

POLAND'S DECISION TO ADOPT THE EURO

Ankit Arora *

Abstract: This research has the primal objective of forecasting the viability of Poland as a present member of European Union taking a step further and joining the inner circle by adopting euro as its currency. A study about short and long term implications of this decision on the country's economic stability and growth prospects.

This journey begins in the chaotic times of the Second World War, a brief snapshot of pre-European Union and Euro zone era, to understand the political and economic background. Taking a look at the convergence criteria, necessary to adopt the Euro. A comparison between Poland and other giants in the union, to know about its status on the grounds of these criteria. We measure the timeline which should be adopted by Poland to join by forecasting Global competitive Index to understand the trends for next 20 years. This gives us an approximate time that would be taken by this nation to be equally competitive with the ranks of Germany, France, etc to survive in a free trade region.

This integration would only be profitable to Poland, if it brings in major trade and capital inflows as a result of elimination of exchange rate risks and transactions cost. Therefore we look at past and present performance of the Polish economy at this front.

Lastly, we try to comprehend a socio – economic paradigm shift that is taking place in European nations and how it would affect Poland as a nation and an economy to conclude our study.

Key words: Poland, Euro zone, Currency Exchange Rate, Global Competitiveness Index, Demographic Shift, Investment Opportunities

JEL Classification Codes: F0, F1, F2, F3, E2, E3, E4, E5, E6

Introduction

“Globalization”, a term, a concept, which seems to have gained ground, especially in India in the last five decades; traces its roots to the industrial revolution, which started in Britain, around 1750 and then spread to Europe and other parts of the world. The development of steam power, internal combustion engine, and electrical power generation completely revolutionized not just the production process, but also gave wings to the outreach of those machine produced goods.

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The Pre- Euro zone era:

Poland or as in the local language “Polska” could be seen as a gateway between two worlds. Scratching the history one could go as back as the Nazi occupation of Poland which forced the country into conflict in World War II.

Economically the first important milestone for Poland has been the Warsaw pact or Warsaw Treaty Organization of Friendship, Cooperation, and Mutual Assistance (1955–1991), signed by eight of communist nations to raise a union in response to NATO (North Atlantic Treaty Organization) which was an integration of North America and Western Europe, initiated by West Germany. Now it is important to know that though both these acts were trade agreements on the face of it but were actually mutual military pacts authorizing these blocs to raise integrated militaries, build missile silos in frontier states and use them against each other when necessary.

Proponents in Euro zone formation:

Being a communist state and signatory to the Warsaw pact obligated Poland to raise iron curtain on its western border, which meant no trade and travel for people. This scenario continued till 1989 which saw the disintegration of Soviet Union and the Maastricht Treaty 1992 which formally announced the inception of the European Union. Eight years later European Monetary Union (EMU) came into being with Euro as the common currency on 1st January 1999.

The agenda of a single currency could be traced back to treaty of Rome of 1957 and modification to it as Single European Act of 1987 who’s objective was build a common market for all the member states of the union to facilitate risk free trade between them. On the launch of Euro in 1999, eleven member states qualified for the single currency and therefore became the first to implement single monetary policy. Poland itself joined the European Union in year 2004 and has ever since been preparing to join the monetary union.

Qualification for using euro is defined under the euro convergence criteria which are based on Article 121(1) of the European Community Treaty. They are a part of the Maastricht Treaty 1992 as the third stage of the EU in which the qualified member adopts euro as its currency. There were five main conditions under this act which had to be fulfilled by any member state who wish to enter this stage.

We can take a quick look at these criteria’s objective to understand the need to setup a qualification for nations.

- I. **Inflation rates:** The most important criteria of the list is the inflation rate which has to be under control to maintain the price stability of goods and services produced by the member states. Due to no convertibility issues involved there is a free flow of capital and inflation could flow with it to nations with low liquidity causing instability to them.

Apparently it should not exceed 1.5 percentage points higher than the average of the three best performing member states of the Euro zone. The inflation rate is calculated using the increase in the latest available 12-month average of the Harmonized Index of Consumer Prices (HICP) over the previous 12-month average.

- II. **Annual government deficit:** These criteria's also take care of the financial position of the member and have setup indicator reference values to represent good health of the government policies.

So ratio of the annual government deficit to gross domestic product (GDP) must not exceed 3% for a particular year. If not it is at least required to reach a level close to 3%. Only exceptional and temporary excesses can be excused.

- III. **Government debt:** The ratio of gross government debt to GDP must not exceed 60% for the member state as it could affect the credit rating for the payment of debt. Usually European national governments have a rating of AAA but when debt ratio to GDP crosses a reference point, it has a serious threat of getting downgraded and becomes more difficult for the nation in future to raise fund via debt.

- IV. **Long-term interest rates:** This is also a major condition setup lets the European Central Bank (ECB) analyze the monetary stability of the nation to assess convergence. The nominal long-term interest rate must not be more than 2 percentage points higher than in the three lowest inflation member states. This reference value has been applied by using the un-weighted arithmetic average of the long-term interest rates of the three countries with the lowest inflation rates. Interest rates have been measured on the basis of harmonized long-term interest rates, which were developed for the purpose of assessing convergence.

- V. **Exchange rate:** Now one of the most technical issues that are involved in the criteria for any nation to join the union is being a member of European exchange-rate mechanism (ERM) which was also devised under the Maastricht Treaty. In this situation, the ECB checks the fluctuations in the exchange rate for a minimum of two years by first pegging the applicant's

currency with Euro and observing the stability in the bilateral exchange rate with a reference band. This reference band was $\pm 2.25\%$ in ERM (I) but due to some events which I would refer later; this was broadened and became $\pm 15\%$ later in ERM (II).

	Condition	Inflation (HICP)	Annual Govt. Deficit to GDP	Gross Govt. Debt to GDP	ERM II Member	Long Term Interest Rates
Country	Ref. value	Max 1%	Max 3%	Max 60%	Min 2Yrs	Max 6%
Poland		3.9%	7.3%	53.9%	No	6.1%
Denmark		2.1%	-3.9%	41.6%	Since 1999	3.4%
U.K		3.0%	7.1%	68.1%	NA	3.98%
Switzerland		0.9%	-1.0%	41.3%	NA	1.46%

Table 1. Comparison of Poland with Convergence Criteria

The above reference table depicts the current position of Poland with the fulfillment of the convergence criteria. This also shows the position of Denmark who is a member state of EU for approximately 30 years but rejected the Maastricht Treaty in 1992 due to the national sentiment of not joining the EMU at the level Maastricht Treaty proposes it. Due to this situation Denmark became an exception to the treaty and a new referendum was carried out under the Edinburgh Agreement or Edinburgh Decision in December 1992, where it became an observant member of the Union. I think of the Danish economy as a milestone economy due to its efficiency, as a benchmark Poland's aptness in adopting Euro.

The reason for inclusion of Swiss data is to depict it, something as a model economy for Polish policy makers to aim for, even though Switzerland has neither been in any bloc in the cold war nor it's a member of EU. It is the most neutral nation in history and has never faced any problem like Poland.

United Kingdom is also a member state of the European Union but not the EMU. Although much larger in size, it serves as a perfect economy which Polish policy makers can learn from, not to make the same mistakes that the former made in recent history with respect to its failed of joining the EMU.

- 1) **Annual Government deficit:** This point is more related to the internal financial position of the government and from the data in Appendix (A3), we can observe that the Polish have a general government deficit of 7.3% which is greater than the criteria of max 3%. But it is not as bad as it looks due to the fact that growing economies need more spending than taxation to produce multiplier effect, which internally produce internal stimulus. The annual deficit is not totally due to excessive spending of the government but is also affected by the current account imbalance of -5% of the GDP. Now this imbalance is due to the manufacturing and agricultural imbalance which would be discussed by me in the following points and could be seen in Appendix (A4), (A5) & (A6). They can only bank on their growing service sector right now, which is producing a positive trade balance but it defeats the overall picture of inclusive growth. The agriculture sector is so neglected that they have to import some of their staple food and makes them self insufficient in future time of need.
- 2) **European Exchange Rate Mechanism:** This methodology is used by the ECB for two main reasons. Firstly to check the stability of the applicant currency when pegged against Euro and observing the fluctuation in a given band. Secondly, it paves the way for this currency to be de-monetized and finally replace it with Euro in that nation. Unfortunately, examples like of Britain and Italy have made Poland reluctant to even join ERM. Denmark, even though given an excuse under the Edinburgh agreement, it is a member of ERM since 1999. We should appreciate the Danish central bank for the stability of their currency in ERM. Krone has proved to be, one of the most stable currencies when pegged against Euro.

Polish policy makers should take lessons from mistakes of British central bank which joined the ERM process in 1990 and pegged the Sterling Pound to 2.91 Euro even after vigorous inflation in the country. Two years after this market forced the pound to a lower level below the ERM band forcing Britain to withdraw from the system. The case of Italian Lira was similar to pound which manifested to the same result.

According to my calculation Appendix (G), even after a broader band of $\pm 15\%$ provided in (ERM II), the zloty is unstable when pegged against Euro. It has a fluctuation of 8.006% when we take the data for last 20 years. When comparing with Danish Krone which has fluctuated in a band of only 0.143%

- 3) **Long Term Interest Rates:** This is the main indicator for the internal monetary policy of the country more than anything else. The condition of accession gives a reference value of Maximum 6%. We observe from the table above about the current consolidated long term rates for current year. Poland has a rate of 6.1% which is one of the greatest for a country with a positive

GDP in Europe. Countries like Greece, Italy and Portugal have a higher yield but it is due to their inability of those countries to raise funds. In case of Poland, high long term rate does not suggest the inability of the polish central bank to raise funds but denotes the steady growth and immature business cycle in the economy.

We can observe from the history of inflation in the last decade form Appendix (A7) that leaders have been unable to control the quantity of liquidity in the system and it has been a constant struggle for a polish citizen to live with it. Bond yields before year 2004 which is the pre European Union membership era suggest a decade (1994 – 2004) of high inflationary economy. From the year of membership and onwards there has been a relative steadiness in the bond yields which is majorly due to free trade prospects with other EU nations. To offset this inflation due to growth, either one has to increase its domestic productivity of primary, secondary and capital goods or has to increase yields for bonds to persuade people to save extra money, instead of spending it which probably increase the current account deficit.

If we look at my calculations Appendix (H), we can see that the average yield rate for Poland in the last decade is 6.1% and coefficient of variation of these rates have a swing of 24% of their average value. I have compared them with data of Denmark and UK for the last ten years which show average of 4.01% for Denmark with a coefficient of variation of 18.8%. Secondly we can compare it with UK who for last 10 years has shown an average of 4.35% in the yield to maturity and coefficient of variation of 16.9%.

Now I had two objectives to show this calculation:-

- Firstly the high average for Poland since 2001 is more due to its growth and leadership has learned from the decade before this to control the monetary policy in a way to keep inflation in leash and do not hamper growth.
- Secondly, a high coefficient of variation shows that the business cycles in the polish economy are still immature when compared to that of countries like Denmark with smaller, more efficient economy and United Kingdom with much larger economies.

- 4) **Gross Debt:** Looking at the current scenario this criterion is the most contentious and debated point. Keeping its incomprehensible complexity aside for a moment, if we look at the figures shown in Appendix (A1) & (A2), it is simply understandable that two nations (Denmark and Poland) which are not even the members of the Euro zone, are eligible with government debt to GDP ratio less than 60% and almost all the member nations have this ratio above the required level. You can observe in Appendix (A2) that according to the year

2010 data, Spain at the verge of crossing the line. Greece being the extreme case, it has become virtually impossible of them to payback this debt.

Besides paying back the debt other major problem for which it is important for a nation to keep it under control is the downgrade of the credit rating which has been AAA for major part of history for these nations. This makes it difficult for them to raise money from the debt route as the investors demand for higher yield to maturity and market discounts these government bonds at much higher rates. We have seen in case of recent bond auctions carried out by nations like Italy and Germany which have virtually failed as investors are reluctant to buy these bonds at the yields offered by the nations.

Due to this it becomes even harder for these governments to inject liquidity into an already reeling economy and create stimulus to pay the preceding debt.

- 5) Inflation Rates:** We know that the Polish economy is the fastest growing right now at the rate of 3.8%, which is better than anyone in the union. With a great growth rate comes the problem of inflation which is almost 4.0% and one of the highest. Now it could be said better than that in 1990 – 2004. Looking at Appendix (A7), (A8) & (A9) we can see at the trend lines in consumer prices at annual levels which shows Poland with countries like Greece & Spain but it doesn't mean both are same in economic position but in this case they are inverse with same levels. In case of Greece, inflation (liquidity) is due to unrestricted borrowing and spending but in case of Poland it is purely due to economic growth unsupported by increase in productivity levels in other sectors of the economy.

If we carefully look at the sector wise distribution of Polish economy, it consists of service sector contributing 67.3% of the economy with only 54.5% of the labor force producing capital both domestically and internationally. But by looking at agricultural sector, it is contributing to only 4.8% with 14.8% work force and industry contributing 28% of GDP with 30.7% workforce.

This gives us a facet of growth in consumption due to high income in service sector which is un-proportionally greater than production in the other two to deflate it. This also gives us hint about the inclination of policy makers, who propagate the service sector, especially Information Technology as the face of the economy which has a greater potential of influencing FDI inflow and neglect manufacturing and agriculture sector due to less capital inflow and historical trend.

This fact could be seen in the GINI inequality index figures of year 2006, which shows Poland with highest score approximately 0.25 which is far above even United Kingdom, Denmark, Greece, etc. Appendix (A10)

It is important for the policy makers of any growing country like Poland to understand that multipliers and FDI inflows produce the right effect of

inclusive growth only when velocity of liquidity is matched by same amount of increase in production of good, especially capital goods which are the representative true wealth or it produces an effect of uncontrolled business cycles.

Global Competitiveness of Poland

When thinking about adopting Euro, Poland has give a careful thought of shifting from a weaker zloty to a much stronger currency. The average exchange rate that I have calculated for the last 12 years between these two currencies has been Euro 1 = zloty 4.02. This exchange rate alone gives an advantage to the polish export sector which is dominated by the service sector to earn profits in the European markets and stay competitive which exporting giants like Germany, France and Italy. Refer to Appendix (B1) & (B2).

After shifting to Euro, Poland would be losing this crucial advantage. Not only exports would get hit but their local markets would be flooded with foreign goods and services which would be equally competitive in pricing as the local ones. So it is utmost important for us to know that weather Poland as an economy is ready to face this challenge today or till when in future.

To do this forecast I have taken the help of Global Competitiveness report which is an annual comprehensive study in measuring the competitive competency of a country on global level. After their research, into every aspect of the economy, they summarize and consolidate their findings in a weighted score of each country known as **Global Competitiveness Index (GCI)**.

I took the GCI scores of past seven years 2005 – 2011 for six countries and tested the scores of Poland with five of the best economies in Europe including Germany, France, Switzerland, etc. For these countries, I calculated the change in scores in every year over the previous one. Then taking the average of these rates of change, I got the average percent change which prevailed in this time period. Now taking this average and the GCI score of year 2011 for each country, I took out the future value of GCI scores for the intervals of 5 years, 10 years, 15 years and 20 years. Refer to Appendix (E) for visual.

Then I compared these forecasted values of GCI to come to the conclusion that persistence of the same trend would mean Poland would surpass economies like Denmark, France, United Kingdom and would stand in equivalence to Germany only after 15 years in terms of Global competitiveness. One economy it would not be able to surpass in next 20 years is Switzerland.

These findings give us a strong premise to predict the approximate timeline that should be pertained by Poland in its decision to enter Euro zone.

Investment Opportunities for Poland

One of the major advantages for a growing economy like Poland to join this inner circle is the abolishment of the currency exchange risk which has always been a major cause of resistance for foreign investors to bring their capital into Poland due to the fluctuations in all major currencies Appendix (G) of the world with whom zloty is pegged. We have already seen calculations which tell us about the 8% coefficient of variation of zloty with euro when we observe past 12 year exchange rate data. If the polish leaders are able to remove it by adopting euro then a potential capital account inflow could be a reality.

This would not only eliminate currency exchange risk but would also cut transactional cost for converting between these currencies; this would save money for the investors and encourage them further.

To see weather Poland has any capacity to influence FDI inflow in future, we looked at the past track record of the nation and compared it with some of the best like. We can observe from the comparative analysis in Appendix (F), that there has been a steady increase in FDI inflow to GDP for Poland since 1994 when the transition for it from being a communist state to capitalist nation began. This trend spiked in year 2000 with every other nation in the comparison due to economic boom. If we keep this blip aside, Poland has surpassed every key economy in Europe in terms of FDI inflow for major part of the last decade as a whole except for (Switzerland and United Kingdom).

Potential of foreign capital could also be measure by the degree of globalization in the country. We can see this factor in many statistics in regards to Poland.

- The ratio of international trade in goods and services for Poland has been steadily increasing for Poland in the last which could be observed in Appendix (C1). It has reached a level of close to 45% of total goods and services produced which surpasses almost every major European economy except Germany and Denmark.
- The second fact to look is that **employment in affiliates under foreign control** is highest for Poland which close to 20%, this means that almost 20% of all the working population of Poland works under MNCs which are directly or indirectly controlled by foreigners. Refer to Appendix (C2) & (C3)

- Thirdly, KOF index of globalization is one of the measures to look at the integration of the country's economy with the world. After focusing on almost all the economies of Europe, we can observe in Appendix (I) that Poland has performed better in 2010 evaluation than in 2007 and has surpassed economies like United Kingdom & United States in absolute scores; Germany and France in rate of positive change in score.

Giving the best GDP growth results for the three years even after the crisis has proved Poland as a gem of a nation for foreign investors and has a great potential for directing future FDI inflows in the country.

Socio – Demographic shift in Poland

I have a special purpose for talking about the social and demographic shift which is taking place in all parts of Europe but will have the most significant effect on Poland in the years to come. It has always been thought as a gate way by its own people and citizens of nations which are not the part of European Union and can't freely migrate to western European countries. These include Ukraine, Romania, Bulgaria, Belarus, etc.

Now we should know a fact that education in Poland is highly subsidies which could be seen in the Appendix (D6) (D7). The spending done by the polish government on primary and secondary education is only less than Denmark and UK but the most interesting point is that expenditure on subsidizing the tertiary education which is the professional education and beyond, is even more and is only substantially less than that of UK.

This is a reflection of the polish dream of developing a high tech service sector which could exponentially accelerate the GDP. This view is also supported by the fact that according to PISA (Program for International Student Assessment) reports of 2006 polish student are the most hardworking in the whole continent with the highest average grades when compared with all the European Nations. The numbers of top performing students in Poland are third highest in comparison with the top economically developed nations of Europe Appendix (D5).

But all of this expenditure is of little use as students attaining the most subsidized education are emigrating to countries like UK, France and USA for better paying jobs. This fact is supported by data in Appendix (D3), which shows a clear negative net immigration for Poland for the last two decades consistently. We can also observe Appendix (D8), which shows the increasing polish born population working in UK. We should appreciate the Danish economy once again

as it has been able to stop this emigration to western countries successfully due to its policies.

One should also look at the Age –Distribution pattern table in the next page, to see a comparison of nations, which shows that Poland right now has one of the largest employable population, as a percentage of its total population i.e. age of 15 – 64 years.

The historical and projected birth rates for Poland are the lowest among all other European nations in Appendix (D1) & (D2). When combined with one of the lowest fertility rates in Appendix (D4) of 1.3 it becomes pretty clear that the future population of poles would decrease at much faster levels than any other major nation in that bloc.

This draws us to the conclusion that after a quantum period in time, major part of the original population of Poland would be replaced by immigrants from the east, as its population would emigrate to western European nations to work. The large deficit sustained by the government due to subsidy in higher education is actually encouraging its citizens to leave the country rather than contributing to nation's growth.

The Danish government has shown the way in solving this problem by increasing its expenditure towards subsidizing the primary and secondary education but decreasing in tertiary education. This has made majority of the population less competitive for the technologically advanced jobs in western European countries but highly competitive to work in primary and secondary sector jobs and thus encouraging them to stay in their own country and work.

It is important for the polish policy maker to implement major structural and economic reforms which are necessary to retain the talent in the country itself and stop brain drain. If this issue is not resolved at this stage of growth then it would adversely affect the competitiveness of the nation in the long run and the GCI trends projected by us in our calculations would be less likely to be true.

	Age Distribution	0 – 14 years	15 – 64 years	65 Above
Country				
Poland		14.7%	71.6%	13.7%
Denmark		17.6%	65.3%	17.1%

United Kingdom		17.3%	66.2%	16.5%
Germany		13.3%	66.1%	20.6%

Table 2. Population distribution comparative table

Conclusion & Recommendations:

This study has developed into a true puzzle by adding a new face every day, since I started my research. Forecasting economic conditions, this to in time of emerging crisis is like a double edged sword. I have arrived at a conclusion on the basis of my study is that one should not show urgency as a nation and an growing economy in joining a free trade union which is too competitive for emerging economies. There are certain disadvantages for countries like Poland to adopt Euro in the short run like trade imbalance, inclination towards imports due to strong currency, loss of sovereignty in monetary policy formation. But all these problems tend to be resolved in long term by the significant inflow of capital and substantial increase in nation's competitiveness in the free market.

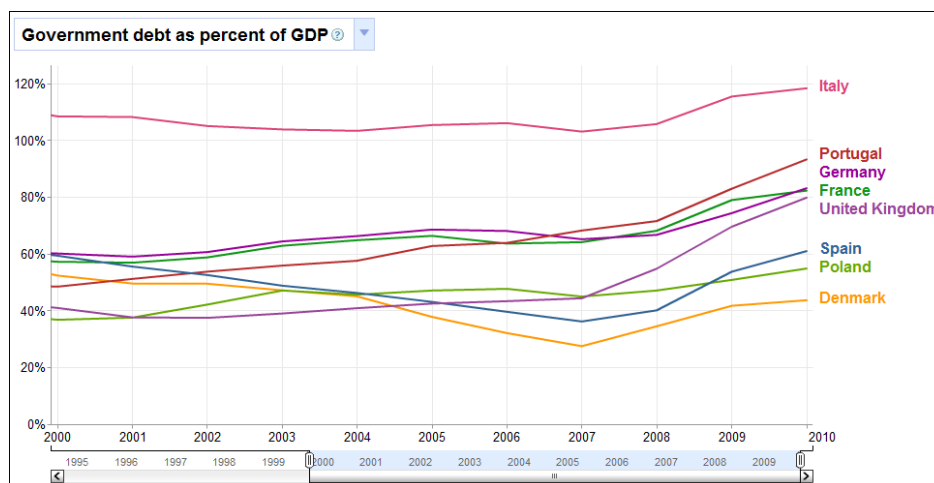
As I mentioned earlier, there is a great need of structural and economic reforms in the polish economy. Lessons from the past are ought to bring out maturity is fiscal and monetary policy by the country's leadership.

After my study I can conclude the fact that after giving a sufficient quantum of time to the economy to grow and mature, Poland should join Euro zone and adopt Euro as its currency in the long run.

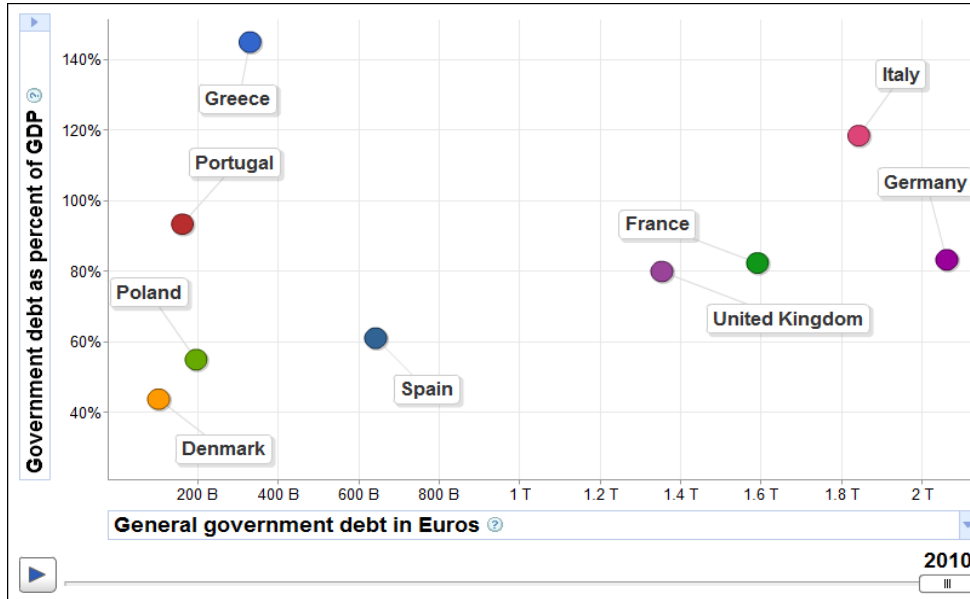
Appendices

Appendix A:

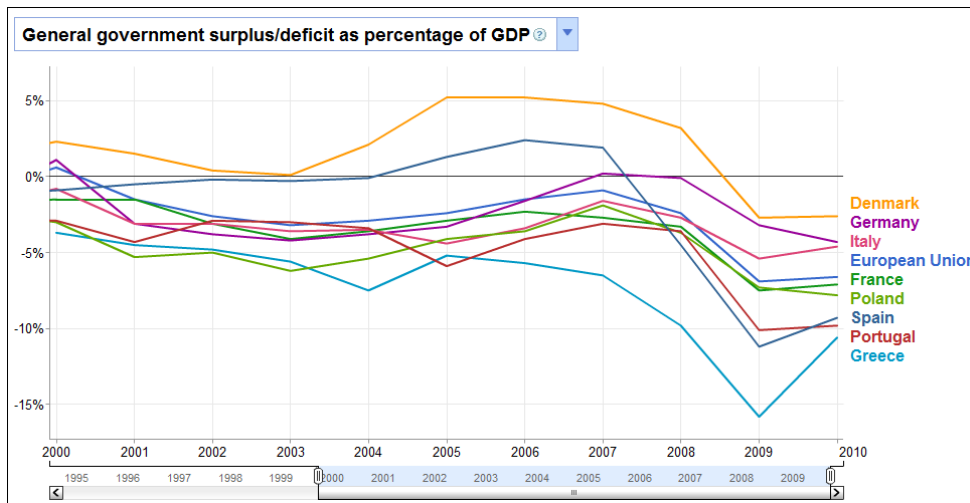
1. Government Debt as percentage of GDP :-



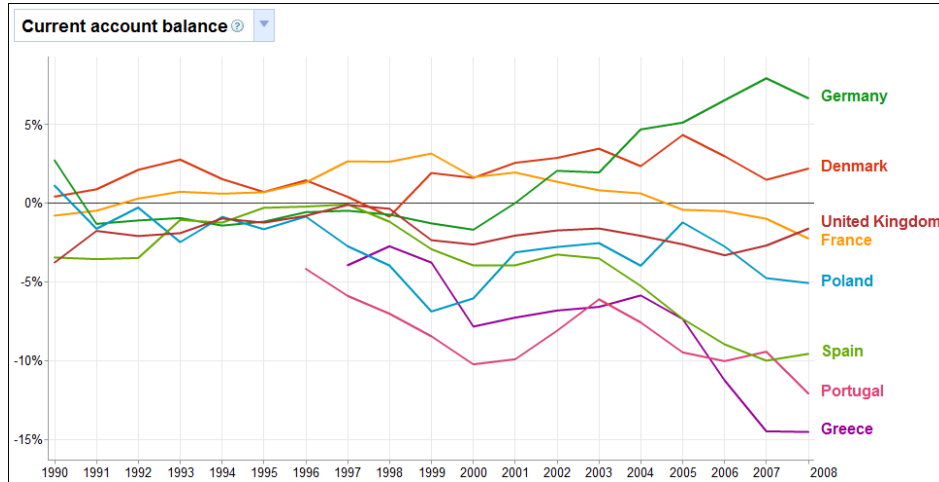
2. Government Debt as percentage of GDP Vs Government Debt in Euros :-



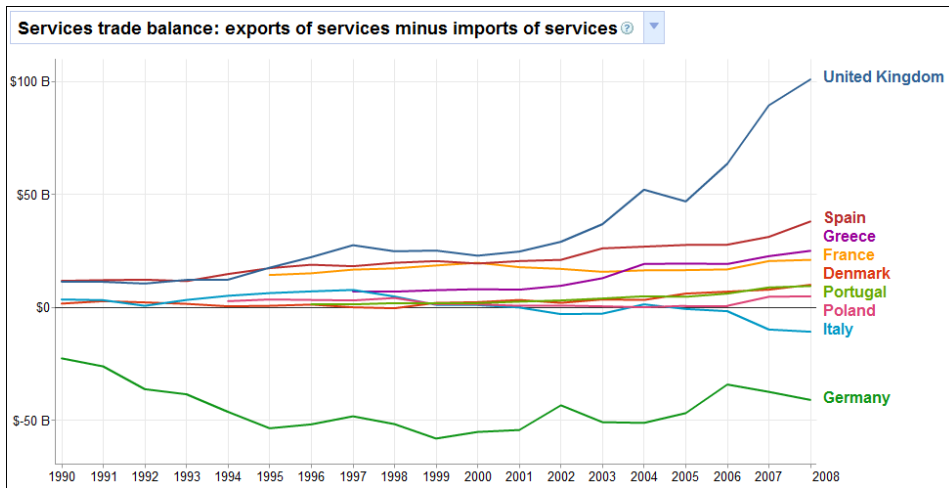
3. General Government Deficit/Surplus as percentage of GDP :-



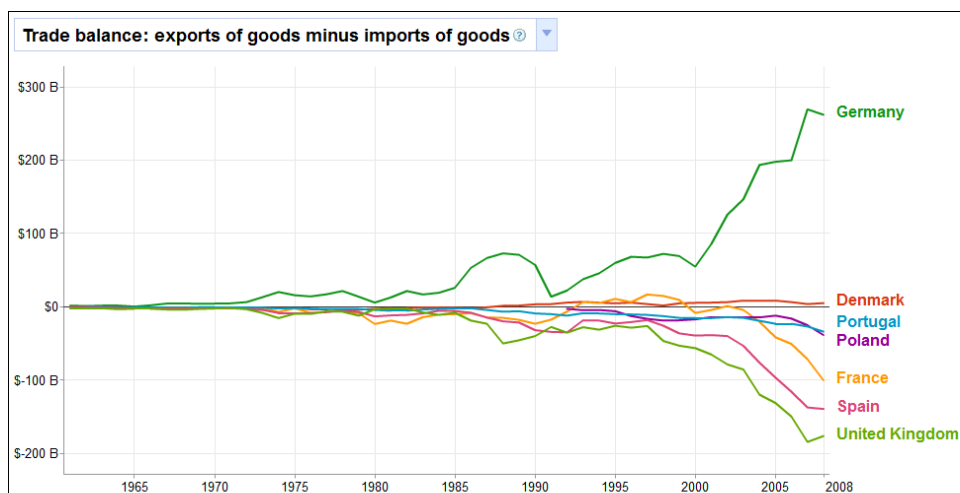
4. Current Account Balance :-



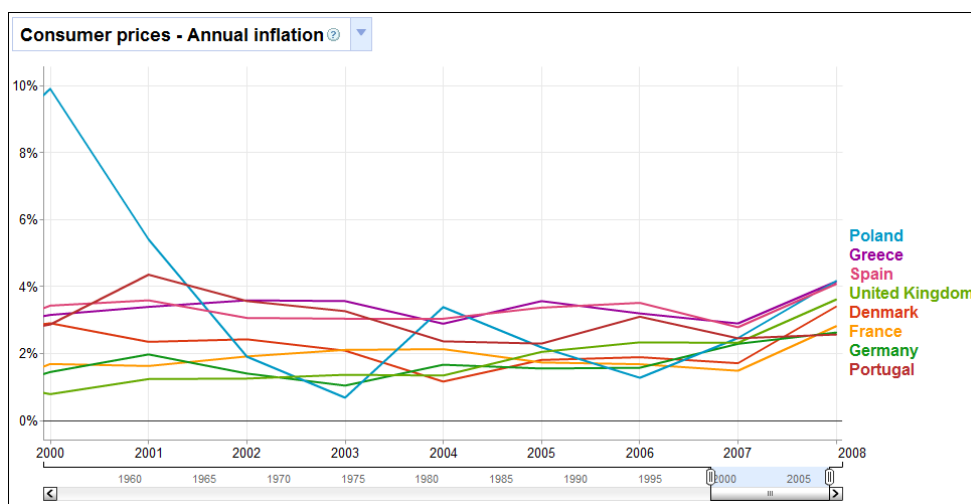
5. Service Trade Balance :-



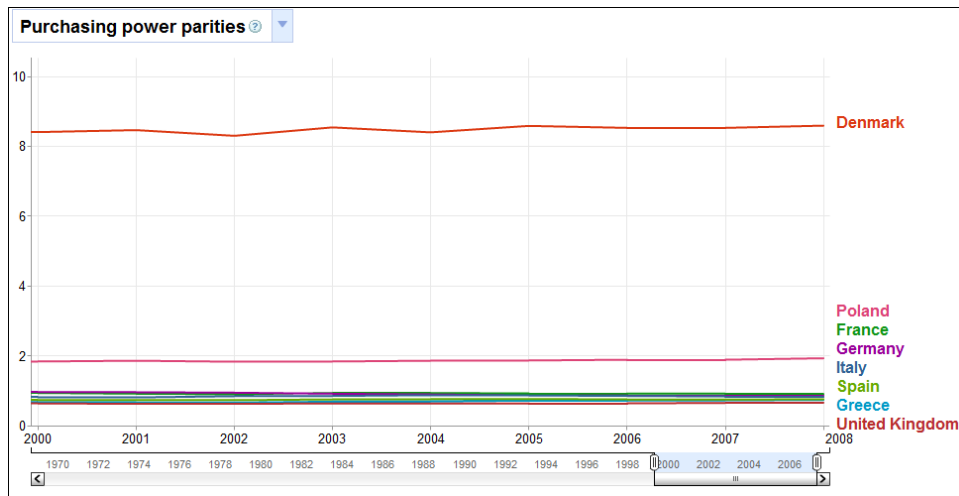
6. Trade Balance in Goods :-



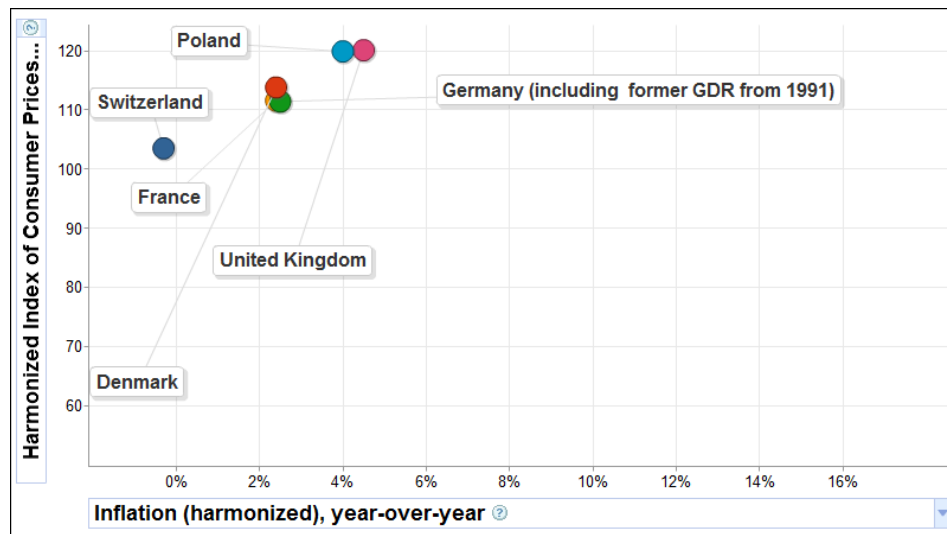
7. Consumer Prices Annual Inflation :-



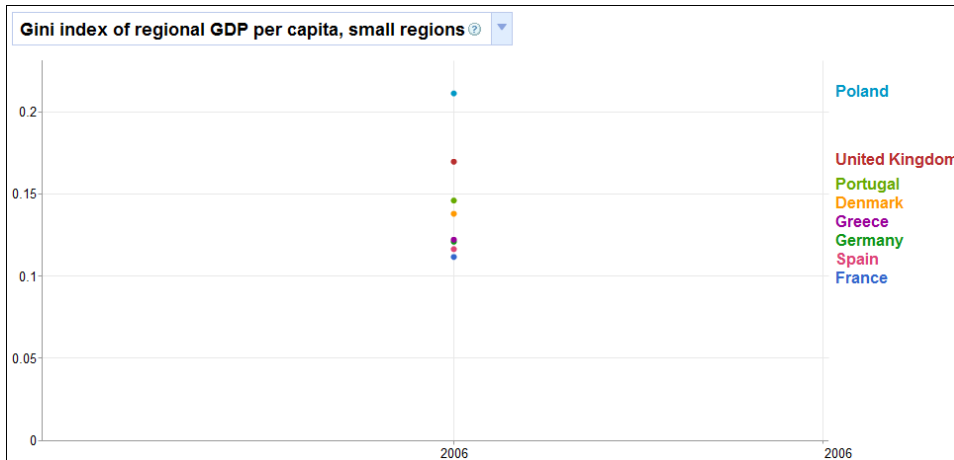
8. Purchasing Power Parity :-



9. Harmonized Index of Consumer Prices :-

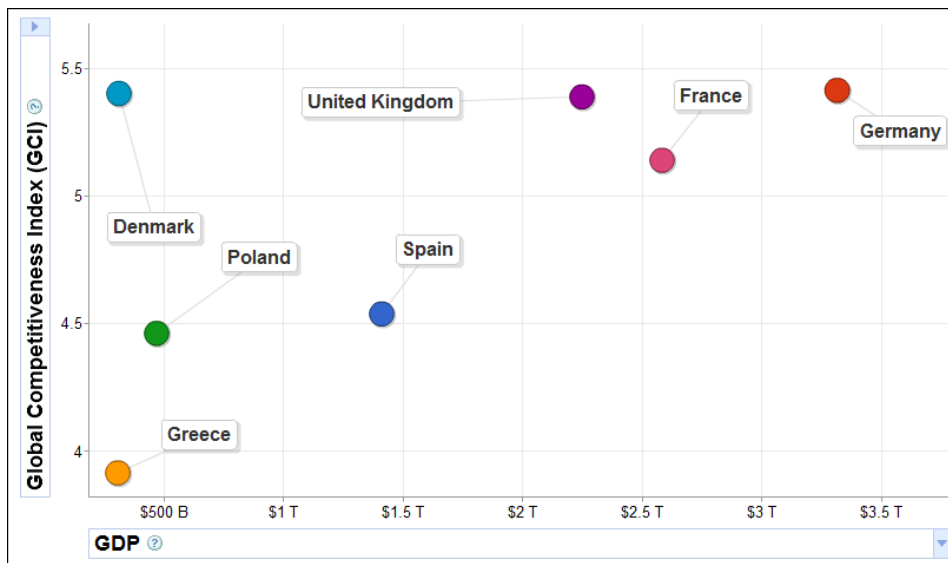


10. GINI Index of Inequality :-

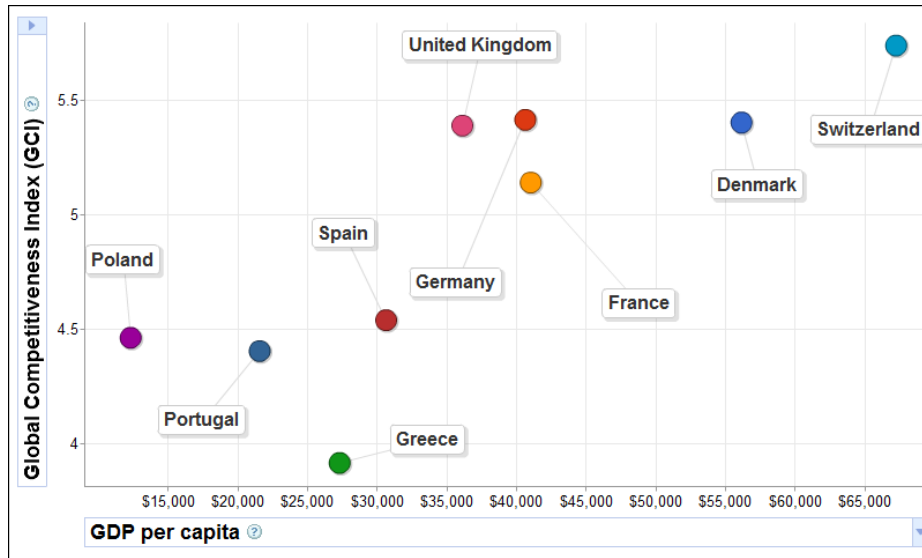


Appendix B:

1. Global Competitiveness Index Vs GDP :-

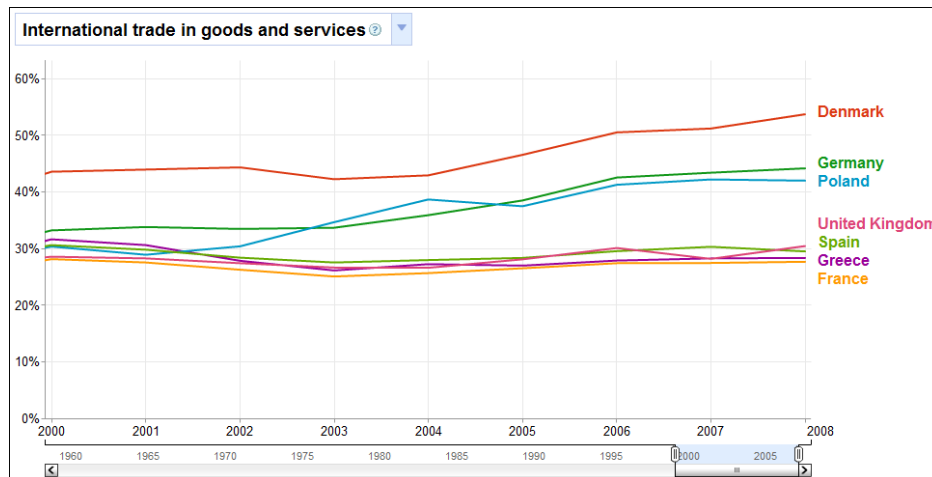


2. Global Competitiveness Index Vs GDP per capita :-

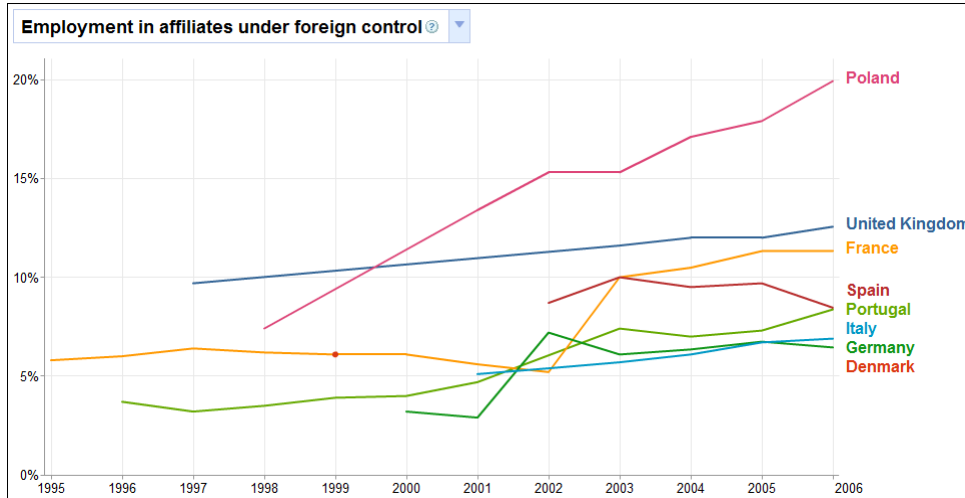


Appendix C:

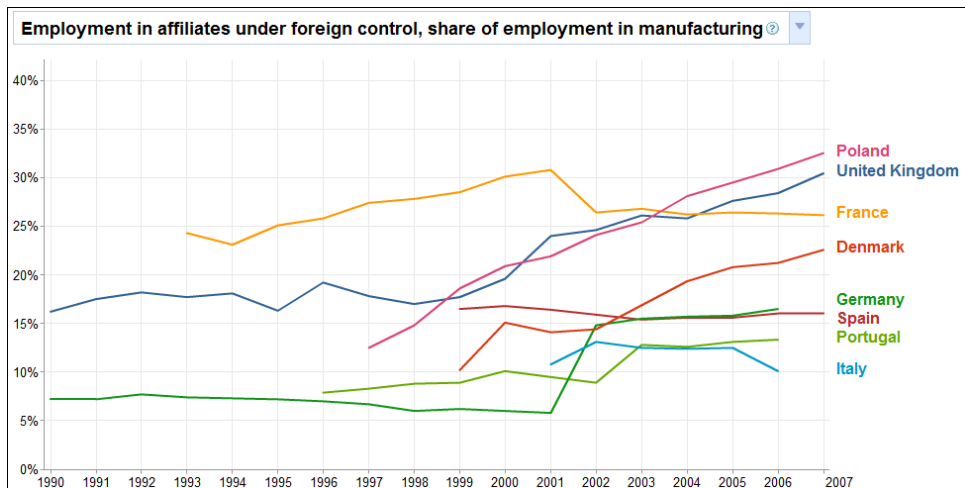
1. International Trade in Goods and Services as percent of total Trade :-



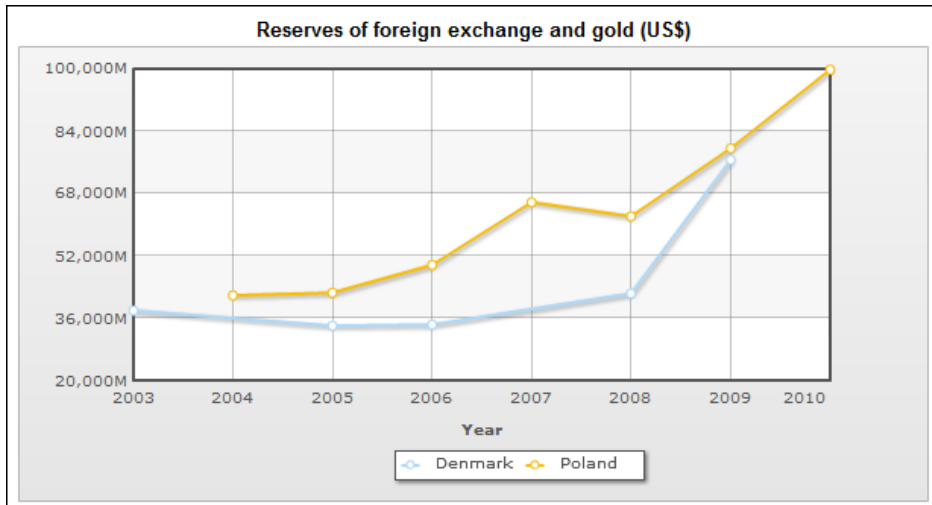
2. Employment in affiliates under foreign control :-



3. Employment in affiliates under foreign control in manufacturing sector :-

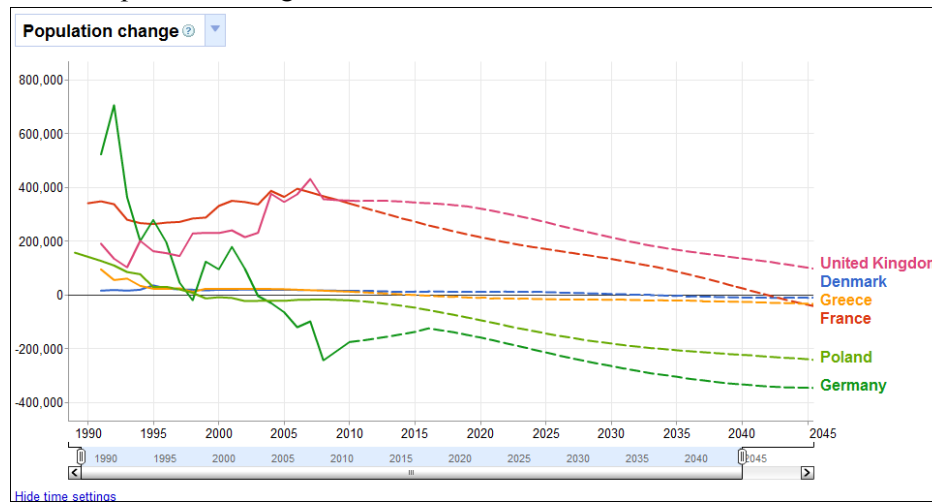


4. Foreign Exchange Reserve Poland & Denmark :-

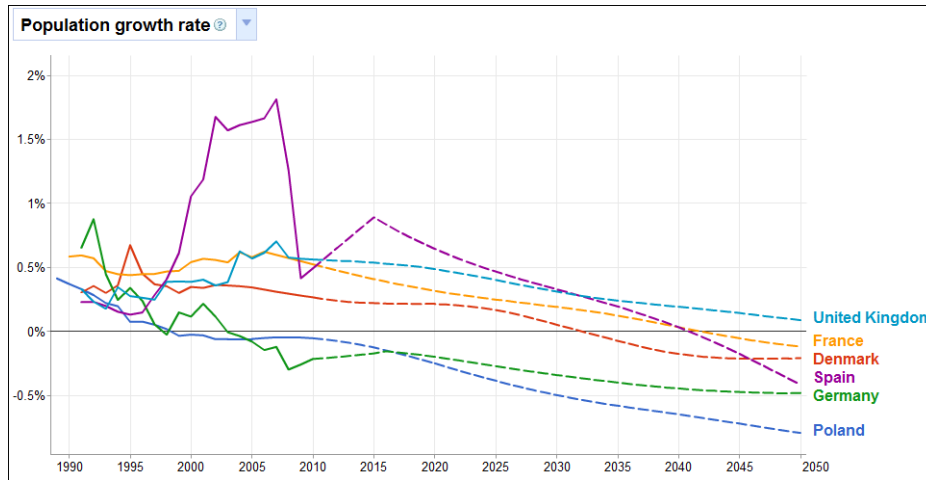


Appendix D:

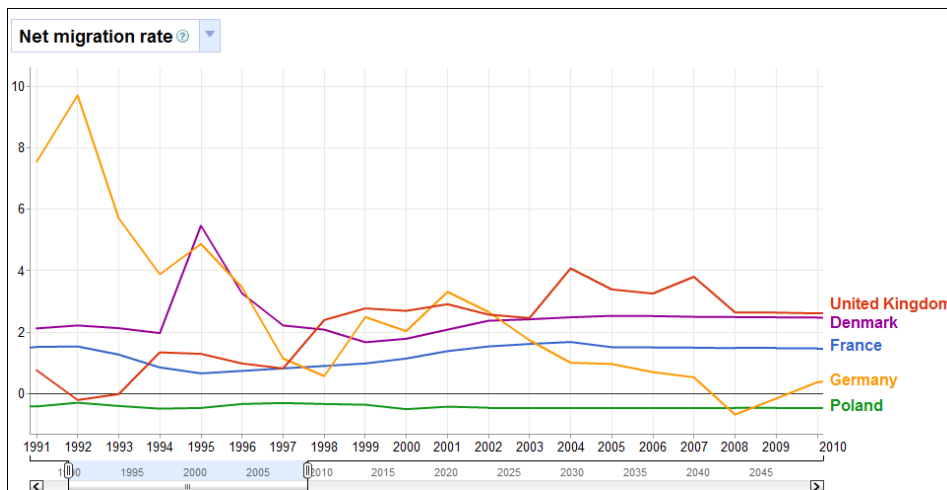
1. Net Population change



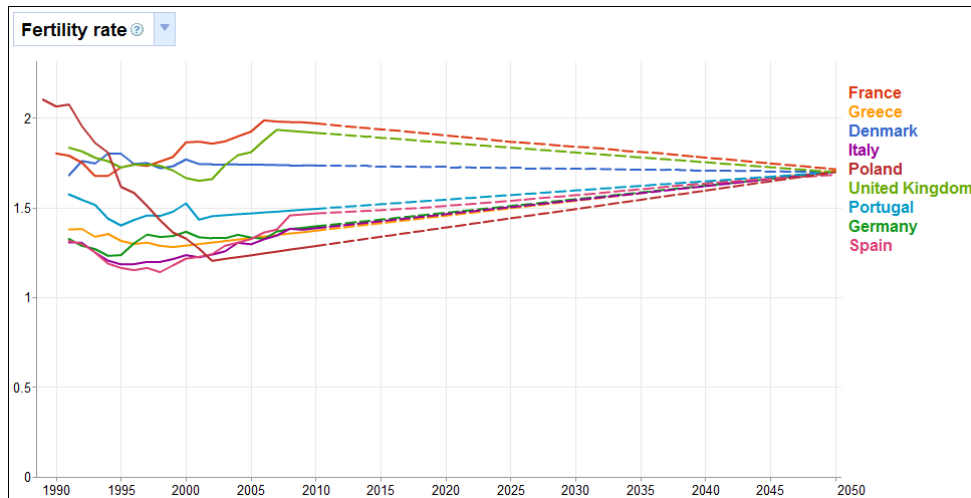
2. Population Growth Rate:



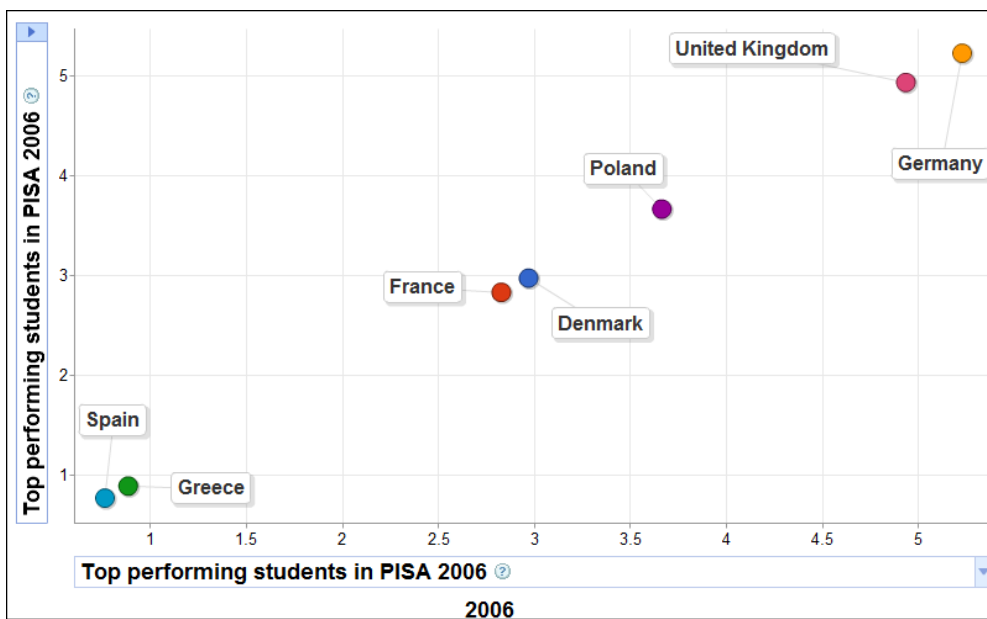
3. Net Migration Rate :-



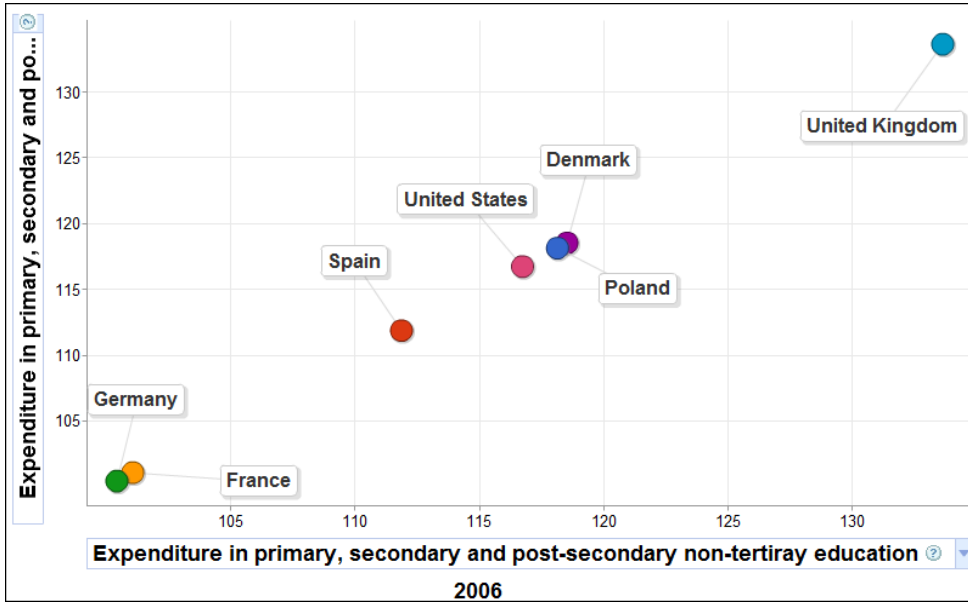
4. Net Fertility Rate :-



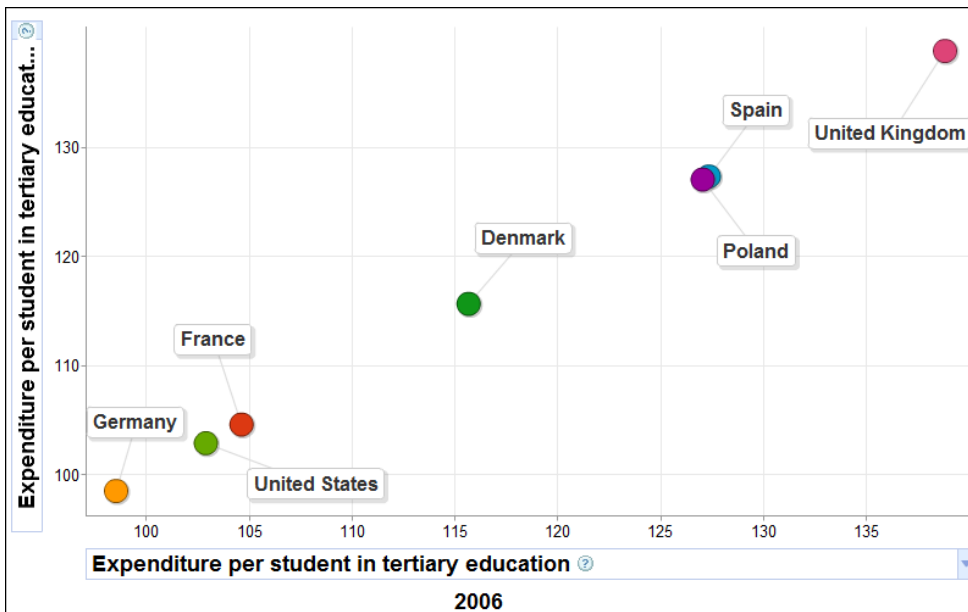
5. Top Performing Students in PISA 2006 :-



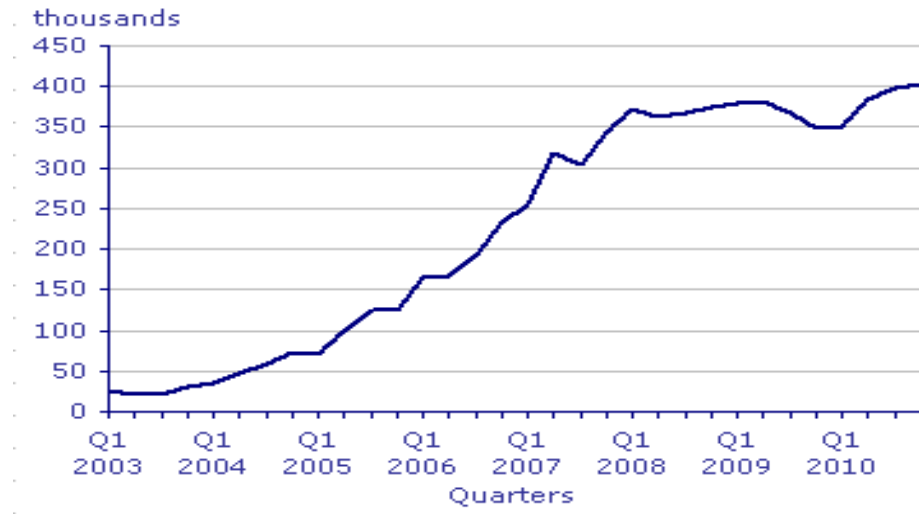
6. Government Expenditure per student in Primary & Secondary Education :-



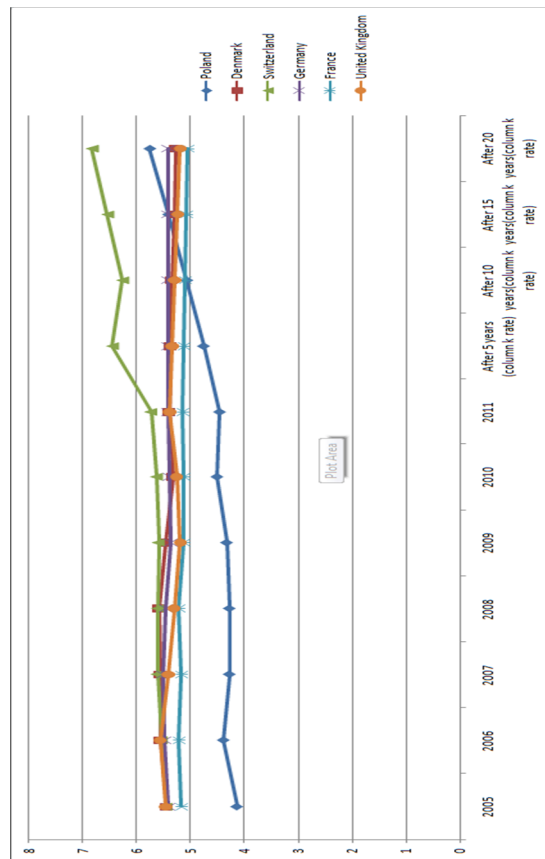
7. Government Expenditure per student in tertiary education :-



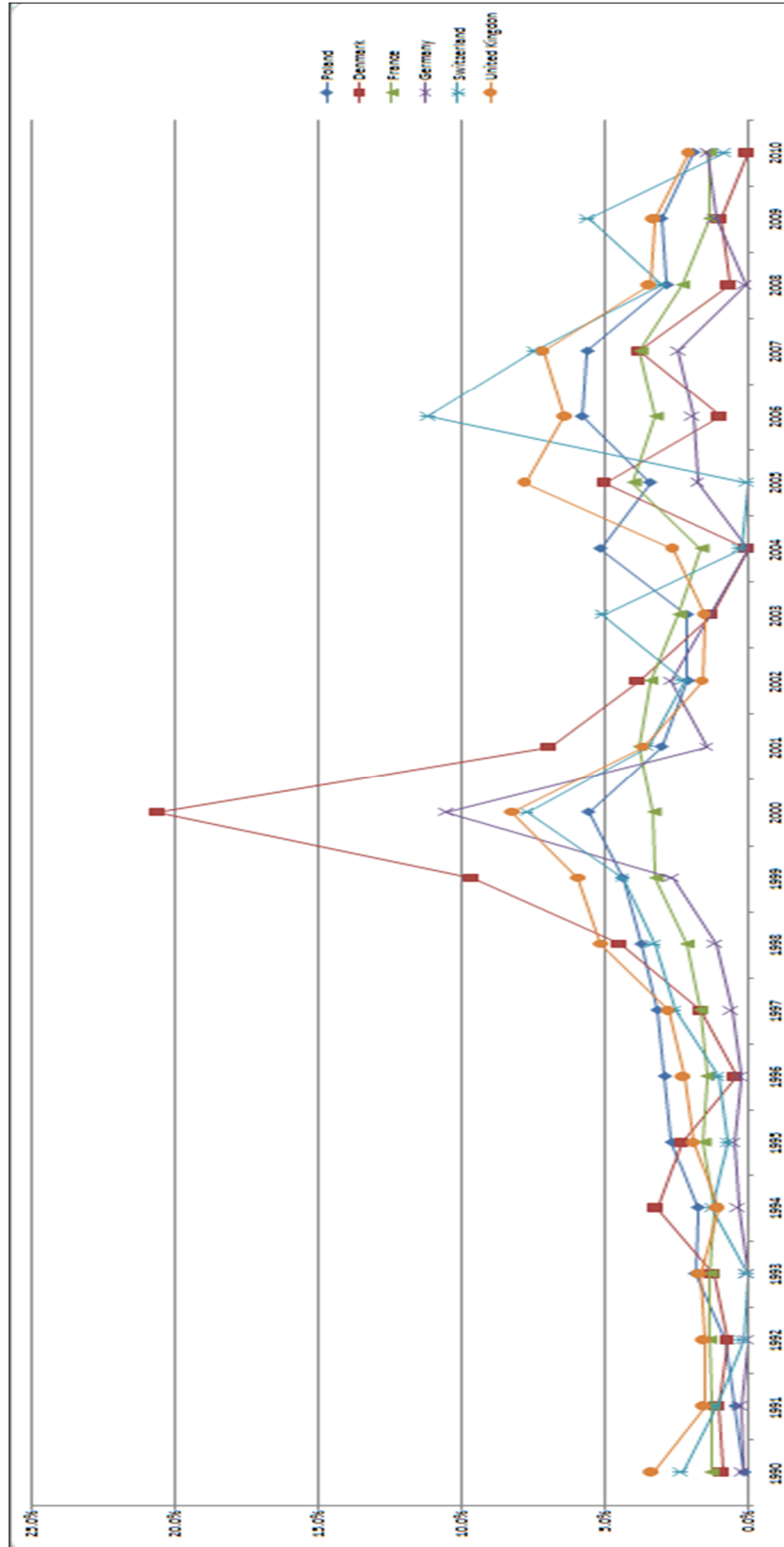
8. Polish Immigrants to UK.



Appendix E: Global Competitiveness Index Forecasts



Appendix F: FDI Inflow as Percentage to GDP



Appendix G: Exchange Rate Fluctuation Calculations for last 12 years (Daily Rates)

1. Euro Vs Polish Zloty

average	4.024459
st dev	0.321983
coeff of variation	0.080006
In Approx Percent	8.0006

2. Euro Vs Danish Krone

average	7.446553
st dev	0.010909
coeff of variation	0.001465
In Approx Percent	0.146

3. Euro Vs Swiss Frank

average	1.515431
st dev	0.104978
coeff of variation	0.069273
In Approx Percent	6.9273

4. Euro Vs Great Britain Pound

average	0.718675
st dev	0.096327
coeff of variation	0.134034
In Approx Percent	13.4034

5. Euro Vs US Dollar

average	1.20406
st dev	0.195677
coeff of variation	0.162514
In Approx Percent	16.2514

Appendix H: Interest Rate 10 Year Bonds Calculations (10 year data)**1. Poland, Polish zloty**

Average	6.425077
St Dev	1.582913
Coeff of Variance	0.246365
Approx Percentage	24.636

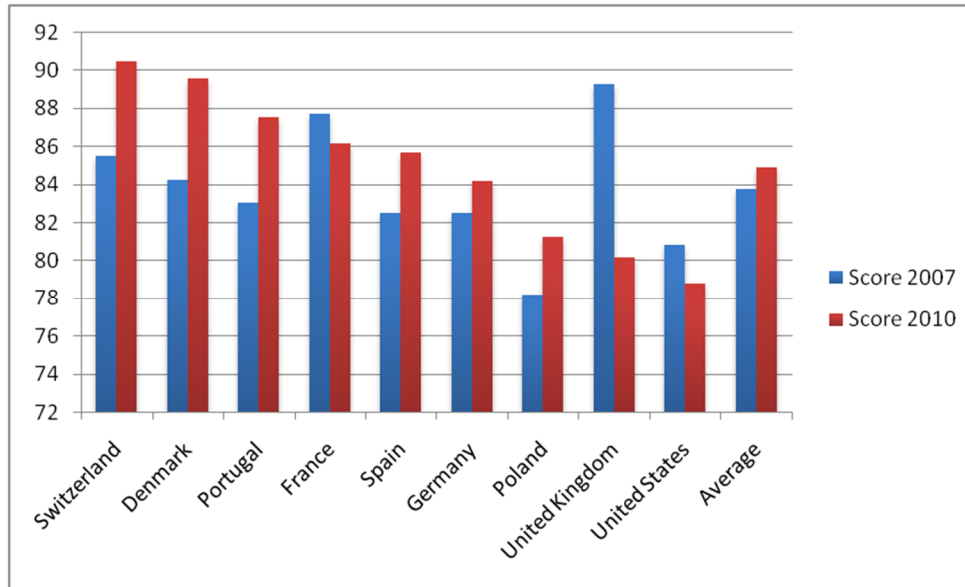
2. Denmark, Danish krone

Average(last 10 years)	4.011923
Standard Deviation	0.757483
Coeff of variation	0.1888
Approx Percent	18.8

3. United Kingdom, pound sterling 10 year rate

Average(last 10 years)	4.359077
Standard Deviation	0.739729
Coeff of variation	0.1696
Approx Percent	16.96

Appendix I: Latest KOF Globalization Index Data



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DECYZJA POLSKI W SPRAWIE PRZYJĘCIA EURO

Abstrakt: Głównym celem przeprowadzonego badania jest prognoza dotycząca działań Polski jako członka Unii Europejskiej w zakresie podejmowania dalszych kroków w celu przyjęcia Euro a tym samym znalezienia się w kręgu państw mających Euro jako walutę. Jest to badanie dotyczące krótko- i długoterminowych implikacji będących skutkami decyzji o przyjęciu Euro i jej wpływu na stabilność ekonomiczną kraju i perspektywy rozwoju.

Aby móc zrozumieć polityczne i ekonomiczne podłoże tej decyzji należy cofnąć się do szalonych czasów drugiej wojny światowej, i krótkich migawek z czasów przez powstaniem Unii Europejskiej i strefy Euro. Warto także przyjrzeć się kryteriom konwergencyjnym, które są niezbędne do przyjęcia waluty Euro. Należy tutaj dokonać porównania pomiędzy Polską a innymi krajami Unii Europejskiej, w celu poznania ich obecnej pozycji ze względu na te kryteria. Pomiary dokonywane są na osi czasu która powinna zostać przyjęta przez Polskę w celu dołączenia do prognozowania dotyczącego globalnej konkurencji i zrozumienia przyszłych trendów na następne 20 lat. To daje przybliżony czas potrzebny na to aby polska gospodarka stała się tak samo konkurencyjna jak gospodarka Niemiec czy Francji i była w stanie przetrwać w warunkach gospodarki rynkowej.

Przyjęcie przez Polskę Euro spowoduje wyeliminowanie ryzyka kursu walut, kosztów transakcyjnych i przyczyni się to zwiększenia poziomu handlu i napływu kapitału. Dlatego też przeprowadzone zostanie badanie dotyczące wydajności polskiej gospodarki w czasie przeszłym jak i teraźniejszym.

波蘭決定採用歐元

摘要：這項研究有原始的預測，波蘭目前的歐洲聯盟成員採取了一步，加入內圈採用歐元作為其貨幣的可行性目標。本決定在該國的經濟穩定和增長前景的短期和長期影響的研究。

這次旅程開始了解政治和經濟背景，在第二次世界大戰中，前歐盟和歐元區的時代，一個簡短快照，混亂的時代。採取的趨同標準看，有必要採用歐元。波蘭和工會等巨頭之間的一個比較，以了解其對這些標準的理由的地位。我們衡量的時間表應波蘭通過加入預測全球競爭力指數，以了解未來20年的發展趨勢。這給了我們這個國家將採取同樣是與德國，法國等隊伍競爭力，生存在一個自由貿易區域的大致時間。

這種整合只會是有利可圖的波蘭，如果它在主要的貿易和資本流入帶來的消除匯率風險和交易成本的結果。因此，我們期待在這方面的波蘭經濟在過去和現在的表現。

最後，我們嘗試去理解一種社會 -

經濟模式轉變，在歐洲國家，以及如何它會影響波蘭作為一個國家和一個經濟體系的總結我們的