Determining Impacts of Partnership and the Euro within the European Union:: With a Focus on Accession Countries

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Abstract: The primary goal of the European Union is to promote a high degree of competition between regions in an effort to allow for the creation of the single market. In the year 2004, the EU had allowed ten new member states to enter into the European Union. This paper looks at the potential positive or negative impact from entering into partnership with the EU. It looks at convergence between EU member states and a potential treatment effect in order to determine that this is indeed a localized phenomenon in the EU or is there a general convergence between all countries. The paper uses a fixed effects approach in order to determine the impact of partnership and use of the Euro within the EU. I find evidence of convergence and a positive benefit from partnership; however, using the Euro appears to have a negative impact on countries.

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1. Introduction

In 1952, Robert Schuman announced a plan in which France and Germany would join their coal and steel production industries in an effort to prevent aggression on either side. The hope was that the connection of economies and certain areas of production would effect change in diplomatic and political relationships. The Schuman Plan led to the creation of the European Coal and Steel Community, signed by six member countries. The community would grow in order to attempt the largest single market in the world allowing for the free movement of goods, people, credit, and services. Over the course of fifty years the community would take on new objectives, members, and names to become what we know now as the European Union.

The European Union is currently comprised of twenty eight member states where in 2004 there was an addition of ten new countries. Currently there are a number of Western Balkan countries, including Macedonia and Turkey, that are in negotiations and making efforts to enter into membership. There are certain requirements in order to gain membership centered on economic and political stability. Partnership and eventual membership allows the country the opportunity to enter into the free trade zone allowing for an expansion for local firms to enter into the large market of consumers stretching across the continent. It also allows countries to enter into the Schengen Area and the European Monetary Union. The following paper looks extensively at the potential benefits of joining the European Union, which the Commission claims that they can be found within enhanced growth and development (particularly for new member states). The goal of the union is to promote competition within the variety of national markets, which requires convergence.

Convergence is the idea surrounding the Solow growth model in that countries that are considered poorer and less developed will be able to grow at a quicker rate (in terms of GDP) relative to more developed nations. There is an extensive body of research and convergence is

one of the main empirical tools in order to test the effectiveness of the European Union. Much of the research attempts to determine convergence between regions and has been limited to looking at the EU-15. What I hope to do is extend the research to include a look at the newly acquired countries. These are mainly Central and Eastern European (CEE) countries that changed their political and economic system with the fall of the Soviet Union in the nineties. I intend on developing a measure of a potential treatment effect that will be dependent on partnership with the European Union. Partnership with the EU is defined as having entered into negotiations to become member states. I will look at a variable that takes into account length of time in the partnership. Alan Deardroff looked at economic growth and expansion within the EU-15 and determined that original countries that were involved in the EU gain a larger benefit when new countries enter. I am hoping that there might be similar results in terms of partnership. I also will extend upon the current research by trying to determine an effect of using the Euro. The common currency is required for all new member states (Poland and Sweden have yet to adopt the Euro since membership in 2004) and could potentially harm countries attempting to develop. The exchange rate for the Euro is higher than those of national currencies for that region (ex. Poland). This may lead to a potential competitive advantage and stronger growth prospects in areas that do not adopt the Euro.

The current situation in Europe has been difficult to measure based on the recent global recession; however, there is a lot of focus on Poland as a "bright star" of Europe. This country has been able to expand corporate development and infrastructure as well as continue to post strong growth despite the global recession. What sets this country apart from others that were also new member states in 2004 is that it has not adopted the Euro. I argue that not using the Euro as a developing country could provide the opportunity for faster growth by drawing in more

funding from private and public sources as well as expanding exports. Throughout the last several decades there has been the focus on two economic development strategies, export led growth and import substitution. Import substitution was commonly used by Communist countries desiring to protect local industry from outside competition. Export led growth was the dominant strategy in many Asian countries including the Four Tigers. There are many papers researching the effect of exports on growth and many see positive effects, primarily with the transfer of technologies. Expanding exports is an important foundation for growth and this is a benefit of joining the EU. The use of a national currency that has a lower exchange rate than the Euro makes goods coming from Poland cheaper to make and sell. Poland has a competitive advantage compared to other CEE countries; however, the reaction should not necessarily be to force the adoption of the Euro onto Poland.

To determine the potential impacts of partnership and use of the Euro I will use a Fixed Effects model, which looks at within-unit variation. This model helps guard against potential sources of unobservable bias, such as the cultural attitude of a country or regional effects that do not change over time and difficult to measure. I will be trying to determine the impact on economic growth of a variety of factors including inflation, exports, and healthcare and education spending. I broke the regression into two main time periods, 1997-2008 and 1997-2012. Over the longer time period I found a negative coefficient on both variables of interest, indicating that partnership and use of the Euro was detrimental for countries. I attribute the negative values on partnership to the global recession, which caused many countries, particularly those in Eastern Europe, to see harsh declines in GDP growth. When looking at the shorter time period, the coefficient on the partnership variable becomes positive indicating a positive effect of entering into negotiations and involvement in the European Union compared to the base group

that are not in the partnership. In all situations the coefficient on exports is positive, providing support for the export led growth hypothesis and the impact it could have on new member states and partners.

The paper is set up as followed. In the first section I will provide a brief history of the foundation of the European Union and many of the ideas and beliefs that formed the institutions and character of the organization today. In section three I will then discuss current literature explaining convergence and providing empirical analysis of convergence within the EU. I will also look at the use of aid funding designed for the European Union and go in depth on two specific country cases, Poland and Hungary. Section four will discuss the data and the fixed effects model. From this discussion I will develop my final model. The last section is the results and a discussion of the benefits of export led growth.

2. Background

2.1. Brief Historical Overview

During the aftermath of World War II the European continent was in the process of rebuilding many of its destroyed towns and cities, as well as dealing with the devastation wreaked on the economic environment at the time. The leaders of Europe desired a change in the course of action, for there had been two world wars in the last fifty years fought on the continent. Two of the superpowers, France and Germany, led the charge and announced the Schuman Plan. The initial signing was between six countries to establish a central body that held control over coal and steel production (the ability to make war). The signing of the treaty ushered in a period of peace between the nations that agreed to a collective economic market.

Robert Schuman and Jean Monnet were the main architects behind the treaty. The main tenant was to open barriers in order to allow for the free movement of coal and steel amongst member countries. This would result in the inability to conduct war between the nations

involved. The desired trade activity between the countries was difficult to achieve, but was seen as necessary to stop war. Much of the backlash resulted from domestic production unions that feared the increase of competition between countries as a result of decreasing tariffs. The establishment of international markets is definitely an important aspect to the proposed idea of peace. However, it is predicated on the fact that sovereign nations were required to give up their sovereign power. This would be the main issue going forward as the economic union would attempt to grow in the future.

The initial idea was announced on May 9th, 1950 and resulted in four main aspects of the law. First and foremost France and Germany were required to eliminate their long fueled rivalry and then the treaty could be extended to all countries in Europe. The second aspect was that Franco-German production of coal and steel would be placed under the control of a high authority. The hope was that this would then establish a single market and increase the wealth of citizens. The high authority's decisions would be binding on all countries involved in the treaty and enforced by a political body. The decisions would be debated over the next year between France, Germany, Belgium, the Netherlands, Luxembourg, and Italy. The debate centered on country specific controls and the independence of the central body. There is a requirement of equality between the states and co-operation amongst the various groups.

In 1957 the member states were worried about the failure of the European Economic Coal and Steel Community. The main issue was the lack of authority granted to the governing body. The leaders of the six countries met in Rome and soon determined the next goal of the community, the establishment of the common market. The Treaty of Rome was signed and the community was then called the European Economic Community, which established

supranational political bodies in an attempt to transform conditions of trade and manufacture. Article two of the treaty states,

> The Community shall have as its task, by establishing a common market and progressively approximating the economic policies of Member States, to promote throughout the Community a harmonious development of economic activities, a continuous and balanced expansion, an increase in stability, an accelerated raising of the standard of living and closer relations between the States belonging to it.

The common market requires certain initiatives proposed by the central body. The common market has the hope to evolve into the single market and eventually to the final stage, the internal market. This was the main goal of the commission over the next few decades.

The initial requirement of a common market is for the elimination of all quotas and tariffs restricting trade between member states. This would lead to the free movement of goods between these countries, an integral step going forward. The next step is the creation of a common customs union. This gives the central governing body the ability to levy common tariffs and quotas placed on countries outside the union. This soon led to common policies regarding agriculture and transport.

The main issue over the course of this time period was in regards to Charles DeGaulle. He was the president of France and was mainly focused on nationalistic goals. During the seventies and eighties the French were competing against the supranational body. Many of the policies that attempted to increase centralization of power within the common governing group were denied by France. The vote by member states to relinquish sovereign powers to the central power required a unanimous vote. In response to granting more powers to the central government, the French decided to veto any law proposed. The countries agreed on a compromise that that sadly led to a continued lack of authority for the central government.

The Luxembourg Compromise was reached in 1966 to try and reach a middle ground between sovereign issues and supranational policies. The policy states that,

> Where, in the case of decisions which may be taken by majority vote on a proposal of the Commission, very important interests of one or more partners are at stake, the Members of the Council will endeavor, within a reasonable time, to reach solutions which can be adopted by all the Members of the Council while respecting their mutual interests and those of the Community.

This compromise indicated that issues that revolved around national issues could be vetoed by member states. This continued the period of inaction as the central agencies could not pass policies to expand upon the central power. The voting system was transferred mainly into a qualified majority, which requires a certain amount of votes in favor of a particular decision.

During this time Europe was suffering from a period of eurosclerosis, which describes both the economic and political environment. The economic environment is characteristic of high unemployment and slow job creation despite economic growth. The political arena was described as stagnant, where policies and perceived inactivity fostered uncertainty amongst the member states. In 1985 Jacques Delors was elected to the position of European Commission. He is labeled as the father of the European Union and led to the eventual development of the single market.

In 1986 the European Economic Community passed the Single European Act, which would establish the single market by 1992. The single market is characterized by the free movement of not only goods and production capabilities, but also the free movement of people and services. At the time of his presidency, the free movement of goods and partially the free movement of capital were achieved by the commission. The goal of a single market is to level the playing field in the hopes of increasing competitive activities between member states. The role of the community is to foster economic development such that it leads to convergence between all national economies completes the single market. The Single European Act involved further economic cohesion and power within the central activities of the supranational governmental bodies. The policy strengthened the European Parliament, which led to the fear of

deregulation. This is mainly because of the national influence on parliamentary members. It also decreased the minimum requirements for passing laws in the Council of Ministers.

Eventually in 1992 the Maastricht treaty was signed, which essentially established the European Union that we know today. The main result of the treaty was the establishment of the European Monetary Union, which went into full effect in 1999. The policies focused on further integration and supranational agencies to help economic development in member states. It expanded the powers of the central government in terms of financial policies and advanced the cause of the European common market. The competencies expanded into three areas; community integration, common foreign and security policies, and police and judicial cooperation.

These three areas would be advanced over the course of the next few decades. In 1995 the Schengen Act was passed and led to open borders between member countries. Two would abstain from entering into the agreement, Ireland and the United Kingdom. The hope was to harmonize the law in regards to visas, conditions for entry, and police cooperation. This helped in advancing the free movement of people by not requiring border checks between internal borders for citizens of the European Union.

The European and Economic Monetary Union would be fully adopted in 1999 through the minting of the Euro. The EMU was an optional institution where both the United Kingdom and Denmark opted to not enter. This resulted in another step in the creation of the single market by giving the European Union the power over monetary policy. Certain criteria for stabilization of economic markets on the national scale were placed into effect, which would lead to the foundation of the requirements for accession into the European Union. The European Union is a constantly evolving institution and has not completed its goal of complete integration. The next main hope is to centralize fiscal policies, but as the goals of the single market continue to

approach more nationally sensitive areas of legislation there is a larger sense of national backlash against the central government.

2.2. Accession into the EU

With the passing of the Maastricht Treaty, the European Union passed certain policies surrounding the stabilization of the economic market. These criteria were then extended to accession countries and became requirements to achieve prior to membership acceptance. These surround issues regarding sovereign debt and inflationary pressures that are major factors of variability between countries. By forcing certain standards for national policies, economies cannot explicitly or implicitly impact monetary policy. Monetary policy includes actions taken by the central bank that impact interest rates and reserve requirements. This is mainly undertaken through increases or decreases in the supply of money or reserve requirements. With the establishment of the EMU, most of the member states entered into the common currency where money supply and reserve requirements would be controlled by the European Central Bank. The main issue soon evolved where there is a lack of control over fiscal policies that allow sovereign nations to impact monetary policy through changes in spending or taxes. Current research shows that differences in debt to GDP ratios have effects on interest rates, which allowed each country to have varying financial environments resulting in a fragmented monetary policy. This led to the stabilization criteria.

The following criteria are required to be met in order to join the European Monetary Union (EMU) and referred to as convergence and stabilization requirements. The first item was that inflation could not be greater than 1.5% points higher than the three lowest inflation rates in the EMU. This would be to ensure equality of monetary policies and attempt to protect against asymmetric risks. Government deficits were made uniform at 3% of GDP, which helps with the issue described above. Similarly, debt levels were placed at 60% of GDP; however, this was

generally not enforced and it was acceptable for the country to join as long as they were making efforts to reduce the debt. Additionally the country for two years prior to joining had to maintain stable exchange and interest rates. Once in the EU the country had to abide by the Stability and Growth Pact, which deals with deficits. If a country were to exceed the limits then the specific country would be fined as a result. The policy was suspended and revised during the early 2000's as a result of the economic recessions. We can see the impact of these policies on earlier adopters of the EU within figure 1 of the appendix.

Over the last few decades there has been a surge in the number of countries entering into the EU. The largest expansion, happening in 2004, saw ten new countries. Currently there are several countries that are in the midst of negotiations to enter into the EU as members. There are three main stages that a country must go through to enter the EU. The initial phase is indicated by the country becoming a candidate for membership. The second phase involves multiple rounds of negotiations and recommendations of actions the candidate countries should take to meet certain criteria at the political and economic level. The final phase is acceptance into the EU when both sides agree on the standards and the previous actions discussed have been completed to an acceptable level.

Prior to acceptance into the EU the economic criteria to meet involve the requirements to get into the monetary union. In regards to the political aspect of acceptance the government must be stable. Many of these newly acquired countries came from central and eastern Europe. In the nineties, they were emerging from the communist yoke of the USSR. They did not have financial or government institutions that allowed for democracy and open markets. It took many years to transition into market economies and they were helped by support of the European Union. The government is required to allow for the protection of basic human rights, support of minorities,

rule of law, and a guarantee of democracy. Lastly, the country must also accept the "acquis communitaire", or the full body of EU law. This is the action of the country accepting the treaty and all the mandates posed in all realms of EU law.

3. Current Literature

3.1. Convergence

The aspect of convergence is extremely important in developing a single market. In order for competition to rise to levels that allow for the free movement of goods, people, services, and capital it requires a certain level of market activity amongst all nations involved in the membership. Without similar levels there will be disparities that pose incentives and benefits to certain regions over others. For example, a country that has lower production costs would theoretically see an influx of people and capital. We can see this in Poland where over the past decade foreign companies have been establishing production facilities in this area allowing Poland to witness some of the fastest growth rates of central and eastern European countries. There will be more discussion of Poland later in the paper.

The idea of convergence has been researched in many papers over the last few decades. Many of these papers have looked at a wide variety of factors and there is some disparity as to the overall effects of convergence, particularly amongst EU countries and regions. Some researchers have found both beta and sigma convergence (Marques and Soukiazis 1998, Coeli, Lefebvre, and Pestieau 2009, and Sala-i-Martin 1995), while others have found that there has been divergence among world economies or that there has been divergence in regards to human development amongst EU countries (Quah 1995 and Monni 1998).

In order to explain convergence, one needs to understand the distinctions between sigma and beta convergence. In simple terms, convergence indicates that the standard deviation between per capita incomes of GDP lessens over time, while the opposite indicates divergence.

B-convergence in its simplest terms is "[when] poor economies tend to grow faster than wealthy ones."[8] If we see a negative relation between per capita income and income levels over time or GDP levels and growth, then we can say that there is β-convergence. The other type of convergence, σ- convergence, shows that convergence occurs as the dispersion of real per capita income GDP decreases over time. Marques and Soukiazis calculate sigma convergence by looking at the coefficient of variation across countries. As the coefficient of variation decreases, this indicates that differences are decreasing (providing evidence of convergence). Some papers express the importance of one measure over the other; however, Sala-i-Martin indicates that both have a unique story to tell.

Despite the traditional approach to convergence using σ-convergence, the importance of β-convergence should not be understated. In certain circumstances looking at the duration or speed of convergence can be an important and interesting aspect to study. In order to test the idea of convergence, Sala-i-Martin looks at convergence within the United States, Canadian provinces, and European regions. He finds evidence of β-convergence in each case. He then discusses the variety of possibilities that explains why convergence may be occurring amongst the wide-variety of groups he researched (Sala-i-Martin 1995). One possibility could be the answer described by Danny Quah, where he shows that the two-percent convergence rate amongst countries could be a statistical illusion based on the limited sample size. Based on the fact that the dispersion of incomes was not increasing, seen within the samples, the paper disagrees with this possible explanation. Another possible solution would be the impact of government transfers; however, the impact was only minimal. The main indication is that the slow rates of convergence could be explained by the limited transfer of technology between regions based on production costs.

In disagreement with the theory of convergence, Danny Quah tries to understand the two-percent growth rate, which leads to discovering areas of divergence. As discussed in the previous paragraph, the two-percent convergence could be explained by a statistical illusion based on small sample sizes. Quah then tries to look into convergence, which he does not find substantial evidence supporting this indication. Instead, based on his own research he discovers divergence in the sense that "convergence clubs" evolve. The results show that poor countries are getting poorer, while the rich countries are getting richer. Another idea shown through the analysis is that there are "convergence clubs," where the rich countries converge between each other and the poor countries do the same within their "club." The evidence shows the vanishing of mid-level economies (Quah 1995).

The implications of the research have important implications for EU policy and decisions. Convergence among regions and countries is important in the face of competitive activities. Salvatore Monni attempted to discover convergence in terms of human development. In creating an index of development, he determined that convergence was not occurring in terms of development. The main findings were that the poor southern regions and countries performed worse than the stronger northern countries. The main implication is that the strict policies of the EMU have resulted in declining performance in EU countries and have actually harmed development efforts within these countries (Monni 1998).

Firstly, I tested for sigma convergence over the time period of 1995-2012. The results can be seen in Table 1 of the appendix. For the overall time period we can see that the dispersion of GDP between countries has been decreasing. This indicates sigma convergence. We can see this clearly by looking at Figure 2, which shows the relationship between the natural log of the growth rate over the time period compared to the natural log of the initial GDP levels. From the

graph we can see a negative relationship, which would indicate convergence across the wider time period, where poorer countries are catching up to richer ones. Further analysis will incorporate varying time periods testing for β-convergence across the countries.

Testing for β-convergence generally uses the following equation,

$$\ln(\Delta y_{I,T}) = \alpha + \beta \ln(y_{I,T-1}) + \gamma Z_{I,T} + \mu_I \quad , \qquad (3.1)$$

This equation indicates convergence by a significant and negative β value. The terms $y_{I,T-1}$ and $\Delta y_{I,T}$ are the level and growth rate in GDP respectively for country I at time T. The second to last term, $Z_{I,T}$, includes all factors that affect GDP. This equation will show β-convergence and the idea that will help express a simple impact of joining the EU. The initial regressions can be seen in Table 2. The separate regressions indicate various time periods, which include 1997-2004, 2004-2008, and 1997-2012. It does not control for other factors that influence growth rates.

The analysis shows that there has been convergence between EU member states over the three distinct periods studied. The coefficients are statistically significant. It shows that convergence has been occurring at a rate of 3.7% for 1997-2004, 3.2% for 2004-2008, and there has been an overall speed of convergence of 7.3%. The rates of convergence also correspond with the analysis of sigma convergence mentioned above. I will open the regression to also incorporate other factors that influence GDP. The final equation looks like:

$$\ln(\Delta y_{I,T}) = \alpha + \beta_1 \ln(y_{I,T-1}) + \beta_2 \textit{Health Spending}_{I,T} + \beta_3 \textit{Inflation}_{I,T} + \beta_4 \textit{Trade}_{I,T} + \beta_5 \textit{Unemployment}_{I,T} + \mu_I \quad (3.2)$$

The extended analysis also shows convergence over the same time periods mentioned above. You can see the results in Table 3. We can see that there is a negative value associated with the coefficient for β_1; however, when extending the analysis the result is not significant in every time period. We can see that countries within the EU are continuing to catch up at a rate of about 4.52% over the extended time frame. This is relatively strong convergence.

The analysis tends to promote the idea of convergence between countries (for graphical analysis of β-convergence see Figure 3 below). This is the main objective for the European Union in order to increase competition and it is an integral aspect of the common market. By including this analysis here we see a potential impact of joining the European Union that provides a benefit in the sense that countries participating in the union see increased growth rates. Most analysis of convergence has been focused primarily on the EU-15 and this analysis has expanded to cover the new member states. The main issue with the analysis is that it does not provide an indication of whether or not this convergence phenomenon is a localized event or a worldwide occurrence. The main question coming from this analysis is: Would accession countries have the ability to witness similar growth rates if they were not a part of the European Union? The analysis of this paper will extend to cover all areas of the globe. The analysis will expand upon the general study of convergence, which some scholars say is a worldwide fact. We can see this by looking at growth rates of China, India, or Brazil compared to most first world nations. There is a trend towards faster growth rates for developing nations. However I hope to see whether or not the EU provides a larger benefit to developing countries.

3.2. Structural and Accession Funds

The goal of the European Union, as stated above, is to provide a level of equality within the region in regards to productivity and income thus increasing competition and allowing for the free movement of the four factors. However, this goal often grates against the sovereign desires of each member state. The goal of the member state is common to that of most countries; grow the economy and provide for strong foreign and domestic policies that match the ideology of the leading party. Structural funds provide the opportunity for the European Union to appease the individual sovereign desires by providing money for state projects, but also have the overall

target of increasing the cohesion between countries, mainly attempting to provide funding for transportation initiatives and innovative areas. It has been found that these policies help lessen the disparity between advanced and under-developed regions. As Cappelen et al. state, "[T]he theory argues that lagging regions may have a high potential for growth due to a backlog of technological knowledge developed in advanced regions." This section will explore some of the current literature on structural funding within the EU as being a key determinant in economic growth of a country as well as discuss some of the funding going towards solely accession countries.

The European Union began to focus upon structural funds in 1975 with the establishment of the European Regional Development Fund (ERDF). The funding came from member states and hoped to lessen disparities within the single market system. There was a major revision in the 1978. There were three areas that changed within the fund due to the acceptance of three poor countries from the south. The first change was to focus on regions that had a GDP per capita of less than 75% of the community average. The second was to target regions in industrial decline, those with high unemployment and low growth. The third was to target those regions that were predominantly rural and agriculturally based. Figure 4 shows the current breakdown of regional support. The distinction between regions is based on GDP per capita above or below the EU average. As you can see from the map most of the funding currently goes towards programs in central or Eastern Europe along with some poorer regions in Spain and Italy. The work of Cappelen et al. finds that Spain and Portugal both benefitted greatly from the availability of these structural funds in the process of convergence. The paper also finds that there is clear evidence that regional support has provided for strong growth increasing competitiveness within the EU.

The most important aspects are that there must be positive reception within the region and these policies must target competence and provide for structural change.

Not all researchers take such a positive outlook on the effectiveness of structural policies. Some, including Beugelsduk and Euffinger, claim that the availability of structural funds creates issues of moral hazard and substitution effect. The claim of the authors is that there may be situations where certain countries should not have actually received funding from the funds. Based on the above specifications of regional support, certain leaders may artificially lower welfare of certain regions to maintain funding (moral hazard). There could be the situation in which country A already planned to provide funding for a certain project; however, if that country decides to use structural funds there may be an instance of crowding out. The crowding out may limit direct investment from private sources. These cases of inefficiency were tested against corruption levels within the government. The findings suggest that corruption does not necessarily limit the impact of structural funds.

In recent years funding towards convergence projects have extended into pre-accession funding. There are several available funds focusing on specific projects; Phare, Instrument for Structural Policies for Pre-Accession (ISPA), and Special Accession Programme for Agricultural and Rural Development (SAPARD). Phare began in 1989 and aimed at aiding Poland and Hunagry in transitioning to market economies. It generally addresses the adoption of the *acquis communautaire* particularly towards economic and social cohesion. In addition to Phare, the European Union introduced ISPA and SAPARD during Agenda 2000 providing funding for the period between 2000 and 2006. ISPA provides funding towards environmental projects to reach certain quality standards and improvement of transport infrastructure. There have been a variety of initiatives within transport, in particular the trans-European Network which attempts to

improve railways and roads to connect all markets within the free trade zone. The final program, SAPARD, focuses solely on rural development, which is the main sector of many accession countries.

The availability of pre-accession funds is a major incentive for countries to enter into negotiations, particularly those that had been a part of the former Soviet Union. The funding that the EU provides focuses towards high growth initiatives within trade, industrial development, and environmental standards. The funding also generally corresponds to higher levels of foreign direct investment, further negating the idea of substitution effect. Poland has received the most funding from structural funds, where it also has the distinction of one of the stronger economies in Central and Eastern Europe. Funding favors less corrupt countries, for example see table 4 for shares of funding based on 2003 data. The impact of these policies heavily influences investment decisions and the path for growth and development.

Currently the Western Balkans receives funding from the Instrument for Pre-Accession (IPA). There have been two dispersals of funds, during the 2007-2013 period and future investments during the period of 2014-2020. The investments provide assistance to public administration reform, rule of law, sustainable economy, people, and agriculture and rural development. All types of pre-accession funding hopes to better integrate the economies of member states and pre-accession states. This helps both countries in terms of developing relationships, providing access to trade, and increasing the competitive nature of the targeted countries.

3.3. Country Specific Studies
3.3.1 Poland

The Polish government entered into formal negotiations with the EU in regards to accession in 1998. The process took nearly four years to complete and the country was officially adopted as a member state in 2004. Since that point Poland has proved itself to be a strong economy that continues to foster development of its industrial sector and witnesses some of the strongest growth rates in the region. It appears that EU membership has benefitted the country through the countless reforms that were required by the EU Commission. These reforms were discussed earlier in the text. The Polish economy had many expectations upon joining the EU that will be discussed in this section in regards to success. This will allow us to further define certain areas of interest to see if success or failure is an isolated event or a characteristic of EU membership.

The paper "The Impact of Poland's EU Accession on its Economy" by Ewa Balcerowicz will be integral to determine short run impacts and expectations accession countries could have with membership. The goal of the paper is to look at several key industries within Poland to determine any possible impact from membership in the European Union. In an economic sense the opening of the market to the four factors mentioned earlier (movement of goods, people, services, and credit) would promote competition increasing economic efficiency. This was one of the main drags on the Polish economy during the transitional phases. The economic nature of a communist country promotes the protection of industry by relying heavily on state-run organizations. Through the gradual introduction to the market economy with the help of the EU, Poland was able to integrate its economy into the international market and compete on a global scale. Through Poland's integration with the EU, the market for Polish goods transformed from a local market to a continent wide market where businesses from twenty seven other countries are

also attempting to provide goods for the 450 million citizens in the EU. Potential gains, analytically speaking, should favor the poorer countries that would be able to converge with the richer countries in the EU. Membership also requires certain required levels for macroeconomic indicators such as inflation and budget deficits, as well as providing access to EU structural funds. Other potential gains would be the ability of migration and potential increases to Polish wages, which were expected to rise by 1.7%.

The paper mentioned above outlines the impact of accession after a two year period of membership. Her analysis shows that convergence of the Polish economy with the older member states was occurring, where Polish growth rates were 4% during this period and the average growth for the EU-15 was roughly 2.3%. The factors influencing the growth rates are the accumulation of capital and an increase in technological progress. The growth of trade tends to stand out as one of the main positive impacts of EU membership. In 1994 exports accounted for 21.6% of GDP. This number would grow to 33.4% and the country continued to witness growth rates of 14.0% and 8.4% in 2004 and 2005 respectively (See Figure 5 for data on export growth of Poland). Export growth continued to surpass growth in imports as Poland saw increases in industrial production and trade outflows of agriculture. There was also an increase in foreign direct investment, which provided much needed capital investments to promote growth oriented projects and business development.

In more recent economic news Poland was able to avoid economic recession and continued to have good relations with many of its neighbors (prior to turmoil between Russia and Ukraine). Many state that the growth of Poland came about with the "shock" therapy of introducing free markets where "[w]lmost overnight price controls went, markets were fully opened to foreign trade, the zloty was made convertible, subsidies to state-owned industries were

slashed and privatisation began." The main characteristic that sets Poland apart from many has been the fight against corruption within the political sector. Their efforts have benefitted the country greatly, for they have received the largest share of structural funds than any other newly accepted member state (and this remains the case over the next five years).

However, the economic climate is not perfect and many reforms should be passed to continue liberalizing the economy, particularly in regards to labor markets and state-ownership of companies. Poland is the sixth largest economy in the EU; however, they also hold certain characteristics from their communist past; particularly in regards to state-ownership. As the Economist states, "Several hundred largish companies are still in the hands of the state; the government has a tendency to declare them "strategic" when they are, in fact, just big." In regards to the labor market, many economists fear the ageing demographic and the increase in emigration of some of the highly skilled Polish workers. Reforms should center in keeping these individuals within the country by promoting laws that allow for later retirement ages and aid to working women, such as child daycare. There has been much progress; however, the economy relies heavily on foreign trade with Ukraine and Russia (particularly with oil). Given the political climate future expectations on growth have declined, despite Poland being one of the strongest economies throughout the last decade growing on average at 4% per year. The main factor to look at will be growth in exports, which tends to lead economic growth.

3.3.2 Hungary

The economic situation in Hungary, as a result of accession, has held mixed results. Based on Table 5 found in the appendix, we can see that Hungary saw strong performance prior to accession and during the first few years of membership; however, that has slowly deteriorating. From this table Hungary saw a rise in unemployment, a larger deficit, and slower

growth rates in regards to GDP. The mixed results have been the case for most accession countries. By entering into negotiation with the EU, Hungary was able to achieve special status as trade partners. There was a general lowering of tariffs, allowing stronger trade with the EU-15, access to structural and pre-accession funds, and help with developing democratic institutions. However, upon accession, Hungary quickly saw a trade imbalance favoring imports and desired to shift to an export led growth (which was not achieved because of the global recession). The main issue in regards to Hungary's economy is that it is closely tied with some of the older EU members, most notably Germany.

As of 2012 Hungary was the worst performer compared to new member states (Figure 6). It was hit hard during the recession and has seen negative GDP growth for several years. The Hungarian government is attempting to revive growth; however, many of the policies they have instilled have led to the laggard growth (many of the policies have stressed the budget, which almost caused Hungary to lose EU funding). One of the key issues for Hungary in the coming years is dealing with the rise of corruption. Politicians are focusing on their own cultural agendas, which sometimes disregards EU law.

There is a silver lining in regards to Hungary. Despite growing concern over local economies, trade growth continues (Figure 7). The two cases discussed, Hungary and Poland, offer insights into the experiences of central European nations. The group of countries had only left the grasp of Soviet Russia in the nineties and immediately desired change. There is no doubt that interaction with the EU and requirements prior to accession have provided benefits for the countries. They have seen positive growth, a period of convergence with older EU members, and citizens enjoy a higher degree of democratic institutions and freer markets. However, these positives may not be long lasting, as is the case for Hungary. One of the key distinctions between

Hungary and Poland involves the use of currency, Poland continues to use the Zloty and Hungary has adopted the Euro. It will be discussed below why this distinction could account for the different stories we see amongst new members. The basic idea is that by adopting the Euro there would be lower investments and trade imbalances may persist, which could lower growth rates within the EU area.

4. Data

The process of collecting data for this research involved using World Bank datasets. The variables came exclusively from the World Development Indicators survey. I collected data over the time period of 1997-2012, where the upper limit was placed due to data availability. I start in 1997 seeing how that is one year before many countries entering into formal negotiations with the EU. The dependent variable within all regressions focuses on GDP growth rates and the independent variables were determined from six specific indicators that were developed by Steven Radelet. The six factors include macroeconomic and political stability, healthcare and education levels, democratic institutions, trade, neighbor effects, and ease of doing business. Neighbor effects and ease of doing business have recently been included in surveys and have limited available data. For the purposes of this analysis these variables are not included. As a measure of trade I use a variable that measures exports as a percent of GDP. There was also availability of public spending on healthcare and education as a percent of GDP. Other variables include measures of inflation, unemployment, real exchange rate, GNI, and government surplus or deficit. These variables offer an extensive measure of growth and they are time varying to be included in a fixed effects model. The hope of the model is to determine potential impacts of using the Euro and partnership, where the variables were developed with historical information found on the EU commission's website.

4.1. The Model: Fixed Effects

The hope of the model is to determine a potential treatment effect for countries entering into a partnership with the European Union (meaning that these countries are on track to join into membership). The data revolves around cross-country panel data covering the years during the time period of 1997 to 2012. The hope of the model is to be able to gain insight into a partnership effect indicated by a faster growth rate amongst accession countries compared to other countries. The desire of the European Union is to promote convergence amongst economies, generally viewed as the eventual "catch up" of poorer countries to richer countries. By using random-effects and fixed-effects, there is an ability to determine the measure of treatment despite the potential for omitted variable bias. I will explain the difference between the two methods and how they will be used to test the main hypotheses.

The use of fixed-effects is generally used to test and analyze the impact of variables that vary over time. The model explores the relationship between independent and dependent variables through variation within an entity (in this case within countries). The assumption when using fixed-effects is that there are inherent traits within an individual that could potentially bias the dependent variable estimation. For example, there may be a desire to determine why individual wages differ between a group of individuals. It may be believed that individual ambition should be an important variable to add to the equation; however, this is difficult to measure. The use of fixed-effects removes the effect of time-invariant characteristics (gender, region of world, etc.) to be able to assess the net effect of the independent time-varying variables on the dependent variable. The equation for the fixed model can take several forms, one being:

$$Y_{it} = \beta_1 X_{it} + \alpha_i + u_{it} \qquad \text{(equation 4.1)}$$

The regression indicates that Y_{it} is the dependent variable based on the entity and time. The independent variable is captured by X_{it} and α_i is the intercept for each entity. The term u_{it} is

the error term. The proper interpretation of the β_1 coefficient would be "…for a given country, as X varies across time by one unit, Y increases or decreases by β units." (Bartels and Brandon 2008). Stock and Watson promote the importance of the model by stating, "The key insight is that if the unobserved variable does not change over time, then any changes in the dependent variable must be due to influences other than these fixed characteristics." (Stock and Watson 2003) The interpretation and use of fixed-effects modeling can be difficult when data for within-cluster variation is low or when a variable changes slowly over time.

The fixed-effects model variation that I will use will incorporate the use of a variable keeping track of length of membership and a binary variable for use of the Euro to hold constant each individual country. The model develops a dummy variable for all countries except for one to guard against multicollinearity. The model is as followed:

$$Y_{it} = \beta_0 + \beta_1 X_{1,it} + \ldots + \beta_k X_{k,it} + \gamma_2 E_2 + \ldots + \gamma_n E_n + u_{it} \quad \text{(equation 4.2)}$$

Within this model we include the individual dummy variables which are shown by E_n. Equations 4.2 and 4.1 are equivalent in that the intercepts on the entity specific variables and the dummy variables are based on the unobservable variable that varies across entities. It may also be important to control for shocks that may occur over the given time period (such as the year that accession countries became member states). We can do this by also incorporating dummies that control for year effects.[1]

There are many statistical methods in determining the choice between random-effects and fixed-effects. One method is the Hausman test, "which is intended to tell the researcher how significantly parameter estimates differ between the two approaches." (Clark and Linzer 2012) It essentially tests whether or not the unique errors are correlated with the regressors. There are

[1] The use of random effects could have been an option for the analysis. However, the assumptions made by the model could introduce unobservable bias into the model. It requires the input of every potential variable that could influence the dependent variable.

similar tests to determine the importance of using time fixed-effects, mentioned above as a possible inclusion into the overall model. This will test to determine whether all of the dummy variables for years should be zero. In the paper *Should I Use Fixed or Random Effects,* Clark and Linzer proposes that the Hausman test is not integral to determining between the two methods; they argue that the size of the dataset, the level of correlation between covariate and unit effects, and the extent of within-unit variation in the independent variable relative to the dependent variable are important. They determine rules of thumb for researchers. On the one hand when units are relatively similar to one another then the choice between the two approaches would be necessary if there is high correlation between independent variables and unit effects. On the other hand the preference between methods when there are a high level of units or observations depends on the goal of the research (if you are trying to make prediction on unobserved units then one would use the random-effect model). I use Clark and Linzer to determine using a fixed effects model.

In my analysis, I have focused solely on the fixed effects model to try and determine a treatment effect by comparing between a treatment and control group. The distribution of countries within the treatment group is not randomized; the choice to enter into the European Union is based on location within the European continent and negotiations between the two parties. This means that there may be a biased estimate from unobservable variables if we use a regular OLS estimate. The model is a generalization of the difference-in-difference approach. The basic fixed-effects model I will test is:

$$\text{Ln}(\text{Growth Rate}_{i,T}) = \rho D_{i,T} + \beta_1 X_{it} + \alpha_i + u_{it} \qquad \text{(equation 4.4)}$$

Many parts of the model have been previously explained; however, the new term is the treatment ($D_{i,T}$). It allows us to control for the treatment by country and how it varies over the time

period. The coefficient on treatment, ρ, is then determined as a within unit change based on the treatment. A positive value on the treatment, or length of partnership variable, would indicate that these countries have a stronger growth rate than the control group ceteris paribus. There is also a focus on a dummy indicating whether a country has entered into the monetary union. I will also incorporate time varying units into the model including data on exports, unemployment, inflation, spending on healthcare, government deficit, education spending, real exchange, etc.

5. Results

Here I will relay the results of a fixed effect analysis determining the impact of partnership and use of the Euro on growth rates. I do not use a random-effects approach because of the potential omitted variable bias from time invariant variables. The results for the analysis can be seen in Table 6 where we see two sets of years to focus upon. The reason behind using the shorter time frame was to see the impact of the two variables of focus prior to the global recession. As we can see from the table both of the primary explanatory variables are statistically significant; however, the sign upon length of partnership differs depending on the time frame. I believe that this is a result of the negative impact from the global recession. The impact of the recession upon many of the accession countries had a deep negative impact on GDP growth. This happened in other countries such as Spain, Italy, and Greece that are deemed as tourist destinations and held substantial amounts of debt prior to and during the crisis. The global recession caused a lack of credit resulting in less funding towards development projects. Corporations struggled to grow and expand their base of operation as global consumption decreased (this also resulted in fewer exports and imports). Many of these countries saw a period of economic contraction, which would contribute to the negative values associated with length of partnership.

If we look at the time period of 1997-2008, we see a positive effect from length of partnership and a negative effect from use of the Euro on growth rates (Table 6 below). Both values are statistically significant, which substantiates my claims earlier in the paper. The positive impact of partnership with the EU can be attributed to the many benefits discussed earlier. The country, prior to accession, is required to enter into the market based economy, adopt more democratic institutions, and the acquis communitaire. The countries are also capable of expanding their trade relations and enter into the single market. This opens up local industry to a competitive environment and a larger market demanding goods. For every year that a country is involved in a partnership with the European Union, there is an increase of .263% towards economic growth. There appears to be a benefit of entering into this partnership, but also an importance of duration. Those that enter into the EU partnership earlier see larger benefits as the time period extends further. In regards to using the Euro, we can see a negative coefficient associated with all four regressions. This variable is a dummy variable indicating that use of the Euro causes potential harm for that particular country. According to the above regression there appears to be a negative impact on growth rates from using the Euro where in the first time period we see a -1.37% contraction in GDP and -2.07% for the entire time period.

As I extend the analysis to incorporate the full set of variables we see the same relationship between GDP growth and the variables of focus. For both time periods and the four separate regressions we see significant results for both length of partnership and use of the Euro (see Table 7 below). There continues to be the negative relation of the length of partnership variable as we extend the time period, but for both time periods using the Euro has a negative impact on GDP growth. It is also intriguing to see a negative coefficient on the real exchange rate variable and a positive value on exports. In the next section I will further elaborate on the

economic significance of joining the European Union by explaining the potential benefits of export led growth. As discussed earlier, countries like Poland have seen strong economic growth compared to those like Hungary and Croatia. One of the main differences is the use of the Euro, which would theoretically have a higher exchange rate than a national currency. The Polish Zloty trades lower than the Euro, which potentially creates a competitive advantage for Poland by increasing exports. The use of export-led growth has been a main focus of countries over the last several decades. Many economists argue that the economic growth seen by the four tigers (Korea, Taiwan, Hong Kong, and Singapore) along with China was the result of export- led growth. Comparing their experience to that of Ghana or other central planning regimes of the 1970's and 1980's there is a large difference with growth and development between those that focused on export led growth rather than import substitution.

5.1. Partnership and Using the Euro

Export- led growth has been the focus of many economies throughout the past few decades, most notably China of recent years. Economists have stated that, "The export-led growth (ELG) hypothesis stands that those countries following an outward-orientation strategy tend to obtain superior growth performances." (Seabra and Galimberti 2012) Since the latter half of the 20th century the focus was between export-led growth and import substitution. The Soviet Union used import substitution as a method to protect growing industries from foreign competition. It worked well in the first few years and was adopted by many African countries. The hope was that by controlling industries and specific macroeconomic factors such as the exchange rate, the government could promote growth by protecting heavy industry (this generally came at the expense of other industries notably in agriculture). These countries eventually struggled as they limited free market activities. Their experience was the opposite

compared to the four tigers of Asia that grew under export promotion. As Giles and Williams states, "Outward orientation makes it possible to use external capital for development and may assist with debt servicing." (Giles and Williams 2000) Through export promotion the government promotes certain industries through lower taxes and establishing a lower exchange rate compared to other currencies. A main benefit to such a policy is that the open nature of the economy promotes the idea of "learning-by-looking" in which the introduction of new products allows for technological innovations.

To look further into the relationship between trade and its potential on growth rates, I look at a regression involving a dummy interacting partnership and export trade. Looking back at Table 7 we see positive impact from exports, showing the benefit of increased exports on growth rates. When we see the regression analysis below in Table 8 we continue to see the positive impact from exports. The potential benefit gained by partnership countries is greater than those not in the partnership. This highlights how the increased integration in terms of trade have provided large benefits for accession countries that have seen higher growth rates compared to those that are not in partnership. The results show the importance of trade liberalization in the area, which allows for these accession countries to compete more readily with other European countries.

Partnership within the European Union allows for the expansion of trade, stable governance, and a focus on free market ideals. The free movement of the four factors between the member states allows corporations to have the incentive to open production facilities in cheaper areas (mostly within newly accepted member states). This also promotes the transfer of technological innovation allowing for even further economic growth and development as Coe and Helpman test. They determine that trade with countries with high research and development

provides faster economic growth (Coe and Helpman 1995). Compared to many of the new member states, trade with countries such as Germany, France, and the United Kingdom provides for the transfer of ideas (whether it be in terms of goods or business practices from corporations expanding their base of operations). By having the positive impact from length of membership we can see benefits from joining into the European Union. As mentioned earlier, development funds have played an important part in promoting development and potentially economic growth. However, I would argue that the trade aspect of partnership and membership has more importance in the process of integration and growth. It increases competition within these territories and allows for the expansion of development, whether that comes from EU support or international corporate expansion.

However, despite the various benefits from partnership there appears to be a negative outcome from entering completely into the monetary union. Using the Euro would generally result in a higher exchange rate compared to many of the national currencies that existed prior to membership in the EU. This causes exports from these countries to be more expensive. Countries such as Poland and Sweden are seen as bright lights among the European Union accession countries with their strong economic conditions (particularly with their success during the global recession). What these two countries have in common is that they both do not use the Euro. They continue to use their own national currencies. Looking at Table 9 below, we can see that the exchange rate of the Euro to the Zloty is a 1 to 4.335 exchange. This establishes a potential competitive advantage for Poland having cheaper exports and production costs. This would bring in more industry providing for stronger development and growth rates. By adopting the Euro, these newly transitioned economies from state-controlled markets to free markets struggle. There are several long-term members such as Italy, Spain, and Greece that have struggled over recent

years using the Euro. If countries were not required to adopt the Euro they may have been able to grow and develop at a similar rate of Poland. The focus should be on economic development, which is not necessarily the focus of the EU. The EU is interested in creating a competitive environment, which would not be established with the use of different currencies. There are obvious benefits to joining the European Union for many countries; however, there should be serious thought put into adopting the Euro.

6. Conclusion

The European Union provides an interesting case study by being one of the largest and most advanced areas of economic and political partnership. In a cursory look at the history of the institution it has done a successful job at maintaining peace and relative stability on the continent. Between member states there has not been war declared since its inception, which was quite frequent prior to the fifties. The hope of the European Union is to promote competition by stimulating growth within regions that are not as developed as others. The institution is a "living and breathing" organization in the sense that it continues to grow and develop. The focus turns to economic development for the next twenty years as the Commission continues to focus on the advance of the single market. There are numerous initiatives in which the EU Commission is attempting to accomplish such goals such as the continued expansion of the trans-European network, which is homogenizing methods of trade such as railroads, ports, and major roadways.

Over the course of its history the number of member states has grown from six to twenty eight, with the potential of several more over the next few years from Western Balkan countries. The EU provides an expansion in trade markets that promotes trade growth. Some fear that the initial growth in trade could potentially harm accession countries, where the overall levels of growth have favored imports as opposed to exports. As Zsuzsanna and Judit ask, "Are we

witnessing the emergence of a ‘colonial’ type of ‘division of labour’ between the EU-15 and the Eastern EU Member States?” These fears are valid; however, recent data from 2012-2013 shows that the share of processed goods towards exports has been increasing relative to the share of raw products. The growth in trade has benefitted these countries by having the opportunity to sell to new peoples across the continent and receive new products. This helps promote research and development as some economists have determined to be beneficial to growth. There is also the case of Poland, which is the shining star of Europe. They have seen steady and stable economic growth, increased funding, and corporate development since their partnership.

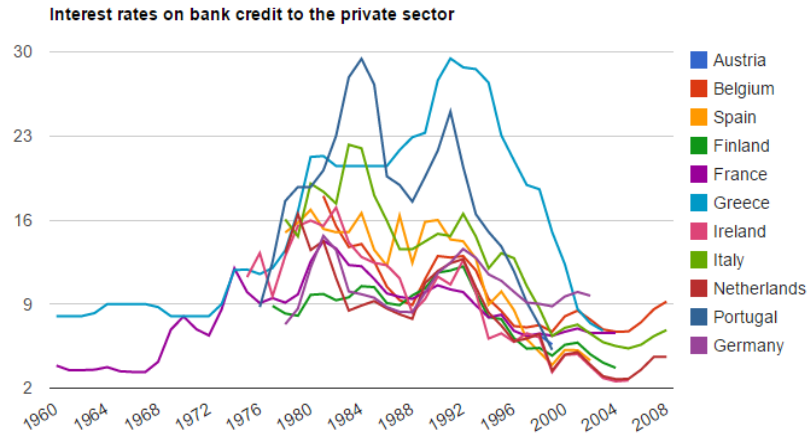
It has been argued in this paper that partnership in the European Union and use of the Euro are key variables explaining growth and development in the Euro zone. As the empirical evidence shows, partnership in the EU provides an expansion of growth. Although this fact does not hold during the global recession, it does not necessarily indicate that there are negative consequences of joining into membership (Poland continued to grow during this time period). Another key factor is the use of the Euro, which has a high exchange rate relative to other countries. This high exchange rate allows for cheaper imports, but exports are more expensive compared with other countries. This provides a competitive advantage for Poland compared to fellow CEE countries. In terms of using the Euro it appears that this harms development and growth opportunities. I would recommend that the European Union should reform their policy regarding adoption of the Euro. There should be a longer grace period before the EU policy-makers force countries to adopt the Euro. This would allow new member states to catch up at a quicker rate with that are more fully developed like Germany and France. This could be an arrangement for accession countries to reach a specific bench mark upon which they would be required to adopt the Euro.

Future expansion on this topic involving use of the Euro and partnership would be aided by data availability of the accession, cohesion, and regional development funds. The European Union does not have this data readily available. There have been small undertakings to try and determine the distribution of funds, but it only covers a small time period and focused on corruption within specific countries. There was also a lack of data surrounding other variables. This limits the models, but data availability should improve over time. Other variables that could be included would be ease of conducting business, overall political stability, and relation with neighbors. These variables have been included in recent surveys, but are generally inconsistent and date back only to 2009. Future studies would benefit from using some or all of these variables.

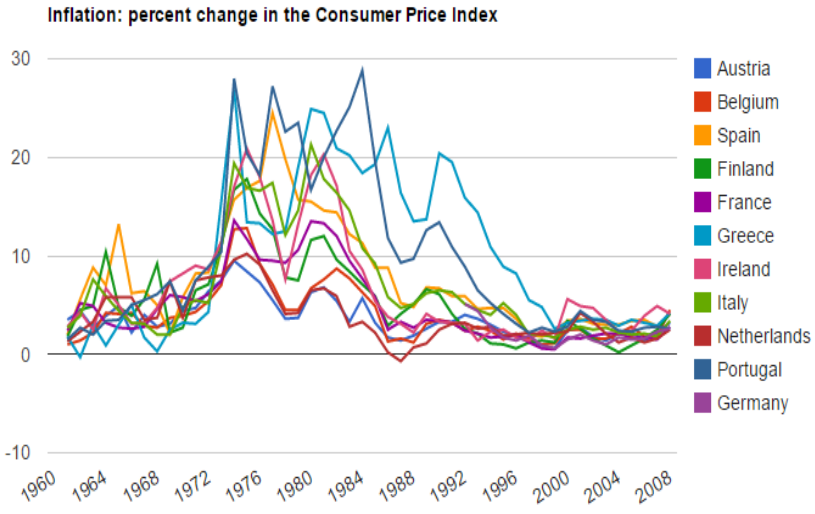
The European Union initially connected war-making industries. Leaders have expanded the scope to include a monetary union, competition policy, the single market, and the Schengen area. Future policies would hope to integrate fiscal policy at the macro level, rather than leave it in of the individual sovereign states. However, in order to reach this point there must be equality amongst all countries to create a completely competitive market. There are still many years before complete integration will occur between all member states. It is a continuous process that needs to be directed at aiding less developed regions. The EU makes a strong effort to help expedite development through the variety of funding programs; however, there are other opportunities the commission could make available. These include providing a more relaxed policy in regards to adopting the Euro and focus on corporate development as key drivers of trade and economic growth. This paper is one indication of the positive impact the EU has on members; however, it is far from perfect and has opportunities to continue improving and reaching that ultimate goal of complete economic and political integration.

Tables and Figures

Figure 1



Measure: percent
Source: TheGlobalEconomy.com, The World Bank



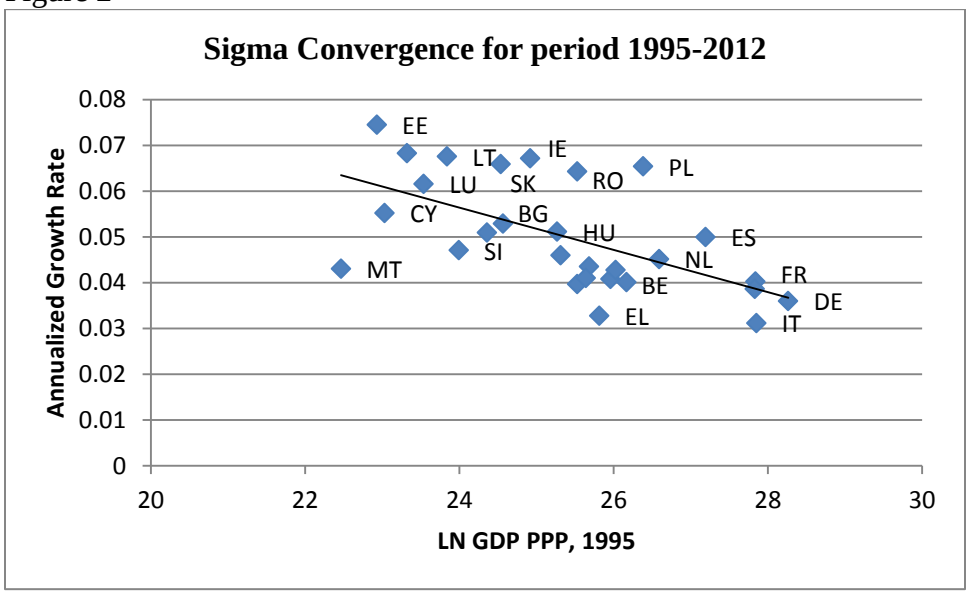
Measure: percent
Source: TheGlobalEconomy.com, The World Bank

Table 1

Year	Coefficient of Variation
1995	1.561107
1996	1.566195
1997	1.580298
1998	1.55018
1999	1.516412
2000	1.473834
2001	1.462835
2002	1.445474
2003	1.397017
2004	1.369709
2005	1.483093
2006	1.441544
2007	1.447989
2008	1.42424
2009	1.384614
2010	1.461388
2011	1.388201
2012	1.315361

Source: World Development Indicators, World Bank

Figure 2



Source World Development Indicators, World Bank

Table 2

Simple β-Convergence Test

Dependent Variable: (1) Ln(Growth2004) (2) Ln(Growth2008) (3) Ln(Growth2012)

VARIABLES	(1) 1997-2004	(2) 2004-2008	(3) 1997-2012
Ln(GDP)	-0.0374***	-0.0319***	-0.0727***
	(0.0104)	(0.00990)	(0.0185)
Constant	1.350***	1.121***	2.601***
	(0.264)	(0.257)	(0.472)
Observations	28	28	28
R-squared	0.334	0.285	0.373

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3

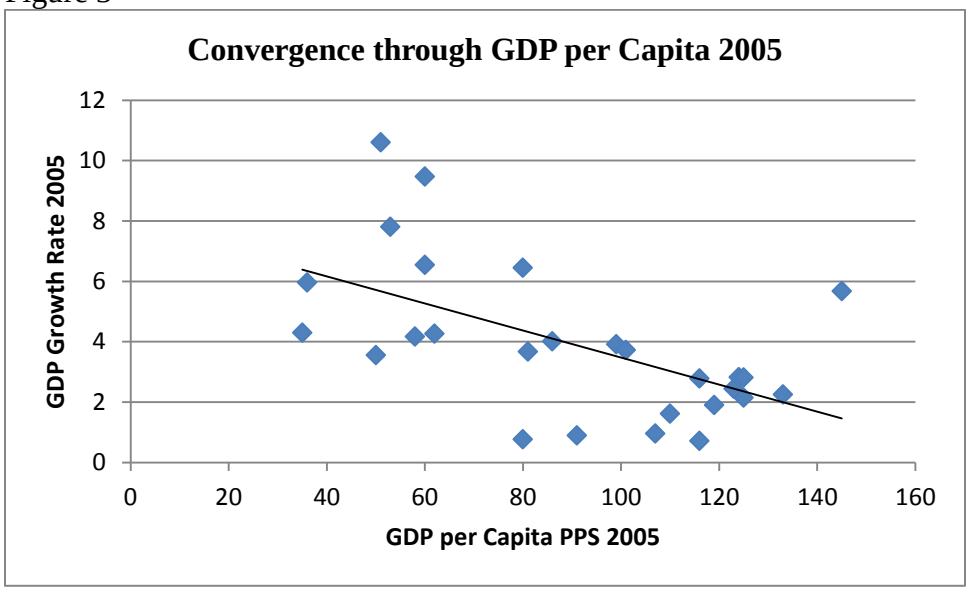
β- Convergence Test Including Controls

VARIABLES	(1) 1997-2004	(2) 2004-2008	(3) 1997-2012
Ln(GDP)	-0.0274**	-0.0109	-0.0452
	(0.0130)	(0.0101)	(0.0271)
Health Spending	-0.0247*	-0.0234**	-0.0427
	(0.0123)	(0.00926)	(0.0257)
Inflation	-5.26e-05	0.0149***	5.93e-05
	(6.61e-05)	(0.00421)	(0.000137)
Trade (%GDP)	0.000933*	0.000181	0.00170*
	(0.000448)	(0.000266)	(0.000932)
Unemployment	0.00890**	0.00505*	0.0117
	(0.00349)	(0.00270)	(0.00725)
Constant	1.075***	0.608**	1.876**
	(0.343)	(0.247)	(0.713)
Observations	26	28	26
R-squared	0.702	0.775	0.628

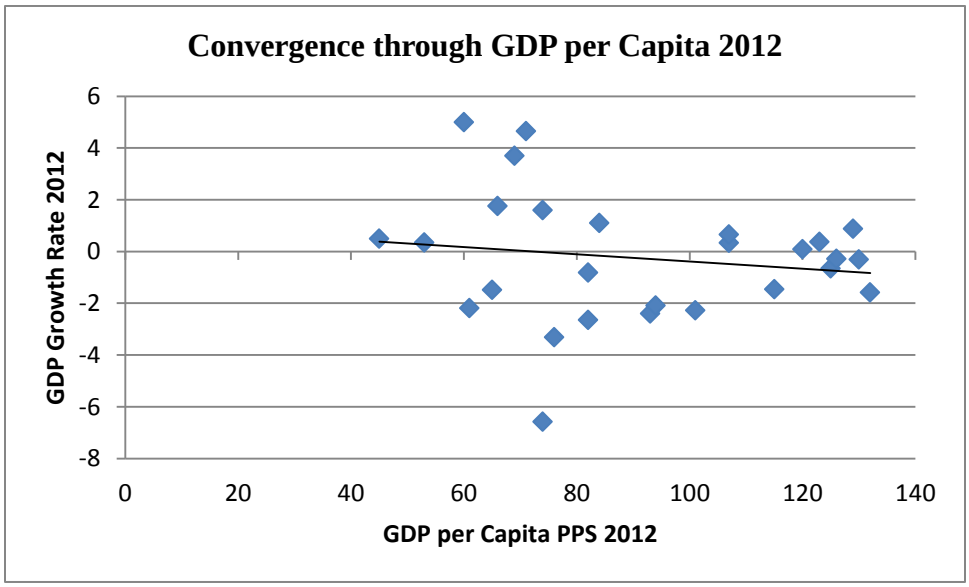
Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Figure 3

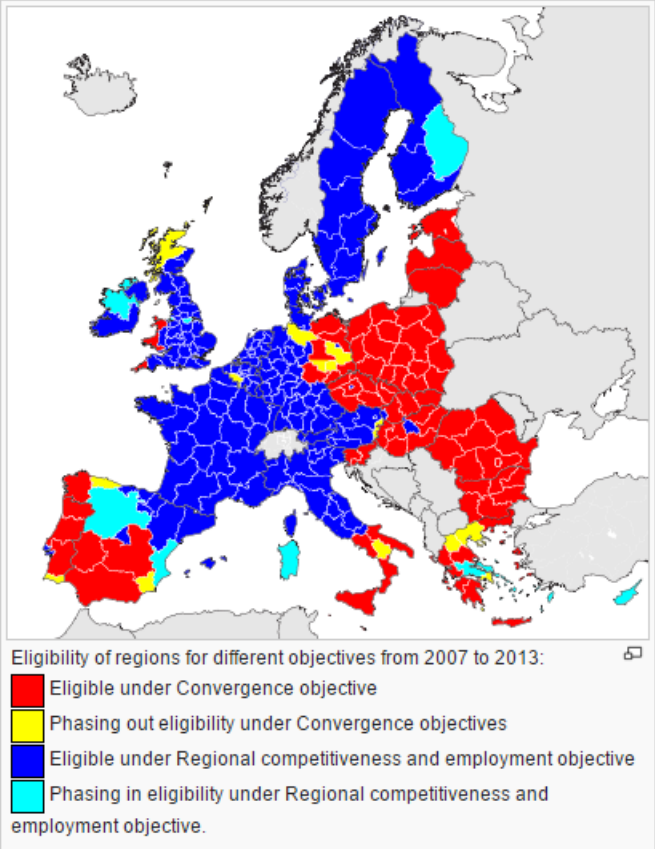


Source: Eurostat



Source: Eurostat

Figure 4



Source: European Commission Regional Policy

Table 4

The allocations per country for PHARE, ISPA and SAPARD in 2003 (in € million)

	PHARE	SAPARD	ISPA	TOTAL
Bulgaria	99	56	113	268
Czech Republic	95	24	76	195
Estonia	40	13	31	84
Hungary	107	41	96	244
Latvia	46	24	54	124
Lithuania	67	32	53	152
Poland	403	182	378	963
Romania	272	162	261	695
Slovakia	57	20	51	128
Slovenia	38	7	15	60
Other[8]	476	-	-	476
Total	**1699.0**	**561**	**1128**	**3389**

Source: European Commission

Figure 5

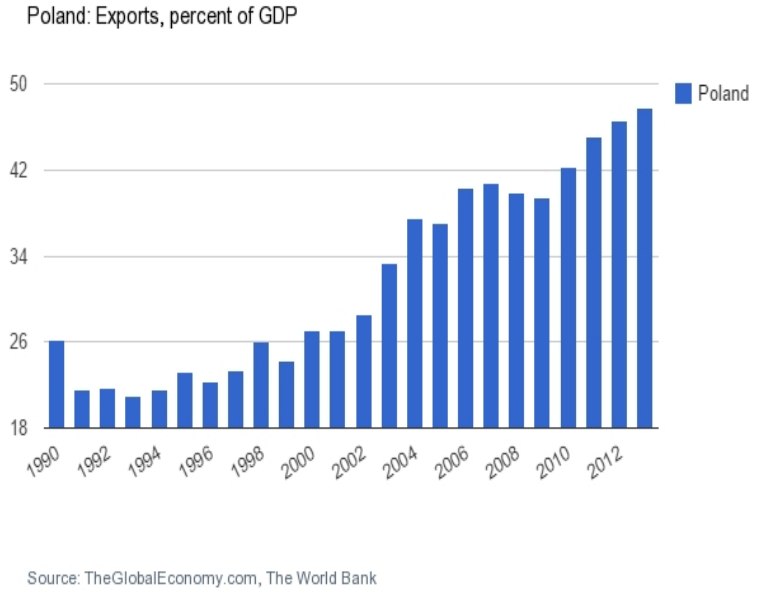


Table 5

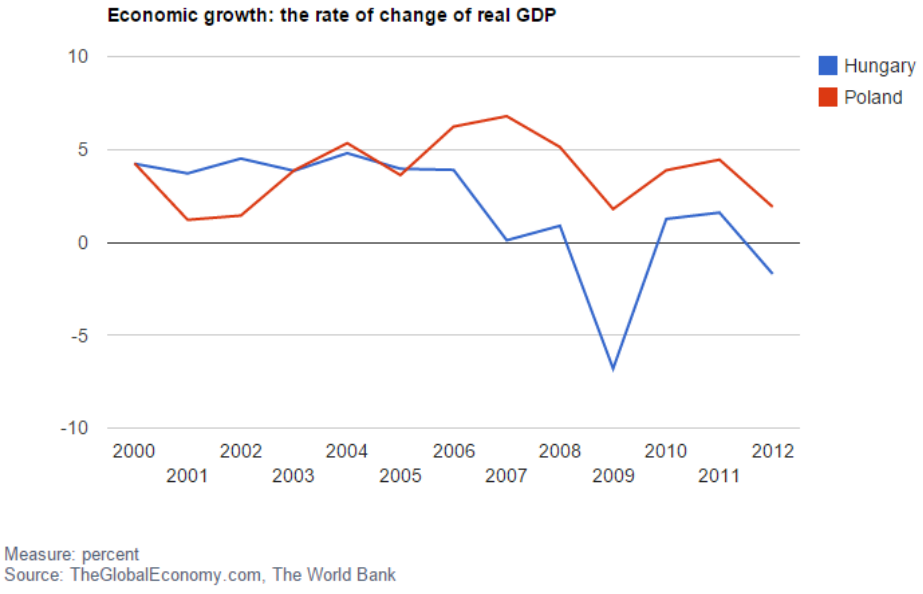
Main macroeconomic indicators of Hungary (in %)

	2000	2001	2002	2003	2004	2005	2006[1]
GDP growth rate	5.2	4.1	4.3	4.1	4.9	4.2	3.4
budget deficit in % of GDP	-3.0	-3.5	-8.4	-6.4	-5.4	-6.2	-8.9
current account deficit in % of GDP	-8.6	-6.1	-7.1	-8.1	-8.5	-6.8	-4.0
consumer price index	9.8	9.2	5.3	4.7	6.8	3.6	3.2
unemployment rate	6.4	5.7	5.8	5.9	6.1	7.2	7.3

Note: [1] estimated

Source: Hungarian Statistical Office, Statistical Yearbook

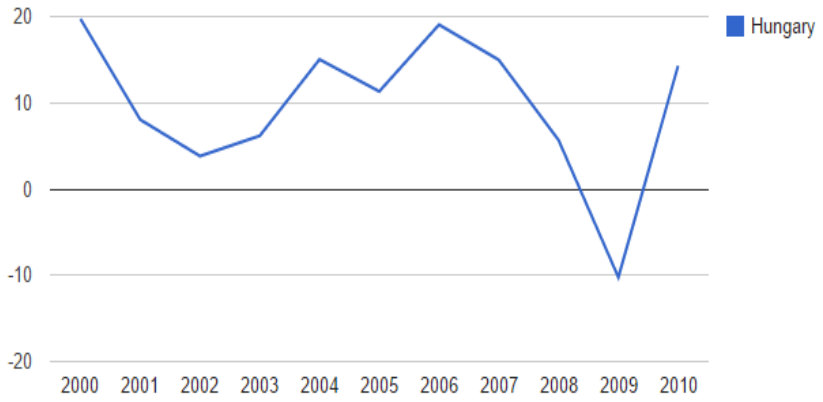
Figure 6



Measure: percent

Source: TheGlobalEconomy.com, The World Bank

Figure 7
Trade growth within Hungary (% of GDP)



Measurement: Percent
Source: TheGlobalEconomy.com, The World Bank

Table 6

Fixed Basic Regression
Dependent Variable: GDP Growth Rates

VARIABLES	(1) 1997-2008	(2) 1997-2012
Length of Partnership	0.263**	-0.231***
	(0.129)	(0.0701)
Use of Euro	-1.374***	-2.079***
	(0.408)	(0.563)
Constant	3.505***	3.346***
	(0.0804)	(0.0617)
Observations	1,331	1,935
R-squared	0.005	0.012
Country FE	YES	YES

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7

Fixed Effects Regression: Determining a Treatment Effect
Dependent Variable: GDP Growth Rates

VARIABLES	(1) 1997-2008	(2) 1997-2008	(3) 1997-2012	(4) 1997-2012
Length of Partnership	0.396***	0.314***	-0.242***	-0.430***
	(0.148)	(0.106)	(0.0835)	(0.143)
Use of Euro (=1)	-2.007***	-1.299***	-2.164***	-1.193**
	(0.504)	(0.431)	(0.650)	(0.550)
Government Surplus/Deficit	0.177***	0.185**	0.420***	0.239***
	(0.0610)	(0.0735)	(0.0785)	(0.0733)
Exports	0.00338	0.165***	0.00850	0.289***
	(0.00390)	(0.0530)	(0.00887)	(0.0445)
Healthcare Spending (%GDP)	-0.0508		-0.410**	
	(0.140)		(0.171)	
Education Spending (%GDP)		-0.0294		-0.0115
		(0.0226)		(0.0209)
Inflation	-0.00646***	-0.157***	-0.00692***	-0.222***
	(0.00150)	(0.0339)	(0.00160)	(0.0578)
Unemployment	0.0903	-0.0594	0.0601	-0.300**
	(0.134)	(0.0879)	(0.104)	(0.114)
Real Exchange Rate	-0.0330	-0.00445	-0.0222	0.0238
	(0.0262)	(0.0262)	(0.0220)	(0.0159)
Ln(GNI)	3.561	-0.385	2.418	-0.721
	(2.165)	(1.883)	(1.671)	(0.938)
Constant	-84.97	14.94	-53.47	22.14
	(55.47)	(48.50)	(41.87)	(24.66)
Observations	410	272	629	402
R-squared	0.160	0.400	0.220	0.590
Country FE	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 8

Fixed Effects Exports
Dependent Variable: GDP Growth Rates

VARIABLES	(1) 1997-2008	(2) 1997-2012
Length of Partnership	0.250*	-0.238***
	(0.130)	(0.0905)
Use of Euro	-0.891	-1.315**
	(0.553)	(0.645)
Exports	0.0257	0.0360
	(0.0225)	(0.0286)
Partnership X Exports	0.0513	0.203***
	(0.0362)	(0.0484)
Constant	3.170***	2.830***
	(0.329)	(0.332)
Observations	1,262	1,778
R-squared	0.031	0.070
Country FE	YES	YES

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9
Exchange Rate of the Polish Zloty (01/15/2015)

Currency	Code	Mid-rate
Australian Dollar	1 AUD	3.0638
Czech Koruna	1 CZK	0.1557
Danish Krone	1 DKK	0.5829
Euro	1 EUR	4.3335
Norwegian Krone	1 NOK	0.4911
Philippine Peso	1 PHP	0.0837
Pound Sterling	1 GBP	5.6595
Romanian Leu	1 RON	0.9621
US Dollar	1 USD	3.7346

Source: NBP

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