The Report Committee for Andrew Harman Frisch
Certifies that this is the approved version of the following report:

Understanding and Profiting from the Recession of 2007-2009

APPROVED BY
SUPERVISING COMMITTEE:

Supervisor: _____
Anthony Ambler

_____
Robert Duvic

Understanding and Profiting from the Recession of 2007-2009

by

Andrew Harman Frisch, BSME

Report

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Dedication

To my parents, who nurtured and fostered the curious scientist in me from an early age. Also thank you for igniting a passion for learning and self improvement in me that I can't seem to get rid of. By allowing me to blaze my own path through the world it has made this achievement that much sweeter and has been a true gift. I can never thank you enough for these gifts, but I treasure and that I am truly grateful and humbled by them every day.

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To my loving girlfriend without whom my studies wouldn’t have been as studious or productive.

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Abstract

Understanding and Profiting from the Recession of 2007-2009

Andrew Harman Frisch, MSE

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Supervisors: Tony Ambler and Robert Duvic

"The charm of history and its enigmatic lesson consist in the fact that, from age to age, nothing changes and yet everything is completely different." – Aldous Huxley

Aldous Huxley perfectly captures the elusive nature of how difficult it is to analyze history to gain insight to the present and future. Especially because the recent exponential growth in information and technology seem to be changing how the world operates. In actuality though, the same patterns continue to reappear. This paper strives to look back and first understand on a macroeconomic level what causes the business cycle of expansion and recession. Particularly, what historically triggers recessions and what are the consequences of those recessions? Using this historical knowledge, this

paper will leave the reader with a better understanding of how a company can grow and thrive in the current difficult economic climate.

Even though the expansion/recession cycle is still prevalent today, the affects of these swings during the 1980's and 1990's were dramatically reduced in what historians call "The Great Moderation". The potential reasons for this moderation will be examined and their validity evaluated. This historical perspective combined with an understanding of more recent events allows for this paper to create recommendations for companies to help navigate the stormy economic waters ahead as we try to recover from the current recession. These recommendations hinge on policy advisors and politicians heeding the advice of the past. Lastly, I will explore potential alternate outcomes given poor fiscal and legislative policy by the ruling elite.

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Chapter 1: How Economies Grow

BUSINESS CYCLES

As economies grow, they generally do so in short intense bursts followed by periods of contraction or minimal growth. This repeated expansion and recession over time is what is referred to as the business cycle and has changed little over the last 100 years. The only thing that truly changes between cycles is the causes, the duration, and the speed in which change happens. The graphical representation of a typical business cycle is shown below.

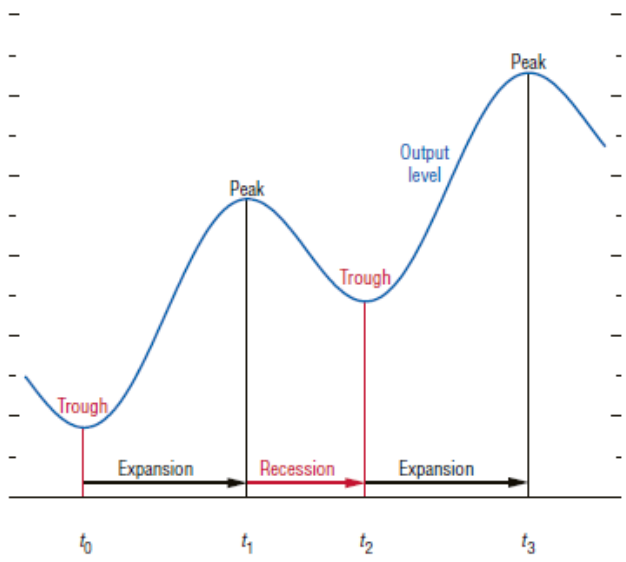

Figure 1: Business Cycle

During an expansion, the economy is generally characterized to have rising GDP (gross domestic product), a stable money supply, and low unemployment. On the other hand, recessions can take many forms but are always characterized by falling GDP. Recessions may or may not have a fluctuating money supply (inflation or deflation), high

unemployment, or social unrest. Understanding the differences of recessions is one of the most important keys to understanding what the best strategy is to maximize profit and will also help strategic long term planning as this will give clues as to which direction the economy is heading.

SAVINGS RATE

There are many causes of the business cycle, but one of the largest factors causing this cycle is personal savings/spending habits. In good times people generally over-spend and once they realize that they have overextended their credit, they dramatically change their habits and begin over-saving. In response these large swings in consumer behavior, corporate spending must ramp up or ramp down depending on what the consumer is doing. This combination has a powerful effect on the economy as is one of the main drivers to the business cycle.

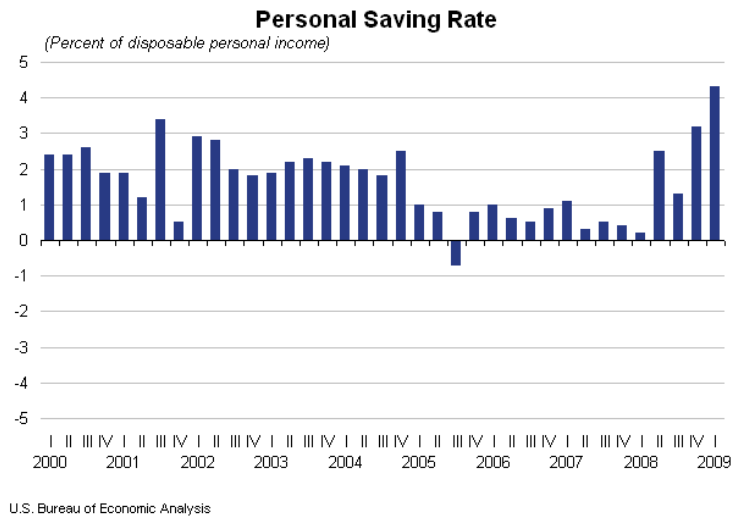

Figure 2: Personal Savings Rate in the United States

As seen in figure 2 the last six years leading up to 2008, the United States consumers' saving rate has been steadily declining, culminating in 2008 with an extremely low savings rate. This was due to consumers spending a higher proportion of their salary than the historical norm. This spending binge enabled an extended period of growth, but at a cost of growing private debt. Once this debt became unsustainable, consumers began to save more, pushing the savings rate for consumers in the U.S. to above 4% which is the largest savings rate in the last 10 years. The problem with analyzing the savings rate is that there is no known optimal savings rate, so it is hard to derive whether the growth is healthy or unhealthy. Unless of course, the savings rate is negative, at which point everyone agrees that, that type of spending is unsustainable. So even as this is a good backward looking indicator that things were unsustainable, during the expansion there was no way of knowing what the savings rate should have been.

Even though recessions and expansions can most likely never be eliminated, it has become the role of the central bank to try to moderate them. As central banks have become more focused on this, it was believe that they had found ways to tame recessions and spur sustainable growth. This effort is generally called the "Great Moderation" and took place from the mid-eighties through 2007. During this time recessions were mild, inflation was low, and growth was steady. There are many theories as to why the business cycle flattened out during this time. In this paper we will examine the five most prevalent theories for this moderation. These theories are improved monetary policy, improved supply chain management, improved geo-political stability, new financial innovations, or luck. (Barnett, 2008)

Chapter 2: Causes of "The Great Moderation"

IMPROVED MONETARY POLICY

The first theory gives credit to the central banks of the world and the fact that they improved their monetary policies during this time. This improved monetary policy consists of central banks using a counter cyclical policy to try and either heat up or cool down an economy. The main mechanism for a central bank to control the money supply is by lowering or raising interest rates.

As economies are expanding there is a large demand for money. One way to slow this demand is to contract the money supply by raising interest rates. This causes the cost of borrowing to rise, and dampens the demand for currency allowing the economy to slow its growth. This also helps to keep inflation in check by reducing demand thus keeping prices low.

Conversely, if the economy is stagnating or contracting, the money supply needs to be expanded. By lowering interest rates central banks create an incentive to individuals and businesses to borrow money. This increased borrowing encourages growth and helps raise the GDP. This is a fairly low risk option as it can be reversed very quickly by raising interest rates. This option will be discussed more in depth in the next chapter.

There are also other more inventive and risky options for the central bank that should be used with extreme caution. These occur when the central bank uses non-traditional ways to inject additional money into the markets instead of only changing the interest rate. One way is for the government to sell treasuries directly to the central bank and then the government reinvests that money into the economy. This is dangerous because this forces the central bank to print money that otherwise didn't exist and send it through the economy. As this money circulates through the economy it gets multiplied

by either the saving or spending multiplier, depending on how it is used. If the government is running a deficit, this strategy also runs the risk of creating the impression that the government is monetizing their debt.

This option is extremely difficult to reverse if needed because once the money is out on the market it cannot be easily taken back. By flooding the market with new money this sets the stage for the possibility of extreme inflation after the recession has ended. The consequences of this can be seen in places like Zimbabwe, where hyper inflation is occurring because the government has been monetizing their debt and the only way to pay off such a large debt is to incur hyper inflation.

In both of the above cases the central bank is using expansionary or contractionary monetary policy to try and achieve balanced growth.

To achieve this growth, the central bank must insure inflation does not get too high. The biggest problem with this goal is the fact that "too high" is an extremely subjective term. High inflation erodes wealth and has historically led to political unrest. So to try to give a more concrete definition the U.S. central bank has started to give an acceptable inflation range in which they try to maintain. In this way businesses and individuals can try to better plan how to invest their money. By trying to remove some inflation uncertainty from the markets the central banks are able to encourage the markets to take other risks which generally spur growth. (Davis, 2008)

IMPROVED SUPPLY CHAIN MANAGEMENT

The second theory is that supply chain management has improved allowing for better forecasting. Supply chains generally work by first forecasting sales, then procuring raw material, then manufacturing the finished good, and finally either selling to a retailer or an end user. Ideally the sales forecast and final sales numbers would be very similar.

This would allow a company to staff properly and not worry about "gaping out" of a product.

Before the mid 1980's sales forecasts did not do a good job predicting final sales. This drove companies to over-produce goods to ensure they had available stock during peak times. By over producing though, they exacerbated the boom/bust cycle by adding volatility to the economy. In the 1980's companies had gotten better at matching sales forecasts to actual sales (partly due to shorter lead times, and partly due to better models), which allowed them to reduce the inefficiency of carrying large amounts of unsold inventory. One of the major factors in this jump in accuracy was the advent of the "just in time" manufacturing philosophy. (Davis, 2008)

By having more accurate forecasts this also allowed them to deploy capital in a more efficient manner and reduce workers' uncertainty about employment. By reducing the production and forecast volatility they were better equipped to weather small economic shocks without magnifying this volatility and causing a larger system wide recession. This ability to ride out small economic shocks might have contributed to the great moderation.

IMPROVED GEO-POLITICAL STABILITY

After the cold war ended the world entered into an unprecedented time of peace of prosperity. This cessation of hostilities enabled a number of significant paradigm shifts in the way countries conduct business. First it enabled the countries to reduce their military spending and reallocate those resources to civilian purposes. Also as the more countries began to embrace capitalism the barriers to trade that had been erected for national security reason began to fall. This reduction in trade barriers allowed world trade to growth to average above 4% a year.

This increase in cross-country trade had a positive effect in helping to avert any large scale worldwide conflicts. As more countries became dependent on each other for economic growth they were less likely to become engaged in hostilities with one another. This became virtuous cycle of trade and prosperity. This intertwining of economies and opening of additional markets has allowed companies to expand into new regions thus reducing the affect of regional recessions on their bottom line. Also the regions that have been opened up have been extremely fast growing markets. By having access to these fast growing markets it has enabled more established economies to continue growing at a steady pace.

FINANCIAL INNOVATIONS

Another possible cause of the great moderation is the new financial innovations that have come about in the last twenty years. For good or bad the availability of credit has greatly expanded in the last twenty years. Examples of financial innovations that have spread the availability of credit are the securitization of mortgages and risk based pricing of loans and bonds.

These new instruments have allowed people who historically would not have been able to have access to credit to tap into credit markets to response to positive and negative shocks. This ability to respond to transient shocks by borrowing has a leveling affect on how those shocks affect the economy in general without having a detrimental long term effect. An example would be a short term recession in which a business needs to secure financing to make it through the recession. After the recession is over the business will hopefully become profitable again and be able to pay back the loan. In this way they are able to keep their spending at an even and sustained pace, which helps to balance the economy. (Dynan, 2005)

This availability to credit has a downside as well. If the recession turns out to be longer than expected or even turns into a depression, this credit has a negative effect for the recovery. As seen with the current recession, companies and individuals excessively leveraged their assets in good economic times and they were caught unprepared for a long term shock and by being saddled with all this debt will prolong the recession by keeping spending subdued until these loans have been paid back. Only time will tell exactly what affect this large amount of public, corporate, and consumer debt will have on the recovery.

GOOD LUCK

The last theory on why the business cycle flattened out is that the world just ran into a streak of good luck.

This could be entirely true, but for the purposes of this paper, I will be assuming that the causes of the great moderation where a combination of the previous four factors.

Chapter 3: Causes of Recessions

Even with the great moderation, expansions and recession still occur. To try to understand what lies ahead and to be better prepared to face it, one must understand what has historically caused recessions and how different causes create different types of recessions. Understanding the causes and differences of these recessions is key to positioning yourself or your company to maximize returns before, during, and after a recession. The five causes of recessions that we will examine are fiscal policy, monetary policy, oil shocks, external shocks, and financial crises. (International Monetary Fund, 2009)

FISCAL POLICY

Fiscal policy describes how a government gains money and how they spend it. Most governments gain money through various taxes and tariffs, and spend it on a variety of programs including, defense, social welfare, infrastructure, and law enforcement. The balance between taxes and spending will directly impact inflation and economic growth.

A recession can be caused by fiscal policy when the government is trying to stop inflation by raising taxes or reducing the government budget. Raising taxes effectively takes money out of the population's pockets and reduces their buying power. This lowering of demand will lead to lower inflation but at the expense of economic growth. If this demand is lowered too much, the country will sink into a recession.

Another way fiscal policy can bring about a recession is by reducing the governmental budget. This will lower demand for goods that were previously being purchased by the government. If the private sector cannot compensate for this drop in spending the economy will sink into recession as well.

If used properly, these two mechanisms can be used simultaneously to have an overall cooling affect on the economy without forcing the country into recession. On the other hand, if this type of policy is pursued for too long of a time though, it will stall the growth of a country's economy and throw it into a recession.

MONETARY POLICY

A recession can also be caused by monetary policy in much the same way as fiscal policy. Fiscal policy focuses on taxing and spending and tries to manipulate the economy by adjusting the demand curve, monetary policy on the other hand tries to manipulate the economy by adjusting the money supply. In the previous chapter easing the monetary policy by varying the prime interest rate was discussed. In this chapter we will examine how different types of quantitative easy can cause a recession.

The Federal Reserve can use quantitative controls to affect the money supply in three main ways. The Federal Reserve can buy or sell U.S. treasuries, change the amount of cash reserves banks must keep on hand, or change the discount window rate.

The first and most used tool is the buying and selling U.S. treasuries on the open market. By buying treasuries the Federal Reserve forces more money into the system. By selling treasuries money is removed from the system, causing the overall available money supply to contract. This same effect can be gained by varying the amount of cash reserves a bank must keep on hand. The higher amount of cash reserves banks are required to keep on hand, the less money that is circulating through the economy.

The last monetary policy tool is to allow the Federal Reserve to vary the discount rate. This is the rate of interest that is banks can borrow money from the Federal Reserve on a short term basis. As this rate goes up, it discourages borrowing, thus contracting the money supply.

By changing the amount of money circulating through the economy at any given time this helps control interest rates, growth, and inflation. By pursuing a "loose" monetary policy, the Federal Reserve allows more money to circulate through the system encouraging people to spend money and take out loans. By pursuing a "tight" monetary policy, the Federal Reserve can restrict the money supply causing a rise in interest rates that discourage people from spending money and taking out loans.

The key guide to predicting what the Federal Reserve will do is inflation. If inflation is low the Federal Reserve tries to pursue an expansionary monetary policy, if inflation is high they pursue a restrictive monetary policy. When a restrictive monetary policy is pursued for too long, inflation may stay low, but at the cost of sending the country into recession. This is not necessarily a bad thing as Paul Voelker did this in the 1980's to halt inflation at the expense of throwing the United States into a recession. (International Monetary Fund, 2009)

OIL SHOCKS

Another historical cause of recessions is an oil shock. When the price of oil increases dramatically over a short time period it restricts the amount of money that can be spent on other goods causing those sectors to fall into a recession. These used to be very common, but since 1985 there has only been one (May 2008) and that was one of the causes of the latest recession.

EXTERNAL SHOCKS

When some external pressure causes damage to a countries economy, this is considered an external shock. The U.S. sub-prime mortgage crisis of 2007-2008 that led to the tightening up of credit markets would be one example of an external shock to a

other world economies. Even though they may not have directly caused this crisis the effects of the crisis has dramatically affected their economies.

China's economy has been very dependent on exports to the United States. As the sub-prime crisis spread to U.S. consumers, their consumption dropped. This dip in consumption affected the amount of good China could export to the U.S. This drop in exports adversely affected China's economy, even though they did not play a role in the external shock of collapsing house prices in the U.S.

FINANCIAL CRISIS

This can broadly be categorized by financial institutions or their assets losing a large portion of their value. This reduction in asset value causes system wide damage to the banking/investment industry. As the financial sector tries to rebuild its balance sheet institutions shun high risk loans and limit the amount of loans they make in an effort to reduce their liabilities. This is what happened in the early part of 2008 as banks dramatically cut lending forcing consumers to limit spending. This dramatic reduction in spending helped to send the U.S. into recession and precariously close to price deflation which could have resulted in a depression.

Chapter 4: Lessons from History

EXPECTED LENGTH OF 2007 RECESSION

So how can looking back on the causes and types of past recessions help individuals and companies navigate the current recession? The figure below shows the five main causes of recessions and the length of time they last.

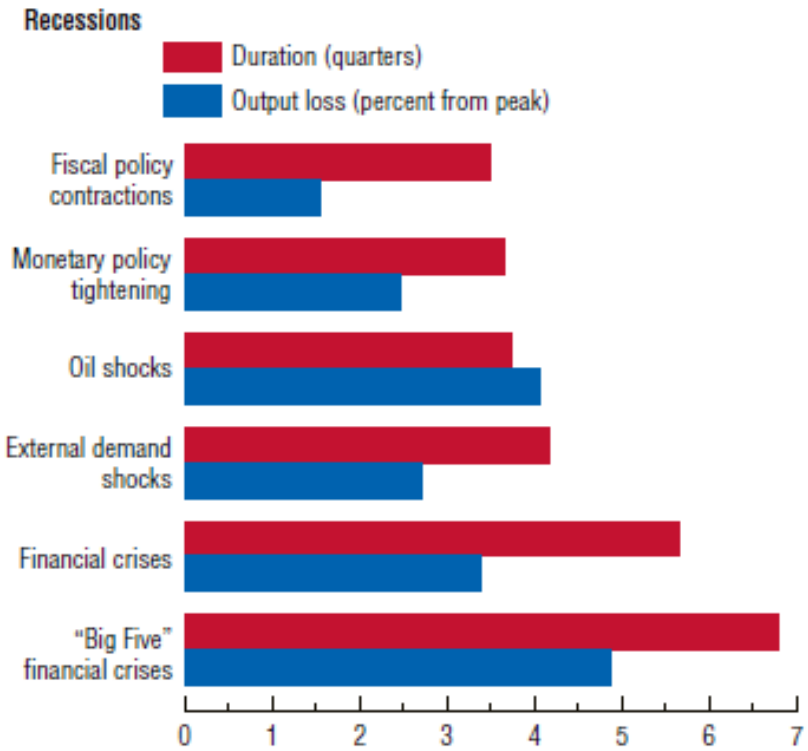

Figure 3: Length of Recessions (From World Economic Outlook April 2009, IMF)

When the causes of the 2007 recession are analyzed two main drivers emerge. An oil shock and a financial crisis brought about by the collapse in the sub-prime mortgage market.

Starting in 2007 gasoline prices began skyrocketing from $60/barrel, culminating in the summer of 2008 when prices almost hit $140/barrel. Because prices rose so

quickly, consumers did not have adequate time to gradually adjust their spending habits. This caused an immediate drop in the demand for goods across the all sectors. The good news is that oil shocks are mostly transient events. On average the affects are only felt for one year and then growth resumes as shown below in figure 4. When growth resumes, consumer spending generally rebounds quickly. This is important because understanding the size and speed of a recovery will allow you to position yourself to take advantage of any growth after the recession is over.

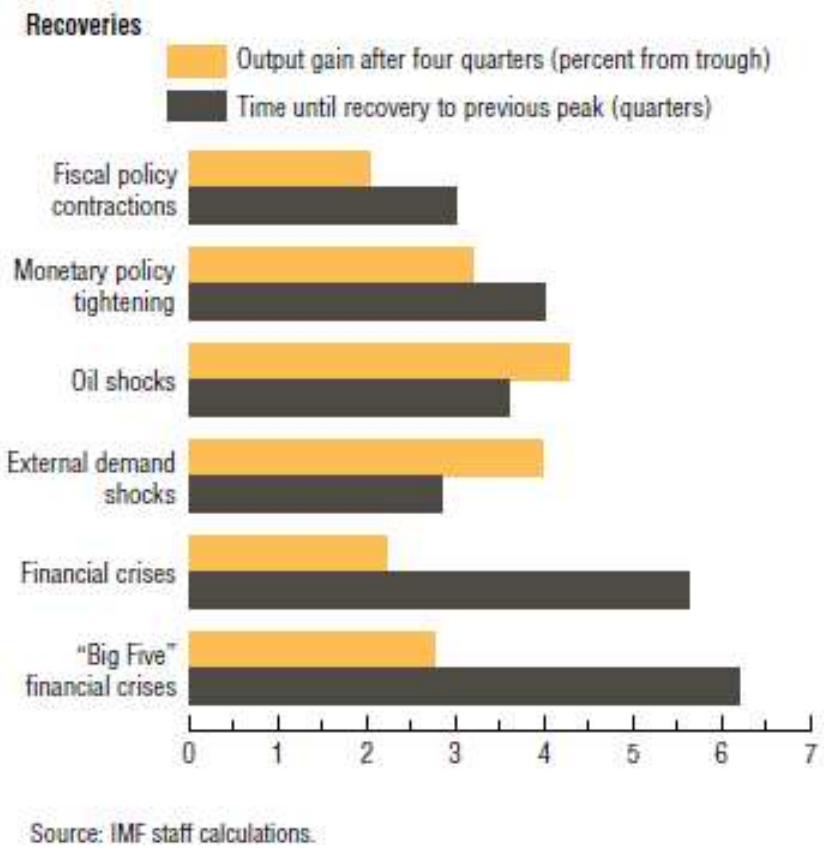

Figure 4: Length of Recoveries (From World Economic Outlook April 2009, IMF)

Unfortunately the second cause of the recession in the U.S. was a financial crisis. As shown in figure 3, recessions that are caused by this tend to be longer than the average

recession. These recessions average more than a year and half, and the recovery is slow and weak. The National Bureau of Economic Research has announced the U.S. has been in a recession since Dec, 2007. This now puts the recession at 6 quarters with the historical average for crisis at 7 quarters. This gives a good historical perspective that this recession may be drawing to a close. There are also multiple economic indicators that have improved showing that the economy is probably on the rebound. An unique thing about recessions that start with financial crises are that their recoveries never recover as much as was lost during the recession. (Aubuchon, 2009)

Also the fact that the U.S. entered the recession so much earlier than some other countries, namely Western Europe, means that their recovery may still be a year off. This needs to be taken into consideration when companies look at their long term strategies.

Given these two catalysts, the recession in the United States will most likely last until the end of 2009. This gives a good historical perspective that this recession may be drawing to a close. There are also multiple economic indicators that have improved in the second half of 2009 showing that the economy is probably close to exiting this recession. But even with an end to the official recession in sight, a robust recover should not be expected.

TYPE OF RECOVERY EXPECTED

If an oil shock was the only cause of the recession, the prudent thing for companies to do would be to secure short term loans to cushion any revenue loss, while continuing to develop and plan products to enter the marketplace roughly a year after the shock. In this way companies would have enough capital to make it through the recession. But be in a good position to capitalize on the robust growth that would follow the recession.

But since this recession was caused by a combination of an oil shock and a financial crisis, this strategy would be hard to implement and ineffectual. Ideally we could look into a crystal ball and accurately predict when recessions would happen, but as of yet, even the most sophisticated economic models do a poor job at predicting recessions.

POTENTIAL PIT FALLS TO RECOVERY

The large fiscal and monetary stimulus that the government has enacted will help to bring us out of the recession as soon as possible, but the problem is after the recession is over the markets will be flooded with money. This excess of money can cause inflation to rise quickly (or high interest rates to fight inflation) suppressing any recovery.

Also, if the U.S. government continues running a huge budget deficit after the economy has recovered inflation will become a larger problem as the danger of monetizing the debt will be more acute. If this happens the supply of dollars will be disproportionately larger than the demand for goods causing rampant inflation. This rampant inflation would cause the average person's standard of living to decline due to a loss in purchasing power from their savings.

Another potential problem could be legislatures enacting new legislation that is harmful to the overall economy. Currently the U.S. and china have both enacted protectionist legislation that make gaining governmental contracts more difficult to obtain if you have outsourced labor or manufacturing of a good. Also the U.S. has just recently pass a bill that imposes tariffs on Chinese tires. This current legislation is not too extreme and may not impact businesses too much, but if more bills are passed that increases trade barriers it will hamstring the current recovery. This is just what happened in the great depression with the Hawley-Smoot tariff act. In which when the U.S. began

imposing steep tariffs on foreign goods, other countries responded in kind, causing gobal trade to collapse.

Another thing to keep in mind is how governments interfere with companies during a bad recession. The U.S. has done that with GM and Chrysler, and China with Rio Tinto. In the U.S's case GM and Chrysler have both been shepherded through bankruptcy by the U.S. government. Instead of going through normal bankruptcy proceedings the government pre-arranged the terms of the bankruptcy and who the winners and losers would be out of the stakeholders of these companies as a condition for loans. These terms have turned out to be particularly unfavorable to secured bond holders. This may have large ramifications as the U.S. comes out of the recession and companies try to raise capital by issuing secured bonds. Now that the precedent has been set that even secured bond holders can be wiped out there may be much less demand for this type of investment hamstringing companies ability to raise cheap capital.

China's case is a bit more complex. Rio Tinto is a large Australian mining consortium that had taken on large debts during the boom years and when the bust came they were caught unprepared for tightening of the credit markets. In a normal recession they could secure short term financing to bridge the recession, but since this recession also included a financial crisis they were unable to pursue this strategy.

This inability to secure short term financing through normal means forced them to turn to Chinalco (Chinese state owned mining company)for capital. In exchange for this infusion of capital, they agreed to a give Chinalco a minority stake in Rio Tinto. This has caused concern that Rio Tinto now has a conflict of interest because one of their shareholders is also their biggest customer. After the 1st capital infusion, Rio Tinto needed another round and Chinalco offered to up their stake to 18%, but was rejected due to these conflict of interest concerns. After spurning Chinalco, Rio Tinto was in

negotiations with Chinese steel companies to set the price of steel for the upcoming year. These negotiations stalled so Chinese steel mills have had to pay spot prices (which has progressively gone up 7% since may) instead of a long term set price. In this precarious economic climate China felt that it was at a disadvantage relative to other companies, so instead of working through normal diplomatic channels they have now accused four Rio Tinto executives of stealing state secrets. This example just highlights how when the economy goes bad governments can resort to tactics that may not be in their economic best interests. (The Economist, 2009)

CONCLUSION

For the past twenty years we have experienced the moderation of the world's economies due to a number of factors. This moderation has allowed new wealth to be created at an unprecedented pace, but it also has allowed us to be lulled into a false sense of security. Even though central banks have gotten better at moderating their economies, recessions can still occur and they can be quite ferocious. When doing long term planning one must not only look at recent history but also take into account historical trends to get a more developed model for future economic behavior. If this was the case, more individuals and businesses may not have been caught so off-guard with the current recession.

As a business it is difficult to judge when a recession will begin, but once in a recession it is relatively easy to look back on the causes and draw some general conclusions on the length and depth of the recession to help position the company for success. The current recession was caused by a financial crisis and an oil shock and it has already proved to be long and deep recession, and the recovery will probably also

prove to be slow. With this in mind companies need to adjust their guidance, forecasts and capital expenditures to match the recovery.

Another option is to find a country in which did not experience a financial crisis. Many Latin American and Asian countries that are now in recession did not suffer a financial crisis. Their banking system was more heavily regulated or run by the state and they have largely been able to escape the kind of credit crunch that America has had to endure. This points to Latin American and Asian countries coming out of the recession sooner and the recovery being more robust. An example of this is that China has just posted their Q2 ’09 GDP numbers and they rose an unexpected 7.9% (annualized to 16.5%) (The Economist, 2009). While the U.S’s GDP declined by 5.5% in Q1 ’09. But this strategy has risks associated with it as well, as shown by the Rio Tinto example.

In conclusion, the best strategy for companies to pursue is to maintain a low level of leverage with the understanding that if short term capital markets dry up they will be able to fund themselves. Also companies should be looking to diversify into countries, especially those that have not experienced a banking crisis, as those countries should enjoy faster growth than the U.S. This diversification also provides some level of protect against inflation in a particular geographic area helping to stabilize revenue. The last recommendation is for companies to proactively prepare for potential worst case economic scenarios and remain flexible enough to adjust to them if needed. This flexibility also enables them to take advantage in any type of more moderate crisis.

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Vita

Andrew Harman Frisch was born in St. Louis, Missouri on Oct. 13th 1980, the son of Paul Douglas Frisch and Sue Ann Frisch. He grew up in Houston, Texas and after completing coursework at Kingwood High School, enrolled at the Georgia Institute of Technology. He graduated in Mechanical Engineering in May, 2003 and began work at Dell Inc. He has worked at Dell Inc for over 6 years doing product design. In January of 2008 he entered graduate school at the University of Texas at Austin to study Engineering Management while still working full time.

Permanent Address: 2932 Thrushwood Dr #B
Austin, TX 78757

This report was typed by the author.