

THE PENNSYLVANIA STATE UNIVERSITY
SCHREYER HONORS COLLEGE

SAM AND IRENE BLACK SCHOOL OF BUSINESS

EFFECTS OF THE EURO CRISIS
ON MULTINATIONAL BUSINESS SALES

ZACHARY TYLER WILLIAMS
SPRING 2013

A thesis
submitted in partial fulfillment
of the requirements
for baccalaureate degrees
in International Business and Accounting
with honors in International Business

Reviewed and approved* by the following:

Kenneth Louie
Associate Professor of Economics
Thesis Supervisor and Honors Advisor

Xin Zhao
Associate Professor of Finance
Faculty Reader

* Signatures are on file in the Schreyer Honors College.

ABSTRACT

The European Debt Crisis hit Europe in late 2007, early 2008, and wreaked havoc on both the general population as well as multinational companies with operating segments on the continent. One of the reasons why the crisis hurt so badly had to do with the fact that 17 countries in Europe share a common currency and are therefore considered a currency union, known as the Euro Zone. Those 17 countries began planning for a common currency more than half a century ago, and the public began using the euro in 2002.

The 17 countries collectively are strong, and make up the largest trading partner of the United States, and many other countries around the world. The idea of a currency union arose years ago with Robert Mundell, who published the Theory of Optimum Currency Areas. The theory specified three requirements that must be met in order for the proposed currency union to be successful. Those requirements were:

1. The savings from adopting the currency must be higher than the expected costs.
2. The countries that will be sharing the currency must trade often with each other.
3. Factors of production, which include labor, capital, and entrepreneurship, must be mobile.

Perhaps the Euro Zone wasn't truly qualified to be a currency union. Regardless, they formed the union and the crisis occurred nonetheless.

The hypotheses that this thesis sets out to test are: (A) whether or not European sales of multinational companies decreased following the crisis, (B) whether or not European sales of multinational companies with more than 32.66% of sales in European segment(s) decreased at a greater rate than sales of European companies with less than 32.66%¹ of sales in Europe, and (C)

¹ 75th percentile of our sample stocks.

whether or not European sales of multinational companies with more than 32.66% of sales in European segment(s) decreased at an even greater rate than the European sales of companies with less than 10.3%² of sales in Europe.

The three years prior to the event years were compared to the three years following the event years; the event years being 2007 and 2008. Once the averages of the sales prior and post were calculated, statistical analysis was conducted on both sets of data to get a better understanding of the impact of the crisis.

Once the summary statistics were completed, a two-tailed t-test was conducted to test the significance of the change. This was important because the results of hypothesis A were not as strong as one might have assumed. The t-test showed that the decrease in overall sales, although relatively minimal, was significant, and was not the result of the choice of companies or a fluke. Therefore, companies with European segments, on average, did see sales decrease after the European Debt Crisis. Hypotheses B and C saw more significant results, which indicated that in general, companies with greater than 32.66% of sales in European segments saw sales decrease at a greater rate than companies with less than 32.66% of sales in European segments, and they decreased at an even greater rate than companies with less than 10.3%.

² 25th percentile of our sample stocks.

TABLE OF CONTENTS

List of Figures	iv
List of Tables	iv
Acknowledgements.....	v
Chapter 1 Introduction	1
Chapter 2 Historical Analysis	4
Euro Zone.....	4
Cause of the Crisis.....	6
Effects of the Crisis.....	9
Chapter 3 Theoretical Analysis.....	14
Robert Mundell	14
Optimum Currency Areas	15
Did the Euro Zone Qualify?	18
Chapter 4 Literature Review	21
What the Euro Crisis Means for Taxpayers and the U.S. Economy	21
The Euro Crisis and the U.S. Economy	22
Devastating Impact: Euro Exit by Southern Nations Could Cost 17 Trillion Euros.....	23
Chapter 5 Data Analysis	24
Source of Data.....	24
Hypothesis A	26
Hypothesis B	29
Hypothesis C	32
Data Analysis Conclusion	34
Chapter 6 Conclusion.....	35
Chapter 7 Suggestions for Future Research.....	37
References.....	38

LIST OF FIGURES

Figure 2-1. Debt as a Percentage of Annual Economic Output	7
Figure 2-2. Trade Deficits	8
Figure 2-3. Extent of Debt	11
Figure 3-1. The GG-LL Curve	17
Figure 3-2. Products Traded Within the Euro Zone	19

LIST OF TABLES

Table 1-1. US Export Partners'	2
Table 1-2. US Import Partners'	3
Table 2-1. Adoption of the Euro	5
Table 5-1. Geographic Segments	25
Table 5-2. Summary Statistics – Pre-Crisis vs. Post-Crisis	27
Table 5-3. t-Test – Pre-Crisis vs. Post-Crisis	28
Table 5-4. Summary Statistics – European Sales 75 th Percentile	29
Table 5-5. Summary Statistics – European Sales Below 75 th Percentile	30
Table 5-6. t-Test – European Sales 75 th Percentile	31
Table 5-7. t-Test – European Sales Below 75 th Percentile	31
Table 5-8. Summary Statistics – 75 th Percentile vs. 25 th Percentile	32
Table 5-9. t-Test – 75 th Percentile vs. 25 th Percentile	33

ACKNOWLEDGEMENTS

I would like to express the deepest appreciation to my thesis advisor, Dr. Kenneth Louie. Without his efforts over the past two years, this thesis would never have been completed. His quick responses, knowledge of international economics, and enthusiastic nature made the process of completing this thesis enjoyable.

I would also like to thank my faculty reader, Dr. Xin Zhao. Without her knowledge of Computstat Industry Data Files, the data used for this thesis would have been very difficult to retrieve. Her assistance throughout the completion of this thesis has been invaluable.

Chapter 1

Introduction

The goal of this thesis is to discuss briefly the history of the Euro Zone and the crisis that has surfaced over the past few years. An analysis will be conducted comparing a large number of multinational companies with sales in European countries. A comparison of the three years prior and post crisis will aim to determine the extent of the damage done to the European sales of these companies. Additional analysis will be conducted as necessary.

The European Union is one of the most powerful combinations of countries in the world, and is the largest trading partner of the United States. Tables 1-1 and 1-2 show select statistics. It's only natural that what happens in Europe affects the United States and other countries all around the world. The European Debt Crisis began in late 2007, and has just recently begun to cool down, ever so slightly. Even with the crisis winding down, it was devastating enough to affect the sales of companies doing business in Europe, in some cases severely.

The primary hypothesis is that in general, companies doing business in Europe, whether entirely or partially, have seen their sales decrease in the three years following the crisis as compared to the three years prior to the crisis. This thesis will seek to test this hypothesis as well as additional hypotheses regarding the impact on sales according to the extent of concentration in Europe.

Table 1-1. US Export Partners^{3,4}

United States Export Partners (Goods)			
<u>Rank</u>	<u>Country</u>	<u>Exports (Year-to-Date)</u>	<u>Percent of Total Exports</u>
---	Total, All Countries	1,547.10	100.00%
---	Total, Top 15 Countries	1105.4	71.40%
1	Canada	292.4	18.90%
2	Mexico	216.3	14.00%
3	China	110.6	7.10%
4	Japan	70	4.50%
5	United Kingdom	54.8	3.50%
6	Germany	48.8	3.20%
7	Brazil	43.7	2.80%
8	Korea, South	42.3	2.70%
9	Netherlands	40.7	2.60%
10	Hong Kong	37.5	2.40%
11	Australia	31.2	2.00%
12	France	30.8	2.00%
13	Singapore	30.6	2.00%
14	Belgium	29.4	1.90%
15	Switzerland	26.2	1.70%

Table 1-1 shows the top 15 export partners of the United States. Of the 15 partners, six are part of the European Union: United Kingdom, Germany, Netherlands, France, Belgium, and Switzerland. The exports of these 15 countries make up 71% of all US exports. The exports of the six European Union countries on this list make up 15% of all US exports. Canada is the only country on this list that has a greater percentage of total exports. This list doesn't include the other two dozen or so European Union countries, which would easily increase the percentage of exports to that above Canada.

³ United States Census Bureau, 2013

⁴ As of December 31, 2012

Table 1-2. US Import Partners^{5,6}

United States Import Partners (Goods)			
<u>Rank</u>	<u>Country</u>	<u>Imports (Year-to-Date)</u>	<u>Percent of Total Imports</u>
---	Total, All Countries	2,275.00	100.00%
---	Total, Top 15 Countries	1714	75.30%
1	China	425.6	18.70%
2	Canada	324.2	14.30%
3	Mexico	277.7	12.20%
4	Japan	146.4	6.40%
5	Germany	108.5	4.80%
6	Korea, South	58.9	2.60%
7	Saudi Arabia	55.7	2.40%
8	United Kingdom	54.9	2.40%
9	France	41.6	1.80%
10	India	40.5	1.80%
11	Taiwan	38.9	1.70%
12	Venezuela	38.7	1.70%
13	Italy	36.9	1.60%
14	Ireland	33.3	1.50%
15	Brazil	32.1	1.40%

Table 1-2 shows the US import partners. As can be seen, the European Union countries on this list are Germany, United Kingdom, France, Italy, and Ireland. The total percent of imports from these six countries totals 12.10%. The three countries above that are Canada, China, and Mexico. Like the export partners, this list doesn't include the remaining countries of the European Union.

⁵ United States Census Bureau, 2013

⁶ As of December 31, 2012

Chapter 2

Historical Analysis

A lot of time and effort has been put into the creation and the maintenance of the Euro Zone. Many different organizations were created in an attempt to sustain the currency area. In order to discuss the crisis affecting this currency union, it's important to have a general understanding of exactly what it is and how it came about.

Euro Zone

The Euro Zone is composed of 17 countries that share a common currency, the euro. The idea of a common currency throughout multiple countries arose back in 1957 with the creation of the European Economic Community (EEC). Many years later the European Union was formed with the signing of the Maastricht Treaty on February 7, 1992. (The treaty went into force on November 1, 1993.) This union formed a common market among the majority of European countries along with the introduction of the euro. On January 1, 1999, the euro was printed and 11 countries began to use the currency, but not the way that we use currency every day.

From 1999 to 2002, individual countries continued to use their respective currencies to complete transactions. During these years, the euro was used for cash-less payments and accounting purposes. On January 1, 2002, the euro was printed and distributed to the countries of the Euro Zone. Table 2-1 shows the members of the Euro Zone and the year in which they joined.

Table 2-1. Adoption of the Euro⁷

ADOPTION OF THE EURO	
1999	Belgium, Germany, Ireland, Spain, France, Italy, Luxembourg, Netherlands, Austria, Portugal, Finland
2001	Greece
2002	-Introduction of banknotes and coins-
2007	Slovenia
2008	Cyprus, Malta
2009	Slovakia
2011	Estonia

In order to become a member of the Euro Zone there are five criteria that must be met, each listed as part of the Maastricht Treaty. They are as follows:

1. Inflation of no more than 1.5 percentage points above the average rate of the three EU member states with the lowest inflation over the previous year.
2. A national budget deficit at or below 3 percent of gross domestic product.
3. National public debt not exceeding 60% of gross domestic product.
4. Long-term interest rates should be no more than two percentage points above the rate in three EU countries with the lowest inflation over the previous year.
5. The national currency is required to enter the exchange rate mechanism II (ERM) two years prior to entry.

The ERM was designed to reduce exchange rate fluctuations in preparation for the Economic and Monetary Union. Currencies could fluctuate up to, but not exceeding 2.25 percentage points up or down. The ERM II sets the limits to 15 percentage points plus or minus.⁸

The European Central Bank has total control over the euro; in fact the reason for the creation of the ECB *was* the euro. The common currency has proved to be very important in maintaining low inflation and interest rates. Prior to the euro, the mobility of goods and services

⁷ European Commission, 2012

⁸ Reuters – Financial Glossary

wasn't very smooth. Barriers to trade were high and travel time between countries was very high due to border crossing. With the euro, however, most of these obstacles have ceased.⁹

Cause of the Crisis

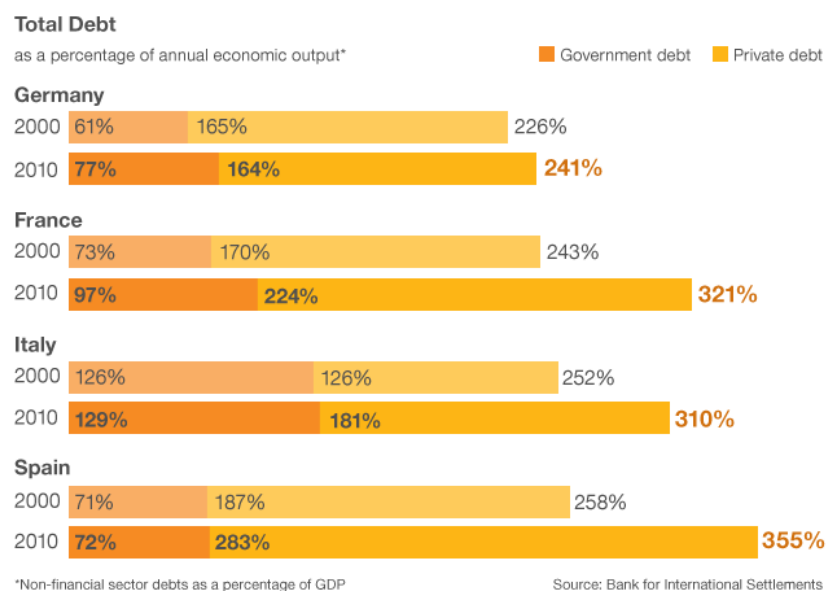
In 2012, the Euro Zone began discussing structural borrowing. This limits the countries to borrowing 3% in order to reduce public debt. Interestingly, this was already agreed upon back in 1997 with the stability and growth pact. So, in order to vote on it again, just this past year, means that no one followed it in the first place. Of course, it wasn't just one country that broke the pact, but there is something to be said about the first country to do so. And who was that? It was Germany, the country that set the pact in motion in the first place. Germany was the first, but Italy was the worst offender. France followed them in breaking the rules, and Spain held out until after the crisis occurred to break the pact. Of course, we can't forget about Greece, which never met this 3% threshold, but manipulated their statistics to make it seem as if they were following the pact.

Based on this information it would generally be assumed that Germany would be in trouble and Spain would be in a fairly good position. This, as we know, is not the case. Germany has historically been given loans at low interest rates, whereas Spain is seen as risky.

The source of the crisis is actually quite simple to understand. The countries had quite a bit of debt prior to adopting the euro, and once the euro was adopted, interest rates dropped greatly. This encouraged a 'debt-fuelled boom,' the extent of which for select countries is shown in Figure 2-1.¹⁰

⁹ European Commission, 2012

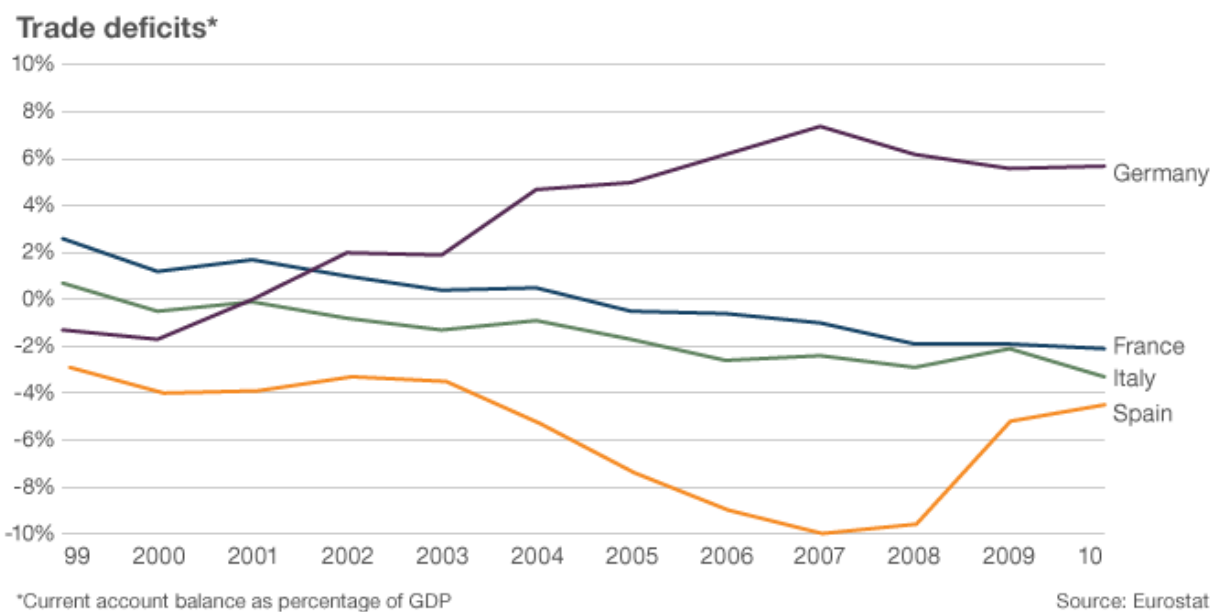
¹⁰ BBC News, 2012

Figure 2-1. Debt as a Percentage of Annual Economic Output¹¹

As can be seen in Figure 2-1, for Italy and Spain, two of the weaker economies in the Euro Zone, their debts have increased by an alarming rate; even France has seen a drastic increase in debt. Italy has seen a 58 percentage point increase in debt over the course of ten years, Spain has seen a 97 percentage point increase, France a 78 percentage point increase, and finally Germany has only seen a 15 percentage point increase.

The decrease in interest rates has increased imports in the weaker economies, resulting in rising trade deficits. Germany on the other hand became an export powerhouse, greatly decreasing its trade deficit. Much of this money that Germany was receiving was lent to southern Europe. Figure 2-2 takes the same countries in the previous figure, and graphs their trade deficits.

¹¹ BBC News, 2012

Figure 2-2. Trade Deficits¹²

As Figure 2-2 shows, Germany, back in 1999, had the second largest trade deficit, in relation to the other three countries listed on this figure. In 2010 it had decreased its deficit from around -1.8% to a trade surplus of about 6%. France and Italy both had surpluses in 1999 and dropped down to deficits. Spain had a deficit in 1999 and in 2010 had a deficit of almost the same amount, but 2007 was a rough year for Spain. This, of course, makes sense considering that is the year that the financial crisis hit.

The reason that this crisis has lasted so long is because of the reluctance to buy. Firms and mortgage borrowers are paying off their debts and can't find the time or money to spend. The government has decided to cut back spending too, but this creates a new problem.

If they cut spending, the recession will deepen and increase unemployment. This would increase strikes and nervousness in the financial market, and really get people thinking about whether or not they should remain in the Euro Zone.

¹² BBC News, 2012

If they don't cut spending, there could be a financial collapse. Debts can increase and no one will lend money because, realistically, what is the chance that they will actually be able to repay it in the future.¹³

Effects of the Crisis

Clearly this crisis is having devastating effects on Europe, and has been causing chaos for the last few years. What hasn't yet been addressed is the effect of the European crisis on the United States. According to Catherine Rampell, journalist for the New York Times, the European Debt Crisis can have three major effects. The effects are related to trade, stock markets, and a credit crisis.

Of all of the United States' exports, 22% are purchased by Europe. If this crisis causes a severe recession, the sale of US products to Europe could fall, which could increase our trade deficit. Another way that trade could be affected is if investors stop investing in the euro. A decrease in euro investments decreases the value of the euro, which makes everything more expensive for those in the Euro Zone. This creates a disincentive to purchase products from the United States, as well as other countries around the world.

Many American companies rely on revenues in Europe. As the article goes on to explain, "Deutsche Bank analysts estimate that about 15 to 20 percent of corporate revenues of companies in the Standard & Poor's 500-stock index are generated by Europe."¹⁴ The worse these companies do, the greater it will decrease their share prices and therefore, decrease American portfolio values.

The final issue is the potential credit crisis. European countries lend to each other frequently, and an issue arises when countries are unable to repay these debts; it creates a chain

¹³ Source: BBC News, 2012

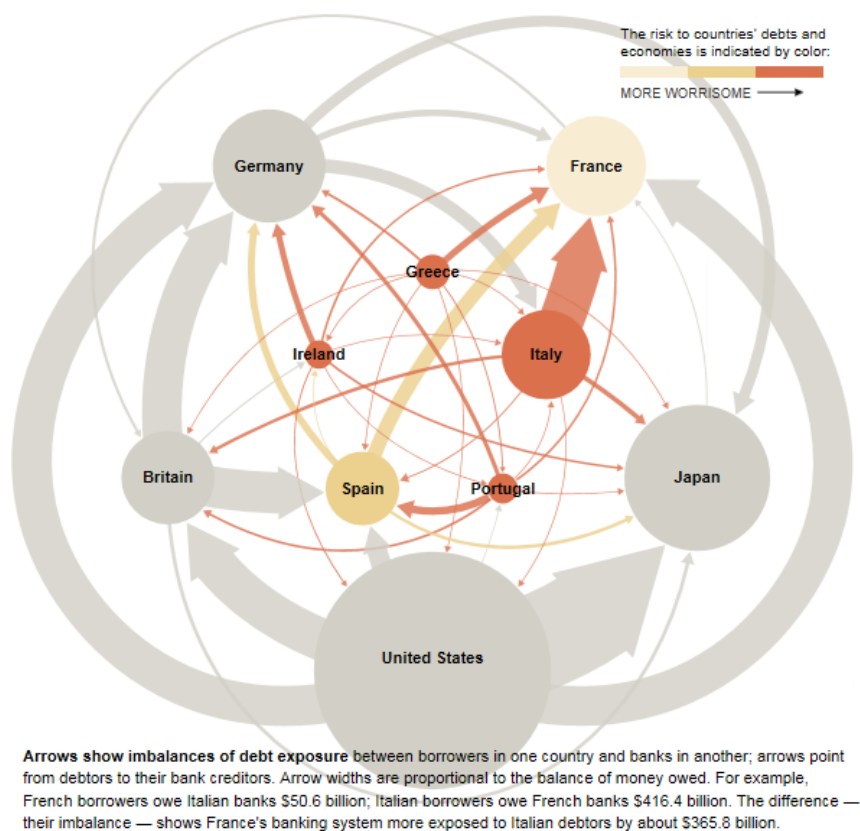
¹⁴ Rampell, 2011

reaction. If any one country defaults, each country owning any of that debt feels the effects, and each successive country that defaults because of the prior country only strengthens the problem.¹⁵

The United States is more connected to Europe than one might think. Even small or minute issues create a ripple effect that crosses the entire world. Naturally, a debt crisis as large in magnitude as this one has done great damage all over. Figure 2-3 on the following page provides a visual of how interconnected the countries are at this point as well as the extent of each country's debt.

Figure 2-3 shows via arrows the countries that hold debt of other countries. The thickness of the arrow shows the amount of debt; the thicker the arrow, the more debt owed to that country. Based on this graph, the United States owes money to France, Germany, Britain, Spain, and Japan, with the greatest amount owed to Japan.

¹⁵ Rampell, 2011

Figure 2-3. Extent of Debt ¹⁶

Stella Dawson of Reuters published an article entitled “Scenarios: Impact of Euro Zone Crisis on U.S. Economy.” This article looks at various outcomes of the crisis based on both the length and intensity of the crisis.

If the outcome were a mild recession, which is defined as a contraction of 1% in late 2011 or early 2012, with slow growth from there on, the main issue would be trade. As stated above, Europe is the United States’ third largest export destination. If exports decreased due to the recession, household and corporate investing could counteract the effects.

¹⁶ Marsh, 2011

Another scenario is a protracted recession. A lengthened recession would hurt the United States to a greater extent, but if domestic demand were to steadily increase, then the effects wouldn't be as strong.

A final scenario is a financial meltdown. This is defined as, "A disorderly sovereign default that causes a 40 percent decline in world equity prices, a widening of credit spreads by 350 basis points in some euro-zone countries, plunging business and consumer confidence, and a global downturn."¹⁷ The direct impact on the United States in this case would be a decrease in GDP growth of 2.05% and 2.77% in 2012 and 2013 respectively, as well as an increase of 2% in unemployment.

The OECD provided greater detail on the effects of a financial meltdown, "Such turbulence in Europe, with the massive wealth destruction, bankruptcies and a collapse in confidence in European integration and cooperation, would most likely result in a deep depression in both the exiting and remaining euro area countries, as well as in the world economy."¹⁸

This article discussed similar topics as the previous. Trade is a large factor when it comes to anything global, and a financial crisis can greatly affect even the strongest of economies.

Even as of this past August, the crisis wasn't improving much if at all. For example, a brand new Apple store opened up in an upscale shopping mall in Madrid. The only problem was that there were no customers. Workers in Spain have seen relentless wage cuts over the course of the crisis, and although the cuts may seem minimal, they are enough to make one think more carefully about where the money is going. And not only are people making less money, the unemployment rate continues to rise. This information is from an article titled, "European financial crisis has ripple effect on U.S. businesses," and this title couldn't be more spot on.

¹⁷ Dawson, 2011

¹⁸ Ibid.

The article goes on to say that many U.S. businesses reported lower than usual revenues because of the crisis. Not only that, but the stock market continues to fluctuate, often for the worse. In late July of last year, the president of the European Central Bank, Mario Draghi, said that he was unable to take new steps to address the debt crisis, despite earlier announcing that he had already been taking new steps.¹⁹

General Motors, headquartered in Detroit, saw third quarter losses amounting to \$361 million in Europe. This was somewhat disturbing considering that the third quarter in 2011 saw profits of \$102 million. Whirlpool sales fell 7% and Ford profit fell 57% losing \$404 million in Europe. Ford has a large market in Spain with the Ford Focus; smaller cars tend to be more popular in Europe than larger cars. People often can't pay cash for a new vehicle and so a loan is taken out instead, which is now almost impossible; this is the same issue in Spain.²⁰

This article is a particularly good example of the focus of this paper. American companies with sales in Europe can see huge decreases in revenues due to the crisis. If they don't change their plans or focus, they could be on a path to bankruptcy.

¹⁹ Cha, 2012

²⁰ Ibid.

Chapter 3

Theoretical Analysis

This section discusses how countries actually come together to form a currency union. The resulting ‘conditions’ discuss whether a country will benefit from the convergence, or will ultimately risk its well-being.

Robert Mundell

Robert Mundell, born in 1932, has a history of excellence as a Professor of Economics at various renowned universities. In 1961, he joined the staff of the International Monetary Fund. Mundell has been an advisor to organizations such as the United Nations, World Bank, European Commission, Federal Reserve Board, US Treasury and more. He received the Nobel Memorial Prize in Economic Sciences in 1999. Mundell is the author of “A Theory of Optimum Currency Areas,” which will be discussed momentarily.²¹

One of the biggest pitfalls of the euro is that unlike countries with their own individual currencies, the government cannot implement monetary policy to revalue or devalue the currency. The ability to control the monetary policy is extremely helpful in that if the country is experiencing a recession, the government can print more money, which increases spending and inflation. In a currency union, such as the Euro Zone, if one or two countries are experiencing tough times, monetary policies *can* be changed, but almost definitely will *not*. Changing the policy to help, say, Greece and Italy, puts the stronger countries, such as France and Germany at risk. This is why it’s extremely important not to hide debt issues from the government, and that the guidelines are followed strictly for countries to enter currency unions.

²¹ Nobelprize.org, 1999

Optimum Currency Areas

Krugman, Obstfeld, and Melitz (2012) provide a good explanation of what optimum currency areas are and what steps should be taken to become one. The ultimate goal of a common currency is to cushion the impact of inflation and other economic ‘shocks.’ There are, of course, negative impacts as well as positive, and it’s important that the benefits outweigh the costs when bringing groups of countries together in this sense.

Krugman, Obstfeld, and Melitz explain how to measure the benefits and costs using simple graphs, similar to supply and demand graphs, labeled GG and LL. The GG Graph shows how the potential gain of one country from joining the Euro Zone depends upon that country’s trading links with the Euro Zone. The benefit of the Euro Zone to the countries that participate is the ability to trade among themselves without facing potentially high exchange rate costs. Prior to the euro, each country in Europe needed to exchange its home currency for whichever currency the country needed, based on its international transactions. The *monetary efficiency gain* “from joining the fixed exchange rate system equals the joiner’s savings from avoiding the uncertainty, confusion, and calculation and transaction costs that arise when the exchange rate floats.”²²

Naturally, the more that the country trades with member countries, the greater the gain will be. It will again be greater if factors of production can travel freely between the country and the Euro Zone. In the end,

“A high degree of economic integration between a country and an affixed exchange rate area magnifies the monetary efficiency gain the country reaps when it fixes its exchange rate against the area’s currencies.”²³

Of course, when there are benefits there are always costs involved. If the country were to give up its floating exchange rate to adopt a fixed exchange rate, the country would lose its ability to use

²² Krugman, Obstfeld, and Melitz, 2012, p. 567

²³ Ibid., p. 567

exchange rate and monetary policy to stabilize output and employment. This is where the LL curve comes about. The reason that some countries don't adopt a fixed exchange rate is because the "floating exchange rate automatically cushions the economy's output and employment by allowing an immediate change in the relative price of domestic and foreign goods...when the exchange rate is fixed, purposeful stabilization is more difficult to achieve because monetary policy has no power at all to affect domestic output."²⁴

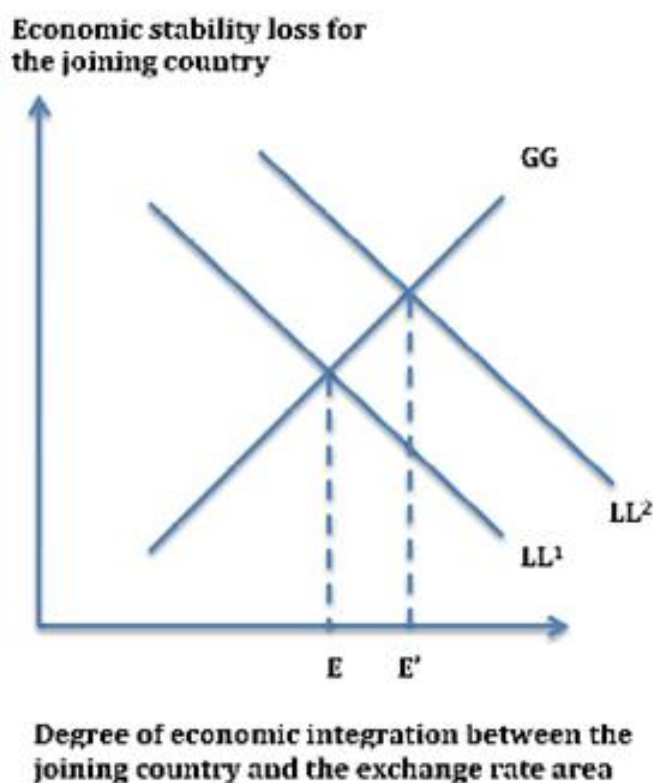
If the Euro Zone countries all experience a decrease in demand for their products, the euro will depreciate against other currencies. This is good, and solves the issue. A serious problem arises, however, when only one of the countries experiences a decrease in demand. If the euro were to depreciate against other currencies, the country would be happy, but it would hurt every other euro country that hasn't experienced a similar drop in demand. This also decreases wages and thus employment. The more integrated the country is within the Euro Zone, the smaller the damage and the quicker the recovery. This is why it's important for countries in a common currency zone to have high mobility of labor. If employment decreases in the country whose demand decreased, people can move to a neighboring country to seek employment. The conclusion here is that:

"A high degree of economic integration between a country and the fixed exchange rate area that it joins reduces the resulting economic stability loss due to output disturbances."²⁵

Figure 4-1 below shows the GG and LL curve together creating the GG-LL curve. Combining these two graphs shows theoretically where the country must stand in order for benefits to equal the costs and thus may want to join a currency union. It also shows what happens when a shift of the LL curve occurs, what happens to the benefits and costs.

²⁴ Krugman, Obstfeld, and Melitz, 2012, p. 568

²⁵ Ibid., p. 570

Figure 3-1. The GG-LL Curve²⁶

As can be seen from Figure 3-1, point E is the point in which the country would seriously start considering joining a common currency area. Remember that the GG curve shows the benefits and the LL curve shows the costs. Therefore, so long as the country falls to the right of the 'E', the country would benefit more from joining the currency union. If the country falls to the left of the 'E', the country should *not* join the currency union.

The shift of the LL curve from LL¹ to LL² results as the size and frequency of country-specific disturbances to the joining country's product markets increase. As these disturbances increase, the economic integration between the countries must increase as well, or they must at least already be higher than the original point. This shift shows that the country must now be more integrated than it had originally been in order for the benefits to outweigh the costs.

²⁶ Krugman, Obstfeld, and Melitz, 2012, p. 572

To summarize this somewhat dense information, in order for a common currency area to be established it ultimately must meet the following requirements:

1. The savings from avoiding the uncertainty, confusion, and calculation and transaction costs that arise from floating exchange rates must be higher than the expected costs of switching to a fixed exchange rate.
2. The countries that will be sharing the currency must trade often with each other. The extent of trade integration must be high; if the countries don't trade with each other, then the currency union will not succeed.
3. Factors of production (labor, capital and entrepreneurship) must be mobile.

Did the Euro Zone Qualify?

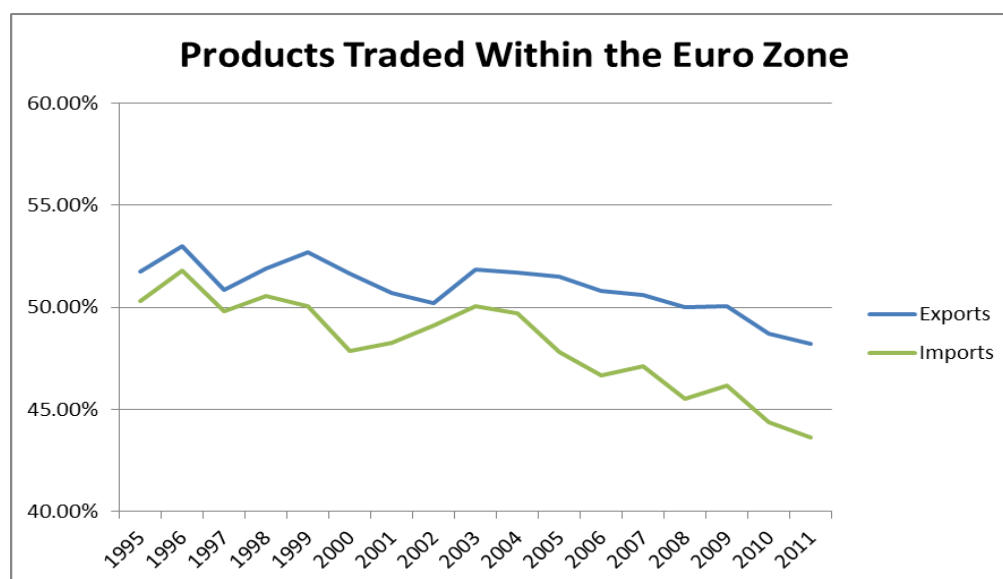
Based on the three conditions described by Robert Mundell, it is debatable whether or not the Euro Zone actually qualified to become a currency union. Although this discussion can be analyzed to a great extent, just a brief overview is going to be discussed here.

The first condition is that the savings from switching must be greater than the expected cost. This is required in most cases because it would be almost impossible to explain to joining countries that the costs are greater than the benefits, but we are going to form the union anyway. One of the downfalls of this condition is that it doesn't imply that this cost benefit analysis should be performed periodically through the existence of the union. The reason this is mentioned is that the benefits could have outweighed the costs in the beginning, but in all reality that was just the expected benefits and expected costs. At the beginning of the crisis it was very clear that the costs outweighed the benefits, and that the floating exchange rates would have been much more helpful in solving the crisis than the adopted fixed exchange rates.

Condition number two is that trade integration must be high. This was plausible at the time, and the issue easily could have arisen as time passed. The reason that this would seem to be

no problem is that if the trade barriers are reduced and goods can move freely between countries, it only makes sense that they trade with each other often, or there is no point in going through the hassle. Figure 3-2 shows the trends of products traded within the Euro Zone.

Figure 3-2. Products Traded Within the Euro Zone²⁷



Ideally for a country to consider joining a currency union, at least 50% of trade should be conducted within the countries. As can be seen from the Figure 3-2, before the Euro Zone was officially started in 1999, trade was greater than 50%. 52.72% of imports came from Euro Zone countries, and 50.08% of exports went to Euro Zone countries.

So it seems that when the Euro Zone began it did in fact meet this recommendation. It's interesting to see, however, that since then, intra-group trade has decreased. In 2011, intra-EU exports were 48.20% and intra-EU imports were 43.61%.

The third and final condition deals with labor mobility. This is the condition that the Euro Zone did not meet, at all. In order to meet this condition, labor must be mobile between the union

²⁷UNCTAD, 2012

countries. If unemployment rates increase in one country, people who can't find jobs should be able to easily find a job in a neighboring country, one which doesn't have increasing unemployment rates. The problem is that each country speaks different languages. A man who lives in Germany and only speaks German will not easily be able to travel to France and find a job. It is definitely possible, but assuming that man doesn't know enough French to be able to hold a conversation, he probably isn't going to be able to find a job in the first place, but also, there isn't much of a motivation to even try.

These three conditions are logical, and should be met prior to forming a currency union. In everything that is done, individually or on a national scale, benefits should outweigh costs. If trading barriers are going to be taken down, trade should regularly be conducted between the countries taking down the barriers. And if labor isn't mobile, then unemployment cannot fix itself. Did the Euro Zone meet these conditions? If not entirely, did they meet them enough to call themselves a currency union? Maybe, maybe not. Regardless, the crisis has occurred, and at this point it is clear that these conditions could be part of the reason.

Chapter 4

Literature Review

The European Debt Crisis began in late 2007 and early 2008, and naturally, this isn't the first paper to discuss the devastating effects. The following three analyses will describe some of the other questions researched and their outcomes.

What the Euro Crisis Means for Taxpayers and the U.S. Economy

Douglas J. Elliott (2011) looked at the risk to the U.S. taxpayer of the crisis and how the IMF could alleviate much of that risk. He discusses that if Europe were to fall into a deep recession, much of our European exports would be lost. The recession creates a great chain reaction that could hit the United States harder than some think. European firms would gain global market share and countries like China would be able to export greater amounts to Europe.

In addition to trade there are investments, financial flows, and business and consumer confidence. All four of these channels combined would put us into another recession. Even with all of these factors, there is only a 25% chance that the euro crisis will end up being bad outcome or a country leaving the Euro Zone.

The IMF could assist the Euro Zone by providing some funding, which would reassure the markets. Not only that, but it would also show that the world is ready to assist the EU. Douglas believes that the IMF would be able to cover the cost without the help of additional sources of money. If, however, additional funds were needed, the risk to U.S. taxpayers would be relatively low. In fact, he states that the risk to taxpayers results more from the IMF *not* stepping in. The longer the crisis continues, the longer U.S. businesses are at risk with European sales drastically decreasing. Federal government tax receipts will decrease, and this would increase

taxes for U.S. taxpayers. Supporting the IMF, however, would greatly reduce the chance of this scenario occurring.²⁸

The Euro Crisis and the U.S. Economy

Two professors of economics at Columbia University, Richard Clarida and Lowell Harriss (2012) looked at how the Euro Crisis has affected the U.S. economy. They answered a handful of interview questions connecting the United States to the European Debt Crisis including: ‘How is the U.S. financial sector exposed to the Eurozone?’ and ‘In terms of the flight to safety, how does a weakening euro and rising dollar affect the U.S. economy, particularly in terms of the potential spike in the cost of U.S. exports?’

To answer the first question, they responded “Were there to be an unraveling or severe dislocation [in the Eurozone], then the contagion would not be directly on the balance sheet [of U.S. banks], but on just the overall re-pricing of risk.”²⁹ No matter what happens with the crisis, the United States is going to feel the effects, but the biggest outcome is an increase of risk.

To answer second question, the euro had only dropped from \$1.46 in 2011 to \$1.26 in the middle of 2012, which isn’t very significant. In fact, this works out well for countries like Germany; it can help increase a country’s exports because their goods are cheaper. If the rate were to continue to decrease, then problems could arise, but at this point there aren’t any major issues.

They went on to explain that the IMF conducted a study that explained that if the Euro Zone were to enter a major recession, a 3.5% decrease in GDP, the United States would also fall

²⁸ Elliott, 2011

²⁹ Clarida and Harriss, 2012

into a recession. This is regardless of any action by the Fed. So, there's a lot that can be done, but at the same time a decent amount that just needs to play its course.³⁰

Devastating Impact: Euro Exit by Southern Nations Could Cost 17 Trillion Euros

The final article, "Devastating Impact: Euro Exit by Southern Nations Could Cost 17 Trillion Euros", (Spiegel, 2012) explains the outcome if Greece were to exit the Euro Zone, that it would cause a chain reaction of other countries exiting the Euro Zone as well. Prognos, an economic research group, estimated that if Greece, Portugal, Spain, and Italy were to leave the Euro Zone, \$22.3 trillion (€17.2 trillion) of worldwide growth would be erased by 2020. They looked at both the losses of creditors who lent the Euro Zone money, as well as the possible impact of a collapse on the 42 most important industrial and emerging economies, which make up more than 90% of the world economy.

They state that although the Euro Zone could most likely support itself if Greece were to leave, the uncertainty of additional countries leaving is unbearable. If Greece were to solely leave, it would cost €14,300 per person by 2020 through the devaluation of the new currency. Germany would lose €64 billion in lost credit and €73 billion in economic growth by 2020.

If Portugal, or Spain, or Italy left instead, the effect would be increasingly more devastating. The loss in GDP would amount to €225 billion, €850 billion, and €1.7 trillion respectively. The effects transfer to other countries as well. If Portugal left, China would lose €275 billion. Any country leaving the Euro Zone would be devastating to the world. If that country left by itself, the disaster could be contained, but the likelihood of additional countries exiting the Euro Zone increases continually.³¹

³⁰ Clarida and Harriss, 2012

³¹ Spiegel, 2012

Chapter 5

Data Analysis

The major hypotheses that this thesis seeks to test are that: (A) multinational corporations with any percentage of sales in Europe pre-crisis, saw those sales decrease post-crisis, (B) multinational corporations with more than 32.66% of sales in Europe pre-crisis saw sales decline at a greater rate post-crisis than multinational corporations that had sales of less than 32.66%, and (C) multinational corporations with more than 32.66% if sales in Europe pre-crisis saw a decline at an even greater rate post-crisis than multinational corporations that had sales less than 10.3%.

Source of Data

As of 1998, Financial Accounting Standards Board (FASB) No. 131 has required firms to disclose information regarding operating segments.

“This Statement requires that a public business enterprise report financial and descriptive information about its reportable operating segments. Operating segments are components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision maker in deciding how to allocate resources and in assessing performance. Generally, financial information is required to be reported on the basis that it is used internally for evaluating segment performance and deciding how to allocate resources to segments.”³²

Using this information, information has been retrieved regarding sales information pertaining to companies with operating segments in the European countries, both in the European Union and out of the European Union.

³² Financial Accounting Standards Board, 1997

Using Compustat Industry Segment files, which publish all firms with any segment sales above 10%, we looked at companies that had any segment sales in European countries. The segments included the following listed in Table 5-1.

Table 5-1. Geographic Segments³³

Geographic Segments	
Albania	Germany
Austria	Greece
Azerbaijan	Hungary
Belarus	Iceland
Belgium	Ireland
Belgium/Switzerland	Italy
Bulgaria	Lithuania
Central & Eastern Europe	Luxembourg
Central Europe	Macedonia
Continental Europe	Malta
Croatia	Montenegro
Cyprus	Netherlands
Czech Republic	Norway
Denmark	Other European Countries
Eastern Europe	Poland
Euro Zone Countries	Portugal
Europe	Romania
Europe & United Kingdom	Russia
European Countries	Slovakia
European Markets	Slovenia
European Operations	Spain
European Region	Sweden
European Russia	Ukraine
European Union	United Kingdom
Finland	Western & Central Europe
France	Western Continental Europe
Georgia	Western Europe

Table 5-1 is not all inclusive; however, each individual country observed is included in this table. Each company reports sales in different segments, variations not listed above include: ‘UK & Ireland’, ‘Europe (Excluding Italy)’, ‘United Kingdom (UK),’ etc.

³³ Compustat Industry Segment Files

Prior to limiting the data to European segments, we had thousands of companies to choose from. Once the companies that had sales in European segments were found, the sales data for each were acquired. The data were found for the years of 2004 – 2011. The event years were 2007 and 2008, and were ultimately disregarded. We averaged the European sales data for the three years prior (2004, 2005 and 2006) and then compared them with the averages for the three years after (2009, 2010 and 2011) the Euro Crisis. There were 1,356 companies with European segments, with sales in either prior or post crisis, or both. Of these companies, 1,080 had sufficient data in *both* prior and post crisis.

Hypothesis A

The first hypothesis that this thesis tests whether or not multinational companies with any percentage of sales in Europe saw, overall, a decrease from pre-crisis to post-crisis. Table 5-2 shows the summary statistics for the average of the three years prior the crisis and three years' post crisis. As can be seen from Table 5-2, 588 companies saw sales decrease following the crisis, whether that was by 1% or 99%, and 492 had sales increase. 54% of the companies had sales decrease, and 46% saw sales increase. For the two summary statistics, the mean decreased from 25.10 to 23.86. This shows that the average of the average³⁴ of post crisis sales was lower than prior to the crisis.

³⁴ The average of the three years prior to the crisis was averaged together. Each of those averages were then averaged together to compare to the results post crisis.

Table 5-2. Summary Statistics – Pre-Crisis vs. Post-Crisis

Companies' Sales	
Decreased	588
Increased	492
Total	1080
Summary Statistics: 2004, 2005, & 2006	
Mean	25.10
Standard Error	0.64
Median	19.92
Mode	100
Standard Deviation	21.19
Sample Variance	449.19
Kurtosis	5.27
Skewness	1.91
Range	181.19
Minimum	0.04
Maximum	181.23
Sum	27111.50
Count	1080
Summary Statistics: 2009, 2010, & 2011	
Mean	23.86
Standard Error	0.62
Median	18.54
Mode	100
Standard Deviation	20.36
Sample Variance	414.67
Kurtosis	3.90
Skewness	1.81
Range	108.70
Minimum	-1.33
Maximum	107.38
Sum	25773.48
Count	1080

This information is important, but it doesn't tell whether or not the change is significant. There is a chance that overall decrease in sales could be because of an outlier, or a glitch. So, Table 5-3 gives some more information. It gives the average, minimum, and maximum of the change. The change is the difference between average prior and post sales for each individual company. Following that is the t-test to give some insight on the significance of the change.

Table 5-3. t-Test – Pre-Crisis vs. Post-Crisis

Average Change		
-1.24		
Minimum Change		
-95.19		
Maximum Change		
75.07		
t-Test: Paired Two Sample for Means		
	Variable 1	Variable 2
Mean	25.10	23.86
Variance	449.19	414.67
Observations	1080	1080
Pearson Correlation	0.81	
Hypothesized Mean Difference	0	
df	1079	
t Stat	3.14	
P(T<=t) one-tail	0.00086	
t Critical one-tail	1.65	
P(T<=t) two-tail	0.0017	
t Critical two-tail	1.96	

The average change shows that overall, sales decreased by 1.238. The t-test shows the significance of the change. Looking at the P(T<=t) two-tail results, when this number is less than .01, it means the difference is statistically significant at the 1% level. That means that there is less than 1% chance that the decrease in average sales is due to chance. Therefore, the decrease in sales is significant.

Hypothesis B

The second hypothesis that this thesis tests is whether or not multinational companies with sales greater than 32.66%³⁵ in Europe were hit harder than those with less than 32.66% of sales in Europe. Because of this, there are two different summary statistic and t-test tables, one each for companies with sales above 32.66% and one each for the remaining companies. Table 5-4 shows the summary statistics of the percent change in sales following the crisis for those companies that had pre-crisis sales greater than 32.66% in Europe. Table 5-5 shows the same information, but for companies with less than 32.66% of sales in Europe.

Table 5-4. Summary Statistics – European Sales 75th Percentile

Summary Statistics: Percent Change Greater than 32.66%	
Mean	-8.48
Standard Error	1.06
Median	-4.70
Mode	0
Standard Deviation	17.45
Sample Variance	304.47
Kurtosis	5.19
Skewness	-1.31
Range	146.89
Minimum	-95.19
Maximum	51.70
Sum	-2298.26
Count	271

³⁵ This is the 75th percentile of the European sales for all out sample companies

Table 5-5. Summary Statistics – European Sales Below 75th Percentile

Summary Statistics: Percent Change Less than 32.66%	
Mean	1.19
Standard Error	0.35
Median	0.10
Mode	#N/A
Standard Deviation	9.94
Sample Variance	98.87
Kurtosis	14.47
Skewness	2.56
Range	98.54
Minimum	-23.47
Maximum	75.07
Sum	960.24
Count	809

As can be seen from the above tables, the greater the percentage of sales in Europe, the harder the company was hit. There were only 271 companies that had sales of greater than 32.66% of sales in Europe, and those companies saw an average decrease in sales of 8.48% following the crisis. There were 809 companies with less than 32.66% of sales in Europe, and those companies on average actually saw an increase of 1.19% of sales post crisis.

Table 5-6 shows the t-test for companies with greater than 32.66% of sales in Europe, and table 5-7 shows the t-test for companies with less than 32.66% of sales in Europe.

Table 5-6. t-Test – European Sales 75th Percentile

t-Test: Paired Two Sample for Means		
Greater than 32.66%		
	<i>Pre Crisis</i>	<i>Post Crisis</i>
Mean	53.91	45.43
Variance	464.73	617.61
Observations	271	271
Pearson Correlation	0.73	
Hypothesized Mean Difference	0	
df	270	
t Stat	8.00098	
P(T<=t) one-tail	1.83085E-14	
t Critical one-tail	1.65	
P(T<=t) two-tail	3.6617E-14	
t Critical two-tail	1.97	

Table 5-7. t-Test – European Sales Below 75th Percentile

t-Test: Paired Two Sample for Means		
Less than 32.66%		
	<i>Pre Crisis</i>	<i>Post Crisis</i>
Mean	15.45	16.64
Variance	72.91	139.07
Observations	809	809
Pearson Correlation	0.56	
Hypothesized Mean Difference	0	
df	808	
t Stat	-3.40	
P(T<=t) one-tail	0.00036	
t Critical one-tail	1.65	
P(T<=t) two-tail	0.00072	
t Critical two-tail	1.96	

As can be seen by the above data, both t-tests show that the changes in sales for both groups of companies are significant. Interestingly, the significance is greater for the companies with greater than 32.66% of sales in Europe. The P(T<t) two-tail is highly significant (well below

.01). For the companies with less than 32.66% of sales in Europe, the increase of 1.19% in sales is still significant, but less significant than the decrease of the other group. Therefore, both sets of data have significance and therefore companies with sales greater than 32.66% in Europe saw sales decrease much more than companies with less than 32.66% of sales in Europe.

Hypothesis C

The final hypothesis that this thesis seeks to prove or disprove is that companies with greater than 32.66% of sales in Europe saw sales decrease to a greater extent than those companies with sales less than 10.3%³⁶ of sales in Europe. 10.3% represents the 25th percentile and 32.66% represents the 75th percentile. Tables 5-8 and 5-9 show respectively show the statistics.

Table 5-8. Summary Statistics – 75th Percentile vs. 25th Percentile

Summary Statistics: Percent Change <u>G</u> reater than 32.66%	
Mean (from Table 5-4)	-8.48
Summary Statistics: Percent Change <u>L</u> ess than 10.3%	
Mean	3.54
Standard Error	0.52
Median	1.32
Mode	#N/A
Standard Deviation	8.43
Sample Variance	71.10
Kurtosis	9.48
Skewness	2.49
Range	69.61
Minimum	-9.96
Maximum	59.65
Sum	924.50
Count	261

³⁶ This number is the 25th percentile of European sales of all our sample companies.

Table 5-8 looks at those companies with sales greater than 32.66% and compares the mean to companies with less than 10.3%. It completely leaves out companies with sales between 10.3% and 32.66%, unlike the previous hypothesis. This table shows that companies with sales less than 10.3% saw an increase in sales following the crisis, but not only by 1.9% like the previous example, but by 3.5%. Table 5-9 does the same thing as Table 5-8 but with the t-test.

Table 5-9. t-Test – 75th Percentile vs. 25th Percentile

t-Test: Paired Two Sample for Means		
European Sales Greater than 32.66%		
	<i>Pre Crisis</i>	
P(T<=t) two-tail	3.6617E-14	
t Critical two-tail	1.97	
t-Test: Paired Two Sample for Means		
European Sales Less than 10.3%		
	<i>Pre Crisis</i>	<i>Post Crisis</i>
Mean	5.94	9.48
Variance	9.07	71.43
Observations	261	261
Pearson Correlation	0.18	
Hypothesized Mean Difference	0	
df	260	
t Stat	-6.79	
P(T<=t) one-tail	3.87216E-11	
t Critical one-tail	1.65	
P(T<=t) two-tail	7.74433E-11	
t Critical two-tail	1.97	

Table 5-9 shows that the increase in sales is significant and even more significant than tables 5-6 and 5-7 showed. Therefore, companies with sales greater than 32.66% in Europe saw sales decrease at an even greater rate than companies with sales less than 10.3%.

Data Analysis Conclusion

The first hypothesis was whether or not companies with sales in Europe saw an average decrease in sales in the three years following the European Debt Crisis, in comparison to the three years prior to the crisis. The analysis of the data showed via the t-test, that there was a significant decline in sales following the crisis.

With that information in hand, the second hypothesis arose. Did companies with more than 32.66% of sales in Europe prior to the crisis see a greater decline in sales following the crisis as compared to companies with less than 32.66% of sales in Europe? It turns out that companies with less than 32.66% of sales in Europe actually saw an increase in sales on average, whereas companies with greater than 32.66% of sales saw over an 8% decrease in sales.

The results of this hypothesis brought on the final hypothesis. Did companies with more than 32.66% of sales in Europe prior to the crisis see an even greater decline in sales following the crisis as compared to companies with less than 10.3% of sales in Europe? The empirical results support this hypothesis, with sales increasing on an average of 3.5% for companies with less than 10.3% of sales in Europe versus a 1.19% increase in companies with less than 32.66% in sales.

Chapter 6

Conclusion

It is natural to assume that when the financial crisis hit Europe, that most companies, if not all, would have lost sales. The problem with that assumption is that every company is different. Some companies may have experienced hard times similar to the crisis in the past, and may have plans set up to combat the effects. Perhaps those plans can not only be implemented without decreasing sales, but increase them instead. Some companies have 70% of their sales in Europe, others have 2%.

After conducting the data analysis, there were a surprising number of companies that had sales increase following the crisis. Still, there was a significant decrease in sales following the crisis, significant enough that it was not because of a fluke, or choice in companies. And companies with sales greater than 32.66% saw sales decrease more than companies with less than 32.66% and even more than companies with less than 10.3% of sales in Europe.

Only a little over a decade ago did the euro become widely used among the Euro Zone countries. Only five years following that in 2007 did the European Debt Crisis hit that threatened the very existence of the currency union. The Euro Zone has very strict guidelines that it follows when deciding which countries to allow into the currency union, but, perhaps those guidelines are too strict to be entrance criteria and should be required to be met to maintain membership. It was a select few countries within the Euro Zone that started the crisis that affected the entire continent and other countries around the world.

With the information gained in the data analysis section of this thesis, it's both interesting and important to be aware of. There are many countries around the world that wish to form a currency union, and there are actually quite a few countries in Europe that are still hoping to join

the Euro Zone. A crisis similar to the European Debt Crisis could occur anywhere, it's not secluded to the European countries only. Therefore, if countries follow the information provided by Robert Mundell relating to when it is actually beneficial to form a currency union, and they follow strict guidelines similar to the Euro Zone had to admit members, they should be in good shape; that is, if they follow equally strict guidelines to maintain membership. Part of where the Euro Zone falls short is that their guidelines only exist for the admittance of countries; they don't require them to maintain those guidelines to keep membership status.

It's also important for businesses to keep all of this in mind. Some companies faced the crisis and didn't have much difficulty surviving; in fact many saw sales increase. However, many saw sales decrease, and as the preliminary data showed, more saw a significant decrease in sales. If a business is thinking about expanding operations to a country that is considering joining a currency union, either an existing one or creating a new one, they need to make sure that they can handle a crisis in the future. History often repeats itself, and if a crisis can't be avoided in the future, we need to at least be ready and able to detect it early and fix it.

Chapter 7

Suggestions for Future Research

The three hypotheses that were analyzed in the data analysis section of this thesis were tested via basic data analysis techniques. Although the empirical results supported all three hypotheses with t-test significance, there is much more research that can be conducted.

An initial concern as to whether the hypotheses would be proven or disproven had to do with the fact that whether the decrease in sales following the crisis was voluntary or not. Companies have the ability to decrease their percentage of sales in segments. Once the crisis hit, some companies may have voluntarily decreased their sales in Europe to avoid overall decreases in sales. This would be a strategic change in sales. In order to find out whether or not companies chose to decrease their sales in Europe, annual reports would need to be reviewed to see whether or not sales decreased due to the situation, or due to management's wishes.

Another area for future research has to do with the number of companies used. Only 1080 companies were looked at for this analysis. This is because of the data set that was retrieved from Compustat Industry Segment files. Not every company listed which country or countries they had sales in, and some didn't provide any information at all. Additional sources could bridge this gap and perhaps clarify the results even further.

A final area that could be researched further would be to look at specific countries. This analysis looked at Europe as a whole, and included companies that provided information for any of the individual European countries. It would be interesting to see if the five weakest European economies, Portugal, Italy, Ireland, Greece, and Spain saw similar, opposite, or stronger results.

References

- BBC News. "Eurozone Crisis Explained." BBC, 19 June 2012.
<<http://www.bbc.co.uk/news/business-16290598>>, (Accessed on 14 Nov 2012).
- Cha, Ariana Eunjung. "European financial crisis has ripple effect on U.S. businesses." *The Washington Post*. 02 Aug 2012. <http://articles.washingtonpost.com/2012-08-02/business/35493409_1_european-financial-crisis-mario-draghi-debt-crisis>, (Accessed on 19 Mar 2013).
- Clarida, Richard, and Lowell Harriss. "The Euro Crisis and the U.S. Economy." *Council on Foreign Relations*. 25 May 2012. <<http://www.cfr.org/united-states/euro-crisis-us-economy/p28361>>, (Accessed on 19 Mar 2013).
- Dawson, Stella. "Scenarios: Impact of euro zone crisis on U.S. economy." *Reuters*. 30 Nov 2011.
<<http://www.reuters.com/article/2011/11/30/us-usa-economy-scenarios-idUSTRE7AT1V720111130>>, (Accessed on 19 Mar 2013)
- Elliott, Douglas. "What the Euro Crisis Means for Taxpayers and the U.S. Economy." *Brookings*. 15 Dec 2011. <<http://www.brookings.edu/research/testimony/2011/12/15-euro-crisis-elliott>>, (Accessed on 19 Mar 2013).
- European Commission. "The Euro". 13 July 2012.
<http://ec.europa.eu/economy_finance/euro/index_en.htm>, (Accessed on 07 Oct 2012).
- Financial Accounting Standards Board. "Summary of Statement 131." (1997)
<<http://www.fasb.org/summary/stsum131.shtml>>, (Accessed on 17 Feb 2013).
- Krugman, Paul, Maurice Obstfeld, and Marc Melitz. *International Economics Theory & Policy*. 9th ed. Boston: Pearson Education, 2012. 557-588. Print.

- Marsh, Bill. "It's All Connected: An Overview of the Euro Crisis." *The New York Times*. 22 Oct 2011. <http://www.nytimes.com/interactive/2011/10/23/sunday-review/an-overview-of-the-euro-crisis.html?_r=0>, (Accessed on 22 Mar 2013).
- Nobelprize.org. "Robert A. Mundell – Biography." 1999.
<http://www.nobelprize.org/nobel_prizes/economics/laureates/1999/mundell-bio.html>,
(Accessed on 13 Oct 2012).
- Rampell, Catherine. "The Euro Zone Crisis and the U.S.: A Primer." *The New York Times*. 14 Nov 2011. <<http://economix.blogs.nytimes.com/2011/11/14/the-euro-zone-crisis-and-the-u-s-a-primer/>>, (Accessed on 19 Mar 2013).
- Reuters. "Financial Glossary – Maastricht Criteria."
<http://glossary.reuters.com/index.php/Maastricht_Criteria>, (Accessed on 13 Oct 2013).
- Spiegel. "Devastating Impact: Euro Exit by Southern Nations Could Cost 17 Trillion Euros." 17 Oct 2012. <<http://www.spiegel.de/international/europe/study-warns-euro-exit-of-southern-nations-could-cost-17-trillion-euros-a-861775.html>>, (Accessed on 19 Mar 2013).
- UnctadStat. "UnctadStat - Table View."
<http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx?sCS_referer=&sCS_ChosenLang=en>, (Accessed on 11 Nov 2012).
- United States Census Bureau. "Foreign Trade." *US Department of Commerce*. 08 Feb 2013.
<<http://www.census.gov/foreign-trade/statistics/highlights/top/top1212yr.html>>,
(Accessed on Mar 31 2013).

ZACHARY TYLER WILLIAMS

14139 Ridge Road
West Springfield, PA 16443
(814) 572-6644
ztwill17@yahoo.com

EDUCATION

Penn State Erie, The Behrend College

- Bachelor of Science in Accounting, 2013
- Bachelor of Science in International Business, 2013
- Minor in Finance, 2013
 - Behrend Honors Program (Fall 2009 – Spring 2011)
 - Schreyer Honors Program (Fall 2011 – Spring 2013)
 - Thesis: Implications of the Euro Crisis – Effect on Multinational Business Sales
 - Dean's List (Fall 2009 – Spring 2013)

ACADEMIC HONORS AND AWARDS

- Penn State Behrend Trustee Scholarship (Fall 2009 – Spring 2011)
- Academic Competitiveness Grant (Fall 2009 – Spring 2011)
- Lawrence & Elizabeth Held Scholarship (Fall 2010 – Spring 2013)
- Kochel Scholarship for International Study (Spring 2011)
- Penn State Academic Grant (Fall 2010 – Spring 2012)
- Merenda Trustee Scholarship (Fall 2012 – Spring 2013)

VOLUNTEER EXPERIENCE

Volunteer Income Tax Assistance (Spring 2013)

- Volunteered 8 to 12 hours per week at Girard High School and Mercyhurst University
- Certified in basic, intermediate, advanced, military, international and foreign student tax law

Becker Campus Ambassador (August 2011 – April 2013)

- Distributed information pertaining to both the CPA exam and the Becker CPA prep course
- Collected a list of accounting students through signup sheets and class presentations
- Made arrangements for the Becker Field Marketing Specialist to speak to students

PROFESSIONAL MEMBERSHIPS

- Member of the Honor Society of Phi Kappa Phi (January 2013)
- Member of the International Honor Society of Beta Gamma Sigma (March 2012)
- Brother of Delta Sigma Pi, Professional Business Fraternity (November 2010)
 - Vice President Chapter Operations (April 2011 – April 2013)