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INTRODUCTION

The Great Recession of 2008 - 2009. What determined it was a recession? First, gross domestic product (GDP) was negative for five out of six quarters. Second, unemployment rose from five percent to over ten percent in less than two years, with 8.3 million jobs lost in the first 24 months of the recession (Connaughton, 2010). Were there indications that we were headed for a recession? John Connaughton (2010) in his article, “Local economic impact of the great recession of 2008/2009,” explains there were indicators of a downturn. The first was the Fed began trying to mitigate the impact prior to the official start of the recession. In August 2007 the Fed lowered the interest rate in response to sluggish economic conditions, which was caused by $3.00 a gallon gas price increases. Within a year, August 2007 to August 2008, the Fed dropped interest rates by 300 basis points (Connaughton, 2010).

While the recession was deemed 2008-2009, the transportation industry faced its impact from 2007-2010. As transportation needs slowed down, the increased capacity caused decreased rates. These decreases were great for shippers, but not transportation companies. These lower transportation rates began with slumps in the housing and automotive industry. The demand to move building materials and automotive parts, along with increased prices for fuel began the recession trend for carriers. As the recession deepened in 2008, carriers began to see other factors emerge. First, overcapacity in the market led to excess supply (Schultz, 2010, pp 60S). “Unlike past recessions, there [was not] the one mega-carrier bankruptcy or closing that immediately took, say $3 billion of capacity out of the market. That immediately caused an imbalance in supply and demand, favoring shippers” (Schultz, 2010, pp. 60S). Decreased prices over several years, led to struggles recapitalizing equipment (Schultz, 2010, pp. 64S). By 2010, carriers needed to begin having capital expenditure budgets to replace the five year old or older
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trucks, which they had tried to hang on to in order to save the expenses. They also needed to invest in more fuel efficient and EPA compliant models (Schultz, 2010, pp. 64S). Finally, the recession has led carriers to diversify and broaden their portfolios. “Schneider has recast its business model so that now 30% of its volume is regional, up from low single digits just a few years ago” (Schultz, 2010, pp. 65S). Carriers are also expanding into other industries they previously were not a part of, such as food and beverage industries or private fleets in order to find new freight opportunities.

How has this great recession compared to others? Have the same industries declined at the beginning of the recession? What can we learn from past economic downturns in order to do things differently in the future? By evaluating past economic cycles and freight trends (before, during, after), this paper will determine if trends occur which may lead transportation companies to operate differently during different economic cycles.

Purpose of the Study

The primary purpose of this research is to provide a framework for organizations to recognize upcoming economic downturns and evaluate impacts to their supply chains. Once the possible impacts are identified, mitigation plans can be created to lessen the impact. Business objectives and future planning can also be tailored in order to take the downturn or upturn into account. This will allow organizations to either weather economic downturns or take advantage of peaks. By being able to fluctuate with the economy, organizations can position themselves as leaders in their industry and have better predictability of revenues, as well as, when it makes sense to incur capital expenditures which may be flexible. For example, a transportation company who manages the economic cycles well is able to determine when purchasing new
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trucks or trailers makes the most sense to take advantage of the best economic conditions or minimizing purchases during less favorable market conditions.

The study will also look at what factors determine where in the cycle the economy is. Impacts to these factors will be identified (such as presidential elections) which may affect the business cycles. By utilizing timelines of past economic cycles, significant recurring events (such as presidential elections) will be added to determine if there is a correlation between these events and the business cycles. If a correlation is identified, organizations can benefit from past trends to identify possible future trends. As in the 2008 recession, indicators were provided in quarters prior to it. These indicators can be watched at an organization level and adjustments made within the organization. The same can be said for during times of economic booms.

Significance of the Study

The significance of this research is in the ability to develop if a correlation exists between business cycles and timing in transportation impacts. Upon determining the correlation or lack of correlation, studies of supply chain impacts within these cycles will establish past events and if those past events can help in determining possible future trends. If so, then supply chain managers can utilize these trends to establish and adjust their business objectives to account for the possible impact of the business cycle. This will allow them to maximize their profits when markets are in peaks and minimize declines in profits in downturns/recessions. For example, in a peak, expansion of fleets through hiring of drivers, purchasing of trucks/trailers, and hiring office personnel can occur. In a downturn, curbing hiring drivers, repairing existing equipment versus purchasing additional trucks and trailers, and not replacing when office personnel leave may be more the common theme. By determining where in the cycle the economy is, organizations can plan these types of activities accordingly.
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According to Berge (2012), economic activity follows a cyclical pattern, activity increases during an expansion and then once reaching peak, it declines during the recessionary period until it hits a trough. The increase or decrease in activity is measured by gross domestic product (GDP). Two or more consecutive quarters of decline classify as a recession. In evaluating global economies, adjusted real GDP is used so larger economies receive more weight than smaller economies. Supply chain management plays a large role in GDP, as it is this product that is being moved from raw material to manufacturer, to distributor to end consumer. Downturns in GDP impact the supply chain and lead to a downturn in raw materials and product being moved. As globalization has increased, global supply chains may be impacted by multiple countries downturns at the same time. Being able to recognize these patterns is key to limiting impacts when multiple countries in the supply chain downturn at the same time and allow organizations to take advantage when they upturn at the same time also.

Research Method

The primary method for this project will be secondary analysis of timelines for recessionary and peak ranges obtained from economic scholarly journals. In these range timeframes, election years will be highlighted to determine if there is a trend of certain economic cycles during election years. The timeline with both data elements will then be matched up to data obtained from supply chain industry journals and articles to determine impact before, during and after these cycles. To determine impacts to the supply chain around these economic cycles, data will be obtained from trade periodicals such as Transport Topics and government websites such as Federal Motor Carrier Safety Administration.

The data collected from these secondary research sources will then be compiled and analyzed to determine if there are correlations, first among election years and economic cycles
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and second among supply chain activities and the economic cycles. Once the outcomes are analyzed, if expected correlations do not exist, the data will determine if there is a different pattern to events or no pattern to events. If a different pattern exists, recommendations for further research will be provided.

LITERATURE REVIEW

Business Cycle Theories

The literature review begins with an evaluation of theories from several economists. Veblen, Marx, Friedman, Keynes, and Sherman all had contributions to economics and evaluations of business cycles, such as contributing factors to up/down swings and ways to influence cycles. From the extension of credit to labor and employment rates, innovations and external shocks, these economists covered various reasons downturns in business cycles can occur. Below is the evaluation of each of these contributors’ theories.

Veblen

Veblen’s (1904) theory is based on the effects of the rate of profit and on the extension of credit. He defined two types of credit: deferred payments and loans. “According to Veblen (1904), credit is used in business expansion, and the credit and expansion spread throughout the economy. During prosperity, two things happen to fuel the economy: rate of profits increases and expectations about the future profits rise. This period of prosperity eventually leads to a point of an over-expansion of credit and declining of profits, forcing a liquidation of the expanded credit. Veblen (1904) proposes that recession is the period of falling prices, forced sales, liquidation, and a shrinkage of values” (Onwumere, Stewart, & Yu, 2011, pp. 50).
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Marx

Karl Marx (1936) proposed that “human labor creates a value but is not in itself value; it comes value only in its congealed state when embodied in the form of some object” (Marx, 1936 as cited in Onwumere, Stewart, & Yu, 2011, pp. 50). He believed that value is the labor involved in producing a product, not in the exchange of commodities. “The difference between the labor value of a commodity and the price of a commodity constitutes a surplus value” (Onwumere, Stewart, & Yu, 2011, pp. 50). Because the workers are left with only a wage and with an insufficient amount of money to buy their own production, goods pile up and stagnation sets in. “Marx (1936) proposed that the fundamental cause of a recession is the exploitation of the workers by the owners reducing the aggregate demand and causing a recession” (Onwumere, Stewart, & Yu, 2011, pp. 50).

Friedman

“Milton Friedman (1953) believed that the business cycle is caused by external shocks compounded by the fact that the government tried to compensate for the external shock. Freidman proposed that monetary and fiscal policy all have lags and that the government’s decision to act with monetary and fiscal policy to stabilize the economy maybe an incorrect decision causing the business cycle to fluctuate” (Onwumere, Stewart, & Yu, 2011, pp. 50). Friedman’s view is the economy is self-correcting and policy makers just need to set rule for government spending and the money supply on an annual basis. No need for expansionary or contractionary monetary and fiscal policies (Onwumere, Stewart, & Yu, 2011, pp. 50).

Keynes
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“John Keynes (1964) proposed that the fluctuations in the business cycle result from changes in the marginal efficiency of capital (MEC)” (Onwumere, Stewart, & Yu, 2011, pp. 51). This is the primary determinant in a business cycle and includes the prospective interest rate and business expectations for the future. Keynes (1964) also proposed business cycles respond to changes in other variables of the economic system, such as, employment, wage rate, consumer prices, personal consumption, money supply, interest rate, resource price, corporate profits, disposable personal income and savings, and investments (Onwumere, Stewart, & Yu, 2011, pp. 51).

Sherman

Howard Sherman (1989) defines profit in the micro level as revenue minus cost in his theory the General Profit Squeeze. “Sherman (1989) proposed that the later period of the business expansion demand slows down, costs of raw materials rise faster than prices, and the aggregate economy slows” (Onwumere, Stewart, & Yu, 2011, pp. 51). This downturn is caused by a combination of slowing demand and rapid increase in costs which squeezes corporate profits. “Once the economy is in recession, both money-wages and profits drop, but profits drop faster than money wages” (Onwumere, Stewart, & Yu, 2011, pp. 51). This results in consumer demand dropping but investment falls more rapidly.

The economists shared varied views on the business cycles. All their views have come into account in various recessions. During several of the recessions, the reason for the downturns have been explained by more than one of their points of view. In addition, the Fed and government have used their research to try to change course during economic crisis.
Definitions of Business Cycles

The term “business cycle” historically has been the fluctuations in the aggregate economy over time. The upward movement strengthens as additional variables start to join forces. These forces keep moving forward until they reach a peak. At that point they are replaced by forces that move them downward. These downward forces build up until they reach a trough. The cycle then turns again and a new cycle begins (Onwumere, Stewart, and Yu, 2011, pp. 49).

“Thus the business cycle is the continuous movement of expansion and contraction caused by the movements of cumulative variables (forces) (McConnell and Brue, 2008 as cited by Onwumere, Steward, & Yu, 2011, pp. 49). It is important to study business cycle fluctuations because they affect prices, wages, and the level of employment and are needed by government, business, and individuals to forecast and prepare for the ups and downs of the aggregate economy (Onwumere, Steward, & Yu, 2011, pp. 49).

Arthur Burns and Wesley Mitchell at the National Bureau of Economic Research (NBER) undertook more precise definition and measurement of recessions, or “contractions” as they called them (Burns and Mitchell, 1946 as cited by Romer, 1999). The result is date ranges from peaks to troughs. The list of dates has been continued by the Business Cycle Dating Committee of the NBER (Romer, 1999, pp. 29). Romer then created algorithm based on Burns and Mitchell guidelines and applied them to various indices. Several findings emerged. First, recessions have not become noticeably shorter over time. The average length of recessions is actually one month longer (Romer, 1999, pp. 30). A second finding is that expansions have lengthened. “In both the 1960s and the 1980s, the United States had expansions lasting at least seven years” (Romer, 1999, pp. 30).
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While these definitions define what business cycle turns are the question remains as to timelines of business cycles. Many sources look to The National Bureau of Economic Research (NBER) to date the business cycles over time. The NBER organization has defined contractions as starting at peak of the business cycle and end at the trough. The following dates since 1980 were provided as downturns:

- July 1981 to November 1982
- July 1990 to March 1991
- March 2001 to November 2001
- December 2007 to June 2009

Many believe the (NBER) simply decides the dates of business cycles. Many others believe the decision is based on GNP or GDP, but Brusca (1992) believes this is a mistake. “GDP frequently shows increases in a recession without signaling the recession’s end. Also, not all increases in GDP are created equal” (Brusca, 1992, pp. 2). Another indicator which the NBER uses as an aid in its dating of ending of recessions is the coincident economic indicator index. “[This indicator] has reached its bottom in the very month that was declared the recession end in five of the past six recessions. In the sixth recession (that ended in November 1982) the Coincident Index bottomed in December of that year, erring by just one month in picking that bottom” (Brusca, 1992, pp. 2).

The Coincident Index of Economic Indicators is composed of a wide array of data on the following: “data on production, the consumer sector, the job market, and from domestic trade” (Brusca, 1992, pp. 2). “Specifically, it includes employees on nonagricultural payrolls, real personal income less transfer payments, industrial output, and real manufacturing and trade
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sales” (Brusca, 1992, pp. 2). “For a period to be called a recession it must display a disruption in economic activity that is significant, widespread, and sustained enough to be of concern” (Brusca, 1992, pp. 1).

Recession Evaluation

July 1981 to November 1982

In July 1982, the FOMC said it wanted to “provide sufficient monetary growth to encourage recovery in economic activity over the months ahead” (Board of Governors, 1982, pp. 109-110, as cited by Romer, 1999, pp. 36). “In the 1980 recession, Fed Chairman Volcker advised President Carter to remove the credit controls that had been initiated. As soon as they were released, the economy was shot out of a cannon into recovery” (Brusca, 1992, pp. 7).

July 1990 to March 1991

In 1990, Bermanke (as cited by Romer, 1999, pp. 37) argued that interest rate cuts and other actions by the Fed in 1987 following the stock market crash, prevented a significant financial crisis. This follows along with the notion that during the 1990-1992 recession that there was a credit crunch. This was not the case. The data suggests it was a poor conduct of monetary policy and not a credit crunch. The Fed lowered rates about as much as a normal recession, but did it at a slower pace, generally by .25% at a time. Interest rates are important in recessions. “The Fed always gets the ball rolling by pumping up the money supply and reducing interest rates to influence private sector rates which it does not directly control” (Brusca, 1992, pp. 7). In addition to interest rate adjustments, the Fed also pumps up the money supply and money growth speeds ahead faster than inflation.
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Every time a new downturn is entered forecasters predict this one will be different. While that is partially correct, it is also incorrect. No two recessions are alike but they share similar characteristics. The 1991 recession is unique in that it appears to be the longest in the post-war period. It is also the only recession to have a war begin and end in the middle of it (Brusca, 1992, pp. 1). Additionally, the unemployment rate in the 1990-1992 recession was not as severe as the 1982 recession. The average unemployment rate was 9.1% in 1982 versus 6.5% in 1991. Brusca (1992) attributes this to more workers simply withdrawing from the labor force so they did not count as unemployed. “Recessions impact job growth because they impact spending and therefore output. Once consumer spending softens, a chain of events is set in motion whereby output cutbacks result in layoffs leading to even less spending, more productions cutbacks, and more layoffs – this is the usual vicious cycle of recessions” (Brusca, 1992, pp. 4).

March 2001 to November 2001

During the 2001 recession the policy helped to recover the economic growth quickly. The wars in Iraq and Afghanistan intensified the negative effects of other crises from decisions and actions made by previous administrations: deregulation of the housing and financial markets (Katkov, 2012, pp. 119). “As the result the uncontrolled growth of the federal deficit and the national debt and the very deep financial crisis that was called by the collapse of the real estate market have amalgamated with negative effects of the changes in the macroeconomic policy and strengthen the recessionary prospects” (Katkov, 2012, pp. 119).

December 2007 to June 2009
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The 2008/2009 recession has been the worst recession since World War II. “The national unemployment rate went from 5.0 percent to over 10 percent in less than two years. GDP was negative during the five of the six quarters during 2008 and the first half of 2009” (Connaughton, 2010, pp 1). Variations in the impact of the recession varied from state to state. Connaughton dispels several myths of the 2008/2009 recession. The first myth addressed is that no one saw it coming. This is false and in fact the Fed began reducing interest rates in 2007 in response to high fuel prices and offered rebates to try to stimulate the economy. The second myth is this was a financial recession. The recession was under way prior to any financial institutions being under scrutiny. Gasoline price spikes in spring/summer 2007 started the downward spiral. Some of the hardest hit industries were construction and manufacturing, making up 4 million of the 8.4 million jobs lost, just in these two industries (Connaughton, 2010, pp. 2). “These two industries were hit hard during the recession because they rely on financing to move their product” (Connaughton, 2010, pp. 2).

“The recession that emerged out of [the] financial crisis forced the U.S. Government to use both mechanisms of the government regulation: fiscal and monetary policy at a very large scale. Economic stimulus packages, corporate and banking bailouts, monetary easing at the multitrillion dollars scale has created both supporters and opponents” (Katkov, 2012, pp. 107). Katkov (2012) supports the real cause of the Great Recession was the change in the national macroeconomic policy from the Demand support to Supply support strategy which took place in mid-1980s. “This change in the economic policy has forced the modification of the structure of the U.S. economy with the substantial diminution of the national manufacturing sector” (Katkov, 2012, pp. 107).
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In the 1980s the Keynesian model of the economic growth was replaced with a more “neo-liberal” model based on the support of the growth of Aggregate Supply. Increase in supply would decrease prices. “Price decreases are good for consumers because their real incomes as the result of prices decreases will rise” (Katkov, 2012, pp. 108). The opposite is true for producers as a price decline means lower profits. When this happens, companies need to reduce their cost of production to maintain a profit. One way to do this is to increase productivity. The second way this can be done is by decreasing the costs of components, both fixed and variable (Katkov, 2012, pp. 108). “At the same time the process of globalization of the world economy has offered another opportunity: to decrease manufacturing facilities can be moved closer to sources of less expensive resources, both natural and labor resources” (Katkov, 2012, pp. 108). As a result, companies began shifting manufacturing of components abroad to cheaper facilities. From 1979 through December 2007, there was a loss of 5.5 million manufacturing jobs in the United States. The number of people employed by the financial sector during the same time period almost doubled as well (Katkov, 2012, pp. 109). “The national economy that has fewer manufacturers and more sales people should face problems during the economic contraction phase of the business cycle (Katkov, 2012, pp. 109). Less production requires less sales people to sell.

“Growing supply needs demand to grow also” (Katkov, 2012, pp. 111). The question then posed is: where are the means to finance growth if there are less people creating products? “The solution of this problem has been found in the developing of the housing market” (Katkov, 2012, pp 111). The housing market was a major source of financing for consumption growth in the 1990s and the first half of the 2000s. “So during the last 30 years of the household consumption – the largest component of GDP (about 70%) has been grown as the result of the
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increase of the rate of debt, not the rate of the income growth” (Katkov, 2012, pp 112). From 1998-2006, households were able to continue to borrow more and more until when the market burst. Katkov (2012) concludes this proves the acceptance of the supply side economic model as the core idea of the new economic policy.

“To fight this [2008] recession the U.S. Government used both fiscal and monetary policies mechanisms” (Katkov 2012, pp. 116). First, Congress passed an act to allow the U.S. Treasury Department to buy mortgages and to strengthen the Federal Reserve System. The Federal Reserve System also increased the money supply by buying securities from banks and providing funds to help those who defaulted on student loans, car loans, and credit cards (Katkov, 2012, pp. 116). In addition to these items, the government also put in stimulus package which included providing rebate checks to Americans to help increase spending in the economy. “Traditionally economy will need the stimulus package that will help it return to the level of the so called “potential” or “full employment” GDP” (Katkov, 2012, pp. 118).

“The American economist Arthur Okun who had served as the Chairman of the Council of Economic Advisers in 1968-1969 has formulated the empirical law that has been called the Okun’s Law. According to this Law every additional percent of actual official unemployment rate above the natural rate of unemployment will generate two percent of the loss of the “potential” GDP or GDP gap. The GDP gap according to Okun is the difference between the “potential” and actual (nominal) GDP” (Katkov, 2012, pp. 118).


Natural Unemployment Rate is 5%.
2008-2009 Unemployment is 10%
Therefore, the difference is 5%
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During this recession, the potential GDP declined 5% x 2 or $1.45 trillion
Nominal GDP in second quarter 2008 = $14,415.5 billion
10% of that is 1441.6 billion
If the fiscal multiplier is 1.5 to bridge the gap between the potential GDP and nominal GDP = $960 billion should be invested.

Overall, “It looks that the economy has needed larger stimulus package in 2009 than the package that the government has been able to offer” (Katkov, 2012, pp. 118).

Freight Trends Surrounding Recessionary Years

In evaluating transportation service trends in regards to recessionary years, the TSI (transportation services output index) can be used as an additional coincident indicator. Lahin and Yao (2012) evaluate the marginal contribution of the TSI during recessionary years. This is important as transportation plays a vital role in facilitating economic activity by moving raw materials and goods among various sectors of manufacturers, wholesalers, and retailers. As this paper evaluates freight trends since 1980 in recessionary times, the TSI will show trends around these recessionary years.

July 1981 to November 1982

Historical data shows declines in sales and TSI beginning as early as December 1980. A change from Fed policy to monetary policy began to take shape around this time. “Major declines in interest rates occurred in the fourth quarter of 1981 and in the third and fourth quarters of 1982” (Lahiri & Yao, 2012, pp. 7). Sales and TSI continued to show decline until November 1982 when the recession ended.

July 1990 to March 1991
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The 1990 recession was due to a fall in consumption (Lahiri & Yao, 2012). While the signs of consumption showed in fourth quarter 1990 and first quarter 1991, signs of a slowdown appeared before that in 1989. TSI in 1989 started to show a decline in January but rebounded by July 1989. From July 1989, it was a downward trend until the recession took hold in third quarter 1990. The Fed was slow to realize a recession was under way in quarter three of 1990, so effective measures to turn around the economy were slow to take effect (Lahiri & Yao, 2012). “Immediately following the recession, the economy did not experience a strong recovery like those in 1980s or earlier” (Lahiri & Yao, 2012, pp. 10). All series but TSI went through slowdowns until December 1991 or later.

March 2001 to November 2001

In June 1999, the Fed raised rates, which was the first tightening of credit in more than two years. In November 1999, the TSI began to decline. Just like the prior recession, TSI had a double-dip recession. “The first phase was in the period 1999:11 to 2000:4 when this sector began recovering, and the second was from 2000:11 to 2001:9, which still gave an early signal for the economic peak four months ahead. If we combine the two phases, TSI would have issued a signal for the recession with a lead-time of 11 months” (Lahiri & Yaho, 2012, pp. 11).

“For the overall economy, the rule of thumb is that a recession entails two straight quarters of declining gross domestic product. But that is not always so. The actual definition set by the National Bureau of Economic Research, allows room for judgement calls by a panel of economists. They dated the last U.S. recession from March 2001 – well before the September 11 terrorist attacks – to November of that year. Yet GDP grew in the second quarter of 2001 between declines for the first and third quarters” (Boyd, 2007, pp. 3). “A notable factor leading
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up to that recession was that a year earlier, in 2000, truckers were idling rigs as fuel prices soared and shipments weakened” (Boyd, 2007, pp. 3).

December 2007 to June 2009

While it can be debated on the causes of the great recession of 2008, indications in the TSI showed earlier, just as they had in prior recessions. House downturns began in 2006, with the fall of housing prices from their peak which cut deeply into home building and home purchases. This also caused a rise in mortgage foreclosures which put financial institutions at risk (Lahiri & Yao, 2012). In addition to housing doing a downward slide, oil prices in July 2008 jumped up substantially to all-time highs. TSI again issued very clear signals for a peak around December 2007 (Lahiri & Yao, 2012). The TSI also signals the trough in June 2009 as the beginning of the next upturn.

“Economic downturns have drastic effects up and down the supply chain, slowing flows of materials and products” (Dooley, et al, 2010, pp. 12). In a Wall Street Journal article from May 18, 2009 (Dvorak 2009) evidence was presented that the electronics manufacturing sector experienced something like the bullwhip effect in terms of larger sales declines occurring further upstream. “The article cites Taiwan Semiconductor Manufacturing Company CEO Rick Tsai saying that in the last quarter of 2008, consumer demand had declined 8 percent, while product shipments fell 10 percent and chip sales fell 20 percent” (Dooley, et al, 2010, pp. 12). An amplification of demand variation that makes matching supply with demand more difficult through a supply chain is called the bullwhip effect (BWE) (Burbidge 1984).

In the study by Dooley, et al (2010) used data from the U.S. Bureau of Economic Affairs on real inventories and sales amounts from the U.S. Manufacturing sector to test this ideal. “The
manufacturing sector data is useful because it provides insight into three different supply chain

“The National Bureau of Economic Research (2008) used data on payroll employment, real
GDP, gross domestic income, real personal income, real wholesale and retail trade sales,
industrial production and employment estimates to pinpoint the beginning of the economic

“Sales across the entire sector declined 3.2 percent from 2007 to 2008 as compared with a
0.4 percent increase in the previous year” (Dooley, et al, 2010, pp. 13). “The recession caused
Wholesalers smoothed inventory levels but could not increase them. The result, wholesalers
ended up having to slash their demand to manufacturers by 6 percent. “The amplified demand
variability inevitably was transmitted to variation in the manufacturers’ inventories (an increase
of 147 percent)” (Dooley, et al, 2010, pp. 13). The result, some of the retailers and many
wholesalers responded to the decrease in demand by cutting demand. This caused them to lose
control of inventory and have to correct it. Some wholesalers and many retailers tried to buffer
themselves by smoothing out their inventory levels. “Wholesalers in general acted as would be
predicted by the BWE model. Because of their farther distance from the consumer, they were
slower to react, and this led to the need for them to take more drastic action” (Dooley, et al,
2010, pp. 15).

Boyd (2007) utilizes multiple sources to try to determine if the transportation industry is
in a recession or not during 2007. Warning signs include: declining truck and rail traffic,
weakness in factory activity, and diesel prices that are soaring. “The slowdown looked to some
last fall like a pause, when the industry might catch its breath for a few months after a long
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period of strong growth” (Boyd, 2007, pp. 1). January and February 2007 saw harsh weather conditions, which followed a weak peak shipping season in fourth quarter 2006. It appeared that a downturn in shipments with deep implications for shippers which are still moving and manufacturing goods and carriers which are finding companies that have freight are pressing for new terms in a changed economic landscape tilting toward shippers (Boyd 2007). A symptom of the weakness in the trucking industry is falling truck rates. Shippers are able to choose from competing bids from different truck carriers. “The broad truck tonnage index from the American Trucking Associations fell 1.7 percent for all of 2006. As 2007 began, it fell another 3.6 percent” (Boyd, 2007, pp. 2).

DISCUSSION

Whether labeled business cycles, economic cycles, or peaks to troughs, fluctuations occur in the economy driving government, businesses, and professionals to take corrective action. Therefore, it is important to study business cycle fluctuations because they affect prices, wages, and the level of employment needed by government, business, and individuals to forecast and prepare for the cyclical nature of the aggregate economy (Onwumere, Stewart, & Yu, 2011, pp. 49). Between business and individuals, transportation companies play an important role. When a downward cycle or recession happen, transportation companies, especially small carriers feel the effects in fuel prices and the rates they can charge in the spot freight market. Customers also may rebid freight or ask carriers for a price decrease, or simply go with a cheaper carrier. This is amplified when production or consumer demand also slow down and transportation demand slows. This causes transportation companies to not utilize all of their trucks. If trucks are not moving, they are not making money. These underutilized trucks still have fixed costs, which can
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be high. This can cause small carriers to have stressed financial times, which may lead to bankruptcy.

July 1981 to November 1982

Veblen’s theory of credit as a way to get out of a recessionary cycle worked in the early 1980s recession. “In the 1980 recession, Fed Chairman Volcker advised President Carter to remove the credit controls that had been initiated. As soon as they were released, the economy was shot out of a cannon into recovery” (Brusca, 1992, pp. 7). Transportation during this recession began to show declines as early as seven months prior (December 1980) to the official start of the recession. Sales and TSI continued to show decline until November 1982 when the recession ended.

July 1990 to March 1991

This recession follows Keynes theory. It was driven by interest rates and a fall in consumption. The Fed lowered rates about as much as a normal recession, but did it at a slower pace, generally by .25% at a time. In addition to interest rate adjustments, the Fed also pumps up the money supply and money growth speeds ahead faster than inflation. Just like in the 1982 recession, signs of consumption began to decline prior to the actual start of the recession in 1989. TSI in 1989 started to show a decline in January but rebounded by July 1989. From July 1989, it was a downward trend until the recession took hold in third quarter 1990. The Fed was slow to realize a recession was under way in quarter three of 1990, so effective measures to turn around the economy were slow to take effect (Lahiri & Yao, 2012).

March 2001 to November 2001
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Veblen’s theory on controlling credit applied in the 2001 recession. In June 1999, the Fed raised rates, which was the first tightening of credit in more than two years. In November 1999, the TSI began to decline. There was a rebound in TSI early 2000 but then declined again beginning in November 2000. Just like the two prior recessionary periods reviewed, TSI showed indications prior to the start of this recession. From a transportation standpoint, impacts in this recession could be seen prior to the start it as well. “A notable factor leading up to that recession was that a year earlier, in 2000, truckers were idling rigs as fuel prices soared and shipments weakened” (Boyd, 2007, pp. 3).

December 2007 to June 2009

The theories of Veblen, Keynes, and Sherman applied in this recession. The 2008/2009 recession has been the worst recession since World War II. “The national unemployment rate went from 5.0 percent to over 10 percent in less than two years. GDP was negative during the five of the six quarters during 2008 and the first half of 2009” (Connaughton, 2010, pp 1). Some of the hardest hit industries were construction and manufacturing, making up 4 million of the 8.4 million jobs lost, just in these two industries (Connaughton, 2010, pp. 2). “These two industries were hit hard during the recession because they rely on financing to move their product” (Connaughton, 2010, pp. 2).

“Price decreases are good for consumers because their real incomes as the result of prices decreases will rise” (Katkov, 2012, pp. 108). When a price decrease goes into effect, wages are not changed. This allows consumers to have more disposable income to spend on other non-essential items, which helps boost the economy. The opposite is true for producers as a price decline means lower profits. When profits are lower, fixed costs remain unchanged, meaning less profit for the business. When this happens, companies need to reduce their cost of
production to maintain a profit. One way to do this is to increase productivity. The second way this can be done is by decreasing the costs of components, both fixed and variable (Katkov, 2012, pp. 108). “At the same time the process of globalization of the world economy has offered another opportunity: to decrease manufacturing facilities can be moved closer to sources of less expensive resources, both natural and labor resources” (Katkov, 2012, pp. 108). As a result, companies began shifting manufacturing of components abroad to cheaper facilities. From 1979 through December 2007, there was a loss of 5.5 million manufacturing jobs in the United States. Less production in the United States means a lower need for transportation of raw materials and finished goods to consumers within the U.S.

Just as with the prior recessions, the great recession of 2008, indications in the TSI showed earlier, just as they had in prior recessions. House downturns began in 2006, with the fall of housing prices from their peak, which cut deeply into home building and home purchases. This also caused a rise in mortgage foreclosures, which put financial institutions at risk (Lahiri & Yao, 2012). In addition to housing doing a downward slide, oil prices in July 2008 jumped up substantially to all-time highs. TSI again issued very clear signals for a peak around December 2007 (Lahiri & Yao, 2012). The TSI also signals the trough in June 2009 as the beginning of the next upturn.

Boyd (2007) utilizes multiple sources to try to determine if the transportation industry is in a recession or not during 2007. Warning signs include: declining truck and rail traffic, weakness in factory activity, and diesel prices that are soaring. “The slowdown looked to some last fall like a pause, when the industry might catch its breath for a few months after a long period of strong growth” (Boyd, 2007, pp. 1). It appeared that a downturn in shipments with deep implications for shippers which are still moving and manufacturing goods and carriers
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which are finding companies that have freight are pressing for new terms in a changed economic landscape tilting toward shippers (Boyd 2007).

Industry Implications

A symptom of the weakness in the trucking industry is falling truck rates. Shippers are able to choose from competing bids from different truck carriers. "The broad truck tonnage index from the American Trucking Associations fell 1.7 percent for all of 2006. As 2007 began, it fell another 3.6 percent" (Boyd, 2007, pp. 2). Through the cycles, transportation carriers are able to take advantage of higher rates when in peaks and must plan ahead to cut costs when in downturns. Transportation rates are volatile and highly impacted by the amount of capacity or freight available. When shippers have many options to hire to move their freight, they can be more selective on who they select. Some shippers will select a carrier based on service record, some on services offered (such as ability to deliver freight in Canada or transport hazardous materials), and some on price.

When freight volumes decline, there are more carriers looking for freight to move. Shippers have a lot of options to choose from so they are able to pay less and carriers have to charge less in order to win the freight. The opposite is true when the business cycle is trending up. More freight is needed to be moved between destinations. This decreases the supply of capacity available. With it being tougher to get trucks, carriers are able to charge higher prices for freight movements. From a carrier side, an upturn in business cycles or peaks are the best position to be in. This allows them to generate more revenue due to the high demand for capacity to move freight. From the shipper side, downturns are better because more capacity is available so shippers have choice. They can hire the best service carriers for lower prices. This allows them to cut transportation costs, keeping more of their revenue for their companies.
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Recessions, however, are not good for either. Recessions cause shippers to spend less on transportation, but also have less of a need for it. This means their competitors and most likely themselves are producing less so their sales may be down also and therefore, they are not generating as high of revenues for themselves as well.

Managerial Implications

Transportation companies should evaluate various indices on a weekly or monthly basis. These should include truck tonnage reports and the four coincident indicators: all employees of nonfarm industries (EMP), personal income less transfer payments (INC), industrial production (IP), and manufacturing and trace sales (SALES). Additionally, the transportation services output index (TSI) should be used. This index utilizes eight series on freight and passenger movements by airlines, rail, waterborne, trucking, transit and pipelines. This covered around 90% of total for-hire transportation during 1980-2000 (Lahiri, & Yao, 2012). “TSI can give early signals to the onset of economic recessions while being contemporaneous to economic recoveries” (Lahiri, & Yao, 2012, pp. 3). As evidenced in this study, in all four recessions since 1980, TSI showed indications of the downturn prior to other indices. Managers at transportation companies should utilize the TSI index to determine when a downturn will occur. Once identified, managers will be able to put into place plans in preparation of the downturn. Cost cutting measures, such as: minimizing the amount of unbilled miles, maximizing safety programs to prevent accidents, and having driver metrics, such as MPG goals to ensure the most efficient use of the truck, all help to maximize profit and become particularly critical in times of downturn. Another way transportation companies can set themselves up so they are prepared for downturns is to secure business at contracted rates so when the downturn hits, prices are locked in. This means they are not relying on the spot market, which when freight demand is down,
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rates also drop. Carriers also should have strong working relationships with their customers and those carriers with high service will also be at an advantage in a downturn. Each mode of transportation and each company will need to evaluate what the best course of action is for them. Tools to help with market conditions include: market analytics, company indicators or reports (such as eight week averages of volume), and industry or carrier conferences. The key is looking ahead and knowing a downturn is imminent and then how the company chooses to handle it.

CONCLUSION

When increased rates for moving freight through the supply chain occurs, the price is passed on to the end consumer. In times of recession, this additional price can impact how fast the economy comes out of the recession. This may be an area for additional research. In the four recessionary periods studied since 1980, TSI showed a decline several months prior to the start of the recessions. Transportation companies should use this as one of the indicators to determine when a recessionary period may be imminent and plan accordingly. Additional research should be conducted to determine ways transportation carriers prepare to handle the downturns identified by TSI. This can be done through industry trade conferences and independent research firms. Customers and logistics companies through working with various carriers also can provide insight based on their daily interactions. Having a strong customer relationship can provide insights into what other carriers are doing. Finally, evaluating information from publicly held transportation companies provides insights into what trends are happening in the industry. Overall it is important for transportation companies to be aware of economic trends and know what measures can be taken as market conditions fluctuate from peaks and troughs.
REFERENCES


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