CHAPTER 01

INTRODUCTION

1.1. BACKGROUND

Just twenty years ago, the dismantling of Cold War division in Europe began with

parliamentary changes in Poland (Bochniarz and Cohen 2006). These changes initiated a domino

effect in transformation of other Central and Eastern European countries (CEE); the

transformation of Romania, East Germany, Hungary, Czechoslovakia, and Bulgaria was soon

followed by sweeping changes in Russia and Central Asia, affecting more than 400 million

people (Chandler 2000). Needless to say, however, the transformation of Central and Eastern

Europe near the climax of the 80s took the European Community (EC) by surprise. In the pre-

1989 era, the EC exercised only a limited relationship with CEE countries and showed no serious

interest for a European project of political and economic integration that would include any of

the CEE states. According to Gower (1999), this inability to foresee the potential of the CEE

region strongly reflects the ineffectiveness in the EC policies.

Shortly after transition to democracy, ten CEE states (Bulgaria, the Czech Republic,

Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia) declared their

utmost desire to join the "family of Europe" (Andonova 2004). As the idea of EU membership

for these newly independent democracies in Central and Eastern Europe started to gain some

serious ground in the early 90s, the debate over enlargement and its economic, social and

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- The first chapter is like a long foreword of the dissertation. It introduces the dissertation document (report) and the research behind it in sufficient detail. Its purpose is to provide the reader with all fundamental information regarding the research and its report. It is usually about **a tenth of the total count** of the study. It usually has the following sections.
  - Background
  - Research Statement
    - Research Questions
    - Hypothesis (if any)
  - Significance of the Study
  - Nature of the Study
  - Summary

- The Background section develops the story behind the research objectives of the study. It moves on step-by-step to provide the reader with necessary ground to walk on while reading the study report. The section leads up to the research questions that the study focuses on. Hence, it needs a few paragraphs to build up to the research statement.

- In this study report, Background begins with a turning point in the modern political history of Central Eastern Europe.

- Unexpected progress in CEE is presented as evidence of great political potential of the region, leading to Western European's interest in strengthening relationship with this part of the continent.

- **Formatting Tip:** Body text is usually kept to line-spacing of 1.5 or 2.0 with text aligned to left throughout the report.

environmental implications came into play (Church 1995, as stated in Phinnemore 1999). Since the beginning of this debate, the objective of the European Union (EU) accession was dominated by the environmental policy agenda of CEE Countries (Pavlínek and Pickles 2004), and there were many reasons for it.

The Northern Part of CEE suffered more severe environmental problems than rest of the region. The "Black Triangle" (see figure I), for example, where the Czech Republic, Germany and Poland are linked, is among the regions which are the biggest homes to industries in Europe, and the power creation plants, which run on coal, were the greatest source of air and toxic pollution in the region (Pavlínek and Pickles 2000).
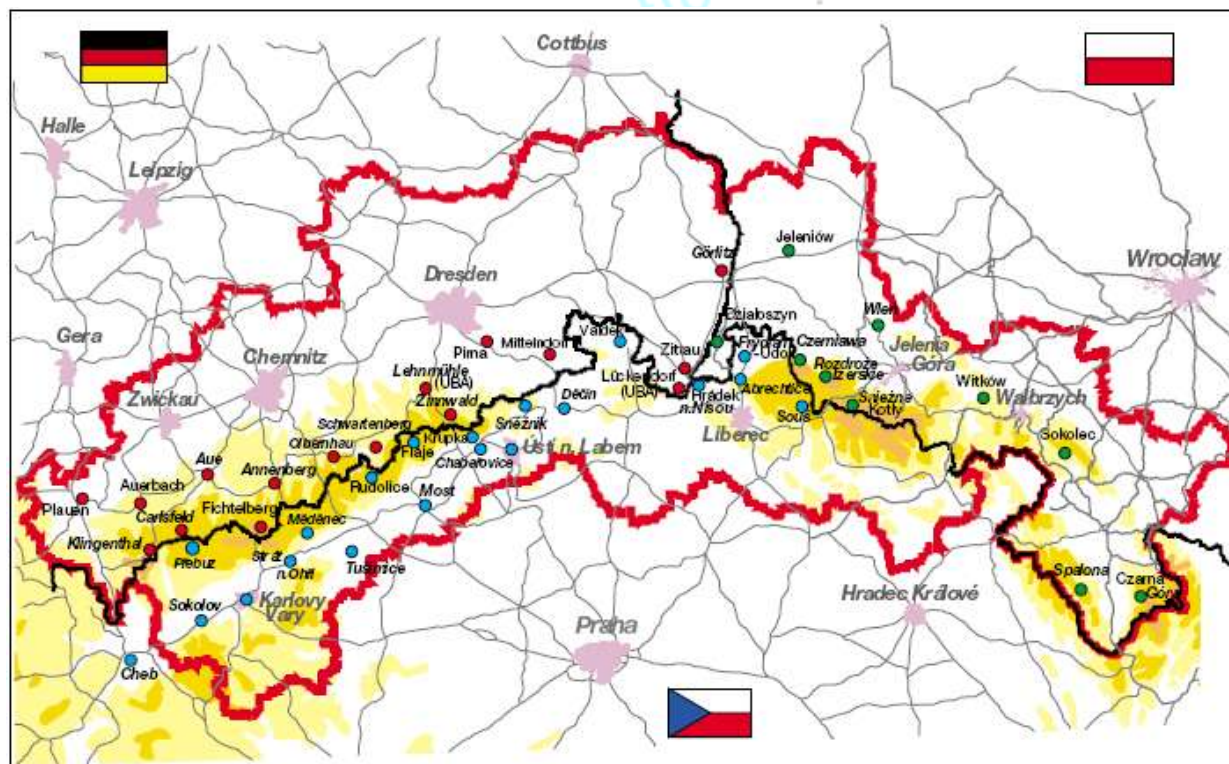

Figure I: The Black TriangleRegion(Source: http//www.plato.if.usp.br)

In Poland and the Czech Republic, several decades of centralized state-managed industrial development had largely ignored the enormous impact of the governments' decision-making processes and policies on the environment and the results were easy for all to see. According to Chandler (2000):

"The region's cities in the early 1990s were a bleak industrial landscape. Children played in

soot-choked residential streets built alongside giant steel and coking operations, chemical

plants, and unfiltered power stations. In some areas the skies were filled with carcinogenic

particulates, acid mist, arsenic, and antimony." (p. 2)

A study by Toman (1994) confirmed that the largest contributions to air pollution problem in the Czech Republic and Poland have been the result of industrial emissions rather than automotive and other vehicular traffic based on the average numbers of vehicles owned by the citizens of these countries compared to other countries in Western Europe. Moreover, as many urban areas in Poland and the Czech Republic have historically been located on – or near the –waterways running through these nations in transition, the environmental impact was particularly pronounced. For instance, as Chandler (2000) emphasizes, "Rivers carried refinery waste and sewage; some carried radiation" (p. 2).

As stated above, both the Czech Republic and Poland are characterised by industries which are well documented in contributing to higher levels of trans-boundary air pollution in Europe. For instance, Carter and Turnock (2002) write:

"The Czech Republic and Poland are excessively scarred by major energy sectors,

particularly evident through large coal-mines (both shaft mines and open pit workings) and

generating capacities." (p. 5)

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- Quotes are taken from key literature to support claims made. Quotes are often helpful if you want to deliver a strong sentiment from literature or provide definitions.

- Works of scholars on the subject are used to provide evidence and strengthen claims.

- **Formatting Tip:** Quotes should be centre-aligned and must be placed in quotation marks. Also, page number from the source text should be provided with the quote wherever possible.

Although some progress was made in reducing the effluence and discharge levels following 1990, these reductions were more attributable to lessened demand for the products being manufactured by these facilities rather than any substantive effort to clean up and remediate the industrial sites responsible for pollution. According to Pavlínek and Pickles (2000),

"The paralyzing financial crises and economic collapse that have accompanied transformation in several reforming countries, and the changes to legal, economic and political systems have had important consequences for environmental conditions." (p. 7)

These important consequences have included a paucity of resources available for environmental remediation or for new investments in non-polluting and more efficient technologies; in spite of a wide range of environmental laws and institutions having been implemented in the European Union in recent years, many transition economies have lacked the resources needed to conform to these policies (Pavlínek and Pickles 2000).

In this regard, Chandler (2000) concludes:

"The environmental situation has improved but often as a result of economic depression and human health conditions have deteriorated dramatically in some areas." (p. 2)

However, Pavlínek and Pickles (2000) attribute much of the success of the former Soviet - satellite states in challenging centralized control that led to the collapse of the Soviet Union in the 90s to a concerted effort to reverse the impact that these state-run policies had on their environments and the health of their citizens. Both authors write:

"In this sense, challenges to state policies found their most direct expression through the movements for ecological resistance which emerged to oppose the ravages of the environment and the health of the population under state socialism" (p. 7).

Taken together, it is apparent that both the Czech Republic and Poland were faced with some profound environmental problems as they entered the transition period from 1990 to 2000 following the collapse of the Soviet Union in the 90s, and it is equally apparent that both of these countries have managed to achieve improvements in ways that have been difficult for other similarly situated countries to emulate. These achievements have been due in large part to the ability of the governments of Poland and the Czech Republic to marshal their available resources in effective ways in addressing their environmental problems as well as in their commitment for "cleaning up their act".

In this regard, Carter and Turnock (2002) emphasize that:

"These countries also have shown a superior capacity for handling their problems, reflecting their ability to identify and resolve environmental problems on the basis of technology and financial resources but also legislation and enforcement regimes plus a political culture with institutions to ensure that issues are raised, alternative solutions discussed and with cooperation forthcoming in respect of agreed strategies." (p. 6)

Moreover, the Czech Republic and Poland are capable of producing tools and equipment for controlling pollution in ways that have contributed to their full integration into the EU (Carter and Turnock 2002).

Clearly, then, the driving forces for Poland and the Czech Republic to improve their environmental standards and ensure transition from centrally-planned to market-based economies arose due to a number of factors, including the overriding need to reduce the adverse impact of these environmental degradations on the health of their citizenry.

There were other compelling forces at work, though, that made the improvement of these countries' environmental standards a high priority as well. For example, Madeo (1995) emphasizes that countries such as the Czech Republic and Poland are well poised to enjoy the benefits of increased trade and integration into the European Union (EU) and international community but these nations also face profound environmental problems that were required to be addressed before full membership in the EU would be granted. In this regard, Madeo (1995) notes:

> "The Czech Republic possesses a level of social and economic development that is beyond that of a typical developing nation. At the same time, however, it must recover from forty years of socialist policies to join the modern world trading system." (p. 945)

Therefore, this study examines the process and importance of the Czech Republic and Poland becoming fully integrated into European markets through EU membership and the process involved in that accession.

1.2. SIGNIFICANCE OF THE STUDY

The significance of membership in the European Union and the resulting benefits cannot be overstated, particularly for the transition economies of Eastern Europe that involve hundreds of millions of people, *mired* in the past in many ways.
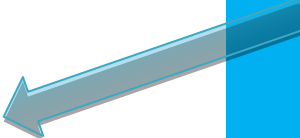
- One important aspect to remember is to follow the instructions of the institute where you are to submit your dissertation as the law. General sections of the Introduction chapter provided in this commentary earlier are helpful to understand what is expected of the chapter, but they do not supersede the guidelines provided by your institution. Note how this sample study also uses a format slightly different from the guidelines we provided to you earlier.

- No section with the title Research Statement before Significance of the Study section. Instead, you will see a different heading was used for the purpose of explaining the study objectives below.

In early 2003, resolutions passed in the European Parliament granted accession to ten European applicant states. The resolutions would allow these states to become inclusive members of the EU by mid-2004 (Medvec 2009). These resolutions were the result of several conferences, summits and agreements that had been forged over the period of a decade, including the European Agreements, the Corfu Summit, the Amsterdam Treaty, the Copenhagen Summit, the Nice Treaty, and Essen Summit,*etc*. (Medvec 2009). All of these summits presented certain conditions that the desiring CEE states needed to fulfil for accession into the EU, which are discussed in detail in the appropriate sections of this document.

Following their associate membership status in the EU in 1991 pursuant to the European Agreements, Poland and the Czech Republic were initially required to demonstrate willingness to achieve the foregoing criteria by showing evidently practical inclination towards reformation of the political and economic systems with regard to problems of nature of economy, law enforcement, rights for the common people, and establishment of fair democracy (Medvec 2009). Poland and the Czech Republic also needed to provide proof concerning compliance with the requirement to improve their commitment to environmental standards as well (Medvec 2009).

Both Poland and the Czech Republic were successful in satisfying the EU leadership of their commitment to full integration by providing evidence on improved environment and achieved membership of the EU in mid-2004; in fact, the Czech Republic even assumed the presidency of the EU in 2009 (Medvec 2009).

- Grounds are provided separately in neat paragraphs to establish why the researcher believes this study is important for literature written on the subject of European Integration and policy-making in the region.

- Significant research and its underlying questions are developed after studying literature and finding gaps that can be filled with new work. This is what sets each research study apart from the rest and makes it contributing to literature on the subject.

Both Poland and The Czech Republic have also become integrated into the EU in other ways, including their transition from the Warsaw Pact membership to a membership in the North Atlantic Treaty Organisation (NATO).

1.3. OBJECTIVES OF THE STUDY

The main objective of this study is to demonstrate the fundamental importance of European integration (Europeanisation) on environmental policy-making development in both the Czech Republic and Poland in tandem with other economic policymaking initiatives that have focused on the environment as a top priority in their transformation and the reasons for these initiatives.

To achieve this objective, the study provides an analysis concerning how, in their capacity as some of the most flagrant polluters in Eastern Europe, the Czech Republic and Poland changed their policy-making processes and how these changes contributed to improvements in environmental quality with a specific focus on air pollution in the region.

The importance of this focus also represents other characteristics of their transformation that are very unique in world history. Indeed, both Poland and Czech Republic are strategically located in the heart of the Europe; Poland is the most populous and, together with the Czech Republic, diversely industrialized region which the members of the EU desperately needed. Integration impact of both the Czech Republic and Poland on the quality of the environment in Europe is based on important arguments: environmental pollution "is no respecter of national boundaries" (Greenwood 2007). Therefore, environmental quality in Europe is determined by conditions in many European countries. Poland and the Czech Republic as "next-door" neighbours of the EU and "frontrunners" of pollution in Central Europe were crucial in raising

- Each objective is described in necessary detail in this section along with how it was designed to be achieved in the study.

environmental quality throughout the continental Europe. For integrating both states into the EU,Poland and the Czech Republic had to adopt the entire comprehensive body of EU legislation that replaced every ineffective or unimplemented laws of the communist era; had to manage to improve environmental quality by using the replacement of the central planning system with a market-based economy that replaced gas-guzzling technology with "green" technology.

The studied transition period of 1990-2000 reveals the uniqueness of this non-violent transformation, rich in changes parallel in areas of the economy, social and political structure that happened at an admirably fast pace.

By researching books, journals, policies and media pieces from each time period of analysis, this study provides valuable new insights into the political, economic and social changes that have taken place in Eastern Europe during the transition period from 1990 to 2000 and how they have affected the EU and new members' integration into a rapidly growing global economy.
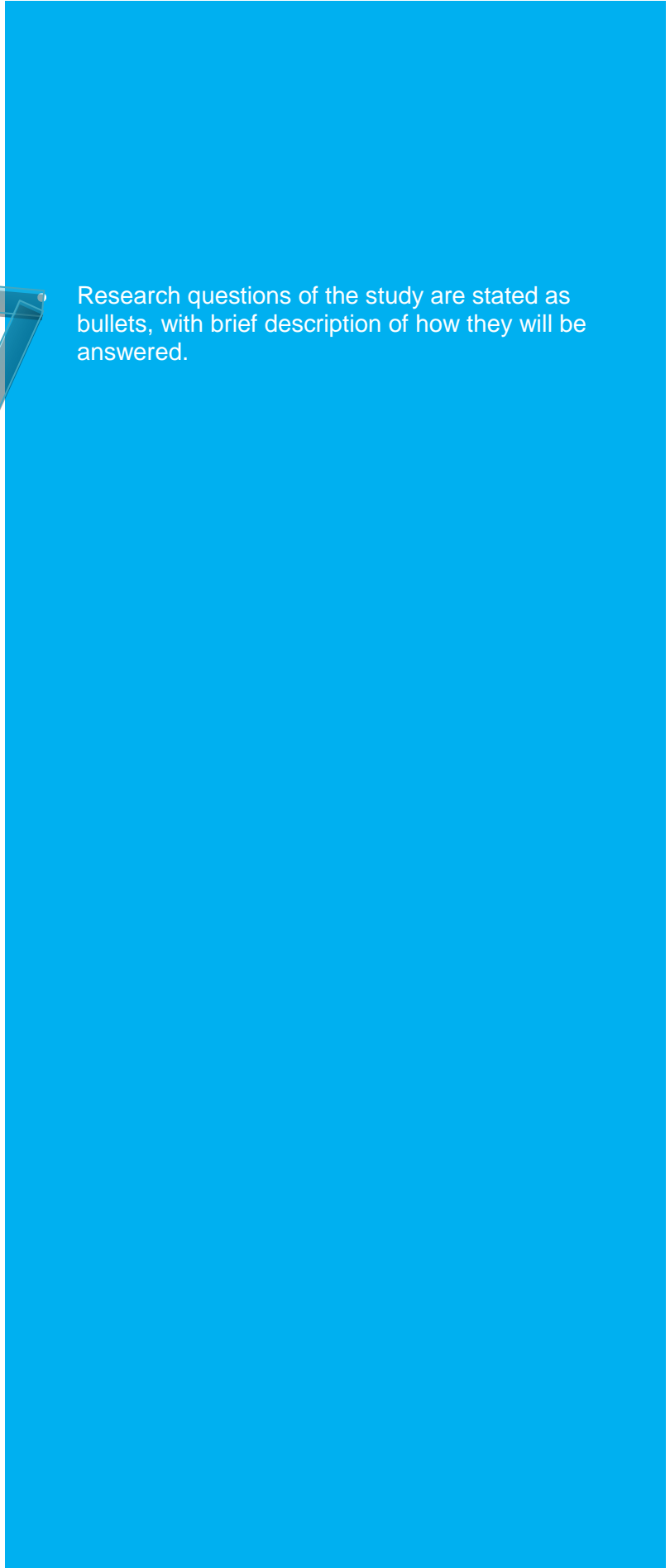
1.4. HYPOTHESIS AND RESEARCH QUESTIONS

The study was guided by the hypothesis that based on their respective geopolitical and economic importance to the rest of Europe the countries of Poland and the Czech Republic have emerged with exemplary commitment to environmental considerations for responsible policy-making and practices. Indeed, both Poland and the Czech Republic were highly successful in reducing their air pollution emissions in recent years for the introduced reasons and others discussed in the following chapters. As much of the fast-paced progress by both countries was achieved during the difficult transition years of 1990 to 2000 with the dual goal of improving the health conditions for their nations' citizenry as well as facilitating their integration into the

- Hypothesis is usually included as a bulleted statement, but as this format was not required for this study, the hypothesis was shaped as a paragraph.

European Union and international community, this success is all the more remarkable. Based on this foreword, the research questions that guided this study relate to the effects of radical economic reforms, policy and EU influence. The questions are:

1. How did selected critical policy, economic and institutional factors such as rising incomes (*e.g*., GDP per capita), regulatory structure (*i.e*., environmental expenditures to GDP) and the structure of the respective country's economy (*i.e*., index of small-scale privatisation) relate to improvement in the indicators of air quality such as CO_2, SO_2 and solid particulate levels?

2. Why did market economy prove to be one of the most effective ways to initiate environmental regulation? To answer this question, a critical analysis of the impact that market forces had on policy effectiveness in terms of financial and regulatory changes is provided, including an examination of how clearly defined property rights, new market-based instruments for improved compliance and enforcement, effective legislation enforcement by emission fees and charges in Poland, and increased expenditures on environmental issues including foreign direct investment played a role.

3. What was the influence of accession in the European Union on facilitating improvements in environmental standards of Poland and the Czech Republic? To answer this research question, an assessment concerning the importance of EU membership and integration as a principal change driver for policy integration and compliance with EU standards is provided, as well as what EU environmental investment funds incentives (*i.e*., PHARE) have encouraged compliance and enforcement regimens in Poland and the Czech Republic to date.

Research questions of the study are stated as bullets, with brief description of how they will be answered.

THEORETICAL FRAMEWORK

2.1. INTRODUCTION

The EU enlargement process, which also embraces the free-market system, has had some very deep political, social and environmental consequences for these former Communist states. This chapter will review theories on European integration and internationalisation and how they are related to the objective of this study.

2.2. ECONOMIC REFORMS, INVESTMENTS AND PSYCHIC DISTANCE

There are various opinions about integration theories and their impact on the transformation strategies in CEE states (Scrieciu and Stringer 2008), including alternative models. However, since the collapse of Communism, radical changes in economic systems in Central and Eastern Europe have been dominated by the neoclassical economic approach (Scrieciu and Stringer 2008). Thus, orthodox neoclassical model with its heavy reliance on market forces have been implemented by Poland and the Czech Republic, and played a dominant role in many sweeping changes, including changes in environmental quality of both these states.

Indeed, the Czech Republic and Poland were among the very first of all formerEastern-Bloc countries to implement economic reforms in an effort to become fully integrated into the

- A chapter with the title Theoretical Framework usually provides discusses key theories out of popular literature on the studied subject in order to provide separate description of what known theories are found to be the basis of the studied research problem.

- TF is not always needed dissertations but plays an important role in reports of political research.

- A brief introduction says what the chapter will show the reader.

- Description on this topic began with Integration theories, especially the Neoclassical Economic Model in relation to economic transition done in Poland and the Czech, which, by the way, were the two countries this study focused on (as you may have noticed from the research questions in chapter 01).

EU (Hassan, Haque and Lawrence 2006). The economic reforms contributed to the successful accession of both countries to the EU and to diminish the so-called *psychic distances* between Poland and the Czech Republic and the other member states of the EU. In this regard, the process of internationalisation involves dealing with various additional costs of conducting business in other countries, but companies with managers who have learned through previous similar experiences, understand that costs associated with internationalisation are reduced (Cuervo-Cazurra 2006).

The theoretical framework of the *Uppsala model* (incremental internationalisation process) can be used to easily comprehend preferences with regard to states where *psychic distance* is the standard of determining the level of accepted internationalisation (Cuervo-Cazurra 2006).

In this regard, authors, such as Armario, Ruiz and Armario (2008), report that to the extent companies enjoy the benefit of solid information and experience with other countries will likely be the extent to which the psychic distance between them is reduced. According to Cuero-Cazurra (2006):

> "Psychic distance is the difference between countries in terms of language, culture, education, business practices, industrial development, and regulations, all of which may limit the transfer of information. This distance reduces the ability of the firm, and particularly of its managers, to understand foreign information." (p. 807)

The *Uppsala model* and like-minded frameworks depict the process of internationalisation as a process of learning wherein the initiatives are based on knowledge which is obtained through a sequential series of international decisions (Armario *et al.* 2008).

- Other models are also discussed in relation to International Business, information flow, and psychic distance.

The more alike the countries in terms of cultural dimensions, such as those articulated by Geert Hofstede (2009) and other sociologists, the greater will be the extent to which investments flow between them and the process of internationalisation will be accelerated.

In this regard, Armario and her associates (2008) emphasise:

"Internationalisation is thus perceived as an evolutionary process in which companies develop growing levels of commitment to foreign markets as they travel through a series of sequential steps and accumulate decisions." (p. 486)

As can be seen in figure II below, there is a high level of congruence between the cultural dimensions developed by Hofstede (2009) for Poland and the Czech Republic (see definitions of these cultural dimensions in Appendix A). There is also a high level of congruence between these cultural dimensions for Poland and the Czech Republic with other major members of the EU, such as Germany and France, as shown in figures III and IV below (Poland's cultural dimensions are used as a basis for comparison based on the similarities with the Czech Republic).

The 5D Model of professor Geert Hofstede
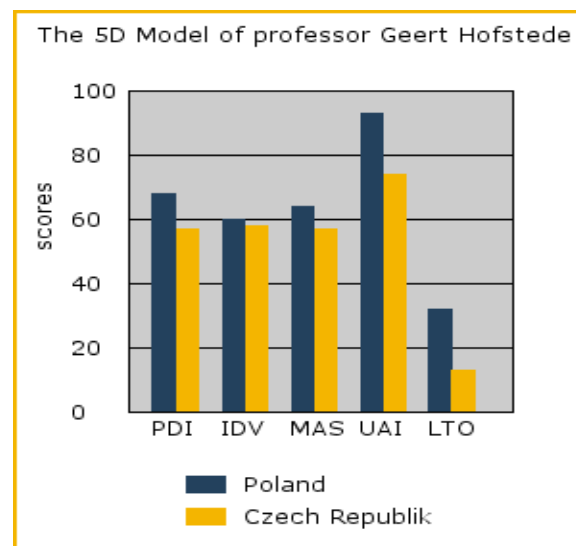
• This report follows Harvard formatting and referencing system. Harvard is one of the three most popular parenthetical referencing systems and is the most widely used one.

• In Parenthetical Referencing Systems, we divide a reference into two parts: **the complete citation**, which is included in the References section at the end of the report, **and the in-text citation**, which refers to including last name of the author of the work you're referring to and the year of publication of that work in brackets.

The 5D Model of professor Geert Hofstede
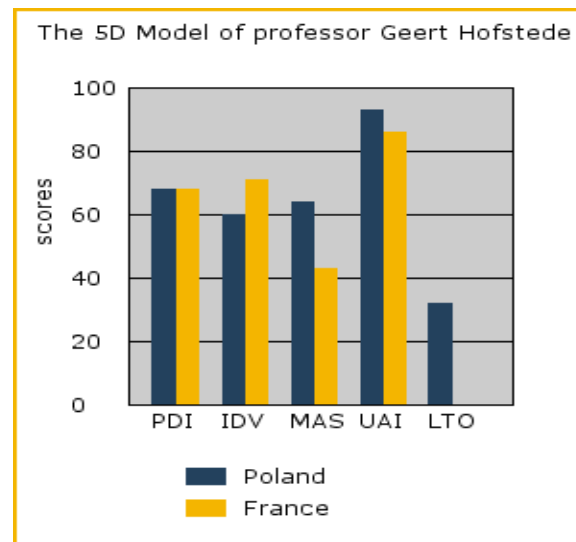
Poland
France

Figure III: Comparison of Cultural Dimensions of Poland with France(Source: Hofstede 2009)

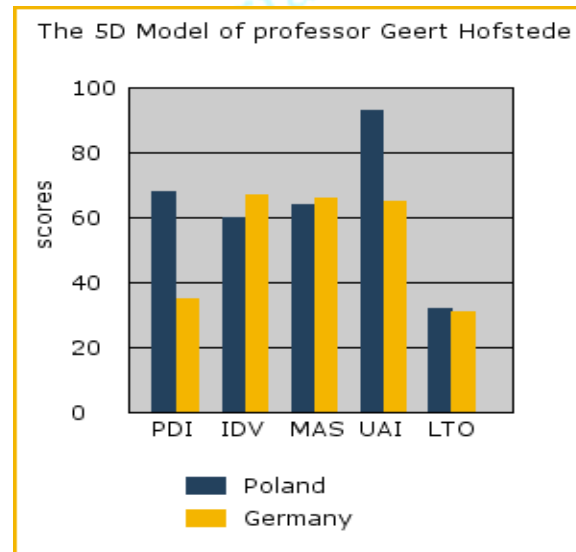The 5D Model of professor Geert Hofstede

Poland
Germany

Figure IV: Comparison of Cultural Dimensions of Poland with Germany (Source: Hofstede 2009)

As can be readily seen in figures III and IV above, although they are not mirror images of

each other, Poland and the Czech Republic enjoy a minimal psychic distance with the other/older

member states of the EU. Based on this theoretical framework, companies in various member states of the EU will initially seek to expand their operations into those countries that are most like the host country and will seek to expand their operations into other, less congruent countries, later on (Cuervo-Cazurra 2006). There is also a learning curve involved in the *Uppsala model* wherein integration with other countries will accelerate as experience and knowledge is gained over time and companies in other countries become satisfied that their investments are worthwhile and safe. Therefore, by implementing economic and environmental reforms early on, Poland and the Czech Republic clearly helped to facilitate their integration into the EU and in attracting significant amounts of foreign direct investment by aligning their regulatory systems and environmental policies with the other member states.

The downside to this process has been an incremental diminution of the ability of policymakers in Poland and the Czech Republic to pursue economic and environmental reforms that are best suited for their own particular wants and needs, a process that is a direct concomitant of globalisation.

According to Deeg (2001):

"The prevailing popular orthodoxy holds that globalisation erodes the political autonomy of nation-states and, by extension, sub-national governments. The growing mobility of goods, capital, and labor make effective government market intervention and regulation-- where it is still considered desirable--possible only on the international level, whether through treaties or international coordination." (p. 51)

While it is apparent that Poland and the Czech Republic gained a great deal by implementing the sweeping reforms needed to gain membership in the EU, it is equally apparent that there was a significant trade-off involved as well.

In this regard, Deeg (2001) adds:

"In this view, the imperative outcome of globalisation is either more political centralisation or simply less political control over markets." (p. 51)

Indeed, there is a great deal at stake for aspiring new members to the EU that can override any domestic policymaking priorities in ways that may adversely affect their ability to pursue initiatives that may be best suited for their own purposes at the expense of the larger benefits accruing to full membership in the EU.

In this regard, Piazolo (1998) states:

"Joining members have great incentives to conclude negotiations quickly and to solve any outstanding disagreements after being granted full membership with decision-making and voting rights." (p. 115)

Although it is reasonable to suggest that the improved environmental standards adopted by Poland and the Czech Republic to facilitate their membership into the EU benefit everyone, it is also reasonable to suggest that these environmental standards, or even stricter ones, would have been implemented anyway absent the need to satisfy the terms of accession into the EU, but at a slower pace than what was actually achieved.

Nevertheless, European enlargement continues its inexorable march to integrate more of the former Eastern Bloc nations into a union that will soon rival and perhaps even outdistance the economic and political clout of the United States of America. Given the enormous stakes involved in the successful integration of the member states, it is important to understand why aspiring entrants as well as the existing EU members pursue these types of economic and environmental policies. A theoretical framework advanced by Piazolo (1998) provides some useful guidance for this purpose wherein he outlines five principles that he maintains specifically impact new members of the EU:

1. "The success of European integration depends more on the domestic response to membership than on the provisions of the *acquis communautaire* (common EU legislation): While the mechanisms of the *acquis* can encourage a restructuring process, the complementary domestic reform program determines the long term results.

2. The EU structural funds have only produced limited results and may create dependency.

3. The Common Agricultural Policy distorts the economies of the new members, embeds the farm lobby and complicates the adaptation process.

4. The new member's self-perception as a "follower" or a "leader" in the EU is consequential.

5. The size and the wealth level determine the country's ability to restructure and to adapt to the liberalisation induced changes." (Piazolo 1998, p. 115)

Given the rapid economic growth experienced by both Poland as well as the Czech Republic subsequent to their accession into the European Union and its vast markets as well as

the amount of foreign direct investments these two countries are attracting, it is reasonable to suggest these two countries have accepted the downsides of the internationalisation process as being worth a trade-off in terms of any sacrifice involved.

CHAPTER 03

LITERATURE REVIEW

3.1. INTRODUCTION

The aim of the research is to study the transition process that Poland and the Czech Republic went through for inclusion in the European Union (EU) and the policies that have implemented since their membership has been incepted in the EU. However, the following review of literature is comprehensive and in accordance with the research objectives of this project.

In order to provide a comprehensive presentation, the review begins with the brief review of the political transformation in recent history of the studied region. This knowledge of the region encompasses the political motives for establishment of the EU as well as the reasons other states of Europe, especially Central and Eastern European (CEE) states, are attracted to the Union with the help of observations made by scholars of the field. Also, this review highlights the studies that have been done in the field of environmental legislation of the EU as well as the two countries subjected in this study. Where appropriate, problems faced by the two countries in following EU policies are also discussed with the help of scholarly works. Some of these problems are specifically discussed ensuring due consideration is given to each important aspect of the studied literature.

- The LR is a descriptive essay which outlines the literary parameters of the study and discusses each important aspect of the research questions with consistent referrals to scholarly works published on the subject. It is usually given **30-35% space in the total count**.

- The LR relies heavily on literature and it is extremely liked that latest scholarly research is used in references in order to demonstrate a firm grip on the theory of the research subject. However, your study should be comprehensive and even older works may be included to add or support an important claim.

- You may have already a variety of scholarly works have been cited in this sample dissertation. This exercise gets more intense in this chapter.

The introduction section briefly reminds the reader of the study's aim and moves on to discuss what important matters are discussed in this chapter.

As stated earlier, the review provided below is categorised in nature and presents the studied literature in a convenient reading form for the audience. For this purpose also, the review can be divided into two main sections: EU policies and history in order for the reader to understand the motives of EU environmental policies and the complications these policies have created for new members, and the transition process the two studied states of Europe have experienced in order to comply to EU regulations on the subject. The focus of the review is mainly on legislation that includes steps to lessen air pollution in the region.

3.2. HISTORY OF EU POLICIES

The EU was formed with the motives of strengthening political, economic and social relations among the states of Europe, and also to stabilise the much criticised state of environmental disorder in these states, in order to establish the continent as a modern well-governed prosperous region (Botcheva 2001, p. 197; Lavigne 1998, p. 38). However, the explicit objectives of the Union have been criticised as being very ambiguous due to the broadness of the terms they have been defined in the constitution of EU (Lavigne 1998). The general terminology and the loose restrictions of criteria stated in the constitution of the EU tends to give the realisation that new entrants in the Union could be any state of Europe while at the same time the utter compliance to these conditions are hard to be fulfilled in a few years (Lavigne 1998), considering the fact that the states entering EU are poor and less-developed and have to face a number of domestic problems during transition towards compliance of the EU law (Watson 2004, p. 1131).

European nations began to unite five decades back yet this integration was named the EU much later. In the beginning of this integration only six European states joined to form the Treaty

- History of EU legislation is the starting point of the essay.

of Rome in 1957 (Holland 1997, p. 26; Lewis and Kwarteng 1995, p. 3). This number increased

with more states signing in to the Union and by 1996 fifteen states had become part of EU

(Holland 1997). The agendas of EU have been in constant criticism and of interest to scholars.

As stated earlier, the agendas of EU have been described as controversial and even contradictory

(Holland 1997). The constitution of EU is complicated and many misunderstandings are possible

in the reading due to the incumbent conflicting ideas arising from the policies that are part of it

(Holland 1997). However, it is also believed these problems have arisen due to the constant

changes the fundamental perception of EU has gone through in the past and the future brings

hope for consistent and mutually inclusive policies in the Union.

The collection of the regulations of the EU, which are necessarily followed by the

entering states and the rest of the members as well, is called *acquis communautaire* (the Acquis)

(Holland 1997). The Acquis is the law of the EU, in simple words. One important part of the

Acquis is the focus on environmental improvement in the European states. This aspect of the EU

constitution highly affects the environmental agendas of the CEE states, especially in light of the

fact that the political gains of membership in the EU keep the poorer CEE states attracted to the

Union (Botcheva 2001).

The environmental policies of EU have evolved with time and are now included in the

Acquis in the form that requires entrants to demonstrate a specific plan that shows the exact

nature of financial assistance and time period they require for being able to comply to the Acquis

fully (Botcheva 2001). Since the first step towards policy-making for environmental concerns in

the region in 1972, the process has become focused on putting forward a multinational design in

the region to decrease the evil of pollution as efficiently as it can be done (Delbard 2008, p. 397).

As noted earlier, the policies established by EU for it members are complex, paradoxical, and

often confusing due to the strength in number (Kollman and Prakash 2002, p. 44; Ong 2001, p.687; Watson and Emery 2004, p. 766). The environmental policies are no exception. However, the flow of design can be seen in the policy-making infrastructure. The environmental law of EU has over 300 regulations and directives that are consistent in strict enforcement of the legislations and many of them focus straight to the corporate sector of the member states (Kollman and Prakash 2002; Ong 2001; Watson and Emery 2004). The recent additions in the EU environmental law seem to be aimed at sustainability by methods such as electronic recycling, decreasing air pollution (Yeoh 2008, p. 189), and auditing programmes like CEMAS (Charlier 1998, p. 107).

- Each argument is enclosed in a neat paragraph connected as a rational chain of cogentcontentions.

Air pollution has become a great concern for governments due to increasing amounts of harmful material emission in the atmosphere (Holnicki and Kaluszko 2004, p. 250). In this regard, the focus of the EU policies is on the industrial corporations and recent legislations like the directives for Environmental Liability and Registration, Evaluation and Authorisation of Chemicals (REACH) have proven the shift of law in EU towards enforcing Corporate Social Responsibility (CSR) of industries in the region (Delbard 2008). Moreover, the diversity in the EU environmental policy arises with the inclusion of carbon emission recording, registering over 1,500 industrial organisations to record and report to EU in this regard. The environmental policies of EU focused on greenhouse gas emissions are motivated in order to comply with the United Nations Organisation's (UN) set goal for Europe to reduce such gas emissions to 8% by 2012 compared to 1990 (Yeoh 2008). Yet, that is not the only motivation EU has; the Union shows its own deliberation in solving the environmental problems in the region, which is also one of the primary reasons for its foundation, with the goal it has set for the region to reduce gas emissions up to 30% by 2020 (Anon 2007).

3.3. HISTORY OF POLISH ECO-POLICIES

Success of policies such as ecological transition of a society depends considerably on the active role of the members of the society, and due to the political history of the country, which resulted in distrust of public and destruction of social activeness. Poland cannot be considered close to the ideal society in this regard (Sobol 2008, p. 198). That does not mean there has been no struggle in the country in the direction of environmental improvement. The Ecology Club, though closed down with the martial in the beginning of the 80s, did succeed in getting the Skawina Aluminium plant closed, which was producing two thousand tonnes of harmful fluorides every year (Kabala 1993, p. 51).

The government established an essentially general Act for environmental monitoring and improvement in 1980 after monitoring in the country completed its ninth year. As enforcement of environmental legislation was very weak during those times in Poland, the Act was not used even for the little potential it had. In the 80s, environmental penalties incurred were only a fraction of the pollution costs they were charged for (Warner 1999, p. 209). Yet, Warner (1999) also believes it would be untrue to say the governments of the past were the only producers of pollution in the country. Scholars have found greater amounts of the sulphur pollution in the Polish air is resulted by other countries as air pollution is known to be a problem that involves contribution from neighbours states as well (Pearce and Turner 1990).

In 1989, when the communist government fell, Poland became a better place with greater access to information for the people and more focused strategies of the government towards environmental improvement, which was a necessary part of the transition of the country towards a market focused economy (Carter and Kantowicz 2002, p. 183). This era began with continued

After discussing EU's legislative history, the review moves to literature written on how Poland changed its policies related to ecology and environmental problems that it faced in the aftermath of its decades upon decades of industrial economy.

focus on the more consistent problems of air and water pollution that had occurred due to the illegal and countless ways in which the industries had used the natural resources of the country in the past. The government resolved to steer the solutions that were sought towards more permanent endeavours concentrating on sustainable management of environment (Clarke and Cole 1998).

The policy-making for sustainable environmental management resulted in the development of categorised plans for varying priorities of the country. On the one hand where the government established a consistent monitoring policy for industries and waste management as well as for the recording of natural resources of the country (Andrzejewski and Baranowski 1993, p. 47; Nowicki 1993, p. 85) while on the other hand the policies were divided into three categories of priorities and the goals were set for the coming years accordingly (Warner 1999). The set goals have been met to date. The rapid change from being one of the most polluted countries of Europe to one of the fastest pollution-fighting states of the EU shown by Poland is in fact one of the reasons why it acquired the attention of the researcher.

3.4. HISTORY OF CZECH ECO-POLICIES

The Czech Republic, which was the western part of the communist Czechoslovakia, shared the position of the most polluted states of Europe with Poland and a few other Central and East European countries. The country had a number of urban settlements and due to the focus of the communist government, very much like Poland, environmental consideration was thrown behind the back while the country produced. Like all the other communist states of the region the county was immersed in increased production under the influence of the socialist development model while the environment paid the toll (Pavlínek 2002, p. 119).

- Similarly, necessary details of the Czech Republic's history of struggle for improving its environmental conditions are shared with the reader.

With time, the environmental conditions of the state became devastated. The industrialisation of the region after the Second World War had contributed to the continued decline in environmental stability. Though there were a few policies that were established by the communist regime but due consideration was never given to them, yet as stated earlier, the partiality in the efforts did not stop the accelerating industrialisation that was to be fuelled with cheap sources that would create much pollution and uncontrolled waste (Carter 1985; Pavlínek 1995; Tickle and Vavroušek 1998). The establishment of the country was so engrossed in the fulfilment of the model that they believed it would create hurdles in the goals they had set for production if the government started to give due consideration to environmental harm the industrialisation was doing to the country. Hence, virtually the same line of action was kept till the end of the communist regime in the country (Pavlínek 2002).

The period that began after the fall of the communist government brought along the opportunity for the country to focus on the environmental concerns, which were becoming exceedingly common in public as well as political circles. Two opinions formed in the wake of this opportunity. One was to shift the economic focus of the country from industrialisation to a welcome market attractive to investors: an opinion which was backed by many politicians and was taken to be the right choice to end the environmental dilemma of the country (Holman 1995). However, the second opinion was much more realistic and criticised on the over-optimistic thinking of the politicians saying it would be unwise to believe environment would get better on its own only if the country was made a market economy. These environmentalists believed that proper policies were required with prime focus on sustainability of environment to solve the problem permanently (Manser 1993; Pavlínek 2002, p. 121; Vaněk 1996). We have already reviewed in the literature that Poland had a clear set of such policies for environmental

improvement after the communist era ended. Manser (1993) and other scholars like Carter and Turnock (2002) seem to be hinting to this integration of thought of the similar countries for the same problem in the same situation. Pavlínek and Pickles (2000) also believe the presence of differences between the social structures and workings of Poland and the Czech Republic is very visible, which led to the different paths the two countries chose in the beginning of the transition (Pavlínek and Pickles 2000, p. 161).

3.5. TRANSITION PROBLEMS OF CEE STATES

The accession requirements set by the EU for new entrants have been set since the expansion of the Union began moving to the East. The firmness in the determined requirements can considered as both positive as well as negative. The positive results of the strictness in the determination of these requirements can be seen by the established standard of environmental, economic and political systems of the member states. However, the same can be considered the negative aspect as it has created great problems for the interested states (Watson 1999).

The requirements of the EU are of a number of kinds and, as reviewed earlier, of such general nature that it is difficult to ascertain knowledge for an interested country of the exact expectations it would have to fulfil. This problem is only solved when the state officially shows interests in the EU and the Union provides detailed guidelines for the country regarding what is expected of it.

3.5.i. FINANCIAL SHORTCOMINGS

The environmental requirements of the EU accession criteria are known to be problematic for the new members, as they require considerable sums for investment on

- The debate then reaches the matter of the problems states in Central and Eastern Europe faced during their transition of economies to be able to access the EU.

- These problems are categorised and discussed separately.

determined policies that ensure improvement in the environment of the country. It is often pondered by scholars what available options can be used by the "pre-accession" countries to fulfil these requirements of the EU without banking on unwanted resources and loans as great investments are required in certain areas including air pollution, waste management and water quality (Botcheva 2001). This kind of financial needs make the governments of the interested states demand longer periods of time for fulfilment of projects that would need great monetary investments. Audits are done on international basis and estimates are acquired as to the expenses that would result from a particular project. Also, governments may request financial assistance from funds that the EU has established for this purpose. However, not every state can be allotted the fund. Hence, the new entrants are the members that are usually most against the expansion of EU any further as it may result in lesser financial assistance from the Union.

3.5.ii. UNCERTAIN ENVIRONMENT

After the fall of the communist governments in the region, though older problems of environmental degradation were halted, a number of other problems arose in the CEE countries in the wake of the movement to join the EU. One of these problems was the uncertainty in the environment that suddenly emerged once foreign companies began to arrive after the communist fall (Neweskeri 2003, p. 21). These companies came to take advantage of the situation and use the cheap labour these countries provided as well as to enjoy the fruits of the futile legislation and weak law enforcement these countries had. Due to the uncertainty in the region's environment, it was convenient for these companies to continue production suitably disregarding the exploitation they were committing to the environment as bribery to concerned officials

became common in matters of waste management and labour rights. As these investors abused

the opportunities industrial accidents and pollution increased (Simpson 2002, p. 6).

3.5.iii. ENVIRONMENTAL JURIDIFICATION

In the past, iron-fist laws have been employed in matters of environment, especially the

EU mandatory regulations 3322/88 and 549/91 in wake of the global promise to end production

of Chlorofluorocarbons (CFCs) to save the ozone layer (Watson 1999, p. 1133). Despite the fact

that this mandatory law-enforcement made it possible for the goal to be achieved, experts'

criticism on limitations of such law-making is quite overwhelming in the literature. Such

legislative actions make the subjected institutes and countries comply using scarce resources of

the society and are under strict monitoring forced to meet the determined requirements with

severely high costs (Stewart 2001, p. 31). This approach of the command and control manner is

not the appropriate choice of action for legislative bodies, especially of the stature the EU holds.

Environmental juridification with command and control approach has severe and permanently

harmful effects on environmental improvement activities in a society. When laws upon laws are

made with changing objectives, the purpose of environmental legislation suffocates under the

weight (Orts 1995, p. 1241). The strength of this approach depends on the honesty and talents of

the people involved in the regulation as it is known that policies are often developed without

comprehensive estimation of the costs they would bore (Orts 1995). People involved in

regulation can abuse their powers conveniently causing much harm whereas on the other hand

they may not use their powers (De Prez 2001, p. 148; Ogus and Abbott 2002, p. 291). Corruption

is also a possibility in this manner (Fredricksson and Svensson 2003, p. 1384). The extent to

which these problems have been found in CEE states is dangerous, especially in light of the fact

that law enforcement and monitoring history in these societies is very discouraging (Klarer, McNicholas and Knaus (eds.) 2001, p. 94). These countries have had weak governments in recent past who have been unable to completely eradicate the problems discussed above, which has resulted in severe problems for them to comply with the demanding mandatory requirements of EU for environmental legislation and management (Neweskeri 2003).

3.6. TRANSITION OF POLAND

As reviewed earlier, the policies used by the communist regime in the region did not in fact improve the condition of the environment due to its consistent priority of production rather than a balanced economy. After the fall of the communist government, the country's policies were shaped to move towards sustainable management of environment, including policies that influenced this effect both directly and indirectly working through the civil and social circles as well as through the political and economic paradigms (Warner 1999).

Being a political government, the new regime after the socialist era began dialogues with political rivals in the country on the subject of environmental policy-making. These conferences led to the establishment of many positive initiatives, one of which was the access of people to information in the country. These initiatives also brought about the approval of such legislation that focused on pollution of the air and water and took waste management as the next target (Warner 1999).

Prudence is apparent in the policies Poland established and also in their strategic utilisation. As mentioned earlier in the review, the Polish government categorised their environmental policies according to the country's priorities and set time limits for each set goal. There were three sets of priorities in environmental policy-making. First, the short-term priorities

were focused on actions that were required to eradicate imminent danger to human life. The time set for this set of initiatives would end in 1995. The second set was focused on bringing Poland closer to EU accession requirements and the goal set for this achievement was 2000. The last set was based on long-term strategies of sustainable environmental management by improving management of the energy sector, its supply chains and water resources leading to protection and conservation of the natural habitats of the country (National Environmental Policy of Poland 1991).

After compiling a long list of industries and production facilities that were the top waste and pollution creators, the government began strict monitoring of these facilities and their chemical emissions in the air as well as waste management strategies. Those who exceeded their assigned limit of waste production were fined considerably and as the charged fees were sufficiently high to matter to the costs of waste production, a major number of these production facilities began to seek ideas that would lessen the waste production (Goralczyk 2003, p. 66; Warner 1999).

Due to the economic reformation in the country, the pricing policy of energy had to be changed and prices rose. Many of the industries in the country moved on to acquiring quality assurance certifications to demonstrate they were in line with the compliance required of them by their government and the EU laws. These affiliations mainly related to demonstration of compliance to environmental laws and also to Life Cycle Costing (LCC) (Goralczyk and Kulkzycka 2005, p. 120), which is the sum total of costs estimated for designing, developing, producing, operating, maintaining, supporting, and disposing, including salvage value for any production facility of considerable size (Barringer and Weber 1996). These actions were mainly adopted by the energy industry as well as the mining industry. This shift resulted in considerable

- Note how most of the references used in this section pertain to late 1990s and early 2000s. This is so because works published during the transition period of Poland were used with emphasis. This exercise provided a more *real-time* touch to description. However, it should be remembered that later works were also studied to avoid any later development in the literature.

decrease of waste production in the country, which has been one of the major contributors in waste production in Poland for several decades. Within the two years between 1999 and 2001, the mining industry decreased waste production from 49.4 Metric tonnes to 43.7 Metric tonnes (Central Statistical Office 2002).

Similarly, other realistic decisions were made, including abandonment of Poland's nuclear programme in 1990, which was causing great concern to the environmentalists, following the step taken by Germany the previous year (Mauser 1994, p. 17). Waste import from other countries was completely banned who were taking advantage of the weak laws in the CEE states after the fall of the communist regime (OECD 1995). Natural conservation was also tended by the policy-makers of the time who created the Nature Conservation Act in 1991 with subsequent laws in following years in order to conserve the forests and wildlife (Anon 2001, p. 3).

Poland initiated itself and took part in many programmes with neighbouring countries to fulfil the accession requirements of the EU, and the EU appreciated the efforts Poland showed proving its sincerity to the regional goals of the Union. The country faced a number of problems during its transition including the disappointingly high inflation and unemployment rates, which resulted in slackening of the government towards the accession efforts as its attention was required toward these domestic problems (Warner 1999). It was found in a research (Bolan 1995, p. 32) that the opinions regarding preferring environment over employment had reduced considerably, yet it must be said that the difference was shown by two surveys that were done with a year apart, which creates the possibility that sampling differences may have caused this change in opinions (Warner 1999).

Poland has succeeded considerably in effectively implementing policies it had designed for air pollution and emissions of chemicals in the atmosphere. The pollution of air has been carefully monitored throughout this period of time and has been recorded to be reducing consistently, a positive trend towards environmental improvement. In 1996, the dust emitted by electricity generating facilities was over 50% lesser than it was in 1989 while Sulphur Dioxide (SO_2) lowered to 30% for the same period (Ratajczyk 1996).

3.7. TRANSITION OF THE CZECH REPUBLIC

Earnhart and Lizal (2006) believe the Czech Republic is an ideal country from among the CEE states for a study of environmental and economic improvement and struggle. It is known that in the recent past, the country had avid air pollution, which became a great matter of public concern (World Bank 1992). After the fall of the socialist government, the country moved towards the solution of this problem and the new government established effective policies and strategies that ultimately led to considerably lowered emissions of pollutants in the atmosphere during the last decade of the 20th century (The Czech Environment Ministry 1998).

As the country had been under the rule of the most repressive communist government in the region (Madeo 1994, p. 947), the legacies of the region's greatest pollution and a devastated environment were left for the new regime (General Agreement on Trade and Services (GATS Agreement) 1998, p. 328). It can be said that almost all of the pollution in the country's atmosphere has occurred due to high level of energy consumption and lack of sufficient consideration for proper disposal of industrial waste. As stated earlier, in these countries, the communist government was focused on increasing national production to the detriment of environment. The need for energy led to the building of many electric power generating plants

- This section aims to describe the transition process through which the Czech Republic went and achieved success similar to Poland's.

which ran on sulphuric fuels emitting large amounts of Sulphur- and Nitrogen-Oxides in air (Madeo 1994). The Clean Air Act of 1991 was the first firm step toward legislative description of the social and economic entities' responsibilities with regard to air pollution and emission. Compared to other similar legislations in surrounding countries, this Act contains two special features. First, it included every known air pollutant and set fines for abuse of the atmosphere with any of them; second, it gave the government no right to distinguish among the entities found guilty with regard to punishment (Clean Air Act 1991). Similarly, the Waste Act of the same year and the Water Act of 1992 were designed to strengthen the environmental policies of the country with regard to waste management and controlling pollution in water resources of the country.

After the communist government, the change in the increasing trend of pollution in the Czech Republic was realised with the help of the automatic decline of economy as massive changes were made in the economic structure of the country. This restructuring included remodelling the economy from centrally controlled to being market based and revitalisation of environmental legislation. As industries slowed down, the need for energy decreased by 6% (Ministry of Environment 1996, p. 60). The Clean Air Act resulted in the remarkable decrease in solid waste production of the Czech Energy Works Company (Černá, Tošovská and Cetkovský 1995, p. 387). Industries also strived to control their waste production and chemical emissions in the atmosphere due to the strict legislation and enforcement of the law. Waste production was reduced to just 3% of the production of the communist period in the cement industry with help of innovative production procedures (HM 1996, p. 6). The estimated production of solid waste for 1999 was down to only 7% of its value from 1993, whereas Sulphur Dioxide emission was estimated for the same period to be 30%, organic substances down to 78% and Nitrogen Oxides

level was estimated to be 57% of its previously recorded value (Maxa, Dlouhý and Řeháček 1998, p. 14).

The reasons for consistently decreasing SO_2 emissions are mainly related to the decrease in overall production in the country itself, as discussed above. The decrease in production led to lessened use of energy and its demand. Yet another important reason leading to the constant decrease in SO_2 was the shift of industries from Sulphur based fuels to other resources (Pavlík 1996, p. 62). The reason for this shift, as reviewed earlier, was the enforcement of the newly acquired environmental laws of the country. Strictness in the enforcement of laws led industries to realise the importance of "healthy" production and making changes accordingly. Also, the share of GDP of the country used for environmental regulations and development increased from less than 1% in 1989 to over 2.5% in 1996, but it reduced the next year to a little lower than the last recorded value (Ministry of Environment 1999, p. 79).

The Czech Energy Works Company completely desulphurised itself by the end of 1998, which was a great accomplishment as this company produced over three-fourths of the country's electricity (Baroch 1998, p. 3; Čápová 1999, p. 4). Though the Clean Air Act resulted in this considerable accomplishment but it did not consider smaller emitting sources or the mobile sources of chemical emissions, which are known to be a considerable source of air pollution, especially in urban areas as automobiles are in greater number and contribute heavily to chemical air emission (Seják 1994, p. 38).

3.8. SUMMARY

The review provided in this chapter gives a detailed account of the transition process the countries of the CEE have had to go through in wake of the increasing demands of the European

integration. The organisation of the European states in the East is found to be economically as well as politically motivated looking towards a united Europe but the environmental aspects of the policies as purpose of the union were established with the formation of the Amsterdam Treaty (Carius, Homever, Bar and Kraemer 2000, p. 138). These focused goals and purposes of the EU have led to the formation of such iron-fist regulations and directives that have been found to be hard to follow for many of the strategically prospective states of the continent.

Poland, which was one of the most polluted countries of the continent, answered the call of the EU for continental unification and sought membership of the EU due to the many advantages it would bring to the economy of the country and the people. When faced with the many demands of the accession to the EU, Poland reacted with apt strategies and with categorised and very well-planned goals set for a variety of lengths of time depending on the country's priorities and the accession demands of the EU. These efforts of the country made it possible for Poland to negotiate with EU on equal grounding. In fact, as discussed in the literature reviewed, EU respected the efforts made by Poland with regard to meeting its accession requirements and financial aid was also given to Poland from specialised Union funds for meeting expensive environmental requirements of the Union. Various programmes were initiated by the Polish government and remarkable achievements were made by the country despite the many problems that arose in the way.

- The summary of the chapter states the key points of the review in cogent and contextual paragraphs.

Much like Poland, the Czech Republic also belonged to the Communist empire of Europe in the mid-20th century and remained so until it fell in 1989. The European integration was a great opportunity of the time and the Czech Republic also sought to be a part of it. It presented a great chance for countries of Europe like the Czech Republic to work intensively on the environmental alteration the region required and take help for it.

Though the beginning of this era produced more than one opinion in the Czech Republic about the path that should be chosen, which led to many political disputes, the overall progress was smooth from the beginning of the transition process. With time, the country gained much stronger approach towards industries that had been the culprit for air, water and solid waste production in the past. With policies charging such facilities for polluting the environment, especially the air the government made them turn over a new leaf and seek improved ways of production that would not harm the environment as before. These processes led to the present state of the country which is greatly free from pollution and chemical emissions in the atmosphere keep on reducing despite the return of the economic activities.

Both Poland and the Czech Republic have shown great diligence achieving the membership of the EU in 2004 and continue to work for the environmental goals they have set for the 21st century.

CHAPTER 04

METHODOLOGY

"What makes science morally, and rationally, compelling is that it is a public enterprise."

Silbey (2003)

4.1. INTRODUCTION

Listing the components of a valid research study, Buckley *et al*. (1975) state that they include addressing a distinguishable problem, providing authentic evidence from literature, forming coherent reasoning, drawing relevant conclusions, providing practical implications to its field, and doing all this with the help of a suitable methodology that keeps in consideration the specific needs of the study. Therefore, it can be argued that the importance of selecting the appropriate methodology for a research study is one of the fundaments of a valid market research (Amaratunga *et al*. 2002). In this regard, it becomes important to be able to define research methodology, which in the words of Remenyi *et al*. (1998) is the structure on which a research study's methods are founded.

The foundation of the methodology of this research is based on the research objectives of this study. These objectives are focused on the acquisition of knowledge regarding how two of the most-polluted countries have emerged in the European region with some of the most effective policies for air pollution reduction in a considerably short span of time. To achieve this

- The chapter of Methodology describes the methodological details and parameters of the research and its report. This chapter informs the reader what methods were used in the study and explains how they were appropriate. It is usually given **15-20% of the total count**, and usually contains the following sections:
  - o Introduction
  - o Research Philosophy
  - o Research Approach
  - o Primary Research (if included)
  - o Presentation Methods
  - o Analysis Techniques
  - o Research Limitations
  - o Ethical Considerations
  - o Summary

- Introduction section tells the reader what to expect in the chapter in terms of content and begins to develop the background of the concept of Methodology providing definitions developed by scholars.

aim, the researcher is to study the secondary data available on the accessible media (Print and the Internet) in order to collect sufficient data with regard to relating economic and institutional factors of the Polish and the Czech Republic's policies with indicators of air quality, effect of market forces on policy effectiveness in these countries, the influence of EU demands and standards for membership on these countries' effective policy making and implementation with regard to pollution control, and presenting an industry within the studied countries as an epitome of effective pollution policy implementation.

4.2. RESEARCH PHILOSOPHY

Methodology designing for market or social research is a complex process, which begins with the selection of the philosophy the study is to follow. However, as this phase of method selection is embedded in the nature of the study, a researcher has in fact to identify the right philosophy among those already identified by scholars. Saunders *et al*. (2003) provide a comprehensive presentation of the orthodox methods employed in research in the form of layers of an onion, named *the Process Onion* (figure V).

It should be noted, at this point, that though *the Process Onion* was designed purposefully for business studies, its elements are capable of being used for other fields of research with harmony as well. The first layer of the Onion depicts approved philosophies established by scholars.
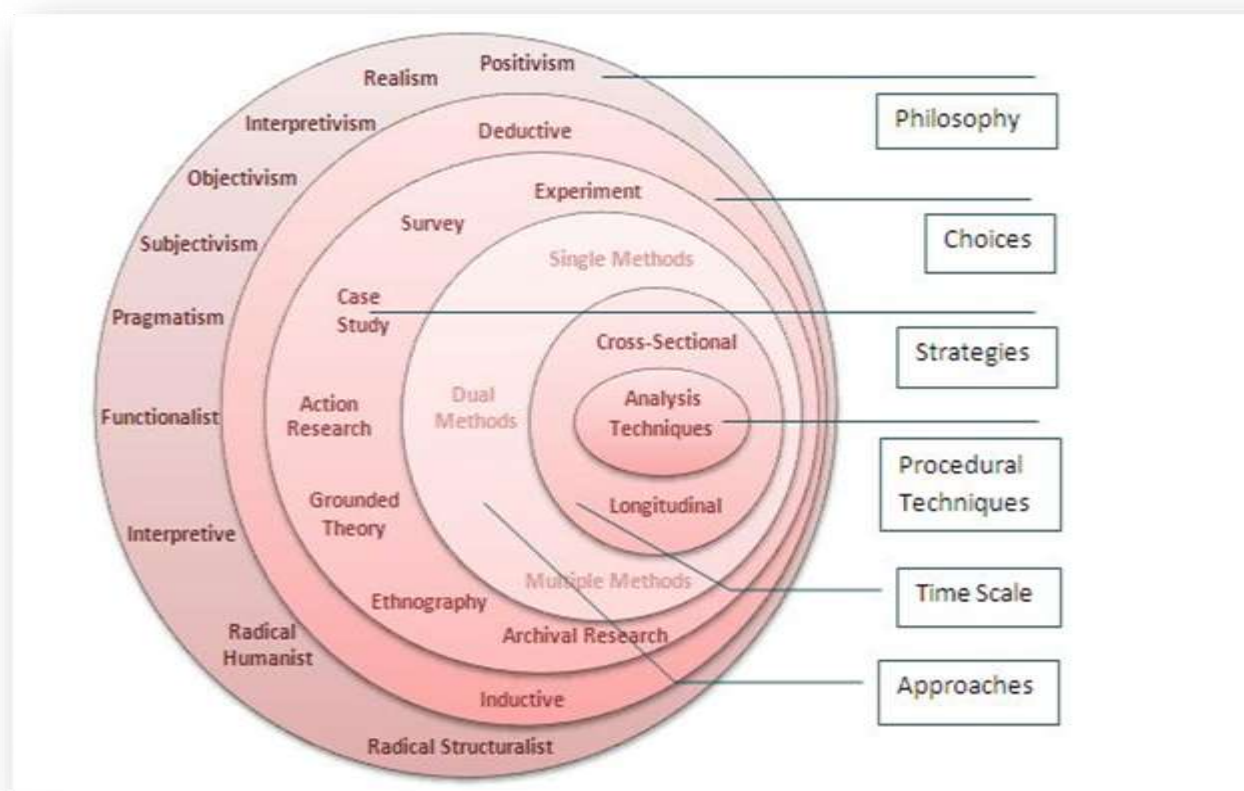
Figure V: *The Process Onion* (Source: Saunders *et al*. 2003)

It is known that two quite differentiating schools of thought have developed with regard to methodology development in academic research. Despite the fact that a number of philosophies exist for research, as shown in figure V, the two belonging to these schools of thought have taken precedence over others in significance and practical application. It can be said that Positivism and Phenomenology have become the two most commonly adopted philosophies in academic research.

Objectivity and Subjectivity are the two opposite ends of vantage points in research. Whereas Positivism demonstrates the objectivity of the world insisting there exists a generalisable perspective about the object of study which can be utilised by observers of varying

- Discussing research philosophy, available choices are discussed with details of which choice was the best of the present study and how it was deemed the best.

viewpoints to assess the object similarly, Phenomenology suggest that on the contrary, it is the eye of the beholder that beauty exists, so to say (Chung and Alagaratnam 2001). As a matter of course, this division of opinions with regard to perspective of researchers has also established the various assumptions regarding nature of science itself (Morgan and Smircich 1980). As a result, these differentiating ideas have been utilised by Burrell and Morgan (1979) in forming a set of four paradigms of research perspective, comprising of functional, radical-structuralist, interpretative, and radical-humanist (Chung and Alagaratnam 2001). Each of these paradigms has formulated their own sets of metaphors, which are employed in research for studying organisations of varying nature and size (Morgan 1980).

Phenomenology is considered part of the constructive sciences, and its theory suggests employment of inductive research techniques and qualitative methods for data collection and analysis to interpret the studied phenomenon usually disregarding the underlying generalisable laws and explaining them in the study's context (Remenyi *et al*. 1998; Easterby-Smith 1991; Amaratunga *et al*. 2002). Contrary to phenomenology, Positivism takes a rather stern position in using research studies for the purpose of explaining fundamental laws and test theories, employing deductive methods paired with quantitative approaches for collecting mathematical data through pre-determined data collection techniques and instruments (Easterby-Smith 1991; Remenyi *et al*. 1998; Silverman 1998; Amaratunga *et al*. 2002).

The identification of one suitable philosophy is not possible for this study, as though the study is fundamentally related to phenomenology (in the sense that we study the implementation of the policies with regard to air pollution control in the studied countries as a phenomenon), we require statistical quantitative analysis for one of the objectives of this study (Research Question 1). Hence a mixed methodology is the solution, as has been employed before in social research in

- Detailed arguments are presented to provide reliable evidence from literature, each in a separate paragraph, following rules of essay-writing.

a similar situation (Gilbert and Mulkay 1984). Scholars approve of employing mixed methods in a research where the need arises (Becker 1977; Bryman 2008; Gilbert and Mulkay 1984; Greene *et al*. 1989; Niglas 2004).

4.3. MIXED APPROACH

The next choice is of the paradigms in methodology. Usually, a study follows the inductive paradigm or the deductive paradigm. Using these paradigms a research study in enabled to provide new knowledge, which works as a contributing factor to the particular field of study (Hyde 2000).

It has been criticised that researchers often adhere to employing deductive techniques, testing established theories and assumptions while such an important purpose of research as establishing theory is often ignored (Deshpande 1983; Bonoma 1985; Wells 1993; Hyde 2000).

As stated in the previous section, this study employs both inductive and deductive techniques due to the mixed nature of the study objectives. The study is majorly inductive, as the fundamental idea is to study the phenomenon of effective policy making and implementation with regard to control of air pollution in the two studied countries. The study provides explanation of the phenomenon by critically analysing the development of these policies and the way they are practised in Poland and the Czech Republic. However, the deductive aspect is added in order to quantitatively study the relationship between economic and social policies implemented in the studied countries, and the progress in pollution control. The need for quantitative assessment of this research objective emerges from the realisation that studying this relationship requires assessment of mathematical data while the effect of one variable on the other can be identified through statistical analysis techniques, such as multiple linear regression.

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- **Formatting Tip:** When multiple works are cited in support of one argument, they are either listed alphabetically or chronologically. Remember to select either way and use it throughout the report.

- In lieu of research paradigm selection, Inductive and Deductive approaches are discussed in considerable detail in this section with emphasis on explaining how a combination of quantitative and qualitative methods was the best choice for this study.

4.4. RESEARCH RESOURCES

The study is archival in nature and the process of data collection took the researcher to a number of resources both in the print as well as through the Internet. As cited in this document, a number of relevant publications were studied for the purpose of accumulating knowledge and information for this study. The researcher employed knowledge from books, scholarly periodicals, and Internet databases and web sources during review of literature as well as for collection of data.

The books and periodicals that were used required frequent visits to libraries. The researcher took several weeks for the collection of the necessary references and data for analysis. As said earlier, the other resource for data collection and research in this study apart from the print sources is the Internet. There are specialised databases present on the Internet that have helped the researcher immensely in collecting significant knowledge with regard to every important step of this study. Especially, the collection of data for analysis was done mostly from the web sources, such as government web sites and other organisational web sites that provided the researcher the much-needed information and data about the established policies of Poland and the Czech Republic with regard to reducing air pollution, and the impact these policies have had and the extent to which they have succeeded.

4.5. ETHICAL CONSIDERATIONS

In archival researches, the burden of ethical considerations is fairly significant, as a number of discrediting elements may emerge once the research has been completed and any discrepancy is found in its ethical considerations.

- Research resources used for the study and compilation of the report are highlighted in this section. As secondary research methods were used in the sample study, sources of literature and data are discussed here.

In this regard, the researcher took considerable care in determining the appropriate considerations throughout the process wherein this study was conducted and completed. The primary most focus has been on the matter of referencing sources accurately. In a research study, it is critically important for referencing the right ideas to the right sources, and it becomes all the more important in archival research where the whole project stands on the data and knowledge collected from secondary sources. Referencing was, thus, done along with the conducting as well as the documentation processes of this study so that no mistake would be made in the referencing of sources.

The researcher also established a standard for purpose of citing authentic and reliable works in the study. It is usually considered sufficient to cite works that have been published from a reliable source, such as a scholarly journal. However, the standard used by the researcher was to use only such works in this study that have been cited before in other scholarly works. This not only ensured that those ideas were included in the works that have been cross-checked by peers of the authors but also provided the researcher to understand these concepts from two perspectives of the author and the peer, giving the researcher greater comprehension.

4.6. PRESENTATION & ANALYSIS

Another important aspect of a research report is the manner in which data findings are presented. Due to the fact that the data collected in this study is secondary in nature and demonstrates the changes the two studied countries have seen with regard to air pollution control in the past two decades, especially the later one, the presentation style used is graphical. The researcher shall provide findings with the help of graphs and table so that convenient reading can

be provided for the reader ensuring at the same time the inclusion of all the important information about any presented part of the collected data.

The analysis techniques used for the data need a bit more explanation. As has been explained earlier, the data collected is mostly of graphical nature and shall be presented so. However, the data collected with regard to the first research question of the study is mathematical in nature. It will also be presented in graphical form but its analysis is done using statistical methods, namely Multiple Regression. The rest of the analysis, done for the other data, shall be done in an elaborative manner, discussing the changes that have been observed in the two studied countries with regard to control of air pollution in light of the policies and figures found during the research.

4.7. SUMMARY

The chapter gives a detailed view on the methods involved in this study and the background of the methodology employed. The significance of choosing the appropriate methodology for a research study is crucially important for the achievement of the study goals. Hence, the researcher considered and weighed the arguments of the scholars attesting to both inductive and the deductive schools of thought as well as that of the scholars who encourage mixed methods. The argument that mixed methods should be applied, giving greater importance to the natural requirements of a particular research study instead of obstinately clinging to any one philosophy was found cogent and, hence, adopted for this study as the nature of research demanded.

- Details are provided for how the used data and results of statistical analyses conducted for the study are presented in the next chapter.

The explanation done in this chapter separately discusses all the important aspects of the methods employed in this study along with a detailed and thorough account of the documentation procedures used in the reporting of this study.

The next chapter provides presentation of the findings of this study as well as the analysis of the collected data.

CHAPTER 05

RESULTS & ANALYSIS

5.1. INTRODUCTION

The fast development and increasing demand for electricity during Communist development of Eastern Europe created speeding deterioration in air quality. As air pollution was regarded as the most urgent environmental problem in Eastern Europe, the Czech Republic and Poland were chosen in this research as examples of coping with this problem in order to expose the difficulties and success of the general approach to environmental management in energy sector /position in the electricity industry that is shared by both countries.

The required methods for the purpose of acquiring results of the research questions of this study were introduced with the statement of the research questions in the first chapter as well as discussed in the third chapter of this document. In this chapter, the results are provided along with their detailed analysis.

The results of this study are a combination of statistical and descriptive findings, each of which are presented in this chapter separately. This presentation of the findings has been done in tabular and diagrammatic style for convenience of the audience.

The presentation has also been done with the consideration that each research question of the study is addressed separately. For this purpose, the researcher has also followed the sequence

with which the research questions were listed in the first chapter of this document. Hence, at first the research question requiring statistical calculations has been discussed below, after which the other two research questions are analysed in description.

5.2. POLICY, ECONOMIC FACTORS, & AIR POLLUTION

For the first research question, the needed data represented only the input of structural reforms by using the index of structural reforms constructed on 44 underlying variables as presented in the working paper of Campos and Horváth (2009) instead of the indexes commonly used in the relevant literature (EBRD, WB, IMF, the UN *etc*.). The rationale behind this unusual selection of data form was to obtain well-defined reference – the measurement of points instead of the indexes that provide lack of information which helps variable in making reform indicators, or how scores in these indexes are generated (EBRD Air Pollution Index- ESI (Environmental Sustainability Index), for example).

In addition, majority of indexes provide data for only a few isolated years, leaving a researcher only with a limited opportunity for research studies (Andonova, Mansfield and Milner 2007). As stated by both authors, the methodology to create the "real" indexes was originally developed by Eduardo Lora (1997). Campos and Horváth (2009) argue that a major advantage of these indexes is that they provide "quality-weight" data that isolate *input indicators* from *outcome indicators* of reforms, unlike the indexes that receive high weight-based predominately on outcomes. Compared to the existing indexes, the indexes based on the "Lora transformation" generate less "optimistic assessment" of the reform process in all post-communist states as well. In short, all three variables: internal, external liberalisation and privatisation data in Lora

- Result of each research question can be described separately under different headings. As 5.2 describes details of results acquired against research question 1.

- Explanation/Rationale pertinent to data selection and variables provide a clear picture of research process and further clarify provided results.

Transformation cover EBRD, WB, OECD index, and other transition reports and data from both the Czech and Polish statistical offices and Ministries (Appendices C and D).

Canonical correlation was used to study the relationship between sustainability factors and key air quality pressure indicators in this research. The idea behind this combination was to firmly and comprehensively determine the direct effect of such policy decisions of the studied countries' governments that had been considered effective role-players in the environmental revival of the Czech Republic and Poland. Canonical correlation has been used repeatedly in economics to measure the overall relationship between two sets of variables. In this study, three sets of variables were devised and are as follows:

SET 01: This set comprises of three variables. These variables are placed in a dependent position as they are the ones this study seeks to evaluate in light of the independent variables. The variables included in this set are part of the emissions from the energy sector, which has been found to be the greatest emissions-producing sector in both the studied countries (Kabala 1993; Carter 1985; Pavlínek 1995; Tickle and Vavroušek 1998). In light of these cited works, and others, it was determined that Carbon dioxide, Sulphur dioxide, and Nitrogen Oxides comprised the air emission more than any other substance recorded to be emitted in air. Hence, the variables were set upon:

1. Emissions of the Carbon dioxide (CO_2),
2. Emissions of the Sulphur dioxide (SO_2) , and
3. Emissions of the Nitrogen oxides (NO_x).

- In-depth explanation of set of research variables is done, in case the study involves sophisticated and complex data which requires extensive explanation to understand the entire research process. (See headings: set 01, set 02 and set 03 onpg. 47-48)

SET 02: Set 02 comprises of independent variables. It was one of the two sets of independent variables of this study. The set was based on the policies of the studied countries that led to environmental restructure in the region. The purpose of measuring these elements of regulatory structure in the studied countries was to establish the direct correlation between the rates with which these regulatory elements and the reduction of air pollution resulting from the shift of the two countries towards improved environmental conditions. These elements were selected considering the effect of investments made by the governments of the studied countries on environmental development. In this regard, the following determinants were selected:

1. GDP Growth
2. Rising GDP per capita, and
3. Environmental expenditures to GDP

SET 03: The third set of variables is also an independent one and is the last set of variables used in this study. This set comprises of economic factors that played their role in the environmental restructuring of Poland and the Czech Republic. This aspect of the first research question also relates to the second research question, considering the nature of elements considered in the two. The factors selected for this set of variables are:

1. Internal liberalisation,
2. External liberalisation, and
3. Privatisation

5.2.i. CANONICAL CORRELATION

In the canonical correlation analysis, the researcher conducted two examinations where the first one was to study the association between variables of set 01 and set 02, while the second one to study the association between set 01 and set 03. However, since data was to be used for two countries, adjustments were found for country variations by including the variable *country* to both sets 01 and 02.

ASSOCIATION BETWEEN SET 01 & SET 02:

Dimensions	Canonical Correlation	Squared Canonical Correlation	Approx. F Value	Num DF	Den DF	Pr > F
1	0.998271	0.996545	92.56	12	24.103	<.0001
2	0.966332	0.933798	28.66	6	20	<.0001
3	0.914352	0.836039	28.04	2	11	<.0001

Table I: Tests of Canonical Dimensions (Sets 01 and 02)

Tests of dimensionality for the canonical correlation analysis, as shown in Table I, indicate that the three canonical dimensions are statistically significant at 0.05. The three dimensions had a canonical correlation above 0.91 between the two sets of variables. The canonical analysis yields a score called canonical-R, which can be interpreted as the simple correlation between the weighted sums of scores from each set of variables, computed with the weights pertaining to the first canonical root. The third canonical-R is fairly substantial (0.91) and highly significant (p<0.0001), suggesting that it is likely that the true correlation between the two sets of constructs is very high. This high value of the true correlation determined with the

- Pointing to the comparisons and contrast between the acquired data leads to newer and unexpected revelations.

- In case an image or a matrix has been added, the content below it must clearly explain what the data/image points to.

- **Formatting Tip:** Quantitative data, when in matrix form, should be aligned in the centre of each cell. It adds to the ease of reviewing the data.

help of table I is directly proportional to the extent of effect of variables in set 2 over those in set 1. Thus, the greater the values of the third canonical-R and greater the significance found, the greater effective relationship is found between regulatory structure of the studied countries and the improvement of air quality during the studied years.

Further, the second canonical-R indicates that the air-quality pressure canonical variate and the regulatory structure canonical variate share about 84 percent of the variance, which means that 84% of the variability in air pollution pressure could be explained by regulatory structure after adjusting for country variation.

It should be realised that this high level of interrelatedness found between the two sets of variables shows that highly significant effects are found on the movement toward improved air quality in Poland and the Czech Republic by governmental policies and restructured regulations with regard to environmental sustainability (Andrzejewski and Baranowski 1993).

ASSOCIATION BETWEEN SET 01 & SET 02:

Dimensions	Canonical Correlation	Squared Canonical Correlation	Approx. F Value	Num DF	Den DF	Pr > F
1	0.999141	0.998282	83.05	12	29.395	<.0001
2	0.960530	0.922618	14.22	6	24	<.0001
3	0.614350	0.377426	3.94	2	13	0.0459

Table II: Tests of Canonical Dimensions (Sets 01 and 03)

Tests of dimensionality for the canonical correlation analysis, as shown in table II, indicate that the three canonical dimensions are statistically significant at 0.05. The three

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dimensions had a canonical correlation above 0.61 between the two sets of variables. The third canonical-R is acceptable (0.61) but marginally significant (p=0.0459), suggesting that it is likely that the true correlation between the two sets of constructs is significant.

When compared with the results drawn from the analysis between variables of sets 01 and 03, it becomes clear that the level of canonical significance between correlation of air quality of the studied countries and regulatory restructure is considerably greater than that between air quality in the two countries and economic factors studied in this research.

Furthermore, from the results the second canonical-R indicates the air-quality pressure canonical variate and the structure of the economy canonical variate share about 38 percent of the variance, which means that 38% of the variability in air pollution pressure could be explained by restructure of the economyafter adjusting for country variation. It also implies that the quality of air in the two studied countries has improved significantly lower under the influence of economic changes when compared with the improvement due to effect of regulatory restructuring of the two countries focused on air quality improvement.

5.2.ii. PRINCIPLE OF COMPONENTS ANALYSIS

Now, after providing evidence that canonical association between sustainability factors and key air-quality pressure indicators exists, the researcher will try to examine its direction by using the principle of components analysis.

The principle component analysis indicates that the 1st component for set 01 explains about 94.7% of its variability (see Table III). Thus, the first factor from set 01 was chosen to represent the set.

- Ideally, the chapter of result is expected to convey just the results, may it be in the form of quantitative or qualitative data, and not analysis. However, in case of this study "results and analyses" are being presented together within a single chapter; thus, detailed analysis (as pointed) can be included.

1.

even at a quick review.

EIGENVALUES OF THE CORRELATION MATRIX: TOTAL = 3 AVERAGE = 1				
COMPONENT	EIGENVALUE	DIFFERENCE	PROPORTION	CUMULATIVE
1	2.84166643	2.70777741	0.9472	0.9472
2	0.13388902	0.10944447	0.0446	0.9919
3	0.02444455		0.0081	1.0000

Table III: Principle Component Results for Set 01

Similarly, for set 02, the principle component analysis indicates that the 1st and the 2nd components of the set explain about 91.3% of its variability (see Table IV). Thus, the first two factors were chosen to represent set 02.

EIGENVALUES OF THE CORRELATION MATRIX: TOTAL = 3 AVERAGE = 1				
COMPONENT	EIGENVALUE	DIFFERENCE	PROPORTION	CUMULATIVE
1	1.69488031	0.64966052	0.5650	0.5650
2	1.04521979	0.78531988	0.3484	0.9134
3	0.25989991		0.0866	1.0000

Table IV: Principle Component Results for Set 02

The principle component analysis indicates that the 1st and the 2nd components for set 03 explain about 92.3% of its variability (see Table V). Thus we choose the first two factors to represent set 03.

EIGENVALUES OF THE CORRELATION MATRIX: TOTAL = 3 AVERAGE = 1				
COMPONENT	EIGENVALUE	DIFFERENCE	PROPORTION	CUMULATIVE
1	1.81916129	0.86858805	0.6064	0.6064
2	0.95057324	0.72030776	0.3169	0.9232
3	0.23026548		0.0768	1.0000

Table V: Principle Component Results for Set 03

5.2.iii. THE REGRESSION MODEL

Considering the regression model for this analyse, the following equation emerges:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5$$

where Y denotes the 1st factor of set 01, X_1 and X_2 denotes the 1st and 2nd factors of set 02,

X_3 and X_4 denotes the 1st and 2nd factors of set 03 and X_5 denotes country.

- Every time a unique set of equation is used, it is crucial to denote what the elements of equation refer to.

REGRESSION ANALYSIS RESULTS:

The results of regression analysis on the components of sets 01, 02, and 03 are significant

(F=32.21, p<0.0001 see Table VI), and indicate that sets 02 and 03 can explain about 91.23% of

the variability of set 01 (see Table VII).

- It is good to remind readers of any petty detail that helps them in understanding the fact mentioned.

ANALYSIS OF VARIANCE					
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PR > F
MODEL	5	14.55711	2.91142	32.21	<.0001
ERROR	10	0.90381	0.09038		
CORRECTED TOTAL	15	15.46092			

Table VI: ANOVA Table for Regression Analysis

VARIABLE	VALUE
ot MSE	0.30064
Dependent Mean	-0.04452
Coeff Var	-675.30172
R-Square	0.9415
Adj R-Sq	0.9123

Table VII: Goodness of Fit for Regression Analysis

The values collected with the help of tables VI and VII indicate high effect of the used independent variables from both assigned sets over the set of dependent variables. The finding that the regulatory restructure and economic factors studied effectively produced over 91% variability in air quality of both Poland and the Czech Republic as a whole through remarkable reduction of air emissions is of great importance of this study and supports the hypothesis of the study that both these countries have worked hard to improve their political and economic structures in order to reduce pollution in the region.

PARAMETER ESTIMATES					
VARIABLE	DF	PARAMETER ESTIMATE	STANDARD ERROR	T VALUE	PR > |T|
INTERCEPT	1	2.40360	1.88247	1.28	0.2305
x1	1	-2.30525	0.47628	-4.84	0.0007
x2	1	0.96226	0.26339	3.65	0.0044
x3	1	1.28122	2.59332	0.49	0.6319
x4	1	1.57135	6.04589	0.26	0.8002
x5	1	-4.26032	1.24196	-3.43	0.0064

Table VIII: Parameter Estimates for Regression Analysis

The parameter estimation done in table VIII indicates that set 02 is negatively associated with set 01 while set 03 is positively associated with set 01. Further, it shows that differentials are significant between the selected two countries in the relation between their sustainability factors and key air-quality pressure indicators (t=-3.43, p=0.0064). We also note that set 02 influences set 01 more significantly than set 03 (p=0007, 0.0044 versus p=0.6319, 0.8002).

Theoretically speaking, nature of the cumulative relationships found among the three sets of variables is complex and various. Following the approach of separately considering the relationships between sets 01-02 and 01-03, it is found that in terms of parameter estimation, the relationship between air quality improvement and regulatory restructure of the two countries is direct while the relationship between air quality improvement and economic restructure has a negative estimated value.

- A coherent analyses not just points out the positive but the negative points in the data, particularly while making comparisons.

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5.3. THE CHOICE OF MARKET ECONOMY

The matter of choice of a suitable economic system after the collapse of Communism in Eastern Europe is highly significant for this study due to the reason that governmental policies in Poland and the Czech Republic began to move towards reduction of effects of the Communist industrial era. This natural opposition to the Communist systems led the region to the opportunity of Eastern and Western integration. The industrialisation of the Communist era was undoubtedly one of the major most reasons in the development of high air emissions of substances, such as SO_2, CO_2 and NO_x (Pavlínek 1998; Tickle and Vavroušek 1998; Phinnemore 1999; Pavlínek and Pickles 2004; Weresa 2004). The new governments were laden with the weight of numerous misdoings of the previous ruling system, yet effective policy-making and regulatory enforcement were the tools in which they found solutions (CENIA 2008; Andonova 2004).

Eradicating the environmental effects of the industrial empire of Communism was one of the leading priorities of the new governments in ECC, the reason being the infrastructures of these countries were crumbling and political credibility could only be achieved with a bold display of strict policies and their implementation (Andonova 2004; Botcheva 2001; Andonova 2007). There were a number of reasons, including the desire to become part of the EU, which initiated the transition thought in the mind of the region's leadership (Fabry and Zeghni 2006). Politicians had realised by this stage that outstanding efforts would be needed to solve the issue of deteriorating ecosystems of the region.

The prospects of the determined change were considerable, but the path to reach this destination was needed to be the smoothest. CEE governments needed money to back their ideas

- Introductory rationale added to the section enables readers to comprehend researcher's point of view but it should be concise. As lengthy rationales are not supposed to be a part of presenting "results" and conducting "analysis".
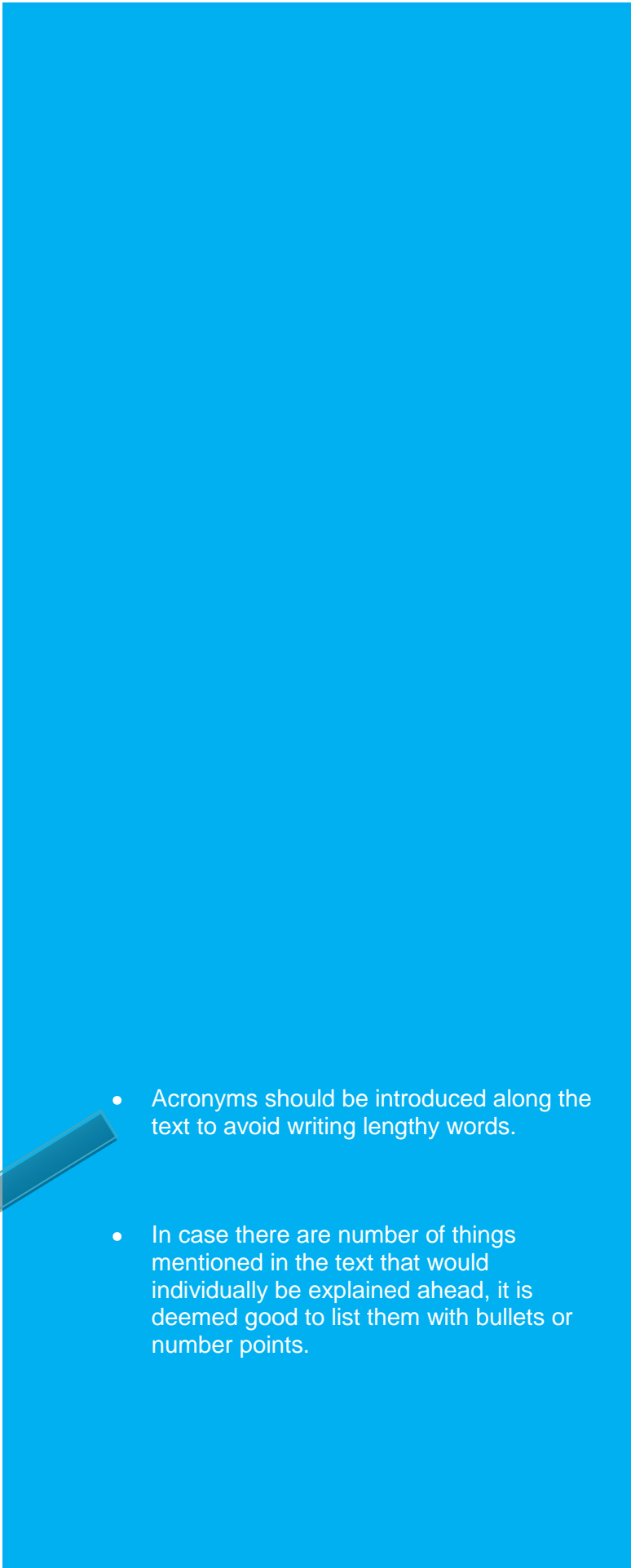
- Additional explanation with regard to elucidating research questions should be avoided in chapter of results and analysis.

for environmental recovery, which could only be done under the influence of an economic system which ensured constant flow of investment from foreign states, and to achieve this end, CEE governments required an attractive business environment with opportunities for investors (Demekas, Horváth, Ribakova and Wu 2007). Hence came the choice of market economy for the CEE states, including Poland and the Czech Republic (Fabry and Zeghni 2006).

In this regard, Poland and the Czech Republic, who were also influenced by their wish to join the EU, unlike some of the CEE states, were required to apply the conditions established by the EU, which included a set of instructions and standards related to establishment and maintenance of "an efficient market economy" which these states were required to meet before they could be given accession to the EU as well as afterwards as part of their membership responsibilities (Fabry and Zeghni 2006).

However, the process that led to this choice is long and many factors are discussed in literature that may be considered responsible for the decision over this choice, including the need of such a system arisen by the impact of restructured regulatory policies, definition of property rights, and efficient enforcement of law *etc*. (Andonova 2004). Such influence of these elements makes them critically important for research on the topic under consideration. Hence, they were included in the second research question of this study.

The researcher focused on the study of three core elements that would throw sufficient light on the response sought for the second research question of this study: ability to attract foreign investment (FI) after the fall of Communism, the actual foreign direct investment (FDI) inflow, and the fines the governments of the studied countries collected from their industrial sectors with the instigation of environmental policies in the post-Communist era. These factors

- Acronyms should be introduced along the text to avoid writing lengthy words.

- In case there are number of things mentioned in the text that would individually be explained ahead, it is deemed good to list them with bullets or number points.

give a comprehensive picture of the three important causes that would justify the selection of the open-market economy as the economic system in the studied countries (Borensztein, De Gregorio and Lee 1998; Charlier 1998).

5.3.i. ABILITY TO ATTRACT FDI:

It must be understood that with the influence of integration to the Western Europe, the CEE states also needed to improve the efforts towards a globalised economy, which meant surety of constant FDI inflow to remain competitive (Fabry and Zeghni 2006). The ability to attract FI is both a cause as well as an effect of Poland's, and the Czech Republic's, choice of the open-market economic system. It is a cause, as the political history of the region in the modern era shows democracy and secularism have brought about the openness of trade and convenience to business as important measures towards successful economy of a state under the umbrella of Capitalism (Pavlínek and Pickles 2000). The end of Communism left CEE states on the verge of making many major choices, as has been said previously. The established systems of the anti-Communist bloc in Europe were the greatest influence, naturally. Hence, CEE states, such as the Czech Republic and Poland identified to the need of a successful economic system that would be adaptable and bring them close to their successful neighbours, especially under the influence of the desire to join the EU. It may occur to some that the choice of this system was simply practice of following the established trend of the time, yet it must also be understood that Capitalism has already demonstrated success of some Western economies, and with the added advantage that this choice would help CEE states to relate to the rest of their region these weak countries were expected to follow democracy and Capitalism (Low 1999).

Poland and the Czech Republic are two of the few CEE states that were recorded to have the greatest potential for attracting FDI, according to World Bank. Similarly, studying for the World Bank, Valahu (2006) writes, discussing the investment advantages for foreign investors in this region of Europe:

> "For investors – particularly those in labour-intensive manufacturing sectors or back-office service sectors – this could be the perfect time to make a move. Consider this shortlist of competitive advantages: a huge, emerging market of 150 million people sitting on the doorstep of the EU; a driving desire to do what it takes to complete the transformation to market economies; access to seaports, rail and highway; a low-cost underemployed labour force with strong engineering skill sets and an eagerness to get back to work" (p. 1).

Considering an example of the automobile manufacturing industry, it is found that some countries in the region have high rate of annual increase in production of cars, such as the Czech Republic with a rate as steeping as 35% in 2005 (Valahu 2006). This region created ten times the number of jobs created by the automobile sectors of the UK and Germany put together during 2004 and 2006.

Scholars have already determined that countries focusing more than others on growing their economic strength attract greater FDI than the rest (Borensztein *et al*. 1998; Merlevede 2000; Carkovic and Levine 2002). It has already been found by research that Poland and the Czech Republic have kept focus on their growth, such as the GDP level, which rose through the transition period before and after EU accession, as shown in figures VI and VII.

- After referring to scholars' view for any piece of shared knowledge, it should then be discussed in context of the study, as well.
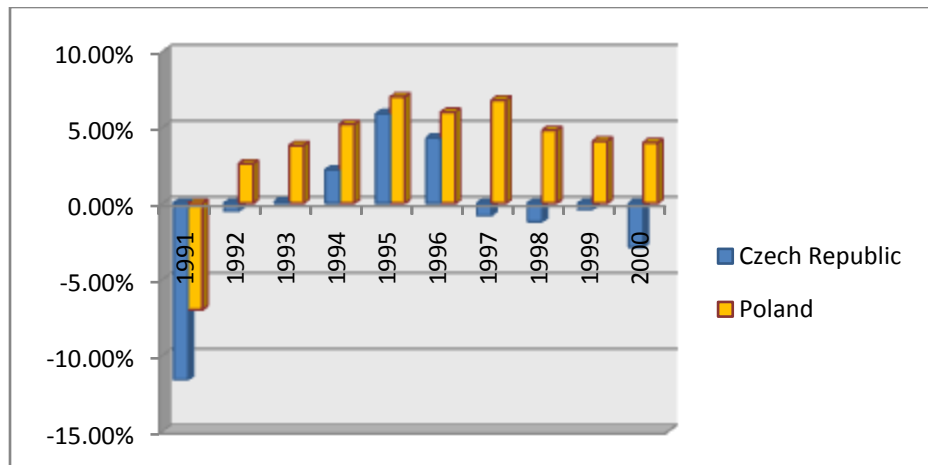
Figure VI: Nominal GDP Growth in the Czech Republic and Poland (Source: World Bank 2002)
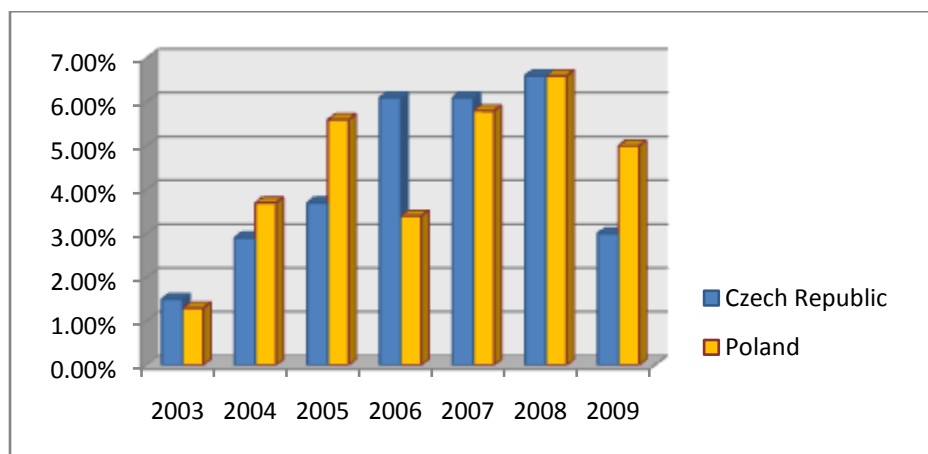

Figure VII: Real GDP Growth Rate of the Czech Republic and Poland (Source: indexmundi.com)[1]

This economic growth in the two countries resulted in the establishment of great opportunities for foreign investors, as discussed earlier. At the same time, the investment of this growth in the GDP has been used by both of the studied countries for improving air quality.

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[1]It should be noted that the GDP data presented in figure VI is nominal while the data from figure VII is real in nature.

- Footnotes don't always present trivial details. Therefore, when adding a footnote researcher must wisely decide as to what information is of little significance in relation to the study and content mentioned.

There are a number of important advantages that transition economies can acquire by increasing FDI attraction, including importing technology and best practices, developing trade internationally, and acquire modernisation with limited resources (Paas 2003; Fabry and Zeghni 2006; Demekas *et al*. 2007). While Communist left with increased opportunities for CEE states, it also created an institutional void (Grogan and Moers 2001). It is understood by many that in such circumstances institutions are created in order to lead the market and maintain inflow of FDI and that such institutions are necessary for the success of this cycle (Fabry and Zeghni 2006).

Research has already found that FDI has played a key role in the economic reformation of Poland (Sadowski 2000; Weresa 2000; Weresa 2004). For example, it has been noted that econometrically speaking, during the period of 1991 to 1995 that increase of one US Dollar resulted in the increase of GDP at the rate of US$ 1.14 (Bak and Kulawczuk 1996; Weresa 2004). Factors, such as the continued demonstration of efforts of transiting the economy to open-market, membership to OECD in 1996, and accession to NATO in 1999 helped the country build its integrity for FDI and increase its potential for FDI attraction.
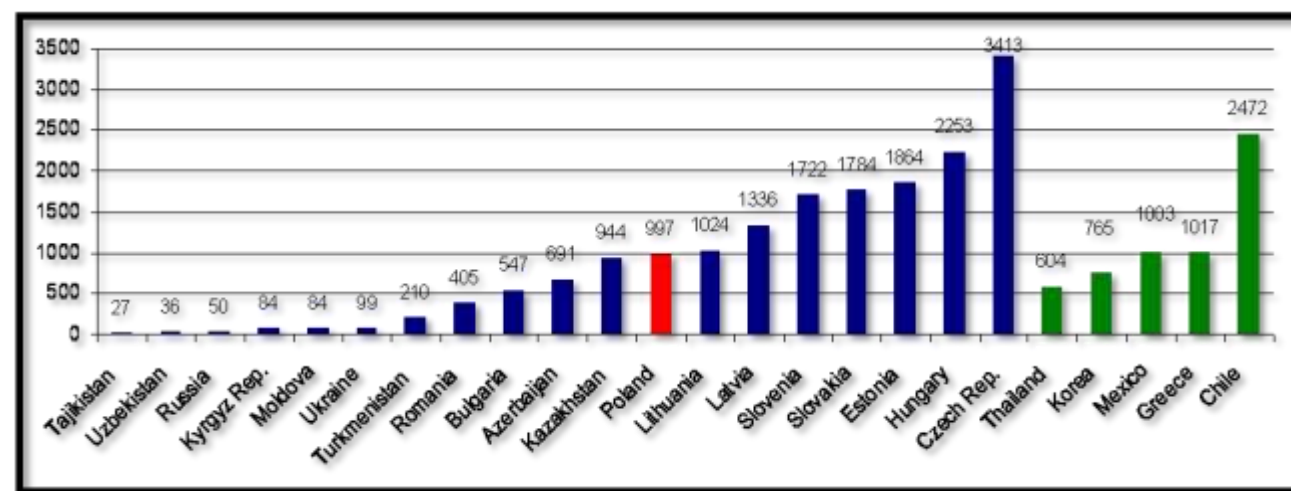

Figure VIII: The Ability to Attract FDI among Various Countries (Source: worldbank.org)

If a graph entails use of different colours for its bars/line then it should be denoted which colour presents what pattern or suggest what findings.

Figure VIII shows that among many countries of the European and Asian regions, the Czech Republic, one of the two countries studied in this research, holds greatest attraction for FDI, while the other subject of this study, Poland, is on the 11th position, according to the statistics provided by the *World Bank* web site.

5.3.ii. FDI IN POLAND & THE CZECH REPUBLIC

As has been discussed, the studied countries have tended to exploit their potential for FDI with considerable effectiveness. Poland used this potential to acquire smoother transition during the 1990s, yet at the turn of the century its GDP measuring purchasing power parity accounted for only a little over 35% of the EU members' average of the same (EUROSTAT 2001). Hence, the country was required to focus more on FDI in both directions, internal and external (Weresa 2004).

The factors studied at the end of the previous section in the chapter provide knowledge of the motivators for foreign investors with regard to Poland. It should be noted that by using these motivators, Poland had acquired the first position for FDI inflow in the CEE region by 1997 (Weresa 2004). Studying the period of 1990 to 2000, the researcher has come to realise, like Weresa (2004), that the period can be divided into two short eras of progress of the country's FDI: 1990 to 1994 and 1995 to 2000. It is also noted that the first part of this era encouraged FDI significantly but in the latter part, FDI accelerated considerably in the country's economy. Over the years in the first shorter era, many sectors of the country's industries attracted FDI inflow, including manufacturing sectors, finance sectors, whole-selling and retailing sectors, and the transportation, warehousing and communication sectors, and during the latter era of 1995 to 2000, the FDI inflow in these sectors has increased with stability (Weresa 2004).

- It is considered ethical responsibility to acknowledge any scholar's/writer's name if the researcher, too, has come up with anything that the scholars already suggested.

The most attractive sectors of the Polish economy have been the manufacturing ones, especially related to food and tobacco (). It was noted that though the manufacturing sectors of the country have grown during the studied era with consistent FDI inflow, their share in the inflow over time has decreased. This is highly suggestive of a positive trend in the FDI inflow economics of Poland, as it is similar to the investment systems established in the developed countries. Table IX shows the FDI structure of Polish economy with regard to FDI inflow, FDI outflow, Polish inward stocks, and Polish outward stocks, giving a comprehensive idea to the reader regarding the FDI aspects of Polish economy.

FDI	INFLOW	OUTFLOW	INWARD STOCK	OUTWARD STOCK
1990	88	9	109	95
1992	678	13	1370	176
1993	1715	18	2307	194
1994	1875	29	3789	223
1995	3659	42	7843	539
1996	4498	53	11463	735
1997	4908	45	16593	678
1998	6365	316	22479	841
1999	7270	31	26075	1365
2000	9341	17	34227	1025

Table IX: FI Stocks & Flows in Poland 1990-2000 (US$ in millions) (Source: Weresa 2004)

The strength of a study lies in presenting the contemporary and up-to-date findings; condition does not apply on peculiar situations where it is imperative to review chronological data.

Similar to the strategy of Poland, in general, the Czech Republic also utilised its potential for attracting FDI. During the period studied in this research the FDI inflow in the Czech

Republic increased near to 14 times each year and by 2001, over 18 percent of the country's GDP was resulting from FDI (Kippenberg 2005). The Czech Republic kept its focus on the inflow of technology sectors into its economy and created various opportunities for foreign investors during this period. However, what remains unanswered is the inability of the country to exploit its ability to attract FDI as completely as Poland and some other CEE states did, while it has already been established with the data provided in figure VIII that the Czech Republic was evaluated to have the greatest potential for attracting FDI. Nonetheless, by 1998, the government had established such attractive investment systems for foreign firms along with considerable incentives that brought about such strong figures as the GDP share mentioned by Kippenberg (2005). It should be realised that this amount of success is also extraordinary. However, roots of the causes of this success lie deep in the Czech History. The researcher discovered during the study of literature that FDI existed in the old Czechoslovakia even before 1989 (fall of Communism) in the Hotel industry in the form of construction projects, which were joint ventures of Socialist firms of the country and Capitalist firms from Western Europe (Tisuanen 1996; Zemplinérová and Benácek 1996;Pavlínek 1998). Pavlínek (1998) even considers this presence of joint ventures as a considerable cause of the Communist fall.
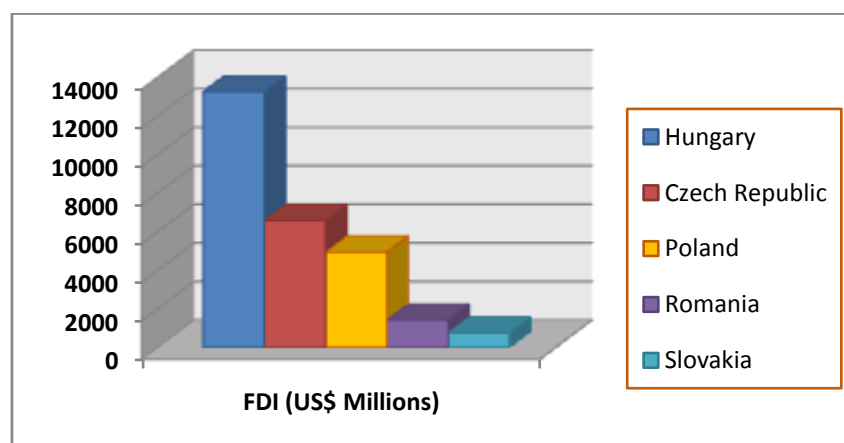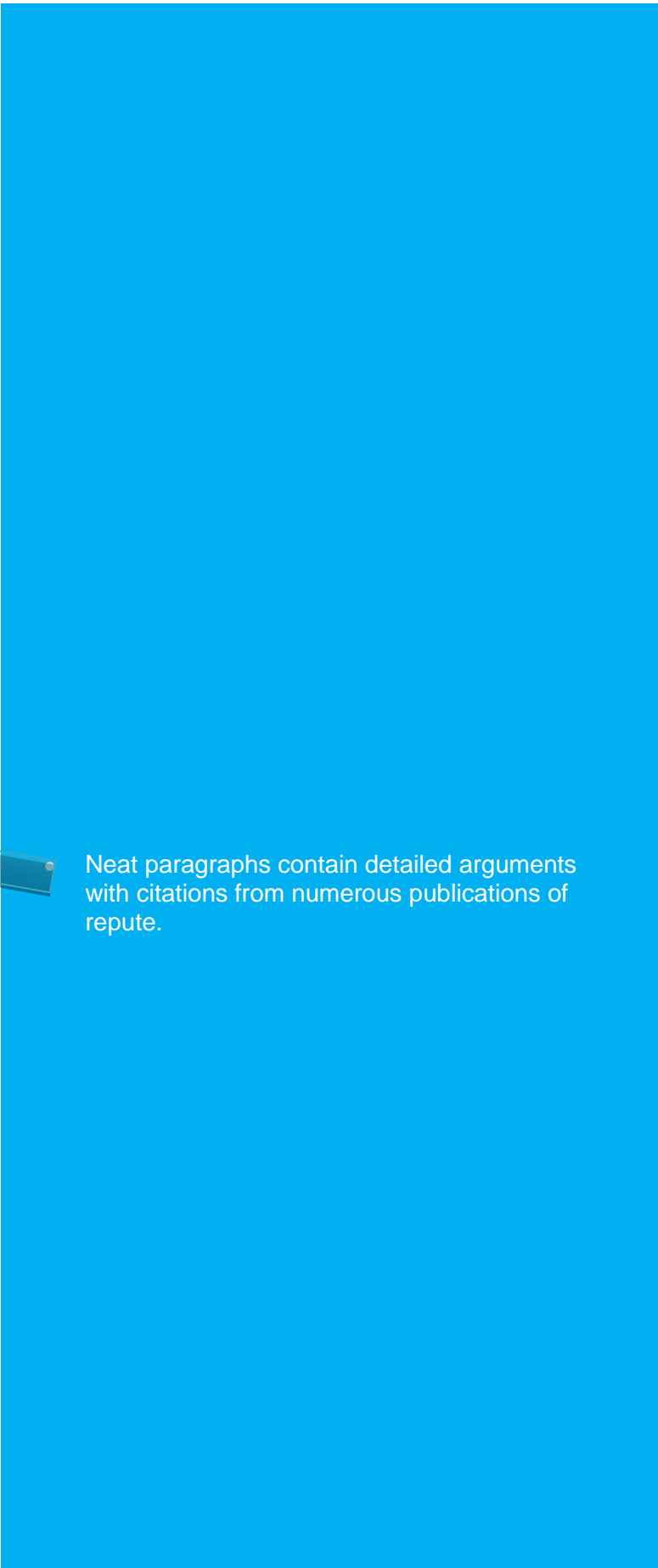

Figure IX: Top 5 FDI-Earning CEE States 1989-1996 (Source: Pavlínek 1998)

Among the determinants of the Czech Republic's high attractiveness to FDI, which still hold considerable unexploited potential, as stated earlier, are its location close to Western Europe on the geographic map, which makes it a favourable trade route to many European nations, giving the incentive of low transportation expenses; its convenient accessibility from the Eastern European states; and its market of low-cost labour with high level of expertise (Pavlínek 1998; Pavlínek and Pickles 2000).

Using these important intangible assets, the Czech Republic has advanced through the CEE states in earning FDI. The transition towards an open-market economy began with a steep decline in GDP (see figure VI), which altered in a couple of years, and near the end of the 20th century over 70 percent of the country's GDP was emerging from the private sectors (Done 1996). As understood by the *World Bank*'s ranking of the Czech Republic as the most-potent state in the CEE region for FDI, *The Economist* (1996) also rated the country as the most efficient risk for national investment while *Wall Street Journal* (1993) rated it the best choice for FDI.

Among the reasons due to which the Czech Republic has been unable to exploit its potential for FDI are the state's policies with regard to tax incentives. Fearing unwanted economic restructuring, the government refused to give foreign investors tax relaxation in return for their investments (Pavlínek 1998). This is a setback for FDI inflow in the Republic as virtually all the other countries of the region were providing tax-related incentives to foreign investors, which affected the decisions of some international investors, as has been admitted by the government (*Hospodárské noviny*1995). At the same time, the nullity of labour-cost benefits arising from the productivity resulting from low labour (Dinga and Munich 2010), particularly with the sensitivity the government has for emissions into the environment, makes the evaluation

Neat paragraphs contain detailed arguments with citations from numerous publications of repute.

whether the advantages of investment in the Czech Republic outweigh the disadvantages tricky (Klaus 1992).

Another very significant reason for this lack of exploitation of the present capabilities with regard to FDI is the usage of major FDIs in a very limited set of firms. For instance, about 60 percent of the total FDIs received during the first five years of the studied decade (Uhlír 1995; Pavlínek 1998). Hence, the positive impact on the country's overall economy was not as great as would be expected with the amount of inflow received.

5.3.iii. ENVIRONMENTAL MANAGEMENT & FINES

The third, and the last, determinant studied in this research with regard to the choice of open-market economy as most suitable, particularly for transition economies like the Czech Republic and Poland, is the management of environmental standards in a state by fining industries for emissions over a given limit. Most of the environmental funds spent by the governments for meeting expected requirements have been capitalised through the collection of penalties and taxes on polluting actors in the economy and remain the single important source of public financing for the environment (Andonova 2004). Therefore, environmental funds are a very important aspect of environmental policy and implementation in both transition economies.

After the fall of Communism, there was an inevitable need of redeeming the environmental conditions, which would be impossible without considerably high costs (CENIA 2008). As highlighted by Weresa (2004), this is an important reason for initiating the transition to open-market economy, as FDI inflow generates a continued source of income for the host country.

- Description is provided in this section of how the studied states used policy-making as a crucial tool to contain environmental pollution.

The problem of need for environmental investment revolves around the much discussed paradoxical and confusing problem of globalisation and environmental effects (Low 1992; Fredriksson 1999; Copeland and Taylor 2004; Andonova 2006). While there are a number of arguments included on both sides of the debate, the essence is the fear of establishing deteriorating environmental conditions under the influence of a globalised market which would presumably encourage investors to choose such countries that have relaxed laws regarding environmental accountability and standards of production. This fear of such encouragement arises from the assumption that firms would want to avoid costs and host countries would like to attract greater investors, they would lower their environmental standards. On the other hand of the debate, it is argued that globalised economy would actually increase the probability of improved environmental conditions by encouraging firms and governments to utilise more efficient and sustainable resources (Andonova 2006).

However, countries like Poland and the Czech Republic do not intend to succumb to such pressures of investors, which are in fact real (Kippenberg 2005). According to many authors (Pavlínek and Pickles 2000), marketisation and democratisation initiated efforts to redo environmental legislation from passsive to active. New legislative environment allowed the coordination of environmental and economic policies as can be observed in both states. The Czech Republic and Poland acquired better, more efficient enforcement and incentive mechanisms that were missing in the Soviet-style centrally-planned economy.

In short, both countries emerged from the transition period as veritable economic juggernauts that continue to outperform many of their neighbours and the global economic indices as well.

The reason for choosing market economy is embedded on a number of levels of pressures for transition economies in the CEE region. The factors involved, including those studied in this research are interrelated and interdependent. While one may cause the initiation of the other, it may also be related to the progress the new factor makes in future. Hence, it may be held that while there are certain reservations among circles of scholars and practitioners, it is virtually accepted by all that globalised economy is in the favour of world trade, and holds considerable opportunities for transition economies to grow, such as the Czech Republic and Poland, which have radically shifted towards the goal of acquiring open-market economies for better futures.

5.4. IMPACT OF EU ON TRANSITION

In the 1940s, the communist regimes in Central and Eastern Europe (CEE) began heavy efforts for industrialisation, which required paved the way for coal-fired power generation plants. Lignite coal, which was easily available, entered widespread use for power generation, but the high sulphur and ash content led to excessive emissions of sulphur dioxide and pollutant particles leading to large-scale environmental degradation in the region (US Department of Commerce 2000).

During the communist era, Czech Republic and Poland also used lignite coal for their power generation, resulting in inferior output and excessive environmental pollution. This coupled with inadequate government regulations to curb industrial emissions raised their environmental crisis and projected them as two of Europe's biggest polluters. Furthermore, the environment condition of the common border region of Poland, Czech Republic and Germany became so degraded that it came to be known as the "Black Triangle", where the sky would remain 'clogged' with smoke during winters (Lu 1995).

After the fall of communism in Europe, Poland, Czech Republic, and many other CEE countries sought accession into the European Union (EU) (Lavigne 1998). However, it was a daunting task for them, as they had to undergo crucial transformation before they could achieve eligibility for membership to the union.

To facilitate accession of applicants into the union, the European Council meeting in Copenhagen, in 1993, laid out the following criteria for membership (2):

1. <u>Political Criterion</u>: it required the guarantee of institutional stability, democracy, the rule of law, human rights and respect for and protection of minorities;

2. <u>Economic Criterion</u>: it demanded the presence of a market economy as well as the capacity to cope with competitive pressure and market forces within the union; and

3. <u>The Legislative Criterion</u>: it obliged adherence to the union's objectives as defined in the *acquis communautaire*, which consists of 35 chapters.

The union enjoys several powers over its members and it has the authority to exercise them to ensure proper enforcement of its regulations. Therefore, in order to they had little choice except to take concrete policy measures against industrial emissions and to enforce the need to preserve the natural environmental and improve air quality.

They needed to deal with complex administrative challenges and assemble concrete policy measures to show positive results considering that their past record was not going to improve their chances of entering the union. Simultaneously, they also needed to move away from the rigid system of centralized planning and control, which the communist regimes of the

past had integrated, into their system of governance. This caused a three-fold challenge for them: (1) to decentralize the structure of their administrative system and adapt to a different paradigm of governance; (2) to liberalize their economies and encourage free markets; and at the same time (3) to enforce environmental regulations with the diminished powers that remained with them (Toman 1994).

However, in May 2004, both Poland and Czech Republic succeeded in earning accession to the European Union. Poland and the Czech Republic are now recognised classic success stories of effective in economic and environmental transformation.

This section evaluates the phenomenal improvement in air quality of Poland and Czech Republic vis-à-vis two factors: (1) the importance of gaining accession to EU for both of these countries and (2) the impact of funding and incentives in ensuring compliance and enforcement of environmental regulations in those countries.

5.4.i. ACCESSION TO THE UNION

Medvec (2009) notes the CEE states, despite being NATO members, the Czech Republic, Hungary and Poland sought accession to the EU as their primary objective. Accession to the EU was an opportunity for CEE countries to boost regional cooperation, which they much needed in order to uplift their economies through after a failed experience with communism. However, western countries looked at the participation of post-communist countries in the EU with caution, which caused disappointment for them. Moreover, Medvec (2009) notes a number of other obstacles were also present, such as: disparity of wealth between EU member states and the CEE states, environmental damage, undeveloped infrastructure, the EU's free-movement-of-labour

- Conclusive remarks on the results are distributed into subcategories and discussed in detail, leading the report towards its climax.

policy, and EU concerns regarding the impact of expansion into East Central Europe on agricultural subsidies under EU's Common Agricultural Policy (CAP).

The Agenda 2000 report, produced by Commission of the European Communities (CEC) in 1997, Poland became the first CEE country to develop a national environmental policy setting out priorities and listing policy tools (Commission of the European Communities 1997). In 1995, it published a detailed review of policy implementation and set detailed targets for next five years. In November 1996, it passed an environmental protection law. Its Regional Environment Inspectorates granted permits at the regional level according to calculations of ambient air and water quality. The CEC recognised the effectiveness of Polish government in implementing air emission standards that provided useful basis for monitoring and management. Moreover, the report commends their introduction of air and water monitoring equipment and procedures in some of the worse polluted areas (Commission of the European Communities 1997).

In 1991, Poland carried out the first pilot project of emissions trading in Chorzow, after an agreement between the Minister of Environment and regional authorities. It permitted several polluters in one of the most contaminated neighbourhoods to comply jointly with individual emissions standards. Despite legal and political opposition, it helped reduce pollution and led to significant savings (Zylicz 1995).

The environmental transformation of Czech Republic A 2006 survey of 133 countries ranks Czech Republic in fourth place behind New Zealand, Sweden and Finland (Esty *et al*. 2006). Now compare this with the 1980s, when the air quality in the Czech Republic was one of the worst in Europe (Český Rozhlas 2004).

Air quality in the Czech Republic had improved since 1989 due to decreased use of brown coal (lignite) that large plants consumed for power generation. This helped them

effectively address problems with traffic and industrial emissions of sulphur dioxide and particulate matter. The current situation of Czech Republic is now comparable with other European countries.

5.4.ii. IMPACT OF FOREIGN FUNDING AND INCENTIVES

Poland's allocation for 1996 was ECU[2] 203 million, and for 1990-96 overall nearly ECU 1.4 billion. The main sectors are agriculture, restructuring and privatisation, finance and banking, infrastructure, social programmes and environment. For cross-border programmes, PHARE has committed a total of ECU 165million to support projects in transport, environment, utilities and economic development in border regions with Germany, Denmark, Sweden and Finland. Despite initial difficulties, PHARE managed to achieve overall contracting rate of 75%, thus, helping Poland in furthering reforms (Commission of the European Communities 1997).

Following the collapse of socialism and the following economic crunch, CEE countries showed genuine intent toward economic reforms for opening their markets to external countries. Hence, they had access to funding and investments from foreign nations that wanted to help them build a fully functional open market economy.

Earning the trust of their western partners was a key issue for them toward realizing their goal of accession to the EU, for which they needed foreign investments in building eco-friendly power plants and guidelines for policy integration from other European nations that had already implemented such measures at home.

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[2]The ECU (symbol: ₠) was replaced by the Euro (symbol: €) on January 1, 1999 at the rate ₠1= €1.