Poland & Czech Republic – FDI

ANALYSIS OF DIFFERENCES IN FDI AND THE INFLUENCE OF EU MEMBERSHIP

A BACHELOR THESIS IN EUROPEAN STUDIES

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Abstract

In this research paper the relationship between EU accession and inward Foreign Direct Investment and the determinants for inward Foreign Direct Investment (FDI) are researched. The research question is: “How can the differences in Foreign Direct Investment between Poland and the Czech Republic between 1993 and 2012 be explained and how is FDI affected by EU membership?” Based on previous research we test several determinants for FDI and assess the impact of EU membership. The research has shown a strong correlation between inflation and FDI. In addition EU accession has shown to have a significant effect on trade costs, which influence FDI. Other determinants, including a skilled workforce and wage costs did not show a straight forward causal relation with regard to FDI.

Preface

The EU has been expanding very quickly, and seemingly out of the blue we have an organization with so many different cultures, historical and economic backgrounds and even languages. It seems that my generation, often referred to as Generation Y, has let these developments go by without much awareness of the impact and the history that is being written. Over the past few years I have had the privilege to talk to many people from different EU member states about their views on all the developments.

I remember talking to a Polish girl who told me that on the day of the accession in 2004 Polish people were euphoric. Out of nowhere Poland would develop an extensive infrastructure network and being part of the EU would mean endless possibilities for trade. I was baffled by her passion and enthusiasm about this subject, for it was something I had not heard a lot of in my own country. How could it be possible that a country which has had the privilege to be a part of this European project of peace and trade seemed so numb to what this actually meant for so many people?

In the same year I became good friends with a girl from Hungary and we spoke a lot about the differences between our cultures and history. She told me stories about Hungary’s communist past and personal stories of what her family had gone through. I will never forget her answer when I asked her what she thought was the biggest difference between her and my culture. She said ‘I feel that in Eastern Europe people are working hard in the hopes they will have enough, enough to keep their head above water, whereas it seems that in the Western Europe people work to have more.’ My interest in the European Union and its effects on welfare has been growing ever since.

1. Introduction

(1) The European Union (EU) has expanded rapidly over the past few years, which has lead to many changes in culture, economy, political decisions etc. in all the countries that became a part of this big project. After the Cold War, Eastern European countries started building there economy on capitalist principles and we have seen great developments ever since. Poland and the Czech Republic are both countries of a significant size and with a fairly large number of inhabitants. Their communist past has had a big impact on many developments including economic developments.

(2) Poland was the country with the most no-votes before the accession to the EU. It got four no-votes against 53 votes in favor. This negative attitude towards Poland was caused by their decision to send troops to Iraq. A Greek Member of the European Parliament (MEP), Alexandros Alavanos, even claimed that the 'Polish authorities are striving to become the next state of the USA rather than join the EU (Gherghisan, 2003)'. Alvanos also accused Alexander Kwasniewski, the Polish President at the time of being a 'Minister in the Communist Government under the regime of General Jaruzelski in the 1980s (Gherghisan, 2003).' Véronique De Keyser, French MEP, said that the decision to send troops to Iraq by the Polish Government 'proves it does not share our values (Gherghisan, 2003).'

The Czech Republic, also awaiting membership, raised its doubts about joining the EU, because of the Benes decrees in 1946 which (Gherghisan, 2003). The Benes decrees issue refers to the expulsion of mostly Germans from the Czech Republic after the Second World War. Ethnic Citizenship and property of ethnic Germans was taken away without compensation, unless they could prove their loyalty to Czechoslovakia during the Nazi times. Right-wing parties in Austria and Germany demanded before the accession, for the decrees to be annulled at ones. However, the Czech Republic denied this request, most likely because it would start a discussion about property claims from Germans and because the Czech Republic, as well as Poland, feels that those who began the war have no claim to revise its effects (The Economist, 2002). Eventually the Czech Republic and the EU did reach a compromise due to a statement of President Vaclav Klaus. He condemned the deportation of the Sudeten Germans and crimes against them. Eventually the committee voted by 54 to 2 with one abstention for the accession of the Czech Republic (Gherghisan, 2003). In 2004 both countries, together with eight other countries, joined the EU.

(3) Remi Adekoya, journalist for the Guardian that of 'the most 10 mostly post-communist countries that joined the European Union exactly a decade ago today, none has benefited more from membership than Poland (Adekoya, 2014).' He writes that the Polish economy was boosted tremendously, but that there is still a fairly high rate (14%) of unemployment. According to Dimireva the Czech Republic is a stable and prosperous market economy, even more since the EU accession. She writes that 'while the conservative, inward-looking Czech financial system has remained relatively healthy, the small, open, export-driven Czech economy remains sensitive to changes in the economic performance of its main export markets, especially Germany (Dimireva, 2012).'

(4) The World Economic Forum's Global Competitive Index (GCI) 2013-2014 describes Poland among other countries as being in transition from an efficiency-driven stage of economic development to an innovation-driven economy; the Czech Republic is already in that category. The Czech Republic holds the 39th place in the global competitiveness rankings and Poland the 41st. In the Central European region that means that the Czech Republic holds the first place and Poland the second (Nic & Świeboda, 2014).
(5) In this research we will try to answer the question "How can the differences in Foreign Direct Investment between Poland and the Czech Republic between 1993 and 2012 be explained and how is FDI affected by EU membership?" Comparing these two countries will hopefully lead to interesting results and new questions. The countries have a fair number of similarities, so the question what distinguishes these countries from one another will possibly lead to surprising answers. By comparing their FDI we can explain a lot about a country's attractive features for FDI and about its development and development potential. We expect to see many similarities between the trends in FDI, but we are very curious to see and understand the differences between the two countries.
(6) The timeframe 1993-2012 was chosen for several reasons. First of all, many Eastern European countries underwent big economic changes as post-communist states in the 1990's. Historically speaking, important developments like the end of the Soviet Union in 1991 and the dissolution of Czechoslovakia in 1992 had a huge impact on the countries and their economies. Secondly, in 1993 the Maastricht Treaty entered into forced, after it was signed in 1992, establishing the European Union.
(7) The sub-questions we will use to be able to answer the research question are:

- What are the effects of EU accession on trade costs for Poland and the Czech Republic?
- What are the effects of EU accession on productivity for Poland and the Czech Republic?
- How could these differences between Poland and the Czech Republic in FDI be explained using the hypotheses on the economic determinants for FDI from the Schneider & Frey article?

These sub-questions are formulated to provide the necessary answers in order to answer the research question. The first sub-question aims to give us insights into what extend EU accession has direct implications on the costs of imports and exports. The second sub-question does not directly look at costs aspect, but at what is produced within a certain period of time. Labor productivity indirectly affects costs, because time used to produce something is often paid out in wage or prevents producers to keep up with other producers. The third sub-question describes the search for an explanation for the differences in inward FDI between Poland and the Czech Republic. The economic theory by Schneider & Frey points out six hypotheses of which four will be researched to find the economic determinants for FDI. These four hypotheses are:
1. A high rate of inflation is a sign of internal economic tension and of the inability or unwillingness of the government and the central bank to balance the budget and to restrict

money supply. As a rule, the higher rate of inflation, the less are foreign direct investment decision-makers inclined to engage in the country. A negative relationship is hypothesized (Schneider & Frey, 1985, p. 165).'
2. 'A large deficit in the balance of payments indicates that the country lives beyond its means. The danger increases that free capital movement will be restricted and that it will be more difficult to transfer the profits from the direct investments into the investing country. With a deficit in the balance of payments being measured positively, and a surplus negatively, the testable hypothesis is that there is a negative effect on the inflow of foreign direct investments (Schneider & Frey, 1985, p. 165).'
3. 'The lower the wage costs are, the more profitable it is directly to invest in the country concerned. A negative relationship to the foreign direct investment flow is hypothesized.
4. For direct investment to be worthwhile, a skilled work force is needed. It is hypothesized that the larger the share of an age group with secondary education, the more direct investment will *ceteris paribus* flow in (positive relationship) (Schneider & Frey, 1985, p. 165).'
(8) In the first section of this research paper we lay out several theories on the effects of EU accession on inward FDI, followed by hypotheses on economic determinants for FDI based on the OLI-paradigm by Dunning. Subsequently we present data on FDI that we will later compare with data on trade costs and productivity, based on the theories on the effect of EU accession on FDI. We also compare the data on FDI with the data that match the four of the six hypotheses on economic determinants. This analysis eventually leads to the conclusion and an answer to the research question.

2. Background and theory

(9) There are many different theories and ideas about the determinants of FDI. The majority of these theories have been improved, adjusted and expanded over the years and researchers still do not agree on all the determinants. The determinants for FDI used in social research vary greatly in many different respects. The most obvious differences can be found in the domains.

(10) Determinants of FDI are argued to be political, social, cultural, economic etc. and therefore cannot be limited to one single domain or indicator. To truly understand all of the trends in FDI you need to use as many determinants from as many domains as possible. However, when comparing FDI between countries, it is possible to focus on one of these domains and see to what extend we can spot differences that might affect FDI. We narrow it down to only economic determinants, to be able to go deeper into the material. In this research we use the economic model by Schneider & Frey to analyze the changes in FDI around the accession of Poland and the Czech Republic to the EU and to explain the differences in FDI between Poland and the Czech Republic between 1993 and 2012. Definitions of terminology used in this research paper can be found in Figure 1 of the Appendix. For the definitions we have only used quotations, because our sources are high profile economic institutions and therefore give more accurate and reliable definitions than if we would use our own interpretation.

2.1 FDI and EU accession

(11) In an article by Breuss, he talks about the macroeconomic effects of EU enlargement for old and new members. Breuss explains how previous theories on macroeconomic effects either did not take into account all the integration effects of EU membership or mostly analyzed the effects for the blocks EU and Central and Eastern Europe (CEEC). Therefore he uses the OEF World Macroeconomic Model by Mondell-Fleming for his calculations, since it allows him to explicitly analyze the effects for specific countries. This model contains the standard demand and supply equations. These equations can be divided into four different blocks. '1) the demand side, consisting of the goods market: consumption, investment, imports and exports, the money market: money balances, long bond rates, exchange rates, 2) the supply side, consisting of capital accumulation: capital stock, nonresidential investment, real interest rates, labour market and the nairu: labour supply, participation rate, natural rate of unemployment, natural employment level, potential output, output gap, employment, average earnings, prices: gdp deflator, import prices, consumer prices, 3) government policy, consisting of monetary policy (in Euroland done by the ECB): Talyor rule, fiscal policy: government spending is exogenous, and 4) the rest of the world: world trade and world prices (Breuss, 2001).'

(12) Breuss uses the standard effects of regional integration by Baldwin-Venables and looks at specific aspects in case of EU enlargement. These effects are depicted in Figure 1.

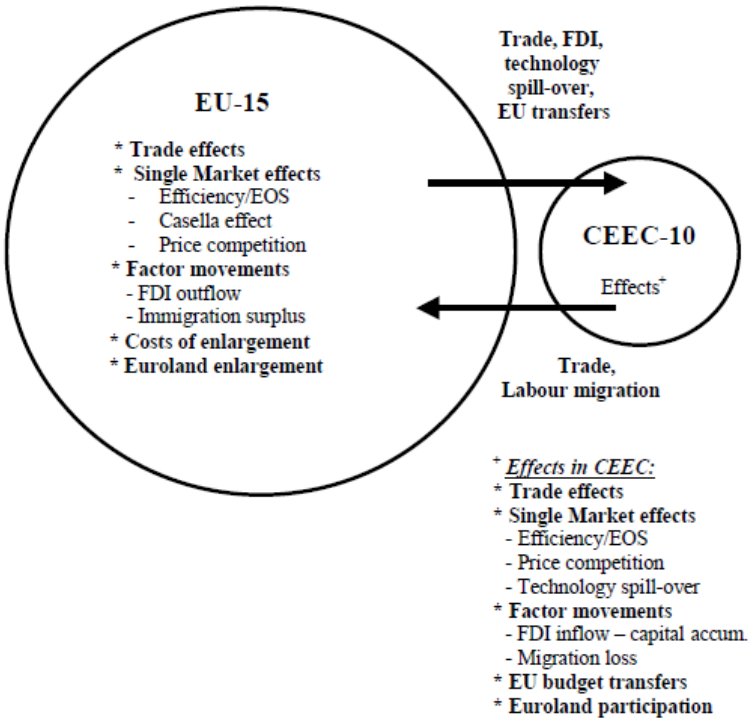


Figure 1 (Breuss, 2001, p. 18)

As you can, see the author talks about EU-15 and CEEC-10. This is because in 2001 (the year the article was written), the EU only had fifteen members and the CEEC did not belong to the EU yet.

(13) Trade effects are the effects due to the tariff reduction and later the abolition of trade barriers. In 1997 the EU eliminated almost all tariffs to the CEEC with the exception of i.e. agricultural and sensitive products. According to Breuss the reduction of trade costs per year after the accession is estimated to be around 5%.

(14) The Single Market effects are the improvement in efficiency and increased price competition. When the European Single Market (ESM) becomes bigger due to the accession of new countries, there will be more competitive pressure between the Member States (MS), which should lead to an increase of productivity and a decrease of the price levels.

(15) The Factor movements include capital movements from the West to the East and labour migration from the East to the West. Both of these factors increase when there is more integration between European countries.

(16) The Cost of Enlargement for the EU and the Benefits for the CEEC are also affected by increased integration according to Breuss. In 1999 the Agenda 2000 was signed which contained a model for implementation of the costs of enlargement by candidate countries. The Agenda 2000 consists of a financial perspective for the next six years. The costs of the enlargements between 2000 and 2006 were to be around eighty billion Euros. The CEEC benefited greatly from closer integration, due to the access to the Single European Market (Breuss, 2001, p. 12).

(17) According to Clausing & Dorobantu's research, the European Union announcements have influenced the amount of FDI in CEEC significantly. They have found that FDI is higher in countries with stable macroeconomic policies, greater openness to trade, and low income tax rates. The economic relationship between the CEEC and the EU started after the collapse of communism. Trade and Cooperation Agreements were concluded in the early nineties between the Union and the CEEC. The Copenhagen Criteria required the CEEC countries to have a functioning market economy and develop stable democracies to be able to become a member of the EU in the future (Clausing & Dorobantu, 2005, p. 85). Following the reasoning of Clausing & Dorobantu, we should see an increase in FDI in Poland and the Czech Republic from 1993 on, due to the collapse of communism, the Trade and Cooperation Agreements, the Copenhagen Criteria and eventually the EU membership.

2.1.1 Case study EU accession assessment

(18) In the article by Kokko an analysis on the effects of EU membership on investment and growth in Sweden is made. The article was written in 1994, one year before the Swedish accession to the EU, which means that research paper is a prediction rather than an empirical analysis. The author assesses the Swedish impact assessment named the Checchini report (Cecchini et al., 1988). He reviews the impact assessment on its reliability from an academic economist's perspective.

(19) The report distinguished between three different scenarios for the Sweden- EU relations. These are full membership, an EEA agreement and a more limited free trade agreement, like the one that was in effect from 1973 and 1993 and it concentrates on the consequences of these three different scenarios in the next five to ten years (Kokko, 1994, p. 676 - 670). The author of this article limits his scope by focusing only on the effects on Swedish investment and growth. He assesses the results of the Checchini report on long-run effects of integration and the quantifying effects on investment and growth. The report states that in the short-run the trade liberalization will stimulate the export production. In the long-run, the report predicts that EU memberships will stimulate investment by vertically integrated multinational organizations, as investors will be guaranteed free trade with the other countries in the Single Market. This type of FDI is supposed to more useful than other kinds; because there will be a high level of specialization; which means high levels of technology, labour skills etc. This would lead to rapid economic growth. The author argues that the assessment takes for granted that vertically integrated FDI flowing into Sweden after EU membership is strategically important. This is the case for American FDI in Sweden, but up until then the European FDI had mainly been horizontal. In addition, the diminishing of trade barriers and costs might lead to less trade, because the possibility for reciprocal dumping disappears when the domestic prices reduce (Kokko, 1994, p. 672). The report states that the ratio of investment to GDP could increase permanently by one percentage point if Sweden joined the EEA and by another if it joined the EU. According to the author, this prediction cannot be made, because there are too many other factors involved. Secondly, he states that there is too little information about what type of FDI may flow into

Sweden. He points out that we know very little about why some events of changes cause temporary effects on growth rates and others seem to be permanent (Kokko, 1994, p. 674). (20) He concludes that the Swedish impact assessment might be too positive about the effects of EU membership. However, he does admit that there are many arguments suggesting that EU membership and closer integration provide new opportunities for the Swedish industry and that investment in human capital and infrastructure will have a stronger impact on the Swedish economy when it were to become an EU member (Kokko, 1994, p. 676 - 677).

2.2 FDI determinants

(21) In the article by Friedrich Schneider and Bruno S. Frey four models (political, economic, amalgamated and politico-economic) are outlined (Schneider & Frey, 1985, p. 161). These determinants are based on a survey by Agarwal and an article by Dunning. The political model tests the influence of political instability on FDI; the economic model uses six economic determinants to explain changes in FDI; the amalgamated model uses the Institutional Investor's Credit Rating indicator composed of economic and political factors and the politico-economic model combines the political and economic model.
(22) The six hypotheses used by the author are based on a theory by Dunning and a survey by Agarwal. The OLI- paradigm by Dunning is the most important basis for the formulation of the hypotheses. On the basis of surveys Dunning set out three sets of influences on FDI: '(1) market factors such as size and growth of the market measured by the GNP of the recipient country; (2) cost factors such as availability of labour, low labour costs and inflation; (3) the investment climate as measured by the degree of foreign indebtedness and the state of the balance of payments.' (Schneider & Frey, 1985, p. 162)
(23) The first two hypotheses are mainly based on the first set of influences as formulated by Dunning; the third, fourth and fifth hypotheses are based on the second set of influences; and the sixth hypothesis is clearly based on the third set of influences. The first two hypotheses also have a strong link to neoclassical theories of domestic investment, like Jorgenson's model of a dual economy. Jorgenson assumed that '*per capita* food consumption is stationary in the presence of a manufacturing sector. He further assumes that industrial workers consume all of their income and that capital owners save all of their income (Ramanathan, 1967).' The hypotheses are built upon the rationale that firms increase their investment in response to their sales and that domestic investment of a country grows with increasing GNP (Agarwal, 1980). The fact that in the hypotheses perfect markets and immediate reaction are assumed, might lead to unrealistic results, as pointed out by Agarwal.
(24) Later on Dunning published a more developed theory called the OLI-paradigm. This theory proposed that an enterprise is more likely to engage in international production: 'the more ownership-specific advantages (relative to enterprises of other nationalities) are possessed; the greater the incentive the firms have to internalize rather than externalize these specific advantages; the more the enterprises are interested in exploiting these advantages from a foreign location (Schneider & Frey, 1985, p. 162).' These three OLI types

of advantages can each be split out into more specific advantages. 'Ownership-specific advantages consist of property rights and/or intangible advantages (Oa), advantages of common governance, that is of organizing Oa with complementary assets (Ot) and Institutional assets (Oi) (Dunning & Lundan, 2008, p. 101).' Location-specific factors include 'spatial distribution of natural and created resource endowments and markets; input prices, quality and productivity; … international transport and communication costs; … artificial barriers… to trade and services; … cross-country ideological, language, cultural, business, political differences (Dunning & Lundan, 2008, p. 101-102).' Internalisation advantages are, among others, 'to avoid search and negotiation costs; to avoid costs of moral hazard and adverse selection, and to protect the reputation of the internalising firm; ... to avoid or exploit government intervention; ... to be able to engage in practices, such as cross-subsidisation, predatory pricing, leads and lags, and transfer pricing as a competitive (or anticompetitive) strategy (Dunning & Lundan, 2008, p. 102).'

(25) The determinants in these models all seem to be legitimate methods to play their part in explaining the changes in FDI in a country. Schneider & Frey tested these hypotheses for 54 different countries. The authors used six testable hypotheses to test the influence of the economic determinants of FDI. These determinants can be divided into three groups: internal economic conditions, external economic conditions of the host country and the relative advantage the labour market offers compared to alternative investment opportunities. The hypotheses relating to internal economic conditions in the host country are:

1. 'The higher the GNP per capita, the better is the nation's economic health, and the better are the prospects that direct investment will be profitable. A positive influence on foreign direct investment is expected.
2. A high rate of growth of GNP is an indicator of a good development potential in the future. This suggests a positive influence on direct investment from abroad.
3. A high rate of inflation is a sign of internal economic tension and of the inability or unwillingness of the government and the central bank to balance the budget and to restrict money supply. As a rule, the higher rate of inflation, the less are foreign direct investment decision-makers inclined to engage in the country. A negative relationship is hypothesized (Schneider & Frey, 1985, p. 165).'

(26) The hypothesis referring to external economic conditions of the host country is:

4. 'A large deficit in the balance of payments indicates that the country lives beyond its means. The danger increases that free capital movement will be restricted and that it will be more difficult to transfer the profits from the direct investments into the investing country. With a deficit in the balance of payments being measured positively, and a surplus negatively, the testable hypothesis is that there is a negative effect on the inflow of foreign direct investments (Schneider & Frey, 1985, p. 165).'

(27) The hypotheses dealing with the relative advantage the labour market offers compared to alternative investment opportunities are:

5. ‘The lower the wage costs are, the more profitable it is directly to invest in the country concerned. A negative relationship to the foreign direct investment flow is hypothesized.
6. For direct investment to be worthwhile, a skilled work force is needed. It is hypothesized that the larger the share of an age group with secondary education, the more direct investment will *ceteris paribus* flow in (positive relationship) (Schneider & Frey, 1985, p. 165).’ Schneider & Frey conclude that the most important economic determinants are a country’s level of development as measured by the real per capita GNP and the balance of payments.

(28) The growth of GNP and the workers’ skill level attracting FDI and wage cost reducing the inflow of FDI appeared to be less important economic determinants. We will leave out the first two hypotheses in our research, because these do not seem to have a significant effect on FDI. We will take a look at the worker’s skill level and wage cost, because we expect that the conclusion of Schneider & Frey’s research might have been different when taking into account EU membership. We use these hypotheses to explain the difference in FDI between Poland and the Czech Republic over the past two decades.

3. Research methodology

(29) In this chapter we discuss the methodological approach. In the previous chapter we discussed several theories which form the basis for our research. In this chapter we will explain how the data are collected and in what way they are analyzed. Firstly, we lay out our units of analysis and units of observation. Subsequently, we highlight our most important sources for data collection. Lastly, we give a description of the most important concepts and variables. This chapter gives an overall overview of the research methodology of this research paper.

3.1 Methodological framework

(30) We have taken Poland and the Czech Republic as our units of analysis. We have selected these two countries, because they have a similar politico-historical background and joined the EU in the same year. Our units of observation are the years between 1993 and 2012. We have selected these years, because the Maastricht Treaty founding the EU entered into force in 1993. For Poland and the Czech Republic, as well as four other countries, the accession negotiations started on March 31st 1998. Poland applied for EU Membership in 1994 and the Czech Republic in 1996. These accession negotiations were concluded in 2002 (European Commission, n.d.). The negations were about the necessity of the acceptance by the accession candidates of the *acquis communitaire* and the terms, under which these countries would adopt, implement and enforce the *acquis,* in addition to possible transitional arrangement as an aid to speed up its implementation (European Commission n.d.). Poland and the Czech Republic both entered the EU in 2004, which is likely to show its effects in the data we are using. We use the articles by Breuss, Clausing & Dorobantu and Kokko to describe and explain the effects of EU accession on inward FDI for both of the countries. We see if the reduction in trade cost after the accession of Poland and the Czech Republic is really as big as 5% per year and if the productivity has increased drastically around 2004 due to increased competition.

(31) Since the countries both have a history of planned economy, which ended shortly before the foundation of the EU, we are very curious as to if we see a big change in FDI over the years and if both countries have been affected by these changes uniformly. We will firstly measure FDI in percentages of the GDP to avoid the risk of the results being heavily affected by inflation. For this research we use quantitative datasets on inward FDI for Poland and the Czech Republic retrieved from the World Bank website. These datasets contain the overall inward FDI as a percentage of the country's GDP for Poland and the Czech Republic between 1993 and 2012 and the overall inward FDI in dollars. We point out the main differences over time between the two countries and use the economic theory by Schneider & Frey to give possible explanations for these differences.

3.2 Sources data collection

(32) In this section the sources we used for our data collection are laid out. We used five main sources for our quantitative data collection. The primary source is the World Bank Group website. The World Bank was founded in 1944 and consists of five different

institutions: The International Bank for Reconstruction and Development (IBRD), The International Development Association (IDA), The International Finance Corporation (IFC), The Multilateral Investment Guarantee Agency (MIGA), and The International Centre for Settlement of Investment Disputes (ICSID). The two most important goals of the World Bank Group are to end extreme poverty within a generation and to boost shared prosperity. The World Bank gives financial and technical assistance to development countries. This includes providing low-interest loans, interest-free credits and grants to developing countries (World Bank, n.d.). We have retrieved data on FDI inflows, GDP and inflation for Poland and the Czech Republic from the World Bank.

(33) PriceWaterhouseCoopers is among the world four biggest accounting firms; together with Deloitte, Ernst & Young and KPMG. (The Economist, 2012) It is a network of firms within 157 countries and provides assurance, tax and advisory services (PriceWaterhouseCoopers, n.d.). From their website we have retrieved data on estimated Central European Union infrastructure needed until 2010 by sector.

(34) Eurostat is one of the Directorate-Generals (DG) of the European Commission. It provides and publishes statistical information to institutions of the EU. It enables comparisons between countries and regions. Its mission is to be the leading provider of high quality statistics on Europe. We have retrieved data on labour productivity in Poland and the Czech Republic from the Eurostat website.

(35) The OECD iLibrary is an online library of the Organisation for Economic Cooperation and Development (OECD). The OECD is an international organization with 34 member countries worldwide. It was established in 1960 following the Organisation for European Economic Organisation (OEEC) that was established in 1948 to run the Marshall Plan. The OECD 'uses its wealth of information on a broad range of topics to help governments foster prosperity and fight poverty through economic growth and financial stability (OECD, n.d.).' We have retrieved data on the Balance of Payment for Poland and the Czech Republic from this website.

(36) Trading Economics is an organization founded in 2008 that provides information of many economic indicators for 196 different countries (Trading Economics, n.d.). We have retrieved data on minimum wage in Poland and the Czech Republic from this website.

3.3 Concepts & Variables

(37) In this research, concepts regarding Foreign Direct Investment are used. Since some of these concepts might lead to confusion, because of different interpretations by different authors; we have created a table with the most important definitions, which can be found in Figure 1 of the Appendix. In every subsequent graph, there will be an indication of what units are used for variables and if necessary a scale is included.

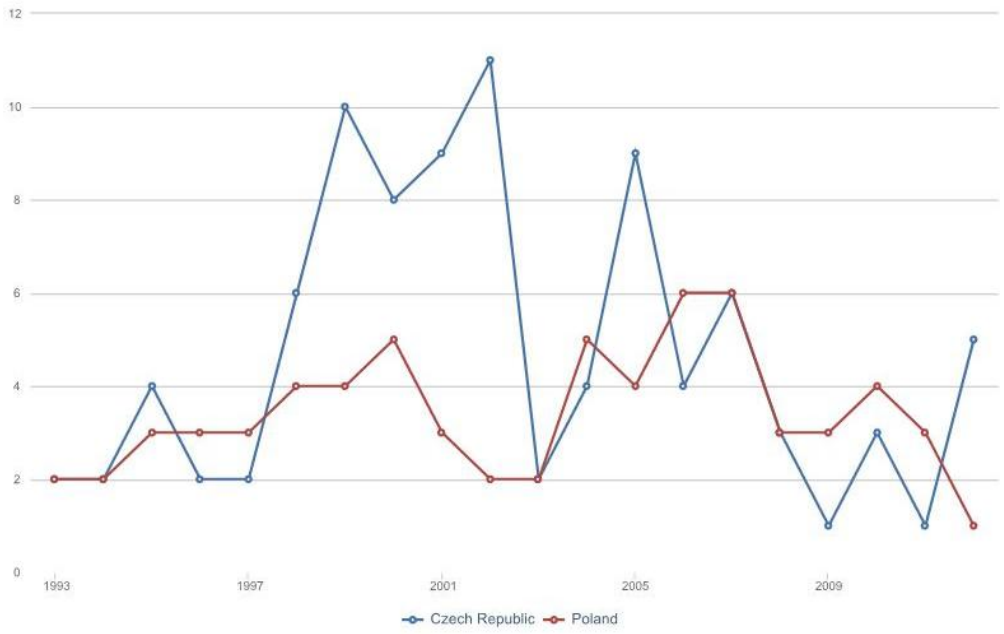
4. Data analysis & Theory application

(38) In this chapter we describe and analyse the collected data on FDI and use the theory mentioned above to elaborate on the causal relationships between several variables and FDI in Poland and the Czech Republic. We do this in order to answer our research question: "How can the differences in Foreign Direct Investment between Poland and the Czech Republic between 1993 and 2012 be explained and how is FDI affected by EU membership?" We start with a general analysis of the data on FDI between 1993 and 2012 on a relative scale as well as an absolute scale. We then look at the GDP per capita and the inflation rate for both countries to become aware of the possible external factors that influence our data on FDI as a percentage of the GDP. In the second part we use data on trade costs and productivity to research the influence of EU accession of FDI. In the last section we discuss four hypotheses by Schneider & Frey to see if there really is a strong causal link between several variables and FDI as stated by the authors. These variables are a high rate of inflation, a large deficit in BoP, wage costs, and the percentage of people with higher education.

4.1 Analysis

(39) We have data on inward FDI in Poland and the Czech Republic between 1993 and 2012. We use graphs containing these data to consider if we see a significant change around 2004. Subsequently, we check if we spot any striking patterns or strange outcomes. It the graphs are linear, we could do a linear regression analysis for each of the graphs to see if there is a pattern in the changes over time. Before looking at these graphs, we should take our expectations in consideration, in order to check if they match the actual data. If this is not the case, we can try to find explanations for the deviation from our expectations.
(40) We expect both countries to have an increase in inward FDI around 2004, caused by their accession to the EU. In addition, we expect to see similar trends in Poland and the Czech Republic, because of their similar politico-economic past and their simultaneous accession to the EU. We expect the Czech Republic to generally have higher inward FDI as a percentage of the GDP, based on a news article we came across, which stated that 'According to estimates, the Czech Republic attracted more FDI than Poland last year' (Warsaw Business Journal, 2013).

(41) Below is the figure containing data on inward FDI as a percentage of the GDP for Poland and the Czech Republic between 1993 and 2012.



Series : Foreign direct investment, net inflows (% of GDP)
Created from: World Development Indicators
Created on: 05/17/2014

Figure 2 (The World Bank, 2014)

The first thing we notice is that the Czech Republic has a few very high peaks in inward FDI in 1999, 2002 and 2005; whereas Poland has no obvious peaks at all. Another striking observation is the fact that after 2004 we do not see an increase of inward FDI for either of the countries, which is completely different from our expectations. We see a short peak for the Czech Republic in 2005, but after 2007 the inward FDI generally seems to be going down for both countries. There is no clear linear pattern for either of the two countries with regard to their inward FDI as a percentage of the GDP. This means that we cannot do a valid linear regression analysis for these data.

(42) Figure 2 triggers another question, namely, what would the graphs look like if we take the absolute values for inward FDI for both countries? In addition, we are interested in Gross Domestic Product (GDP) graphs of both countries, to get an impression of how strongly this measure of material standard of living affects our dataset on inward FDI as a percentage of the GDP. If the graphs with absolute data of the inward FDI per country have similar shapes to graphs in Figure 2, we would assume that the first graph is representative for the actual changes in inward FDI. However, if this is not the case, we should take a good look at the GDP per capita graph and include this in our interpretation of the results.

(43) Below is a graph with data on inward FDI in dollars for Poland and the Czech Republic between 1993 and 2012.

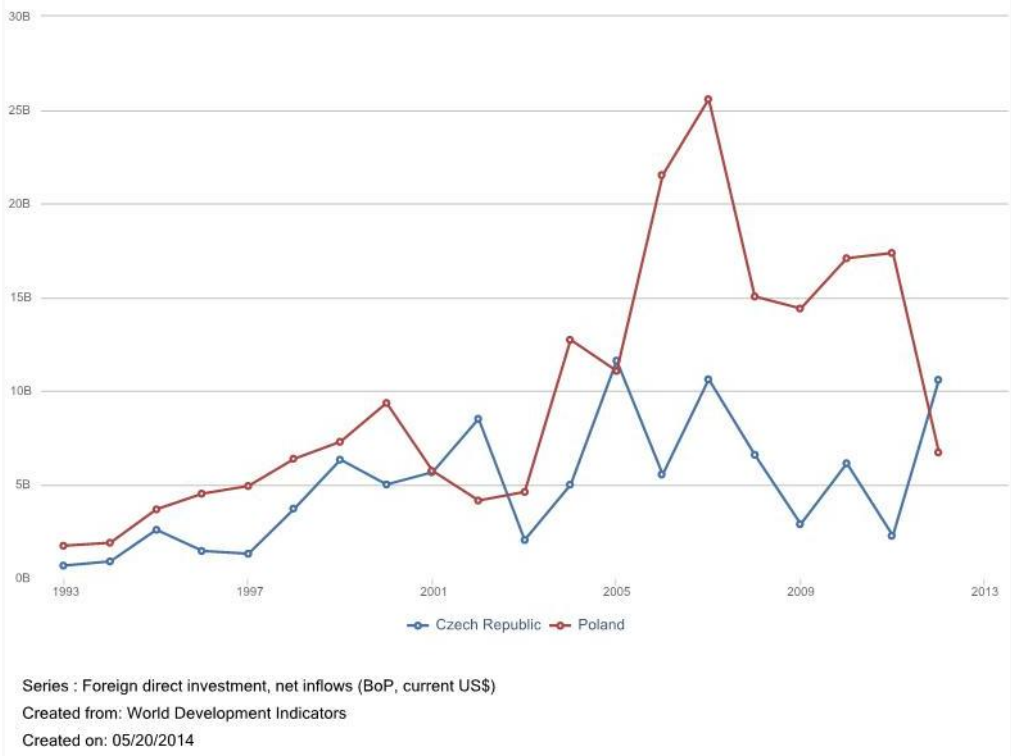


Figure 3 (The World Bank, 2014)

This image shows an increase in FDI for both countries between 1993 and 2004. There are strong fluctuations in FDI for the Czech Republic between 2004 and 2012 with peaks in 2005, 2007 and 2012. However, in Figure 2, the largest peaks were in 1999, 2001 and 2005. Poland shows a very strong peak in 2007. In Figure 2, the inward FDI was also at its highest in 2007 (and 2008), but relatively it did not go up as much as in the Figure 3. We should keep in mind that the absolute numbers in the second graph are logically different for the two countries, because of the size of each country and their GDP. Therefore, even though Poland seems to be much more successful than the Czech Republic after 2005, from Figure 2 we see that overall the Czech Republic attracts relatively more FDI.

(44) To get a clearer image of how much GDP has influenced our first graph, we use data on GDP per capita for both countries. Below is a graph showing the GDP per capita between 1993 and 2012 in Poland and the Czech Republic.

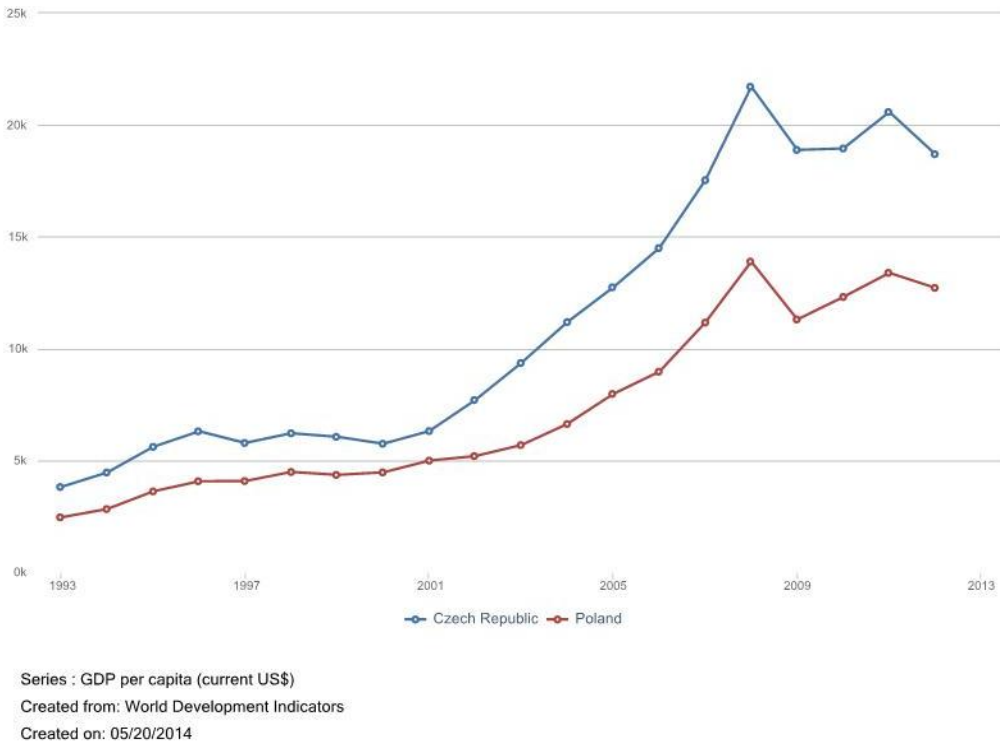


Figure 4 (The World Bank, 2014)

(45) The first thing that we notice is that the shapes of the two graphs incredibly similar to each other. They both go up steadily until 2008 after which there is a small decrease in GDP. After 2001 the growth in GDP for the Czech Republic becomes exponential, which creates a bigger gap between the graphs of the two countries. After 2011 there is a small decrease, again for both countries, but we have too little information to predict if this is just a temporary hiccup, or if the GDP will continue to drop in the upcoming years. The fast growing GDP after 2001 implies that the countries' material standards of living have gone up quickly. The GDP per capita is often used a measurement of the standard of living in a country. In Figure 4 we see that the GDP per capita has been higher for the Czech Republic than for Poland in the whole time frame we are researching. This suggests that the standard of living in the Czech Republic is higher than in Poland. After 2002 the difference in GDP between Poland and the Czech Republic increases, which suggests that the standard of living in the Czech Republic relative to the standard of living in Poland has grown.

(46) To truly be able to interpret Figure 2, we take a look at the inflation rate per country. Inflation is likely to have an effect on inward FDI, because economic tension and inability to balance the budget and restrict money supply is assumed to scare off FDI. However, if it does not equally affect the GDP, our data on inward FDI as a percentage of the GDP might not be interpreted correctly. Below we see a graph containing the data for inflation in Poland and the Czech Republic between 1993 and 2012.

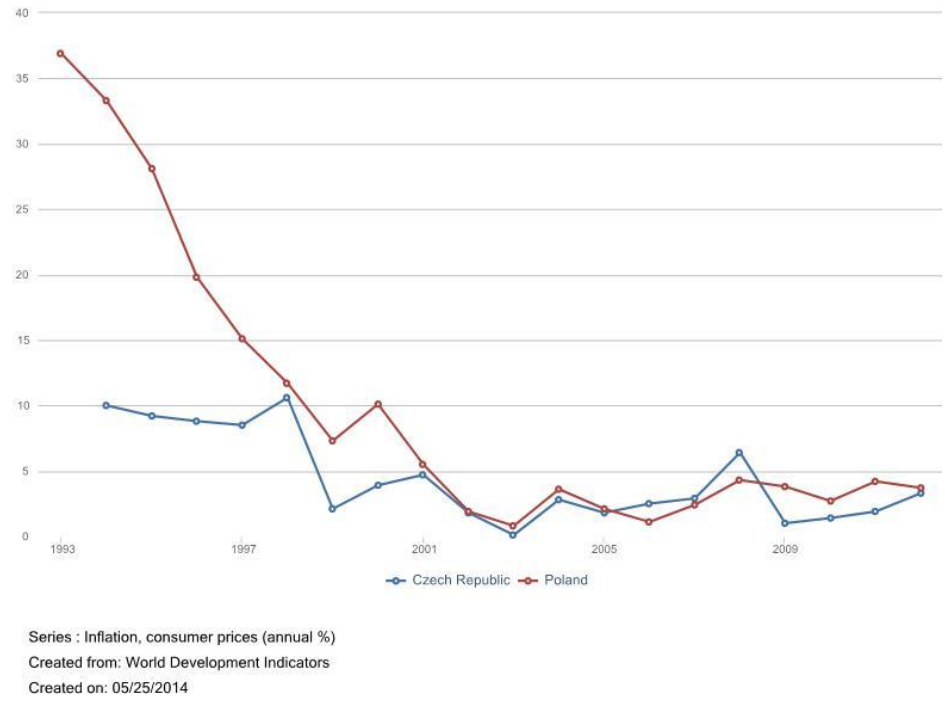


Figure 5 (The World Bank, 2014)

(47) As we can see, inflation has dropped drastically over the years for both countries. In the beginning of the new century it stabilizes and after 2001 the percentage of inflation measured with regard to consumer prices is consistently below 5%, with the exception of one minor peak 2008 for the Czech Republic. There is no sign of the inflation level decreasing even more after this. One of the reasons for high inflation just after the end of communism in both countries might be the sudden strong increase in demand of goods. Both countries suddenly had to transform from a planned economy to a capitalist economy. Neither of the two countries uses the Euro as its currency, so the inflation rate is not dependent on the devaluation of the Euro.

(48) We have seen that while GDP grew, the inflation decreased for both countries. Figure 2 seems to show a significant drop in FDI after 2004. However, since the GDP has increased so much, this interpretation might be a little short sided. FDI in dollars has actually grown, but the fact that the material standard of living has gone up so quickly and inflation down (which are both positive developments for the countries' welfare position) make it seem like the FDI data are disappointing. This is not the case at all, although one could argue that FDI might be lagging behind.

(49) Figure 2 does not give a clear representation of the trends in FDI, because it is heavily influenced by the growth in GDP. However, since the trends in GDP and inflation are similar for Poland and the Czech Republic, we can use Figure 2 for an interpretation of the FDI for Poland and the Czech Republic relative to each other. We use Figure 3 to interpret the developments in FDI for the two countries.

4.2 Application of the theory

(50) From the theories concerning the effects of EU accession on FDI we have derived two main dimensions in which we expect to see changes due to EU accession. As we have already explained more extensively in the 'Research methodology', these dimensions are trade costs and productivity. The determinants of FDI which are discussed in section 4.2.3 give us insights what actually attracts FDI to the countries.

4.2.1 Trade costs

(51) Trade costs can be defined as 'all costs incurred in getting a good to a final user other than the marginal cost of producing the good itself: transportation costs (both freight costs and time costs), policy barriers (tariffs and nontariff barriers), information costs, contract enforcement costs, costs associated with the use of different currencies, legal and regulatory costs, and local distribution costs (wholesale and retail) (Anderson & Wincoop, 2004, p. 691 - 692).' Since trade costs cover such a big scope and are very complex to add up, they are very hard to measure. Breuss explains that the actual reduction in trade costs was never really recorded, but is estimated to be about 5%. We cannot give an actual percentage, but we can point out the main changes due to EU accession that influenced trade costs significantly.

(52) First of all, trade costs are reduced when a country gets access to the European Single Market, because this eliminates trade barriers. The nontariff barriers are also practically completely removed by the Cassis de Dijon ruling in 1979 (Eur-Lex, 1979) prohibiting measures having equivalent effect on internal trade and later written down in Article 34 TFEU of the Lisbon Treaty: 'Quantitative restrictions on imports and all measures having equivalent effect shall be prohibited between Member States (European Union, 2007)'. Secondly, the investments in infrastructure due in the CEEC have brought down transportation costs. The EU Cohesion Funds over a seven year period were dedicated to the CEEC to improve their infrastructure network. An amount of €180 billion was dedicated to EU funds available for infrastructure between 2007 and 2013. The amount of money received is the equivalent to nearly four times the value of UK Public-Private partnerships signed in 15 years. The estimated amount still needed for the infrastructure in the CEEC is €500 billion (PriceWaterhouseCoopers, n.d., p. 1). The need for infrastructure investment for CEEC is the largest for the water and energy industry as you can see in the figure below.

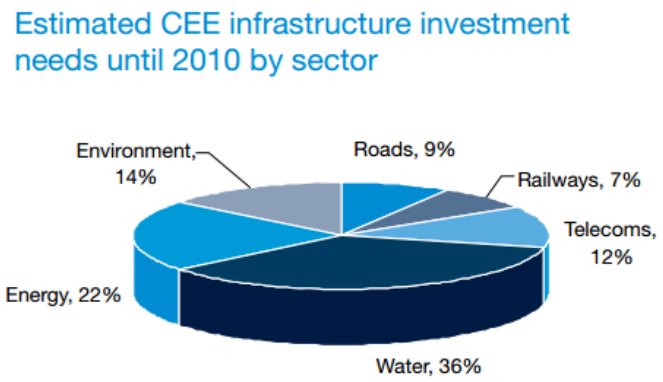


Figure 6 (PriceWaterhouseCoopers, n.d., p.2.)

4.2.2 Productivity

(53) Productivity refers to labour productivity which is defined in a document published by the United Nations 'output per unit of labour (United Nations, n.d.).' This can be calculated by the formula Labour productivity = Volume measure of output / Measure of input use. In this formula the Volume measure of output stands for the goods and services produced by the workforce. This is usually measured in GDP. The measure of input use contains the time, effort and skills of the workforce. It is usually measured by either the number of hours worked of all the employees or the number of employees (OECD, 2008).

(54) From the data we expect to find an increase in productivity around 2004 for both countries, since it is hypothesized that there is more competitive pressure between the MS in general when the European Single Market is accessed by new countries. Figure 7 contains data on labour productivity per hour worked for Poland and the Czech Republic. The upper graph depicts the data for the Czech Republic's labour productivity and the lower graph data on Poland.

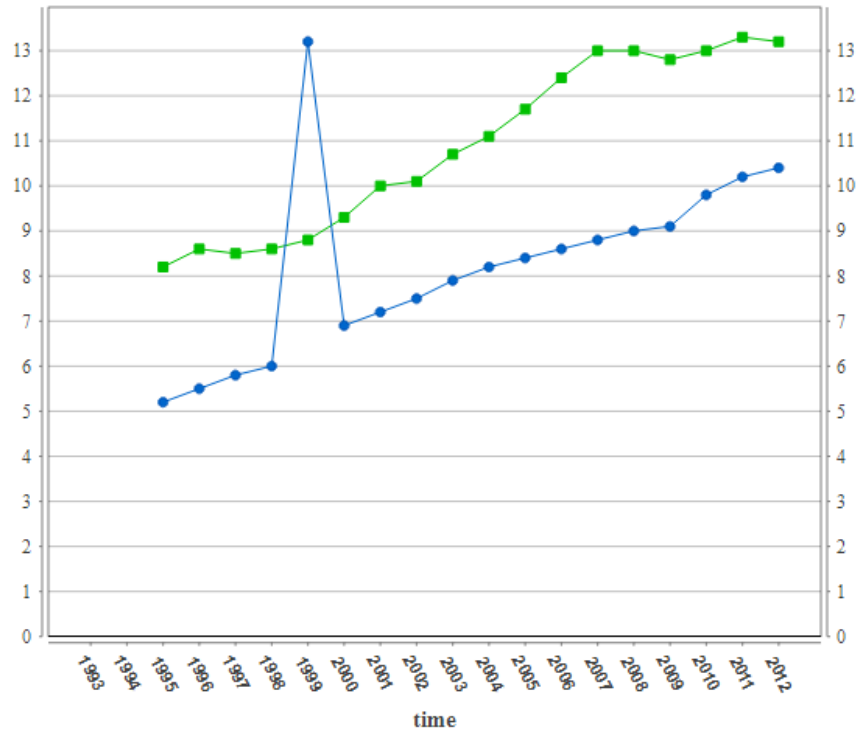


Figure 7 Labour productivity (Eurostat, 2014)

(55) The first thing we notice when looking at the graph, is that there is a very extreme outlier for Poland in 1999. It is very unlikely that labour productivity had such a strong peak for just one year and then returned to a very stable graph, since labour productivity is dependent on hours spent on producing a unit. Therefore, we assume that this peak is caused by a measurement error. Aside from the peak for Poland in 1999 both graphs show a steady increase in labour productivity over the years, without any setbacks. The increasing productivity is in line with our expectations, since trade barriers were removed more and more over the years. However, we do not see any striking changes around the time of the accession to the EU. It could take some time for reforms to be made that increase labour productivity. However, we also do not see any exponential growth after 2004 either, even though a group of ten new Member States joined the EU in this year. This is peculiar, for we would at least expect some kind of sudden strong increase. Therefore, we cannot be certain that the accession to the EU is a direct cause for increased labour productivity.

4.2.3 Determinants for inward FDI

(56) We have seen that the GDP per capita and the inflation graphs respectively show a very clear upward and downward slope with, in both cases, seemingly strong correlations between the countries. The FDI net inflows in US dollars has a weaker correlation, but is upward sloping, more so for Poland than the Czech Republic. Since the graphs seem to have similar patterns, with the exception of Figure 2, we assume that Figure 2 is an accurate representation of the relative 'successfulness' of the two countries regarding their inward FDI. We have seen that both countries have a certain number of years in which they are more successful than the other country. For the Czech Republic these years are 1995, 1998,

1999, 2000, 2001, 2002, 2005 and 2012. For Poland it is 1996, 1997, 2004, 2006, 2009, 2010 and 2011. For the other years between 1993 and 2012 the inward FDI was pretty much equal. From this, it might seem that the two countries are on average equally successful. However, for the Czech Republic we see much bigger peaks in the graph than for Poland. The average inward FDI as a percentage of the GDP for the Czech Republic between 1993 and 2012 is 4.77%, whereas for Poland it is 3.42%. This is a fairly large difference, which suggests that the Czech Republic has been more successful in attracting FDI over the past two decades. We will use the economic determinants by Schneider & Frey to see if we can find an explanation for these differences between the two countries.

(57) The first hypothesis we look at is 'A high rate of inflation is a sign of internal economic tension and of the inability or unwillingness of the government and the central bank to balance the budget and to restrict money supply. As a rule, the higher rate of inflation, the less are foreign direct investment decision-makers inclined to engage in the country. A negative relationship is hypothesized (Schneider & Frey, 1985, p. 165).' We have already looked at the inflation rate and we saw a large decrease that stabilized in 2001. Describing it more extensively, we see that especially for Poland the inflation has dropped tremendously between 1993 and 1999. We see a general decrease for the two countries until about 2001 and then two very stable lines that, with the exception of the Czech Republic in 2008, stay under the 5% ratio. It is interesting that Poland had a much higher inflation rate between 1993 and 1997 and that the inflation has stayed so low after 2001. Especially shortly after the collapse of communism, the economic tension was very noticeable in both countries. As mentioned earlier, Poland and the Czech Republic quickly had to adjust to a whole new economic system. In the hypothesis unwillingness of the government and the central bank to balance the budget and to restrict money supply are mentioned as causes for high inflation. However, this is an assumption we cannot make about either of the countries. From the economic policies in the early 90s we can derive that the willingness to balance the budget was certainly there.
(58) In 1990, Polish Finance Minister Leszek Balcerowicz introduced a radical economic reform program to transform a communist economy to an economy with market allocation of resources and largely private ownership called the Balcerowicz Plan (Johnson & Loveman, 1995). Inflation dropped after that, but there is not enough evidence to assume that this is due to this plan. In 1998 the Czech Republic began with inflation targeting, followed by Poland (Jonas, 2000, p. 1).
(59) When we compare the inflation rate of Poland and the Czech Republic to Figure 4, we see a negative relationship between inflation and FDI between 1993 and 2001 for both countries, as Schneider & Frey hypothesised. Inflation is going down, while FDI is steadily going up. However, after 2003 FDI shoots up while inflation stays around the same level. The steady inflation level in relation to the growing FDI can be explained by the fact that the inflation rate could not get much lower, and therefore it stabilized. The growing FDI can very likely be explained by the political developments of EU accession. Figure 4 makes it seem

that Poland was much more successful than the Czech Republic in this regard. However, looking back at Figure 3 in order to see the proportional FDI of the countries, we see that there is a peak in FDI of the Czech Republic in 2005. After this, the level stays similar until 2008, when Poland overtakes the Czech Republic for three years.

(60) The second hypothesis we consider is 'A large deficit in the balance of payments indicates that the country lives beyond its means. The danger increases that free capital movement will be restricted and that it will be more difficult to transfer the profits from the direct investments into the investing country. With a deficit in the balance of payments being measured positively, and a surplus negatively, the testable hypothesis is that there is a negative effect on the inflow of foreign direct investments (Schneider & Frey, 1985, p. 165).' Before we look at the data on balance of payments (BoP) for Poland and the Czech Republic, we should mention an important fact with regard to the interpretation of these data; free capital movement cannot be restricted by countries when they are members of the EU. This means that data on BoP after EU accession are irrelevant to test this hypothesis, because it does not support the relation the authors are claiming. Not only quantitative restrictions on trade, but also measures having equivalent effect are prohibited within the EU, something that is explicitly mentioned in the Treaty of Lisbon.

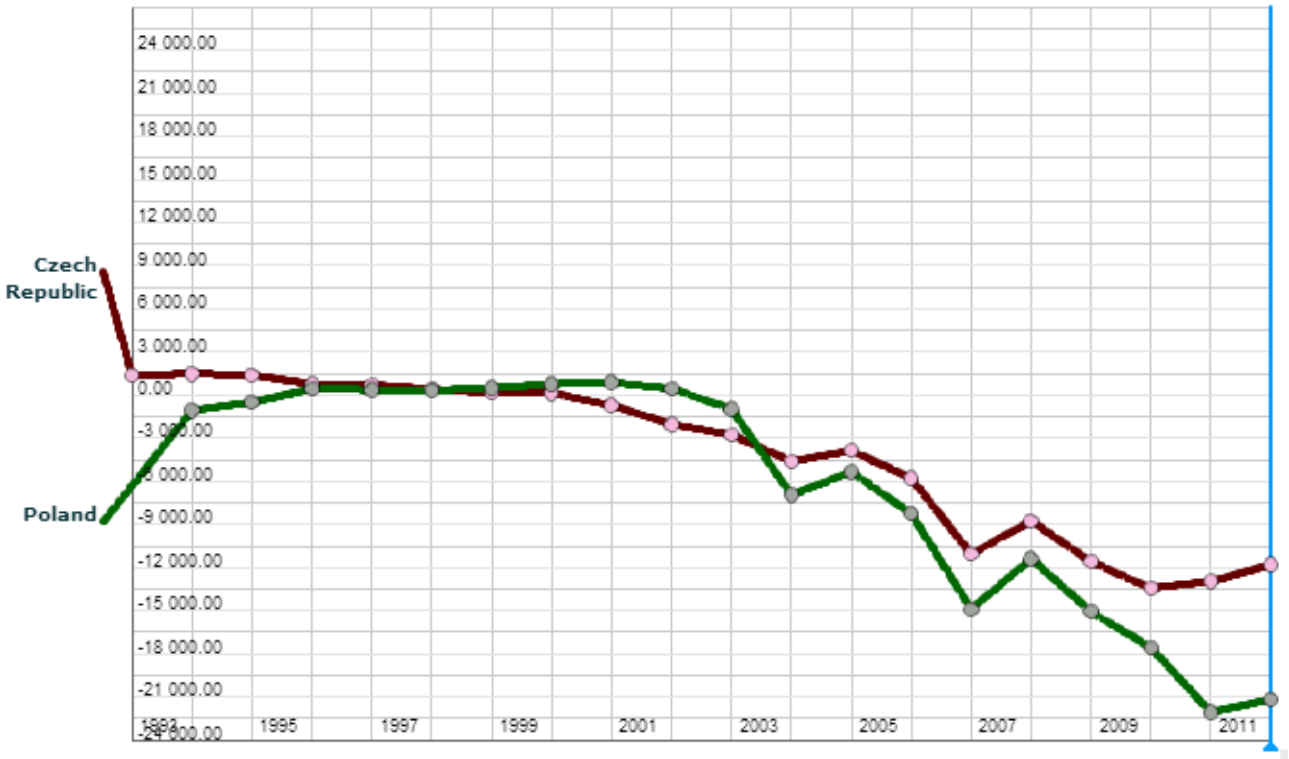


Figure 6 - Income, Balance in millions, US-dollars converted, adjusted seasonally (OECD iLibrary, 2014)

(61) In Figure 6 we again see that the two countries follow a very similar trend. Between 1993 and 2003 the BoP stays very stable and is close to zero. FDI between 1993 and 2003

also does not show a very strong upward or downward slope. However, the relationship between FDI and BoP, if any, taken from these data, seems to be the opposite from what the hypothesis claims. FDI goes up at the same time that the budget deficit increases slightly. As mentioned before, we cannot make any claims about the hypothesis for after 2004. However, there is a logical explanation for the growing deficit in BoP after the accession to the EU. The EU has many different funds to support the poorer regions of Europe. These include Instrument for Pre-Accession Assistance, the European Regional Development Fund and the Cohesion Fund (European Commission, 2014). These funds are directed at Member States or pre-accession countries. Poland and the Czech Republic are both considered to be poorer regions and have therefore received lots of funding. When the value of imports exceeds the value of exports, the countries have a negative BoP. To get an idea of the relative BoP for both countries, we take a look at the BoP as a percentage of the GDP.

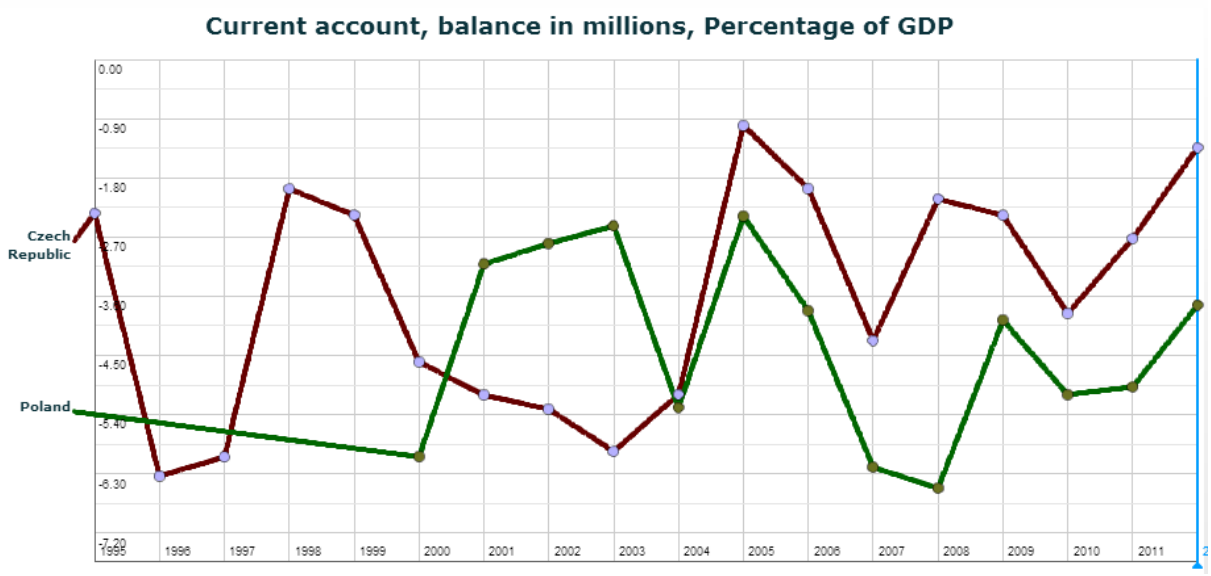


Figure 7 (OECD's iLibrary, 2014)

(62) We see that from 2004 onwards the two graphs started to follow a similar trend, which is very likely to be due to the accession to the EU and the funding that came with it. Before this, the two countries even almost seem to be contradictory to each other with regard to peak and troughs. There does not seem to be one country before 2004 that has a much higher overall deficit than the other. After the accession to the EU though, Poland steadily has a higher BoP deficit/GDP ratio than the Czech Republic. It is not relevant to compare this graph to Figure 2, since we have already established that we cannot assume any relationship between BoP and FDI. The complementing BoP cannot be explained by the countries' GDP, since we have seen in Figure 4 that the countries follow a very similar slope. Figure 6 seems to give a more accurate representation of the BoP than Figure 7, since it shows a more stable graph, which is what you would expect for data on BoP. Since both countries hardly had any deficit before their accession to the EU and also showed a fairly stable situation between 1993 and 2004, there is no reason to assume that the hypothesis holds any truth. Since we

cannot use the data from after the accession, we can also not establish a positive relationship between BoP and FDI.

(63) The third hypothesis we consider is 'The lower the wage costs are, the more profitable it is directly to invest in the country concerned. A negative relationship to the foreign direct investment flow is hypothesized (Schneider & Frey, 1985, p. 165).' The authors have already expressed their doubts about the truthfulness of this statement, but we have decided to see if this might have an effect when taking EU membership into account. We tried to retrieve data on minimum wage over the years. Unfortunately, we were not able to find data on minimum wage before 1999.
(64) Poland sets its minimum wage in accordance with the Minimum Wage Act of 2002, which came into effect in 2003. This legislation set the standards for the setting of minimum wage and set a lower rate for recent school-leavers. The minimum wage under this legislation is determined by negotiations of the Tripartite Commission. If this Commission fails to reach a consensus the minimum wage will be set by the cabinet. Adjustments are made once or twice a year with the use of the forecast annual average price index announced by the Polish Official Statistics (Eurofound, 2012).
(65) The General Agreement for 1991 was signed in the Czech Republic containing the first minimum wage. This was confirmed by the Government Directive No. 99/1991 'for all employees independently of their professional classification, the form of their work activity, and the performance and insolvency of their employers (Buchtikova, 1994, p. 27).'
In Figure 4 of the Appendix there is an overview of all the minimum wages in the Member States of the EU in 2013. Both Poland and the Czech Republic are fairly low on the list.

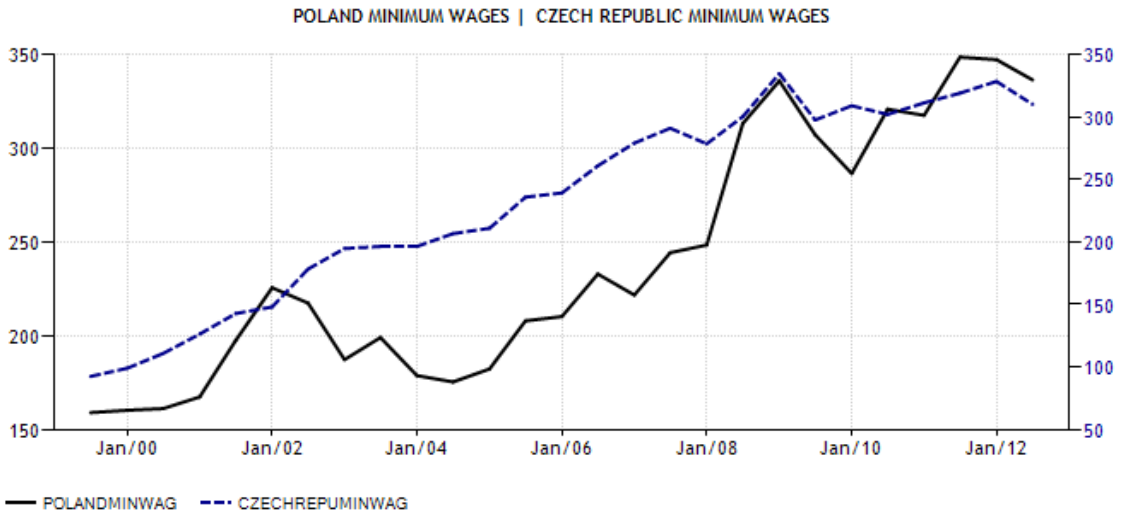


Figure 8 (Trading Economics, 2014)

(66) From this figure we can see that on average, after 2000, the minimum wage in the Czech Republic has been higher than in Poland. After 2008 this difference has become smaller. This is an interesting observation, since we would expect exactly the opposite when we compare it to Figure 3. Following the logic of the hypothesis, lower wage costs should

mean higher inward FDI. However, we cannot find a causal relation using our observations from Figure 2 and Figure 8. We are also interested in the average labour costs, instead of merely the minimum wage, because this might give us insights in how much labour actually costs.

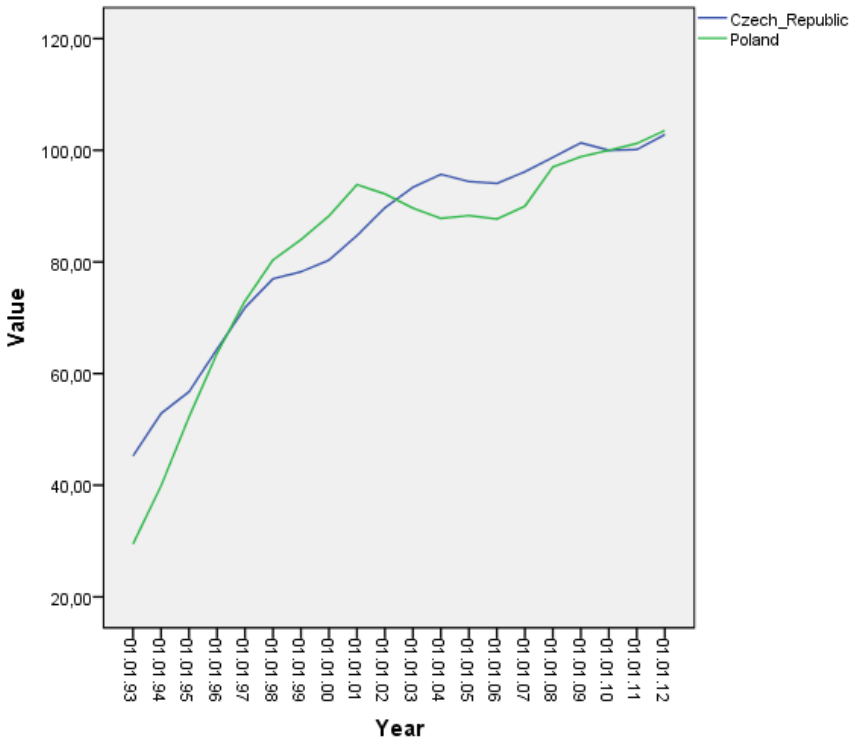


Figure 9 (OECD iLibrary, 2014)

(67) Figure 9 contains data on Unit Labour Costs (ULC) per year, measured by the Index OECD base year (2010=100). We can see that the shapes of the graphs are fairly similar. Between 1997 and 2003 Poland has higher ULC per year than the Czech Republic, this changes after 2003, when the ULC for the Czech Republic overtakes the Polish ULC. In 2011 the countries' ULC shift towards each other. Again, this is not what we would expect, since higher ULC, following the logic of the hypothesis, should result into lower inward FDI. This is not what we see when we compare Figure 9 and Figure 3. However, we do see very strong similarities between Figure 8 and Figure 9. This leads to the assumption that when minimum wage goes up, ULC go up. From these observations, we are prone to believe that there might actually be a positive relationship between labour costs and FDI.

(68) The last hypothesis we take into consideration is 'For direct investment to be worthwhile, a skilled work force is needed. It is hypothesized that the larger the share of an age group with secondary education, the more direct investment will ceteris paribus flow in (positive relationship) (Schneider & Frey, 1985, p. 165).' This hypothesis was also shown by Schneider & Frey to have little to no influence on FDI. We will consider it anyway, because the accession to the Single Market might have led to migration of skilled workforce and more attraction of FDI.

(69) In the beginning of the 90's, important legislation was implemented in Poland with regard to higher education. The Higher Education Act and the Act on Academic Titles and Degrees were signed on September 12th 1990. The first act regulated the entire system of higher education. Operations of the higher education system regulated, as well as the general framework for their organizations, the governing bodies and responsibilities of the institutions. On top of that the rights of academics and student, rules governing employment in higher education and other important tasks were regulated by this Act (Duczmal, 2006, p. 213 – 214)). The second Act stated that the Ministry had the responsibility to set quota for of the amount of professors employed, the lowest and highest salaries for the faculty staff and the teaching load for academics (Duczmal, 2006, p. 228). On the 12th of January 1991 the Act on Committee for Scientific Research was signed. This Act introduced the separation in funding for research and funding for teaching (Duczmal, 2006, p. 230). The Higher Education Act was the most influential Act on the entire structure of higher education in Poland. In 1999 Poland went through another major educational reform. This reform introduced the lower secondary school gymnasium as a new sort of school. In Figure 2 of the Appendix you can see an overview of the education structure before and after 1999. These reforms were designed to lead to raise the level of education, especially in rural areas with small schools. In addition, compulsory education in Poland from then on started at the age of five or six until the age of 18.

(70) The compulsory school attendance for people in the Czech Republic is between the age of 6 and 15 years. The country, just like Poland, has also seen some major reforms with regard to secondary education over the years. These include the Higher Education Act signed in 1998 and the Education Act signed in 2004, followed by the Framework Educational Programmes. The Education Act concerns pre-primary, compulsory and upper secondary education and the Framework Educational Programmes contains concrete objectives and conditions for the institutions and students. The current structure of education in the Czech Republic can be found in Figure 3 of the Appendix. The Bologna process has also strongly affected the Czech education system with the adoption of i.e. ECTS, diploma supplement, quality assurance etc. The EU policy 'Strategy of Lifelong Learning' was approved by the Czech government in 2007. The principles are: defined: '(1) recognition and permeability, (2) equal access, (3) functional literacy, (4) social partnership, (5) demand stimulation, (6) quality, (7) counselling services (The Ministry of Education, Youth and Sport of the Czech Republic; 2012).'

(71) In order to assess the last hypotheses, we look at the labour force with secondary education between 1993 and 2012 for Poland and the Czech Republic as a percentage of the total population. There is no reason to assume that the population grew a lot faster in one particular year. Therefore it is not necessary to check the absolute numbers of labour force with secondary education.

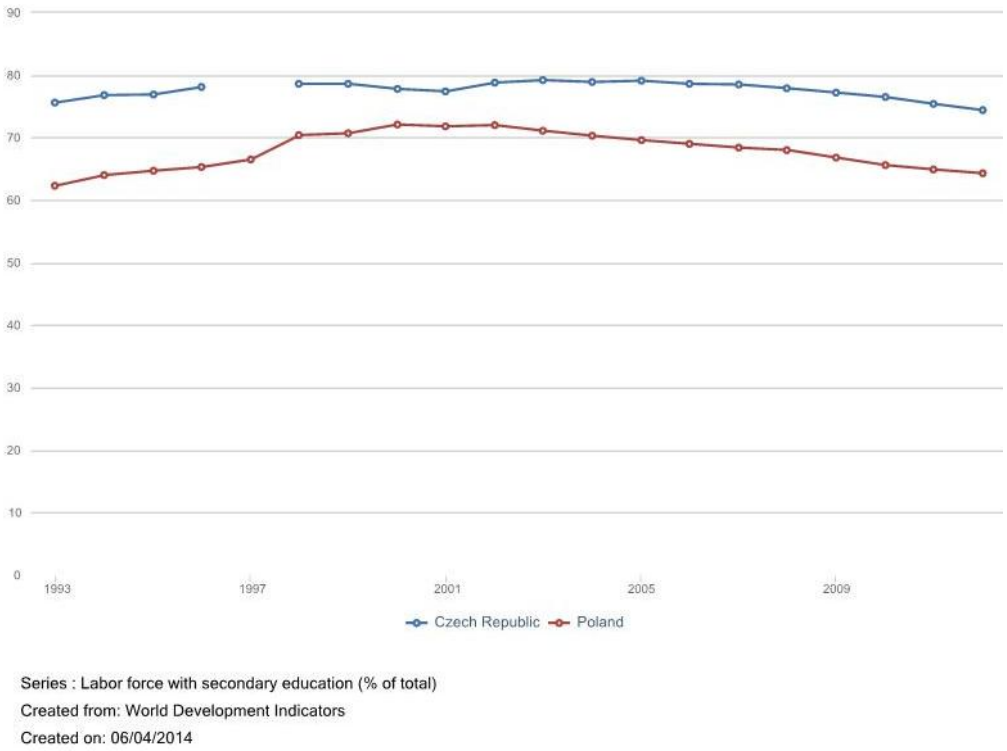


Figure 10 (The World Bank, 2014)

(72) Remarkably it seems that skilled workforce on average has not changed at all over the past twenty years in either Poland or the Czech Republic. The proportions stay stable and fluctuate between 62% and 72% for Poland and 75% and 80% for the Czech Republic. The EU accession does not seem to make any difference for the skilled workforce. Only between 1993 and 1997 it has been increasing slightly for both countries, coming from a point a few percentage points lower than the average between 1993 and 2013. The fact that the Czech Republic constantly has a higher proportion of skilled work force, might be a determinant for the fact that the Czech Republic on average attracts more FDI than Poland does. However, there is not enough evidence to back up this assumption. The positive relationship between a skilled workforce and FDI is not supported by these data.

(73) The fact that the Czech Republic scores higher on the overall skilled workforce with secondary education is not completely surprising. The Czech GDP is also higher over the years, which can be interpreted as the material standard of living. A country that is more developed would be expected to have more educated people.

4.3 Discussion

(74) In the previous sections of this chapter we have analyzed data on FDI and applied the theory on our data. This section will be used to discuss our findings and answer our sub-questions. As a reminder, these sub-questions were:

- What are the effects of EU accession on trade costs for Poland and the Czech Republic?
- What are the effects of EU accession on productivity for Poland and the Czech Republic?

- How could these differences between Poland and the Czech Republic in FDI be explained using the hypotheses on the economic determinants for FDI from the Schneider & Frey article?

These questions were formulated in order to be able to answer our research "How can the differences in Foreign Direct Investment between Poland and the Czech Republic between 1993 and 2012 be explained and how is FDI affected by EU membership?"

(77) We found that our data on FDI were not as straight forward as we expected, especially the data on FDI as a percentage of the GDP. We did see an upward slope in FDI in US dollars for both countries and we used information on trade costs and labour productivity to see to what extend these were affected by EU accession, as was hypothesized by Breuss. We found that trade costs, although hard to measure exactly, did go down due to EU accession. The accession to the European Single Market eliminates the tariff barriers and the legislation about measures having equivalent effect practically removes the non-tariff barriers too. The second cause of the decrease in trade costs is the investment in infrastructure in CEEC by the EU from several funds. To answer the first sub-question, the trade costs have drastically gone down thanks to EU accession.

(78) The question concerning labour productivity had a less straightforward answer. We saw an ongoing increase in labour productivity for both countries, as expected based on the theory by Breuss. However, we did not see a significant or exponential increase for either of the countries after 2004. Therefore we have to state that there is not enough evidence to assume that labour productivity has grown due to EU accession.

(79) The hypotheses by Schneider & Frey were our basis to research what the determinants were for differences in FDI between Poland and the Czech Republic. The first hypothesis we discussed was 'A high rate of inflation is a sign of internal economic tension and of the inability or unwillingness of the government and the central bank to balance the budget and to restrict money supply. As a rule, the higher rate of inflation, the less are foreign direct investment decision-makers inclined to engage in the country. A negative relationship is hypothesized (Schneider & Frey, 1985, p. 165).' We found that there is indeed a positive relation between inflation and FDI. This is the most visible between 1993 and 2005, after which the inflation rate stabilizes.

(80) The second hypothesis was is 'A large deficit in the balance of payments indicates that the country lives beyond its means. The danger increases that free capital movement will be restricted and that it will be more difficult to transfer the profits from the direct investments into the investing country. With a deficit in the balance of payments being measured positively, and a surplus negatively, the testable hypothesis is that there is a negative effect on the inflow of foreign direct investments (Schneider & Frey, 1985, p. 165).' We could not establish any clear causal relationship between 1993 and 2004. After the EU accession, the data could not be used to test this hypothesis, since free capital movement cannot be restricted by a European Member State.

(81) The second hypothesis was 'The lower the wage costs are, the more profitable it is directly to invest in the country concerned. A negative relationship to the foreign direct

investment flow is hypothesized (Schneider & Frey, 1985, p. 165).' We looked at the minimum wage and the Unit Labour Costs. From both of these datasets we derived that there was actually a positive relationships between labour costs and FDI instead of a negative, as hypothesized by Schneider & Frey.

(82) The last hypothesis was 'For direct investment to be worthwhile, a skilled work force is needed. It is hypothesized that the larger the share of an age group with secondary education, the more direct investment will ceteris paribus flow in (positive relationship) (Schneider & Frey, 1985, p. 165).' We could not find any relationship between skilled workforce with secondary education and FDI, since the skilled workforce per country stayed the same on average over time. However, we did see that the Czech Republic had a higher skilled workforce over time.

(83) In summary, the only clear variable responsible for the increasing FDI after EU accession was the strong decrease in trade cost after the accession to the ESM. Labour productivity could not be proven to be affected by EU accession with regard to the economic FDI determinants; the only clear relationship we found was the negative relationship between inflation and FDI. We also saw that FDI went up as wage costs went up; however, this is unlikely to be a direct relationship. We expect that a third variable might have been influencing both variables, like standard of living or GDP.

5. Conclusion

(84) In the introduction we mentioned some of the many similarities between Poland and the Czech Republic. Their communist past and the abrupt ending of a planned economy system in the beginning of the 90s meant a whole new beginning for both countries. People went to bed in a communist country and woke up with capitalism. The accession to the European Union was the beginning of a new era for CEEC. In this research we have tried to answer the research question: "How can the differences in Foreign Direct Investment between Poland and the Czech Republic between 1993 and 2012 be explained and how is FDI affected by EU membership?" The answers to the sub-questions, as discussed in the 'Discussion' section, have shown us that there is a strong correlation between inflation and FDI. Other economic determinants, however, did not turn out to have such a straight forward relation with FDI. This does not mean that FDI is not strongly influenced by economic factors. It does mean that we might have been looking at the wrong determinants, or possibly in the wrong context. The Czech Republic overall attracts more FDI and seems to be scoring a lot higher on many grounds. It seems that the overall welfare might be encouraging FDI and that we should put many more factors together to truly explain the differences in FDI.

(85) With regard to EU accession, we could see a clear causal relation with regard to trade costs. FDI went up after EU accession for both countries, which is at least partly thanks to the drastic decrease in trade costs. We did not see such a clear causal relationship between EU accession and labour productivity as hypothesized by Breuss. Again, to truly understand the effects of EU accession on trade costs, we cannot stick to merely economic determinants. Cultural and political determinants to start with are very likely to have a significant account in the changes in FDI. Even though in this research only a clear relationship between inflation and FDI is discovered with regard to the differences between Poland and the Czech Republic, it does seem that the fact that the Czech Republic on average score higher on many development principles is likely to influence FDI. We would recommend Poland to stimulate secondary education, since it is lagging behind with about ten percent in comparison with the Czech Republic.

(86) There are several limitations to this research that should be taken into account when interpreting the data and should be considered in further research. The most important limitation is the choice for merely economic determinants causes the research to only cover a partial explanation for changes in FDI. Research using i.e. cultural and political determinants as a starting point is needed for a more complete representation of the facts. In addition more attention should be paid to third variables. Even when merely looking at economic determinants, the cross-sectional influences are often extensive though subtle. To get a good overall picture of the causes of changes in FDI one should become very conscious of how the determinants affect each other.

(87) Therefore, for further research we would suggest to research what the relation is among the economic determinants. It is very likely that many of these determinants affect each other. To really be able to explain the reasons behind the differences in FDI for Poland

and the Czech Republic, one would need to use many different determinants. That way the results can properly be put into perspective. I would recommend for a following research to design a framework with socio-economic, political and cultural determinants and to analyze the correlation between these determinants. If that is clearly brought into perspective, it becomes easier to distinguish between determinants that have a stronger or a weaker effect, or determinants that only play a role in certain situations.

References

Adekoya, R. (2014, May 1). How the EU transformed Poland. Guardian Weekly. Retrieved July 20, 2014, from http://www.theguardian.com/commentisfree/2014/may/01/eu-poland-10-years-economic

Agarwal, J. P. (1980). Determinants of foreign direct investment: A survey. Weltwirtschaftliches Archiv, 116(4), 739-773.

Anderson, J. E., & Wincoop, E. v. Trade Costs. Journal of Economic Literature, Vol. 42, 691-751. Retrieved April 4, 2014, from http://www.citationmachine.net/apa/cite-a-journal

Breuzz, F. (2001). Macroeconomic effects of EU enlargement for old and new members. WIFO Working Papers, No. 143.

Buchtikova, A. *Minimum Wages in the Czech Republic; Employment Effects in the Transformation Period.* International Labour Journal, P. 27 - 41. Retrieved , from http://www.gurn.info/en/topics/minimum-wages/country-studies/minimum-wages-in-russia-and-in-the-czech-republic

Business Dictionary. (n.d.). What is balance of payments (BOP)? definition and meaning.

BusinessDictionary.com. Retrieved July 20, 2014, from http://www.businessdictionary.com/definition/balance-of-payments-BOP.html

Cecchini, P., Stabenow, M., Catinat, M., & Jacquemin, A. P. (1988). Europa '92: Der Vorteil des Binnenmarkts. Baden-Baden: Nomos.

Dimireva, I. (2012). Czech Republic: country overview. — EU. Retrieved July 20, 2014, from http://www.eubusiness.com/europe/czech-republic

Dorobantu & Clausing (2005). Re-entering Europe: Does European Union candidacy boost foreign direct investment?. The Economics of Transition, Vol. 13 (1), 77-103.

Duczmal, W. (2006). The rise of private higher education in Poland: Policies, markets and strategies. University of Twente.

Dunning, J. H., & Lundan, S. M. (2008). Institutions and the OLI paradigm of the multinational enterprise. Asia Pacific Journal of Management, 25(4), 573-593.

EUR-Lex. (n.d.). Access to European Union Law. . Retrieved April 4, 2014, from http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:61978CJ0120

Eurofound. (2002). *New minimum wage legislation criticised by unions*. Eurofound. Retrieved July 23, 2014, from http://www.eurofound.europa.eu/eiro/2002/11/feature/pl0211109f.htm

European Commission. (n.d.). Negotiations. Retrieved April 4, 2014, from http://ec.europa.eu/enlargement/archives/enlargement_process/future_prospects/negotiations/eu10_bulgaria_romania/index_en.htm

European Commission. (n.d.). The Funds. Retrieved July 4, 2014, from http://ec.europa.eu/regional_policy/thefunds/cohesion/index_en.cfm

Eurostat. (n.d.). Labour productivity per hour worked. Retrieved July 3, 2014, from http://epp.eurostat.ec.europa.eu/tgm/graph.do?tab=graph&plugin=1&pcode=tsdec310&language=en&toolbox=sort

Freeman, R. (2008). *Labour productivity indicators.* OECD. Retrieved July 22, 2014, from http://www.oecd.org/employment/labour-stats/41354425.pdf

Gherghisan, M. (2003, March 19). MEPs give green light for EU enlargement. EUobserver /. Retrieved July 20, 2014, from http://euobserver.com/enlargement/10618

Jakubowski, M., Patrinos, H. A., Porta, E. E., & Wisniewski, J. (2010). The impact of the 1999 education reform in Poland. World Bank Policy Research Working Paper Series, Vol.

Johnson, S., & Loveman, G. (1995, March 1). Starting Over: Poland After Communism.

Harvard Business Review. Retrieved July 4, 2014, from http://hbr.org/1995/03/starting-over-poland-after-communism/ar/4

Jonas, J. Inflation targeting in transition econonomies: some issues and experiences. IMF. Retrieved April 4, 2014, from http://www.imf.org/external/pubs/ft/itarg/2000/eng/chapter2.pdf

Kokko, A. Sweden: Effects of EU Membership on Investment and Growth .The World Economy, 679-681.

Nic, M, & Świeboda, P. (2014). Central Europe fit for the future: 10 years after EU accession.

Central European Policy Institute. Retrieved July 20, 2014, from http://www.cepolicy.org/publications/central-europe-fit-future-10-years-after-eu-accession

OECD. (n.d.). Central and Eastern European Countries (CEECs) Definition. OECD. Retrieved July 20, 2014, from http://stats.oecd.org/glossary/detail.asp?ID=303

OECD. (n.d.). What we do and how. OECD. Retrieved July 21, 2014, from http://www.oecd.org/about/whatwedoandhow/

Poland Minimum Wages. (n.d.). Trading Economics. Retrieved April 4, 2014, from http://www.tradingeconomics.com/poland/minimum-wages

PriceWaterhouseCoopers. (n.d.). About us. PwC. Retrieved July 21, 2014, from http://www.pwc.com/gx/en/about-pwc/index.jhtml

PriceWaterhouseCoopers. (n.d.). Building New Europe's Infrastructure*. . Retrieved July 3, 2014, from http://www.pwc.com/gx/en/engineering-construction/assets/building-new-europe-infrastructure.pdf

Schneider, Friedrich, and Bruno S. Frey. Economic and political determinants of foreign direct investment. World development 13.2 (1985): 161-175.

The Economist. (2002). A spectre over Central Europe. The Economist Newspaper. Retrieved July 20, 2014, from http://www.economist.com/node/1284252

The Economist. (2011). What wage inflation looks like. The Economist. Retrieved July 20, 2014, from http://www.economist.com/blogs/freeexchange/2011/09/unit-labour-costs

The Economist. (2012). Accountable. The Economist Newspaper. Retrieved July 21, 2014, from http://www.economist.com/news/finance-and-economics/21567953-two-controversies-ensnare-big-four-accountable

Trading Economics. (n.d.). About us. Retrieved July 21, 2014, from http://www.tradingeconomics.com/about-te.aspx

United Explanations (2013). *Minimum wages in Europe (2013).* . Retrieved July 23, 2014, from http://unitedexplanations.org/english/2013/02/04/minimum-wages-in-europe-2013/

United Nations. (n.d.). Labour productivity and unit labour costs. Retrieved July 20, 2014, from http://www.un.org/esa/sustdev/natlinfo/indicators/methodology_sheets/econ_development/labor_productivity.pdf

UN report Poland's FDI figures underwhelming. (2013, February 12). . Retrieved April 4, 2014, from http://wbj.pl/article-61843-un-report-polands-fdi-figures-underwhelming.html

United States Navy Academy. (2007). Calculating a Laspeyres Price Index. Retrieved July 20, 2014, from http://www.usna.edu/Users/econ/rbrady/312%20Materials/LaspeyresCalc.pdf

World Bank. (2014, January 1). World DataBank. Retrieved April 4, 2014, from http://databank.worldbank.org/data/home.aspx

Appendix

Foreign Direct Investment	'Net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments (World Bank, n.d.).'
GNP per capita	'The dollar value of a country's final output of goods and services in a year (its GNP), divided by its population. It reflects the average income of a country's citizens. Knowing a country's GNP per capita is a good first step toward understanding the country's economic strengths and needs. Since 2001, the World Bank refers to the GNP per capita as the GNI per capita, gross national income per capita (World Bank, n.d.).'
Inflation, consumer prices	'Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. The Laspeyres formula is generally used (World Bank, n.d.)'
Laspeyres formula	'A Laspeyres Index is known as a "base-weighted" or "fixed-weighted" index because the price increases are weighted by the quantities in the base period. The Consumer Price Index is an example of a Laspeyres Index. … Formally the calculation is written: $L_t = \frac{\sum_{j=1}^{n} p_{jt} q_{j0}}{\sum_{j=1}^{n} p_{j0} q_{j0}}$ where the subscript "j0" refers to the base year value for good j, and t, refers to the current year. (USNA, n.d.).'
Balance of Payments	'Set of accounts that are recorded of accounts that record a country's international transactions and which (because double entry bookkeeping is used) always balance out with no surplus or deficit shown on the overall basis. A surplus or deficit, however, can be

	shown in any of its three component accounts: (1) Current account, covers export and import of goods and services, (2) Capital account, covers investment inflows and outflows, and (3) Gold account, covers gold inflows and outflows. BOP accounting serves to highlight a country's competitive strengths and weaknesses, and helps in achieving balanced economic-growth (Business Dictionary, n.d.).'
Trade costs	'All costs incurred in getting a good to a final user other than the marginal cost of producing the good itself: transportation costs (both freight costs and time costs), policy barriers (tariffs and nontariff barriers), information costs, contract enforcement costs, costs associated with the use of different currencies, legal and regulatory costs, and local distribution costs (wholesale and retail) (Anderson & Wincoop, 2004, p. 691 - 692).'
Labour productivity	'Labour productivity is defined as output per unit of labour. The Key Indicators of Labour Markets (KILM) distinguish five different categories. These are: i. the total economy. ii. manufacturing. iii. transport and communication. iv. trade, including sales and repairs of motor vehicles, wholesale, retail, hotels and restaurants. v. agriculture, forestry and fisheries (United Nations, n.d.).'
Unit Labour costs	'The unit labour cost is defined as labour cost per unit of output (United Nations, n.d.).' 'Unit labour costs are the best estimate of staffing costs faced by firms. They represent the amount of money needed to pay your staff to make one unit of output, one widget. This is a function of two elements, the cost of the staff—their hourly wages—and the speed at which they make widgets, their productivity. Expressed in growth rates unit labour costs are roughly equal to

	growth in wages minus the growth in labour productivity, per widget. In America, in the second quarter, unit labour costs increased by 0.8%, this consisted of a 1.0% increase in wages and a 0.2% increase in labour productivity (The Economist, 2011).'
GDP (per capita)	GDP per capita based on purchasing power parity (PPP). PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources (World Bank, n.d.).'
Central and Eastern European Countries (CEEC)	'Term for the group of countries comprising Albania, Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Romania, the Slovak Republic, Slovenia, and the three Baltic States: Estonia, Latvia and Lithuania (OECD, n.d.).'

Figure 1 - Definitions

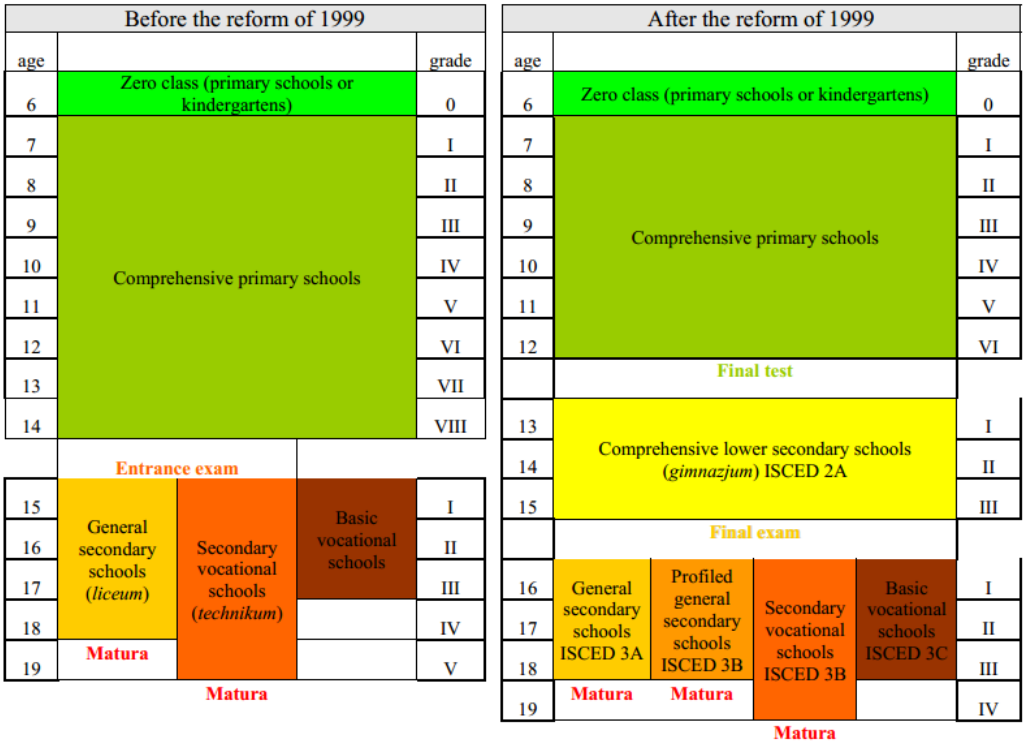


Figure 2 (Jakubowski et al., 2010)

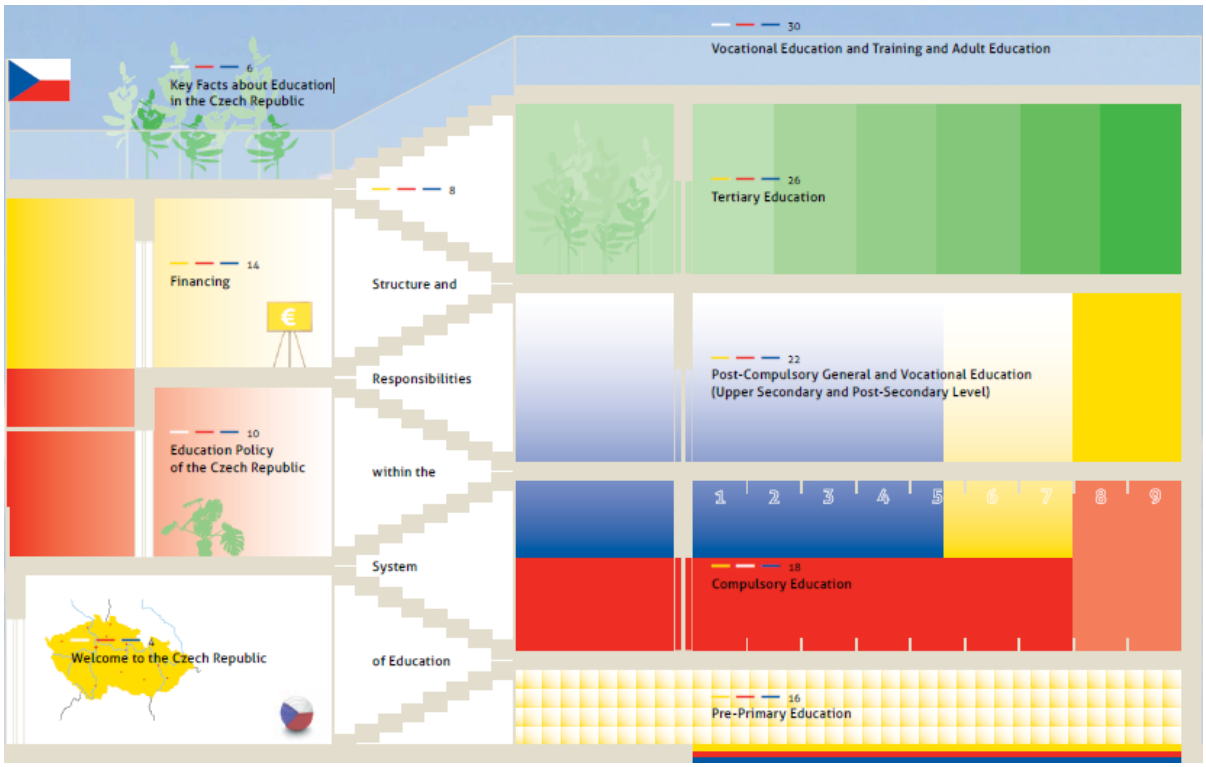


Figure 3 (The Ministry of Education, Youth and Sport of the Czech Republic; 2012)

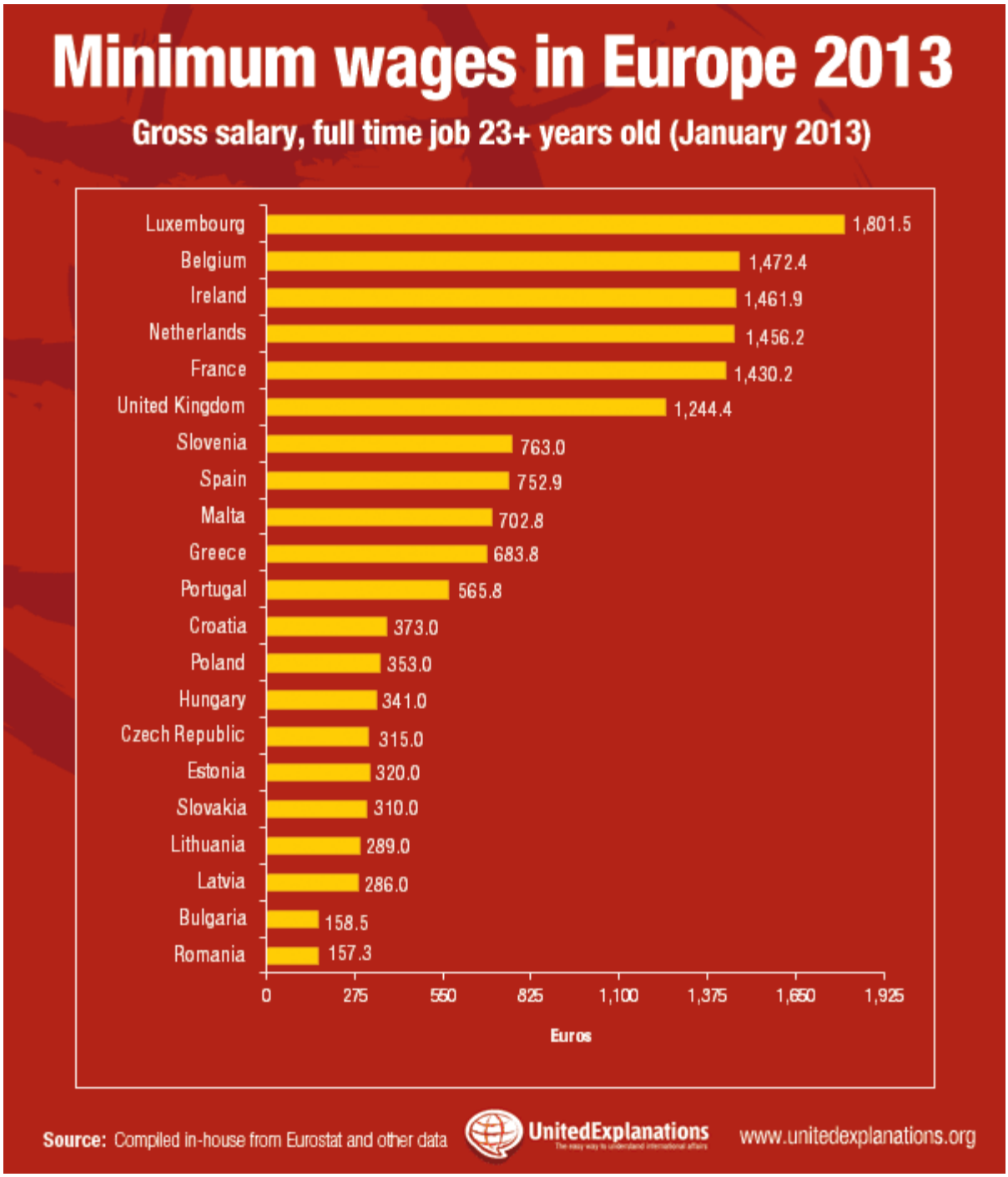


Figure 4 Minimum Wages in Europe 2013 (United Explanations, 2013)