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Recovery or Bust: Is the Eurozone Recovering More Slowly Than the Rest of the European Union?

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This thesis examines the recovery of the Eurozone and the non-Eurozone members of the European Union in the wake of the Financial Crisis that began in 2007. The aftermath of the crisis left many countries struggling economically, and it is important from a macroeconomic perspective to understand which countries are struggling more and why. Through a detailed analysis of many commonly used macroeconomic indicators, it appears that the non-Eurozone members of the European Union are recovering better than the Eurozone; this result is believed to be caused by the non-Eurozone's ability to better leverage their monetary policy.

In 2007, a tremendous housing bubble in the US burst, causing a collapse of several long-standing investment banks, and resulting in a global financial crisis. This crisis then triggered the Great Recession in the US, and in Europe the crisis manifested itself as the European Sovereign Debt Crisis. Greece was the first to succumb to the financial poison, followed by Portugal, Spain, Italy, Cyprus, and Ireland. As the world has become more globalized, it has become more pressing to study the factors affecting not only a home country's performance, but also the performance of associated nations. Given that the trade flow between the US & Europe is an estimated $2.7 billion a day, each is keenly aware of the other's recovery. (Office of the United States Trade Representative)

This paper splits the European Union into two groups: the Eurozone and the members of the European Union who aren't part of the Eurozone. In the years since the crisis, we have witnessed uneven progress towards recovery. There are many similarities between the nations in each of the groups, specifically: trading partners, agreement on the core principles of the European Union, and later countries' agreements to join the Eurozone once they had met the Maastricht criteria. (The European Commission) However, the notable difference between the two groups profiled in this study is the Eurozone must act as a whole in their policies, even when it might not be in the best interest of all the countries involved.

I. Background

a. The Formation of the European Union

After World War II, Europe remained distrustful of its neighbors and wanted to prevent the occurrence of yet another conflict. Luxembourg, France, Italy, West Germany, the Netherlands, and Belgium (The Six Member States) decided that the best way to preclude any one country from attempting to usurp the others was to intertwine their economies through the European Steel and Coal Community. This would make it impossible for one member to grow and mobilize their military without the other members knowing. (The Six Member States) The Treaty Establishing the European Steel and Coal Community was signed 18 April 1951, entered into force on 23 July 1952. and although it expired on 23 July 2002, it was the precursor to what we now think of as the European Union.

Further integration was accomplished by the Six Member States through the 25 March 1957 signing and the 1 January 1958 entry into force of the Treaties of Rome, which formed the European Economic Community (EEC) and the European Atomic Energy Community (EURATOM). Both of these, along with the European Steal and Coal Community, are considered the communities of the European Union; the EURATOM Treaty, however, is considered legally separate from the current European Union. The EEC established a Customs Union among the members and created the European Commission.

The next important treaty to be signed was the Merger Treaty, which further integrated the three communities of the European Union by creating a governing body over the three. This treaty was signed 8 April 1965, entered into force 1 July 1967, and was later partially replaced by the Treaty of Amsterdam on 1 May 1999. (The Six Member States)

The Single European Act established a common market amongst the members of the EU. It also made the voting laws such that one nation could not veto potential legislation, and created "cooperation and assent procedures, giving Parliament more influence." It was signed by 12 member states (the original six, plus Denmark, Ireland, United Kingdom, Greece, Spain, and Portugal) on 17 February 1986 and entered into force on 1 July 1987. (European Union)

The goal of the Treaty of Amsterdam was the consolidation of past treaties "in preparation for the arrival of future member countries." (European Union) It also aimed to make decision-making more transparent. This treaty was signed on 2 October 1997 and entered into force on 1 May 1999. (European Union)

The Treaty of Nice's goal was efficiency in light of the fact that the EU had ballooned to 25 members. It also included changes to the composition of the European Commission and a redefined voting system for the European Council. It was signed 26 February 2001 and entered into force on 1 February 2003. (European Union)

The Treaty of Lisbon once again reformed the voting policies and created new positions within the structure of the government. It also made the de facto bill of rights legally binding. The Treaty of Lisbon was signed 13 December 2007 and entered into force 1 December 2009. (European Union)

b. The Formation of the Eurozone

On November 1, 1993, the Treaty on the European Union (informally known as the Maastricht Treaty) went into effect for the 12 members of the European Union. This treaty required that countries wishing to join the third stage of the Economic and Monetary Union adhere to certain convergence criteria:

- Keep inflation at a maximum level of 1.5 percentage points higher than the average of the three best-performing countries in the European Union;
- The ratio of government deficit to GDP must remain under 3% except in extraordinary and temporary circumstances;
- The ratio of Gross Government Debt to GDP must not exceed 60% or must be satisfactorily diminished and approaching a sufficient ratio;
- Must have joined Exchange Rate Mechanism (ERM II, added in 1997 revisions) under the European Monetary System for 2 consecutive years, and should not have devalued its currency in that time;
- The nominal long-term interest rate must not be any more than 2 percentage points higher than the [long term interest rate of the] 3 lowest-inflation member states. (The European Commission)

With a few years to adhere to the criteria, the Economic and Monetary Union started the European Central Bank on June 1, 1998 and debuted the euro in 1999.[1]

II. Financial Crisis

a. The American Financial Crisis

Securitization has been around since the mid-20th century and mortgage-backed securities since the 1960's, but the Financial Crisis was caused by sub-prime mortgage-backed securities. As Michael Lewis explains it, "A mortgage bond wasn't a single giant loan for an

[1] The UK was initially a member of the Exchange Rate Mechanism, but after a summer of the USD depreciating (affecting the British exports, which were priced in USD); this, compounded with the uncertainty surrounding Danish and French Referendums for the Maastricht Treaty, caused the GBP to suffer a devaluation that took it below the minimum level, and the only way to save the currency was to take control of Monetary Policy again by dropping out of the Mechanism in September of 1992. (Walden)

explicit fixed term. A mortgage bond was a claim on the cash flows from a pool of thousands of individual home mortgages." As he also notes, the debtor had the right to pay off the loan at any time, which was typically when they could refinance at a lower interest rate, leaving the lender with lower rates with which to invest his newly-repaid money. (Lewis)

The proliferation of sub-prime mortgage-backed securities was spurred by the originate-to-distribute model. The originate-to-distribute problem was a recognized problem before the crisis; in 2003, the House of Representatives held the Hearing on Protecting Homeowners: Preventing Abusive Lending While Preserving Access to Credit (American Securitization Forum). This model incentivized loan agents to make these bad loans, which the banks were then allowed to send off to be packaged up into securities. The banks no longer cared about the ability of the debtor to pay the loan back, as the loan was now off their books. The credit rating agencies consult the investment banks on how to package these securities, and then rated them highly to keep their lucrative consulting contracts. The mortgage-backed securities were then sold to the public, to the banks, and to other investment banks, and credit default swaps were offered by companies like AIG. (Mishkin)

Credit Default Swaps furthered the spread of the financial crisis. The Credit Default Swap, created by JP Morgan's Blythe Masters in the 1990s, was an unregulated insurance policy that the investment banks would buy on the policies that they sold to/bought from other investment banks. AIG specialized in a lot of these policies, and it guaranteed a payout to the holder of the policy in the event of a default of the mortgage-backed security. The only problem with this model is that it allowed people who didn't own a piece of the asset to insure the asset against damage. In the documentary *Inside Job*, this process is explained as buying an insurance policy on your home, but the insurance company also allows someone else to buy a policy on your home in the event that something happens to it. If your house catches on fire, the Insurance Company not only pays you for the damage, but also anyone else who took out a policy on your home. (Ferguson)

The underlying problems notwithstanding, a major cause of the Financial Crisis was the asset bubble on which all of these things depended: the housing market. When the housing bubble burst in 2007, the mortgage-backed securities that solely help sub-prime mortgages went into default, requiring AIG and other large insurers to start paying off the Credit Default Swaps that were held not just by policy holders, but by others who had insured the bad assets without holding them. It wasn't just the general public who held these securities, however; the large investment banks and depository institutions that had made bad loans and packaged the securities also held many of them, causing liquidity problems throughout the financial sector. This ripple effect culminated in the failure of top investment bank Lehman Brothers and the sale of Merrill Lynch, Bear Stearns, Washington Mutual, Countrywide Financial and Wachovia to Bank of America, JP Morgan Chase, and Wells Fargo, respectively. The financial poison may have started in America, but within 2 years, it had spread to Europe through the purchase of CDO's by German banks, European pension funds, and other European consumers. (Lewis)

b. European Sovereign Debt Crisis

The Euro first started experiencing trouble at the end of April 2010. None of the countries in the Eurozone had been rated lower than investment grade since the debut of the Euro in 1999, but Greece broke that trend by being downgraded three steps to BBB+ by Standard & Poor's. Also, the spread between Greek 10-year bonds and German bonds widened 23 basis points to its largest gap since 1998, with Spanish and Portuguese spreads increasing as well. The crisis only worsened when German Chancellor Angela Merkel delayed a vote on bailing Greece out, commenting that Greece "must do its homework" first. (Ross-Thomas and Davis)

Just minutes before Greece's downgrade, S&P had downgraded Portugal two steps, from A+ to A-. (Ross-Thomas and Davis) By July of 2011, the crisis was an unavoidable reality. Portugal was sharply downgraded by Moody's to below investment grade at the beginning of the month, worrying analysts about a system-wide contagion. This event, coupled with the loss of Greece's investment grade, made analysts worry about the health of the entire Euro system, especially with the delay in Germany's bailout decision (The Week)

Although Portugal was rated as junk, it wasn't seen as low as Greece. Greece's debt ratios are higher, and the Portuguese government embraced austerity measures more easily than the Greek government did. (The Week) However, that reason is also why Moody's was accused of being anti-European for still downgrading Portugal.

Ireland was downgraded to beneath investment rating by Moody's one week after Portugal's downgrade. The yield on Irish 10 year bonds rose to 13.65%, which was a premium of 11% over the German 10 year bond yield. Although Ireland was the recipient of a bailout from the European Union and the International Monetary Fund the previous November, the European Commission stood up for the measures that the Irish government had taken toward austerity. (Kruger and Flynn)

After reaching yields of 6% in July, Italy's bonds reached yields of up to 10.5% in November. While they had no formal designation of being "junk" bonds, the Italian government still faced trouble raising medium and long-term debt. (Za and Bruschi)

In June of 2012, Spain was downgraded three steps to the lowest investment grade ranking by Fitch. The ratings agency also gave Spain a negative outlook and placed blame on "policy missteps at the European level that in Fitch's opinion have aggravated the economic and financial challenges facing Spain." (Isidore) Just days after the Fitch downgrade, Moody's followed suit and downgraded Spain to the level right above junk. (Detrixhe and Hopkins)

At the same time that Moody's downgraded Spain to one step above junk, they also downgraded Cyprus to Ba3. A full downgrade to junk status came in March 2012, when they became worried about the exposure Cyprus had to Greek debt. This came two months after Standard & Poor's downgraded Cyprus to junk status in January. (Moody's Downgrades Cyprus Credit Rating To Junk On Greek Exposure)

In 2013, the ECB suspended Cypriot bond usage as collateral after S&P downgraded Cyprus to "selective default" and Fitch ranked Cyprus as "restricted default." (Riecher)The ratings agencies promised to reevaluate those ratings after the bond exchange (part of the €10 billion bailout). This is in stark contrast with the ECB's decision to waive minimum thresholds for Greek, Portuguese, and Irish debt in 2010 and 2011. (Lesova) (Vits)

"To an extent, investors, who often ignore rating changes, already upgraded their view of Ireland. Last week, the country's debt office sold new 10-year bonds through a group of banks at the lowest cost of borrowing for more than 13 years. Ireland left its bailout program in December" (Brennan and Griffin)

III. Scope of the Investigation

The distinct difference between the two groups is that the Eurozone must make fiscal and monetary decisions collectively through the European Central Bank, while the rest of the European Union may make their own monetary policy decisions. A limitation on the European Union countries that are not in the Eurozone is that they may be trying to join the Eurozone if they are members of the Exchange Rate Mechanism. In accordance with the ascension treaties of subsequent countries, every country that joins the European Union will ascend to Eurozone status as soon as they have satisfied the Maastricht Criteria for 2 years. (The European Commission)

Not every country that is currently in the European Union was used in this study; similarly, countries that are now a part of the Eurozone are considered to be in the non-Eurozone European Union countries for our purposes. The determination was made to use the divisions as of 2011, excluding Estonia, for the data. Estonia was excluded because it joined the Eurozone in 2011; therefore, it was new to the Eurozone and could unfairly skew the data by including it in either category. Latvia also joined the Eurozone after the timeline of this study (in 2014), so it is included in the non-Eurozone countries, while Croatia is left out entirely due to its admission to the European Union occurring in 2013.

The hypothesis, of course, was that the non-Eurozone members of the European Union are recovering faster than the Eurozone is. To accomplish this goal, I performed hypothesis tests on several key macroeconomic indicators: Real GDP PPP, Real GDP PPP Per Capita, Household Consumption, Labor Force Participation Rate(as a percentage of 15-64 year olds), Inflation (measured by the GDP Deflator), and the Unemployment Rate.

For the measures about people, we chose GDP per capita, inflation, and household consumption. These measures help us determine the individual welfare of citizens: GDP per capita tells how well off the average citizen is; inflation tells how much the price of goods is rising, and household consumption can help monitor changes in spending, which can be indicative of how much a recession is affecting the average household.

For the overall economy, we chose unemployment, real GDP, and the labor force participation rate as our measures. The unemployment rate, of course, monitors those in the labor force who are looking for jobs but do not have them. Real GDP tells us about the amount of products/services the country is producing, and the labor force participation rate can tell us what percentage of people who are able to work are actually working.

These measures were then evaluated with a hypothesis test, specifically, using a t-test. A t-test is defined as "a statistical examination of two population means." (Investopedia) The point of the test was to compare the two groups (Eurozone vs. Non-Eurozone European Union members) to see if a) there was a difference in their growth and average rates, and b) if that difference was statistically significant to the 90% or 95% confidence interval.

IV. Data/Results/Conclusion

The hypothesis tests turned up a myriad of results. Real GDP Growth, Real GDP per Capita Growth, Average Inflation, and Household Consumption Growth were all statistically significant, but Average Labor Force Participation rate and Average Unemployment Rate were not; the growth measures as well as the raw data for the labor force participation and unemployment rates all support the hypothesis that the

Eurozone is recovering more slowly from the recession, while the average inflation refutes the hypothesis. Average Labor force Participation and Average Unemployment Rate also appear to refute the hypothesis, but those numbers are statistically insignificant according to the t-tests.[2]

Observance	**Eurozone**	**Non-Eurozone**	**2-tailed P Value**
Growth in Real PPP GDP	1.71%	6.01%	0.035
Growth in Real PPP GDP per capita	-0.32%	8.50%	0.015
Growth in Household Consumption*	5.60%	16.58%	0.013
Average Inflation	2.27%	1.32%	0.071
Average Labor Force Participation	71.30%	70.91%	0.872
Average Unemployment Rate	9.92%	9.53%	0.812
n	16	10	

*Due to insufficient data, Cyprus and Malta were left out of the Household Consumption Metric; therefore, there are only 14 countries in the Eurozone's aggregate data

a. Case Study #1: UK vs. France

For the first cases study, I chose to compare the second largest economy in the Eurozone (France) to the largest economy of the non-Eurozone European Union members (UK). As there were not multiple variables in each group, a t-test was not applicable; however, it is still possible to compare growth and average rates between the two nations.

[2] Since Greece was an obvious outlier during this time, I have calculated the p-value without Greece for each of these metrics as an interesting note. The two-tailed p-values for the adjusted metrics were: Real GDP .078, Real GDP per capita .025, Household Consumption .023, LFPR .806, Inflation (GDP Deflator) .086, and Unemployment .613. Therefore, every metric is statistically significant to the 90% confidence interval, with the exception of the Labor Force Participation Rate.

Observance	France(Eurozone)	UK (non-Eurozone)
Growth in Real PPP GDP	3.80%	3.09%
Growth in Real PPP GDP per Capita	2.23%	0.78%
Growth in Household Consumption	2.23%	13.11%
Average Inflation	1.12%	1.96%
Average Unemployment Rate	9.40%	7.80%
Avg Labor Force Participation Rate	70.40%	75.60%

UK has higher Household Consumption Growth, Inflation, and Average Labor Force Participation Rate, but lower Average Unemployment Rate, Real GDP Growth, and Real GDP Growth per capita than France. Over the past 4 years, the two economies have grown at similar rates, but French citizens appear to be seeing larger gains in Real GDP per capita than British citizens do. This coupled with the large gains that the UK has seen in Household Consumption could point to increased spending using credit. However, the UK also still has a higher Average Labor Force Participation Rate and lower unemployment rate than France does, which suggests a more robust labor market.

b. Case Study #2: Sweden vs. Belgium

The next economies that were picked for a case study were Sweden & Belgium. Both are close, geographically, and their GDPs in the 2011 World Bank Data were similar, as well.

Observance	Belgium (Eurozone)	Sweden (non-Eurozone)
Growth in Real PPP GDP	4.01%	11.33%
Growth in Real PPP GDP per Capita	0.78%	8.77%
Growth in Household Consumption	10.76%	12.09%
Average Inflation	1.81%	1.26%
Average Unemployment Rate	7.70%	8.13%
Avg Labor Force Participation Rate	66.77%	79.30%

Sweden and Belgium ended up being a much more drastic comparison than the UK and France. In Growth in Real GDP PPP, Growth in Real GDP PPP per capita, Growth in Household Consumption, and Average Inflation, as well as Average Labor Force Participation, Sweden is the clear winner. The only area that Belgium is doing better in is the Average Unemployment

Rate. If the international rates are calculated in a similar manner to the US's calculation, this could mean that there are less people looking for jobs in Belgium than there are in Sweden, as people who are not actively seeking employment are not included in the unemployment rate that the US's Bureau of Labor Statistics calculates.

V. Summary

In summary, the data compiled from the World Bank seems to suggest that the Eurozone is, in fact, recovery more slowly than the rest of the European Union. The majority of the statistics analyzed with the t-tests supports this hypothesis and are statistically significant to the 95% or 90% confidence interval.

In addition, one of the case studies also supports this hypothesis; however, a study of the largest economy outside of the Eurozone and the second largest economy in the Eurozone did yield a different result. It should be noted, though, that in the British economy, less people are unemployed, more of the labor force is working, and the household consumption has grown much more than French economy. The household consumption could indicate that consumer confidence is returning more quickly to British citizens than it is to French citizens, which can contribute to recovery.

Whether this continues to be the case remains to be seen, as this is an on-going recovery; however, for the time being, the evidence is suggesting that the non-Eurozone members of the European Union are recovery faster.

Dictionary:

Communities of the European Union: This term is used to describe EURATOM, the European Steel and Coal Community, and the European Economic Community(of which the last two were replaced by the European Community)

Six Member States: Luxembourg, France, West Germany, Italy, Belgium, and the Netherlands; these states formed the European Coal and Steel Community, which was the precursor to the European Union

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