the U.S. Numbers greater than one indicate that the REIF region employs a higher percentage of the population in that particular sector as compared to the base population (United States), while numbers lower than one indicate the opposite. For example, the sector with the largest location quotient in our region is Mining, Quarrying, and Oil and Gas Extraction. Locally, 1.8% of employment was in that sector, compared with 0.4% in the U.S., resulting in a location quotient of 4.6 (1.8/0.4 = 4.6). In other words, there is a higher concentration of people employed in Mining locally than what is typical nationwide. Other industries that employ greater numbers locally include Utilities, Health Care and Social Assistance, and Government. Conversely, only 2.4% of the REIF region's population is employed in the Professional, Scientific, and Technical Services industry, while 6.0% of the national population works in that industry, giving our region a location quotient of only 0.4.

Figure 9. Location Quotient by Sector



Source:EMSI

Industry Summary

Professional and Health Care Add Most Jobs, Mining Experiences Biggest Losses

Description

According to the U.S. Bureau of Labor Statistics, employment data is recorded monthly. This data includes the number of workers who were employed during, or received pay for, the period of pay that includes the 12th day of the month. Almost all employees are reported in the state where their job is located.

Why is It Important?

Examining the change in employment over a longer period can provide meaningful insight as an indicator of whether or not the economy is changing within a region. Knowing which industries have increased in number of employees and which have declined in employment can also assist the population in understanding which types of jobs to pursue in their region and which might be more fruitful elsewhere.

How is Our Region Doing?

Table 2 shows 2017 employment levels, the percentage change in employment (including full-time, part-time, and temporary jobs) from 2012 to 2017, the average earnings in that industry, and the regional earnings compared to the national average. Sectors are categorized by the first two digits of their NAICS code. There can be multiple industries within a single sector. As shown in the table, the largest percentage increase in new employment in the region occurred in the Professional, Scientific and Technical service sector. This sector added 660 jobs between 2012 and 2017, for a 15% increase overall. Other major employment gains can be seen in Health Care (2,650 jobs, 7% increase) and Construction (655 jobs, 8% increase). The sectors that experienced the largest percentage declines in employment included Mining and Administrative and Support Services.

Interestingly, the Professional, Scientific, and Technical Services sector was mentioned in the previous section as having a very low location quotient, so it is a positive sign to see jobs being added in this area. However, it is important to note that earnings in this sector are significantly lower in the REIF region than the national average. The average regional employee in this field earns roughly $38,000 less annually than is typical nationally. Regionally, wages are lower in nearly every sector except for Transportation and Warehousing and Agriculture, Forestry, Fishing, and Hunting. Both of these sectors have higher than average wages compared to the national average.

Table 2. Employment Characteristics by Industry

Industry Sector	2017 Jobs	2012-2017 Percentage Change	Cost of Living Adjusted Earnings	Earnings Compared to National Avg
Government	46,073	(2%)	$55,387	($18,469)
Health Care and Social Assistance	38,945	7%	$53,801	($4,448)
Retail Trade	24,724	2%	$29,627	($6,636)
Accommodation and Food Services	21,038	4%	$18,005	($5,433)
Manufacturing	14,213	(2%)	$65,838	($15,609)
Other Services (except Public Administration)	8,886	3%	$25,937	($10,764)
Construction	8,554	8%	$64,745	($5,854)
Transportation and Warehousing	6,714	8%	$67,842	$5,032
Finance and Insurance	5,884	(2%)	$60,502	($59,963)
Professional, Scientific, and Technical Services	5,011	15%	$67,183	($38,505)
Administrative and Support and Waste Management and Remediation Services	4,327	(13%)	$34,033	($11,274)
Wholesale Trade	4,276	(2%)	$58,945	($27,535)
Mining, Quarrying, and Oil and Gas Extraction	3,830	(17%)	$100,933	($21,389)
Educational Services	3,828	(1%)	$30,994	($18,547)
Arts, Entertainment, and Recreation	2,652	2%	$20,884	($21,944)
Information	2,099	(1%)	$52,392	($67,168)
Utilities	1,779	(4%)	$119,857	($20,249)
Real Estate and Rental and Leasing	1,774	12%	$32,535	($32,268)
Agriculture, Forestry, Fishing and Hunting	1,355	7%	$43,959	$5,756
Management of Companies and Enterprises	1,274	(5%)	$89,890	($46,293)

Source: EMSI

Occupation Summary

Employment Growth Indicates Slight Growth over the Five-Year Period.

Description

The Occupational Employment Statistics (OES) program produces employment and wage estimates annually for over 800 occupations. These estimates are available for the nation as a whole, for individual States, and for metropolitan and nonmetropolitan areas. This report uses county-level occupation summary data generated by the Economic Modeling Systems, Inc. (EMSI) software.

Why is It Important?

Employment and wages by occupation can provide meaningful insight into which occupations are growing, which pay the highest wages, and whether certain skills are in demand. Also, comparing occupation data with industry data can help show a more nuanced picture of the economy. Occupations can cross industry lines, so examining growth in this manner can help workers identify skillsets and educational needs that might benefit them in their career path.

How is Our Region Doing?

Table 3 shows 2017 employment levels, the percentage change in employment (including full-time, part-time, and temporary jobs) from 2012 to 2017, the average hourly earnings in that occupation, and the regional earnings compared to the national average. Occupations are categorized by the first two digits of their Standard Occupation Code (SOC). There can be multiple jobs within a single occupation type. As shown in the table, the largest percentage increase in new employment in the region occurred in the Community and Social Service Occupations. This group added 550 jobs between 2012 and 2017, for a 10% increase overall. Other major employment gains can be seen in Food Preparation (753 jobs, 4% increase) and Healthcare (586 jobs, 4% increase). The occupations that saw the largest percentage declines in employment included Office and Administrative Support (-727 jobs, -2%) and Arts and Design (-140 jobs, -7%).

Interestingly, while nearly all industry sectors shown in the previous section had lower than average annual earnings, many of the occupations shown in Table 3 have hourly earnings that exceed the national average. There are two possible reasons for this. First, it is possible that the REIF region has a larger share of part-time jobs than is typical nationally, which could explain the higher-than-average hourly earnings but lower-than-average annual earnings. Another possibility is that certain occupations (Management, Computer, Legal) which are employed across industry sectors are driving down the overall average.

Table 3. Employment Characteristics by Occupation

Occupation Type	2017 Jobs	2012-2017 Percentage Change	COL Adjusted Median Hourly Earnings	Earnings Compared to National Avg
Office and Administrative Support Occupations	29,856	(2%)	$15.92	($0.41)
Food Preparation and Serving Related Occupations	21,375	4%	$10.04	$0.04
Sales and Related Occupations	18,778	1%	$11.04	($2.04)
Healthcare Practitioners and Technical Occupations	14,957	4%	$28.30	($2.45)
Education, Training, and Library Occupations	12,844	1%	$22.00	($0.89)
Transportation and Material Moving Occupations	12,343	3%	$16.88	$2.08
Personal Care and Service Occupations	11,962	4%	$11.01	$0.16
Production Occupations	11,358	(3%)	$17.72	$1.80
Installation, Maintenance, and Repair Occupations	9,802	2%	$21.00	$0.17
Management Occupations	9,126	3%	$36.71	($11.54)
Construction and Extraction Occupations	8,824	2%	$25.43	$4.45
Building and Grounds Cleaning and Maintenance Occupations	8,405	2%	$11.91	$0.02
Healthcare Support Occupations	7,544	1%	$14.31	$1.00
Community and Social Service Occupations	6,258	10%	$18.94	($1.54)
Business and Financial Operations Occupations	6,149	3%	$26.03	($6.01)
Protective Service Occupations	4,923	1%	$20.68	$2.08
Architecture and Engineering Occupations	2,901	4%	$34.68	($2.83)
Computer and Mathematical Occupations	2,393	4%	$28.82	($10.70)
Life, Physical, and Social Science Occupations	2,144	5%	$26.58	($4.03)
Arts, Design, Entertainment, Sports, and Media Occupations	1,927	(7%)	$18.15	($4.68)
Military occupations	1,704	(6%)	$19.25	$2.53
Farming, Fishing, and Forestry Occupations	958	4%	$17.79	$6.82
Legal Occupations	704	(3%)	$28.88	($9.49)

Source: EMSI

Education Level: Bachelor's Degree or Higher

Region's Percentage of Population Lags behind Both States and U.S.

Description

According to the United States Census QuickFacts, a person is counted as having a bachelor's degree or higher if he/she has obtained a minimum of a bachelor's degree from an accredited institution. Data included people age 25 and older. Percentages were calculated by dividing the amount of people who had obtained a bachelor's degree or higher by the total number of people 25 years of age or older in the population.

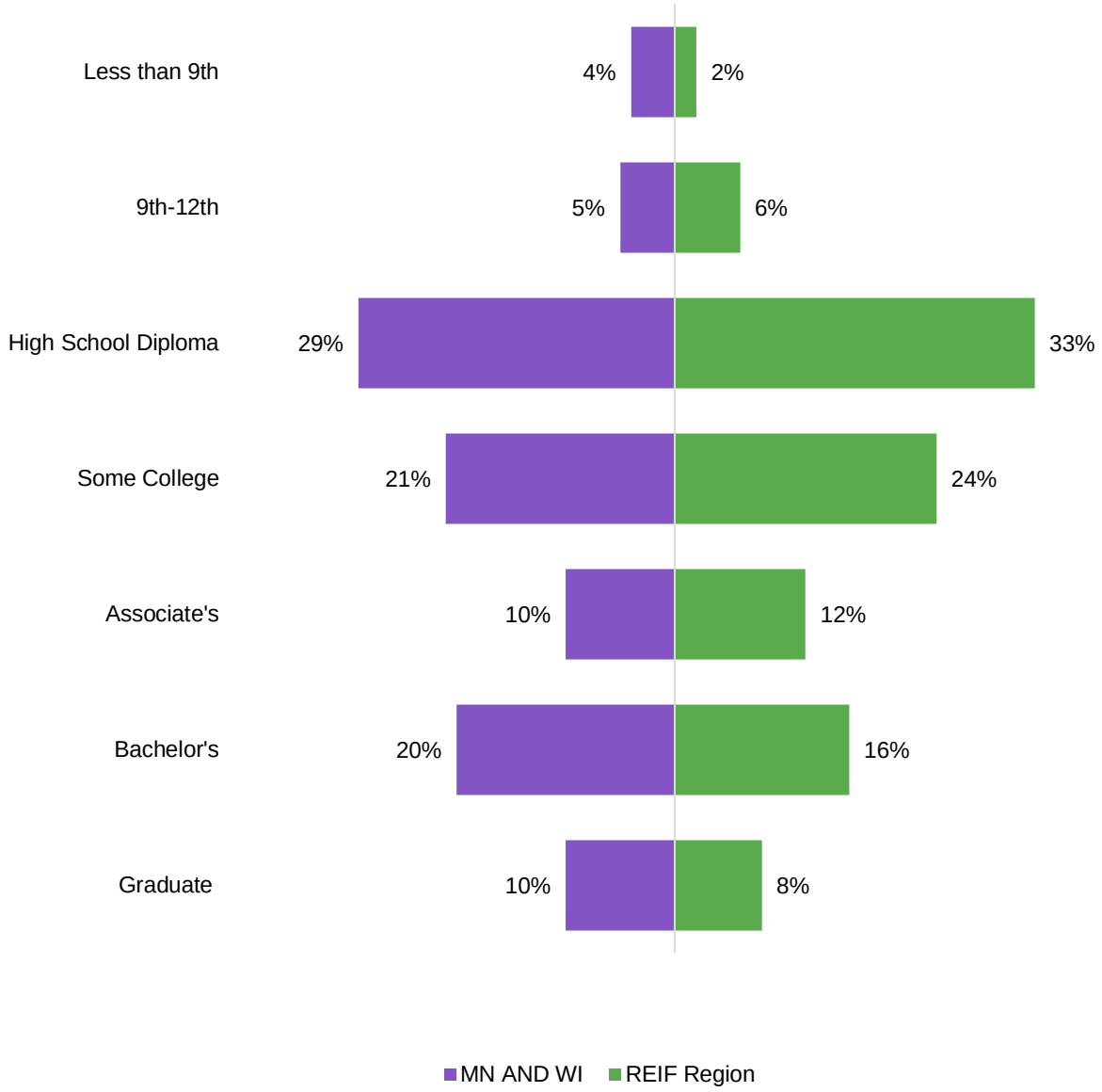
Why is It Important?

Historically, a college degree was not necessarily a requirement to making a living or finding a rewarding career. However, in the ultra-competitive, high tech, and demanding global workplace, a college degree has become a minimum cost of admission, so to speak, in much of the modern economy. Approximately one-third of the jobs available in the United States already required a post-secondary education according to 2012 data from the BLS. Additionally, the BLS predicted that by 2022, the percentage of positions requiring a post-secondary degree will continue to grow – an approximately 12.1% increase among those requiring a bachelor's degree, an 18.4% increase among those requiring a master's degree, and a 16.0% increase among occupations requiring a doctorate or professional degree. These numbers are a critical portrayal of how important post-secondary education has become and the importance of maintaining a competitive population of degree-holders in the workforce.

How is Our Region Doing?

Figure 10 shows the education pyramid for both the REIF region and the combined figures from Minnesota and Wisconsin. Individuals are divided into groups based on the highest academic achievement that he/she has attained. The REIF region has fewer individuals without a high school diploma compared to the states. Also, the REIF region has more individuals with Associate's degrees. However, Minnesota and Wisconsin, as whole, outperform the region when it comes to completion of bachelor's and graduate or professional degrees. The higher amounts of associate's degrees and lower amounts of bachelor's degrees may speak to the types of jobs that are available for individuals in the REIF region.

Figure 10. Educational Attainment Pyramid



Source: EMSI

Median Home Value

Region's Median Home Value Less Than MN, WI, and U.S.

Description

According to the U.S. Census Bureau QuickFacts, respondents to 2011-2015 American Consumer Survey (ACS) were asked to estimate the selling price of their housing unit and land if they were to sell their property at that time. The data includes owner-occupied, single-family homes on less than 10 acres of land.[1]

Why is It Important?

The median value of owner-occupied housing units is an important economic indicator because for many people, the value of their home represents a substantial portion of their overall net worth. Having an accurate estimate of that value can provide a region with important information related to personal wealth within its population, property values, and expected tax revenues. It is also a crucial tool in determining the general level of demand and supply of houses within a region that can be indicative of whether or not people desire and value homes there.

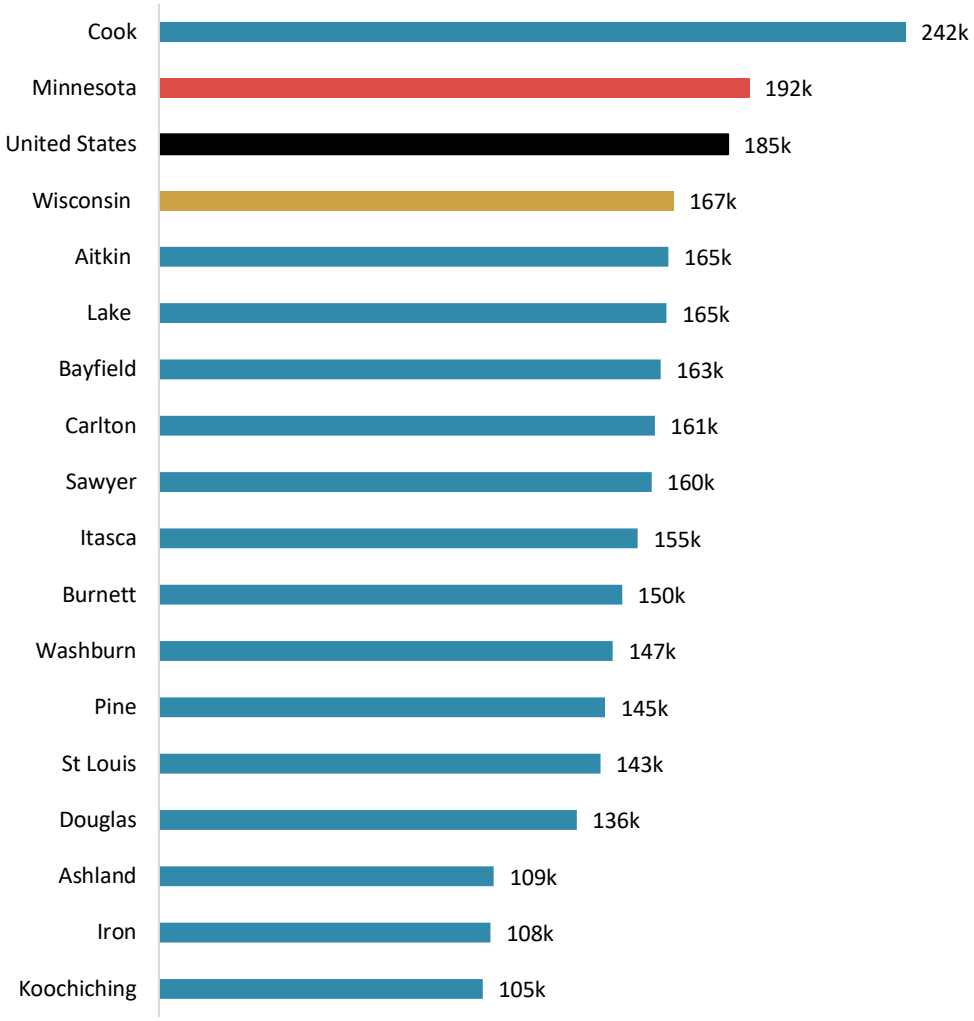
How is Our Region Doing?

Figure 11 shows the median home value by county,[2] as well as the median value for the state of Minnesota, the state of Wisconsin, the United States, and the average for the REIF region. The median value of owner-occupied housing throughout the REIF region was lower than the median for Wisconsin, Minnesota, and the United States. Cook County, Minnesota, was the only county with home values that were higher than the levels of the United States, Minnesota, and Wisconsin. Most of the REIF counties have median home values between $135k and $165k, with a few REIF counties having median property values of just over $105k.

When comparing these values to the previous year, slow growth can be seen across the board in median home values. This growth in home values have been the most significant for those counties with the lowest values, with increases in home values over 5% in the recent years.

[1] Mobile homes, houses with a business or medical office, houses on 10 acres or more, and housing units that are in multi-unit structures were not included in this data.
[2] The statistics in this indicator were five-year estimates from the American Community Survey (ACS), 2011-2015. The ACS is a mandatory, ongoing statistical survey that samples a small percentage of the population every year.

Figure 11. Median Home Values



Source: ACS 1 Year Estimates 2017

Average Household Income

Average Household Income for REIF Region Lower than MN, WI, and US

Description

According to the U. S. Census QuickFacts, household income is defined as the income of the householder plus the incomes of all other individuals 15 years of age or older that occupy that same household. (This can include persons who are not related to the householder.) Income is calculated by including not only the individuals' wages or salaries but also other forms of alternative income such as investments, bonuses, etc.

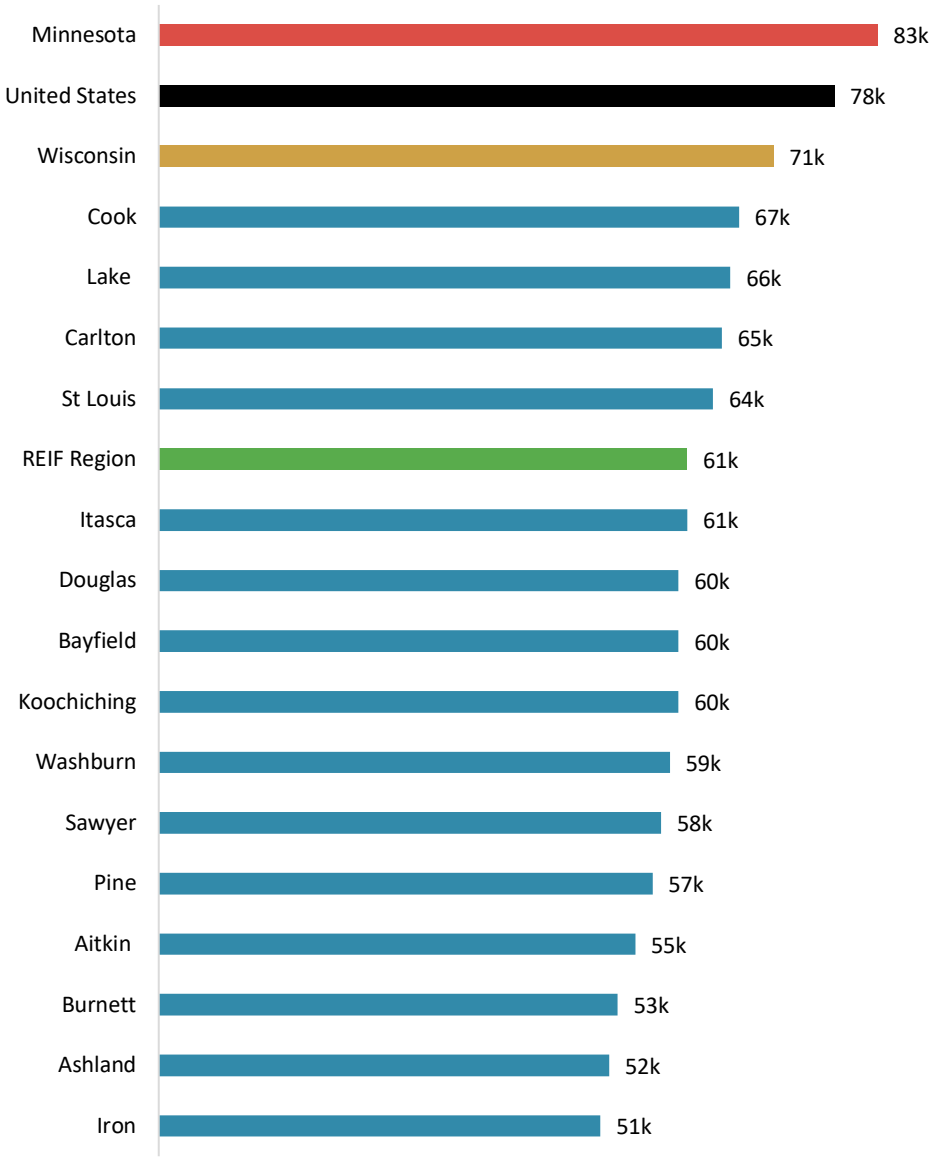
Why is It Important?

Household income is a common representation of the typical individual's wealth within a population or region. It can help highlight which regions might be struggling and which regions excel. Household income is often most useful when compared with other indicators for the same region, such as gross domestic product, median home value, and employment by industry.

How is Our Region Doing?

Figure 12 shows the average household income for all of the REIF counties and for Minnesota, Wisconsin, and the United States. As a whole, the REIF region has a lower average income. The REIF region has an average of $61k, which is significantly lower than the figures for Minnesota ($83k), the United States ($78k), and Wisconsin ($71k).

Figure 12. Average Household Income



Source: ACS 1 Year Estimates 2017

Poverty Level

Average Regional Poverty Rate Higher Than States'

Description

According to the U.S. Census QuickFacts, poverty thresholds fluctuate by the size of each family. Poverty status is recognized by analyzing annual income and comparing that number to a set of dollar values. This means that if the family's income (before taxes) is lower than the poverty threshold value set by the U.S. Census Bureau for that size of family, then every individual in the family is considered to be in poverty.

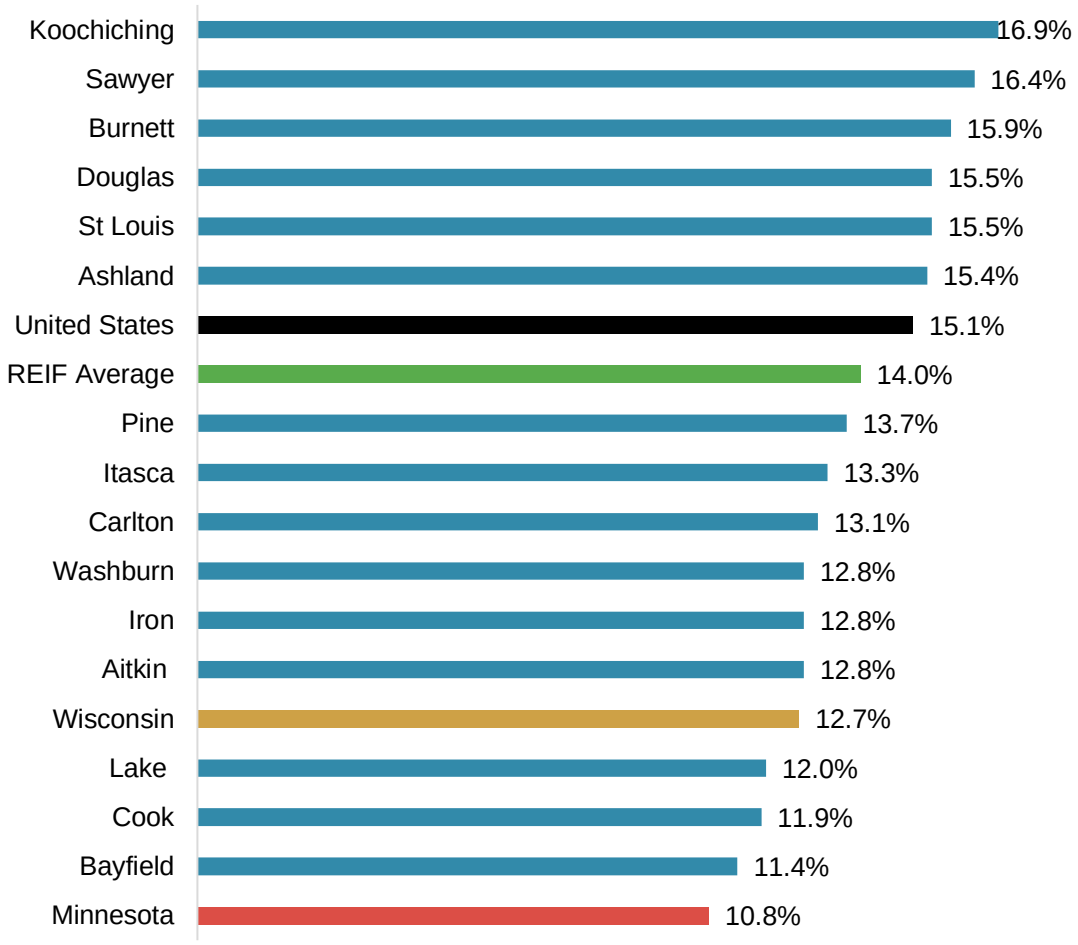
Why is It Important?

The poverty rate is important in determining the social and economic well-being of a region. High levels of poverty negatively impact the quality of life for a county's residents and can be a burden on the region's economy. High poverty levels have been correlated with high unemployment levels and low education levels. As an indicator, when the percentage of people living in poverty decreases, the economy typically improves as a result of the government being able to focus spending on promoting industry and developing the economy rather than allocating that money on less economically productive assistance programs.

How is Our Region Doing?

Figure 13 shows the poverty rate for each county in the REIF region, as well as the region as a whole, the states of Minnesota and Wisconsin, and the United States as a whole. In the REIF region, 14% of people are under the poverty line. This is slightly lower than the American average of 15% but is significantly higher than the poverty levels of both Wisconsin (12.7%) and Minnesota (10.8%). In the REIF region, Koochiching County, Minnesota, has the highest amount of poverty with nearly 17% of people in poverty. Bayfield County, Wisconsin, had the lowest poverty rates in the REIF region with about 11% below the poverty line.

Figure 13. Poverty Level



Source: ACS 1 Year Estimates 2017

Special Topics: Tourism and Water Resources

Upsurge in Hiring Beginning in 2014, But Job Growth in Region Lags behind States

Description

Each year, the Regional Economic Indicator Forum has a special topic. At the spring event, the topic was tourism and its importance to the region. The special topic at the fall event was the economics of water resources.

Why is It Important?

The Tourism industry is an important piece of the overall economy as it accounts for a large portion of the region's employment. And, of course, our region depends heavily on its water resources, with its location surrounding Lake Superior.

How is Our Region Doing?

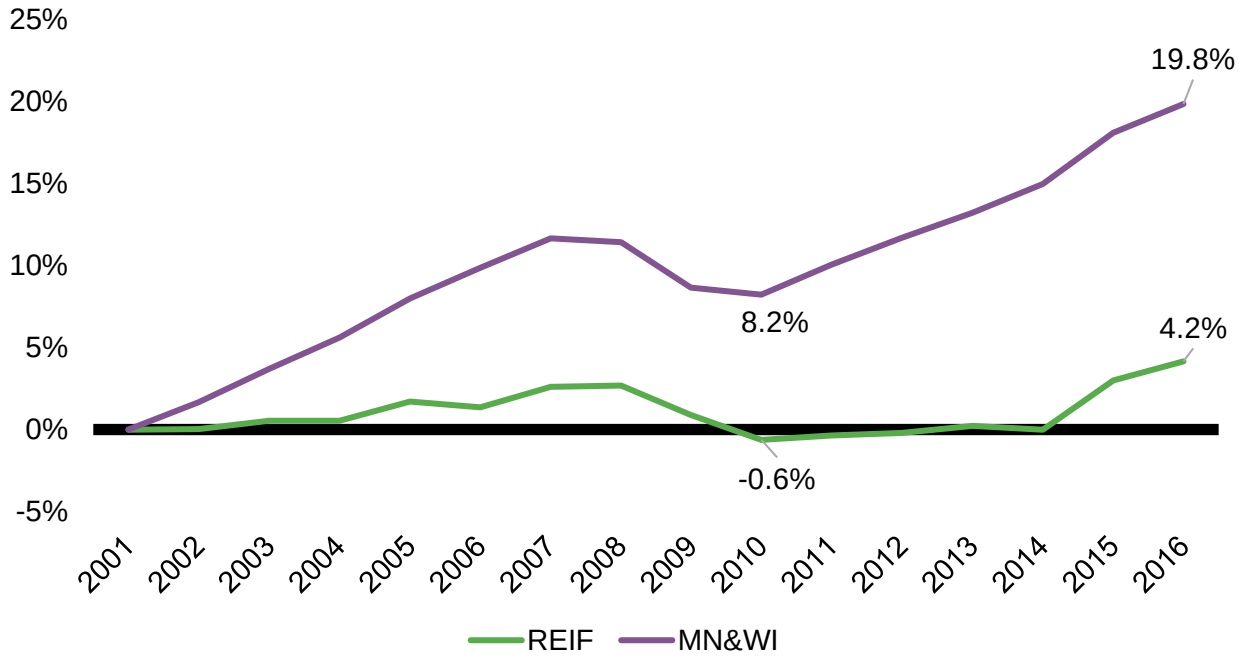
Figures 14-16 show the industries and occupations selected for the special topics and the employment growth in both areas for the REIF region and the whole of Minnesota and Wisconsin.

Figure 14 shows growth in the tourism industry using 2001 as a baseline. As shown in the figure, the industry in the REIF region was growing at a steady pace until 2007-2008. At that time, employment numbers fell back to 2001 levels and remained there until about 2014, at which time the industry began to add jobs again. Employment in the tourism industry for the states of Minnesota and Wisconsin also experienced a dip in 2007-2008, but the loss was smaller and recovery happened more quickly. As a result, the industry for the two states grew about 20% during the 15-year period, while the REIF region has only seen about 4% growth, with nearly all of that within the last two years.

Figure 15 highlights which industries have contributed to the recent growth in tourism. Restaurants, Special Food Services, and Drinking Establishments have seen the most growth in our region, adding more than 800 jobs between 2014 and 2016.

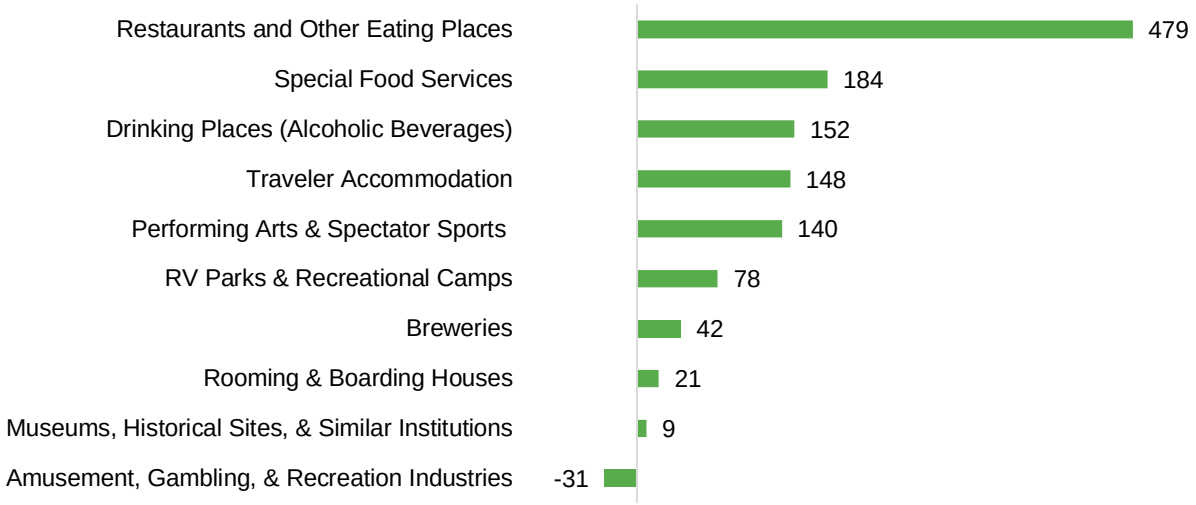
Finally, Figure 16 shows employment growth for occupations related to water resources. These occupations include Water and Wastewater Treatment Plant and System Operators, Great Lakes Water Transportation Workers, Ship and Boat Captains and Operators, Fishers and Related Fishing Workers, Sailors and Marine Oilers, Hydrologists, Motorboat Operators, Port and Harbor Operations, Environmental Science Technicians, Fish and Game Wardens, Farming Occupations, and Forestry Occupations. Like the tourism industry, water resource occupations have grown in the REIF region since 2012 but not as quickly as they have statewide. Interestingly, most of the regional growth in these occupations also happened beginning in 2014.

Figure 14. Tourism Industry Growth



Source: EMSI

Figure 15. Job Growth of Tourism Subsectors 2014-2016



Source: EMSI

Figure 16. Growth of Water Resource Occupations

Consumer Confidence Indicators: Predicting the Business Cycle

Indicator	Public Survey (Random)	REIF Survey (Non-random)
ICS 	Rising optimism about short-term economic outlook	Weakening short-term economic outlook
ICC 	Strong current state of the economy	Economy is slowing down
ICE 	Expectations of future economic expansion	Expectations of future economic expansion

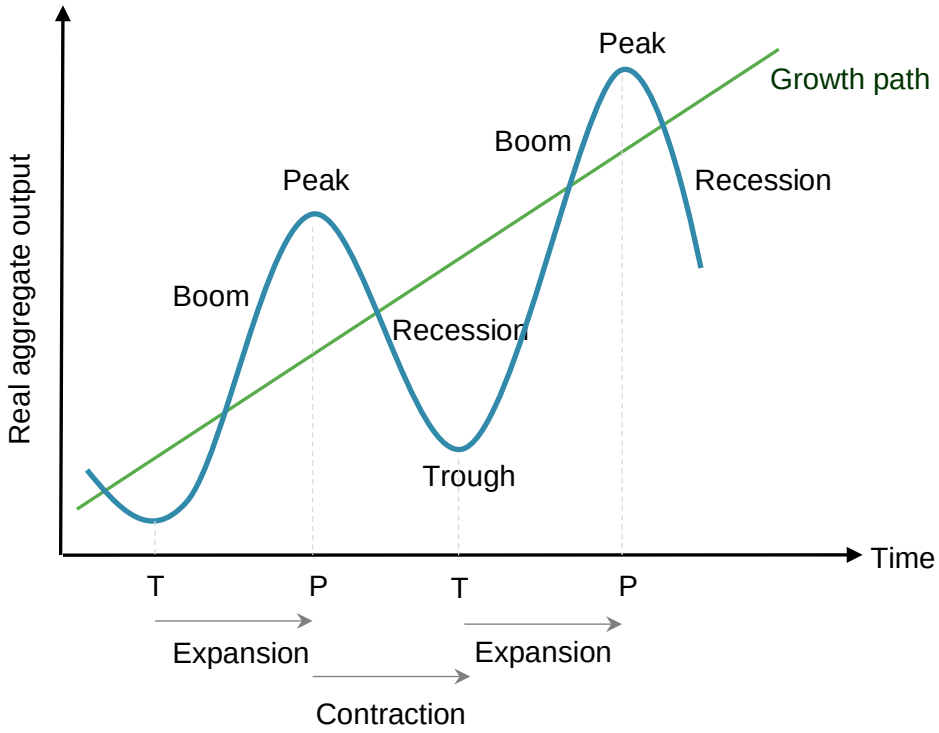
Rubana Mahjabeen, Ph.D., Assistant Professor of Economics, University of Wisconsin-Superior
UW-S student researchers: Mitchell Blomberg, Leah Boedigheimer, Matthew Botsio, Thy Anh Bui, Adar Buxton, Undralsaikhan Dambii, Obiageli Ekwunwa, Uyanga Gereltsogt, Brian Honness, Faith Ikede, Micheal Jacobs, Kurumi Maeta, Dekotah Miska, Naho Miyachi, Sunyoung Moon, Adaeze Ndu, Augustine Ngo Bitjong, Hung Nguyen, Minh An Nguyen, Opeyemi Omiwale, Almira Salimgarieva, Yiyang Shi, Marquise Slay, Avani Vora, Tsetsen-Ujin Zagdsuren

Business Cycle and Consumer Confidence Indicators

"The future belongs to those who prepare for it today." Malcolm X

The economy-wide fluctuations in economic activity are popularly referred to as a *business cycle*. As illustrated in Figure 3, business cycle is a short-run alternation between economic downturns and economic upturns. When the economy is booming, consumers and businesses enjoy economic prosperity. When the economy is in a recession, the fortunes reverse. Thus, if a business cycle could be anticipated, its effects could be lessened or shortened.

Figure 17: Business Cycle



Source: University of Wisconsin-Superior Illustration

To equip decision-makers with tools enabling them to anticipate the forthcoming fluctuations in the economy, economists developed so-called *leading economic indicators*. Leading economic indicators, such as the index of consumer expectations, stock prices, and housing permits, tend to move ahead of coincident economic indicators and, therefore, signal where the economy is heading in the future. Significant continuous increases in leading economic indicators signal that the economy is about to expand, while significant continuous declines in leading economic indicators signal that an economic contraction is about to happen. Given their ability to predict future economic conditions, leading economic indicators are closely watched by businesses and other decision-makers, as they help them plan for the future.

In fall 2013, a research group at the University of Wisconsin-Superior (UW-S) started developing regional economic indicators for fifteen northern Minnesota and northwest Wisconsin counties, including the Index of Consumer Sentiment (ICS), Index of Current Conditions (ICC), and Index of Consumer Expectations (ICE). Generally speaking, ICS is designed to gauge consumers' attitudes towards the business environment, personal finances, and consumption spending. ICC is designed to gauge the current state of the economy, or serve as a coincident economic indicator. ICE, a leading economic indicator, is used for business cycle forecasting, as it reflects the consumers' outlook on future economic and financial conditions. This outlook in turn determines consumer spending behavior, and through a multiplier effect, the overall economic activity and prosperity in the area.

Methodology of Computing Consumer Confidence Indicators

The methodology behind these indices is based on the following:

- Target survey area: Eight Minnesota and seven Wisconsin counties, including: Koochiching, Itasca, St. Louis, Lake, Cook, Aitkin, Carlton, Pine, Douglas, Bayfield, Ashland, Iron, Burnett, Washburn, and Sawyer county. Since most consumer spending decisions are made on a household level, household numbers were used to generate the survey samples.

- Data collection process: Randomly selected households were contacted over a phone and asked to answer 5 core survey questions related to three consumer confidence indicators (see Appendix for details). Same questions were also asked through email surveys. These Consumer confidence survey questions were modeled after the University of Michigan consumer survey.

- Data samples: Starting in fall 2014, two surveys were conducted, one over a phone and another via e-mail. Phone-based surveys were conducted using a random representative sample of households residing in each county. E-mail surveys were conducted using a roster of previous REIF attendants. Responses were then compared across samples and were found to be statistically different from each other, so it was decided to track the two samples separately from each other. Sample size, response rate and margin of error for each survey and time period are documented in Table 4 below.

Table 4: Consumer Confidence Survey: Sample, Response Rate and Error

Time	Complete Phone Responses	Phone Response Rate	Margin of Error, 95% (Phone)	Complete Email Responses
Fall 2013	219	6.45%	6.62%	-
Spring 2014	216	8.24%	6.66%	-
Fall 2014	91	21.16%	10.27%	92
Spring 2015	187	19.44%	7%	104
Fall 2015	107	16.41%	9.35%	117
Spring 2016	104	16.83%	8.77%	113
Fall 2016	98	15.83%	9.09%	78
Spring 2017	154	14.88%	7.29%	131
Fall 2017	155	13.94%	7.33%	112

Source: University of Wisconsin-Superior

- Calculation of indices: using the phone-based consumer survey data, three consumer confidence indices were calculated as follows:
    1. Balance by question and county: Q_{ij} = (% positive$_{ij}$ - % negative$_{ij}$) * weight$_j$ + 100, where i = 1…5 indices question number, j = 1…15 indices county, and % positive and % negative stand for percentages of positive and negative responses produced within each time-period respectively. County weights were used to correct for the county non-response error to ensure that results would be representative of households residing in each county and the target area.
    2. Balance by question: $Q_i = \sum_j Q_{ij} \Big/ 15$, where j = 1…15 counties.
    3. Indices: $\mathrm{ICS}_t = \frac{Q1_t + Q2_t + Q3_t + Q4_t + Q5_t}{Q1_b + Q2_b + Q3_b + Q4_b + Q5_b}$; $\mathrm{ICC}_t = \frac{Q1_t + Q5_t}{Q1_b + Q5_b}$; $\mathrm{ICE}_t = \frac{Q2_t + Q3_t + Q4_t}{Q2_b + Q3_b + Q4_b}$, where Q1…5 represents question number, t indices time periods, and b indicates base-year values.

Findings of Consumer Survey

The results of 15-county regional consumer confidence indices based on phone survey and email survey are presented in Table 2 and 3 respectively. National consumer confidence indicators developed by the University of Michigan are presented in Table 4. During spring 2017, both phone and email surveys show that except for current economic conditions, general public and past REIF participants had positive sentiments and displayed optimism about future economic outlook. However, during fall 2017 all three indices for general public had a positive trend while for REIF participants those three indices showed a negative trend.

Over the year, fall 2016 to fall 2017, general public became positive about current economic conditions and displayed optimistic sentiments. On the other hand, compared to fall 2016 in fall 2017 local government, business people, and academics became negative about current economic conditions and pessimistic in their sentiments about short-term economic outlook. It should be noted that last year's elections and partisanship had a strong impact on peoples' opinions and sentiments. Interestingly, the largest rise was in the index of consumer expectations. Over the time period fall 2016 to fall 2017 both groups, random households and past REIF participants had positive expectations about the future of the economy.

Table 5: 15-County Regional Consumer Confidence Indicators (Phone Survey)

Time	ICS	ICS, Percent Change	ICC	ICC, Percent Change	ICE	ICE, Percent Change
Fall 2013	100.00		100.00		100.00	
Spring 2014	100.91	0.91%	100.26	0.26%	101.36	1.36%
Fall 2014	103.83	2.89%	102.31	2.05%	104.86	3.46%
Spring 2015	105.74	1.84%	105.21	2.83%	106.11	1.19%
Fall 2015	103.23	-2.37%	104.71	-0.48%	102.23	-3.66%
Spring 2016	106.02	2.70%	104.34	-0.35%	107.16	4.82%
Fall 2016	102.60	-3.23%	102.70	-1.57%	102.50	-4.35%
Spring 2017	103.19	0.58%	102.05	-0.63%	103.95	1.41%
Fall 2017	104.43	1.20%	104.41	2.31%	104.44	0.47%

Source: University of Wisconsin-Superior

Table 6: 15-County Regional Consumer Confidence Indicators (Email Survey)

Time	ICS	ICS, Percent Change	ICC	ICC, Percent Change	ICE	ICE, Percent Change
Fall 2014	100.00		100.00		100.00	
Spring 2015	97.01	-2.99%	97.81	-2.19%	96.47	-3.53%
Fall 2015	95.77	-1.28%	96.72	-1.11%	95.13	-1.39%
Spring 2016	93.39	-2.49%	94.85	-1.93%	92.40	-2.87%
Fall 2016	95.95	2.74%	98.86	4.23%	93.98	1.71%
Spring 2017	96.26	0.32%	96.47	-2.42%	96.11	2.27%
Fall 2017	94.78	-1.54%	95.39	-1.12%	94.36	-1.82%

Source: University of Wisconsin-Superior

Table 7: National Consumer Confidence Indicators

Time	ICS	ICS, Percent Change	ICC	ICC, Percent Change	ICE	ICE, Percent Change
Dec' 16	98.2	4.69	111.9	4.29	89.5	5.05
Jan' 17	98.5	0.31	111.3	-0.54	90.3	0.89
Feb' 17	96.3	-2.23	111.5	0.18	86.5	-4.21
Mar' 17	96.9	0.62	113.2	1.52	86.5	0.00
Apr' 17	97	0.10	112.7	-0.44	87.0	0.58
May' 17	97.1	0.10	111.7	-0.89	87.7	0.80
June' 17	95.1	-2.06	112.5	0.72	83.9	-4.33
July' 17	93.4	-1.79	113.4	0.80	80.5	-4.05
Aug' 17	96.8	3.64	110.9	-2.20	87.7	8.94
Sep' 17	95.1	-1.76	111.7	0.72	84.4	-3.76
Oct' 17	100.7	5.89	116.5	4.30	90.5	7.23
Nov' 17	98.5	-2.18	113.5	-2.58	88.9	-1.77

Source: University of Michigan

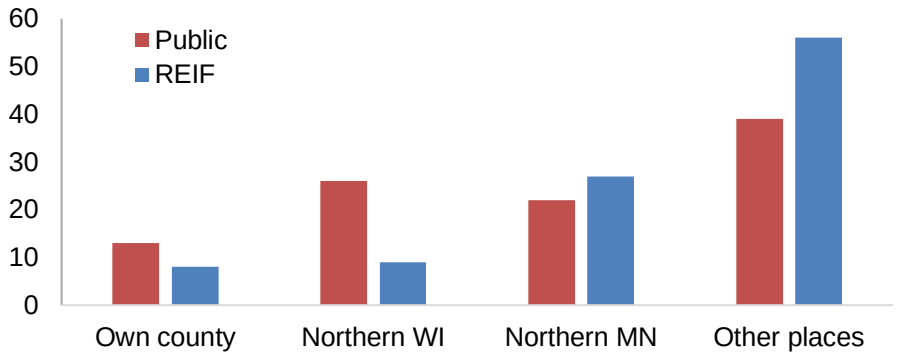
By comparing the national and phone-based regional indicator trends, it is possible to discern that nationwide and in the 15-county area consumers generally feel that the economy has been growing stronger. This positive trend is also reflected in the email-based index of consumer expectations. These findings suggest that during 2017 there was a growing optimism about the current and future economic conditions. The national survey, computed by the University of Michigan did show a few months where there was a negative trend, but overall, the indices were trending upward.

Specific Topic of Spring 2017

In spring 2017 semester, Regional Economic Indicator Forum topic was tourism and survey participants were asked two questions to find out how much demand is out there for local tourist sites.

When survey respondents were asked on average how often they visit local tourist attractions in their county, more than 40% respondents from both groups - random households and past REIF participants answered that they visit their own county tourist attractions once a year. Interestingly, 28% of random households have never visit their own county tourist attractions, while in case of past REIF participants the number is 12%.

Figure 18: Location Preference for Vacation (Percentage of Respondents)



Source: University of Wisconsin-Superior

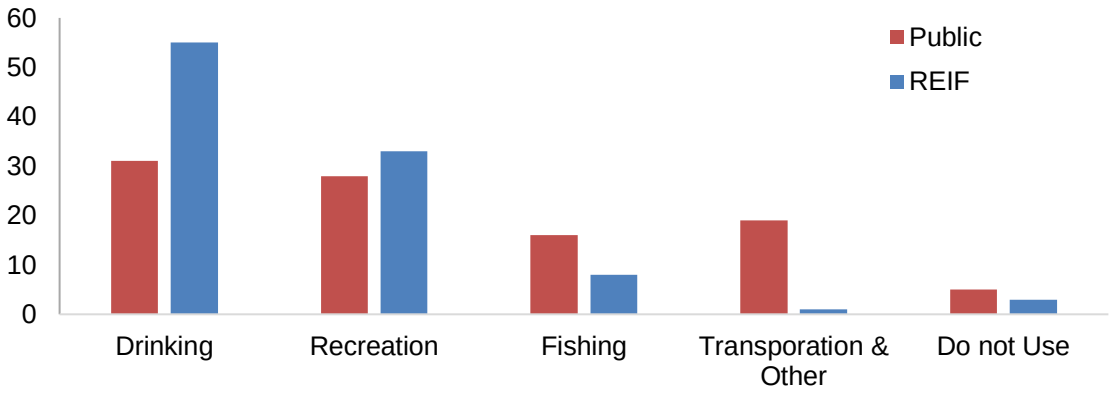
When it came to the location preferences for vacation, both groups mostly chose other places than their own area: approximately 39% of randomly surveyed households prefer other locations, while a little over half of past REIF participants prefer other places for vacation. The next popular vacation preference was different for the two groups; over a quarter of past REIF participants chose Northern Minnesota, while a quarter of random households surveyed chose Norther Wisconsin. The most interesting part is, both groups had the least number of people visiting their own counties for vacation.

Specific Topic of Fall 2017

In Fall 2017 semester, Regional Economic Indicator Forum topic was regional water resources and two questions were asked to survey participants.

First, on the importance of regional water resources majority of both groups - random households and past REIF participants think that regional water resources are very important for the local economy. Specifically, 91% of surveyed random households and 100% of surveyed REIF participants believe that local water resources are important for the REIF region.

Figure 5: Number One reason for Using Regional Water Resources (Percentage of Respondents)



Source: University of Wisconsin-Superior

Second, on the usage of regional water resources – drinking and recreation represent the top two reasons of water usage. Specifically, 31% of surveyed random households and 55% of surveyed REIF participants use regional water for drinking purpose. The most interesting part is, 5% of random households and 3% of past REIF participants said that they do not use regional water resources for any purpose.

Regional Equity Index: An Analysis of the Equity Performance of Stocks of Local Interest

Sakib Mahmud, Ph.D., Associate Professor of Sustainable Management and Economics, University of Wisconsin-Superior
University of Wisconsin-Superior Student Researchers: Mitchell Blomberg, Eric Fahlborg, Nikolas Kosman, Marcus Luoma, Hung Nguyen, Almira Salimgarieva, Viktor Sallhag, and Olle Sedelius.

The purpose of this research is to provide information and a financial analysis on the equity performance of companies of local interest in the fifteen counties surrounding the Twin Ports area. This sixth report of an ongoing research project that will track the equity performance of these companies, create an index of local stocks as a way to measure economic activity in the region, examine measures of future performance, and make comparisons to industry averages and market indices.

The first report covered the performance of the index and individual stocks that make up the index over a five-year period from January 2, 2009 through December 31, 2013. The second report extended the study period through September 30, 2014, the third report through February 28, 2015, the fourth report extends the study through October 1, 2015, and the fifth report through March 1, 2016. The sixth report, the current version, covers the study period through October 2, 2017. In this report, REI outperforms the benchmark index, and investors were more bullish than bearish on the majority of the stocks in the index.

Construction of the Index and Index Components

The Regional Equity Index (REI) was constructed using publicly traded stocks of companies located in the fifteen counties surrounding the Twin Ports. The initial criteria for inclusion in the REI required that the stock be publicly traded with the firm's headquarters located within the fifteen county area of the study. ReferenceUSA, a business database, was utilized to identify companies that meet the initial criteria. Only two companies located within the fifteen-county region met the criteria requiring that the firm's headquarters be located in the region. In order to construct an index that is relevant, additional stocks needed to be included. To increase the size of the index, the criteria was relaxed to include firms who had a significant presence in the region as indicated by the number of employees locally or the significance of regional activity to the overall contribution to the firm. The firms identified using these criteria include the following:

Allete
Ascena Retail Group
Calumet
Canadian National Railway
Charter Communications
Cliffs Natural Resources
Enbridge Energy Partners
Louisiana-Pacific
Marriott International
Morgan Stanley
Polymet
UnitedHealth Group
USG Corporation
US Steel

A brief profile of each of the companies and a graph illustrating their equity performance over the study period is provided in Appendix D. Of the fourteen firms that make up the index, ten of the stocks trade on the NYSE, and four trade on NASDAQ. UnitedHealth Group, Marriott International, Morgan Stanley, Charter Communications, and Canadian National Railway are considered large-cap firms, Polymet is a small-cap firm, and the remaining eight stocks in the index are mid-cap firms.

The REI is an equally weighted equity index. An equally weighted index treats each stock equally regardless of its market capitalization or economic size. It is assumed that an equal dollar investment is made in each stock at the beginning of the measurement period. Monthly returns for each stock are calculated over the study period beginning January 2, 2009 and ending October 2, 2017. For each month of the study period, returns are calculated by taking the change in the price from one month to the next, divided by the price at the beginning of the month. The prices used to calculate returns are the historical adjusted prices listed on Yahoo! Finance. Closing prices with adjustment for splits are used because these prices reflect any dividends paid or stock splits that may have occurred during the period. Therefore, the adjusted price is a more accurate representation of the true total return to an investor.

Since the REI is composed primarily of mid-cap firms, the index is compared to a benchmark index consisting of the average return of six popular mid-cap equity indices. Using standard benchmarks such as the S&P 500 or DJIA would not provide a reliable comparison since these indices are constructed using large-cap firms. The benchmark index used for comparison purposes for years 2009 to 2017 is the S&P MidCap 400® Equal Weight Index.

Stock Performance

Table 8 shows the annual returns for each component of the REI over the study period ending October 2, 2017, the average and median returns for the REI components, and the annual returns of the benchmark index.

Historically, the performance of the REI components relative to the benchmark index shows the overall performance of the index to be below the market. The average return for the REI exceeded the performance of the benchmark in 2012, 2016, and recently, 2017. Between 2013 through 2015, the index underperformed relative to the benchmark index. Although the general trend of the REI in a positive or negative direction is consistent with the trend observed for the market, high performance of Calumet and Louisiana-Pacific in year 2017 caused REI to exceed the benchmark S&P MidCap 400® Equal Weight Index.

Table 8: Annual Returns for REI Components and Benchmark Index, ending 11/2/2017

REI	2011	2012	2013	2014	2015	2016	2017
Allete	5.56%	-4.09%	15.49%	3.64%	-8.55%	23.33%	22.24%
Ascena Retail Group	3.89%	32.18%	18.23%	-40.83%	-3.28%	-44.53%	-80.61%
Calumet	-7.80%	54.55%	-12.92%	-7.88%	8.03%	-78.56%	116.25%
Canadian National Railway	14.83%	12.99%	25.22%	20.61%	-12.07%	23.50%	22.33%
Charter Communications	-15.60%	-56.87%	-36.98%	-67.63%	-66.57%	453.29%	-14.17%
Cliffs Natural Resources	37.31%	23.19%	69.94%	25.03%	13.49%	53.52%	27.41%
Enbridge Energy Partners	0.88%	-13.29%	2.97%	24.92%	-40.02%	1.39%	-38.36%
Louisiana-Pacific	-16.10%	109.22%	-17.16%	-16.71%	8.52%	6.43%	41.23%
Marriott International	-22.74%	19.63%	19.88%	58.19%	-7.06%	22.09%	33.98%
Morgan Stanley	-48.60%	2.43%	60.19%	13.12%	-8.89%	33.93%	13.64%
Polymet	-46.35%	-17.27%	37.77%	13.98%	-8.41%	10.13%	-22.08%
UnitedHealth Group	30.68%	4.66%	35.97%	32.84%	15.36%	38.19%	22.29%
USG Corporation	-39.54%	149.81%	-9.01%	-0.21%	-11.99%	19.49%	9.36%
US Steel	-54.76%	-24.14%	1.04%	2.91%	-69.58%	293.49%	-24.72%
Median	-11.70%	8.82%	16.86%	8.38%	-8.48%	22.71%	17.94%
Average	-11.31%	20.93%	15.05%	4.43%	-13.64%	61.12%	9.20%
Benchmark	-4.49%	12.30%	24.59%	7.23%	1.50%	17.70%	8.45%

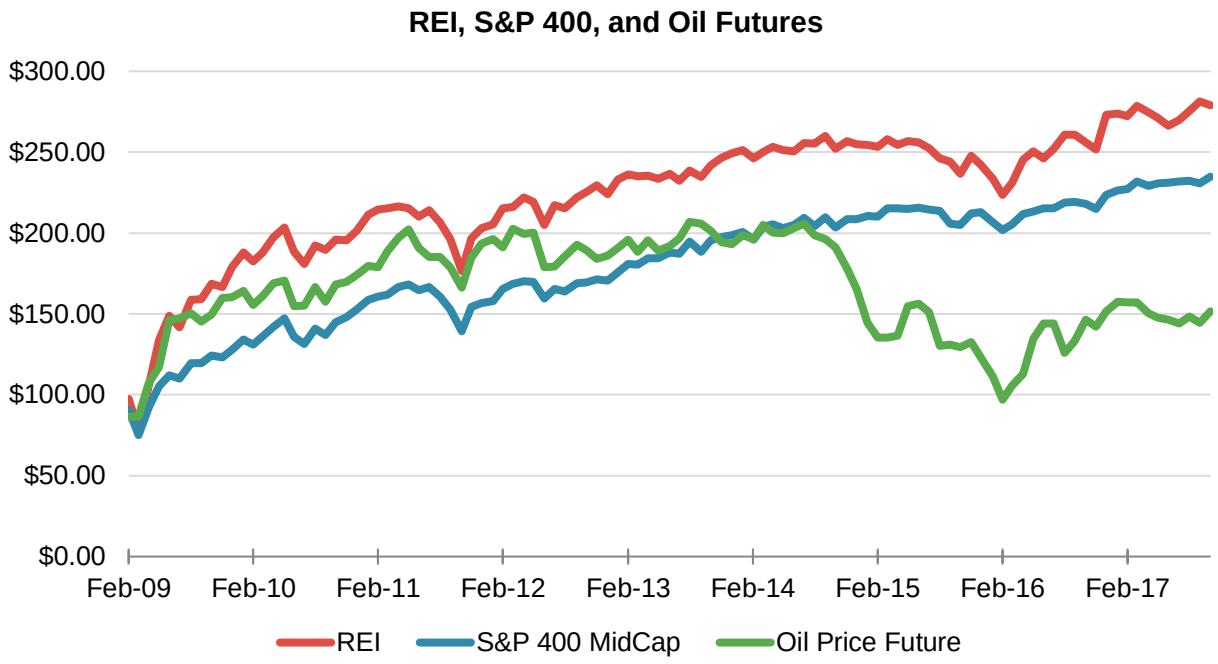
Figure 19 illustrates the growth of $100 invested in the REI on January 2, 2009 and held until October 2, 2017. The growth trend of the $100 investment in the REI is compared to the trend of $100 invested in the S&P 400 over the same period of time and the crude oil futures. The S&P 400 is chosen because it is a mid-cap index, which provides the most meaningful comparison to the REI, and monthly data was available to calculate the returns for the S&P 400 over the five-year study period. The ending value of the REI is $279.10, up from $255.86 from a year ago at

the beginning of October 2016. On the other hand, the ending value of the S&P 400 is $234.84, which is also up from $218.06 at the beginning of October 2016. Compared to crude oil futures, the REI has continued to show movement in response to changes in oil prices. This indicates that the REIF region is currently highly dependent on the price of oil and other commodities. Figure 19 reveals that the REI is more sensitive to fluctuations in commodities pricing than the diversified S& P 400.

The REI trends somewhat with the market, but has significantly outperforms relative to the S&P 400 during the sixth study period; while both the REI and S&P 400 were up during the period, the REI is increased 9.08% from the last report. This is more than the gain experienced by the S&P 400, which is up by 7.69%.

Looking at the components of the REI individually, only two of the fourteen stocks in the composite index have underperformed the benchmark this year to date. Polymet, Ascena Retail Group, Cleveland-Cliffs, and USG Corporation have returns ranging from -22.08% to -80.61%, while the other components have returns ranging from 9.20% to 116.25%. As mentioned before, Louisiana-Pacific with 41.23% and Calumet with 116.25% are the highest performing stocks in the REI composite index.

Figure 19: Growth of $100 Invested in the REI and the S&P Index against the Oil Futures

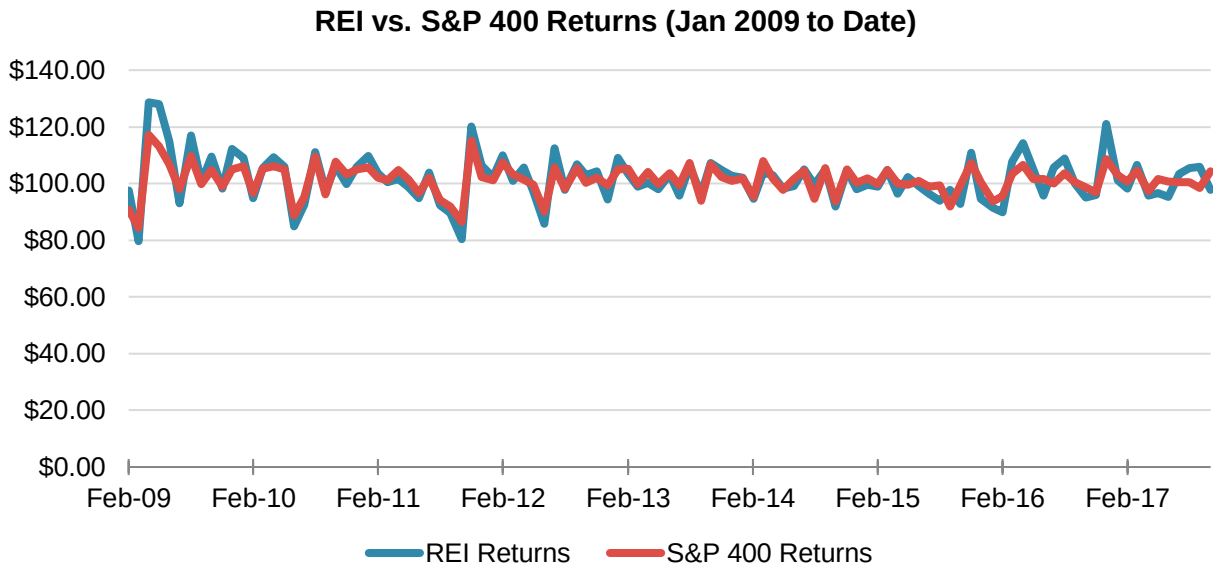


Source: Yahoo Finance and Market Insider

Next, Figure 20 below highlights price volatility of REIF region by comparing REI returns to the S&P 400 Mid-cap returns. One can see that the REI return line has higher peaks and valleys,

and appears to be more volatile. This makes sense, since REIF region, as a whole, is simply less diversified than the S&P 400 Mid-cap. In a separate statistical regression analysis, the findings reveal that approximately 60% price movement is aligned with the overall market, which implies approximately 40% of the movement in prices is unique to the region.

Figure 20: REI and S&P 400 Correlation



Source: Yahoo Finance

Measures of Future Expectations

Predicting future stock price performance accurately and consistently is an impossible task. However, research has shown that certain measures are more effective in predicting future performance than others. Two companies, Value Line® and Morningstar®, are well known for providing measures that are useful in predicting the future performance of firms. This study makes use of data from both of these sources.

Valueline® Measures

Timeliness and Performance Rank

The Timeliness Rank provides a measure of predicted stock price performance relative to the market over the next year. The measure is based on historical price and earnings data, recent price and earnings trends, and recent unexpected earnings events. The highest possible rank is 1 and the lowest is 5. Stocks ranked 1 and 2 are expected to outperform the market, stocks ranked 3 are expected to mirror the market, and stocks ranked 4 and 5 are expected to underperform the market. The Performance Rank is similar to the Timeliness Rank but is typically used for smaller capitalization firms. As can be seen in Table 9, the average Timeliness/Performance Rank for the

REI is at 2.1. This suggests that on average the price performance of the REI should outperform the market over the next year.

Out of fourteen REIF companies, six of them are ranked 1 and 2. These are, Allete, Canadian National Railway, Louisiana-Pacific, Morgan Stanley, UnitedHealth, and US Steel. These companies are expected to outperform the market next year. Compared to last year, Cleveland-Cliffs, formerly known as Cliffs Natural Resources, declined from a rank of 2 to a rank of 4. The Timeliness Rank data also reveals that Calumet, Charter Communications, Polymet, USG Corporation, and Marriott International are ranked 3. With a rank of 3, stocks of all these companies are expected to perform as well as the market.

Besides Cleveland-Cliffs, the companies that are ranked 4 are Ascena Retail Group and Enbridge Energy Partners. Stocks of all these three companies are expected to underperform the market next year.

Safety Rank

The Safety Rank measures the potential risk of an individual stock. It is based on the stability of the stock price over time and the financial strength of the firm. The highest possible Safety Rank is 1 and the lowest is 5. A conservative investor, who is mainly concerned with safety, would typically invest in stocks with a rank of 1 or 2.

As illustrated in Table 9, the Safety Rank for the REI is 3.1, which makes the REI slightly above average in terms of potential risk. UnitedHealth Group has a rank of 1, as it did last study period. Allete and Canadian National Railway have a rank of 2, which indicates above average safety. Charter Communications, Enbridge Energy Partners, Louisiana-Pacific, Morgan Stanley, Marriott International, and USG Corporation have a rank of 3, indicating average risk potential. Polymet and US Steel have a rank of 4, which indicates a below average level of safety. Ascena Retail Group, Cleveland-Cliffs, and Calumet have a rank of 5, which indicates low average level of safety for the stocks of these three companies. Although Louisiana-Pacific safety rank has slightly improved compared to last study period, Ascena Retail Group found their safety rank declined over the same period.

Technical Rank

The Technical Rank provides an estimation of stock price performance relative to the market over the next three to six months. Unlike the Timeliness and Performance Ranks, which provide a longer term estimate, the Technical Rank is focused on short term price estimates. The measure is based on the stock's price performance during the past year relative to the market. Stocks ranked 1 and 2 are expected to outperform the market over the next three to six months. Stocks ranked 3 are expected to mirror the market over the short term and stocks ranked 4 and 5 are expected to underperform the market over the short term.

The average Technical Rank for the REI is 3.1 and indicates that the index is expected to mirror the market over the next three to six months. Out of all fourteen REIF companies, only Canadian

National Railway has a rank of 2. Hence, stocks of Canadian National Railway are expected to outperform the market over the short-term period. Calumet, Charter Communications, Cleveland-Cliffs, Enbridge Energy Partners, Louisiana-Pacific, Morgan Stanley, Marriott International, and Polymet have a rank of 3; this indicates they are expected to do as well as the market over the short term. For Calumet, the current ranking is an improvement from a rank of 5 from the last study period.

Based on the Timeliness Rank and Technical Rank, Canadian National Railway is expected to outperform the market both during short term and rest of the year. On the other hand, Ascena Retail Group is expected to underperform in short term and rest of the year. Allete, Louisiana-Pacific, Morgan Stanley, UnitedHealth, and US Steel are expected to outperform the market in the long term compared to the short term. Cleveland-Cliffs and Enbridge Energy Partners are expected to have average performances over the short term, with declines in performance the rest of the year. On the other hand, Calumet, Charter Communications, and Marriott International are expected to perform as well as average in the short term, and to continue this average performance the rest over time.

Price Stability Rank

Stock Price Stability measures the weekly volatility of the stock price relative to the stock's volatility over the past five years. The ranks range from 100 (highest stability) to 5 (lowest stability).

The average Price Stability for the REI is 41.4, which is higher than the average in the previous report. Allete, Ascena Retail Group, and Enbridge Energy Partners have declines in stability rank. Louisiana-Pacific has increases in stability rank. The other companies in the REI remained unchanged from the previous report.

Cleveland-Cliffs, Calumet, Ascena Retail Group, US Steel, and Polymet scored the lowest in price stability with values ranging from 5 to 20, indicating a high level of risk. Allete and Canadian National Railway scored the highest in price stability, with values ranging from 90 to 95. Also noteworthy is that eight of the fourteen companies in the REI have price stability ratings at or below 40.

The Price Stability rank for these firms is consistent with the volatility of the returns shown in Table 9 over the study period.

Price Growth Persistence

Price Growth Persistence is a measure of the historical stock growth trend of an individual stock relative to the price growth trend of the market. In other words, it measures the tendency of a stock to show persistent growth. The ratings range from 100 (highest) to 5 (lowest).

The Price Growth Persistence average for the REI is 48.9, indicating it is below average in terms of consistent price growth. Canadian National Railway, Charter Communications, UnitedHealth Group, Louisiana-Pacific, and Marriott International showed above average persistence in price growth, with measures ranging from 50 to 100. Allete, Ascena Retail Group, Calumet, Cleveland-Cliffs, Enbridge Energy Partners, Morgan Stanley, Polymet, USG Corporation, and US Steel all

showed below average persistence in price growth, with measures ranging from 5 to 45. Compared to the previous report, four companies, Allete, UnitedHealth Group, Louisiana-Pacific, and US Steel saw their price growth persistence measure increase, while two of the companies Ascena Retail Group and Enbridge Energy Partners, saw their price growth persistence measure decrease. For rest of the companies excluding the new additions – Morgan Stanley, Marriott International, and USG Corporation - there is no change in price growth persistence measure.

Table 9: Value Line® Measures

REI	Timeliness/ Performance	Safety	Technical	Price Stability	Price Growth Persistence
Allete	1	2	4	90	45
Ascena Retail Group	4	5	4	15	35
Calumet	3	5	3	5	25
Canadian National Railway	2	2	2	90	95
Charter Communications	3	3	3	60	100
Cleveland-Cliffs	4	5	3	5	15
Enbridge Energy Partners	4	3	3	30	25
Louisiana-Pacific	1	3	3	30	75
Marriott International	3	3	3	80	90
Morgan Stanley	2	3	3	45	20
Polymet	3	4	3	10	5
UnitedHealth Group	2	1	4	85	100
USG Corporation	3	3	4	30	40
US Steel	2	4	5	5	15
AVERAGE	2.1	3.1	3.1	41.4	48.9
MEDIAN	3	3	3	30	37.5

Morningstar® Measures

Financial statements can be useful in predicting future earnings, dividends, cash flows, and a variety of other factors. They can be used as a way to anticipate future conditions, identify strengths and weaknesses, provide information about past performance, and forecast future performance. Financial ratios are a convenient way to summarize large quantities of financial data into a single number that can be used to measure performance. The use of ratio analysis allows you to put financial statement figures into perspective. However, the ratios by themselves are meaningless unless compared to some standard. Ratios are typically compared to an industry average or to the trend of the firm. A cross-sectional analysis compares the ratios of the firm to

some standard at a specific point in time. The objective is to look for deviations from the norm. A time-series analysis compares the ratios of a single firm to itself over time. The objective is to look for trends to determine whether performance is improving or deteriorating.

Price ratios are often used to measure investors' expectations of future stock price performance.

A higher price ratio than the industry average is generally considered better. A higher ratio typically means that investors expect future performance will be better than the average within that industry.

Price-to-Earnings

The Price-to-Earnings ratio is calculated by dividing of the firm's current stock price by its earnings per share. A high P/E ratio usually indicates investors are expecting high earnings growth in the future. As an investor, this is generally good news. However, a high P/E ratio can be the result of a high price or the result of low earnings per share. The average market P/E ratio is 20 to 25 times earnings. It is most useful to compare the ratio to the industry average or to the firm's historical P/E ratios. Although it is mathematically possible to have a negative P/E ratio, the ratio is generally not reported if earnings are negative.

The P/E ratios reported by Morningstar® show that Allete, UnitedHealth Group, US Steel, and Marriott International favorably to their industry averages. Canadian National Railway, Cleveland-Cliffs, Louisiana-Pacific, USG Corporation, and Morgan Stanley have P/E ratios lower than their respective industry averages.

US Steel, with a P/E ratio of 87.7, has ratio well above the industry average; this may be an indication that the stocks are currently overpriced.

The average P/E ratio for the REI is 18.91, which is lower than the average market P/E ratio of 26.80. The median P/E ratio for the REI, including all companies for which data was available, is 15.75 and relatively lower compared to the average market P/E ratio.

Table 10: Price Ratio Measures

REIF Companies for Regional Equity Index (REI)	Price/Earnings		Forward Price/ Earnings	PEG Ratio	PEG Payback	Short Ratio	Shares Short % Change
	Firm	Industry					
Allete (ALE)	22.9	21.1	20.2	2.8	11.9	4.18	2.69%
Ascena Retail Group (ASNA)	*	22.6	4.9	*	*	19.74	7.57%
Calumet (CLMT)	*	36.4	*	*	*	1	27.65%

Canadian National Railway (CNI)	20.4	21.9	18.5	*	*	07.02	14.33
Charter Communications (CHTR)	*	27.6	52.4	1.4	8.4	4.68	8.35%
Cliffs Natural Resources (CLF)	15.3	21.9	*	*	*	3.58	6.48%
Enbridge Energy Partners (EEP)	*	39.0	21.2	*	*	6.56	16.92%
Louisiana-Pacific (LPX)	16.2	37.7	12.6	0.7	6.2	1.58	40.90%
Marriott International (MAR)	38.9	21.9	23.5	0.9	7.6	6.55	47.00%
Morgan Stanley (MS)	13.8	16.6	12.1	5.5	9.8	1.79	4.85%
Polymet (PLM)	*	21.9	*	*	*	18.59	-3.27%
UnitedHealth Group (UNH)	23.6	19.8	18.1	1.4	9.0	3.92	-6.09%
USG (USG)	25.9	37.7	14.9	0.8	6.6	5.49	16.30%
US Steel (X)	87.7	14.9	15.2	*	*	2.72	5.54%
AVERAGE	18.91	26.8	15.26	0.96	4.25	6.24	114.85%
MEDIAN	15.75	21.9	15.05	0.35	3.1	4.43	7.96%

Forward Price-to-Earnings

The Forward Price-to-Earnings ratio is calculated by dividing the firm's current market price per share by the expected earnings per share. It is a way to compare current earnings to estimated future earnings. If earnings are expected to grow, the Forward P/E ratio will be lower than the current P/E ratio. Therefore, a low Forward P/E ratio relative to the current P/E ratio is considered better. However, one can also argue that when both current market price per share is relatively falling faster than expected earnings per share, the Forward Price-to-Earnings ratio could fall though such outcome should not be considered favorable for an investor when a company facing drop in both its current and expected future earnings.

Of the companies that had data on Morningstar® for the current P/E and the Forward P/E ratios, eight of the REIF companies under the REI have a lower Forward P/E ratio than current P/E ratio. This means the earnings are expected to grow for these companies.

Price-to-Earnings-to-Growth (PEG)

The PEG ratio is calculated by dividing the P/E ratio by the growth rate of the firm's annual earnings per share. It is considered a better measure of expected price performance than the P/E

ratio because it considers the firm's growth in earnings. A high P/E ratio may look attractive to an investor, but when the firm's growth rate is considered, it may not look as appealing. A lower PEG ratio generally indicates the stock may be undervalued. However, the relationship between the PEG ratio and valuation varies from industry to industry.

A general rule of thumb is that a PEG ratio close to 1 is considered desirable. A PEG ratio equal to one indicates that the stock is fairly priced, a PEG ratio greater than one indicates the stock is overvalued, and a PEG ratio less than one indicates the stock is undervalued. Morgan Stanley with Peg ratio of 5.5 is highly overvalued. On the other hand, Allete, Charter Communications, and UnitedHealth Group, with PEG ratios between 1.4 and 2.8 are slightly overvalued. All other companies in the REI for which Morningstar® had data on PEG ratio appear to be undervalued based on this measure.

PEG Payback Period

The PEG payback period is the time it would take an investor to double his/her money in a stock investment. A longer PEG payback period indicates the investment is riskier. All of the PEG payback ratios calculated for the REI components appear to be in a reasonable range. However, information on Peg Payback Period is available only for seven companies out of fourteen REI companies of the REIF region.

Short Interest Ratio

Short selling allows an investor to profit from declining stock values. A short sale is the opposite of taking a long position in stocks. When an investor buys a stock with the hope that the price will rise, he/she is taking a long position. If an investor feels that the stock's price is going to fall, he/she can take a short position. In a short sale, the investor borrows the stock from a broker and sells it at the current market price. If the price declines, the investor can cover his/her position by buying the stock in the open market at the lower price, repaying the broker, and realizing a gain.

Short interest is the total number of shares of stock that have been sold short by investors but have not yet been covered. Short interest is an indicator of investor sentiment in the market for a specific stock. A large change in a stock's short interest from month to month can be a very telling indicator of investor sentiment. If short interest increases, it means there are more investors who believe the stock price will decline.

The short interest ratio is the number of shares sold short (short interest) divided by the average daily volume. The ratio reflects the number of days it would take short sellers to cover their positions. The higher the ratio, the longer it will take to buy back the borrowed shares. A short interest ratio of five or greater is considered a bearish signal and a ratio below five would be considered a bullish signal.

Six of the firms in the REI have short interest ratios ranging from 5.49 to 19.74, indicating that a significant number of investors are fairly confident that the stock will not increase over the short term. Eight of the firms in the REI have short interest ratios below 5.0, indicating that investors

are bullish on these stocks. The average short interest ratio for the REI Index is 6.24, a 13.45% increase in the average short interest ratio since the last report. The value of 6.24 indicates a generally bullish sentiment among investors.

Business Confidence Survey

Bob Hoffman, Assistant Professor, School of Business and Technology, College of St. Scholastica. Student Researchers: Katherine Grotte, Bethany Anderson, Cole Martin

To provide a cohesive analysis for all of 2017, the following report includes data, points of interest, and themes from St. Scholastica's findings from the Spring 2017 REIF and most recent Fall 2017 REIF analyses. The following sections are organized as such:

Spring 2017 Business Confidence Analysis
- Overall state of confidence and NBC index reading
- General business confidence indicators
- Specific business indicators
- Factors limiting business activity
- Mining in the REIF region

Fall 2017 Business Confidence Analysis
- Overall state of confidence and NBC index reading
- Factors limiting business activity
- Contributing themes
- Water Resources in the REIF region
- Contributing themes
- Final remarks and accuracy discussion

Business Confidence Survey Methodology

Spring 2017 Business Confidence Analysis

Spring 2017 Overall State of Confidence and NBC Index Reading

Spring 2017 yielded overall confidence at a positive NBC reading of 107, where any reading above 100 indicates confidence. The 107 was down slightly from Fall 2016's reading of 109. Spring 2017 General Business Confidence Indicators Respondents were first asked to address their general level of business confidence during the previous six months. Roughly 36% reported that both their company outlook and level of business activity had increased. Immediately following, businesses were asked to gauge their expectations for general confidence for the next six months. In this case, about 45% of respondents expected their company outlook and level of business activity to increase in the coming six months.

Spring 2017 Specific Business Indicators

After evaluating business confidence on a general level, we asked respondents about more specific indicators. We asked what happened to the average hours worked by their employees, the total number of employees, selling prices, capital expenditures, sales revenue, and profits over the previous six months. Our findings reflect minimal changes in all indicators, except for sales revenue and profits. A total of 33% experienced an increase in both indicators and 30% experienced a decline in both indicators.

For the next six months, all the indicators are expected to go up. Notable indicators included sales revenue and profits, where half of respondents expected increases.

Spring 2017 Factors Limiting Business Activity

We then asked businesses to select up to three factors that are limiting their general business activities. Demand, competition in own sector, and government policy were the top three limiting factors, selected by 36%, 28% and 26% of respondents, respectively. The downturn in the Mining industry, shortage of skilled labor, cost of labor and cost of materials were also frequently selected.

In keeping with the theme of the Spring 2017 forum, we included mining as one of the available options for a limiting factor. We were able to see that around 25% of respondents reported the effect of the mining sector in the region as a limiting factor in their business activity.

Spring 2017 Tourism in the REIF Region

The final two questions in the Spring 2017 survey sought to discover businesses' opinions on the tourism in the region. The first question asked, "How much is your business effected by tourism?" While 36% reported not being dependent on the sector, 44% reported a moderate dependence and 20% reported a significant dependence on tourism..

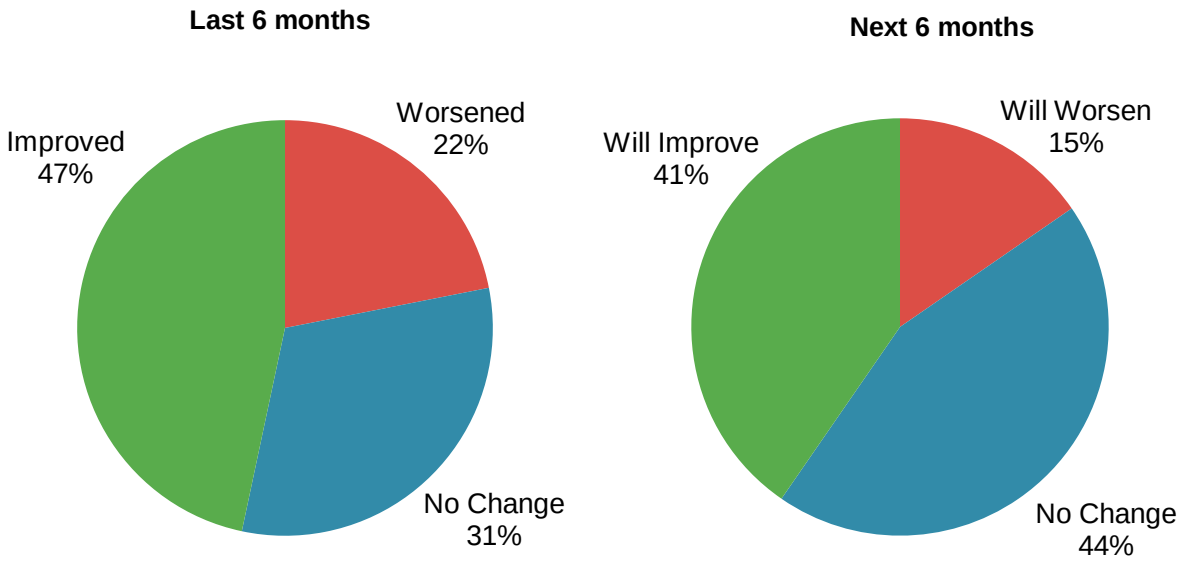
Fall 2017 Business Confidence Analysis

Fall 2017 Overall State of Confidence and NBC Index Reading, National Comparison

Our business confidence was calculated at a 108. We can register this as expressing significant confidence in the future of our businesses, for this number is based on the 1967 base mark of 100. It was set that year because it was neither a peak nor a low point. In addition, not only is our region's business confidence above the benchmark, it is also significantly above the national average which was calculated to be 101.5 in September. We also gathered data on what percentage of our local business increased or decreased operations in the last six months, and what the anticipation was for the upcoming six months. Our data found that a pleasant 47% said their overall business confidence increased, and 41% are looking forward to upcoming growth. To provide more in-depth information about what is driving the optimism, we looked at the health of specific indicators. Including hours worked, new or loss of employment, taxes, selling prices, profits, and revenue. Most businesses increased their employment or stayed the same,

few decreasing or planning on decreasing the amount of employees. We also noted an overall positive outlook on future profits.

Figure 21: Business Activity (For Past and Future 6 Months)



Source: The College of St. Scholastica

Fall 2017 Factors Limiting Business Activity

The shortage of labor is by far restricting the growth of our local economy the most. Stated previously, local businesses are growing and wanting to grow more, but they are unable to find employees to fill the positions that they want to add to their organizations. Generally speaking, economists believe the four most common reasons behind a shortage of labor. Firstly, increased housing cost in an area, which discourages new prospective employees from joining the community. Secondly, the jobs being offered are too specialized or require more qualifications than the average prospective employee can reasonably fulfill. Furthermore, the wages being offered not being attractive enough for prospective employees. Lastly, the economy is near full employment. Looking at the graph, we can see correlations between what companies are struggling with and what could be factors in the labor shortage. Housing prices were noted by 13% of respondents as specifically limiting their growth. We also found it interested how the shortage of labor was listed as the most limiting factor, but the cost of labor followed shortly after. So as many businesses are willing and desiring to take on the expense of more employees, others are struggling to expand their businesses under the weight of their current employment cost.

Figure 22: Factors Limiting Business Activity

Source: The College of St. Scholastica

Contributing Themes

ALLETE, St. Luke's, Essentia

After analyzing the results of the survey, our team decided it would be best to meet with bigger businesses in Duluth, knowing that whether or not the outlook of the largest employers aligns with our data would have a significant effect on the accuracy. We interviewed ALLETE, Essentia, and St. Luke's hospital. We discussed with all of the companies about the effects of the labor shortage in the area. Our team got the chance to sit down with ALLETE's Sustainability Group, which is comprised of managers from all throughout ALLETE's subsidiaries, who explained to us that although this region is filled with an excellent workforce it is hard to find candidates with the very specific skill sets needed in some areas of the business as jobs continue to evolve. St. Luke's Hospital mentioned similarly that they are having a hard

time filling positions with specific skill sets, like physicians, but that they also have been struggling to fill entry-level positions like janitors and cooking staff. Essentia Health said they are also experiencing labor shortages which they accredit to the lack of skilled workers in this area and lack of migration to the area. A trend we saw amongst all three businesses is taking on less-experienced workers into their organization and taking on the cost of training and educating employees after hiring. This poses as a significant risk for businesses as they run the possibility of enduring the cost of training employees, only for them to take their new skills and move into a different organization. Another interesting strategy adopted by ALLETE is a program they put on with local schools to show students possible jobs in the utilities industry. This day gives students a chance to see Minnesota Power utility trucks up close and to talk to real employees about their careers. St. Luke's talked about how they partner with local colleges in order to provide students with opportunities to do internships in hopes that more college students will stay in the area after graduation. In addition, when there is a shortage or need for a certain type of employee, St. Luke works with the schools to start up educational programs to get people qualified. For example, they are currently working with Lake Superior College to restart their ultrasound program because there is a need within the community. Similarly, Essentia is participating in local career pathway committees, presenting in local schools about opportunities. They have also sought state grants to fund apprenticeship models for employment training.

Fall 2017 Water Resources in the REIF Region

Transitioning from General Business Confidence to how businesses are reacting to this semester's specific topic of our water resources and how it affects our businesses; we saw that 50% of individual local businesses have invested over $1,000 to improving their environmental sustainability in just the last 6 months, and almost 10% have invested over $250,000. This is monetary and physical evidence that preserving our resources is extremely important to our region, as the same percentage of respondents plan to invest the same amount in the next 6 months. 31% of the region's businesses said that the ample supply of our water resources was a significant factor in moving their businesses here. 71% of respondents stated their business would see a significant negative effect if the local water resources were compromised. So if we want to keep this remarkably and excitingly high business optimism and economic growth, we need to maintain the integrity of our abundant supply of water resources.

Figure 23. Importance of Water in Business Activity

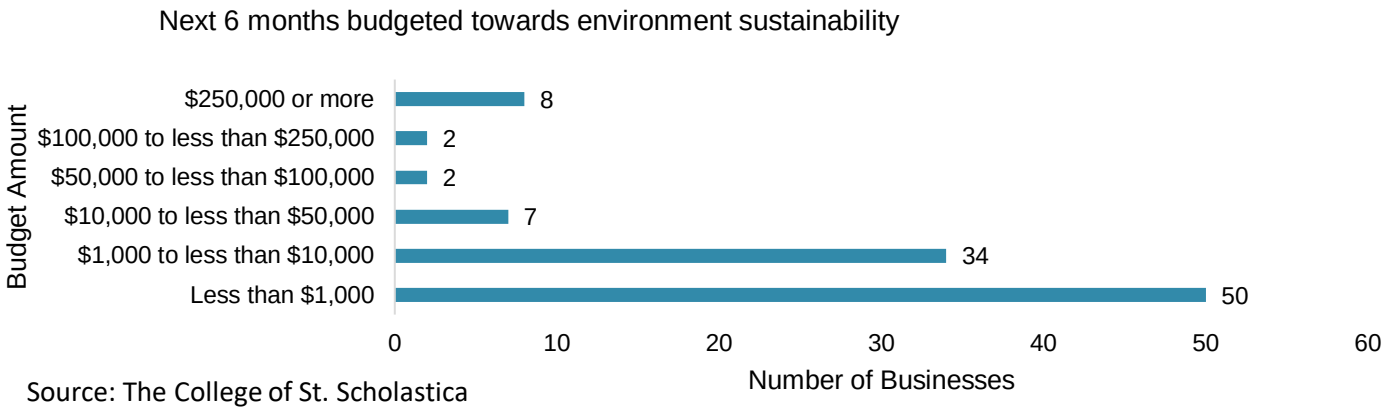
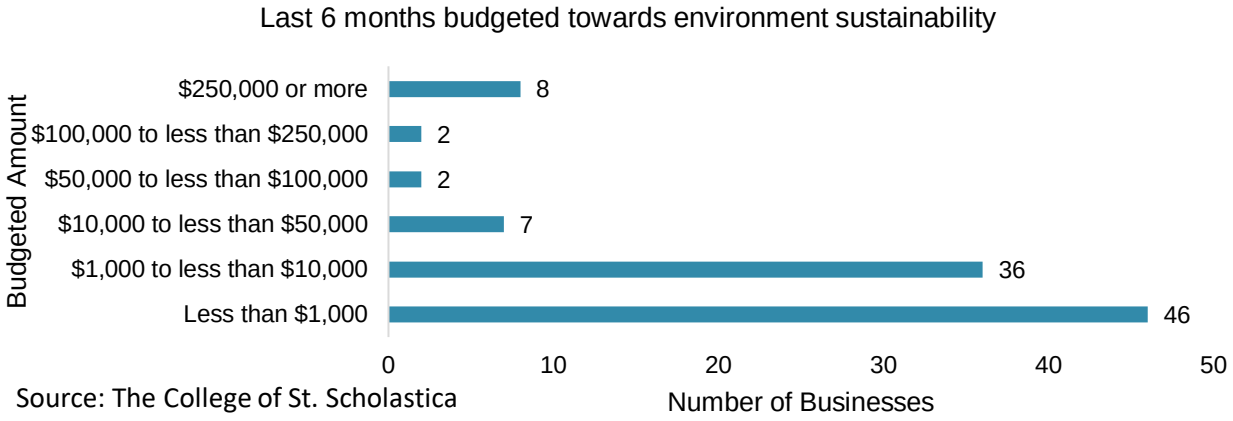


Figure 24: Importance of Water in Business Activity



Contributing Themes

ALLETE, St. Luke's, Essentia

Kurt Anderson, director of environment and land management and part of ALLETE's conservation corps stated Minnesota power was formed based on the region's water resources. "It's part of our identity." ALLETE has a mission to reduce most if not all waste possible and to leave mined and used land better than they got them and has taken on countless project to achieve this. These projects come at a great cost to the company and often the costs are endured by the customer. Which can present difficulties for the region, especially when competing with certain international companies which may not have the same environmental sustainability standards. However, in the last few decades they have noticed a shift in their demands of ALLETE, today customers care more about the environment and they hold the company accountable to provide them energy while still maintaining the integrity of our local environment. So customers and the organization are taking on the endeavors of improving our

region's sustainability. One way they reduce waste is by selling the ash from their coal plants to be added to cement mix. A program they've started is to plant new long live conifer trees to help increase the population. A quote from a member of ALLETE's Sustainability Group highlights the heart of their mission, "People don't think about water and power until they don't have it, but we do!". From managers all throughout the company we heard the importance of planning long term, not just five or ten years but decades ahead, and thinking about the environment as a big picture. ALLETE has reduced their water discharge, completed environmental retrofits to parts of their coal plants, and reduced 90% of mercury in water output. Regulation provides ALLETE with standards to maintain for many parts of their business but ALLETE is persistent about doing better and more when it comes to caring for the environment.

Analysis of Accuracy and Final Remarks

We compared this springs data with our current data, comparing the REIF businesses forecast for the next 6 months and our actuals. In the Spring of 2017, 50% of businesses said they anticipate improvement business activity, the predictions based on business confidence were accurate at 47% of improvement in the fall of 2017. Furthermore, Fall of 2016 to the spring of 2017, showed that 35% of businesses stated they would improve business activity in the next 6 months. Our data concluded that 39% saw business activity improve in the spring of 2017. The Spring of 2016 businesses expected a 42% improvement in business activity and our data in the Fall of 2016 stated that 32% saw improvement in the activity. Fall of 2015, 41% of businesses stated they expect an improvement in business activity, while our data from the spring of 2016 states a 42% improvement in business activity. The spring of 2015, 50% of businesses expected an increase in business activity and 47% of businesses experienced an improvement in the fall of 2015.

As we analyze our data, we find their forecast of business activity to be relatively close with an average of 4.2% differential between each year. The largest difference was between the fall and spring of 2016 of 10%. Our team concluded this could be due to the large storm that struck Duluth and the REIF area in July of 2016, resulting in businesses losing confidence for their future forecast of that year. In addition to our business confidence research, the businesses we met with shared with us how much of a draw Lake Superior is for potential hires. As much as people from outside the area dislike the cold winters we experience here, the lake has been the reason some people accept positions here. This allows businesses to remain confident as long as our natural water resources remain sustained.

The Business Confidence Survey Methodology

The Business Confidence Survey was constructed using the following seven questions:

1. What sector is your business in?

2. How many employees does your business have?

3. Excluding normal seasonal changes, how did the following factors change, if at all, for your business in the last six months? [Average Hours Worked, Number of Employees, Selling Prices, Capital Expenditures, Sales Revenue, Profits] relating to the current state of your business relative to the past six months?

4. Excluding normal seasonal changes, what do you expect will be the effect, if any, of the following factors on your business in the next six months? [Average Hours Worked, Number of Employees, Selling Prices, Capital Expenditures, Sales Revenue, Profits] relating to your company for the next six months?

5. General business conditions in the previous six months

a) How has the outlook for your company changed?
b) What is your evaluation of the level of general business activity?

6. General business conditions for the next six months

a) How will the outlook of your company change?
b) What is your evaluation of the level of general business activity?

7. What factors are limiting your ability to increase business activity? Please check up to three.

The CSS Economic Research Team created the questions after reviewing numerous business confidence surveys administered by a wide variety of institutions to determine the basic framework for manufacturing such a survey. It was determined that the indicators selected were the most important and valuable factors that can be used to gauge business activity. The survey was distributed via email to the following chambers in late September and early October of 2017: Cable Chamber of Commerce, Chisholm Chamber of Commerce, Cloquet Chamber of Commerce, Duluth Chamber of Commerce, Hayward Chamber of Commerce, Hermantown Chamber of Commerce, Hibbing Chamber of Commerce, Rice Lake Chamber of Commerce, Superior Chamber of Commerce, and the Two Harbors Chamber of Commerce. If you'd like your business to participate in the research surveys, please send an email to news@nbcbanking.com, and you will be added to the list.

Appendix

Consumer Survey Questions: Phone and Email Surveys

Q1: "First, we would like to know how you are doing financially these days. Would you say that you (and your family living there) are currently better off or worse off financially than you were a year ago?"

Better now | About the same | Worse now | Do not know

Q2: "Now looking ahead, do you think that one year from now you (and your family living there) will be better off financially, worse off, or just about the same as now?"

Will be better off | About the same | Will be worse off | Do not know

Q3: "Now turning to business conditions in the country as a whole, do you think that during the next twelve months we'll have good times financially, bad times, or what?"

Good | Bad | Good and bad | Do not know

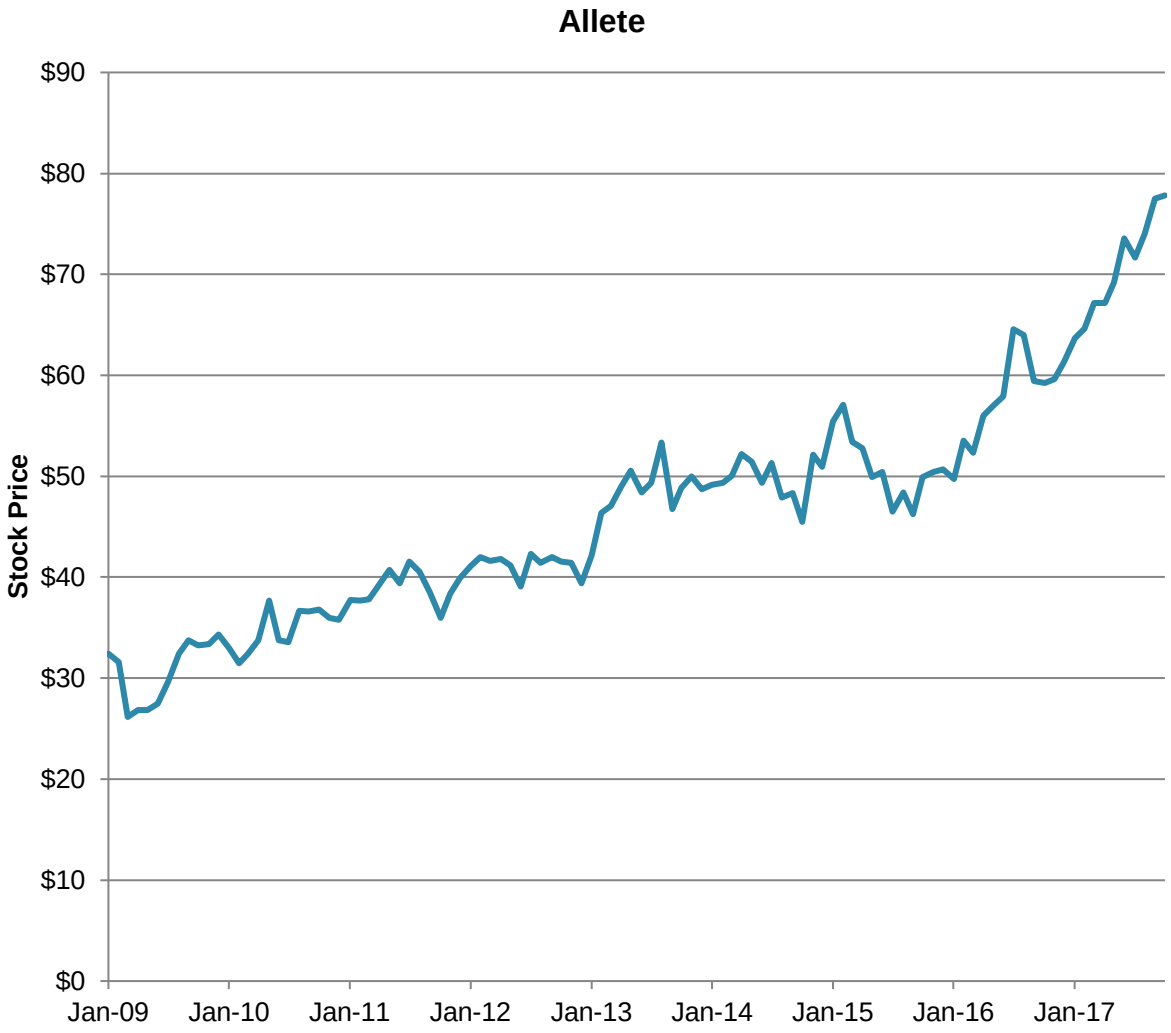
Q4: "Looking ahead, which would you say is more likely during the next five years or so - that in the country as a whole we'll have continuous good times, or bad times with periods of widespread unemployment?"

Good | Bad | Do not know

Q5: "Generally speaking, do you think now is a good or bad time for people to buy major household items, such as furniture, refrigerator, TV and things like that?"

Good | Bad | Good and bad | Do not know

Stock and Historical Return Information



Company: **Allete Inc.**

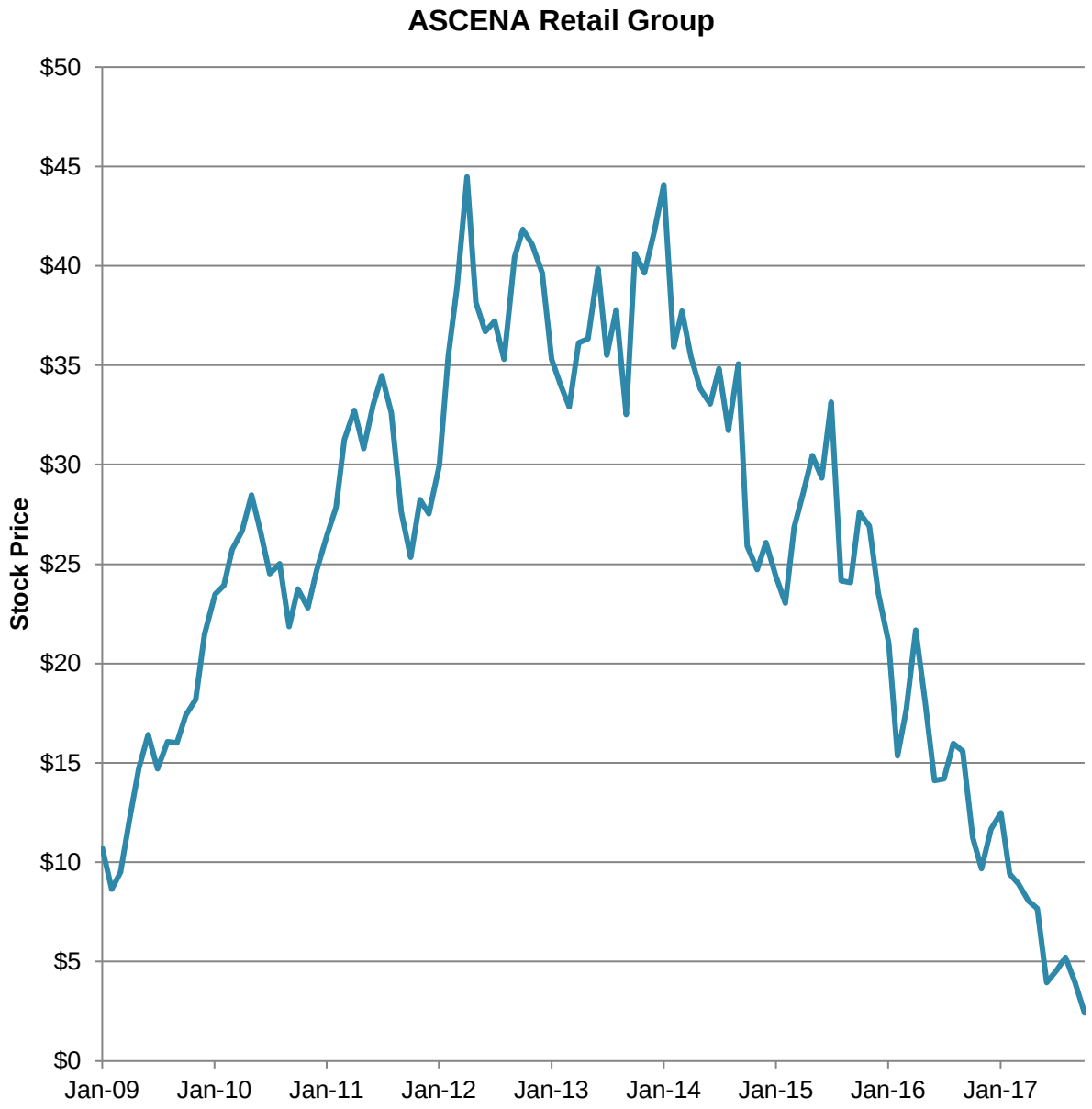
Ticker: ALE

Exchange: NYSE

Market Cap: $3.96B

Industry: Utilities, Regulated Electric

Description: Generates, and distributes electric power in the United States. The Company's business segments are comprised of Regulated Operations and Investments and Other.



Company: **Ascena Retail Group Inc.**

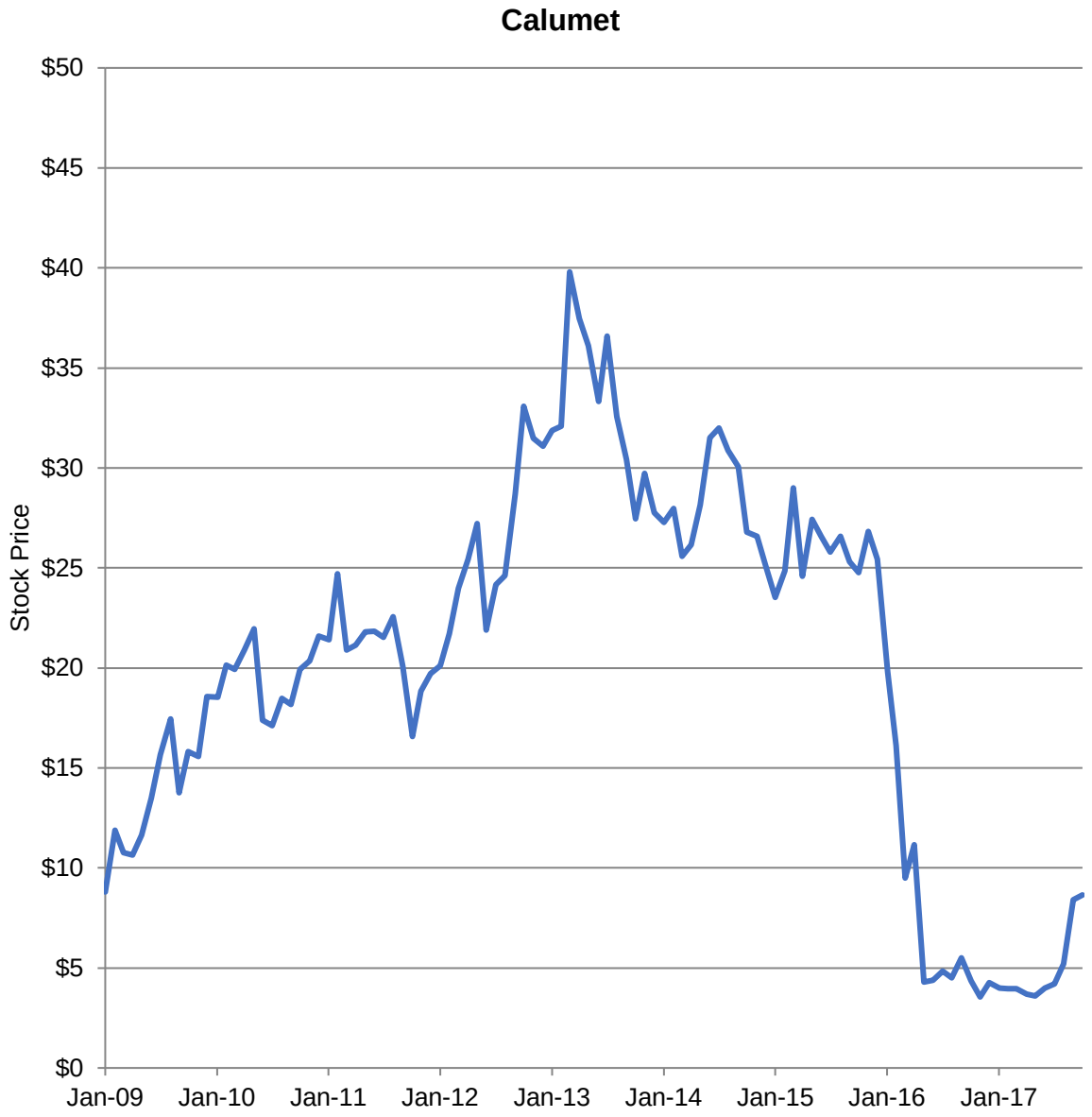
Ticker: ASNA

Exchange: NASDAQ

Market Cap: $3.79B

Industry: Apparel Stores

Description: Ascena Retail Group, Inc., through its subsidiaries operates as a specialty retailer of apparel for women and tween girls. The company offers apparel, accessories, footwear, and lifestyle products, such as bedroom furnishings and electronics.



Company: **Calumet Specialty Products Partners LP**

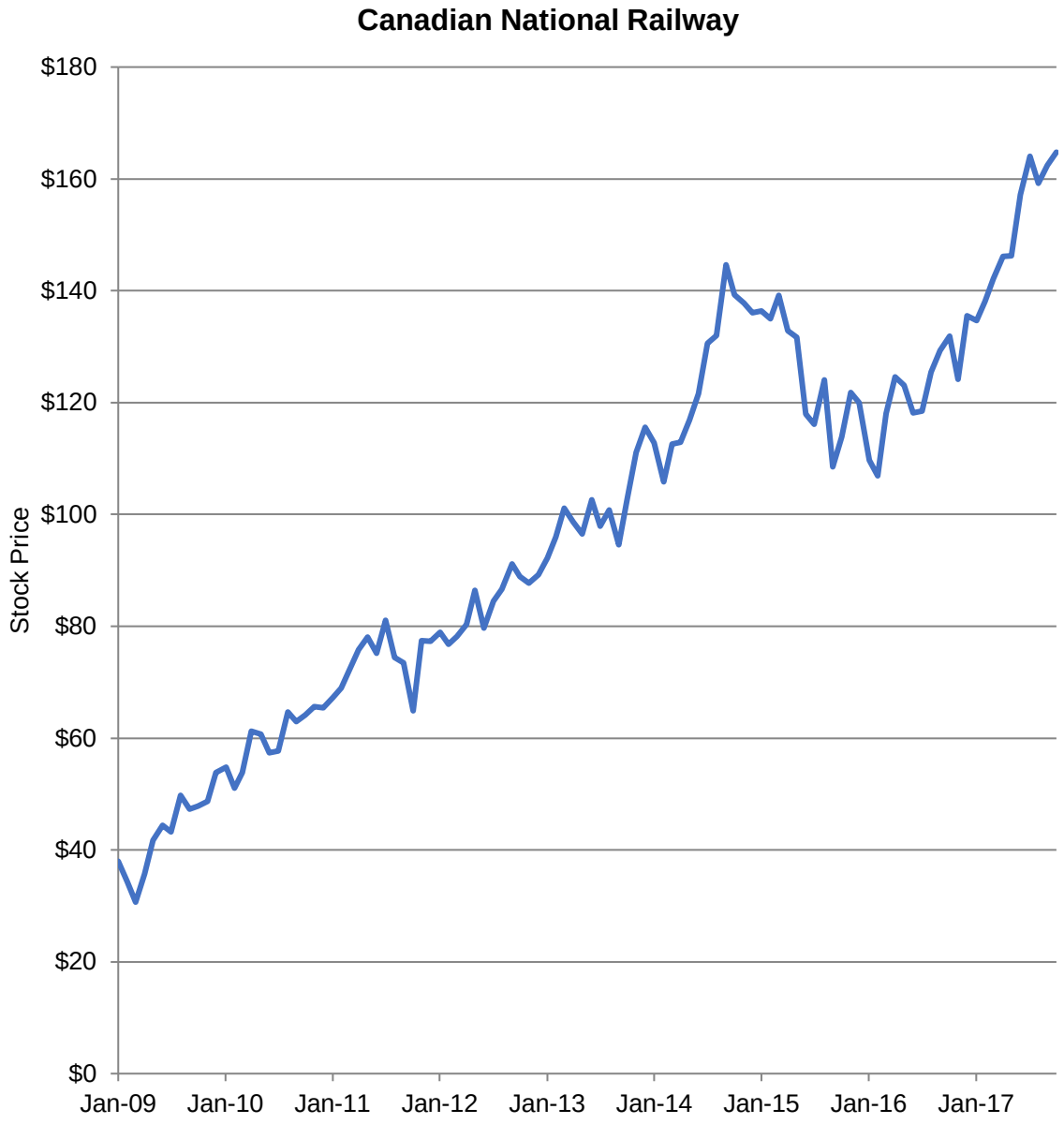
Ticker: CLMT

Exchange: NASDAQ

Market Cap: $6.26B

Industry: Energy, Oil, and Gas Refining

Description: Calumet Specialty Products Partners LP is a producer of hydrocarbon products in North America. It operates in two segments: specialty products and fuel products; and owns plants located in Louisiana, Wisconsin, Montana, Texas, Pennsylvania and New Jersey.



Company: **Canadian National Railway Company**

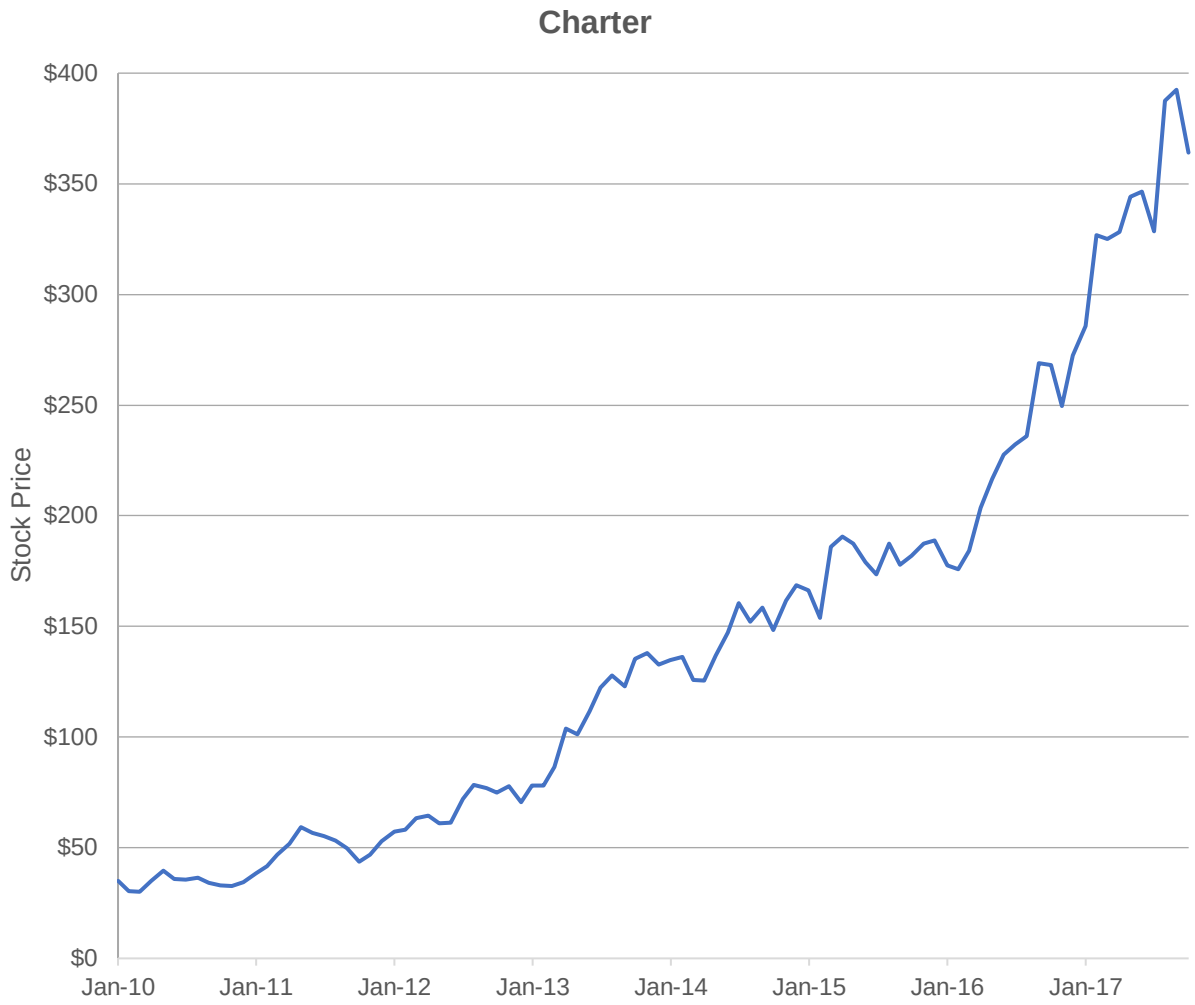
Ticker: CNI

Exchange: NYSE

Market Cap: $60.7B

Industry: Railroads

Description: Canadian National Railway Co is engaged in the rail and related transportation business. It transports goods for business sectors, ranging from resource products to manufactured products to consumer goods.



Company: **Charter Communications, Inc.**

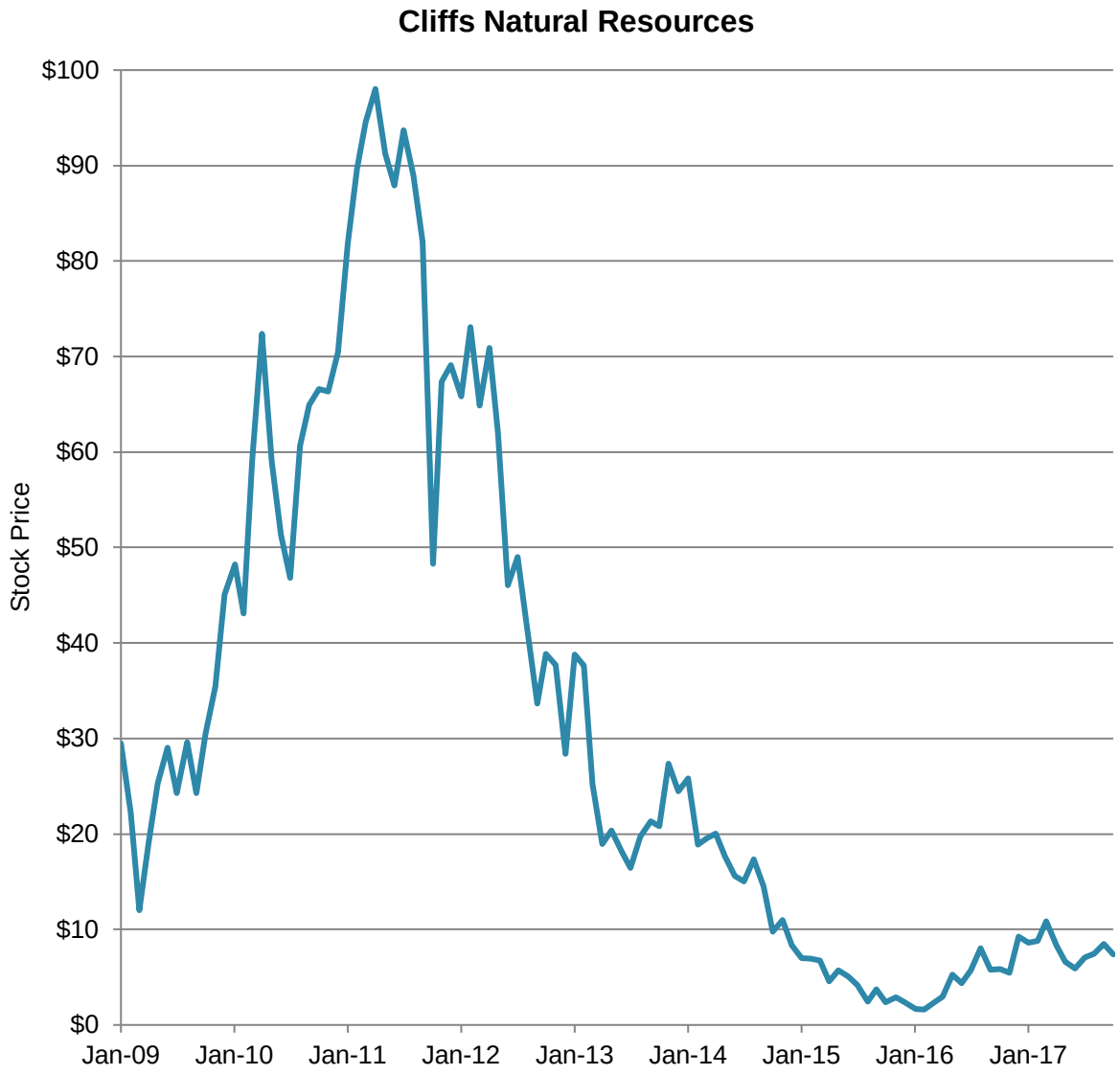
Ticker: CHTR

Exchange: NASDAQ

Market Cap: $94.2B

Industry: Cable Services

Description: Charter Communications, Inc., through its subsidiaries, provides cable services to residential and commercial customers.



Company: **Cleveland-Cliffs Inc.**

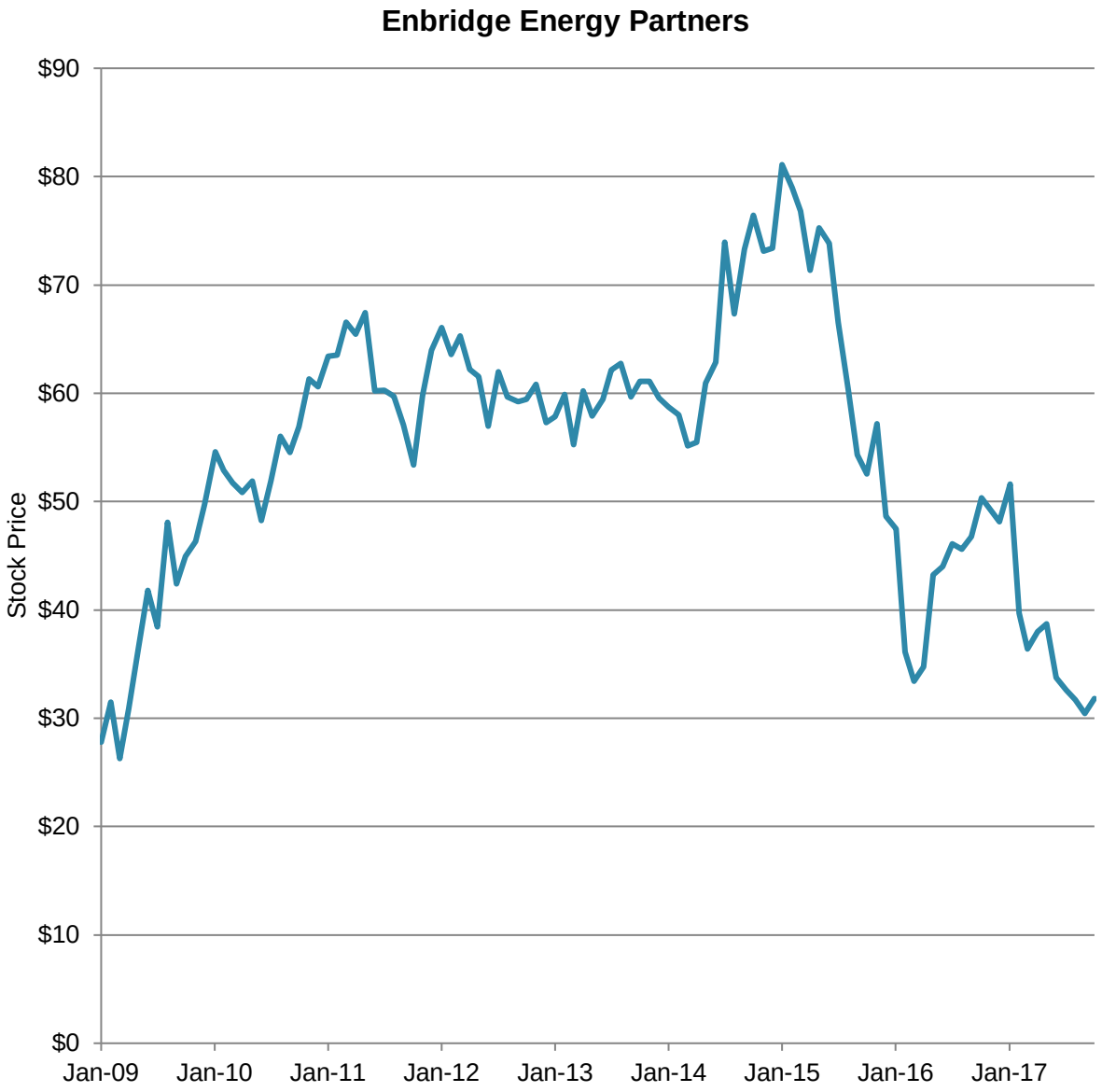
Ticker: CLF

Exchange: NYSE

Market Cap: $1.94B

Industry: Industrial Metals and Minerals

Description: Cleveland-Cliffs, Inc., formerly Cliffs Natural Resources, is a Cleveland, Ohio, is a mining & natural resources company. It produces iron ore pellets, fines and lump ore, and metallurgical coal.



Company: **Enbridge Energy Partners, L.P.**

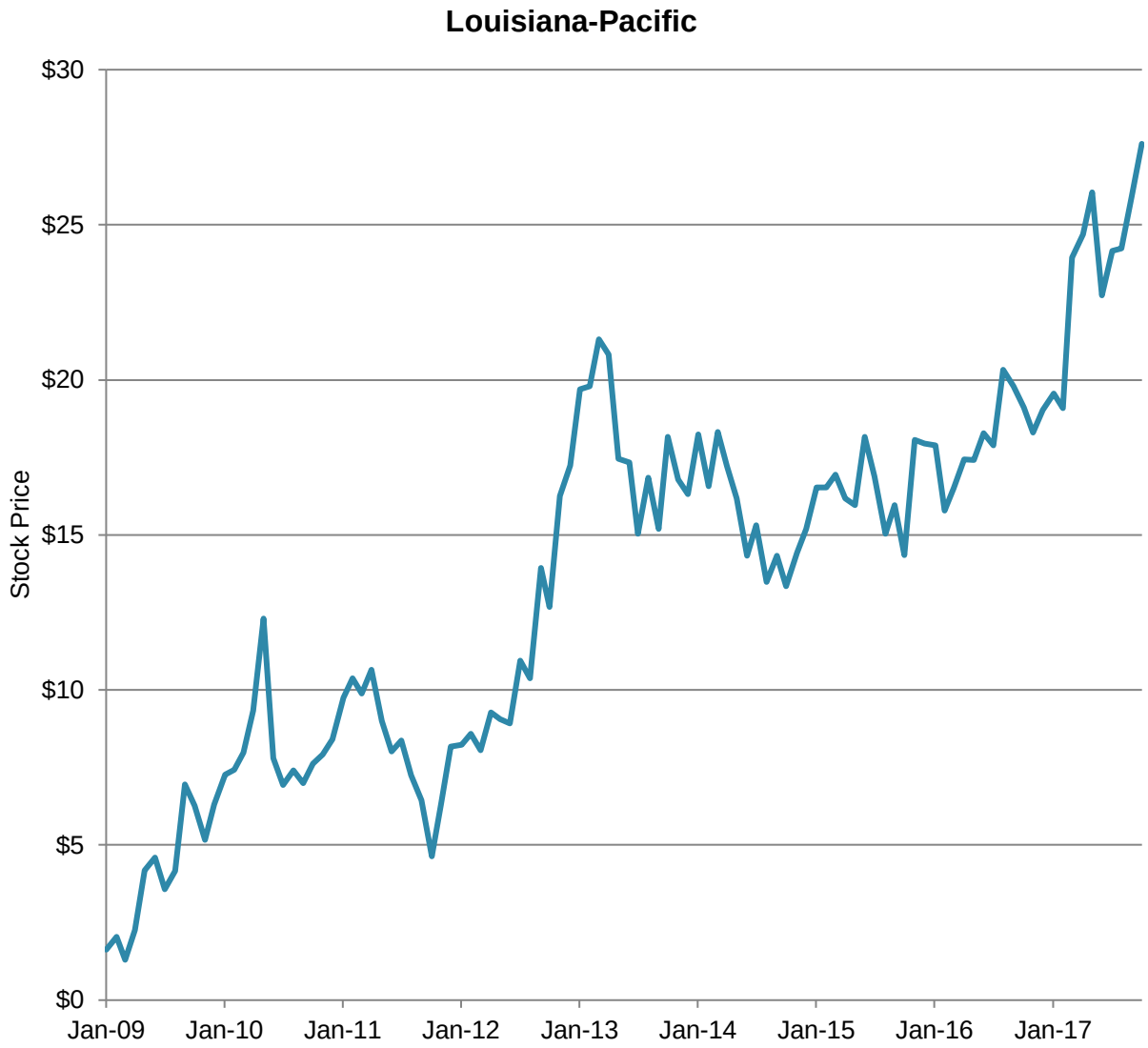
Ticker: EEP

Exchange: NYSE

Market Cap: $6.15B

Industry: Energy, Oil, and Gas Midstream

Description: Enbridge Energy Partners LP is engaged in the ownership and operation of crude oil and liquid petroleum transportation and storage assets, natural gas gathering, treating, processing, and transmission assets and marketing assets in USA.



Company: **Louisiana-Pacific Corporation**

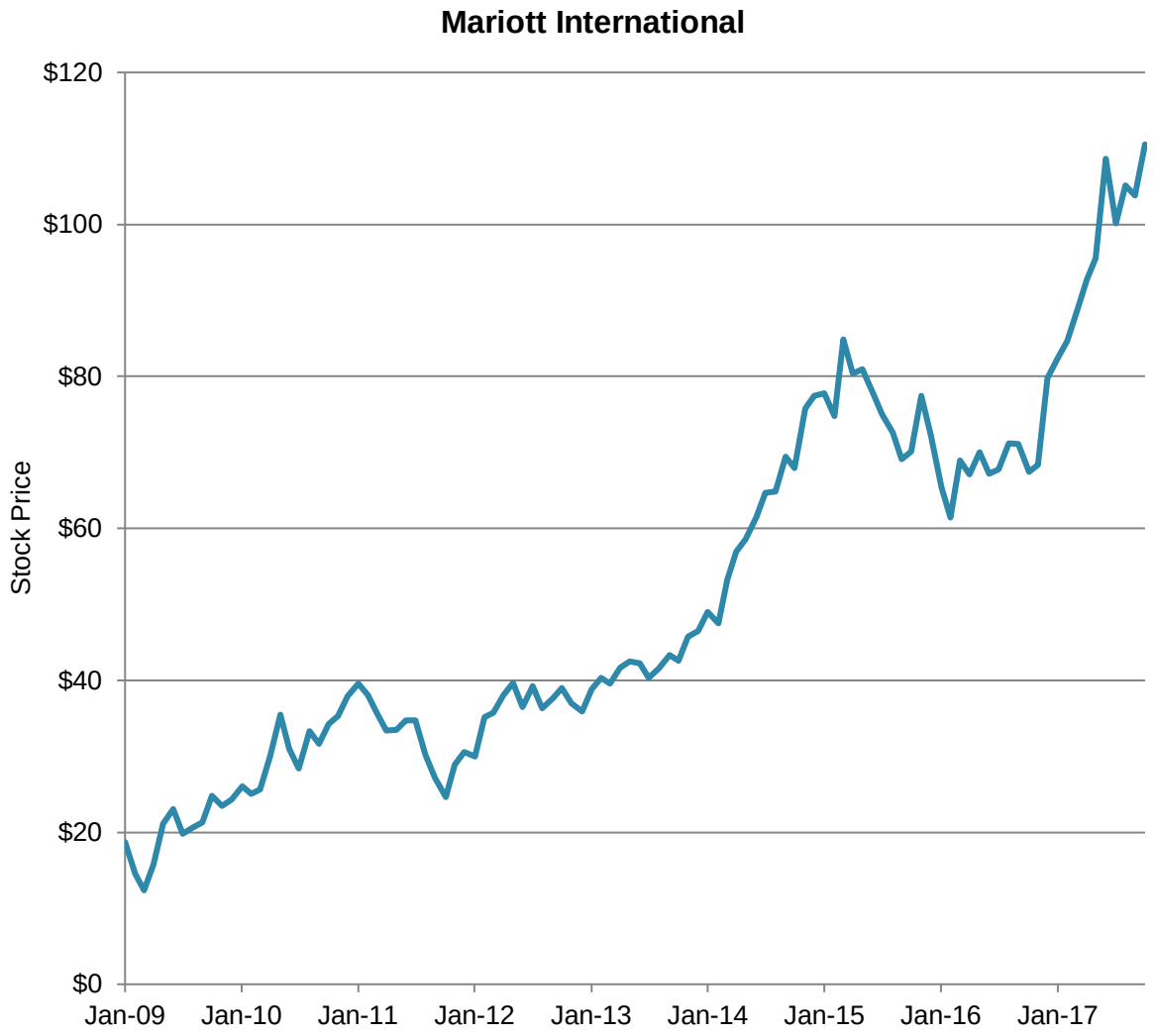
Ticker: LPX

Exchange: NYSE

Market Cap: $3.89B

Industry: Building Materials

Description: Louisiana-Pacific Corp. is engaged in the manufacture of building products. It operates in four segments: North America Oriented Strand Board (OSB); Siding; Engineered Wood Products (EWP); and South America.



Company: **Marriott International, Inc.**

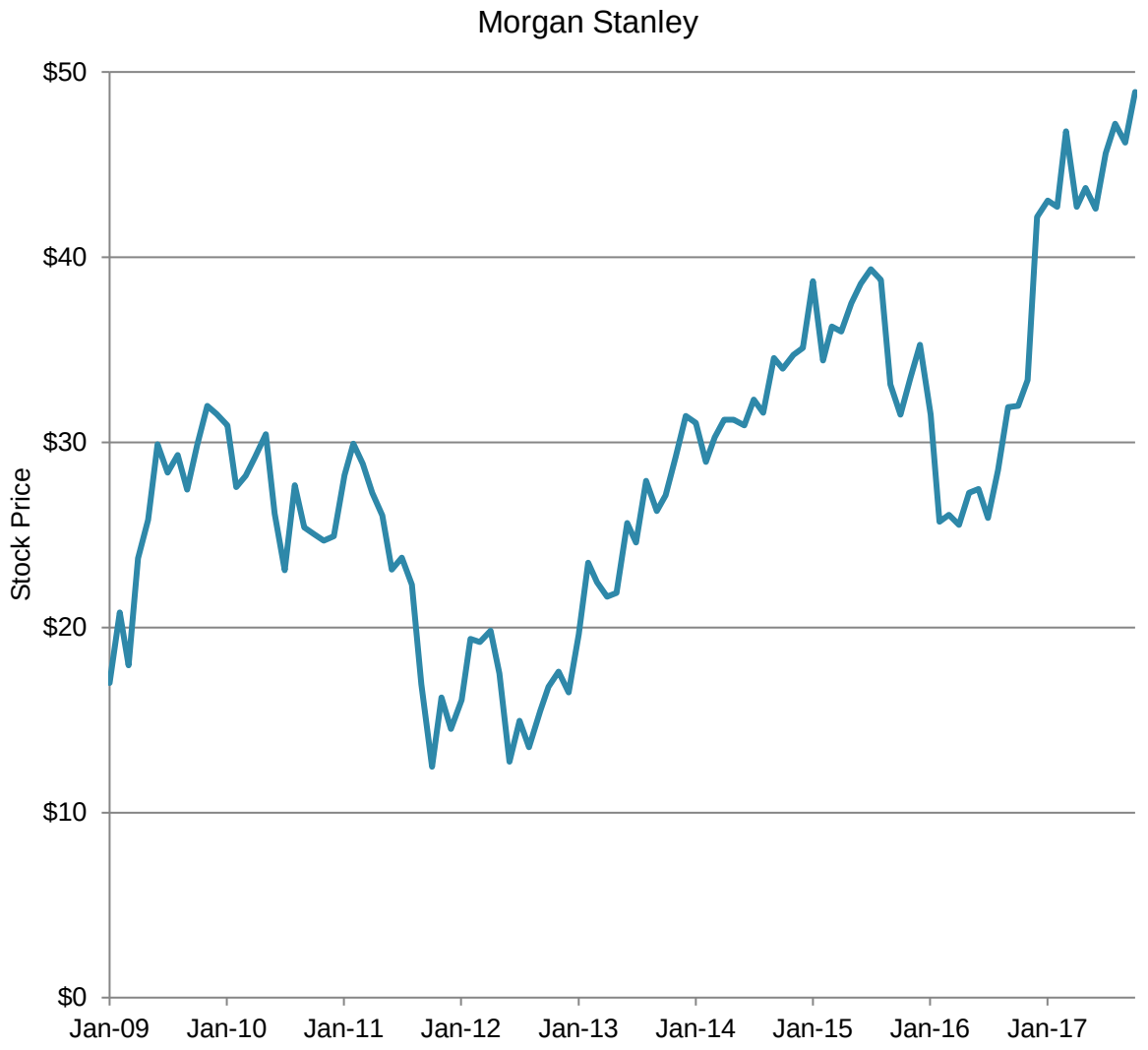
Ticker: MAR

Exchange: NASDAQ

Market Cap: $46.84B

Industry: Hospitality Business

Description: Marriott International, Inc. operates, franchises, and licenses hotels and timeshare properties worldwide.



Company: **Morgan Stanley**

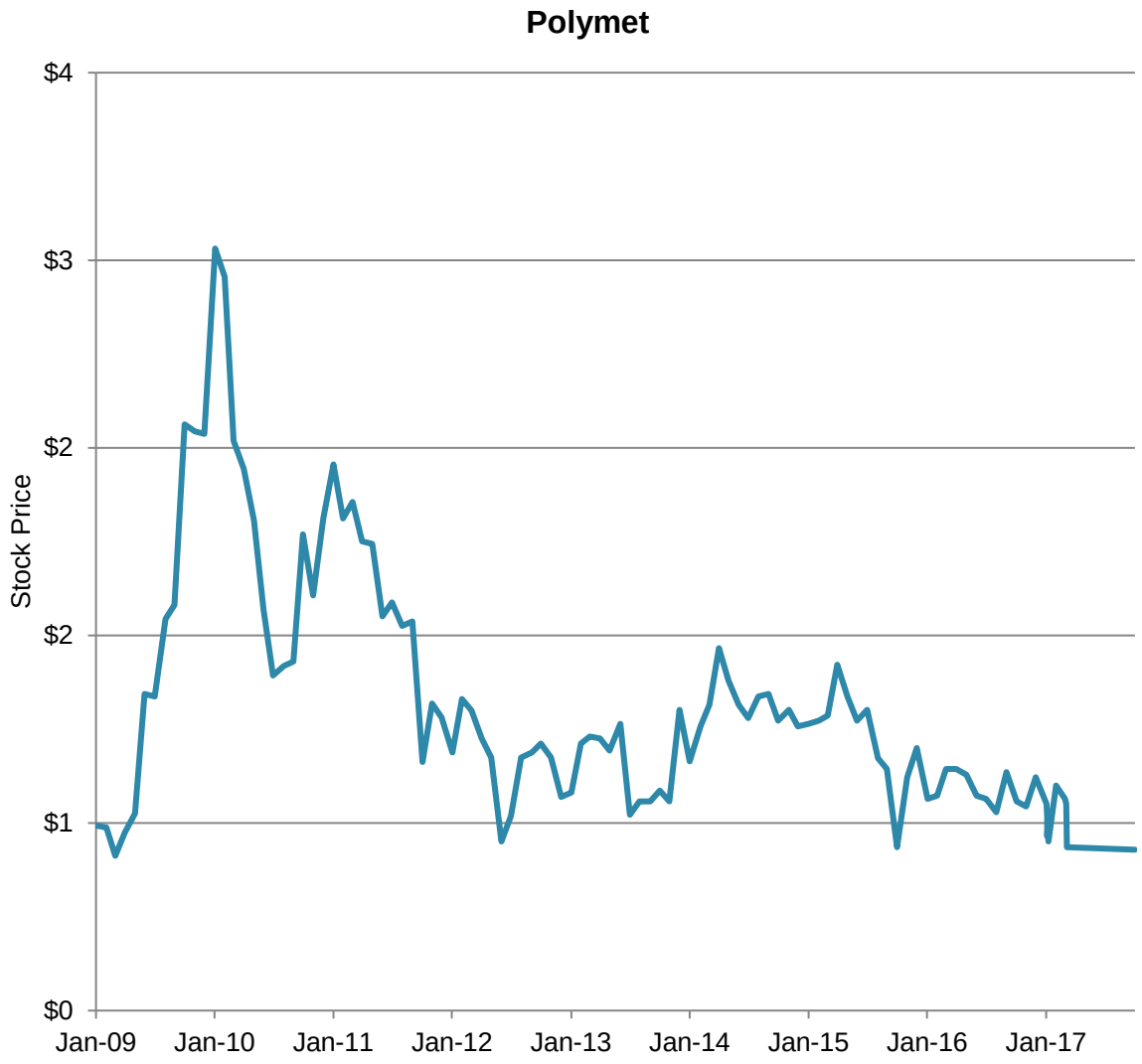
Ticker: MS

Exchange: NYSE

Market Cap: $96.14B

Industry: Financial Services

Description: Morgan Stanley, a financial holding company, provides various financial products and services to corporations, governments, financial institutions, and individuals in the Americas, Europe, the Middle East, Africa, and the Asia-Pacific.



Company: **Polymet Mining Corp.**

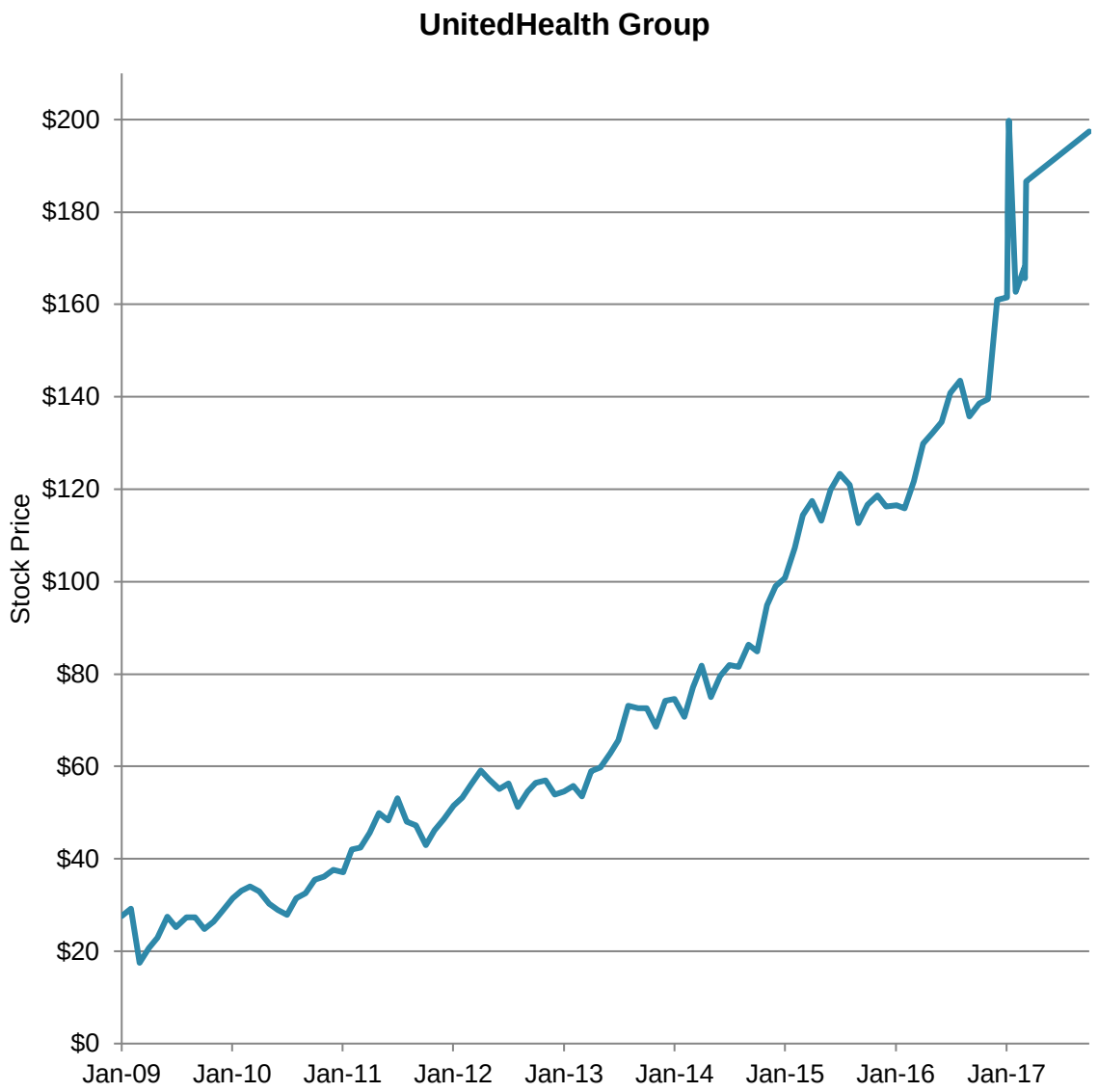
Ticker: PLM

Exchange: NYSE

Market Cap: $213M

Industry: Industrial Metals and Minerals

Description: Canadian mine development company focused on the NorthMet copper-nickel-precious metals project through its wholly owned subsidiary, PolyMet Mining, Inc., a Minnesota corporation.



Company: **UnitedHealth Group Incorporated.**

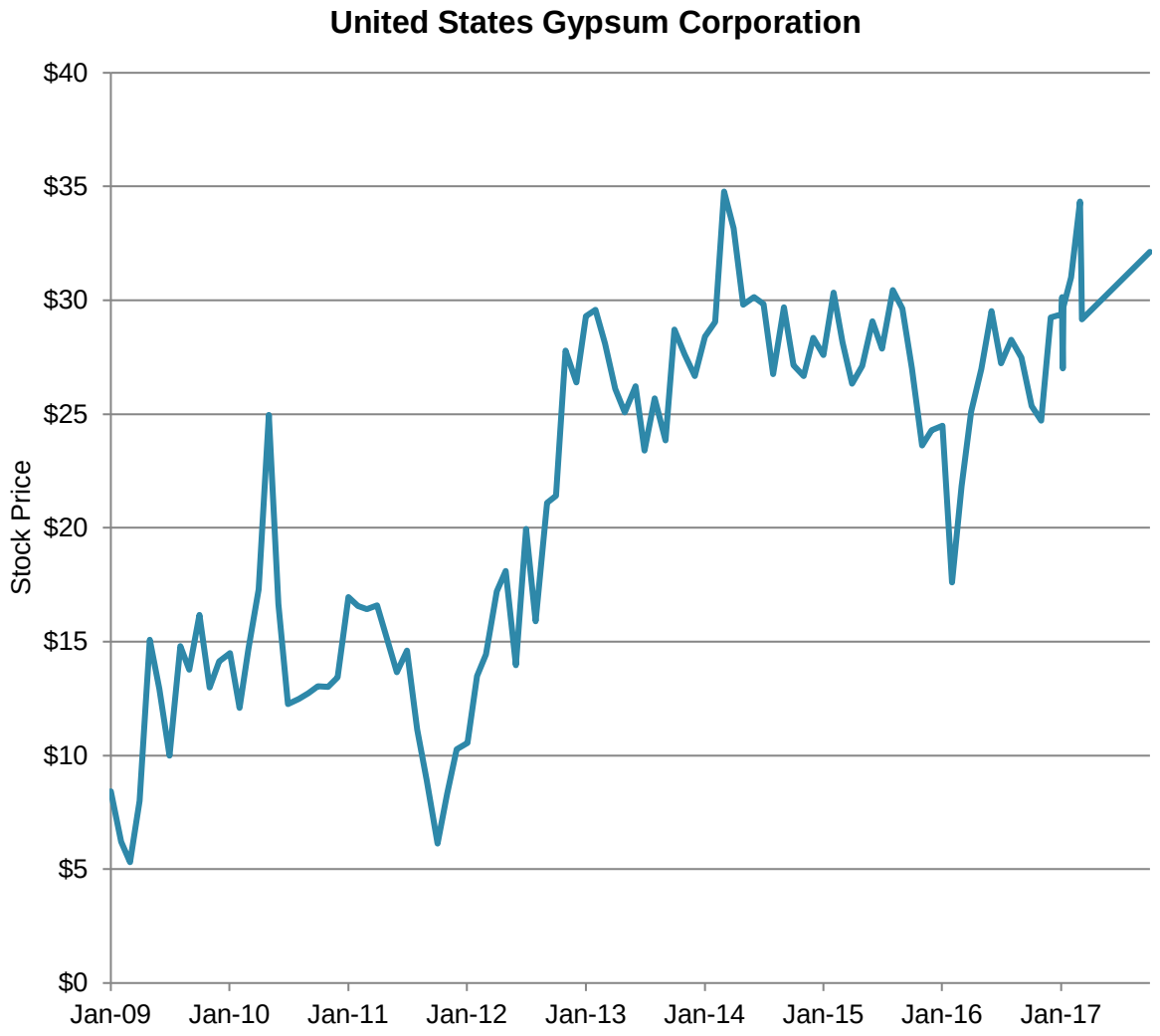
Ticker: UNH

Exchange: NYSE

Market Cap: $217.4B

Industry: Health Care Plans

Description: UnitedHealth Group Inc. designs products, provides services and applies technologies that improve access to health and well-being services, simplify the health care experience and make health care more affordable.



Company: **United States Gypsum Corporation**

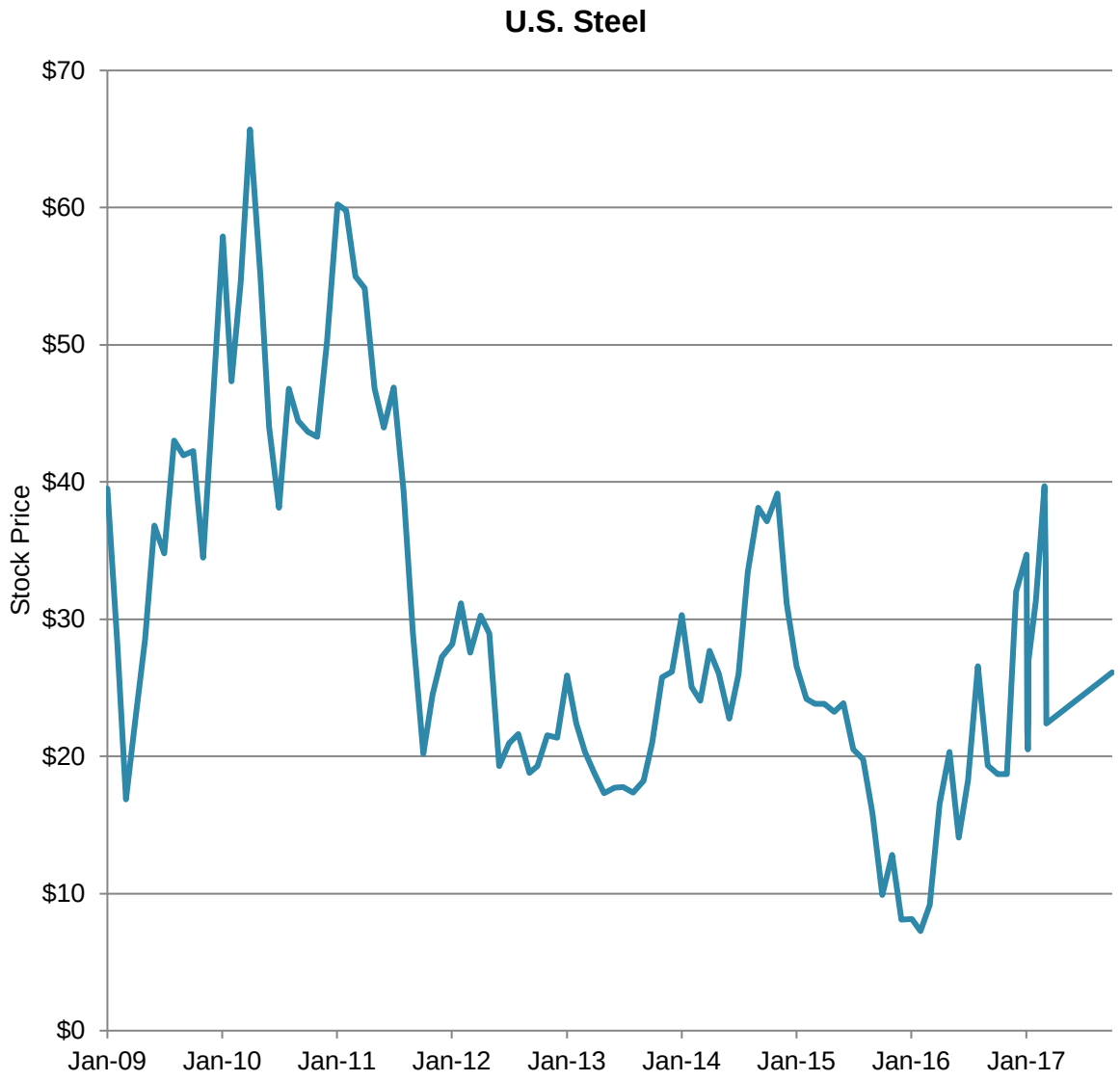
Ticker: USG

Exchange: NYSE

Market Cap: $5.03B

Industry: Building Materials

Description: USG Corporation, through its subsidiaries, manufactures and sells building materials worldwide. The company's Gypsum segment manufactures and markets gypsum and related products for residential, commercial, and institutional buildings, as well as for various industrial applications.



Company: **United States Steel Corporation**

Ticker: X

Exchange: NYSE

Market Cap: $5.75B

Industry: Basic Materials, Steel

Description: United States Steel Corporation is an integrated steel producer of flat-rolled and tubular products with major production operations in North America and Europe.

Resources

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nbcbanking.com

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