2016 Annual Report

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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, the special topics of mining and transportation were presented. The information below summarizes the research findings from the colleges.

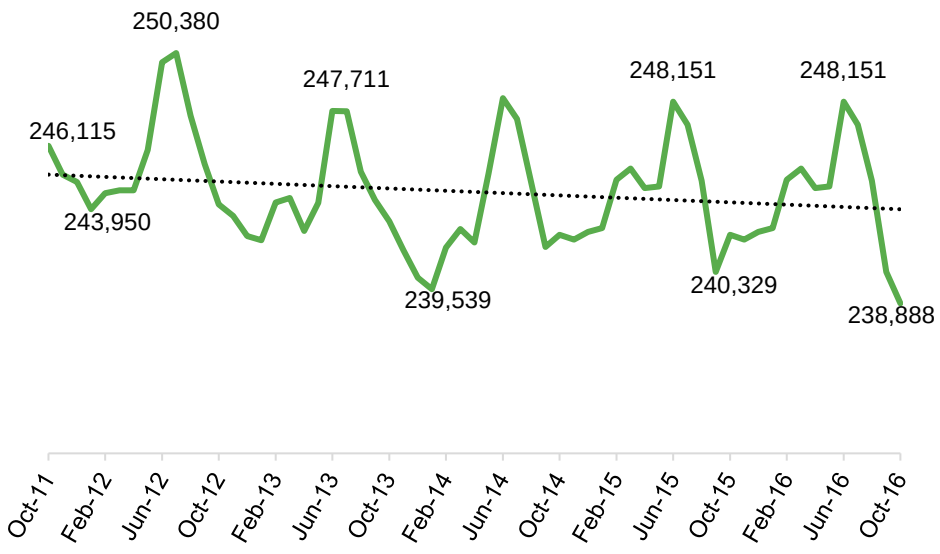
Economic Indicators Affecting REIF Region

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, job growth in various sectors, and an increase in building permits, overall the regional economy seems to be experiencing slow to moderate growth. As shown by many of the indicators, economic performance in the REIF region tends to lag behind the states of Minnesota and Wisconsin.

One of the region's most concerning trends is its shrinking labor market. From October 2011 to October 2016, the region's labor force declined by over 3%. This represents a loss of the region's most valuable resource: its workers. The decline is likely the result of Baby Boomers coming into retirement age, as roughly 20% of the REIF's population is 65 years or older.

Figure 1. REIF Region experienced overall decline in labor force from 2011 to 2016



Despite the decline in the region's labor force, the five-year employment change has remained relatively stable, increasing, on average, by 0.6% annually for a total growth rate of 2.8% overall. During the five-year period, the Accommodation and Food Services industry added the most jobs, at more than 2,400, while Arts, Entertainment, and Recreation lost the most, at nearly 2,000. A positive employment growth rate indicates that the region is efficiently employing its shrinking labor force. Still, maintaining positive employment growth in the coming years will prove more difficult if the labor market continues to decline.

Key household characteristics for the REIF region were also included in this report. While there are some areas in which the region outperforms the states and nation, such as the rate of homeownership, the region lags in many areas. For example, the rate of poverty in the REIF region is higher than that of Minnesota, Wisconsin, and the United States, and median household income and educational attainment levels are lower in the REIF region compared with the two states and the country.

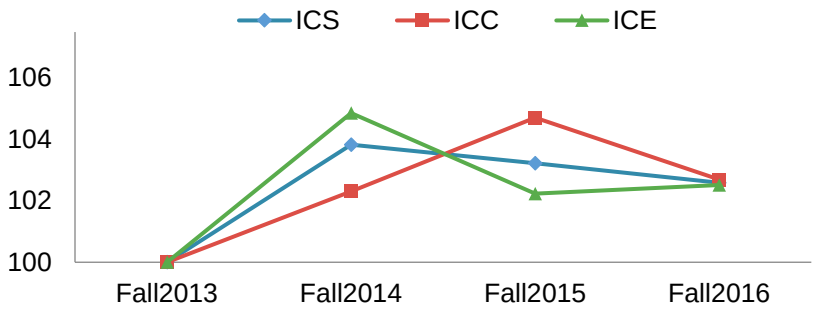
One bright spot in the region is the growth in the construction industry and the level of new construction happening locally. The construction industry added more than 1,500 jobs between 2011 and 2015. At the same time, the number of new building permits was up in nearly every county in the REIF region between 2014 and 2015, signaling that confidence has increased since the Great Recession.

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 UWS student research team surveyed randomly chosen households, 104 in spring 2016 and 98 in fall 2016, in the REIF region's eight Minnesota and seven Wisconsin counties via telephone along with previous REIF participants, 113 in spring 2016 and 78 in fall 2016 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 2016 the general public became cautious about current economic conditions and displayed declining sentiments but were optimistic about the future economic outlook (Figure 2). According to the REIF participants' survey results, in 2016 local government, business people, and academics were positive about current economic condition but pessimistic in their future economic outlook (Figure 3). These mixed trends are due to diverse demographic, economic, and educational backgrounds of randomly surveyed households and previous REIF participants. Given this when interpreting these findings of consumer confidence indicators, businesses should pay attention to attributes of their customers.

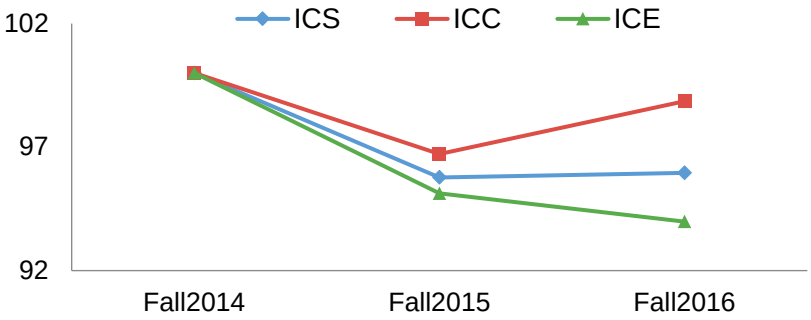
Key Point: Overall, during 2016 the survey findings suggest that there is a growing pessimism about the current and future economic conditions.

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

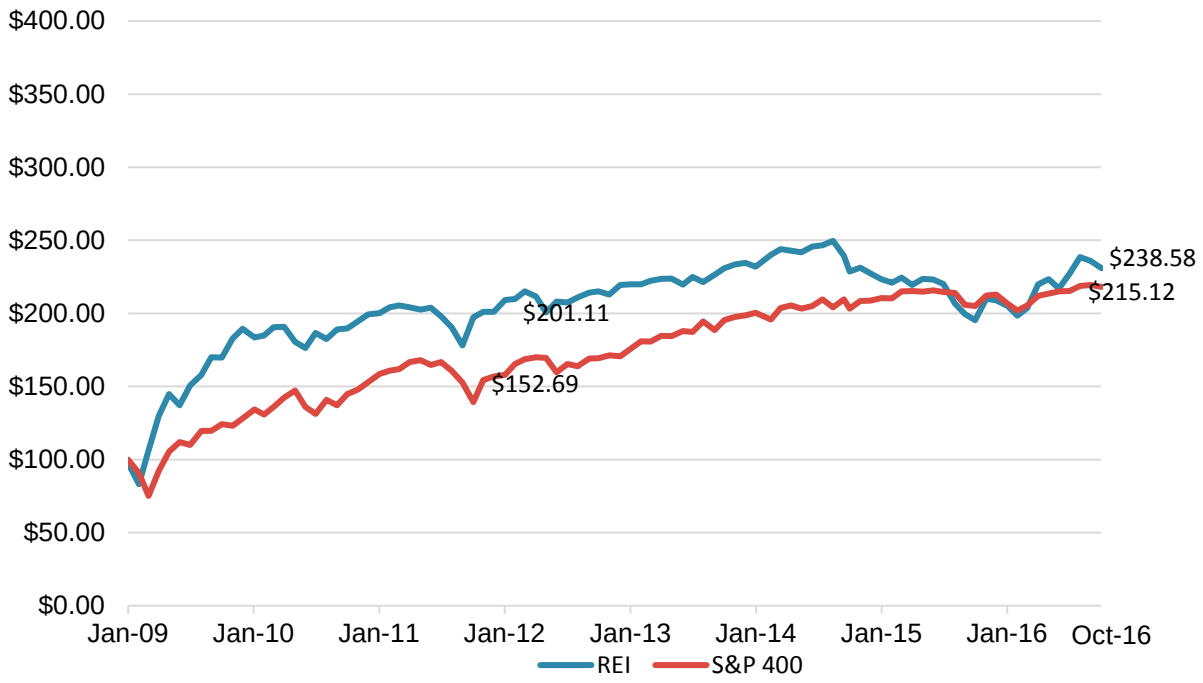
For this portion of the research, UWS provides information and a financial analysis on the equity performance of companies of local interest in the REIF region. This ongoing research project tracks the companies' equity performance, creates an index of local stocks to measure economic activity in the region, examines measures of future performance, and makes comparisons to industry averages and market indices. The study extends the timeframe from the fourth REIF report to 10/03/2016.

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 REI showed a strong gain (29.51%)

year-to-date, the overall performance of the index is significantly above average when compared to the benchmark index return of -4.97%. Out of twelve REIF companies, only two in the REI composite index have underperformed the benchmark this year to date. Polymet, Ascena Retail Group, and Calumet have returns ranging from -1.27% to -77.95%, while the other companies have returns ranging from 2.39% to 250.90%. U.S. Steel with 129.98% and Cliffs Natural Resources with 250.90% are the highest performing stocks in the REI composite index during the fifth study period ending 10/03/2016.

Figure 4 below illustrates the growth trend of $100 investment in the REI on January 2009 and held until October 3, 2016. This is, then, compared to the trend of $100 invested in the S&P 400 over the same time period. Note that the REI trends somewhat with the market, but it has significantly outperformed relative to the S&P 400 during the period between October 1, 2015 (the fourth report ending period) and October 3, 2016 (the fifth report ending period). Compared to REI and S&P 400 values from the last report, REI is up 18.22%; whereas, S&P 400 is up by 6.35%.

Figure 4: REI vs. Benchmark S&P 400



The Value Line® Measures indicate that most of the stocks in the REI are consistent with market expectations of future performance or expected to perform better in the short term. For a more extended period in the long term, Enbridge Energy Partners, Louisiana-Pacific, Polymet, and U.S. Steel are expected to mirror the market, and Cliff Natural Resources is expected to outperform the market. However, the rest of the seven companies are expected to underperform the market in the

long term. The Morning Star® Measures show that the REI's Price-to-Earnings ratio is above the benchmark market average. Of the companies that had data on the Forward Price-to-Earnings ratios, earnings of majority of them are expected to grow. The Short Interest ratio shows investors have positive short term expectations of performance for most of the index stocks. Seven 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 2016, 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 decrease in business confidence for the October survey. However, overall local businesses remain confident both about their company outlook and the business activity in the region. Only 22% believe that their firms will see worse conditions in the next six months, and only 21% believe that business activity will worsen in the region.

One reason for the decline in business confidence may be during the last six months of the year the actual results were worse than what firms were expecting. Last spring, around 50% of respondents anticipated an increase in sales revenue and profits but only 30% saw an increase in these indicators. In the spring, 17% expected a decline in sales revenue and profits but 35% experienced a decline in both sales revenue and profits.

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 higher than the national business confidence survey.

From our survey results, it appears that businesses were uncertain about the effect of the presidential election on their businesses and the local economy. It will be interesting when we conduct the next survey to see the effect of the new administration on business confidence.

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

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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, in order 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

Little to No Population Change Since 2001

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 2001 to 2015 by the population in the base year (2001).

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.

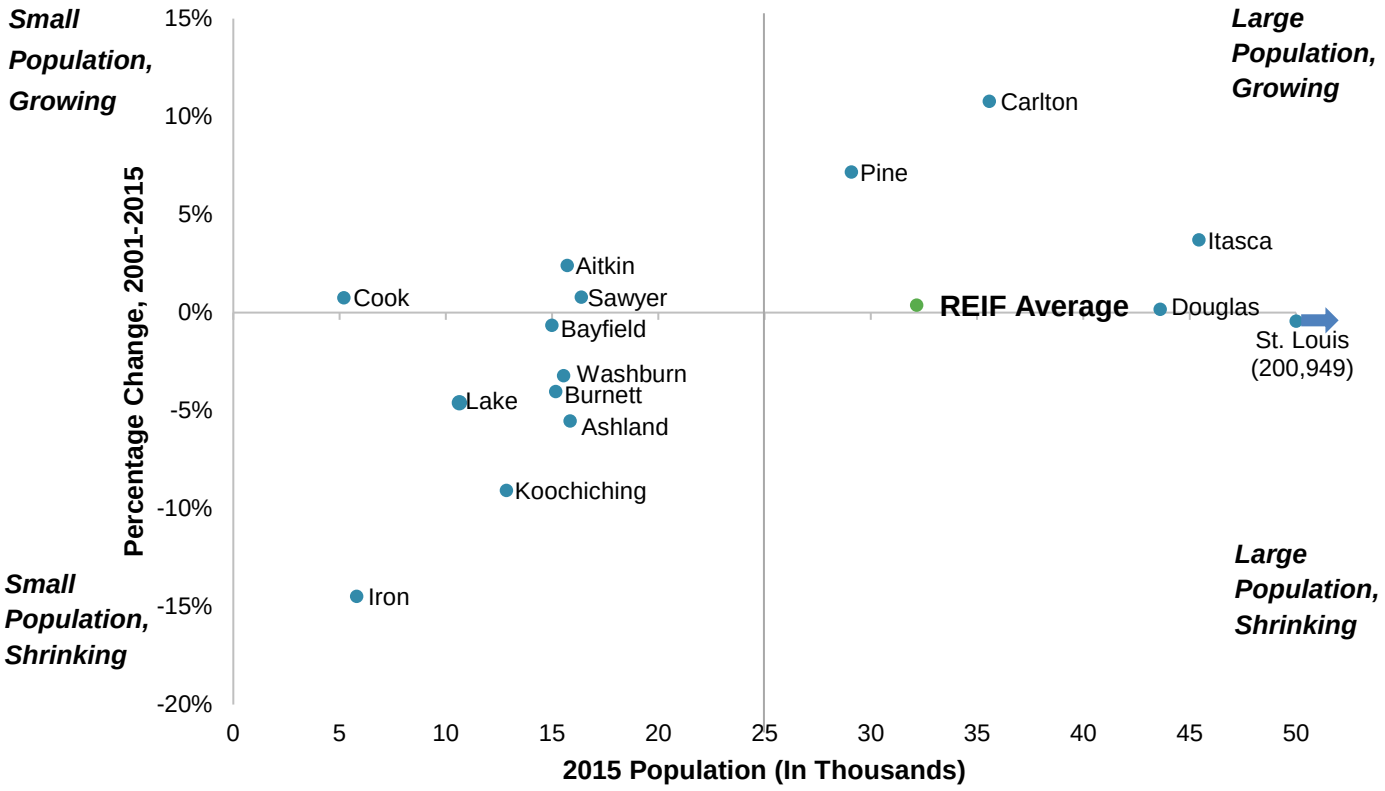
How is Our Region Doing?

Figure 5 shows the 2015 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 very small positive population change (0.4%) during the 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 -15.3% and -10.1%, respectively. Conversely, considerable growth was seen in Carlton and Pine Counties in Minnesota at 11.9% and 9.3%, respectively. While each of the four counties mentioned have individually seen significant population changes since 2000, the net result was that the REIF region's population as a whole has been largely unmoved. In total, Iron and Koochiching Counties significantly underperformed in terms of population growth compared to the states of Minnesota and Wisconsin

at 6% and 10%, respectively. St. Louis County, located on the far right in Figure 5, is shown with an arrow to indicate that its population of nearly 201,000 is beyond the graph's visual capability.

Figure 5: Population and Percentage Change in Population, by County (2001 to 2015)



Source: U.S. Census 2015 Population Estimates

Demographics

Population Older, Less Racially Diverse than U.S.

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?
Figure 6 includes demographic statistics by gender, age, and race/ethnicity for the REIF region in 2015. According to these statistics, the REIF region had slightly more men than women in its population. While this difference was quite small, it is somewhat unusual, as there are typically more females in a population due to their tendency to live longer. For example, only 49% of the United States' population was male compared to 51% in the REIF region.

The region's largest age group was the 45 to 64-year-old population, though only slightly higher than the under 25 group. As more of the Baby Boomers move into the 65+ category, this share of the population will likely grow significantly in coming years. Notably, nearly 20% of the population is already over 65, much greater than the nation as a whole at just 14.8%. About 49% of the population in the REIF region was over 45 years old compared to just under 41% nationally.

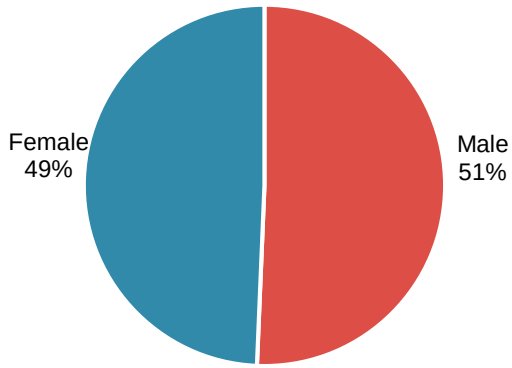
Looking at the race demographic, it is clear that the REIF region was not particularly racially diverse, as shown in Figure 6. The population was substantially white (including Hispanic[1]) at just under 92%, and that number was essentially unchanged since 2010, while other parts of the country have grown increasingly diverse. Compared to the percentage of the U.S. population that was white (73.1% in 2015), the REIF region was significantly higher. In-migration has become a major source of population growth in many parts of Minnesota, Wisconsin, and the nation. This

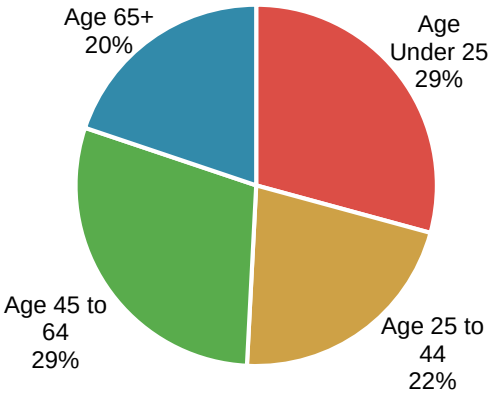
[1] The U.S. Census Bureau treats race and ethnicity as independent categories. Therefore, a person of any race could be Hispanic or non-Hispanic.

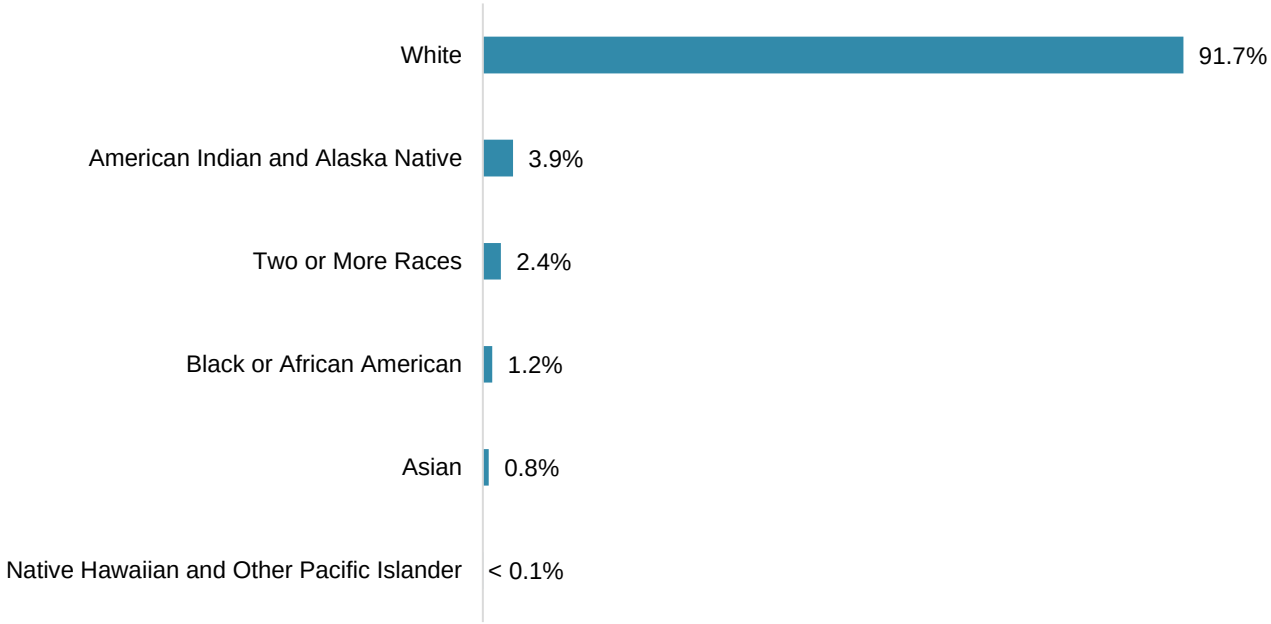
might be an area to focus on in the future if the REIF region wants to increase its racial/ethnic diversity.

Figure 6: Population Demographics (2015)

(Gender, Age, Race)







Source: U.S. Census 2015 Population Estimates

Labor Force

Declining Labor Force

Description

According to the U.S. Bureau of Labor Statistics, 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.

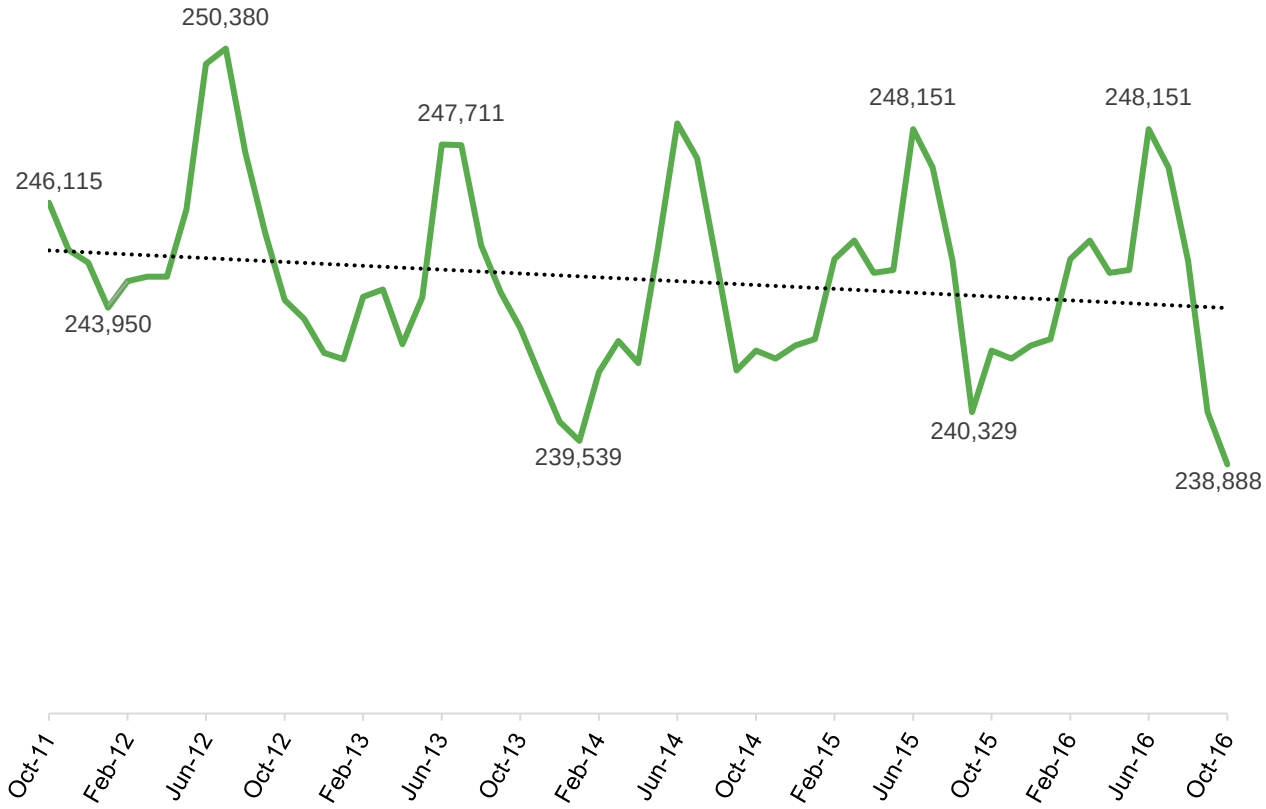
Why is It Important?

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 many people 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?

Figure 7 shows monthly data for the region's labor force over the last five years. The labor force of the combined counties within the REIF region exhibited a seasonal behavior— increasing in the summer and decreasing in the winter months. This pattern is not necessarily unusual though as many industries are inherently affected by things like weather, harvests, and school schedules that cause inflows and outflows of potential workers in the region. However, the broader trend in the data without the seasonal effects was trending down in general. As mentioned previously, even a small decline in the size of the labor force can have real impacts for a region's industries looking to find and hire skilled labor. From October of 2011 to October of 2016, the labor force in the REIF region was reduced by just over 3% (from 246,115 workers to 238,888 workers). In fact, October of 2016 marked the lowest point in the REIF region's labor force during the last five years.

Figure 7. Labor Force, by Month (Oct. 2011 to Oct. 2016)



Source: Local Area Unemployment Statistics (LAUS)

Unemployment Rate by Month

Recent Uptick in Unemployment Rate Following Steady Declines Overall

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?

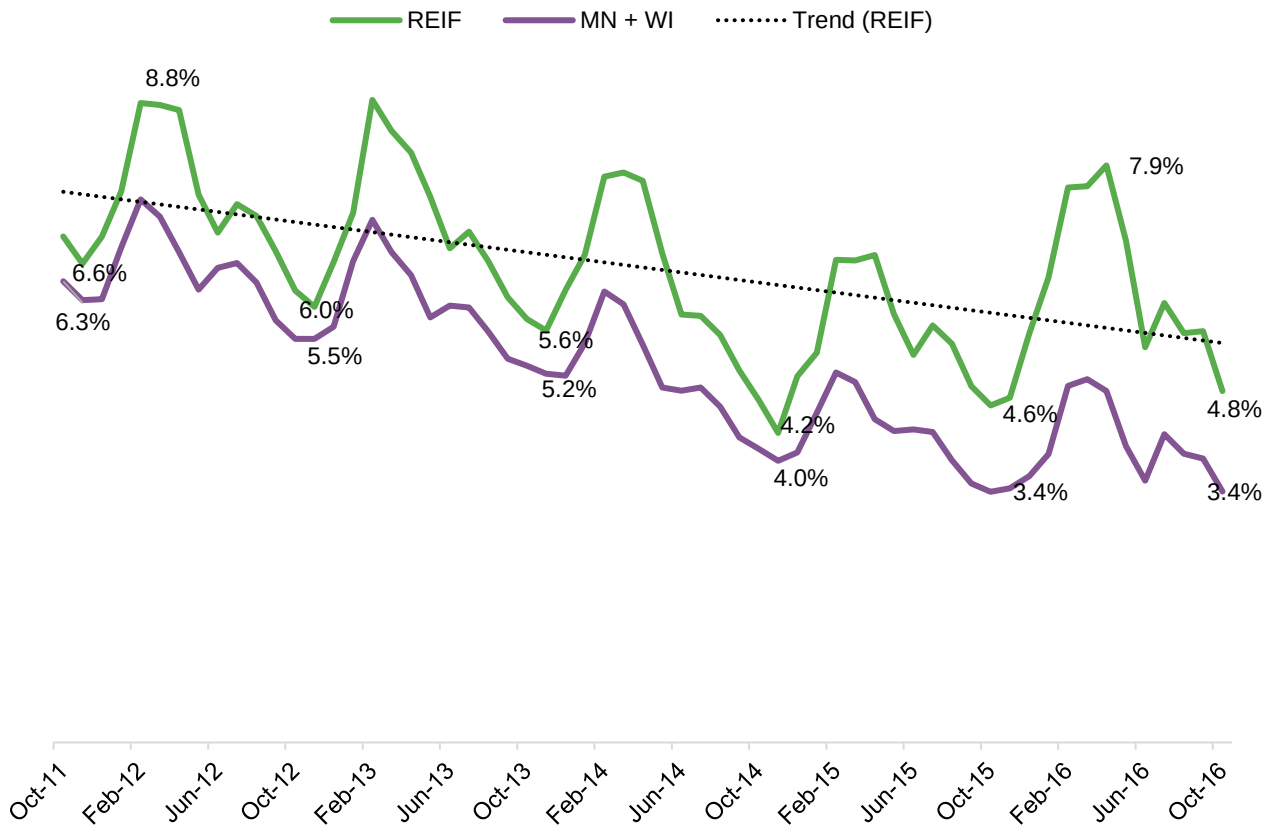
Figure 8 shows the unemployment rate by month from October 2011 to October 2016. Similar to the fluctuations seen in the labor force in Figure 7, the unemployment rate over the last five years exhibited seasonal cycles of increases and decreases (as shown by the trend line). The overall trend beyond the seasonal effects during this period showed a decline. Compared to the rate from October 2011 (6.6%), the unemployment rate had decreased by almost 2.2 percentage points in October 2015 (4.8%). This decrease in the unemployment rate is a positive sign and indicated ongoing improvement in the REIF region's economy. However, the unemployment rate has increased by nearly 0.6 percentage points since October 2014. This could mark the inflection point for an upward trend moving forward.

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. However, despite the significantly higher rates at the peak in the winter months, the region's unemployment rate has typically progressed toward matching the broader two states' rate in the fall, usually by October. However, beginning in 2015, the region's unemployment rate rose quite significantly compared with the increase seen by the two states, and the gap has continued to widen since that time. By October 2016, the gap

between the REIF unemployment rate and the states' rate was 1.4%, whereas in October 2011 the gap was only 0.3%.

This recent increase in regional unemployment corresponds closely with the timing of the mining facility layoffs, which began in early 2015. While the monthly data does not include a breakdown by industry, the mining layoffs are a probable explanation for this spike in unemployment considering the significant role the industry has in the region's economy.

Figure 8: Unemployment Rate, by Month (Oct. 2011 to Oct. 2016)



Source: Local Area Unemployment Statistic (LAUS)

Employment Location Quotient

Natural Resources and Mining More Concentrated in Region than in States

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 consisting of the combined states of Minnesota and Wisconsin.

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.

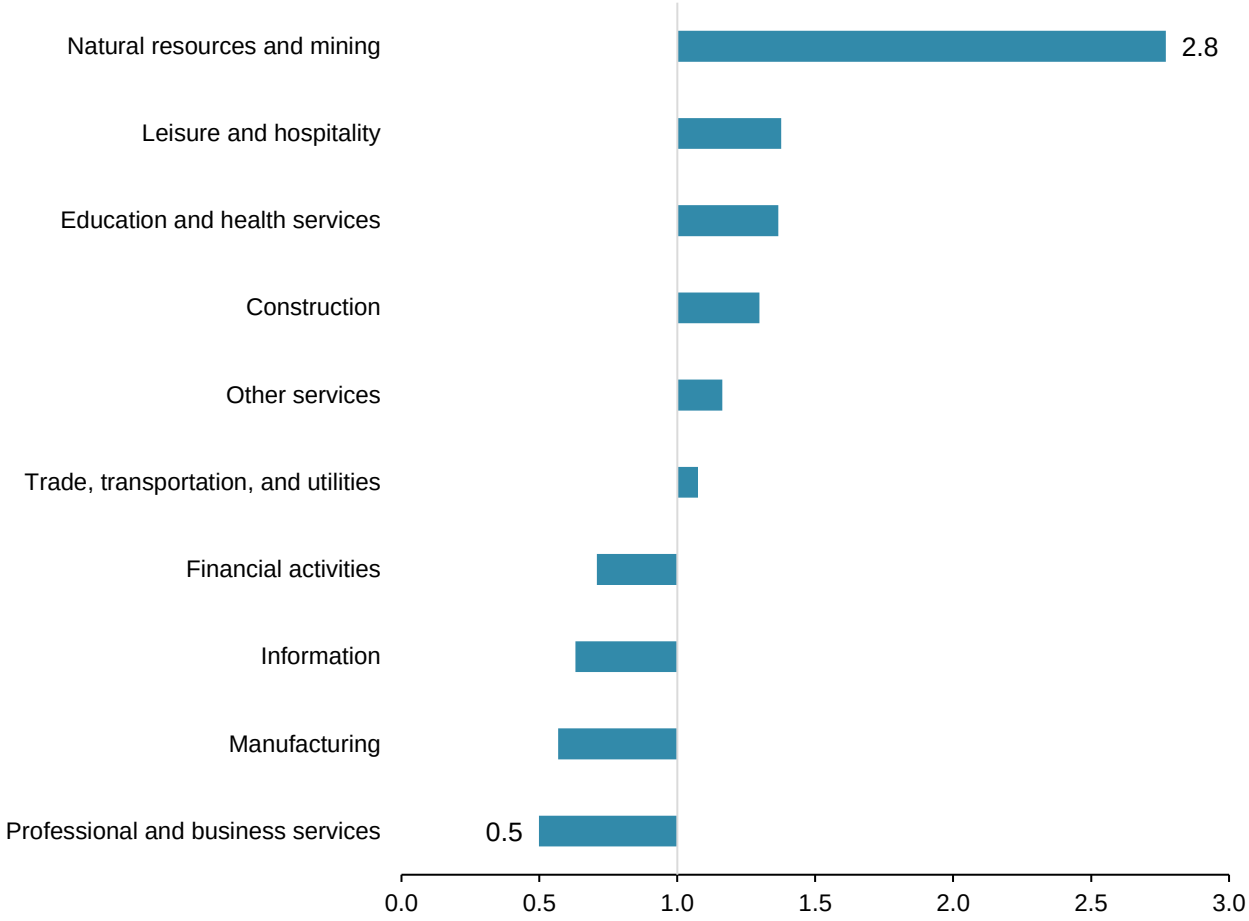
How is Our Region Doing?

Figure 9 shows the location quotient of the super-sectors found in the REIF region. There are eleven super-sectors, categorized by the first digit of their North American Industry Classification (NAICS) code. However, only 10 super-sectors are shown in Figure 9 because the Unclassified super-sector for the REIF region did not have any data reported.

The location quotient was determined by dividing the percentage employed within the REIF region for each super-sector by the percentage employed in the same super-sector in the two state region (Figure 9). For example, 3.31% of employment in the REIF region was in Natural Resources and Mining, while only 1.20% was in that super-sector in Minnesota and Wisconsin as a whole, resulting in the location quotient of 2.8 seen in Figure 9 (3.31/1.20 = 2.77). This super-sector was found to have the greatest location quotient, meaning that within the region, there is a higher concentration of people employed in Natural Resources and Mining locally than in the broader statewide region. Numbers greater than one indicate that the REIF region employs a higher percentage of the population in that particular super-sector as compared to the base population (Minnesota and Wisconsin) while numbers lower than one indicate the opposite. The whole of Minnesota and Wisconsin employs nearly twice as much of their population in the Professional and Business Services super-sector relative to the REIF region.

With the special topic of the fall 2016 forum being transportation, it is worth noting how the super-sector location quotient from the REIF region compares to that of the whole of Minnesota and Wisconsin. The Trade, Transportation, and Utilities super-sector employs a higher share of workers in the REIF region (23.36%) as compared to the whole of Minnesota and Wisconsin (21.72%), producing a location quotient of just over one. This illustrates that there is a slightly higher concentration of transportation jobs in the REIF region than in the area of the two states.

Figure 9: REIF Region Employment Location Quotient, by Super-sector (2015)



Source: Local Area Unemployment Statistic (LAUS)

Five-Year Employment Change

Accommodation and Food Services Adds Most, Arts, Entertainment, and Recreation Loses Most, Slight Gain Overall

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?

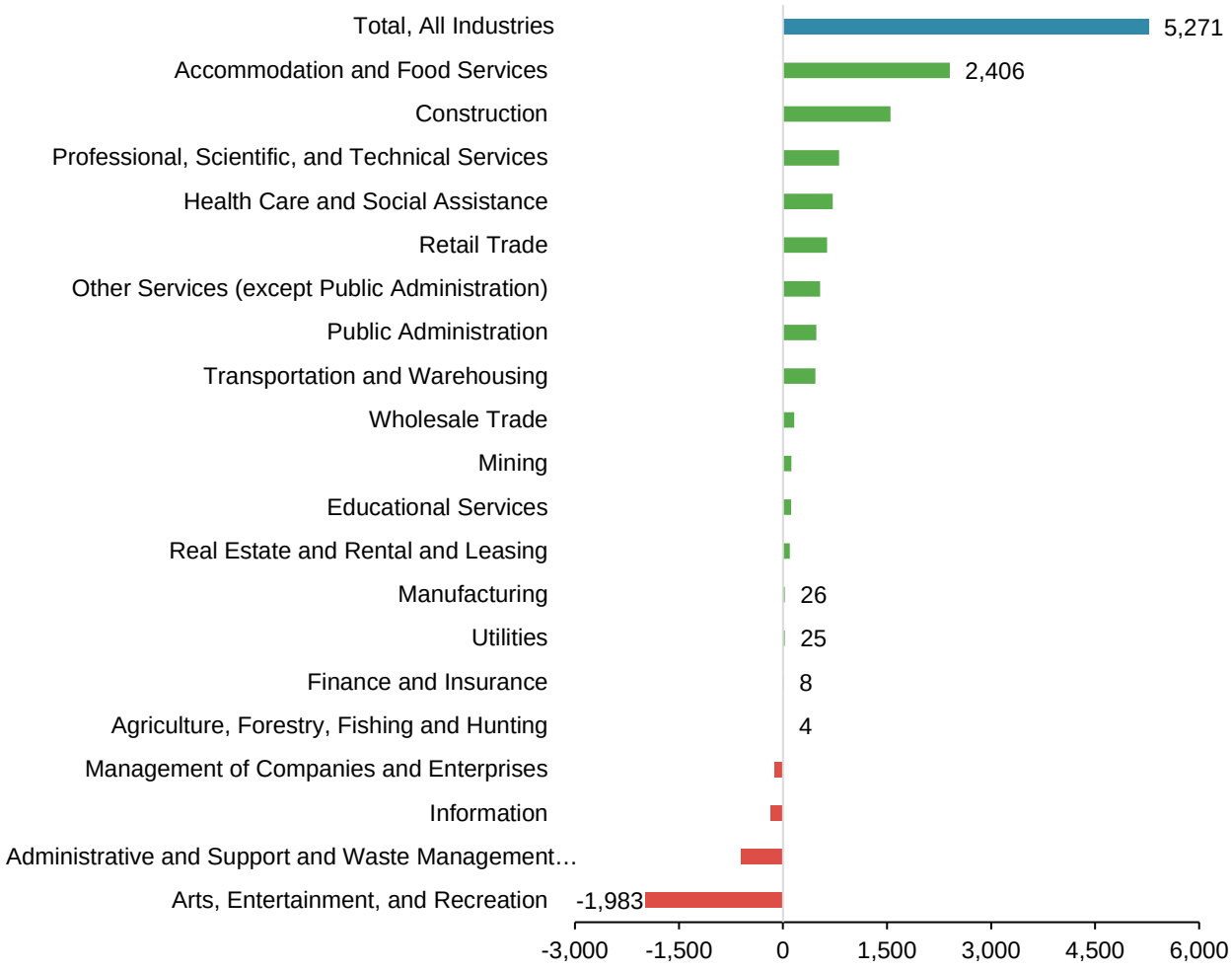
Examining the change in employment over a longer period can provide meaningful insight as an indicator of whether or not the economy is changing within a region. Knowing which industries have increased in number of employees and which have declined in employment can also assist the population in general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

How is Our Region Doing?

Figure 10 shows the change in employment (measured in number of employees) by sector from 2011 to 2015, which includes full-time, part-time, and temporary jobs. A sector is categorized by the first two digits of a NAICS code. There can be multiple sectors within a single super-sector. The graph highlights which sectors have expanded throughout the REIF region and which have experienced a decline. The largest increase in new employment in the region occurred in the Accommodation and Food Services industry, by a large margin, with more than 2,400 jobs over the five-year period. The second largest increase in the region was in the Construction industry, which also added a large margin of workers to the region at just over 1,500 jobs.

The industries that experienced the largest declines in employment included Arts, Entertainment, and Recreation, Administrative and Support and Waste Management and Remediation Services, and Information. A large increase in total employment in the region can be seen in the bar labeled Total, All Industries (represented by the blue bar) in Figure 10, however, this change in nearly 5,300 jobs only represents a 2.8% increase in employment over the 5-year time period. Over the same time period, the region's population decreased by nearly 3,000 people, which means that more jobs are being created even with a smaller labor force.

Figure 10. Employment Change, by Sector (2011 to 2015)



Source: Minnesota Department of Employment and Economic Development (DEED) and Wisconsin Department of Workforce Development

Annual Employment Growth Rate

Employment Growth Indicates Little to No Change over Five-Year Period

Description

According to the U. S. Bureau of Labor Statistics (BLS), employment growth or job growth is the gross number of jobs created from one period to another. The BLS has set a minimum level of job growth throughout the nation that must be met to minimize the effects of new employees entering the labor force.

Why is It Important?

The employment growth in a country or region is a key indicator of the strength or weakness of an economy. If population or labor force growth continually increases but employment growth stays the same, unemployment can rise. Furthermore, although the population growth rate has been low in recent years (about 0.4%), the employment growth rate must at least keep pace in order to mitigate the effects of the new employees entering the work force and avoid increasing unemployment.

How is Our Region Doing?

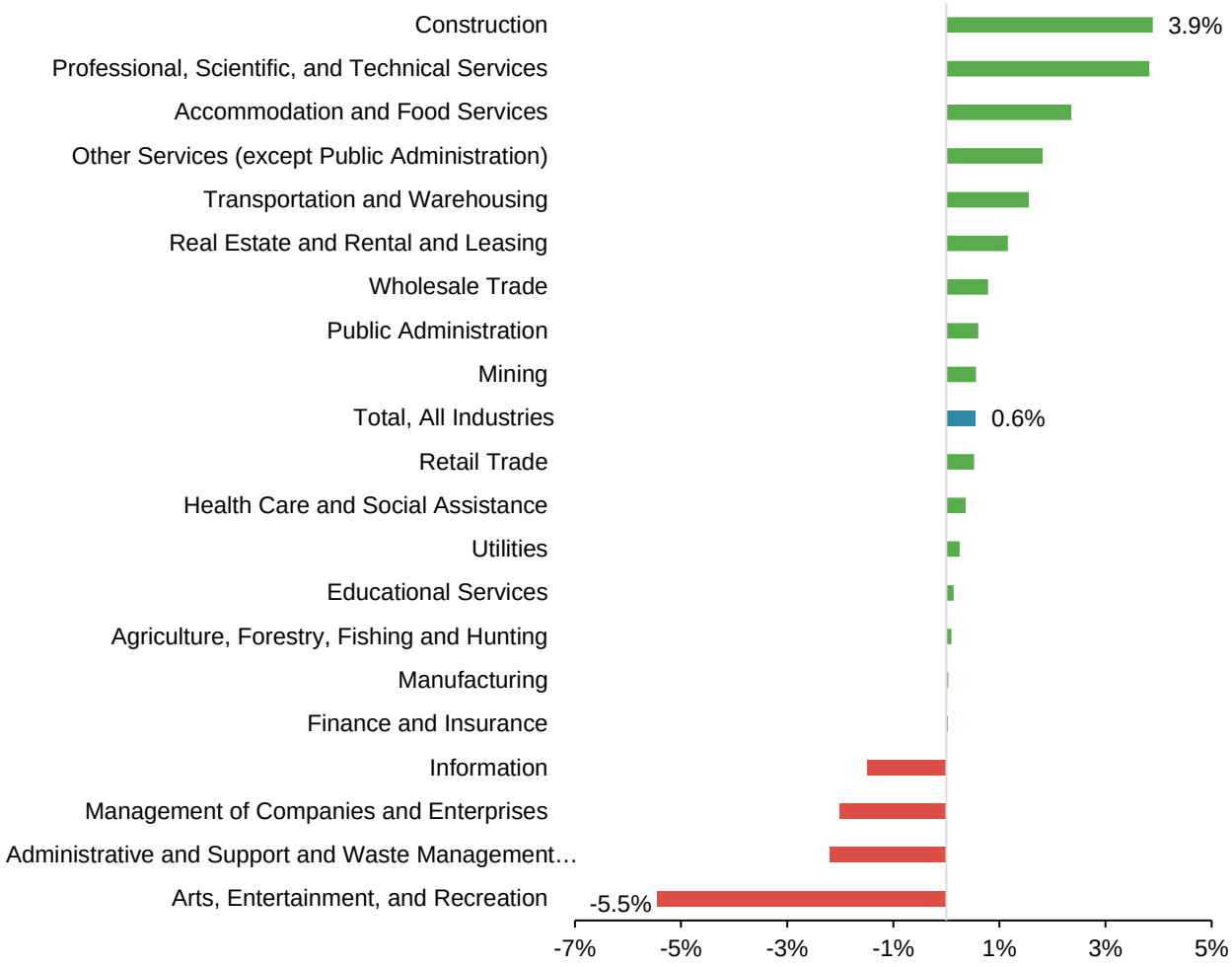
Figure 11 shows the annualized average growth rate in employment over the five-year period (2011-2015) for each of the sectors in the region as well as for the total of all sectors combined. The percentage seen for each sector represents the average percentage increase (or decrease) each year. For example, a 10% average annual growth rate over five years corresponds to a 50% increase over the 2011 levels.

The same sectors as in Figure 10 were again either positive or negative, however, on a percentage change basis, the magnitude of employment gains and losses was slightly different. The sector with the largest average percentage increase in employment was Construction, whereas by number of jobs (Figure 10) the Accommodation and Food Services sector was first. The Construction sector increased by over 19% during the five-year period. These changes were largely a function of the sector's existing size within the region. Because the Construction sector employs fewer people than the Accommodation and Food Services sector in the REIF region, a smaller absolute change in the total employment corresponded to a larger percentage change.

The total change in employment for all sectors combined remained consistently flat over the five-year period. The Total, All Industries category (represented by the blue bar) in Figure 11 shows that on average, overall employment grew by just 0.6% each year for the REIF region (2.8% over 5-year period). As mentioned earlier, the relationship between employment growth and population growth is important. If real growth in the number of jobs in a region does not keep pace with the

growth of the population, people will be compelled to leave for employment elsewhere due to the lack of available jobs.

Figure 11: Average Annual Percentage Change in Employment, by Sector (2011 to 2015)



Source: Minnesota Department of Employment and Economic Development and Wisconsin Department of Workforce Development

Annual Establishment Growth Rate

Establishment Growth Consistently Negative over Five-Year Period

Description

According to the U. S. Census Bureau, an establishment is defined as a single physical location where business is conducted or where services or industrial operations are performed. An establishment is not necessarily identical with a company or an enterprise, which may consist of one establishment or more. When two or more activities are conducted at a single location under a single ownership, all activities are generally grouped together as a single establishment and classified based on its major activity.

Why is It Important?

Usually, with new establishments comes new jobs for the region, whether people are directly employed by the new establishment or indirectly employed elsewhere as a result of the new establishment's addition to the economy. As a new establishment grows, it typically leads to a growing demand for more employees and greater benefit to the local economy. Of course, just the opposite can happen as well. Naturally, when larger establishments go out of business, more people are likely to become unemployed. The survival rates of a business fluctuate depending on the specific industries in which they operate. According to the BLS, the Health Care and Social Assistance sector has one of the highest survival rates among the industries over time, with Construction ranking at the lower end of the spectrum.

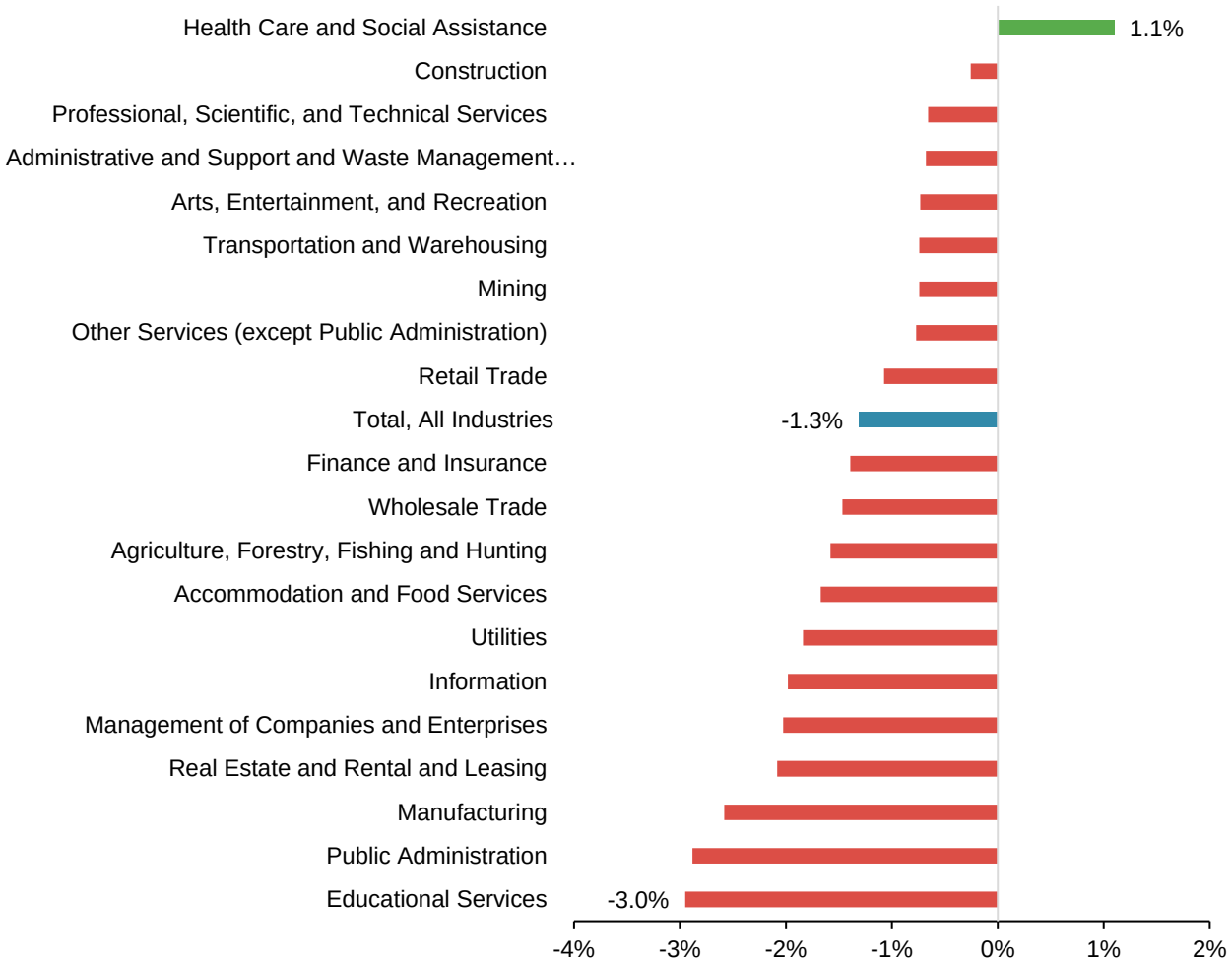
How is Our Region Doing?

Figure 12 shows the annual average percentage change in establishments (i.e. the establishment growth rate) by sector from the year 2011 through 2015 as well as for the total of all industries combined. The percentage seen for each industry represents the average percentage increase (or decrease) for establishments each year. For example, a 10% average annual growth rate over five years corresponds to a 50% increase over the 2011 levels. Negative establishment growth in the REIF region far outweighed positive establishment growth with 19 sectors that experienced negative growth and one that experienced positive growth.

The only positive establishment growth was noted for the Health Care and Social Assistance sector. The Construction sector sustained the smallest loss, while the Educational Services sector reported the greatest loss. The Manufacturing sector saw establishments decrease at a rate of 2.6% per year, and considering its place as the third largest sector by number of establishments in the region, this loss was quite significant and was numerically the largest change of all the various sectors.

The Total, All Industries category (represented by the blue bar) in Figure 12 indicates the overall average yearly percentage change in establishment growth. Over the full period represented (2011 to 2015), the total number of establishments throughout the REIF region declined by 1.3%. Additionally, since employment grew slightly during this same time period (Figure 10) while overall establishments were reduced, it is likely that consolidation occurred within the REIF region sectors. This means that a smaller number of larger establishments may have displaced a large number of small establishments, thus, reducing the number of establishments while maintaining a consistent amount of employment.

Figure 12: Average Annual Percentage Change in Establishments, by Sector (2011 to 2015)



Source: Minnesota Department of Employment and Economic Development and Wisconsin Department of Workforce Development

Quarterly Positive; One-Year Employment Overall Negative, Mixed Individual Industry Results

Description
Quarterly employment numbers are reported by the Minnesota Department of Employment and Economic Development (DEED) and Wisconsin Department of Workforce Development. These statistics include the number of workers who were employed during, or received pay, for that month. Quarterly numbers are reported every three months (for example January, February, and March are Q1).

Why is It Important?
Understanding which industries have added employees and which sectors have been declining in employment over the previous quarter is particularly helpful in identifying a region's most recent economic developments. The quarterly employment growth rate (e.g. Q1 2016 to Q2 2016) can highlight the impact of the most recent (and particularly seasonal) events, such as cyclical demand impacts and periodic layoffs, and serve as a leading indicator of more long-term trends to come. Comparing the quarterly change in employment to the one-year and the long-term average growth can give a region insight into the direction the economy might be taking relative to its past and which sectors are contributing most to it.

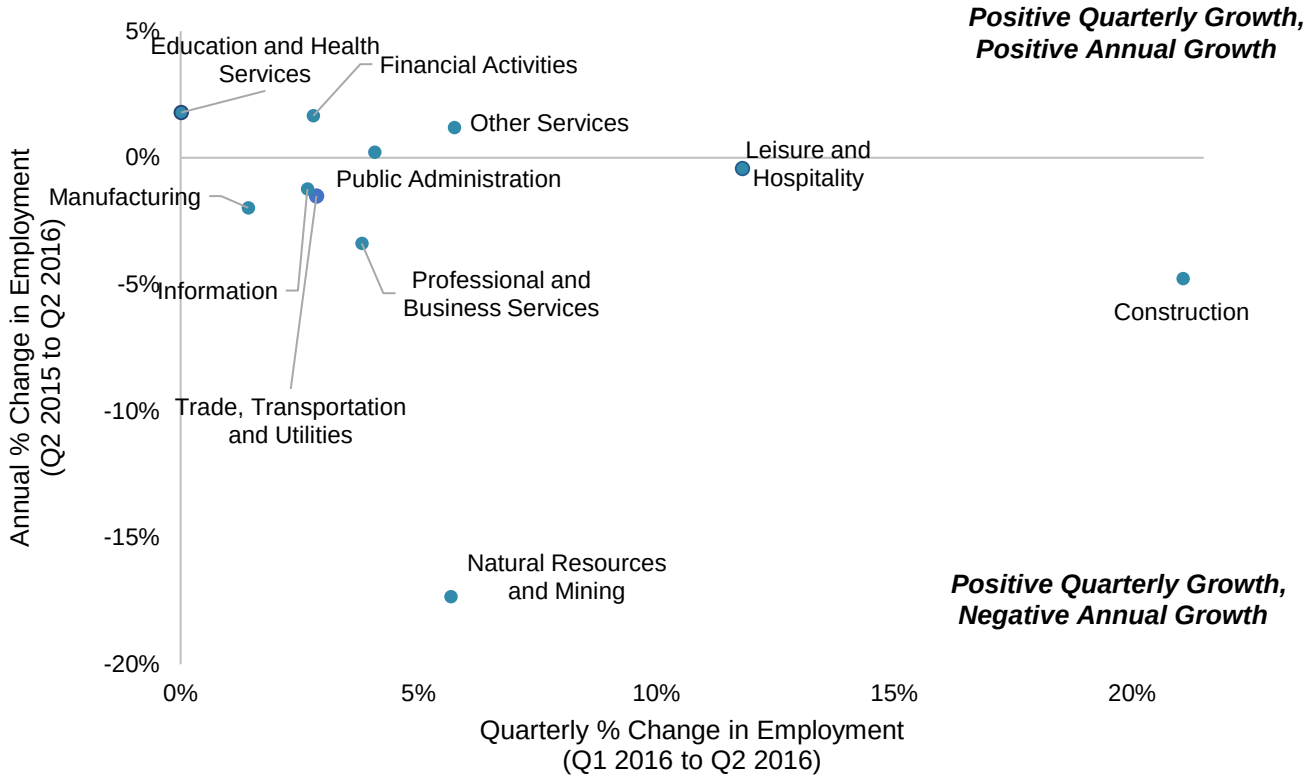
How is Our Region Doing?
Figure 13 shows the percentage change in employment (i.e. employment growth rate) by super-sector from both one quarter to the next (Q1 2016 to Q2 2016) and one year to the next (Q2 2015 to Q2 2016). Every super-sector experienced growth between the first and second quarters of 2016, which is expected, however there was little annual growth from Q2 of 2015 to Q2 of 2016.

For example, while the construction industry had a large increase from Q1 of 2016 to Q2 of 2016, there was a decrease in employment from Q2 of 2015 to Q2 of 2016. This is because the quarterly growth rate can be very sensitive to seasonal economic dynamics. Because Q1 is comprised of winter months, there was more construction activity during Q2 when the climate became warmer. Due to the impact seasonality can have, the quarterly growth rate is not necessarily indicative of strength. In order to gauge the direction in which the economy is heading, it is more prudent to compare the year-over-year growth rate between quarters.

Four of the eleven super-sectors experienced growth from the second quarter of 2015 to the second quarter of 2016. Interestingly, the super-sectors that had positive one-year growth showed little quarterly growth as can be seen in Figure 13. The super-sector with the largest annual gain for the REIF region was Education and Health Services at nearly 2%, but this super-sector

exhibited no quarterly employment growth (0%). Meanwhile, Construction had the greatest growth in quarterly employment at over 21% but experienced a slight decline in growth from the previous year (-4.8%). The super-sector with the largest annual loss was Natural Resources and Mining at -17%.

Figure 13: Percentage Change in Employment by Super-sector



Source: Minnesota Department of Employment and Economic Development and Wisconsin Department of Workforce Development

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 they have 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?

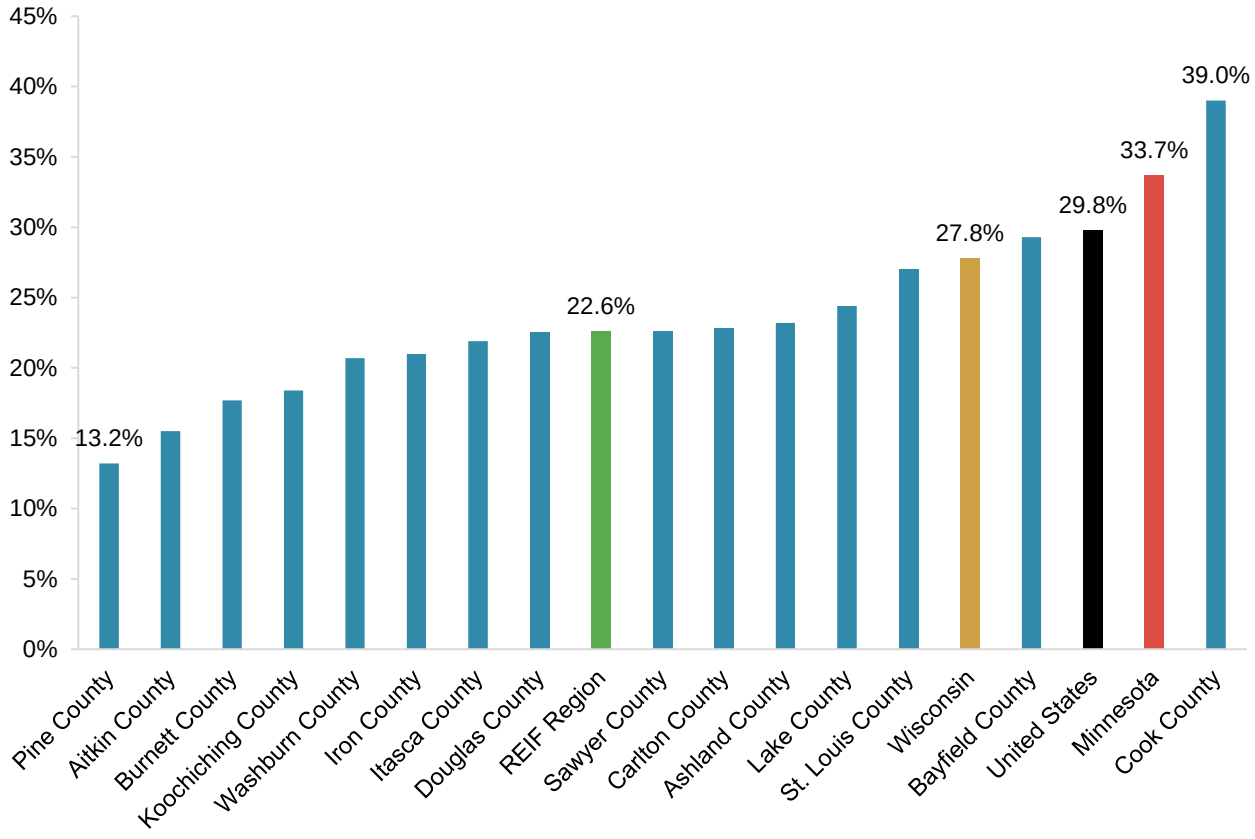
Historically, a college degree was not necessarily a requirement to making a living or finding a rewarding career. However, in the ultra-competitive, high tech, and demanding global workplace, a college degree has become a minimum cost of admission, so to speak, in much of the modern economy. Approximately 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?

Figure14 shows the percentage of the REIF population with a bachelor's degree or higher by county.[2] Counties with the lowest levels of post-secondary educational attainment are on the left, and counties with the highest levels are on the right. The averages for the combined REIF region, Minnesota, Wisconsin, and the United States were also included. As the graph indicates, the REIF region had fewer post-secondary degrees as a percentage of the population than either of the states at just 22.6%. The percentage of the total U.S. population with a bachelor's degree or higher (29.8%) was also higher than that of the REIF region and just above that of Wisconsin (27.8%). However, it was still well under the average for Minnesota (33.7%). Referring to Figure 14, only Cook County (at 39%) had an educational attainment level higher than the average for the state of Minnesota and the United States.

[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 14: Percentage of Persons with a Bachelor's Degree or Higher (2011 to 2015)



Source: American Community Survey (ACS), 2011-2015, 5-Year Estimates

Housing Units

Region Maintains Fewer Housing Units on Average than MN and WI

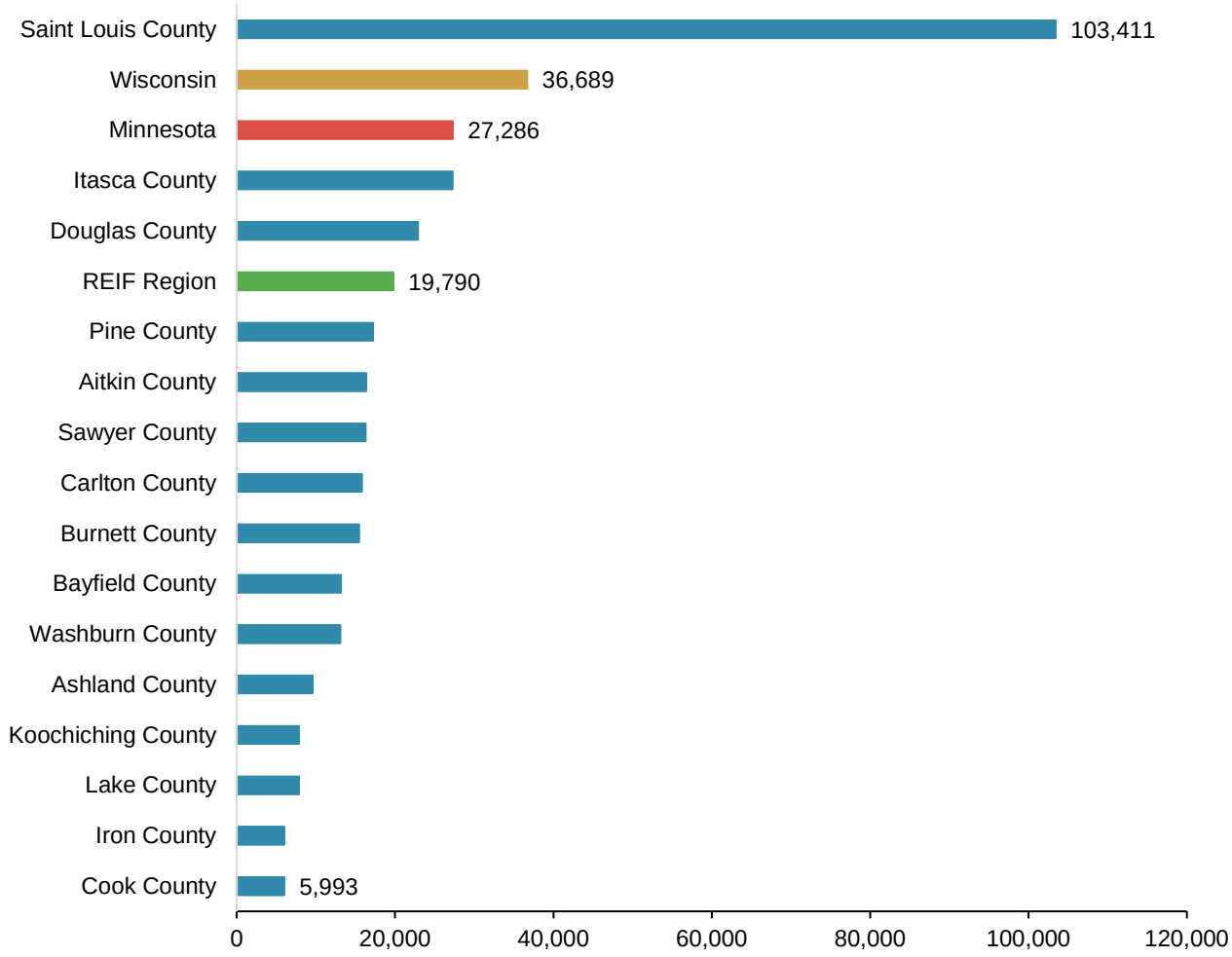
Description
According to the U.S. Census QuickFacts, a housing unit is identified as a separate living quarters, such as a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied. (It can be vacant as long as it is intended for occupancy.) A housing unit is considered owner-occupied if the owner or co-owner lives within the unit, even if the unit has been mortgaged or has not been paid off fully.

Why is It Important?
The number of housing units throughout a region can be an indication of the general strength of the economy. Occupied housing units show the commitment of the people to the region, as people establish residence and contribute to the local community and economy. Additional filled housing units typically equate to more contributors to the economy through the labor, production, and spending that those contributors provide. This number can fluctuate as renters and other transient population groups tend to move more frequently.

How is Our Region Doing?
Figure 15 shows the number of housing units in each of the region's counties as compared to the average of the REIF counties. St. Louis County in Minnesota had the largest number of housing units in the region by a large margin. Despite the relatively large number of units in St. Louis County, the REIF region as a whole still had fewer housing units, on average, than the average Minnesota or Wisconsin county.

The REIF region exhibits a unique situation with regard to the number of housing units and population in that some counties had more housing units than people. In 2015, Cook and Aitkin counties (Minnesota) and Iron and Burnett counties (Wisconsin) each had more housing units than people in each county's population. This was likely because of the prevalence of second homes and vacation properties in those counties; tourism plays a significant role throughout the region, particularly in those selected counties. For Aitkin, Iron, and Burnett counties, the difference was small (less than 5%). In Cook County, however, there were about 15% more houses than there were residents (5,993 homes and 5,194 residents) in 2015.

Figure 15: Total Housing Units (2015)



Source: American Community Survey (ACS), 2011-2015, 5-Year Estimates

One-Year Building Permit Growth Rate

Region Experiences Growth in Issuance of Building Permits from 2014 to 2015

Description

According to the U.S. Census QuickFacts, building permits are defined as the number of new privately owned homes with permits provided by the appropriate authorization organization; they are also referred to as a housing start, which indicates the construction of a housing unit. The housing unit is considered owner-occupied if the owner or co-owner lives within the unit, even if the unit is mortgaged or not paid for fully.

Why is It Important?

New housing starts represent approximately 4% of the annual gross domestic product (GDP) of the United States. An increase in new housing is a key indicator that the economy is strengthening. During the recent recession for example, the annual number of building permits issued nationally in 2009 was down just over 58% from that of 2007. Furthermore, from 2005 to 2007, before the onset of the recession, this same measurement, the annual number of building permits issued, had already begun to decline quite rapidly – evidence of this figure's value as a leading indicator of the economic situation to come.

How is Our Region Doing?

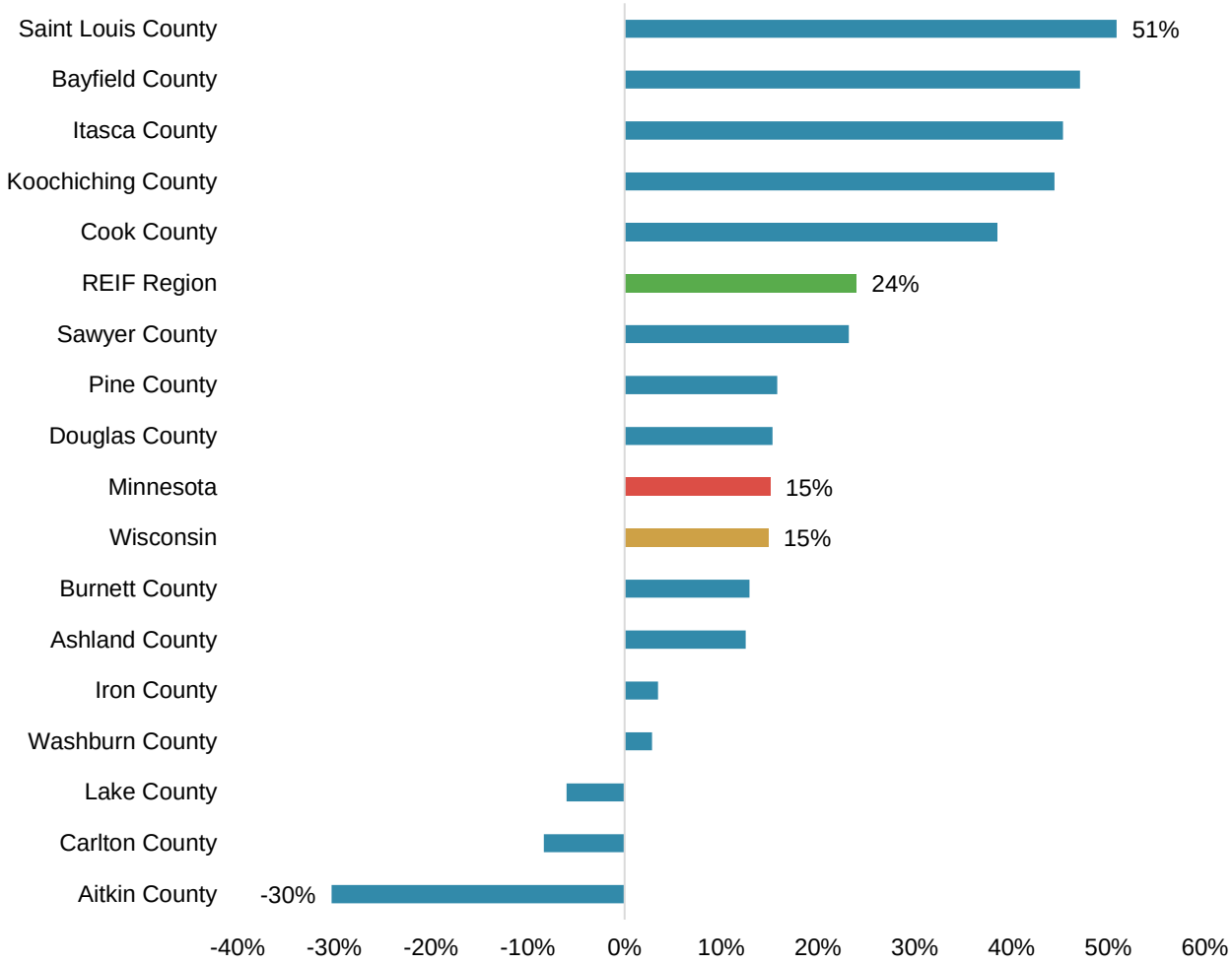
Figure 16 shows the percentage change in the issuance of building permits by county over the period of 2014 to 2015. The average growth rate for the REIF region over that period was 24%, meaning that the number of building permits issued overall increased from 2014 (1,348 permits) to 2015 (1,671 permits). That increase was greater than the increase seen for the state of Minnesota (15%) or the state of Wisconsin (15%). By percentage, the REIF region outperformed both states in terms of new housing starts, a positive sign for the economy in general.

It is relevant to compare Figure 15, showing the total number of housing units for each county, to Figure 16, the percentage change in building permits (2014-2015) by county. This highlights which counties within the REIF region added new housing units, and it provides some context in terms of what already existed in the counties' concurrent housing stock.

St. Louis County realized the greatest percentage increase in building permits issued from 2014 to 2015, increasing by more than 50%. This increase was also nominally significant, adding 273 new housing starts over the previous year, the largest year-over-year increase in the REIF region. By percentage, Aitkin County saw a significant decline in the number of new permits issued. While Aitkin County saw the largest growth in building permits in 2013-2014, with an increase of over 100%, this year seemed to be a growth correction for the county.

Overall, the continued growth in the number of issued permits throughout the region is a positive indication of a strengthening economy. This indicator is most useful when evaluated in combination with other trends, such as the number of housing units as seen in Figure 15.

Figure 16: Percentage Change in Building Permits (2014 to 2015)



Source: U.S. Census 2015 Housing Estimates

Homeownership Rate

Homeownership Rate Higher than that of States and U.S.

Description

According to the U.S. Census QuickFacts, the homeownership rate is calculated by dividing the number of owner-occupied units by the number of housing units occupied by people within that region. A housing unit is identified as a separate living quarters, such as a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied. (It can be vacant as long as it is intended for occupancy.) A housing unit is considered owner-occupied if the owner or co-owner lives within the unit, even if the unit has been mortgaged or has not been paid for fully.

Why is It Important?

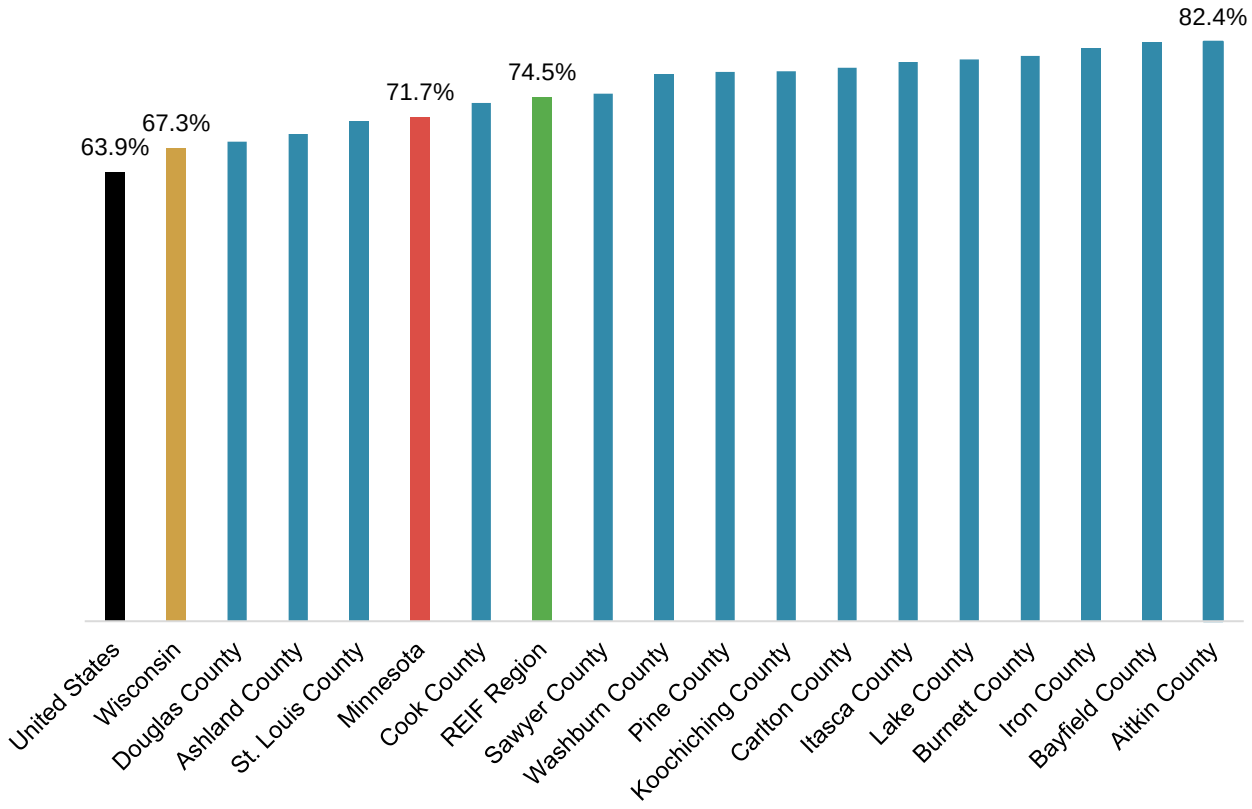
Owner occupied housing shows a commitment to the community by its residents. Those living in their purchased homes typically contribute to the community's economy, intend to remain in residency for a longer-term, and have a vested interest in the region. Thus, a higher homeownership rate is typically a good sign for the economy in a broader sense. Conversely, a very high homeownership rate can also be a hindrance to economic growth by leading to lower levels of labor mobility and less availability for new entrants to the labor market, plus it can indicate a weak rental market.

How is Our Region Doing?

Figure 17 shows the homeownership rate by county[3] as well as the average rate for the combined REIF region, Minnesota, Wisconsin, and the United States. As seen in the figure, the homeownership rate for the REIF region as a whole was higher than the states of Minnesota and Wisconsin, and the United States. In 2015, the region had an average homeownership rate of about 74.5% across the 15 counties, while Minnesota's average rate was 71.7%, and Wisconsin's was 67.3%. The average for the United States was just 63.9%. The generally high level of homeownership in the REIF region is likely related to the older, more stable population present as discussed previously, a lack of rental options due to the rural nature of much of the region, and the relatively low cost of homes. The counties with the highest rates of homeownership included Aitkin in Minnesota and Bayfield, Iron, and Burnett in Wisconsin. The counties with the lowest rates of homeownership included Douglas and Ashland in Wisconsin and St. Louis and Cook in Minnesota.

[3] 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 17: Homeownership Rate (2011 to 2015)



Source: American Community Survey (ACS), 2011-2015, 5-Year Estimates

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 lot 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.[4]

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?

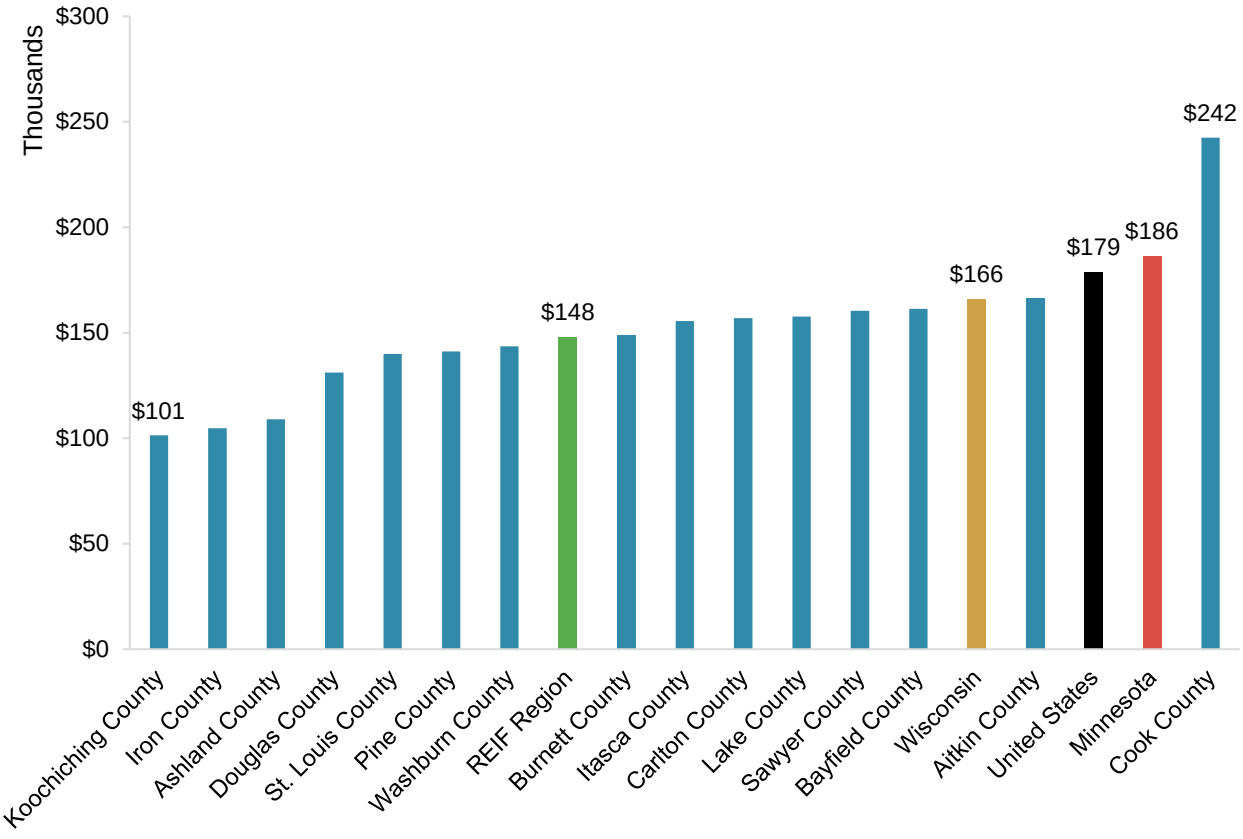
Figure 18 shows the median home value by county,[5] as well as the median value for the state of Minnesota, the state of Wisconsin, the United States, and the average for the REIF region. The median value of owner-occupied housing throughout the REIF region was lower than the median for Wisconsin, Minnesota, and the United States, at an average of $148,027. Although this was much lower than Minnesota ($186,200) and Wisconsin ($165,800), it was still higher compared to some other Midwest states, including Michigan ($137,500), Iowa ($136,100), Indiana ($131,000), and Ohio ($136,400). Generally, the Midwest has not been known historically for having the highest property values. However, the fact that the REIF region remained above these other states is a positive indication that there was demand in and value placed on the region.

As can be seen in the figure, Cook County in Minnesota had the highest median home value in the region by a considerable margin. Counties with the lowest median home values included Koochiching County in Minnesota and Iron and Ashland Counties in Wisconsin, all hovering just above the $100,000 mark.

[4] 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.

[5] 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 18: Median Home Value (2011 to 2015)



Source: American Community Survey (ACS), 2011-2015, 5-Year Estimates

Median Household Income

Median Household Income within 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?

Median 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. Median 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?

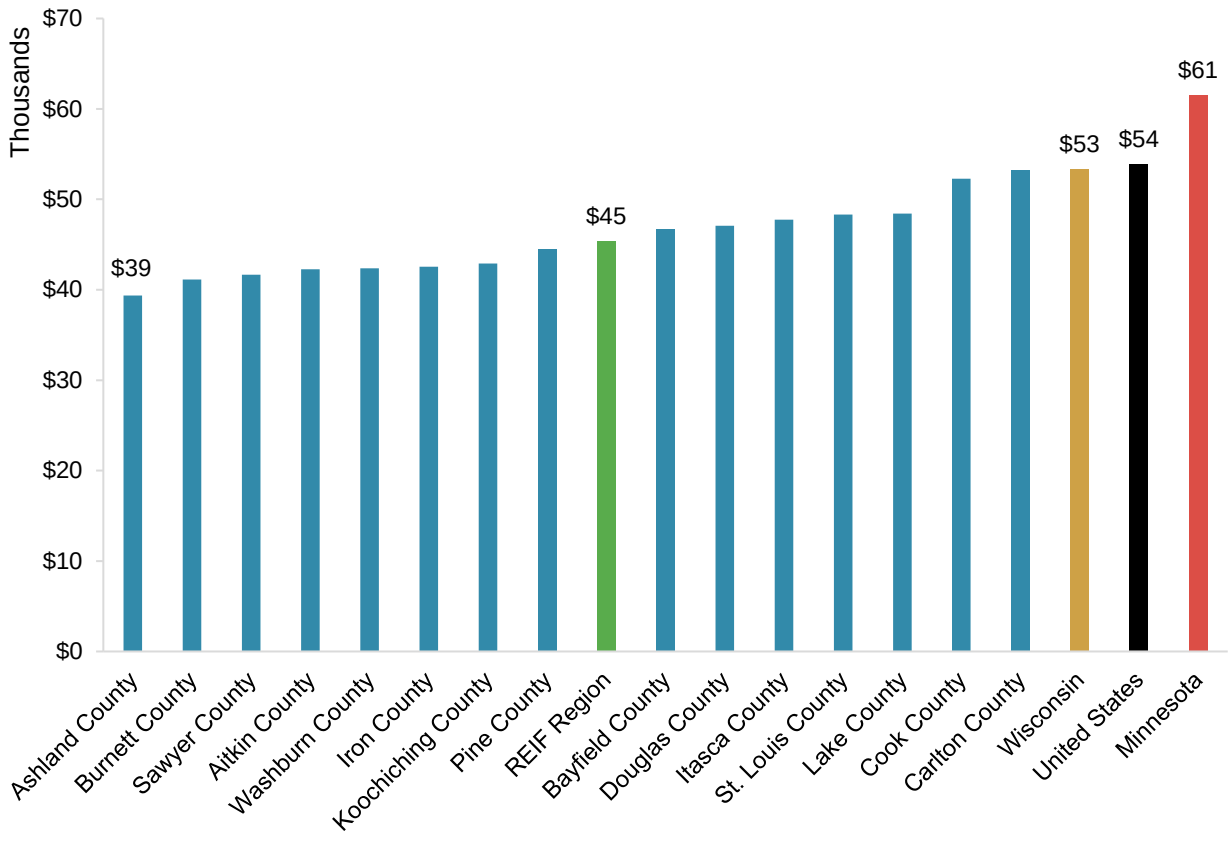
Figure 19 shows the median household income[6] by county as well as the median for Minnesota, Wisconsin, the United States, and the average for the REIF region. All of the dollar amounts given were calculated as 2015 dollars. The REIF region's median household income was $45,374, which was much lower than Minnesota's and somewhat lower than Wisconsin's and that of the United States. The state of Minnesota's median household income was one of the highest in the nation at over $61,000 – higher than any of the REIF counties' (the highest was Carlton County in Minnesota at $53,357). Other counties with the highest median household incomes included Cook, Lake, St. Louis, and Itasca (all in Minnesota), while the counties with the lowest median household incomes included Ashland, Burnett, and Sawyer (Wisconsin). Five of the lowest six median incomes were found in Wisconsin counties.

Regardless of how much higher Minnesota's median household income was compared to most of the rest of the U.S., the REIF region was still relatively low compared to the United States and other Midwest states. One reason for the discrepancy might have been demographics. The REIF region had an older population than elsewhere in Minnesota and Wisconsin. A higher percentage of people beyond their primary earning years could produce the lower median income seen in the region. This should also be considered in terms of the average living expenses, median home values, and other situational factors that can impact the real value of a household's income beyond just the number given. For example, with the lower median home value discussed

[6] 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.

previously, the lower median household income seen in the region was proportionately smaller, as would be expected.

Figure 19: Median Household Income (2015)



Source: American Community Survey (ACS), 2011-2015, 5-Year Estimates

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?

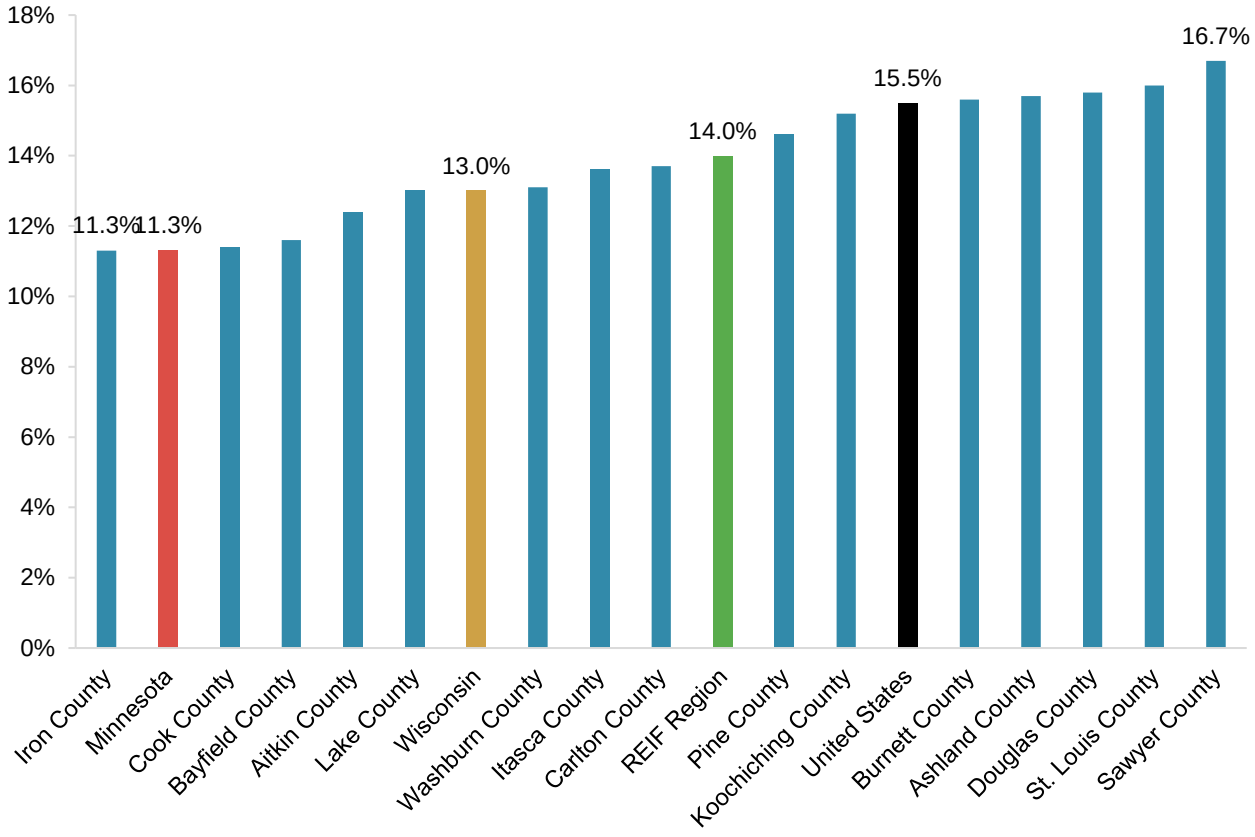
The poverty rate is important in determining the social and economic well-being of a region. High levels of poverty negatively impact the quality of life for a county's residents and can be a burden on the region's economy. High poverty levels have been correlated with high unemployment levels and low 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 productive assistance programs.

How is Our Region Doing?

Figure 20 shows the percentage of people living in poverty[7] (the poverty rate) in each of the 15 counties, as well as the averages for the REIF region, Minnesota, Wisconsin, and the United States. In this chart, lower values, those further to the left, are better than higher values. Compared to the national average of 15.5%, the REIF region was found to have a slightly lower rate, at 14.0%. However, the REIF region's poverty rate was slightly higher than the rate for the state of Wisconsin (13.0%) and significantly higher than that of Minnesota (11.3%). Iron County in Wisconsin was the only county within the region to have a lower poverty rate than either Minnesota or Wisconsin. The majority were higher, with Sawyer, St. Louis, and Douglas above the national average. The poverty rate for Sawyer County in Wisconsin was almost 17%, suggesting that nearly 1 in 5 people in this county lives in poverty.

[7] 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 20: Percentage of Persons in Poverty (2015)



Source: American Community Survey (ACS), 2011-2015, 5-Year Estimates

Transportation Employment Growth

REIF Transportation Jobs Grew More Slowly than Whole of Minnesota and Wisconsin Since 2001

Description

Transportation employment growth shows how much the Transportation and Warehousing super-sector has grown in terms of jobs since a base year. The growth rate is calculated by dividing the number of people employed in a given year by the employment in the base year, which in this case is 2001.

Why is It Important?

The Transportation and Warehousing industry is an important piece of the overall economy as it accounts for a large portion of the nation's GDP (10% in 2002[8]) and allows for industries to transport goods and services. No other industry can function without transportation. This industry can also serve as an important signal of what to expect in the coming economic cycle, and the Transportation Services Index is commonly used as a leading indicator for economic performance. According to the Bureau of Transportation Statistics, growth in the transportation index is typically followed by growth in the rest of the economy, while negative transportation trends can signal economic downturn.[9]

How is Our Region Doing?

Figure 21 shows how Transportation and Warehousing employment has grown from 2001 to 2015 in the REIF region and the whole of Minnesota and Wisconsin based on data provided by EMSI. From 2001 to 2015 the REIF region underperformed the average of the two states. As can be seen during the Great Recession, Transportation and Warehousing jobs in both regions took a sharp decline. In 2010, both regions hit their bottom for Transportation and Warehousing employment (-14% for the REIF region and -5% for the state's) but have since seen job resurgence. In 2013, the Wisconsin and Minnesota region exceeded its 2001 employment level, while the REIF region narrowed the gap to nearly 4.5% less than its 2001 levels. If the REIF region can continue this trend of Transportation and Warehousing employment growth, it will soon have more jobs than it had in 2001.

Figure 22 shows the growth of the Transportation and Warehousing subsectors over the 2010-2015 period. The subsector of Transportation and Warehousing that grew the most in the REIF region in terms of jobs since 2010 was Rail Transportation with 269 jobs. This subsector job

[8] http://www.rita.dot.gov/bts/programs/freight_transportation/html/transportation.html
[9] http://www.rita.dot.gov/bts/press_releases/bts055_14

growth was primarily responsible for the employment resurgence seen in Figure 21 starting in 2010. Meanwhile, the Truck Transportation subsector saw the most job dissipation.

While it might seem logical to think that Truck Transportation jobs were being substituted by Rail Transportation jobs during 2010-2015, this is likely not the case. The Truck Transportation subsector is further broken into additional subsectors. Most of the Truck Transportation jobs that were lost during this time period were in the General Freight Trucking industry as opposed to Long-Distance Trucking. General Freight Trucking consists of local shipments, such as bulk mail transportation or the transportation of furniture. This shipping is usually done in one day, in urban areas, and usually does not cross state lines. Therefore, the growth in the rail sector is likely unrelated to the losses in trucking.

Figure 21: Transportation and Warehousing Percentage Change of Employment (2001-2015)

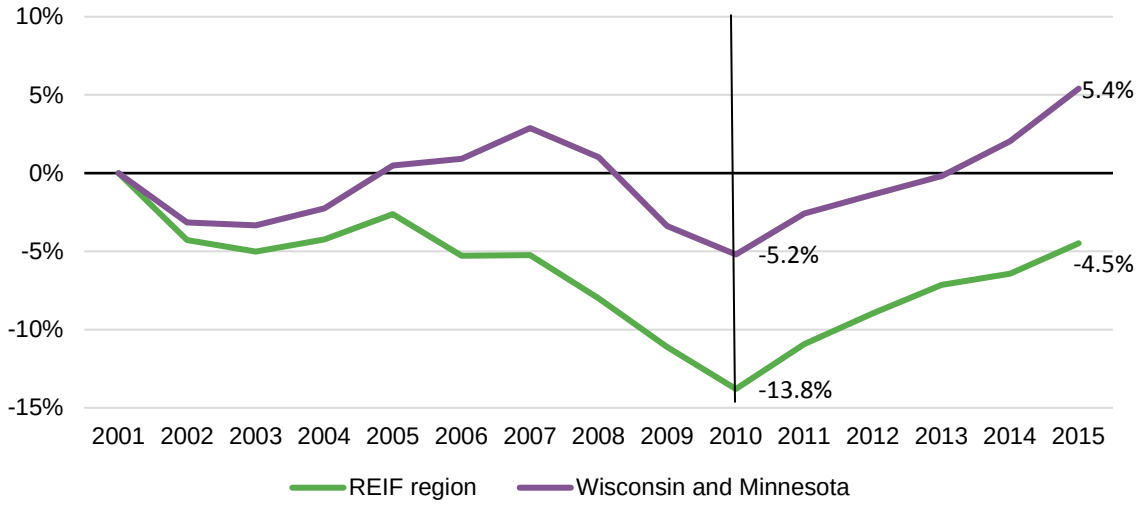
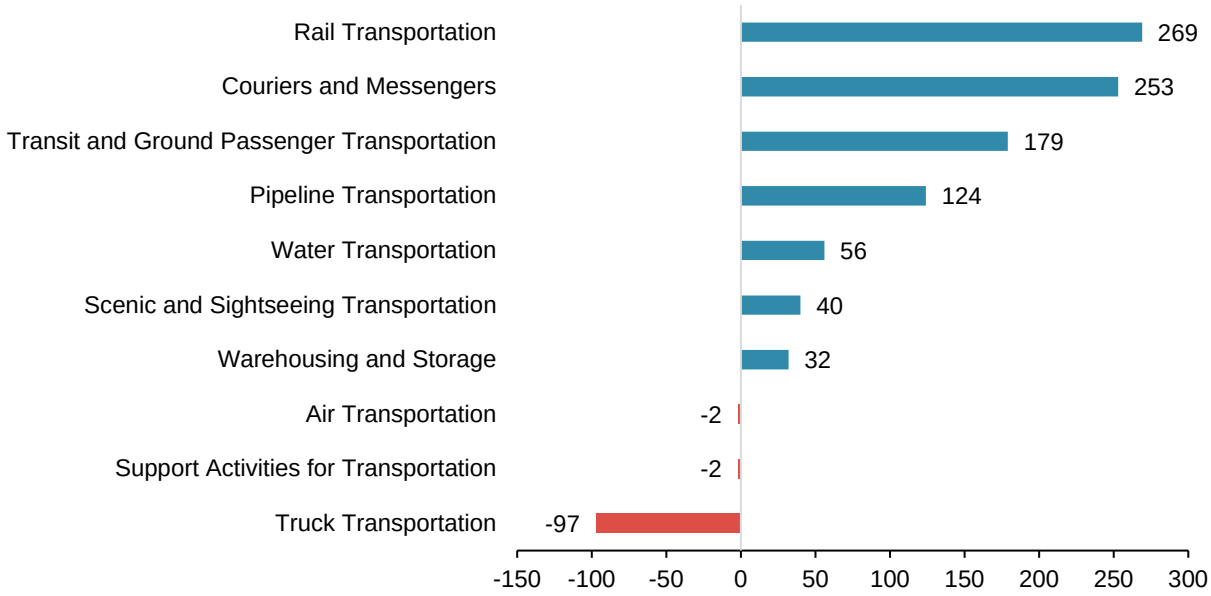


Figure 22: Job Growth of Transportation Subsectors



Source: Economic Modeling Specialists International (EMSI), 2016

Means of Transportation

REIF Transportation Jobs Grew Slower than Whole of Minnesota and Wisconsin Since 2001

Description

The means used for transportation to a person's job refers to the principal mode of travel or type of conveyance that the worker usually used to get from home to work during the reference week, according to the U.S. Census Bureau. People who used multiple modes of transportation in the same day to get to work were asked to report which mode took the longest. If they used varied transportation during the week (i.e. train on Monday and car on Tuesday), they were asked which mode they most frequently used.

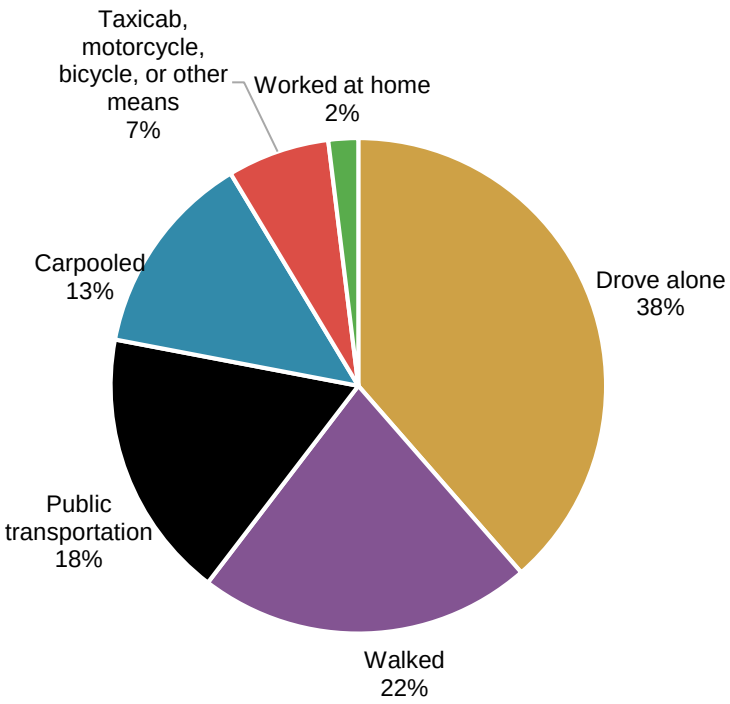
Why is It Important?

A major difficulty for people either entering or remaining in the workforce is not having a reliable source of transportation to get to and from a jobsite. In the combined REIF region, nearly 6,000 workers don't have access to a vehicle for work purposes. As Figure 7 on page 19 showed, the labor force in the region has been trending downward since 2011. A lack of reliable transportation is a common barrier preventing many individuals from entering the labor force. Increasing opportunities for people to commute to work is one way that the REIF region could perhaps increase its labor force participation.

How is Our Region Doing?

Figure 23 shows the most common means of transportation for REIF region workers without an available vehicle during the 2011-2015 period. Surprisingly, almost 40% of workers were commuting by driving themselves in a vehicle they do not own, which could be that they drove a family member's, friend's, or roommate's vehicle. Additionally, more people in the REIF region without personal vehicles walked to work (22%) compared to those taking public transportation (18%). The low public transportation figure is primarily due to the lack of public transportation in the rural areas of the REIF region.

Figure 23: Means of Transportation for Workers without Vehicles



Source: American Community Survey (ACS), 2011-2015, 5-Year Estimates

Consumer Confidence Indicators: Predicting the Business Cycle

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

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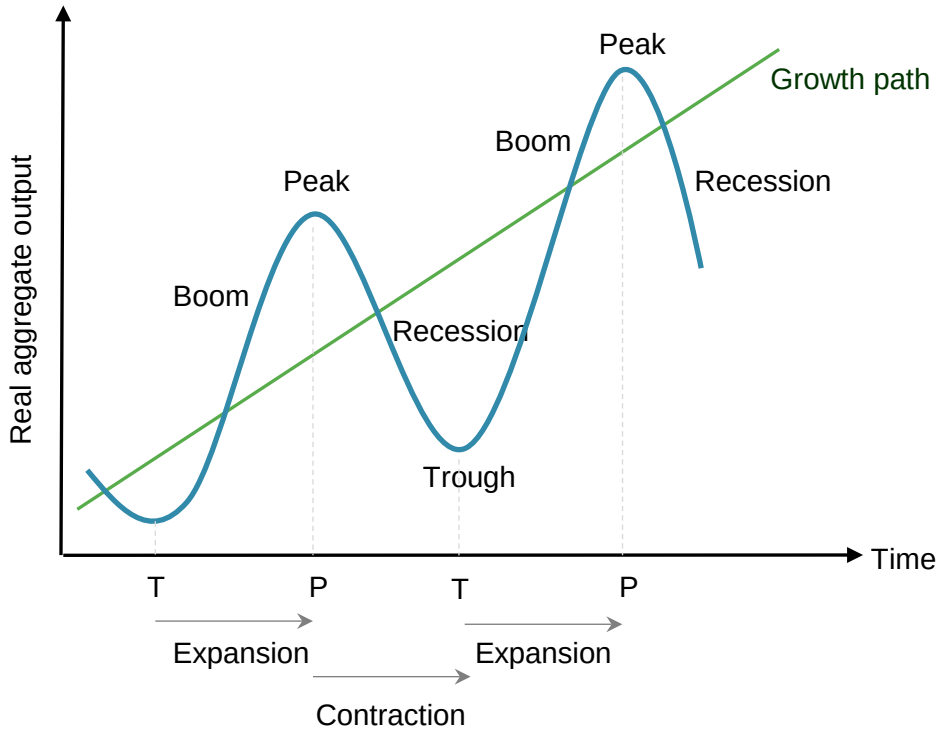
UW-S student researchers: Mitchell Blomberg, Leah Boedigheimer, Prashant Burlakoti, Undralsaikhan Dambii, Abdisa Dawano, Obiageli Ekwunwa, Caleb Hjelle, Brian Honness, Naho Miyachi, Mirriam Salia Mlusu, Adaeze Ndu, Augustine Ngo Bitjong, Nneoma Nwobilor, Arne Nyeck, Alex Quinones, Regina Rex, Marquise Slay, Avani Vora, Armel Gilles Fetue Wafo, 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 24, 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. To forecast the business cycle, economists use coincident, leading, and lagging economic indicators.

Figure 24: Business Cycle



Source: Authors' Illustration

How the economy is doing today is traditionally described by a single aggregate economic indicator known as *Real Gross Domestic Product* (GDP). Real GDP measures how many goods and services the economy actually produces and can afford in a given year, if prices stayed constant.

Since real GDP describes the current state of the economy, it is known as a *coincident economic indicator*. Other typical coincident economic indicators include: nonagricultural employment, industrial production, and consumption. Significant continuous increases in coincident economic indicators signal an economic expansion. For businesses, this means a growing economy, rising revenues, and economic prosperity. Lagging economic indicators follow the coincident economic indicators. Unfortunately, coincident economic indicators take time to collect. 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: 8 Minnesota and 7 Wisconsin counties (Koochiching, Itasca, St. Louis, Lake, Cook, Aitkin, Carlton, Pine, Douglas, Bayfield, Ashland, Iron, Burnett, Washburn, and Sawyer). 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). The 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 email. Phone-based surveys were conducted using a random representative sample of households residing in each county. Email 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, therefore, 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 1 below.

Table 1: 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%	-
Spr. 2014	216	8.24%	6.66%	-
Fall 2014	91	21.16%	10.27%	92
Spr. 2015	187	19.44%	7%	104
Fall 2015	107	16.41%	9.35%	117
Spr. 2016	104	16.83%	8.77%	113
Fall 2016	98	15.83%	9.09%	78

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 Tables 2 and 3 respectively. National consumer confidence indicators developed by the University of Michigan are presented in Table 4. During spring 2016, phone surveys show that except for the current economic condition, the general public had positive sentiments and displayed optimism about future economic outlook. However, during fall 2016, all three indices for general public had a negative trend. In the email survey, all three indices declined in spring 2016 before showing positive trends in fall 2016. Interestingly, this was the first time, since data collection started in spring 2014 for REIF participants, that any of these indices had not displayed a downward trend for non-random email sample and instead showed a rise.

Over the year, fall 2015 to fall 2016, the general public became cautious about current economic conditions and displayed declining sentiments. However, during that same time period they became slightly optimistic in their future economic outlook. On the other hand, in fall 2016, local government, business people, and academics became positive about current economic conditions but were pessimistic in their future economic outlook as compared to fall 2015. These mixed trends are due to the diverse demographic, economic, and educational backgrounds of randomly surveyed households and previous REIF participants. Further, some uncertainty generated from the fact that 2016 was a presidential election year. Given this, when interpreting these consumer confidence indicators findings, businesses should pay attention to attributes of the customers they serve.

Table 2: 15-County Regional Consumer Confidence Indicators (Phone Survey)

Time	ICS	ICS Percentage Change	ICC	ICC Percentage Change	ICE	ICE Percentage Change
Fall 2013	100.00		100.00		100.00	
Spr. 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%
Spr. 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%
Spr. 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%

Source: University of Wisconsin-Superior

Table 3: 15-County Regional Consumer Confidence Indicators (Email Survey)

Time	ICS	ICS Percentage Change	ICC	ICC Percentage Change	ICE	ICE Percentage Change
Fall 2014	100.00		100.00		100.00	
Spr. 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%
Spr. 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%

Source: University of Wisconsin-Superior

Table 4: National Consumer Confidence Indicators

Time	ICS	ICS Percentage Change	ICC	ICC Percentage Change	ICE	ICE Percentage Change
Dec 2015	92.6	1.42	108.1	3.64	82.7	-0.24
Jan 2016	92	-0.65	106.4	-1.57	82.7	0.00
Feb 2016	91.7	-0.33	106.8	0.38	81.9	-0.97
Mar 2016	91	-0.76	105.6	-1.12	81.5	-0.49
Apr 2016	89	-2.20	106.7	1.04	77.6	-4.79
May 2016	94.7	6.40	109.9	3.00	84.9	9.41
June 2016	93.5	-1.27	110.8	0.82	82.4	-2.94
July 2016	90	-3.74	109	-1.62	77.8	-5.58
Aug 2016	89.8	-0.22	107	-1.83	78.7	1.16
Sep 2016	91.2	1.56	104.2	-2.62	82.7	5.08
Oct 2016	87.2	-4.39	103.2	-0.96	76.8	-7.13
Nov 2015	91.6	5.05	105.9	2.62	82.5	7.42

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 REIF area consumers generally feel that the economy has been growing weaker. This is also reflected in the email-based regional indices. These findings suggest that during 2016 there was a growing pessimism about the current and future economic conditions. The national survey did show a few months where there was a positive trend, but overall, the indices were trending downward.

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

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University of Wisconsin-Superior Student Researchers: Mitchell Bloomberg, Graham Dahl, Paige Ford, Aaron McIntire, Maryam Salihu, and Isaac Staat.

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 is the fourth 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; and the fourth report extends the study through October 1, 2015. This fifth report covers the study period through October 3, 2016. 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 REIF region. 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.

ReferenceUSA, a business database, was utilized to identify companies that met the initial criteria. However, only two companies met that criteria. Therefore, to construct a relevant index, additional stocks needed to be included. To increase the size of the index, the criteria was relaxed to include firms that 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	Ikonics
Ascena Retail Group	Louisiana-Pacific
Calumet	Polymet
Canadian National Railway	Sappi Limited
Cliffs Natural Resources	UnitedHealth Group
Enbridge Energy Partners	US Steel

A brief profile of each of the companies and a graph illustrating their equity performance over the study period is provided in the Appendix. Of the twelve firms that make up the index, eight of the stocks trade on the NYSE, three trade on NASDAQ, and one trades OTCPK. UnitedHealth Group and Canadian National Railway are considered large-cap firms, Polymet is a small-cap firm, Ikonics is a micro-cap firm, and the remaining eight stocks in the index are mid-cap firms.

The REI is an equally weighted equity index that 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 3, 2016. 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 2016 is the S&P MidCap 400® Equal Weight Index.

Stock Performance

Table 5 shows the annual returns for each component of the REI over the study period ending October 3, 2016, 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 2010 and recently, 2016. Between 2011 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 Cliffs Natural Resources and US Steel in year 2016 caused REI to exceed the benchmark S&P MidCap 400® Equal Weight Index.

Table 5. Annual Returns for REI Components and Benchmark Index, ending 11/3/2016

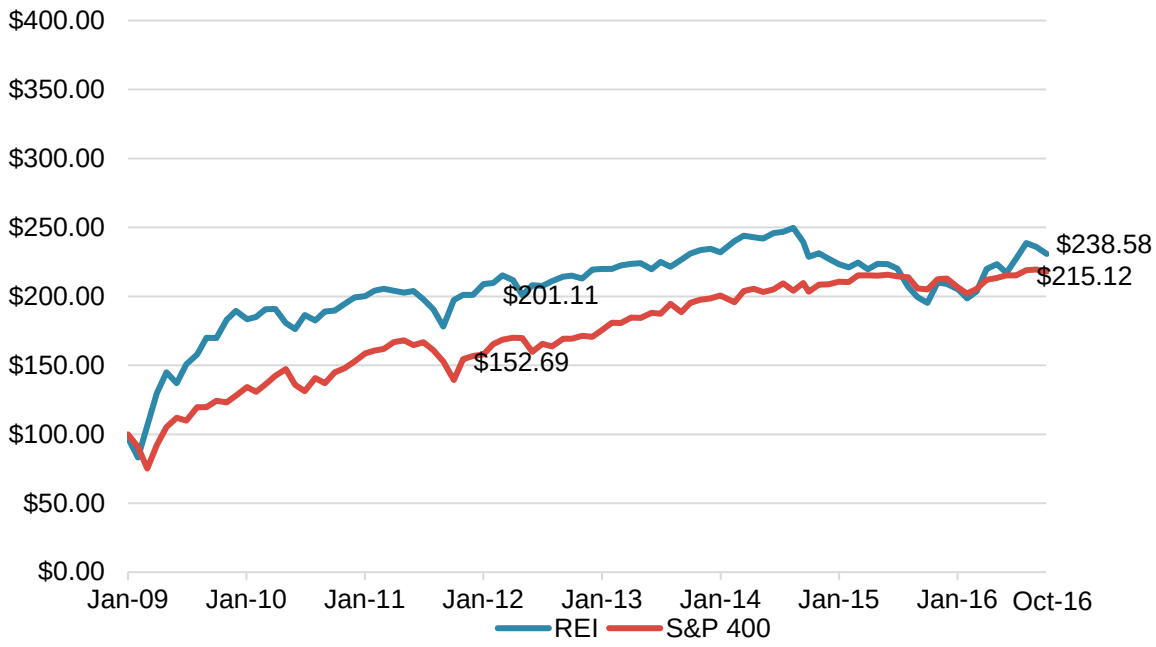
REI	2010	2011	2012	2013	2014	2015	2016
Allete	14.62%	8.76%	2.60%	16.58%	12.76%	-10.29%	19.11%
Ascena Retail Group	12.82%	13.21%	-41.11%	24.80%	-44.74%	-13.71%	-46.53%
Calumet	15.49%	-6.03%	58.53%	-14.46%	-13.68%	-15.80%	-77.95%
Canadian National Railway	22.72%	17.30%	16.90%	22.29%	20.88%	-19.56%	20.21%
Cliffs Natural Resources	69.78%	-20.00%	0.89%	-33.44%	-72.78%	-76.24%	250.90%
Enbridge Energy Partners	16.20%	4.19%	-12.47%	1.56%	38.07%	-41.48%	6.11%
Ikonics	18.89%	1.07%	9.64%	83.13%	-1.38%	-26.57%	2.38%
Louisiana-Pacific	33.93%	-15.49%	139.08%	-7.36%	-9.37%	8.10%	6.82%
Polymet	-28.31%	-52.79%	-15.45%	0.00%	15.05%	-26.17%	-1.27%
Sappi Limited	7.01%	-43.74%	27.40%	-20.16%	11.78%	22.89%	25.49%
UnitedHealth Group	17.76%	38.67%	0.89%	36.73%	42.47%	15.56%	18.92%
US Steel	4.01%	-53.23%	-8.09%	17%	-12.19%	-69.39%	129.98%
Median	15.84%	-2.48%	1.75%	9.07%	5.20%	-17.68%	12.87%
Average	17.08%	-8.97%	14.90%	10.55%	-1.09%	-21.06%	29.51%
Benchmark	33.88%	24.62%	-3.48%	17.84%	26.94%	8.96%	-4.97%

Figure 26 illustrates the growth of $100 invested in the REI on January 2, 2009 and held until October 3, 2016. 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. 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 $230.85, up from $195.28 from a year ago at the beginning of October 2015. On the other hand, the ending value of the S&P 400 is $218.06, which is also up from $205.04 at the beginning of October 2015.

The REI trends somewhat with the market but has significantly outperformed relative to the S&P 400 during the fifth study period; while both the REI and S&P 400 were up during the period, the REI is up 18.22% from the last report. This is more than thrice as much as the gain experienced by the S&P 400, which is up by 6.35%.

Looking at the components of the REI individually, only two of the twelve stocks in the composite index have underperformed the benchmark this year to date. Polymet, Ascena Retail Group, and Calumet have returns ranging from -1.27% to -77.95%, while the other components have returns ranging from 2.39% to 250.49%. As mentioned before, US Steel with 129.98% and Cliffs Natural Resources with 250.90% are the highest performing stocks in the REI composite index.

Figure 25: Growth of $100 Invested in the REI and the S&P Index



Another way to evaluate the performance of the REI and its components in year 2016 is to compare year-to-date (YTD) returns of the components to their respective average annual returns. Table 6 shows the year-to-date return for each REI component, the average annual return for each REI component, and the difference between the year-to-date return and average annual return for each REI component. Seven of the twelve components of the REI have underperformed this year relative their average annual returns. Most notable among them are Calumet, Louisiana-Pacific, and Ascena Retail Group, whose differences between YTD and average annual returns range from -49.50% to -85.03%. Out of five remaining components of the REI, Sappi Limited, US Steel, and Cliffs Natural Resources outperformed the most, between 19.55% and 228.02% relative to their average yearly return.

Table 6: Year-to-date (YTD) and Average Annual Return for each REI Component, ending 10/3/2016

REI	Returns		
	YTD	Average Yearly	Difference (YTD - Average Yearly)
Allete	19.11%	8.22%	10.89%
Ascena Retail Group	-46.53%	2.97%	-49.50%
Calumet	-77.95%	7.08%	-85.03%
Canadian National Railway	20.21%	17.87%	2.34%
Cliffs Natural Resources	250.90%	22.88%	228.02%
Enbridge Energy Partners	6.11%	13.58%	-7.47%
Ikonics	2.38%	12.11%	-9.73%
Louisiana-Pacific	6.82%	62.79%	-55.97%
Polymet	-1.27%	25.31%	-26.57%
Sappi Limited	25.49%	5.94%	19.55%
UnitedHealth Group	18.92%	23.16%	-4.24%
US Steel	129.98%	6.83%	123.15%

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 7, the average Timeliness/Performance Rank for the REI is at 3.3. This suggests that on average the price performance of the REI should mirror the market over the next year.

Only Cliffs Natural Resources has a rank of 2, indicating it is expected to outperform the market. Compared to last year, this is a significant improvement for Cliffs Natural Resources, going from a rank of 5 to a rank of 2. On the other hand, Canadian National Railway declined from a rank of 2 to a rank of 5, and United Health also declined from a rank of 2 to a rank of 4. Ikonics' rank slightly improved from a rank of 5 to a rank of 4. Stocks of all these three companies are expected to underperform the market next year.

Ascena Retail Group and Enbridge Energy Partners both showed improvement from the previous study period, going from a rank of 4 and 5 respectively to a rank of 3. Although Allete, Calumet, and Louisiana-Pacific have a rank of 3, which remain unchanged compared to the last study period, Polymet's rank dropped from 2 to 3 during the same timeframe. With a rank of 3, stocks of all these companies are expected to perform as well as the market.

Value Line® did not provide any measures for Sappi Limited.

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 7, the Safety Rank for the REI is 3.4, 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. Ascena Retail Group and Enbridge Energy Partners have a rank of 3, indicating average risk potential. Ikonics and Louisiana-Pacific have a rank of 4, which indicates a below average level of safety. Cliffs Natural Resources, Calumet, and US Steel have a rank of 5, which indicates low average level of safety for the stocks of these three companies. Although Enbridge Energy Partners' safety rank has slightly improved compared to last study period, Calumet and US Steel 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 2.5, which indicates that the index is expected to slightly outperform the market over the next three to six months. Allete and Calumet have a rank

of 1; whereas, Ascena Retail Group and Canadian National Railway have a rank of 2. Hence, all these four companies are expected to outperform the market over the short-term period. Cliffs Natural Resources, Enbridge Energy Partners, Louisiana-Pacific, Polymet, UnitedHealth Group, and US Steel have a rank of 3; this indicates they are expected to do as well as the market over the short term. For Cliffs Natural Resources, the current ranking is an improvement from a rank of 5 from the last study period.

Based on the Timeliness Rank and Technical Rank, Allete, Ascena Retail Group, Calumet, and Canadian National Railway are all expected to outperform the market in the short term but expected to underperform the rest of the year. On the other hand, Cliffs Natural Resources is expected to outperform the market in the long term compared to the short term. Ikonics and UnitedHealth Group are expected to have average performances over the short term, with declines in performance the rest of the year. Enbridge Energy Partners, Louisina-Pacific, Polymet and US Steel 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 35.5, which is lower than the average in the previous report. Ascena Retail Group, Calumet, Enbridge Energy Partners, and US Steel saw declines in stability rank. UnitedHealth Group saw increases in stability rank. The other companies in the REI remained unchanged from the previous report.

Cliffs Natural Resources, Calumet, US Steel, Polymet, and Louisiana-Pacific 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 twelve 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 5 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 40.5, indicating it is below average in terms of consistent price growth. Canadian National Railway, UnitedHealth Group, Louisiana-Pacific, and Ikonics showed above average persistence in price growth, with measures ranging from 50 to 100. Allete, Ascena Retail Group, Calumet, Cliffs Natural Energy Resources, Enbridge Energy

Partners, Polymet, and US Steel all showed below average persistence in price growth, with measures ranging from 5 to 45. Compared to the previous report, three companies, UnitedHealth Group, Louisiana-Pacific, and Allete reveal their price growth persistence measure increased, while six of the companies saw the price growth persistence measure decrease. For Calumet and Polymet, there is no change in price growth persistence measure. As mentioned before, there is no reporting of price growth persistence and other measures for Sappi Limited under the Value Line® measures.

Table 7: Value Line Measures

REI	Timeliness/ Performance	Safety	Technical	Price Stability	Price Growth Persistence
Allete	3	2	1	95	40
Ascena Retail Group	3	3	2	20	40
Calumet	3	5	1	5	25
Canadian National Railway	5	2	2	90	95
Cliffs Natural Resources	2	5	3	5	15
Enbridge Energy Partners	3	3	3	40	35
Ikonics	4	4	3	15	50
Louisiana-Pacific	3	4	3	20	50
Polymet	3	*	3	10	5
Sappi Limited	*	*	*	*	*
UnitedHealth Group	4	1	3	85	85
US Steel	3	5	3	5	5
AVERAGE	3.3	3.4	2.5	35.5	40.5
MEDIAN	3	3.5	3	20	40

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.

They are typically compared to the industry average. A higher price ratio is generally considered better. A higher ratio typically means that investors expect future performance will be better.

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, Ascena Retail Group, Canadian National Railway, Cliffs Natural Resources, Ikonics, Louisiana Pacific, and UnitedHealth Group compare favorably to their industry averages. Sappi Limited has a P/E ratio significantly lower than the industry average, 11.3 and 19.9 respectively.

Both Ikonics, with a P/E ratio of 157.6, and Ascena Retail Group, with a P/E ratio of 67, have ratios 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 41.21, which is above the average market P/E ratio of 19.39. When Ikonics is dropped, the REI average P/E ratio drops to 26.67 which is still well above the average market P/E ratio. The median P/E ratio for the REI, including all companies for which data was available, is 24 and relatively above the average market P/E ratio.

Table 8: Price Ratio Measures

REI	Price-to-Earnings		Forward Price/Earnings	PEG Ratio	PEG Payback	Short Ratio	Shares Short % Change
	Firm	Industry					
Allete (ALE)	24	19.9	17.4	2.9	11.2	4.8	6.07%
Ascena Retail Group (ASNA)	67	19.9	11.9	0.6	5.7	5.26	3.42%
Calumet (CLMT)	*	19.9	*	*	*	1.97	-5.07%
Canadian National Railway (CNI)	19.8	17.1	18.2	*	*	6.67	12.29%
Cliffs Natural Resources (CLF)	38	19.9	*	*	*	3.47	-0.0711%
Enbridge Energy Partners (EEP)	*	19.9	26.2	*	*	6.38	0.0791%
Ikonics (IKNX)	157.6	19.4	*	*	*	6.66	25.44%
Louisiana-Pacific (LPX)	30	19.9	11.3	2.3	8.2	1.82	-5.56%
Polymet (PLM)	0	17.1	0	0	0	25.65	-1.73%
Sappi Limited (SPPJY)	11.3	19.9	0	0	0	1.03	-9.21%
United Health Group (UNH)	23.2	19.9	16.7	1.1	8.1	1.77	-15.25%
US Steel (X)	*	19.9	27.5	*	*	1.14	-19.08%
Average	41.21	19.39	14.36	1.15	5.53	5.55	-0.66%

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, except for Sappi Limited, none of the companies have a lower Forward P/E ratio than current P/E ratio.

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. Allete, Louisiana-Pacific, and UnitedHealth Group, with PEG ratios of 2.9, 2.3, and 1.1 respectively, 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 four companies out of twelve 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.

Five of the firms in the REI have short interest ratios ranging from 5.26 to 25.65, indicating investors are fairly confident the stock will not increase over the short term. Seven 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 5.55, an 18.36% decrease in the average short interest ratio since the last report. This indicates a bearish sentiment by investors, but moving in the direction of a bullish signal.

Business Confidence Survey

Bob Hoffman, Assistant Professor, School of Business and Technology, College of St. Scholastica. Student Researchers: Ana Maria Camelo Vega, Bethany Anderson.

To provide a cohesive analysis for all of 2016, the following report includes data, points of interest, and themes from St. Scholastica's findings from the Spring 2016 REIF and most recent Fall 2016 REIF analyses. The following sections are organized as such:

Spring 2016 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 2016 Business Confidence Analysis
- Overall state of confidence and NBC index reading
- General business confidence indicators
- Specific business indicators
- Factors limiting business activity
- Transportation in the REIF region
- Final remarks

Contributing Themes
- Allete
- National comparison

Business Confidence Survey Methodology

Spring 2016 Business Confidence Analysis

Spring 2016 Overall State of Confidence and NBC Index Reading

Spring 2016 yielded overall confidence at a positive NBC reading of 109, where any reading above 100 indicates confidence. The 109 was up slightly from Fall 2015's reading of 108. Spring 2016 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 2016 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 2016 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 2016 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 2016 Mining in the REIF Region

The final two questions in the Spring 2016 survey sought to discover businesses' opinions on the mining sector in the region. The first question asked, "How dependent is your business on the mining sector?" While 36% reported not being dependent on the mining sector, 44% reported a moderate dependence and 20% reported a significant dependence on the mining sector. We then asked about the specific effects of the decline in the mining sector in the region. 36% of businesses reported a negative impact in sales revenue, 15% of businesses saw their number of employees reduced and 42% experienced an overall decrease in the level of business activity.

Fall 2016 Business Confidence Analysis

Fall 2016 Overall State of Confidence and NBC Index Reading

Overall, the region's business confidence continues to sit at a positive level. Our business confidence index registered a reading of 108. This was slightly lower than the spring's reading of 109. However, we were able to analyze the national average business confidence of 100 and found that our region's business confidence index is above the country's national average. This

fall's survey yielded fewer responses than expected, which prevented our team's ability to break down the results by size and sector.

Fall 2016 General Business Confidence Indicators

Businesses were asked to measure two indicators: business activity and company outlook, where business activity was any activity engaged with the purpose of making profits and company outlook was the economic segment or stock market exchange. Roughly half of respondents indicated that both indicators had no significant change. 32% of the respondents indicated a decrease in general outlook and 30% indicated a decrease in business activity. On a positive note, both the overall outlook and business activity improved in 31% of the cases. Looking ahead, roughly 50% of businesses expect their company outlook and levels of business activity to stay the same in the next 6 months.

Figure 26. Company Outlook (For Past and Future 6 Months)

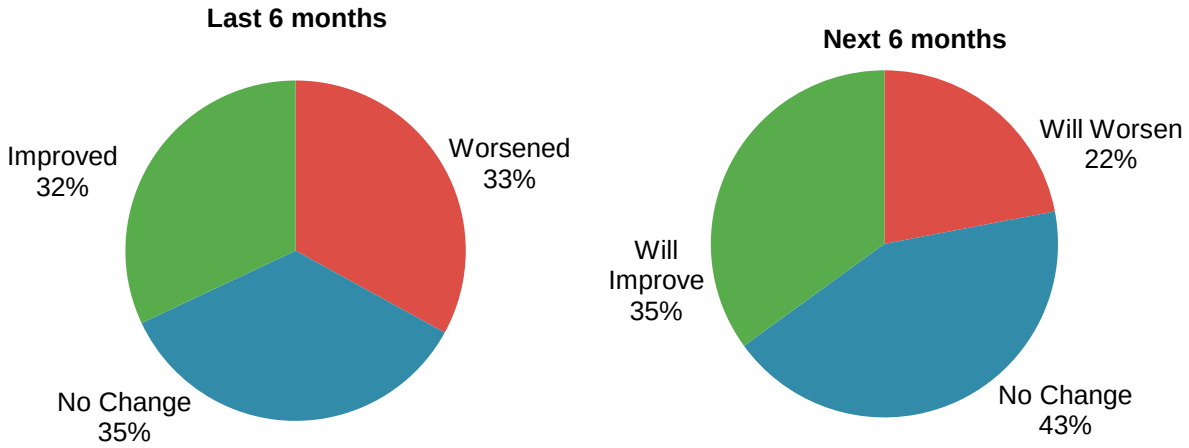
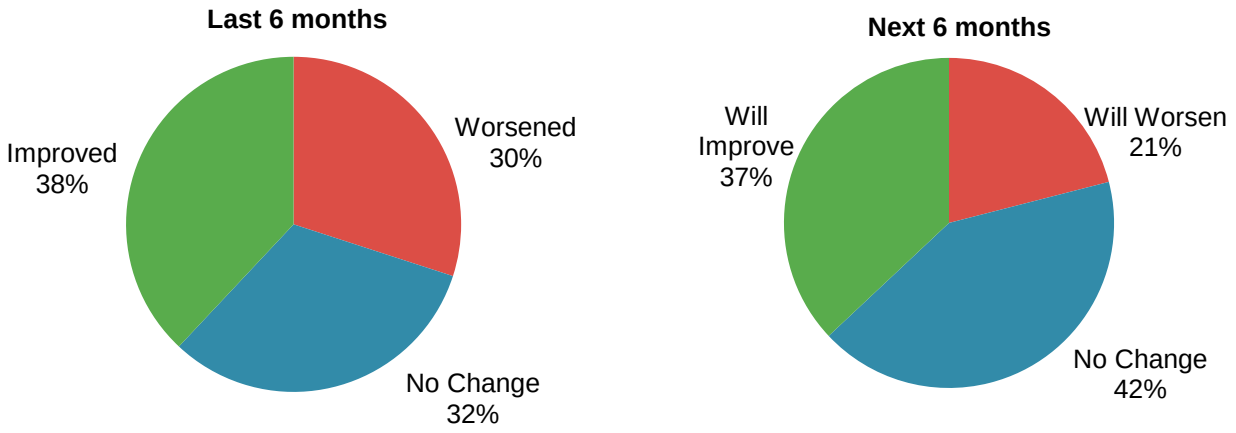


Figure 27: Business Activity (For Past and Future 6 Months)



Fall 2016 Specific Business Indicators

After our evaluation of business confidence on a general level, we asked businesses about more specific indicators. We asked what happened to the average hours worked, number of employees, selling prices, capital expenditures, sales revenue, and profits. Our findings reflect minimal to no changes in average hours worked, number of employees, and selling prices. Around 36% experienced a decline in sales revenue and profits. For the next six months, confidence levels were constant except for profits and sales revenue, where 29% and 34% expect an increase in these.

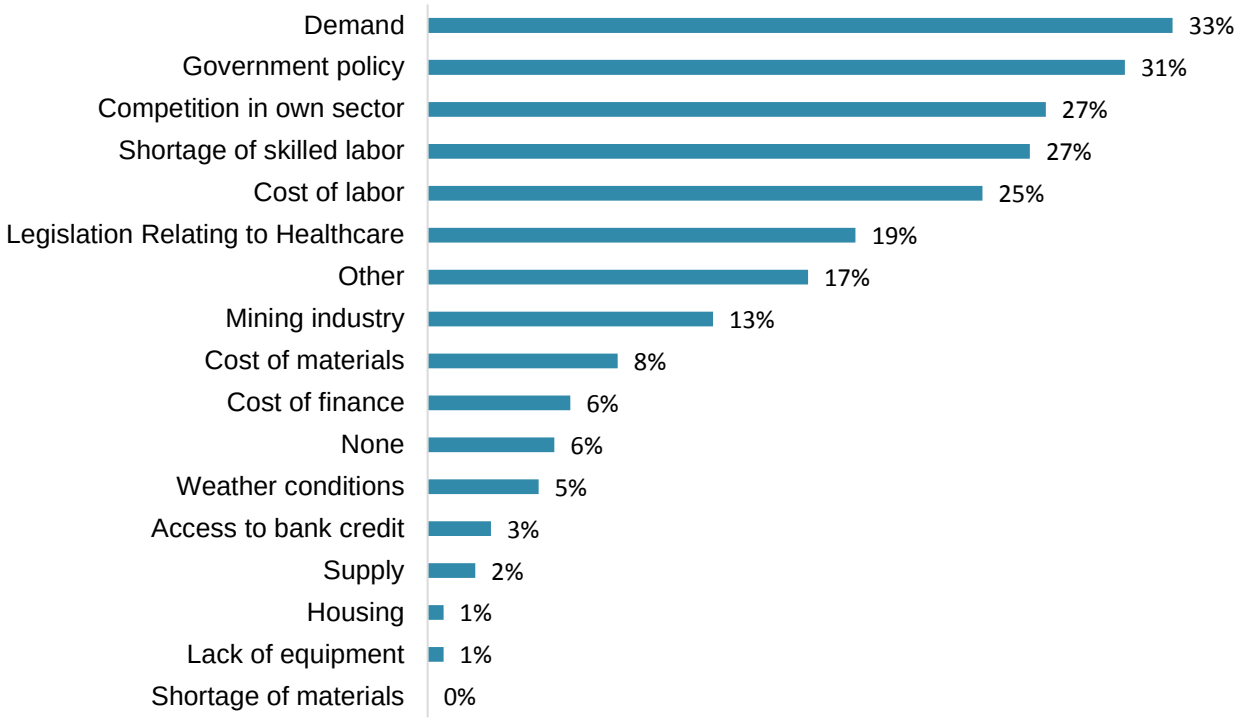
Comparing this fall's results to the results obtained in the spring shows that the actual results were worse than what had been expected. Last spring, around 50% of respondents anticipated an increase in sales revenue and profits but only 30% saw an increase in these indicators. In the spring, 17% expected a decline in sales revenue and profits but 35% experienced a decline in both sales revenue and profits.

Fall 2016 Factors Limiting Business Activity

We then asked businesses to select up to three factors that were currently limiting their general business activities. When analyzing this, it was seen that the limiting factors were the same ones from the last business survey, which reflects the lack of significant change in businesses activity. The least influential factors limiting business activity in the region were lack of equipment, housing and shortage of materials. Businesses were given the option of "other", which was selected by 17%. Businesses classified "other" as cost of advertising, price of oil, high taxes, low income rates,

environmental regulations, lack of local support, lack of volunteers, lack of economic development in the region, presidential elections.

Figure 28. Factors Limiting Business Activity

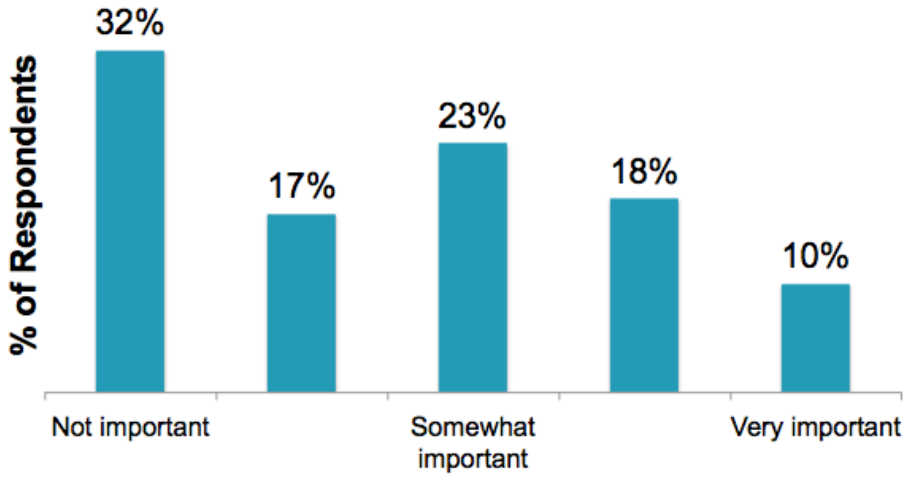


Fall 2016 Transportation in the REIF Region

The special focus of this report is transportation and the effect of transportation on businesses in the region. Respondents were asked four questions focused on transportation specifically. We were able to identify a clear trend in the lack of impact that transportation has in the region's business development. We had a wide spectrum of responses, with only 10% reflecting a significant importance of transportation in their business activity.

We also asked about the most impactful form of transportation, with 91% using personal vehicles as the main and most reliable form of transportation. 83% of the businesses spend less than $100,000 on transportation, and around 13% spend between $100,000-$500,000. Respondents also indicated in making transportation decisions that reliability of service and scheduled service were the most important factors for their businesses, while claims and damage history did not have a significant influence. Businesses support the idea of an alternate form of transportation, such as Uber.

Figure 29. Importance of Transportation in Business Activity



Fall 2016 Final Remarks

While our business confidence index showed a slight decrease in the last survey, overall confidence remains positive. Many respondents are projecting further growth in the next 6 months. There is some evidence that the presidential election created a high level of uncertainty.

Contributing Themes

Allete

We had the opportunity to talk to people from Allete's forecast and analysis team. Our research team thought that getting insight from such a large company in the Northland would be beneficial to compare our findings with theirs. Allete, centered in Duluth, is a utilities company that has 1,903 full-time employees, and 1,965 employees total. When talking with Allete one thing we noticed that was different than many other companies in the region is the amount of regulation that they are required to follow.

We asked them how they thought average hours worked, number of employees, selling prices, capital expenditures, sales revenue, profits would change, if at all, in the next six months. Allete

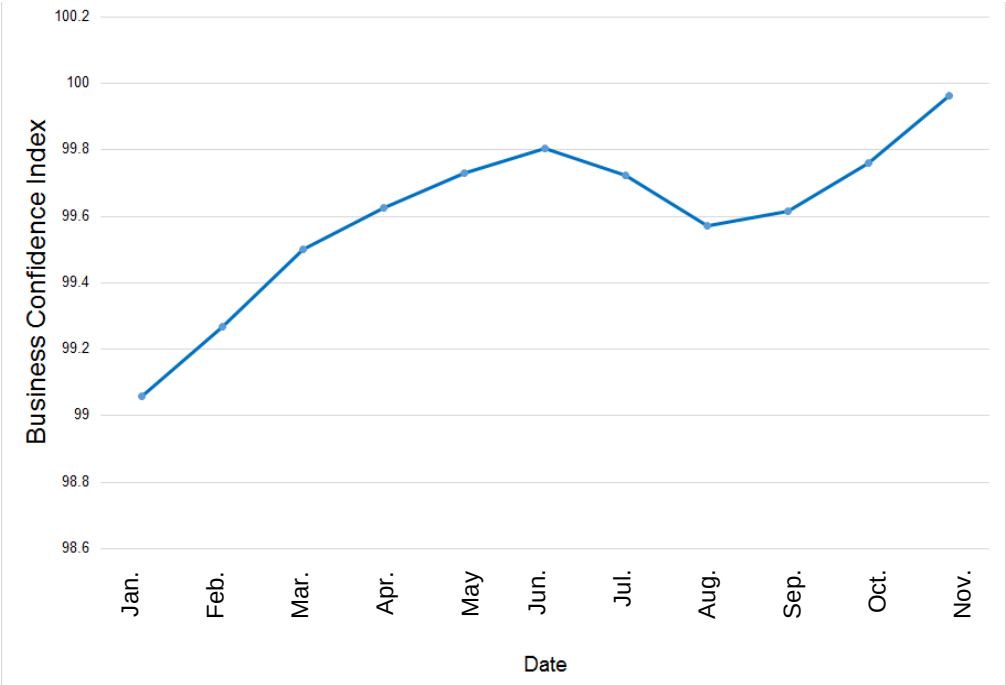
doesn't see any reasons that work hours would increase or that there would be an increase in numbers of employees. Approximately two-thirds of their sales prices are regulated which means that their selling prices would not change without the approval of their regulators. There have not been any significant updates to the regulated rates in the last six months that would change the how they charge their electric customers. When asked about the outlook of the company has changed they discussed how two of their larger customers have either filed for bankruptcy or will be closing completely. However, this has not discouraged them as companies like Louisiana Pacific and Polymet continue to make progress towards starting operations in Allete's service territory. Their outlook on the company continues to be positive as they continue to move away from coal-based generation into gas and renewable options. They are forecasting a similar outlook for the next six months. When asked about their evaluation of the level of general business activity, Allete explained that the winter months greatly impact their residential and commercial heating. They are expecting this winter to be colder and snowier than last winter. This will have a positive impact and will be a big change from last year's mild winter. When asked about factors that limit their ability to increase their business activity they stressed that regulation keeps them within a certain service territory. Although they cover a vast amount of the Northland, their regional footprint restricts them from expanding their current operations and even from expanding to new businesses.

Moving into the transportation specific portion of the interview, the analyst explained that not only is it important to have access to transportation, it is also important to have access to multiple providers who can provide competitive rates. Allete budgets $90 million dollars to inbound and outbound transportation. Railways have the greatest impact on the company as this is how they transport coal. Allete doesn't currently use any ships or waterways but they have utilized vessels in the past. Allete uses trucking for the delivery of railroad ties, coal and biomass.

National Comparison

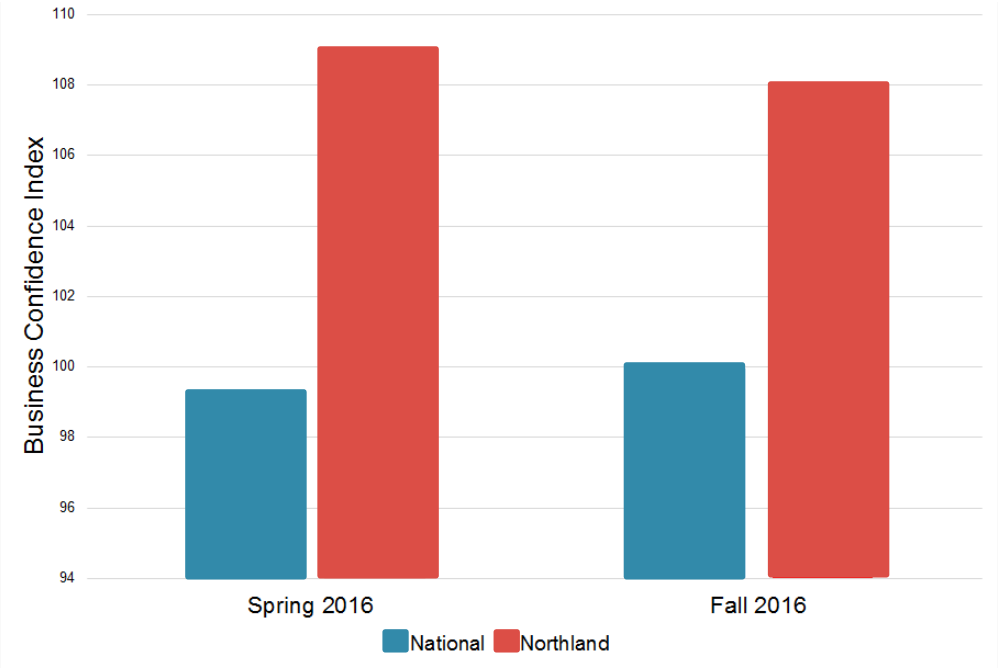
Another way to get a better understanding of the responses we got for our region's business confidence is to compare them to the national business confidence index (BCI). As you can see in the graph, businesses have gained confidence in the last few months of this year.

Figure 30. U.S. Business Confidence (2016)



Although our study does not have monthly figures of the region's business confidence we are able to compare the most recent data to the previous research periods. In the next graph, you will see the nation's business confidence index compared to our findings from both the spring and fall of this year in our region. Note that although our region's confidence has gone down slightly it is still considerably higher than the nation's business confidence index.

Figure 31. Local and National Business Confidence



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 2016: 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

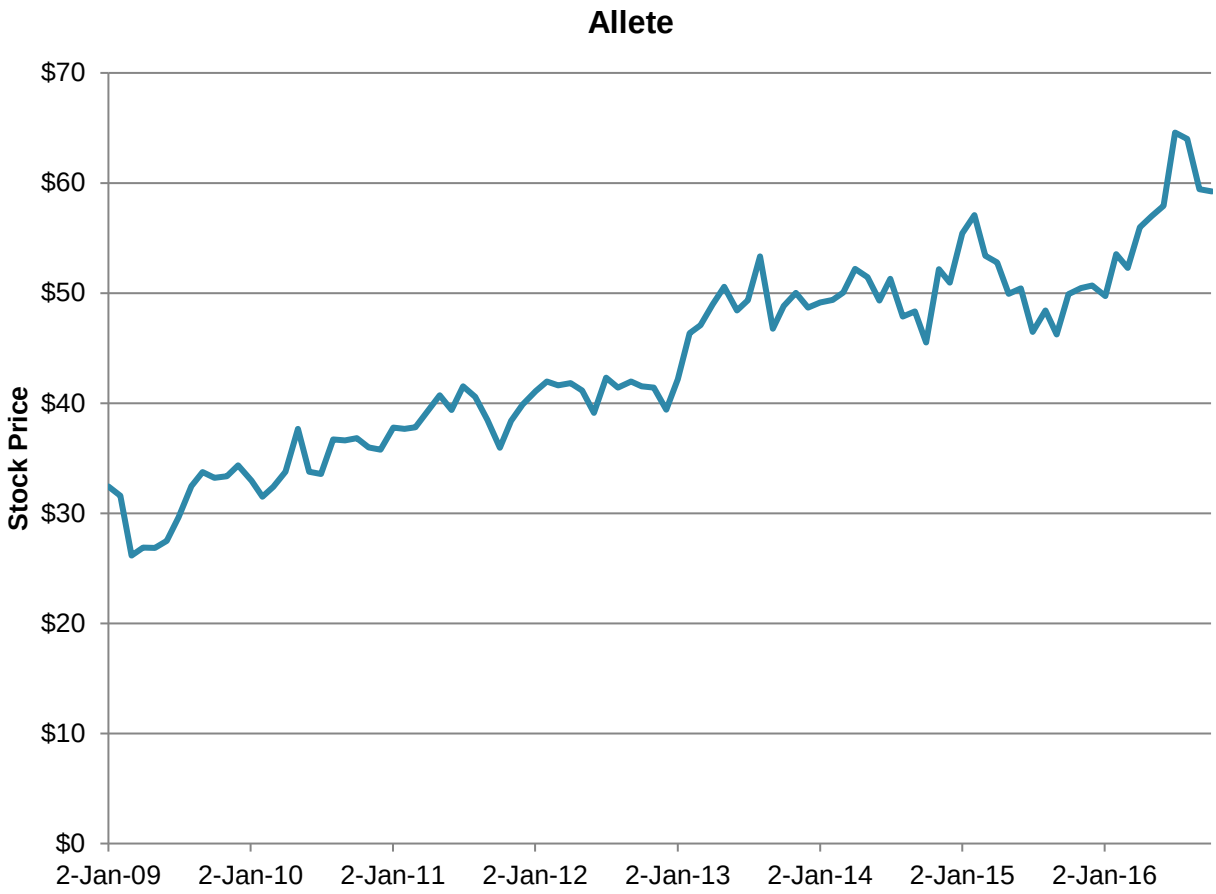
Q4: "Looking ahead, which would you say is more likely during the next five years or so - that in the country as a whole we'll have continuous good times, or bad times with periods of widespread unemployment?"

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.**

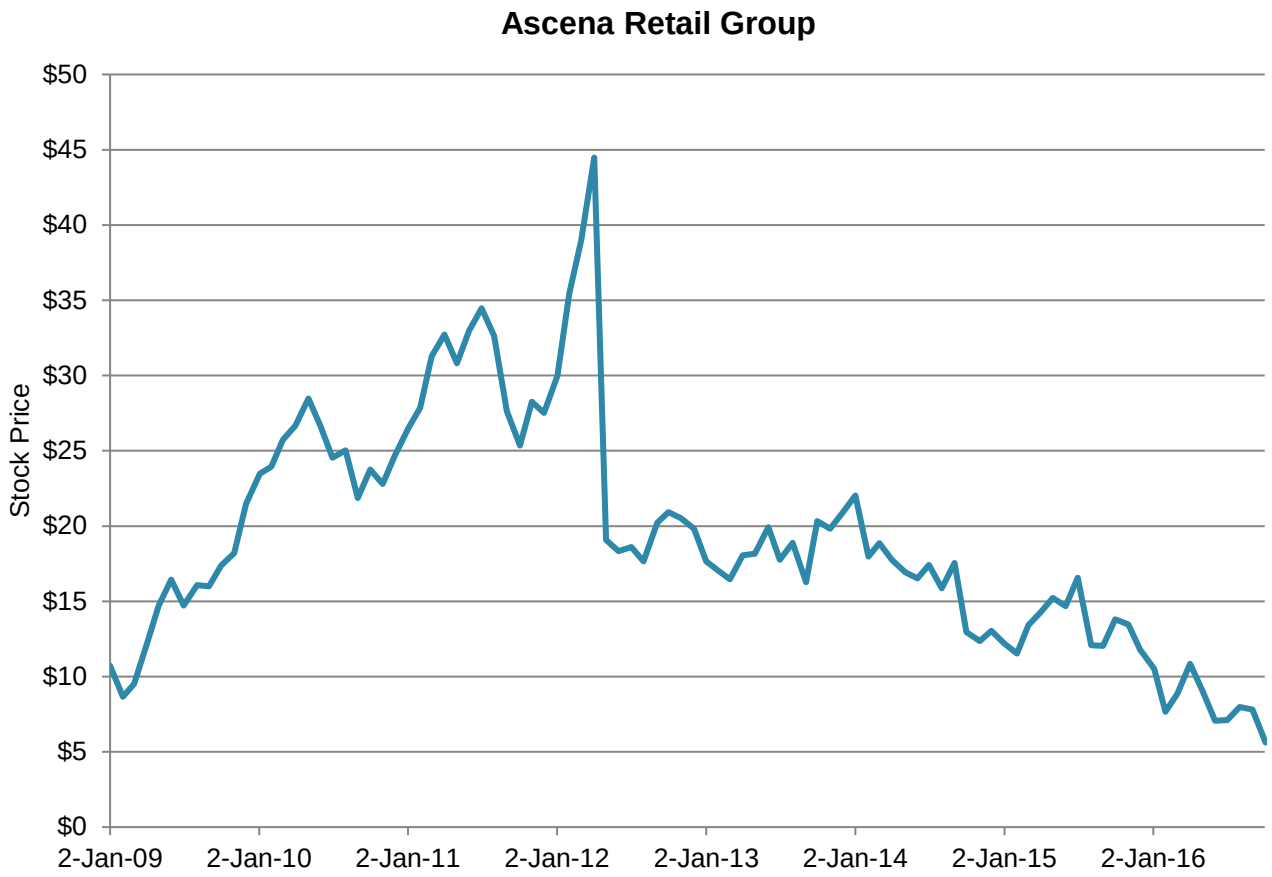
Ticker: ALE

Exchange: NYSE

Market Cap: $2.45B

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.**

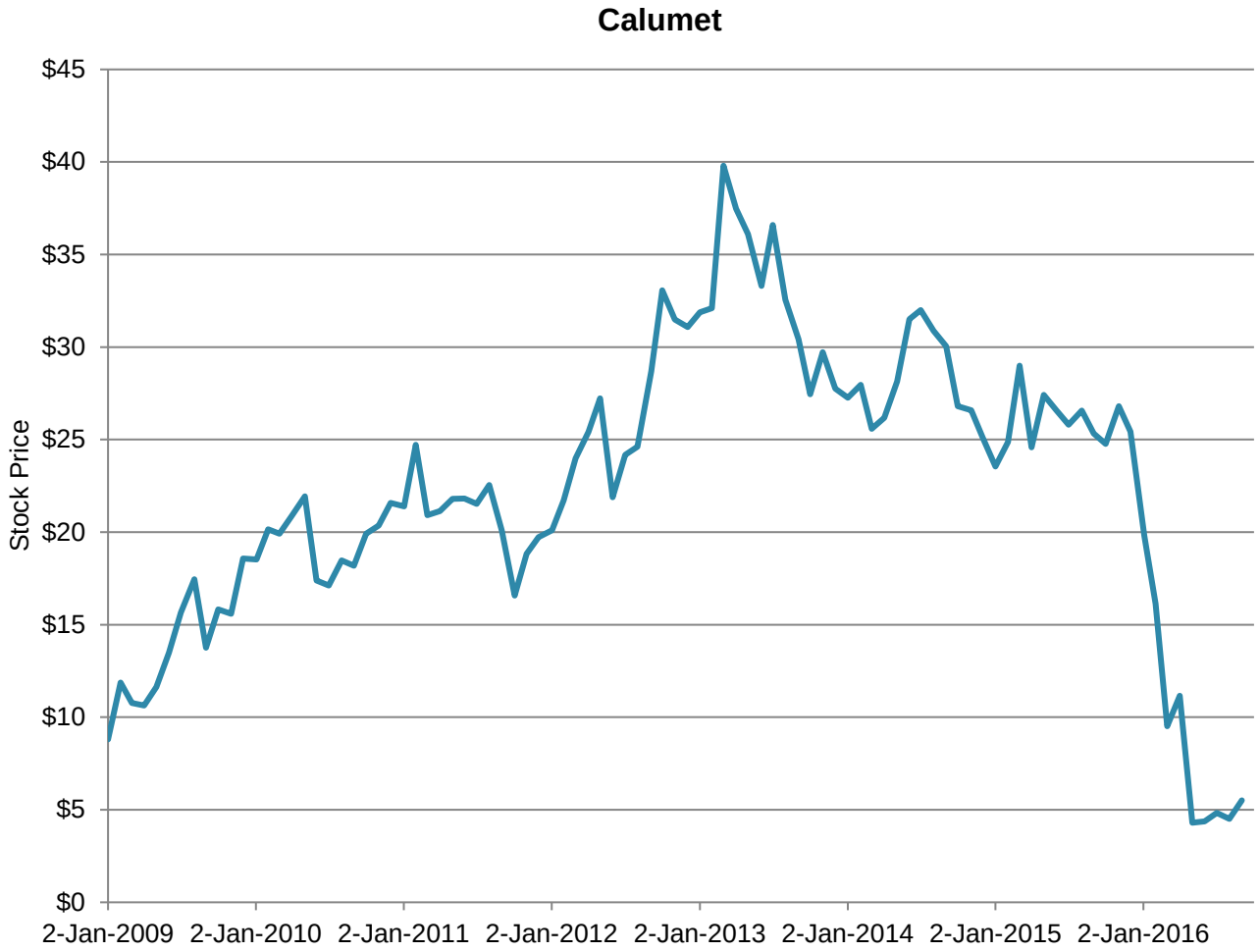
Ticker: ASNA

Exchange: NASDAQ

Market Cap: $2.04B

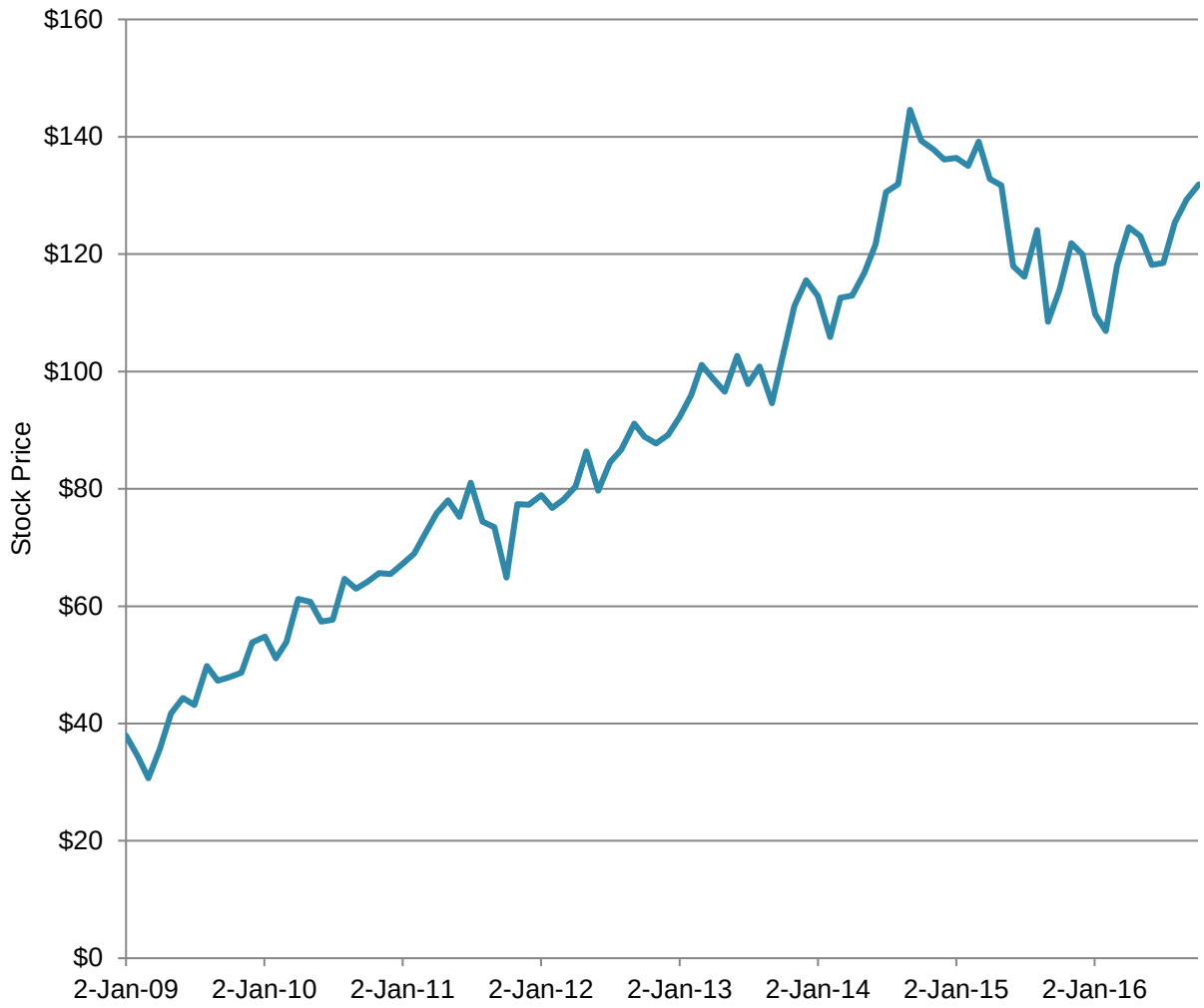
Industry: Apparel Stores

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:	$1.75B
Industry:	Energy, Oil & 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**

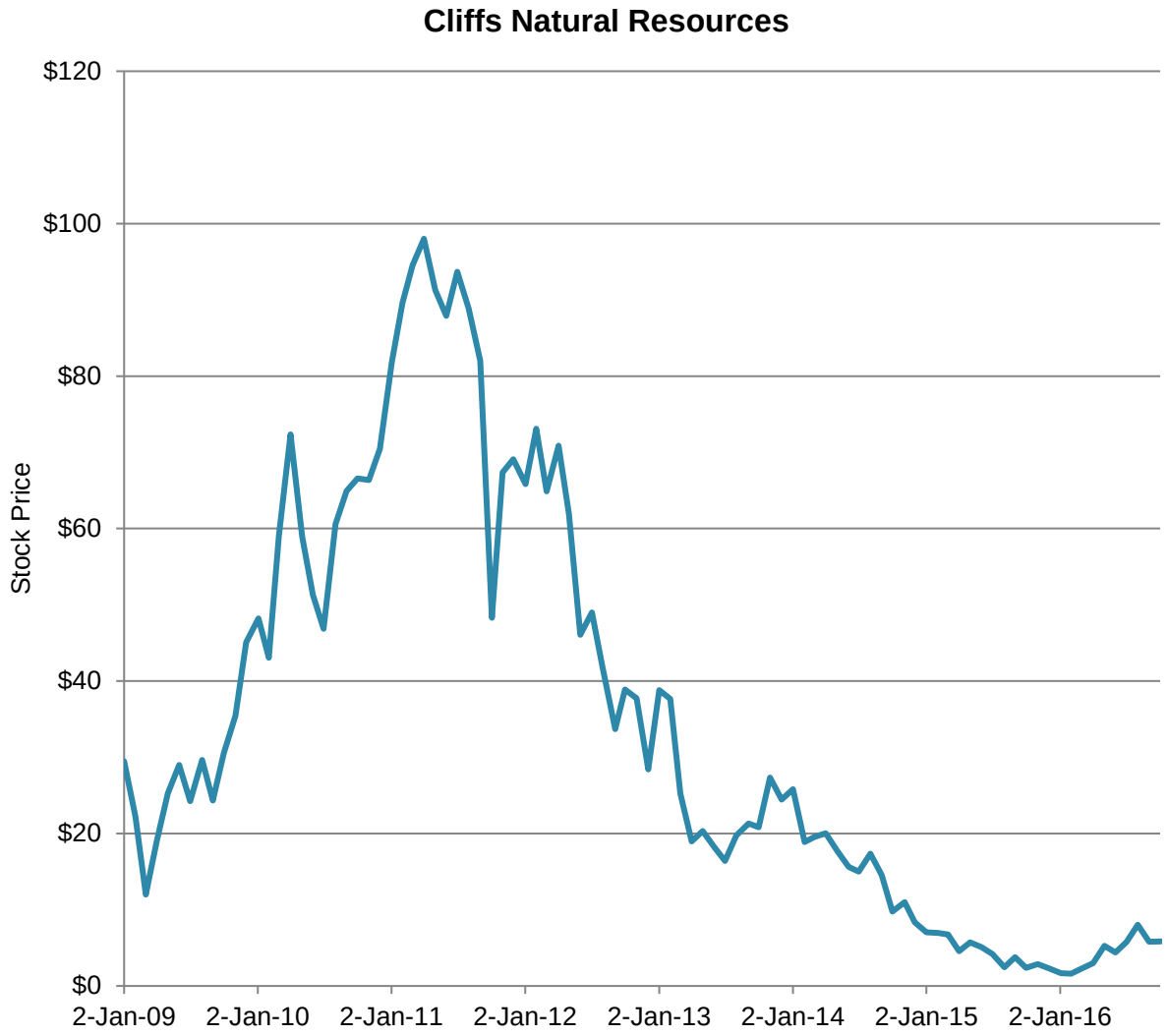
Ticker: CNI

Exchange: NYSE

Market Cap: $42.44B

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: **Cliffs Natural Resources**

Ticker: CLF

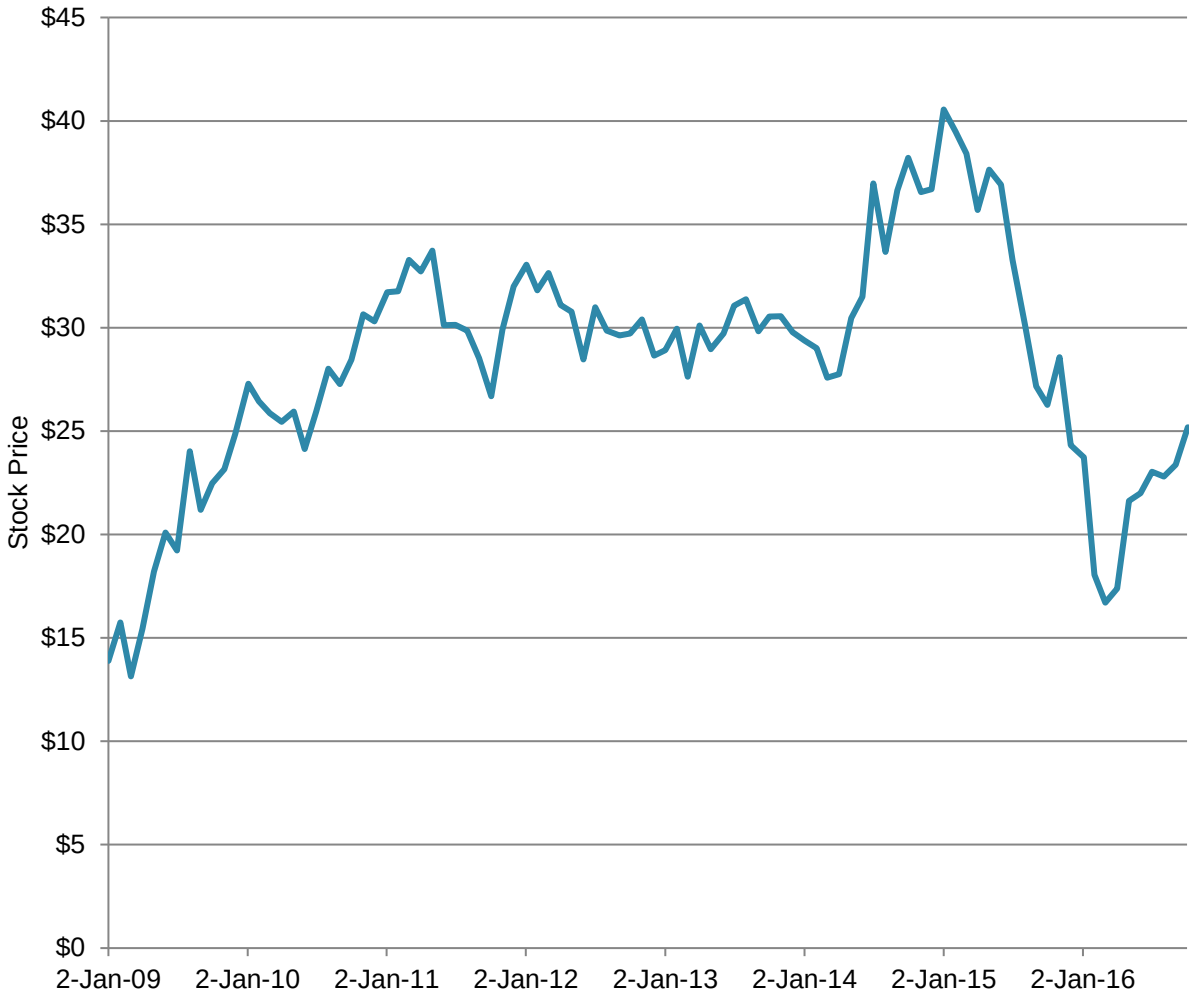
Exchange: NYSE

Market Cap: $325M

Industry: Industrial Metals & Minerals

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

Enbridge Energy Partners



Company: **Enbridge**

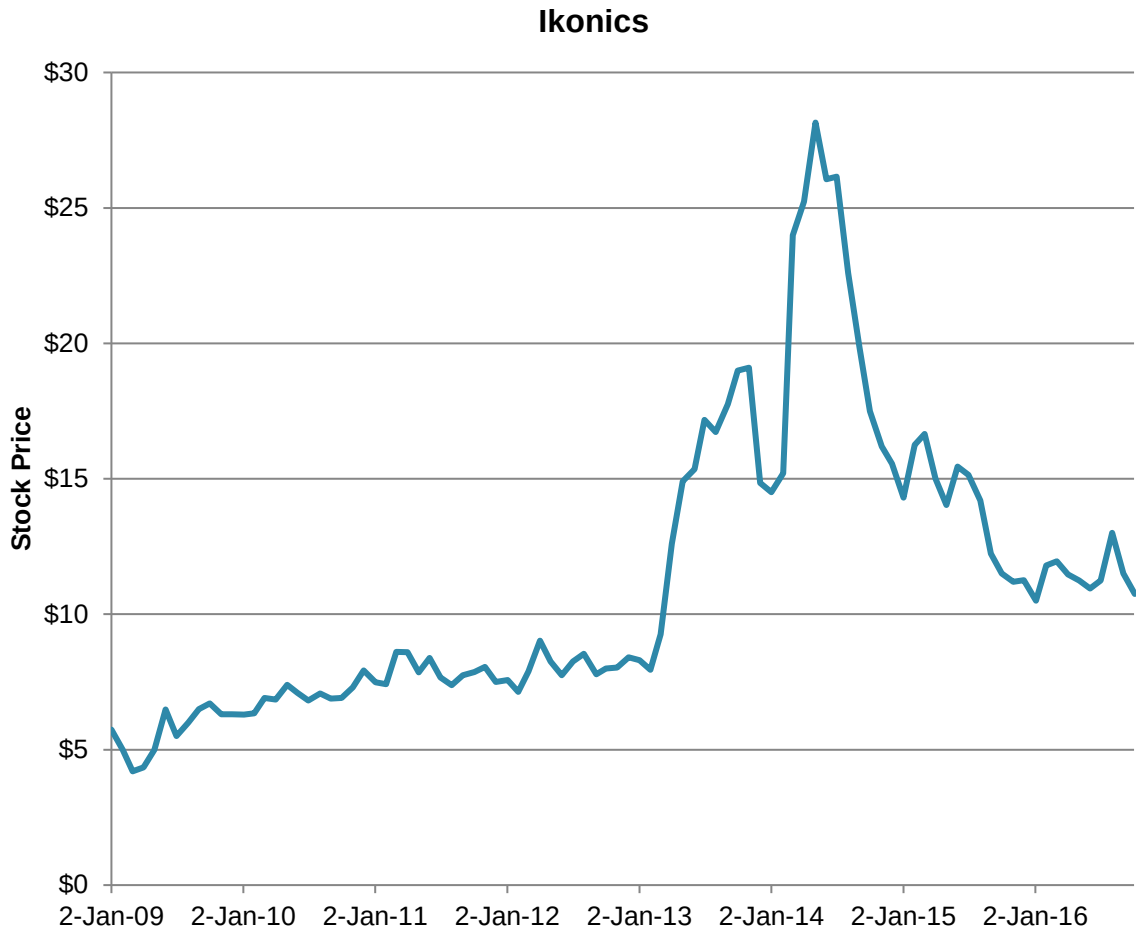
Ticker: EEP

Exchange: NYSE

Market Cap: $7.64B

Industry: Energy, Oil & 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: **Ikonics**

Ticker: IKNX

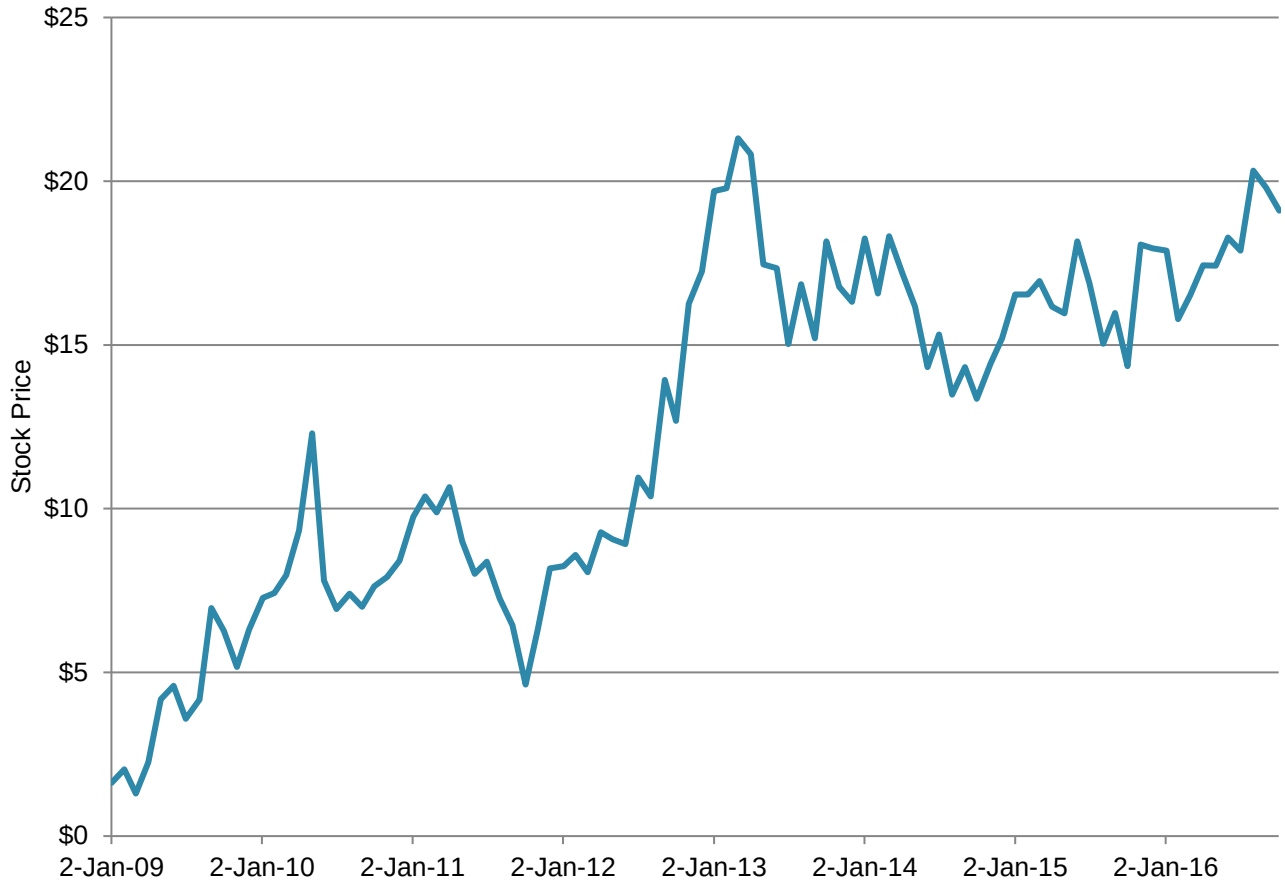
Exchange: NASDAQ

Market Cap: $22.32M

Industry: Specialty Chemicals

Description: IKONICS Corporation is engaged in development, manufacturing and selling of photosensitive liquids (“emulsions”) and films for the screen printing and awards and recognition industries.

Louisiana-Pacific



Company: **Louisiana- Pacific**

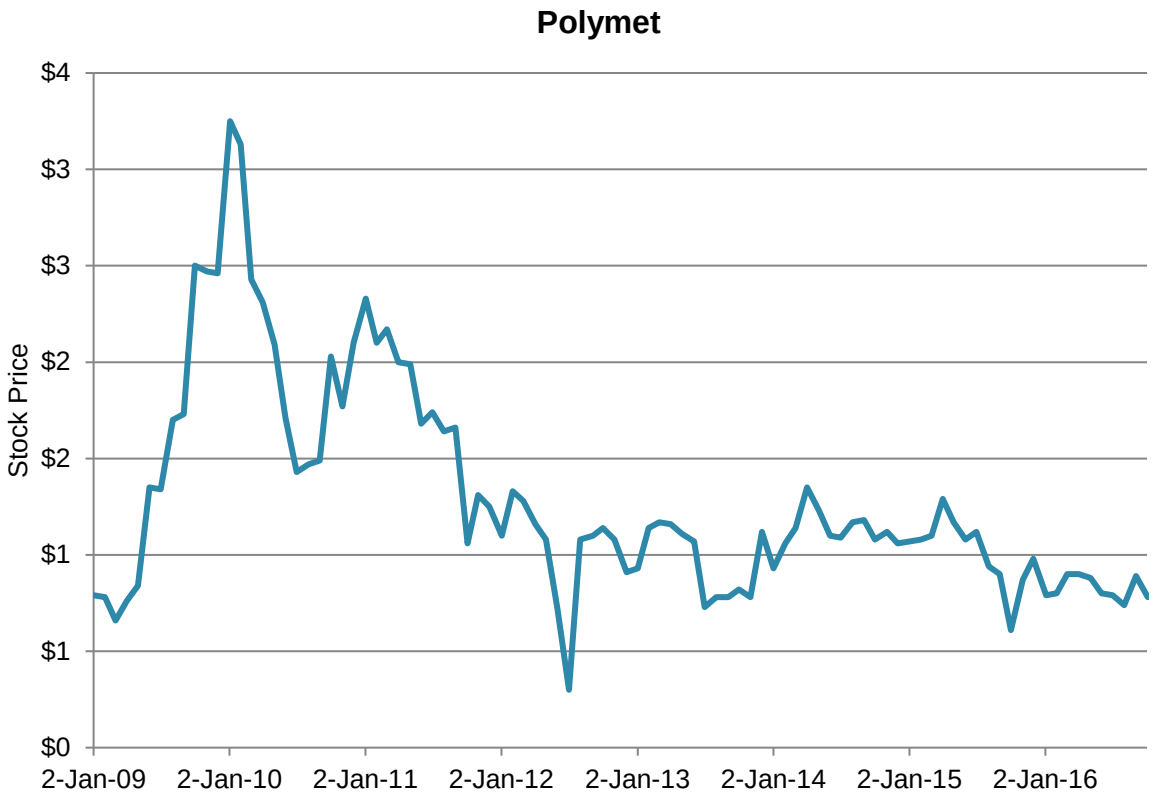
Ticker: LPX

Exchange: NYSE

Market Cap: $2.42B

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: **Polymet**

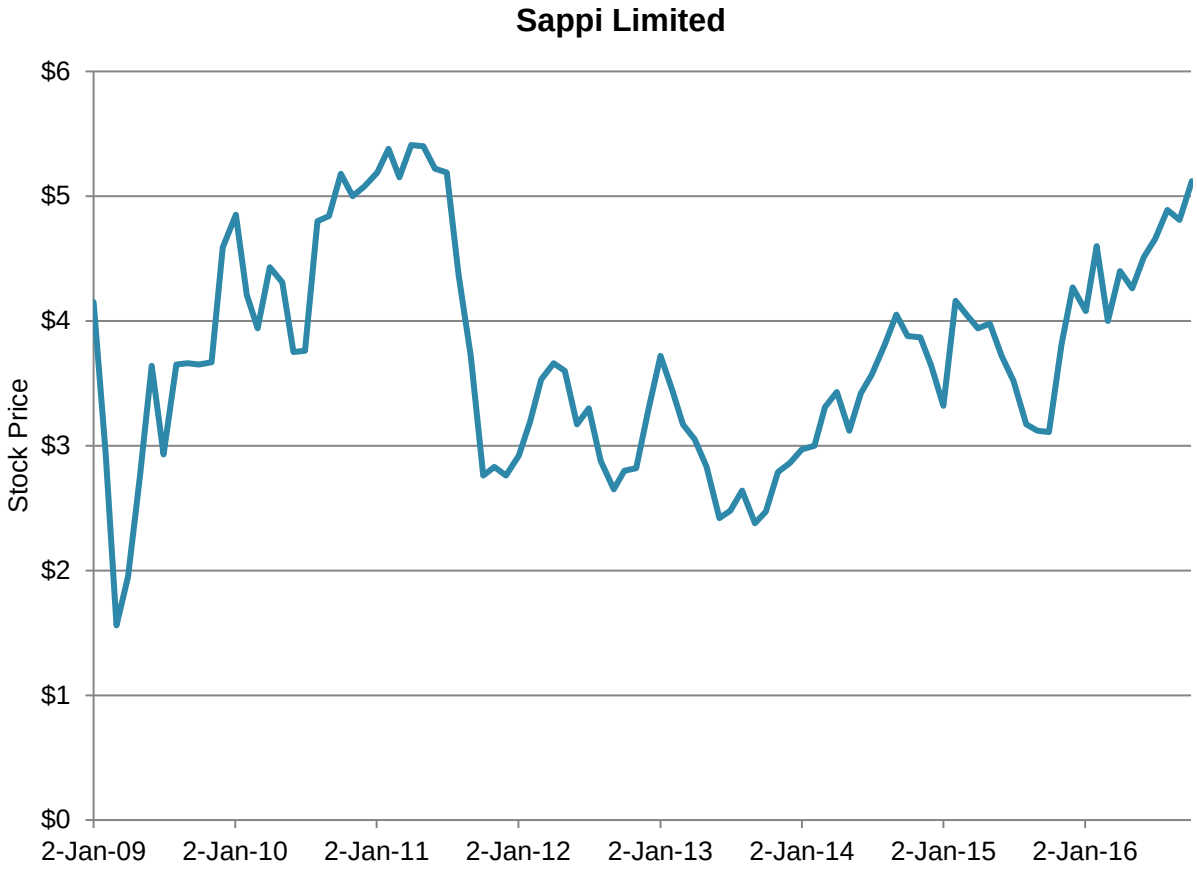
Ticker: PLM

Exchange: NYSE

Market Cap: $246M

Industry: Industrial Metals & 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: **Sappi Limited**

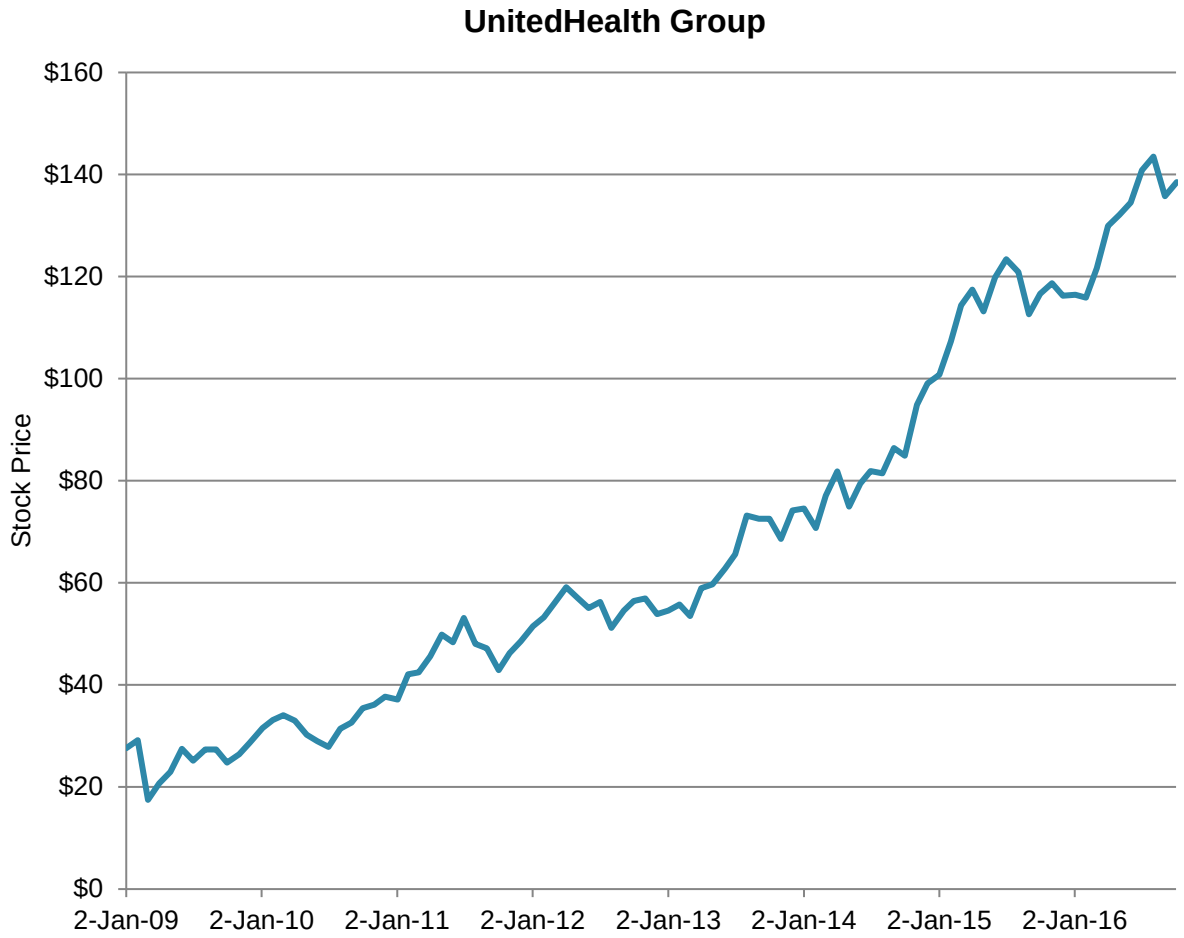
Ticker: SPPJY

Exchange: OTCPK

Market Cap: $2.07B

Industry: Paper & Paper Products

Description: Sappi, Ltd. is a paper and pulp group. The Company is a producer of coated fine paper used in books, brochures, magazines, catalogues and many other print applications.



Company: **UnitedHealth Group**

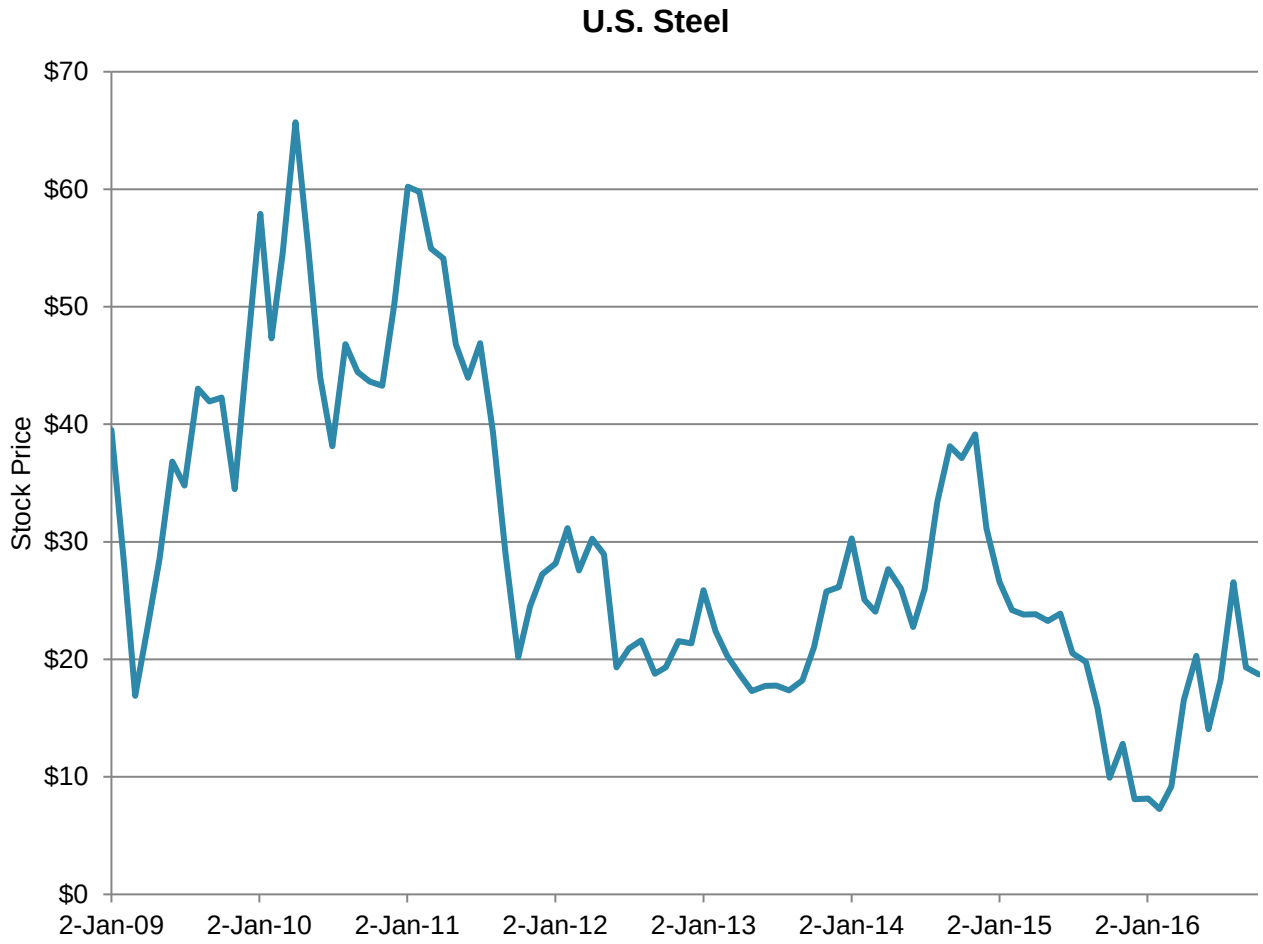
Ticker: UNH

Exchange: NYSE

Market Cap: $109B

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: **U.S. Steel**

Ticker: X

Exchange: NYSE

Market Cap: $1.02B

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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