Dynamics of Cohort Replacement in the Transition Economies of Central and Eastern Europe

Master of Population Studies

University of Groningen
Faculty of Spatial Sciences
Demography Department

Julia H. Grigorova
j.grigorova@student.rug.nl

S2501376

Supervisor: Prof. Dr. Leo van Wissen

Population Research Centre

Groningen, The Netherlands

August 2014

Acknowledgements

This thesis marks the end of a worthwhile experience, which has enabled me to further develop myself, both academically and personally. During the course of one year, I acquired a range of technical and analytical skills, which serve as the fundamental framework behind conducting social research. I acquainted myself with many essential theories and methods in the field of Demography. For this, I would like to thank the entire staff of the Master of Population Studies programme at the University of Groningen. I would like to express special gratitude to Prof. Dr. Leo van Wissen for providing me with guidance throughout this research process. His valuable comments and suggestions have raised my awareness to think and reflect more critically when performing analyses of such nature. Kindly, I appreciate the time he has dedicated in doing so. His calm demeanour brought a sense of reassurance at times of difficulty. I would also like to thank the coordinator of the Master programme, Dr. Fanny Janssen, for brining enthusiasm into the academic environment and for motivating and supporting the students throughout the entire year. Her personable and sincere character has been a delight. Lastly, I would like to thank my classmates for making this academic experience a cherished one. The diversity of the class brought different and fresh perspectives from other parts of the world. The exchange of ideas and information on a variety of subjects has been enriching.

Abstract

The intent of this research is to determine what kind of relationship exists between economic progress and demographic development in the economic transition countries of Central and Eastern Europe and the role contextual factors play in mediating this relationship. To achieve this, the overall replacement ratio (ORR) method has been applied to determine the population replacement dynamics for a select group of countries, particularly by observing the changes in female cohort replacement. These changes are then compared with the respective changes in GDP per capita using a linear regression analysis. The main findings suggest that higher income leads to higher cohort replacement levels in time. The opposite holds for countries which have struggled to meet sufficient economic standards throughout the transition period from a centralised economy to a free market. Still, the economic-demographic relationship is diversified by the respective historical, regional, ethnic, linguistic and geopolitical circumstances or predispositions. Migration is a key component influencing the development of population replacement at a time when fertility remains low and mortality is continuously postponed into later ages. In addition, this study provides contextual information for better understanding the transpired economic and demographic processes within the post-communist region.

Keywords: Central and Eastern Europe, transition economies, post-communism, cohort replacement, economic and ethnic migration

Table of Contents

List of Tables

List of Figures

List of Abbreviations

CIS	Commonwealth of Independent States
D	Daughters' cohort
EEU	Eurasian Economic Union
EU	European Union
FSU	Former Soviet Union
GDP	Gross Domestic Product
GNI	Gross National Income
M	Mothers' cohort
NATO	North Atlantic Treaty Organisation
ORR	Overall Replacement Ratio
TFR	Total Fertility Rate
UN	United Nations
USSR	Union of Soviet Socialist Republics

1. Introduction

1989 is a revolutionary year in contemporary European and world history. It is an ending, a beginning and a symbol of change. It represents the fall of an ideological and physical divide which existed, for some, as long as a lifetime. Many personally remember the joyous celebrations on the streets of Eastern Europe following the collapse of communism and the Berlin Wall that symbolised and reinforced its existence. The call for change rapidly spread throughout the region, and with the dissolution of the Soviet Union in 1991, the departure from socialist-based principles and forms of governance was well underway. The change intended to eradicate decades of centralised power manifested through a planned economy and one-party rule to bring about democracy, privatisation and free-market capitalism. Although it sounded ideal and promising, the euphoria quickly subsided once the effects of transition were fully felt. The process did not prove to be so smooth, as all countries endured an economic collapse shortly after its inception. The immediate and sudden shift was something most had anticipated and hoped for, but were not prepared to handle. Variation in the pace and effectiveness of recovery has led to some divergence within the post-communist region today. This thesis outlines how respective demographic processes have transpired throughout the region with special focus on the transition period from communism to capitalism, considering the economic restructuring and the circumstances which accompanied this change. To analyse these demographic processes, specifically the study focuses on the status of cohort replacement in 14 countries of the former Eastern Bloc: Belarus, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Slovakia, Slovenia and Ukraine. This study also emphasises the important contextual factors which play a role in mediating the existing economic-demographic relationship in Central and Eastern Europe.

1.1 Background

The first few years which followed the collapse of the former regime were the most difficult. Reasonably, all countries encountered economic and social challenges while implementing and adjusting to the new structural changes, yet even then, disparities were noticed. In addition to recession and inflation, some countries were gripped with more severe cases of corruption and organised crime, unemployment, poverty and inequality, and a deteriorated standard of living. As a result of hardship and uncertainty, along with legalised changes in mobility and family policies, population trends began to take the forms of high out-migration and record-low fertility rates. Public health, life expectancy and mortality were also compromised, as some countries experienced alarming set-backs with durations varying anywhere from just a few years to almost two decades. Although population and fertility decline had begun in some countries prior to transition, pro-natalist policies and the migration curb managed to alter the extent of such processes. With the absence of previous government policies, given the social and economic turbulence at the time, the 1990s marked the beginning of a sharp population decline for those countries which were unable to reach an optimal level of transitioning. For the ones that made a faster and more efficient recovery, the picture looks quite different, where a convergence with Western Europe and a divergence from the rest of Eastern Europe has taken place.

More than two decades into transition, although progress has been made by all countries, the extent and effectiveness of reform varies throughout Eastern Europe. Most notable progress has been made by the Central European countries. In contrast, countries of the former Soviet Union, apart from the Baltic States and Russia, are encountering more difficulty in terms of economic efficiency. Development in the Balkan countries of South-Eastern Europe has been moderate, but rather limited. It is important to note that this discrepancy between the post-communist states has to do with differences in initial starting points among other reasons which will be discussed further in this paper.

In the past decade, the European Union (EU) has been expanding precisely by its accession of Eastern European countries in 2004, 2007 and 2013. Membership depends on a certain level of democratic and economic criteria, thus achievements by transition economies are not only recognised, but have become the gateway into the EU. Still, more is needed in order to reach the standard of living and economic stability of the West. The disparities between East and West can also be seen through the analysis of demographic behaviour and processes. Although fertility rates are below replacement all throughout Europe, with the exception of a few countries, mortality and migration figures are more distinct between East and West. On average, countries in Eastern Europe have higher death rates, higher cases of morbidity, lower life expectancies and an overall lower perceived and actual state of well-being than that of their Western counterparts. Migration from the region is incomparable with the exodus of the 1990s; however, it still moderately continues to persist in some places, especially with the young and highly skilled seeking better opportunities abroad, thus contributing to the effects of the brain drain and rapid ageing phenomena. On the other hand, due to their relative economic prosperity, some countries in the region have become receivers of migrants and have not suffered so much in comparison. Yet, migration has been determined by several other factors since the offset of transition, in addition to economic ones.

With the above demographic and economic indicators in perspective, this paper will attempt to illustrate the extent through which countries of the former centrally-planned economies in Central and Eastern Europe are able to achieve cohort replacement while having to undergo a shift to a free market economy. This will be done by using the proposed overall replacement ratio (ORR) developed by Wilson et al. (2010). As the ORR measures cohort replacement including all three components of fertility, mortality and migration, it is a useful tool in determining their combined effect on successive populations through time. However, during a time when fertility is below replacement all throughout Europe, with the exception of a few countries, and mortality continuously postponed into greater ages, migration continues to be a key factor in shaping the ORR in the earlier stages of a cohort's life course. Thus far, the ORR has largely been used to support the claim that migration has been able to compensate to a certain extent for low fertility rates in Europe, particularly Western Europe (see Wilson et al. 2010, 2011 & 2013). As this part of Europe continues to host considerable migration flows from other parts of the world, this is not so much the case in most of Eastern Europe where emigration is more likely to exceed immigration. Yet, differences within the region clearly exist leading to a more diversified and complex picture which requires and deserves closer examination. Indeed, some countries are taking in more migrants than they are sending out, but to a lesser extent than their Western counterparts.

As population dynamics always change and will continue to do so, new research is necessary to maintain information up to date. This paper will examine to what extent differences in demographic outcomes are linked to economic development exclusive to economies in transition. Understanding whether economic circumstances are in tandem with growing or declining populations in the region is one tool for governments to reflect on their performances and implement changes where necessary to achieve optimal social and economic circumstances in the future. As all countries experienced a period of social and economic vulnerability, what has enabled some to surpass the rest in terms of relative development? Is the degree of recovery also reflected in the respective demographic processes? What other factors, in addition to economic development, do these processes depend on? These are a few of the questions this research will attempt to answer.

The study is both exploratory and explanatory in nature, as it seeks to determine the ORR of a select group of countries having undergone a similar economic and political shift where such a method has not been previously applied, but will also use existing literature to explain the new findings. The frame of reference or paradigm that will be applied is the concept of structural functionalism. This paradigm, first introduced by Compte and Spencer, as explained by Babbie (2013), views a social entity in the form of an organism comprised of individual parts, each of which serves a function for the operation of the whole. In theory, society as a body is dependent on smaller interconnected parts which serve particular functions to contribute towards overall stability. Cases of dysfunction and inefficiency on a broader scale are a result of poor performances by certain smaller but crucial mechanisms. In this case, demographic processes, essentially driven by people who constitute the social body, are inevitably dependent on institutions or stakeholders managing the economy. Underperformance by these determinants, consequentially, leads to an imbalance on a variety of levels, one possibly being demographic.

1.2 Objective and Research Questions

This thesis attempts to illustrate the variation in cohort replacement among the Central and Eastern European countries, particularly the transition economies. This will be done by observing the size of different birth cohorts, subjecting them to the natural processes of fertility, mortality and migration, and outlining their development through time. Their developments are then compared with the respective changes in GDP per capita using a linear regression analysis. By doing so, more precisely, this study seeks to determine the type of link that exists between the degree of adequate economic transitioning and the way demographic processes have transpired in the respective countries. Furthermore, it will look at other important factors which affect this relationship.

Concisely, the focus of this study is on the following research questions:

1. What is the nature of the relationship between economic performance and cohort replacement in the transition economies of Central and Eastern Europe?

2. What kind of factors may lead to some diversity in the proposed relationship?

1.3 Thesis Structure

As indicated in the table of contents, this thesis is divided into five main chapters, each of which includes its own sections and in some cases sub-sections, respectively. This chapter (Chapter 1) serves as an introduction to this thesis, outlining the important aspects and purpose behind this research. The following chapter (Chapter 2) delves into the background information necessary to understand respective economic and demographic processes in the region of Central and Eastern Europe, as well as some of the theories behind them. It concludes by outlining the hypotheses which are pursued in this study. Chapter 3 explains the methodology and data used to answer the main research questions first presented in the previous section (1.2) of this chapter. Furthermore, Chapter 4 presents the results after the methodology has been applied and offers a closer analysis of the demographic processes and outcomes in the region. The final chapter (Chapter 5) serves as the conclusion and discussion of this thesis by providing a short summary and a more concrete argument of the findings. Lastly, a list of all sources which were used in this study is included under the title *References*.

2. Theoretical Framework and Background Information

2.1 The Challenge of Transition

"Hundreds of books have been written on the transition from capitalism to communism but not the other way [around]. There is no known recipe for unmaking an omelette." An extract from a 1990 issue of *The Economist* (as cited in Ickes, 2007, p. 1), this quote precisely explains the dilemma Eastern Bloc countries were faced with after the abrupt collapse of much of what they had known throughout the 20th century. The main goals were crystal clear – to privatise, deregulate prices and wages, liberalise trade and establish a legal system of democracy – yet no historical precedent laid the foundations on how to initiate and proceed with this extraordinary transformation (Ickes, 2007). Thus, more than two decades into transition, this process is what Ickes (2007) calls a social experiment which we are fortunate to bear witness to. Thus, respective governments were in the position to choose whether to pursue a radical reform (shock therapy) or introduce the necessary changes more gradually. The question of whether the aim should be an American-style mixed economy or a Western European-style welfare state of market socialism was also something to consider (Åslund, 2008). Despite the split in views, internationally, more economists and key financial organisations tended to favour the more drastic approach, as doing so, they believed, would minimise social and political costs in the long run – the worse, the better. Nonetheless, others emphasised that the opposite would prove more effective and were divided amongst themselves in regards to what should be the main goal in decentralisation (Åslund, 2008). About half of all countries opted for some form of shock therapy at some point, either through full implementation or in combination with gradualism, leading to a variation in extent from country to country (Havrylyshyn, 2007). Radical reform, however, was more sound and consistent in Central Europe and the Baltics which lead to the construction of more solid democracies from the get-go (Eikert, 1998). All of the former Soviet Union pursued gradual or limited reforms, with Russia and Kyrgyzstan abandoning shock therapy after some time (Havrylyshyn, 2007).

As early as ten years into transition, specialists began to analyse and draw comparisons between the two systems. To a certain extent, the general consensus was that, indeed, shock therapy yielded better results, as it turned out that those who pursued more drastic measures produced higher growth rates, lower inflation, more foreign investment, lower poverty rates and overall better institutions in the long run (Havrylyshyn, 2007). Radical reform also seemed to be a more suitable environment for liberal democracy by decreasing the opportunity for shady political transactions. On the other hand, gradual reform quite often gave way for small groups of wealthy oligarchs to capture the state and dominate economic decision-making (Havrylyshyn, 2007). However, lack of honesty and transparency, not speed necessarily, is what more or less determined the process of large-scale privatisation (Havrylyshyn, 2007) which up to today continues to hinder notable progress in South-Eastern Europe and the FSU.

Looking at the overall picture, it seems plausible to infer that shock therapy is the solution for economies initiating transition. However, some observers (Pusca, 2007; Popov, 2009) suggest that simply comparing radical versus gradual reform is not enough and actually undermines a whole range of possible factors which contribute to such divergence between economies. Popov (2009) argues that optimal policies are context-dependent and specific to each

stage of development. In addition, what works for one case, may not necessarily work for another, thus, reforms to stimulate growth should be different depending on prior circumstances and historical events. In fact, it is unreasonable to expect all countries to reach the same level of development when they did not start from the same point prior to transition. Furthermore, Pejovich (2006) offers a different perspective by emphasising the effects of culture on institutional restructuring, as some societies were inherently more open to capitalism to begin with. He points out that although egalitarianism and collectivism are common to Central and Eastern Europe (especially through their reaffirmation under the regime); the intensity of such cultural traits increases the farther East and South-East one travels. Even during the communist era, geographical proximity to the West determined its degree of influence despite the presence of a physical and ideological divide.

During the first decade of transition, Grzegorz Ekiert, today a professor of Government at Harvard University, explained the reasons why Central Europe at that time had already begun to distinguish itself from the rest of the pack. In his recent article for World Politics Review in 2012, he confirmed that the distance between Central Europe and the remaining former Eastern Bloc countries continues to grow today. He provides several reasons for this which largely link to differences in institutional changes and historical circumstances, a combination of the differing views mentioned earlier. It is no coincidence that the more successful countries fall within close proximity to the West allowing for a closer relationship both during the pre and post transition periods. They are also the countries that maintained closer ties with international organisations and the global economy in the past which through trade and communication enabled them to receive aid in the form of expertise and capital inflows (Ekiert, 1998). Prior to the regime change, these countries also had earlier attempts at liberalisation, economic reform and opposition, which contributed to a less stringent and more viable form of communism. This, in turn, helped sack the communist parties from power immediately following free elections and allowed for stronger and faster institutional changes. These changes were introduced sooner rather than later using more comprehensive and consistent measures. In conclusion, Ekiert explains that "[i]nstitutional engineering alone cannot create successful democracies and market economies, although institutional choices are critically important. In order to understand the East European experience we should pay more attention to legacies of the old regime and path-dependent dynamics […]" (Ekiert, 1998).

Regardless of radical or gradual reform, the transformation process, as envisioned, proved to be a challenging and costly one for the entire region, especially during its early stages. Shortly after its inception, all economies underwent a massive collapse with Gross Domestic Product (GDP) falling as much as 50 to 85 per cent of its pre-transition levels (Easterlin, 2008). The struggle to bring it back up took more than a decade, as by 1999 only two countries had surpassed their 1989 levels (Campos & Coricelli, 2002). There was a significant decline in the input and output of production during this period, and unemployment, which essentially did not exist under the prior regime, increased to double digits in some places (Easterlin, 2008). Wages fell and were at times late or incomplete, income inequality began to grow, and for the first time in collective memory, millions became victims to severe cases of poverty (Billingsley, 2008). As a consequence of social and economic turbulence, a short-term mortality crisis to varying degree was observed, along with the deterioration in subjective well-being. Furthermore, the conditions

led Eastern Europe to become the world's fastest depopulating region due to its substantial outflow migration and record-low fertility.

Understanding these consequences and the challenges that came with transitioning to a market economy cannot be fully grasped without a closer examination of what ordinary people had to make adjustments from. Indeed, the former communist system violated some of today's widely accepted notions of individual liberty and placed a constraint on access to power, yet it replaced them with other advantages which pure capitalism does not offer. The former regime is recognised for providing free access to education and universal healthcare along with government subsidies for food, child care, housing, transportation, energy, entertainment, etc. (Vassilev, 2005). The government's role in covering expenditures and providing social services was immense. Prices were regulated and kept low, but so were wages as a result of the socialist-based economy which guaranteed employment to all its citizens (Campos & Coricelli, 2002). The first decades under communism witnessed rapid growth and industrialisation, improvements in health and the standard of living, as well as greater gender equality, especially with the massive entrance of women into the labour force. However, the success in the regime's style of allocating resources and managing the industry could only go so far resulting in a depletion of its capacity. From about 1970 onwards, overall economic growth in the Eastern Bloc started to stagnate with some divergence beginning to take place (Campos & Coricelli, 2002). The reforms implemented under the Gorbachev administration during the final years of the Soviet Union were unable to reverse this halt in development. As a result, the weakened system gave way for the revolutions of 1989 which spread rapidly throughout the region with demands for decentralised democratic governments. Although there is no clear consensus as to what precisely led to the demise of the regime, a number of factors are said to have played a role, two of which, Easterly and Stanley (1995) explain, were the rigidities in economic structure and the impediments to productivity (as cited in Campos & Coricelli, 2002).

2.2 Demographics of Transition: Effects and Legacies of Former Policies

In the offset of the transition, Campos & Coricelli (2002) describe the countries of the former Eastern Bloc as industrialised with reasonably educated and healthy labour forces. They also had the optimism to pursue the necessary reforms. However, several of the structural and legal changes that took place during this period had a relatively negative effect on fertility, mortality and migration processes, although the extent varied from country to county. The following section serves to explain the abrupt demographic changes that began to take place during transition.

2.2.1   Effects on Fertility

Many studies have suggested different reasons behind the fertility decline in Eastern Europe. Such factors include the shift in cultural and behavioural values which are generally associated with the second demographic transition first taking hold of Western countries. Although the drop in birth rates is a result of a combination of several factors, this thesis will refer to two which are specifically linked to the regime change – the economic and social

uncertainty that accompanied the transition period and the termination of former pro-natalist policies.

The question whether the economic crisis of the 1990s was a cause for the decline in fertility is subject to debate, as several studies have attempted to refute this argument. However, prior literature and economic theory point to reasons why we should take this factor into account (Billingsley, 2008), as failing to consider it would undermine the overall understanding of fertility decline in Eastern Europe – an economically vulnerable region throughout the 1990s. Two theories in particular tie well with the economic mechanisms underlying fertility behaviour – Becker's new home economics and Caldwell's wealth flow theory. The theory of new home economics is one on a micro-economic level concerning choices within the family or household. Particularly, the decision whether to pursue having more children is either constrained or facilitated by household income. The benefits of each additional child are weighed against the costs (Billingsley, 2008). In addition, a study by Ranjan (as cited in Billingsley, 2008) on the former Eastern Bloc countries determined that postponement is also optimal during times of economic uncertainty due to the irreversibility of the decision. In connection with new home economics is Caldwell's wealth flow theory which explains the shift in the direction of wealth flows – from upward (children to parents) to downward (parents to children). As before, (surviving) children were seen as an asset and a contribution to the security and well-being of their parents, especially during old age, they are now seen as an economic and opportunity cost. Thus, limiting the number of children to a desirable level where overall parent-child needs are fully met is most optimal and fulfilling (Kaplan & Bock, 2001). Today, having many children is largely seen as a disadvantage, both socially and economically (Sobotka, 2002).

On the fertility decline in Central and Eastern Europe, Sobotka presents extensive and in-depth research to explain its complexity. Driven by a combination of different factors, the sharp fall in the total fertility rate caused Eastern Europe to shift from being Europe's highest fertility region to becoming its lowest one, all within a few years. Two of the factors he presents are clearly the economic constraints and uncertainty people were faced with during the 1990s. This, he points out, can be seen more in countries such as Bulgaria, Romania and the FSU. There, we see finalised fertility converging to one-child families as a result of the harsher economic and social circumstances experienced during transition. In Central Europe, the decline was caused more by postponement and Western-like patterns of behaviour and lifestyles (Sobotka, 2002). The new emerging trends were in sharp contrast with the previous norms of behaviour under communism. Throughout the regime, the offset of family life was largely characterised by early and almost universal childbearing with a strong attachment to two-child families (Sobotka, 2002). In addition, reproductive behaviour during this time was shaped by a culture of low contraceptive usage due to the lack of sex education, and limited choices and access to reliable contraceptives (Stloukal, 1999; Sobotka, 2002). The government's failure to develop adequate provisions for modern contraceptives due to high cost and negative regard made women more inclined to turn to induced abortions after a third conception (Stloukal, 1999). A widely liberal acceptance on abortion in the post-Stalinist period, one might suggest, was a contradiction to pro-natalist policies which promoted the expansion of the labour force and a strong military presence. Indeed, by the 1960s, governments took note of the declining birth rates and began to place restrictions on abortions making them more difficult to obtain. All governments introduced some form of pro-natalist policies by, for example, prolonging paid maternity leave, raising

family allowances, providing child benefits, assisting single mothers and those wishing to pursue higher education, and instituting low-cost or subsidised childcare (Stloukal, 1999; Sobotka, 2002; Zivec, 2013). Therefore, child-rearing was not costly and mothers had the time and resources to take care of their children (Sobotka, 2002). In an attempt to be seen at ease, but used as a mean to satisfy socio-economic planning, reproduction became a collective responsibility of the masses, explains Stloukal (1999). "In Bulgaria, Czechoslovakia, Hungary, and Romania, the governments came to the conclusion that people's right to control their own fertility had to be sacrificed in the drive to meet economic targets" (Stloukal, 1999, p. 26). One might regard this as a form of deceptive exploitation.

Life under the regime was more or less predetermined for individuals. The life course followed a unilateral path which was shaped by the top-down government policies which engulfed all spheres of society under the communist regime. This is what Sobotka (2002, p. 2) terms as *the socialist greenhouse* - "an artificial environment that [permeated] people's employment opportunities, educational choice and life transition." With a high degree of uniformity and familism, he adds, this very cocoon is what sheltered Eastern Europe from acquiring similar changes in fertility comparable to those of Western Europe throughout much of the 20th century. Once the greenhouse disintegrated, so did the system of egalitarian state support and social security that went along with it. The abandonment of pro-natalist policies, which helped maintain replacement fertility in the past, further contributed to the rapid decline in fertility in the following years. Bradatan & Firebaugh (2007) use Romania as a case study for this occurrence, suggesting that most research on this subject tends to omit the circumstance of switching from prior pro-natalist policies. Although they acknowledge the second demographic transition and the economic crisis, as well as the aftermath of demographic shock, they emphasise the importance of mentioning the role and legacy of former population policies in the region. They add, however, that fertility decline in Eastern Europe is not new, as without the incentives for childbirth in the last three decades of the regime it would have continued to decline further. Thus, the pro-natalist policies were an interruption to what had been inevitably meant to transpire. Besides positive incentives, some countries engaged in more rigid measures in their attempts to limit abortion. By the end of the 1960s, abortion in Bulgaria was exclusive to women with at least two children. The most severe case is that of Romania, where all abortions and contraceptives became legally restricted in 1966, with abortion permitted only under selective circumstances. In turn, Romania became the country with the highest fertility rate prior to 1989 and the one to experience the sharpest decline afterwards (Bradatan & Firebaugh 2007).

To better illustrate the importance and influence of pro-natalist policies, Zivec (2013) offers a comparison between neo-liberal and socialist fertility policies in the case of West and East Germany prior to the fall of the Belin Wall. Divided Germany is an excellent example of differing population policies, as both halves were inherently from the same root – people, culture, language and history. In 1975, both East and West Germany had close fertility rates, 1.54 and 1.45 respectively, where both had entered under-replacement within the past decade in similar manner (as cited in Zivec, 2013). Taking note of the sharp decline, both governments introduced several packages with incentives to stimulate childbirth around the same time. East Germany followed similar policies to those of its Eastern allies, generating a better response, with the total fertility rate (TFR) reaching 1.94 in 1980 (Zivec, 2013). Western Germany, on the other hand, implemented policies that were aimed at creating financial incentives and family-

friendly facilities using a less interventionist approach. The policies proved to be largely ineffective. Data from the German Federal Statistical Office presented in Zivec (2013) suggests that West German fertility remained constant while the one of its counterpart remained higher during the last 15 years of the regime, although its peak was short-lived. As expected, with the fall of communism and the Berlin Wall, East German fertility immediately took a toll reaching a record-low 0.77 in both 1993 and 1994 (as cited in Zivec, 2013). It was not until the late 2000s that both fertility rates were able to, more or less, merge together.

The graph on the following page (Figure 1) illustrates the TFR for the 14 selected countries in this study during the period 1970 to 2010. Prior to 1990, fertility throughout the region varied and fluctuated among countries. We see some countries already beginning to experience continuous decline since the 1970s while others some increase, primarily due to the effectiveness of respective fertility-related incentives and policies. The 1990s are characterised by convergence by all countries into a sharp downward trend which begins to slightly recover in the 2000s but is still quite distant from previous levels. The slight increase is a result of the effects of postponement and the tendency to have fewer children, both from economic circumstances and the shift in reproductive behaviour norms. Two aspects which affect the period TFR are the quantum (number of children at the completion of childbearing) and tempo (timing of childbirth) effects, which could change in the course of a given time period. These changes should be considered when observing the sharp decline and some of the recuperation that has taken place in recent years illustrated in Figure 1. This is due to the fact that, on average, the mean age of childbearing has increased and the number of children at the completion of the reproductive period has declined in comparison to previous generations. Billari et al. (2006, p. 1) explain that "[…] events such as leaving the parental home, forming a new union, getting married and becoming a parent are being experienced on average later in life than ever before. Postponement has been particularly important in understanding the fertility decline observed across Europe over the last few decades." Because of the overlooked aspects in the period TFR, Bongaarts & Feeney (1998) proposed a technique to measure the quantum-tempo effects appropriately – the tempo-adjusted total fertility rate. Since then, several other methods have been developed to account for these differences (Potančoková et al., 2008; Bongaarts & Sobotka, (2010).

2.2.2   Effects on Health and Mortality

"A key aspect of life and wellbeing in any society is that of population health (Safaei, 2012, p. 1). Immediately following the aftermath of regime disintegration emerged its negative implications on public health and mortality trends, largely as a result of institutional restructuring (privatisation and health care systems), transition-generated stress and behaviour (unemployment, income inequality, poverty, crime, violence, divorce, etc.), which in turn encouraged unhealthy life styles (tobacco and alcohol consumption, poor diet, etc.). The dramatic losses contributed to the emergence of depopulation throughout Eastern Europe (Popov, 2010). The region also saw an upsurge in infectious diseases, especially (even drug-resistant forms of) tuberculosis - a problem thought to have been settled in past years (Vassilev, 2005). Through observation of the mortality and life expectancy patterns that transpired since the offset of transition, currently the larger picture suggests variability between individual countries but

Figure 1: Total Fertility Rates for 14 Central and Eastern European Countries, 1970 - 2010
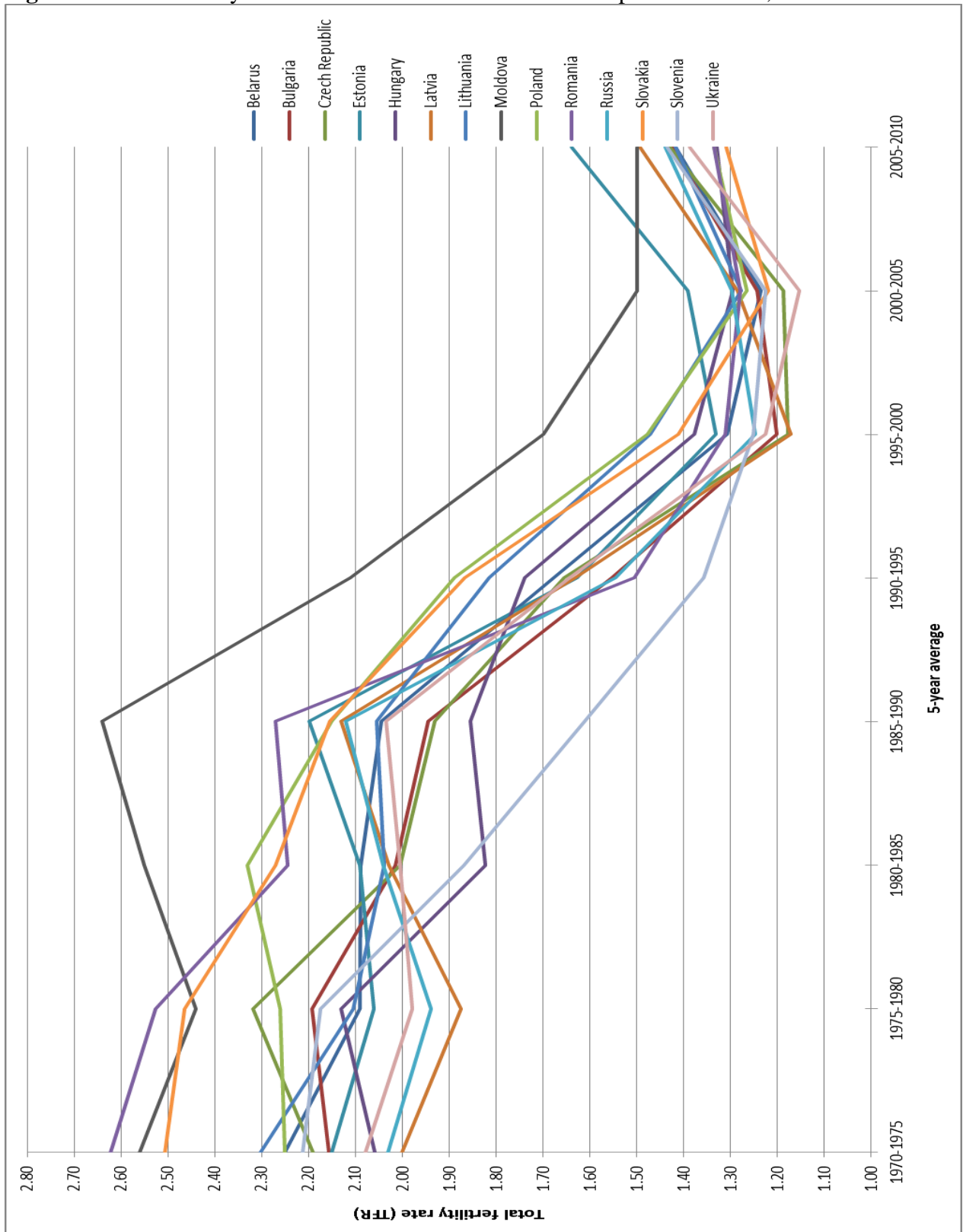
Data source: United Nations, Department of Economic and Social Affairs, Population Division, 2012

with an overall steady improvement on all levels. Despite a consistent upward trend, transition countries still have ways to go until they reach the health attainments of the West (Safaei, 2012).

As noted, variability was observed in the region shortly after changes began to take place. Most countries experienced setbacks in life expectancy and mortality (infant, child, male and female) which lasted anywhere from a few years to well over a decade. Central Europe was able to reverse the trends faster in comparison to other countries, especially those of the FSU. Having had experienced two setbacks, most severe and prolonged was the case of Russia, where mortality and life expectancy rates did not begin to fully recover and meet their pre-transition levels until much recently. To identify some of the common factors while allowing for country-specific variability in seven Central and Eastern European countries, a study by Safaei (2012) determined that higher income per capita and trade openness of a country is associated with lower mortality and higher life expectancy rates. Applying this relationship, we can explain the disparity between Central Europe and the remaining countries of the former Eastern Bloc. It is important to note, however, that these countries also had better initial conditions in the offset of transition than those of the FSU in particular, as they had stronger economies and relatively well developed infrastructure to begin with (McKee, 2004). In FSU countries, Stuckler et al. (2009) concluded that increased unemployment rates during the 1990s were strongly associated with mortality in the region. Popov (2010) supports this claim, as in the case of Russia, men in their 40s and 50s who lost their jobs, who encountered increased inequality and/or who experienced divorce were the first to die prematurely in the 1990s. Indeed, those that were most vulnerable to premature mortality were men, especially of working age (Stuckler et al., 2009). While recognising other determinants, such as the deterioration of the health care system, tobacco and alcohol consumption, a change in diet and external causes (accidents, murders and suicides), Popov (2010) states that they are not what experts would regard as primary factors, thus emphasising the importance of transition-generated stress (unemployment, income inequality, poverty and divorce) to be at the core of the mortality crisis – an alarming and unprecedented phenomenon during a time of peace and in the absence of plague, famine and other catastrophic disasters. On the other hand, Zatonski el al. (2008) point out to nutritional factors (poor diet) affecting the cardiovascular system and a prevalence of alcohol and tobacco intake to be key indicators of the health gap between East and West. Not to omit a contributing factor was also the rise in external causes. "In the euphoria that accompanied new-found freedoms, existing social norms were swept away, and public rejection to state control did not discriminate between those activities that had sought to repress legitimate freedoms and those that aimed to promote the public good" (McKee, 2004, p. 33). In essence, the absence of tight state control and a reliable legal system along with greater individual autonomy and expression gave way to disorderly and anarchical forms of conduct which were previously supressed by the regime. This resulted in the rise of crime, violence, homicide and (traffic) accidents - all external causes - which contributed to the increase of mortality rates.

In the period prior to 1965, before the communist states began to encounter the first signs of long-term societal stagnation, Zatonski el al. (2008) acknowledge the dramatic achievements in the health sector up to that time. To explain the emerged health gap between the East and West today, they point out to the poor health infrastructures and lack of focus in certain crucial areas, specifically in regards to non-communicable diseases. Similarly, Figueras et al. (2004) describe the long-standing challenges of the health care systems to be the comparatively

lower quality of their services, their poor responsiveness to citizens, the largely outdated clinical practices and equipment, reliance on out-of-pocket payments and high levels of corruption within. "The latter have been typically oversupplied with doctors and hospital beds, but unequipped with modern technology, and are said to be ill-prepared to engage in health promotion or behavior change" (Safaei, 2012, p. 2).

Another aspect of transition which left a mark on health care institutions was the privatisation process. By conducting a study on its effect on all 25 post-communist countries, Stuckler et al. (2009) determined that mass-privatisation programmes contributed to the increase in adult male mortality rates by 12.8% and that vulnerability decreased with higher social capital. Furthermore, the end of free universal health care and many government subsidies for medical expenditures upon which individuals and institutions had previously become accustomed to was considerably not met with ease, especially by the less advantaged and vulnerable members of society left to fetch for themselves.

Other aspects to consider are subjective well-being and self-perceived health, important indicators that allow for better insight and understanding of an individual's personal perception of one's own conditions and experiences. For this, Bobak et al. (2000) conducted a study on seven Central and Eastern European countries to determine the effects of socio-economic factors and material inequality on self-rated health. In doing so, they determined that, consistent with mortality rates, the prevalence of poor self-rated health was high during this period, especially for Hungary and the FSU. The level of education attainment and the degree of material deprivation were important predictors of this. Furthermore, Easterlin (2008) sought to map out *Life Satisfaction on the Road to Capitalism* using data from several waves of the World and European Values Surveys and arrived at an interesting paradox. He explains that although the switch to a free-market economy brought great gains in material satisfaction, it lost grounds in work, health and family life satisfaction. In other words, people ended up trading one benefit at the expense of a few others. Just as the gap in resource inequality widened, so did the one in subjective well-being, with the less educated and those over age 30 being the most vulnerable (Easterlin, 2008). Easterlin illustrates the road to capitalism as one having a "V" shape – life satisfaction dropped sharply from pre-transition levels due to the fall in GDP and rise in unemployment and financial insecurity, and later by recovered close (but not quite) to its initial levels after some improvement.

Looking at the broader picture, economic resources both on a macro and micro level is one of the primary determinants of health and well-being, among other things. On the macro or national level, it largely reflects the functionality of the health care system and the health of the population at hand. Numerous studies have concluded that the higher the income, the greater the prospect of reaching an optimal and desirable state of actual and self-perceived well-being. Applying this theory leads to the understanding that less progressive economies with lower per capita income are more likely to be at a higher disadvantage leaving their populations more exposed to the risks of mortality and morbidity as a result of less effective health care programmes and institutions and outdated medical practices and technology.

The graph on the following page (Figure 2) illustrates differences in life expectancy for the same 14 countries for the period 1970-2010. Here we see that the FSU countries have suffered

Figure 2: Life Expectancy for 14 Central and Eastern European Countries, 1970-2010
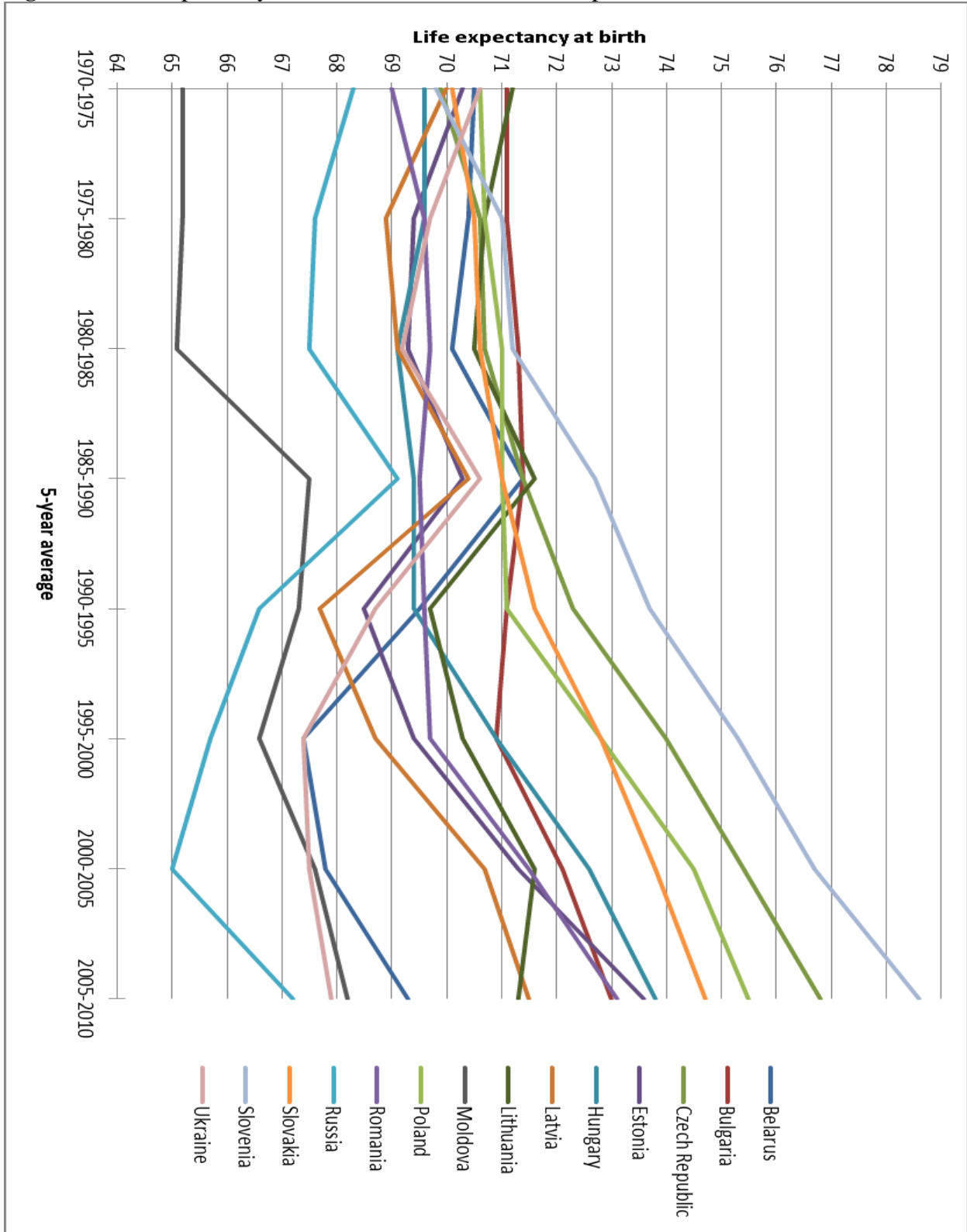
some setbacks in life expectancy, which for Belarus, Russia and Ukraine have not yet been compensated to former levels. On the other hand, Central Europe seems to have been left intact, with Hungary and Poland stalling in improvement until 1995 in comparison to Czech Republic, Slovakia and Slovenia which have shown steady improvement since 1970. A reminder, the 5-year averages are general figures which tend to minimise the developmental effect of life expectancy throughout the years. This is important to consider when observing the data in Figure 2.

2.2.3   The Onset of Migration

Closed populations do not exist nor have they ever, even during the tightest border controls and strictest regimes. There are multiple ways of entering and leaving a country, both through legal and illegal manner. Thus, populations are not only subject to natural increase by fertility and mortality. It is important to observe the role migration has played in the post-communist region, as this will serve as a stepping stone to our analysis and discussion of population replacement differentials in the following sections.

Characteristic of the communist era was the conditional and rather limited access to mobility. Migration was largely confined within members of the Eastern Bloc and was strictly regulated by the authorities. The most significant form of movement was reasonably between the republics of the Union of Soviet Socialist Republics (USSR) (Kaczmarczyk & Okolski, 2005). Even during such times, countries were divided into migrant-sending and migrant-receiving (Engbersen et al., 2010; Papadopoulos, 2011), with some of the former patterns of movement still serving as determinants of destination choice. Migration outside of the region was exclusive to ethnic minorities seeking family reunification or repatriation and to labour-dependent persons, with both cases entirely controlled by the state (Kaczmarczyk & Okolski, 2005). There had been numerous cases of forced population transfers, as well as other forms of redistribution of people. Following the abrupt lift of the Iron Curtain, many in the West anticipated an influx of immigrants from the East largely because of the differences in affluence between the two counterparts (Kaczmarczyk & Okolski, 2005). Indeed, an outflow did take place, but not on the scale that was expected due to several reasons. Migration dynamics in the long-run came to develop into more temporary or cyclical patterns of mobility, which seem to be, more or less, historically dependent (Kaczmarczyk & Okolski, 2005).

After the opening of the borders, indeed, the region experienced its highest outflow of migrants in the initial years following the changes. The population in EU countries, alone, increased by more than one million each year in the period between 1990 and 1993 (Rangelova & Vladimirova, 2004). Some undertook a longer journey by choosing to go to the historically immigrant-based countries like the United States, Canada, Australia and New Zealand. However, not all intended to move west. Looking at the overall picture, migration flows, for the most part, did not spill beyond the region itself, especially considering the largest movement being between the successor states of the former USSR, with Russia becoming one of the top migrant-receiving countries in the world (Kaczmarczyk & Okolski, 2005; Engbersen et al., 2010). A considerable destination was also Central Europe which has developed since as a transit region towards the West. (Wallace, 2002) After the peak years of the early 1990s, migration to Western countries

began to gradually subside, one reason being the more restrictive measures undertaken by the receiving countries to limit the amount of inflow (Rangelova & Vladimirova, 2004; Kaczmarczyk & Okolski, 2005). In addition, starting with 2004, the ongoing accession of Eastern European states in the EU has resulted in the rise in hostility on some levels by native populations towards the newcomers, whether it be through negative press and media coverage or by the classic "they are stealing our jobs" kind of rhetoric. With xenophobia on the rise and a growing right-wing Europe as seen from the recent EU parliamentary elections (2014), efforts will be made by some parties to challenge the current immigration policies to place further limitations, especially for the United Kingdom. Attitudes also serve as deterrents for some individuals who otherwise would have had the prospect or inclination to migrate. In addition, tighter measures inevitably tend to increase nonconventional ways of entrance. Immigration measures are not geared specifically towards Eastern Europeans but do indeed concern them. Thus, a closer examination of the underlying migration flows, their duration, direction and scale is necessary.

Eastern Europe's migration processes are far from homogenous and are related to past, present and regional circumstances. The highest recorded movement was in the 1990s between the successor states of the former USSR, with Russia experiencing the highest exchange of migrants (Kaczmarczyk & Okolski, 2005). This, of course, is clearly, for the most part, linguistically, historically and regionally dependent. As a result of the population transfers between the states of the Soviet Union throughout much of the 20th century, post-Soviet migration has been largely based on repatriation with individuals returning to their respective origins. Russians have seen the largest resettlement outside of their homeland and thus, have been the largest group to repatriate. Today, Russia has become the world's second largest migrant-receiving country after the United States, with approximately 9% of its population being foreign born (Heleniak, 2011). Relative to other post-Soviet republics, with the exception of the Baltic States, Russia's economy is considered to be stronger and is still regarded as a world power with the legacy of its glorious past still lingering. Despite the many challenges at present, it also attracts a large pool of economic migrants. Furthermore, Belarus and Ukraine have also seen some inflow from other members of the Commonwealth of Independent States (CIS), simply most of the successor states of the former Soviet Union. In 2006, the UN ranked Ukraine as the fourth major destination after the United States, Russia and Germany (Ivakhnyuk, 2006). "With Russia, Ukraine has the second largest migration corridor in the world (the US-Mexico corridor being the largest). [S]ince 1991, [it] has gradually become a major transit country for reaching Western states through its large borders. Based on this complex picture, it is clear that Ukraine will continue to become an increasingly important country in world migration patterns and networks" (Migration Policy Centre, 2013, p. 1). Yet, the picture is complex because both Ukraine and Belarus are also countries of emigration, leading to some fluctuation in net-migration figures for the past two decades. As might be expected, the current migration dynamics of Ukraine are likely to change in the upcoming years as a result of the recent political developments, which thus far, have caused tension among citizens and civil unrest in the country's Eastern regions, as well as a shift in geopolitical orientation away from Russia.

Wallace (2002) speaks of Central Europe as another target destination and one regarded as a step towards the West. Since the early 1990s, out-migration has gradually decreased and in-migration has continued to exceed it. Both in- and out-migration patterns tend to be less

permanent and are more circulatory in nature (Wallace, 2002; Engbersen et al., 2010). In essence, they are more short-term than long-term and are characterised by seasonal, temporary and also irregular labour migration (Engbersen et al., 2010). For more permanent settlement, the United States, Canada, Australia and New Zealand are preferred (Wallace, 2002), also because of their distance and financial cost for more frequent travel. Prior to EU accession, East-West migration became displaced in Central Europe, as migrants encountered difficulties in their attempts to move westward, hence acting as a transit region (Wallace, 2002). The relatively higher wages for manual and service-based work provided opportunities for people from the former USSR and the Balkans. In turn, Central European migrants sought the same type of employment in Germany and Austria, these countries being the closest in proximity (Wallace, 2002).

The above tendencies of labour migration go in line with two theories in particular – the dual labour market theory by Doeringer & Piore (1971) and Lee's classic push-pull model (1966). As its name suggests, the dual or segmented labour market consists of two separate sectors, each referencing a type of skill requirement, either high or low. The division is further characterised by capital-intensive or labour-intensive methods of production (Kogan, 2007). The occupations within the two sectors all exist within a hierarchy, with those at the bottom fulfilling the undesirable jobs by local people. These substitutions are quite often individuals of minority and immigrant backgrounds that are willing to take up lower-paid jobs in the local market, as wages are comparatively higher with those in their home countries. Such employment is also quite often illegal in nature and part of the informal economy (Wallace, 2002). Wage disparities between countries are one aspect of the classic push-pull model of migration. There are factors which give reason to individuals to pursue the decision to migrate. Although there are cases not governed by such principles, most migrants are driven by, to name a few, higher standards of living, prospects and opportunities and even safety and security. In essence, places of destination are usually found attractive and the benefits of undertaking migration tend to outweigh the costs. At the same time, lack of satisfaction with the home country on key matters will influence people to reconsider whether to stay or seek better opportunities abroad.

Following the first Eastern European accession into the EU in 2004 (Central Europe and Baltics), free travel further altered migration dynamics. Ironically, Engbersen et al. (2010) explain that just as the post-communist migration Westward had been overestimated, the post-accession one had been underestimated, both in volume and distribution. As Germany placed restrictions on its labour market towards citizens from the new member states, places such as the UK, Ireland and Norway saw the biggest inflow, especially from Poland (Engbersen et al. 2010). Approximately 500,000 migrants in the period 2004 to 2007 had come to work in the UK from the new member states, but experts suggest that about half of them have likely returned to their respective countries since (Blanchflower et al., 2007). Kaczmarczyk (2010) explains that this figure of 500,000 migrants accounts for Poles alone. This experience led the UK and other countries to follow Germany's precautions and to impose employment measures on the following two new member states, Bulgaria and Romania, in 2007. For both countries, Southern Europe (Spain, Italy and Greece) is most preferable for short-term and seasonal work, quite often of illegal nature, but many also choose to go to Germany and the UK among others (Engbersen, 2010; Markova, 2010). From Bulgaria, "[t]emporary migration has become more regionally and ethnically specific with migrants increasingly originating from poor, ethnically mixed rural

areas" (Markova, 2010, p. 226). In the case of Romania, migration Westward is also linguistically determined. The two countries have also seen significant losses in active and qualified individuals which has raised concern over long-term repercussions of brain drain on development. Figures of emigration consist of high numbers of students pursuing university education abroad. The effect on emigration from these two countries particularly is troublesome, especially with Bulgaria undergoing one of the fastest population declines and ageing processes in Europe. Out-migration has decreased since the 1990s for Bulgaria, but still remains considerably high in respect to other post-communist countries (Markova, 2010). The EU accession of Bulgaria and Romania in 2007 has enabled the ease of emigration from the two countries. Although migration continues to be characterised by temporary, seasonal and student migration, more so than permanent settlement, still many have chosen to remain in their countries of destination for a comparatively better standard of living.

In a nut shell, migration in and out of Eastern Europe is predominantly circular in nature and dependent on a variety of historical, regional and linguistic factors. Capturing the migration phenomenon is rather difficult, as the definition of what constitutes a migrant varies from country to country and many people fail to notify their local municipalities upon leaving their home countries. Those employed in unregistered occupations are also a challenge. In addition, migration estimates fail to account for circular and return migration which tends to inflate net-migration figures (Engbersen et al., 2010). Another important fact concerning migration in the region is that all countries have become receivers of growing numbers of refugees, asylum seekers and illegal immigrants, both from within Eastern Europe in the past and from other places such as Africa and Asia at present. Most of the people coming from outside the continent see particularly Central Europe and the Balkans as temporary and transit destinations with hopes of reaching the more developed countries of the North-West. Finally, the overall picture in Eastern Europe indicates primarily that Russia and Central Europe are receiving more migrants than they are sending out. Although, emigration continues to decrease in the rest of the post-communist nations, excluding fluctuations in Belarus and Ukraine, they are still characterised by negative net-migration rates, with the Baltic States, Bulgaria, Moldova and Romania most harmed by this.

To conclude this section, net-migration rates for the 14 selected countries in this study for the observation period 1970 to 2010 are presented in Figure 3 on the following page. The graph expresses the net number of migrants per 1,000 population in five-year averages. By observing the graph, it can be seen that, indeed, immediately after 1990, net-migration figures for Bulgaria, Estonia, Latvia, Lithuania, Moldova, Romania and Slovenia dramatically plummet, with Romania to a lesser extent and with Bulgaria, Moldova and Slovenia having begun to experience these negative effects earlier than the rest. The period following the regime changes reasonably produced the most movement across borders. It can also be observed that Poland and Slovakia have consistently stayed close to an even exchange between immigrants and emigrants. The remaining three countries of Central Europe (Czech Republic, Hungary and Slovenia) have become the receivers of migrants in recent years. As indicated previously, Belarus and Ukraine exhibit mixed figures in terms of migration and this can also be observed through their fluctuating lines in the graph. Clearly, Russia has had a positive net-migration rate since 1975. The causes behind the respective migratory processes outlined here will be explained in Chapter 4 of this thesis.

Figure 3: Net-migration Rates for 14 Central and Eastern European Countries, 1970-2010
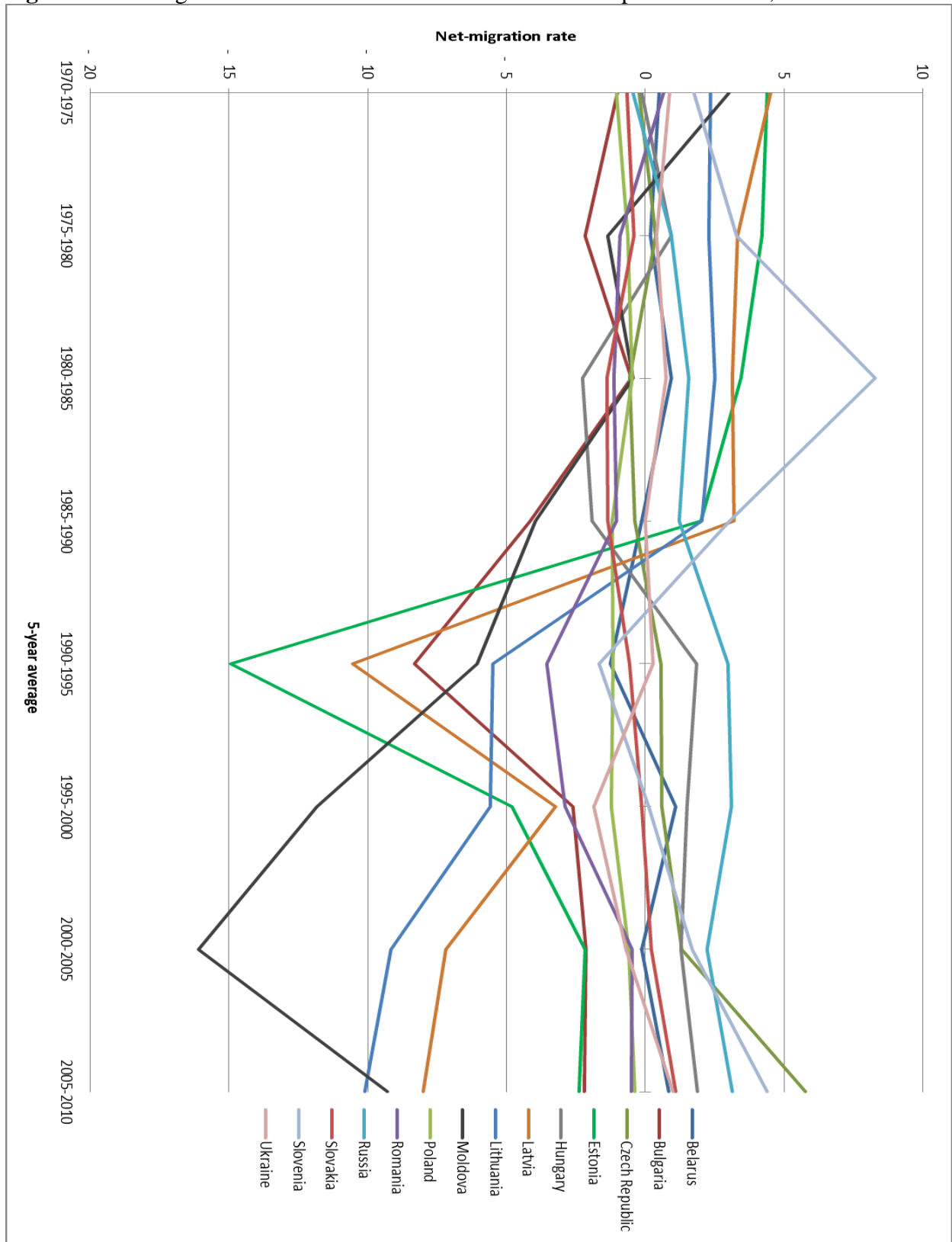
2.3 Hypotheses

Although this study chooses to focus on the economic aspect, indeed, a wide range consisting of additional underlying factors exists when attempting to understand the population dynamics of a particular society. Of course, the economic determinant here is explored within the context of economies in transition, which, at this point, are clearly at the third stage of the demographic transition, where birth rates are low and life expectancies reasonable when compared globally. In that respect, death rates are considerably higher as a result of the large share of elderly and not due to famine, infectious diseases, and lack of hygiene and basic health awareness as in the past. In other words, in the context of developing countries which have not fully surpassed the second stage of the demographic transition, the economic determinant should be analysed through a different lens, taking into account the distinctive societal circumstances of the population in question. Given this, the statements below are linked with the earlier presented research questions, only this time more specific. They serve as the fundamental proposals for this research and will be challenged through the use of appropriate methodology.

Hypotheses:

- More successful countries of the economic transition in Central and Eastern Europe are more likely to achieve higher cohort replacement levels as a result of higher economic attainments. With this in mind, countries characterised by lower economic improvement have experienced a decline in cohort replacement.

- Contextual factors such as historical, linguistic, cultural and geopolitical factors alter the extent of the economic effects on cohort replacement for individual countries in the region.

3. Methodology and Data

3.1 Methodology

"A population's history of fertility, mortality and migration is written into its age structure, revealing the extent to which generations are replacing themselves" (Wilson et al., 2010, p. 1).

To answer the research questions, as mentioned earlier, the overall replacement ratio (ORR) will be applied. Developed by Wilson et al. (2010), this method has been used to measure inter-generational replacement exposing populations to all three natural processes of fertility, mortality and migration. Several other methods exist to measure population reproduction and birth replacement using different combinations of period and cohort data, yet not all techniques include all three components. The ORR is unique in that it concentrates on the overall replacement of a population by directly observing its actual size as it ages, irrespective of the specific and underlying processes which shape it. Nonetheless, it gives a good indication on how migration plays a role in population structuring, especially in the early stages of life when mortality, for the most part, is almost absent. To arrive at the ORR, the size of a selected cohort is compared to the size of a previous one where its changes are tracked through time. For selected countries and years, this study will compare the size of female birth cohorts to that of their mothers'. The cohort of mothers indicates the *average* number of women in a specified fertile age range who were capable of giving birth during a particular year. As the daughters' cohort ages, its size is adjusted accordingly, but the initial size of the mothers' cohort is kept constant throughout. Essentially, the daughters' cohort is extracted using actual cohort data as it is followed through time and the mothers' cohort is taken from period data referencing a specific time period. For the mothers' cohort, this research has chosen the fertile age range 20 to 35, which indicates the period in which childbearing among women is highest in the study population. This decision is subject to interpretation and is highly contextual. Of course, other more appropriate age ranges may be considered and applied depending on the population at hand. Finally, an ORR of 1.0 indicates an absolute level of replacement, where both cohorts of mothers and daughters are balanced. Hence, a ratio above the replacement level points to the daughters' cohort surpassing the size of its mothers' and any figure below the threshold demonstrates the opposite, respectively.

To better explain this, Table 1 serves as an example to demonstrate the necessary components in determining the ORR for Bulgaria's female birth cohort of 1995 from its time of birth to 2010. In the table, D represents the daughters' cohort and M denotes the mothers' cohort, respectively. Given this, it can be seen that the female birth cohort D of 1995 started with a size of 38,320 individuals. The women which were capable of giving birth to them in 1995 within the chosen age range 20-35 (cohort M) were 900,573. The average size of cohort M is determined by dividing its total size by 16, which is the difference between the highest and the lowest margins of the prime childbearing interval *plus* one ($35 - 20 + 1$). The average size of the mothers' cohort (56,286) is held constant and only the size of cohort D is adjusted according to the year it is being observed in. Finally, for each year, cohort D's new size is divided by cohort M's original size from 1995 to track its changes through time. Through observing the results presented in the table, it can be seen that Bulgaria's female birth cohort of 1995 has reduced in size by 3,323 individuals during its 15-year observation period, which equates to a difference of 0.06 in overall

replacement. The initial replacement level of 0.68 has not been maintained. This also shows that the daughters' cohort was much smaller in size in comparison to its mothers', a difference of 0.32 in ORR. Again, a replacement level of 1 is essential in reaching an absolute level of cohort replacement.

Table 1: ORR for Female Birth Cohort 1995, Bulgaria

Country	Birth Cohort (D)	Year	Cohort Size (D)	Cohort Age (D)	Cohort age Range (M)	Cohort Size (M)	Cohort average Size (M)	ORR
Bulgaria	1995	1995	38,320	0	20-35	900,573	56,286	0.68
		2000	38,550	5				0.68
		2005	35,858	10				0.64
		2010	34,997	15				0.62

Data source: Eurostat, 2014

For more background and detailed explanations on the development, calculation and/or utilisation of the ORR, see Wilson et al. (2010, 2011 & 2013).

3.2 Data

The computations for overall replacement for the selected countries in this study have been prepared using data provided by Eurostat (2014) and the United Nations (UN) (2013); thus, the acquired data are classified as secondary and are used for quantitative purposes. Specifically, countries outside of the European Union are covered by the UN in this study due to the completeness of the data at hand. Both sources provide estimates annually on population by age and sex up to 2010, but it is important to acknowledge some of the evident inconsistencies in national data between the two mediums. Understandably, the two cannot produce the same absolute figures, yet differences in annual population size for a given country vary between being relatively minimal to being considerably significant. For example, for the year 1970 in Romania, the UN recorded an estimate of 317,700 females under the age of one, yet Eurostat for the same year, age and country recorded 217,478. This large difference of more than 100 thousand people is exceptional, but raises some questions and poses difficulties in data selection. However, more importantly, both sources point to similar trends in population growth and decline. As previous research has dealt with Eurostat data to determine the ORR for various countries in Europe, this study follows a similar model, when possible. For countries outside of the EU, for which Eurostat data are either incomplete or unavailable, preference is given to those provided by the UN. Finally, in this study, females under the age of one are used to symbolise a birth cohort, which may indeed undermine, to some extent, the reality of possible migration within a particular year. Although in- and out-migration for new-borns certainly exists, it is generally quite minimal. Despite the above mentioned intricacies, the overall picture, which will be presented in the next chapter in detail, is reasonable and goes hand in hand with current national demographic trends.

To represent economic and geographic diversity as much as possible, the following countries have been selected in alphabetical order: Belarus, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Slovakia, Slovenia and Ukraine. With the exception of Slovenia having been part of former Yugoslavia until 1991, other states of the Western Balkans have not been included in this study, particularly because of the uneven timing process of succession leading to the republic's full disintegration, as well as the complexity and severity of the ongoing ethnic conflicts which engulfed the region for much of the 1990s.

Economic standing for each of the countries presented in this study is determined using the economic indicators set forth by the World Bank. The organisation classifies countries into four groups (low, lower-middle, upper-middle and high income) based on Gross National Income (GNI) per capita in current US dollars. As indicated by the World Bank, high income countries have a GNI per capita of $12,616 or more, upper-middle income countries between $4,086 and $12,615 and lower-middle income countries between $1,036 and $4,085. The income classifications for each of the selected countries in this study are outlined in Table 2 below. For the purpose of simplification, the countries which fall within the lower-middle and upper-middle income groups have been abridged into one category with reference to middle income.

Table 2: Countries and Income Classifications

Country	Income Group	Abridged Income Groups
Bealrus	Upper-middle	Middle
Bulgaria	Upper-middle	Middle
Czech Republic	High	High
Estonia	High	High
Hungary	High	High
Latvia	High	High
Lithuania	High	High
Moldova	Lower-middle	Middle
Poland	High	High
Romania	Upper-middle	Middle
Russia	High	High
Slovakia	High	High
Slovenia	High	High
Ukraine	Lower-middle	Middle

Data source: World Bank, 2013

4. Results and Analysis

4.1 Results: A Visual Representation of the ORR per Country

This section simply serves to illustrate the overall replacement during the period 1970 to 2010 for selected female cohorts by age for the 14 transition countries in Central and Eastern Europe mentioned previously. As an accompaniment, the two subsequent sections will explain in further detail the outcomes presented here.

Figures 4-17: Overall Replacement Ratios for Selected Female Birth Cohorts by Age for 14 Central and Eastern European Countries per Income Group, 1970-2010

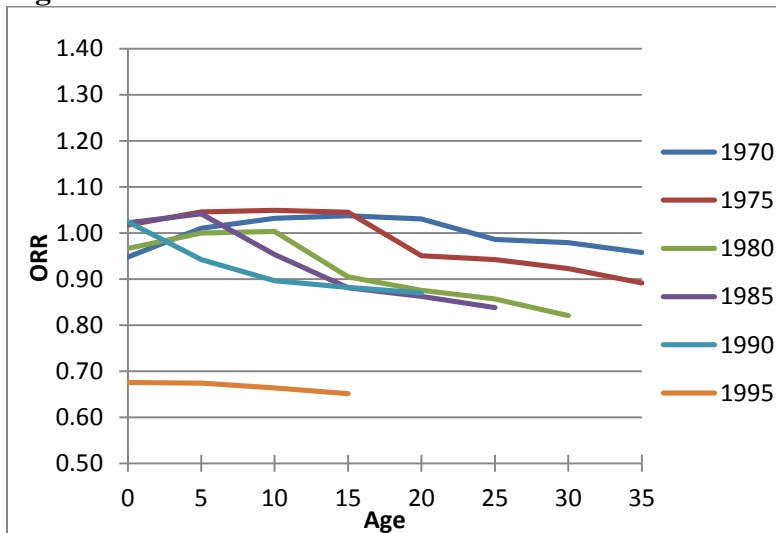<u>HIGH INCOME GROUP</u>

Figure 4: Czech Republic
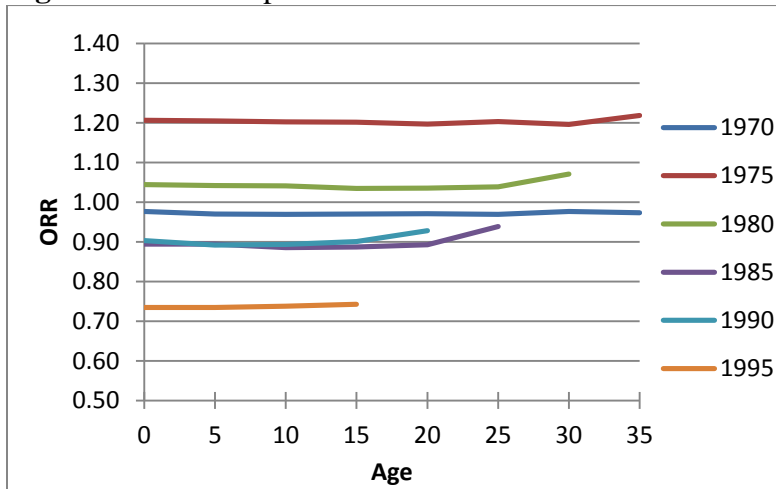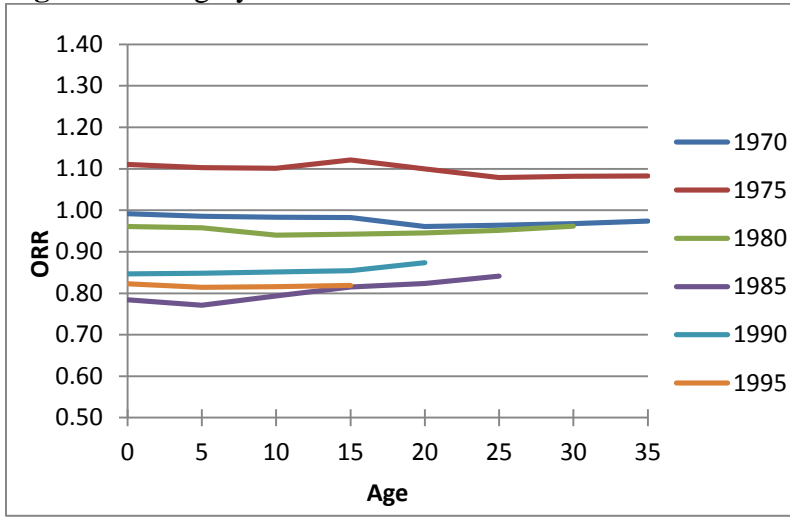

Figure 5: Estonia

Figure 6: Hungary

Figure 7: Latvia
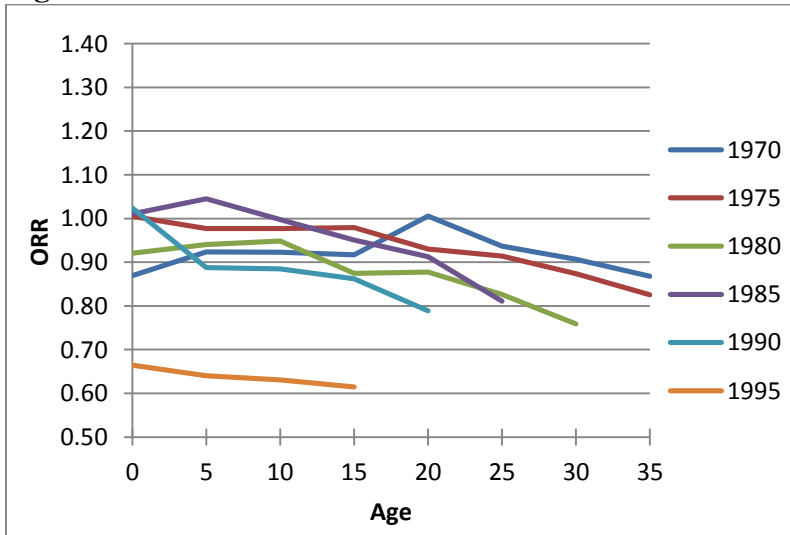
Figure 8: Lithuania
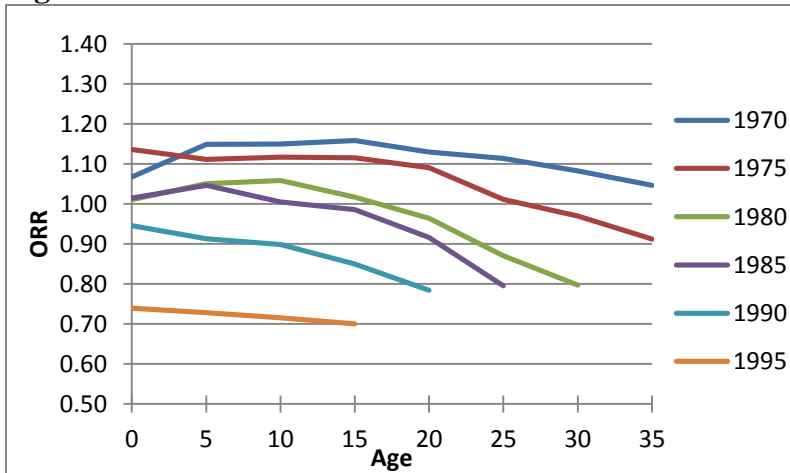
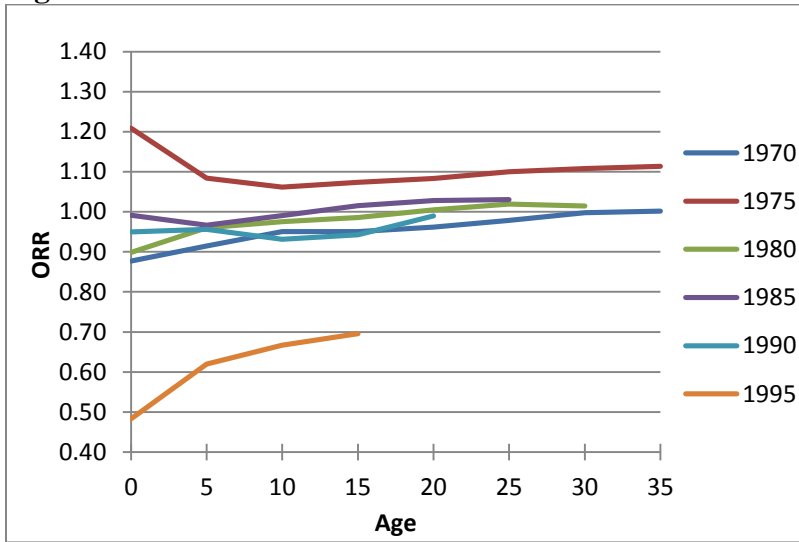**Figure 9:** Poland
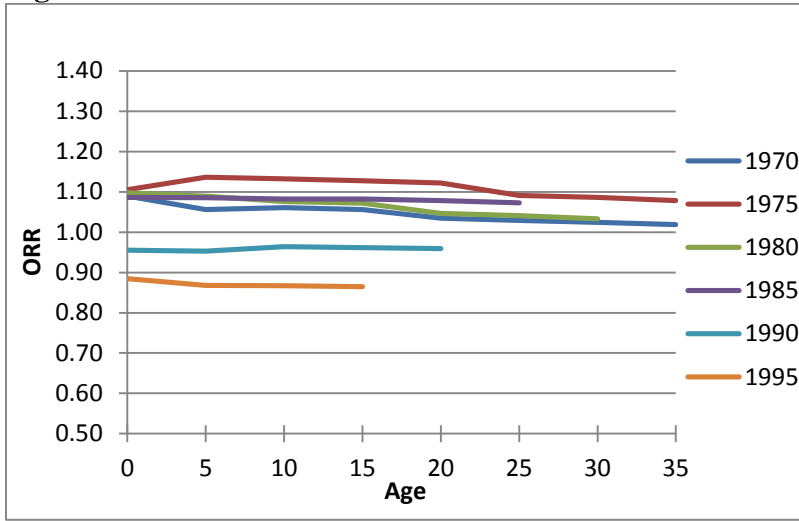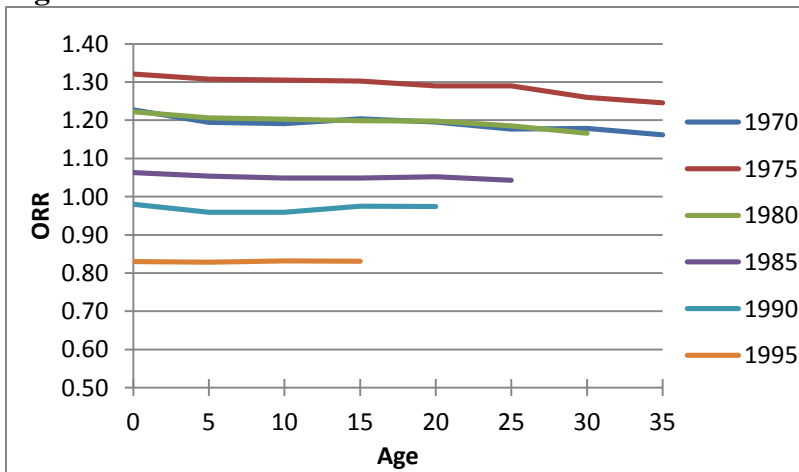

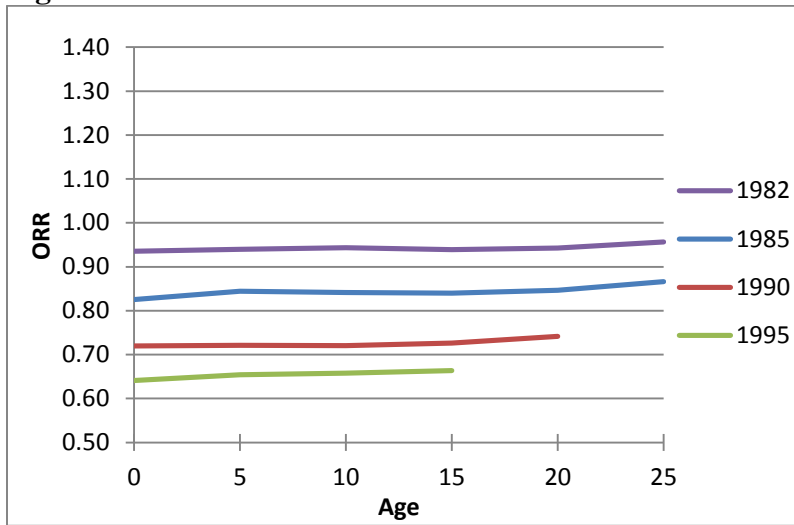**Figure 10:** Russia

Figure 11: Slovakia

Figure 12: Slovenia

MIDDLE INCOME GROUP

Figure 13: Belarus
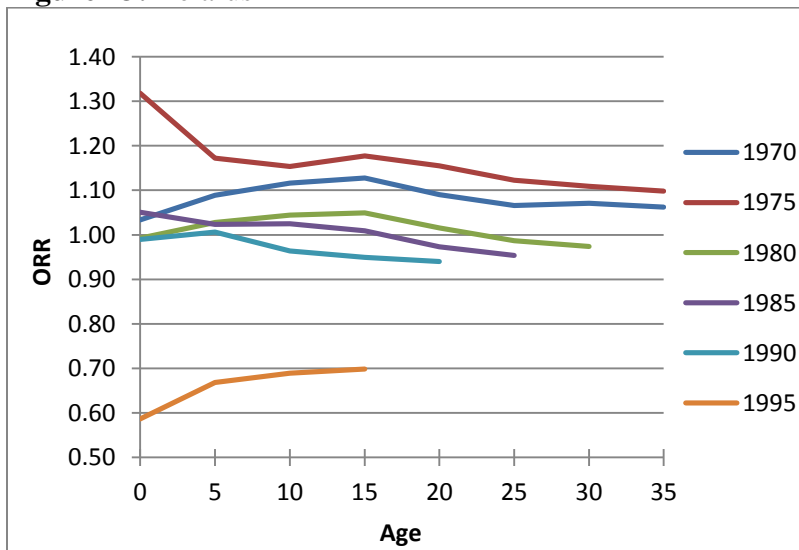
Figure 14: Bulgaria
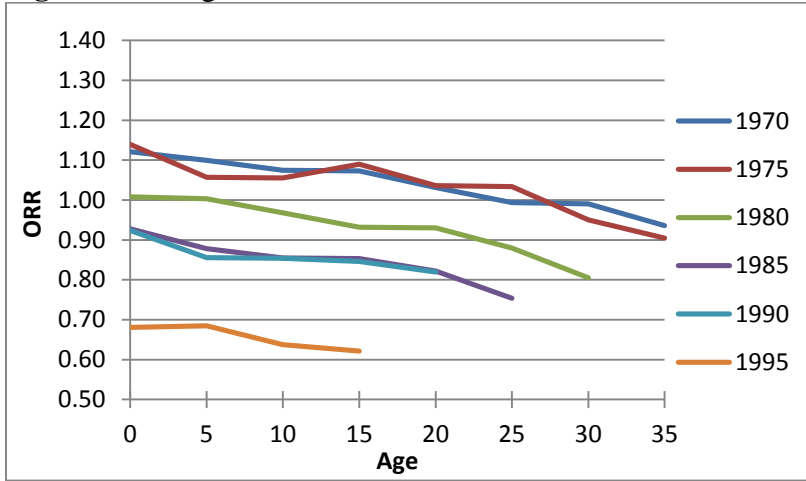
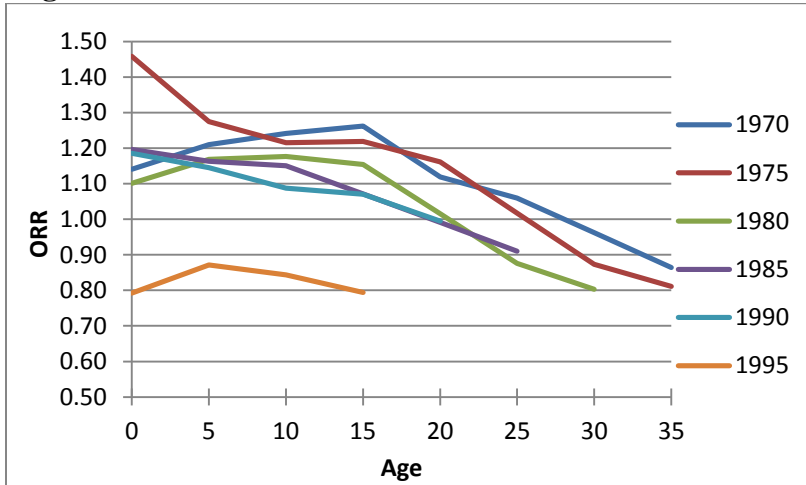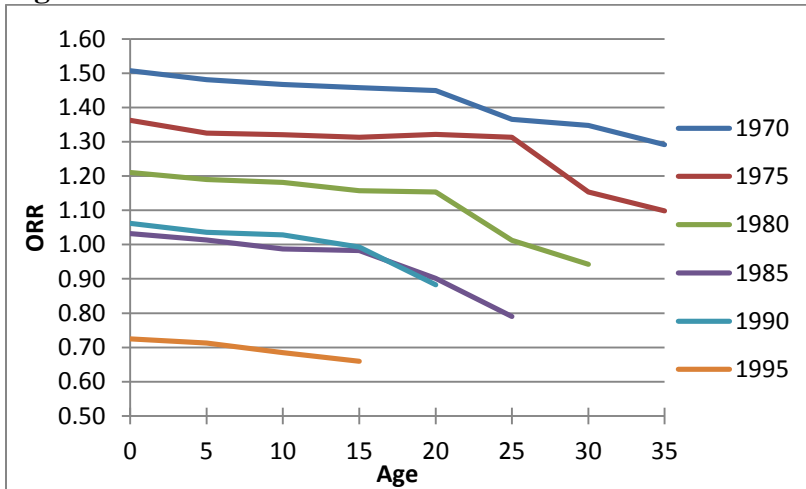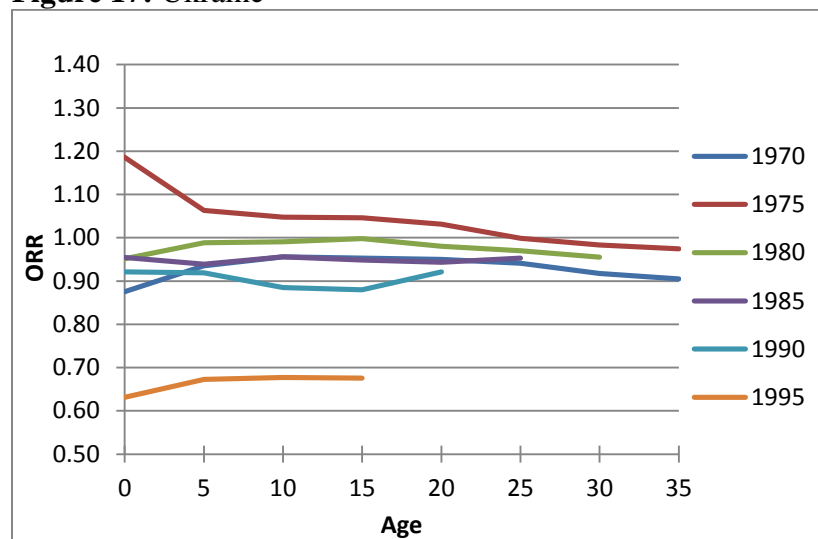**Figure 15:** Moldova

Figure 16: Romania

Figure 17: Ukraine

Data sources: Eurostat, 2014 (Figures 4, 5, 6, 7, 8, 9, 11, 12, 14 & 16);
           United Nations, Department of Economic and Social Affairs, Population Division, 2013
           (Figures 10, 13, 15 & 17)

4.2 Analysis and Interpretation

When observing the above presented schemes of overall replacement per cohort, age and country, it can be seen that, indeed, for the most part, there is a relationship between the economic well-being of a country and its demographic developments. All, with the acknowledgement of a few cases, fit this proposed model and the general hypothesis of this thesis. The next sections will go into detail in explaining the main processes, as well as the underlying reasons behind the partially unsupported aspects of the proposed relationship. The next sub-section will seek to explain the additional statements which accompany the main hypothesis. As this chapter largely deals with migration and its effect on the ORR, it is recommended that the reader refers back to Figure 3 on page 19 for a revision on the respective net-migration figures.

4.2.1 Explaining the Results

Before beginning the analysis, it is important to consider the two aspects of the ORR – a cohort's development through time (its exposure to mortality or migration) and its initial starting point in relation to other cohorts (the differences in fertility between cohorts). Both will be discussed in this section, beginning with the developmental effects first.

First, let us begin with the countries to which the economic-demographic relationship is largely applicable. When examining the ORRs for the high income group, it can be seen that Czech Republic, Hungary, Russia and Slovenia (Figures 4, 6, 10 and 12) have clearly

experienced slight to moderate growth in the selected cohort replacements. Specific to the diagrams, this is more pronounced as the cohorts enter into early adulthood. Largely, the increase can be seen at age 20 and onwards, as individuals in early adulthood tend to be part of the most mobile age group. On the other hand, Poland and Slovakia (Figures 9 and 11) have not seen the same growth and have rather experienced a slight decrease for the older cohorts. However, this decline is very minimal for both, considering that none of the changes even amount to a full tenth of a point. Instead, the younger cohorts have been, more or less, stable since the beginning, which indicates some recovery. When compared to Estonia, Latvia and Lithuania (Figures 5, 7 and 8), which are in the same income group, the decreases in Poland and Slovakia are clearly not as significant and not relevant to every cohort. The Baltic States are part of the resulting ambiguity and distinguish themselves from the rest of the countries in the high income group. The reason why this is the case will be discussed shortly. Looking at the overall picture, it can be observed that, indeed, Central Europe has managed to maintain its population and even attract newcomers, as in-migration is relatively modest and cohort replacement stable throughout. Although the ORRs of the Central European countries have not increased as much as those of both North-western and South-western Europe (see Wilson et al. 2013), the overall consistency and signs of increase for some is indicative of a more stable environment. Also, one should consider that this circumstance is also partly due to the differences in migration practices prior to 1989 in the Eastern Bloc. Most considerable increase since the beginning in the high income group is exhibited by Russia as could be expected. Applying the background information presented earlier in this paper, this is explained by the nature of the country's pre- and post-Soviet migration flows. Russia continues to host migrants from the former Soviet sphere as a result of the historically, linguistically and ethically determined predispositions. In addition, the country also attracts economic migrants due to its relative economic position in the CIS region.

By observing the middle income group, it can be determined that the initial cohort replacement levels have not been maintained and seemed to have dropped slightly to moderately for Belarus and Ukraine (Figures 13 and 17) and significantly for Bulgaria, Moldova and Romania (Figures 14, 15 and 16). Here, as in the previous paragraph, the developments are described by outlining their course, and the different starting points for replacement are not influential at this point in the analysis, but will be referred to in later paragraphs. With the exception of a few irregularities, here we can see how this group and the previous one conform to different demographic processes. Romania's decline differs with that of Bulgaria and Moldova in that it begins to intensify much later characterised by a sharp and abrupt fall. The decline seems to start in earlier age for each consecutive cohort. With the exception of a few short-lived increases, Bulgaria and Moldova clearly exhibit patterns of consistent decline since the beginning, with Moldova's being alarmingly steep. The picture for each of the three countries is a cause for concern, yet it should not come as a surprise. Although the negative net-migration rate has shown signs of recovery in recent years, it is still quite troublesome, especially for Bulgaria and Moldova which have much smaller populations than Romania and where the effects of population decline are felt more severely. Moldova is still regarded as the poorest country in Europe, and with Bulgaria and Romania, all three are considered to have been predominantly migrant-sending societies throughout much of the communist regime and have continued to be such in the period thereafter. Although decrease in the ORR is also demonstrated by Belarus and Ukraine, it is not to such an extent and is rather more intricate and heterogeneous. With the exception of the 1975 cohorts, the changes in ORR are not so great and offer a mixed

picture for the two former Soviet countries. This is explained by their double role in being migrant-receiving and migrant-sending societies as a result of the Soviet resettlement arrangements. For Belarus, it can be observed that decline follows an earlier increase by the older cohorts, again with the exception of 1975, and we see similar developments in Ukraine to some degree. The youngest cohort has experienced an increase in both countries, but it is too soon to determine whether it will sustain, as the cut-off point is right before the cohort enters into early adulthood, the peak years of migration.

From the results, it can be seen that the Baltic States do not fit the proposed stance that a positive relationship exists between economic stability and demographic tendencies. The outputs for Estonia, Latvia and Lithuania (Figures 5, 7 and 8) portray a picture which looks more like that of Bulgaria and Moldova previously, rather than that of the remaining high income countries. Despite some irregularities, the replacement levels of these three countries all point to a consistent decline. Why is this so? "From the late 1990s until 2008, the economies of the Baltic states were among the fastest-growing in the world" (Kramer, 2012, p. 4). Reasonably, other factors in addition to the economy play a role in determining the demographic processes of any society. Clearly the picture is much more complex and requires further investigation. In understanding the demographic obscurity in the Baltic States, one has to consider their shift from being migrant-receiving societies during the Soviet era to becoming migrant-sending immediately after the Union's collapse. The sharp decline in net-migration is expressed in Figure 3 presented previously. The change is also illustrated in the ORR diagrams when looking at the older cohorts for each of the three cases, although variability clearly exists. After some increase, all cohorts for the three states converge into a downward trend. This can be explained by the nature of the migration processes which were directly linked with the population transfers and redistributions under the Soviet Union. During that time, the Baltic States took in migrants mainly from Russia, Belarus and Ukraine. Zaionchkovskaya (1996) explains that the forced settlements of Russians and other Slavs were indeed stimulated by the imperial and militarist interests behind the Russian expansion. She also points out that relocation, particularly to the Baltic States, was also with the intent to satisfy demands for economic development. The natural growth rate for the populations of Latvia and Estonia specifically was so slow that it could not provide the necessary labour force to sustain the fast growing cities to fit the Soviet agenda. For the most part, titular nationalities in the three Baltic countries stayed within their borders (Zaionchkovskaya, 1996), but their proportion drastically fell as minorities substantially increased, especially in Estonia and Latvia. These two countries today are among the most ethnically mixed societies in Europe and as a result experience ongoing tensions between the major ethnic groups (Zvidrins, n.d.). For example, in 1990, Latvians composed only about half (52%) of the total population of their country, but since then, their proportion has been steadily increasing (Kramer, 2012). After the disintegration of the Soviet Union and the offset of free movement, the Baltics became countries of emigration, where Russians especially, sought a return home. Although outflow from the Baltics has been consistent throughout the transition period, three particular waves are considered to have boosted it. The first wave was in the early 1990s and was largely comprised of ethnic minorities for the purpose of repatriation. The second wave occurred when the three countries joined the EU, and the third one was a result of the 2008 global economic crisis (Engbersen & Jansen, 2013). Despite the setback in 2008, the three countries recovered and continued to produce reasonable growth rates, yet, emigration has not seen a pause. As a result of a combination of low birth rates, high emigration and ageing

societies, the Baltic States are encountering severe demographic decline similar to that of Bulgaria and Moldova.

When comparing the ORRs for the selected countries, the gradual and consistent trend of one-child families in Central and Eastern Europe during the last two decades, as Sobotka referred to, is portrayed in the respective diagrams. Especially in the case of Bulgaria, Lithuania, Romania and Slovenia, the consistent decline in birth rates can be seen since the beginning of the observation period 1970, where each consecutive birth cohort achieves a lower replacement level when compared to its mothers. Except for Hungary, the youngest cohort for all countries is the lowest and is far below the overall replacement level of 1. This figure should not be confused with the TFR where a 2.1 replacement fertility average is necessary to sustain a population. In analysing Romania and the former Soviet republics, one may question some apparent distinctions and seek explanations for them. Romania exhibits the highest reached overall replacement in the beginning of the observation period with an ORR above 1.5. This has to do with the previously mentioned restrictive measures which were placed on the access to contraception and abortion, along with the population policies which intended to stimulate higher fertility throughout Ceauşescu's time in power. For Belarus, Moldova, Russia and Ukraine, the peculiar and almost identical shape and development of the 1975 cohort coincides with the renewed financial incentives in 1974 which sought to encourage higher childbearing (see Heer, 1977). This explains the considerably higher starting point of the 1975 ORR. Yet, it can be observed that for each of these countries, the cohorts of 1975 experienced considerable decline within the first five years since birth. Davis & Feshbach (1980a) explain that the 1970s marked a rise in not only infant and child mortality, but also mortality for all age groups. They explain that infant mortality increased perhaps as a consequence of two prenatal factors – the effect of influenza epidemics and growing pollution on the health of pregnant women. "Soviet concern about this trend was reflected in the country's failure to publish infant mortality data after the release of the 1974 figure - 27.9 deaths/1000 live births - up from 22.9 in 1971" (Davis & Feshbach, 1980b). Thus, in an attempt to conceal factual figures, quite often, infant mortality rates in the USSR were understated. For the same cohort of 1975, a similar decline in under-five mortality can be seen in the graph for Bulgaria as well.

While analysing the starting and ending points of cohort development, a cohort's initial replacement level can be compared to the level it reached in 2010, the end of the observation period. Reviewing the graphs, diversity presents itself among countries. Where applicable, increases in cohort size do not always result in the achievement of absolute replacement, a figure of 1. This is especially the case for the younger cohorts which start off at a much lower replacement level than the preceding ones. Only in the case of Russia do most cohorts pass the absolute replacement mark, with cohort 1990 falling short by just 0.01 and cohort 1995 making considerable progress, but is still unable to surpass the threshold, having started with an ORR of 0.48. Despite slight decreases, Poland's four oldest cohorts still remain over an ORR of 1. For the graphs characterised by decline, all cohorts have either already fallen under the threshold or are headed steadily in that direction. This is pronounced especially for Bulgaria, Estonia, Latvia, Lithuania, Moldova, and to some extent, Romania. Because Romania's two oldest cohorts started with a much higher overall replacement than the rest of these countries, it would take more time for them to fall under an ORR of 1 if the current trend persists.

4.2.2 Further Interpretation

To clearly see the nature of the economic-demographic relationship in its current context, this section attempts to illustrate it through the use of statistical measures. The scatterplot in Figure 18 represents the comparison between the change in GDP per capita and the average change in cohort size from 1990 to 2010 for each of the countries where the relationship more or less holds (all countries excluding Estonia, Latvia and Lithuania). Cohorts 1970 and 1995 have not been included in the calculations because the former reached the 35-age mark (the end of its observation in this study) in 2005 and the latter was not present in the first five years of the 1990s. Thus, to find on average how the cohorts for a particular country have developed in the period 1990-2010, cohorts 1975, 1980, 1985 and 1990 have been used. 1990 marks the onset of the transition for most countries and is the first year for which data for all on GDP indicators are available and complete. GDP per capita is based on current prices in US dollars as provided by the United Nations Statistics Division (2014).

By observing the scatterplot below, it can be seen that a positive relationship exists between the change in GDP per capita and the change of a cohort's size within the 20-year period. Although the points in the figure do not cluster closely around the line of best fit, still a pattern can be observed. Essentially, the change in GDP per capita acts as the independent variable and the change in the size of a cohort acts as the dependent variable, respectively. A linear regression has been performed to assess the statistical relationship between the two variables. The regression equation displayed on the chart indicates that an increase in per capita GDP by one unit would increase the size of a cohort for a given country by 0.000014 on the log-odds scale. The small figure should not come as a surprise, as we are dealing with ratios as a method to measure cohort replacement. Moreover, the independent variable has a statistically significant effect on the dependent variable ($p < 0.05$), as presented in Table 3. 41.1% of the variation in the change of a cohort's size is explained by the change in GDP per capita.

Figure 18: Compared Changes in GDP per Capita and Cohort Size for 11 countries, 1990-2010
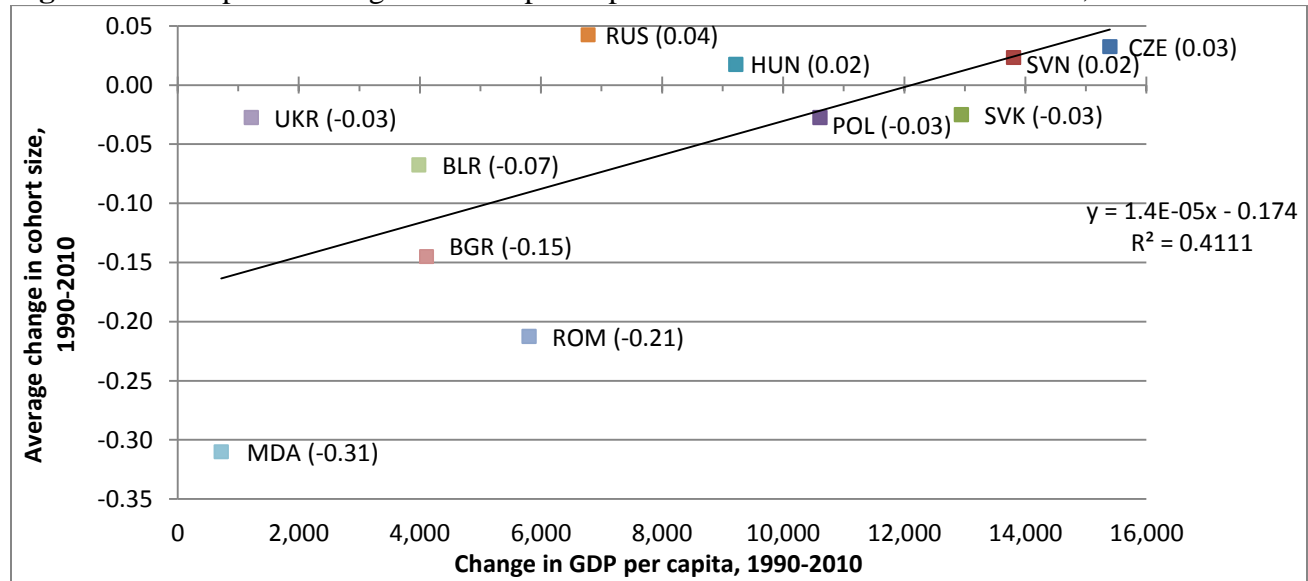
Data sources: United Nations, Department of Economic and Social Affairs, Population Division, 2013; Statistics Division, 2014

33

Table 3: Linear Regression, Changes in GDP per Capita and Cohort Size

Regreassion Coefficients

	B	P-value
(Constant)	-0.174	0.009
Change GDPpc	1.4E-05	0.034

Data sources: United Nations, Department of Economic and Social Affairs, Population Division, 2013; Statistics Division, 2014

Indeed, some divergence is displayed in the chart by some of the countries. For the most part, we see that all middle income countries have experienced negative changes, along with the two high income countries of Poland and Slovakia. Still, the decline for these two countries is to a much lesser extent than all the middle income countries, except Ukraine. Looking at Ukraine, referring back to Figure 17, after some decline, cohort 1990 has recuperated to its initial overall replacement level and cohort 1985 has not experienced much change, which in turn has lessened the extent of decline for the country. The rest of the high income countries have improved their overall replacement ratios since the onset of transition. Russia has experienced the largest increases, yet economically, it stands after the Central European countries which are in the same income group. Belarus and Ukraine both have, to varying extent, lower GDP per capita increases than Bulgaria and Romania, but have experienced slighter decreases in the size of cohorts in comparison.

As mentioned earlier, the analysis of the economic-demographic relationship becomes more complex, as contextual factors play a role in demographic developments. For this reason, three correlation tests have been performed to examine what would be the difference if one or two outliers were excluded from the analysis: one with all 11 countries, one excluding Ukraine, and one excluding both Belarus and Ukraine. The decision to exclude one or both of the countries is based on the more modest changes in cohort size in comparison to the other three countries (Bulgaria, Moldova and Romania) in the same income group. They too have experienced decline, yet it is not as severe as the one observed in Bulgaria and Romania, which have made greater increases in GDP per capita, especially in comparison to Ukraine. This disparity has to do with the fact that they have a more mixed picture in terms of migration, as discussed earlier.

The Pearson correlation coefficient between the change in GDP per capita and change in ORRs for all the countries is 0.64 and moderate. When Ukraine is excluded, the coefficient becomes 0.76 and the relationship becomes stronger. Finally, with the exclusion of both Belarus and Ukraine, the correlation between the two variables reaches 0.80 where the relationship is considerably strong. A comparison between the three scenarios shows in which way Belarus and/or Ukraine affect the economic-demographic relationship.

Furthermore, as low fertility is present all throughout the region, migration has the effect of improving or exacerbating the ORR depending on the direction of international migratory flows. Through examining cohort replacement, it can be seen that migration plays a very crucial role, as it holds the potential to counter some of the effects of low fertility. This we can see clearly in the case of Czech Republic, Hungary, Slovenia and Russia through the use of the presented diagrams. Migration to these countries is mainly economically driven, but there is more to the picture than meets the eye. Migration is not simply determined by economic reasons, take the

Baltics, for example, a region that is credited for consistent and substantial progress throughout the transition period, but which has witnessed immense out-migration considering their small populations. On the other hand, Belarus and Ukraine have also seen out-migration, but its effect has been reduced due to some in-migration taking place as well. Why have these two countries, which are still lagging economically, been able to partially slow down the decline when compared to Estonia, Latvia and Lithuania?

In thoroughly understanding the cohort replacement processes for the selected countries, especially for those which had once been part of the USSR, one has to look at the region in its historical context. This is the case especially for the former Soviet republics where migration processes had been controlled for much of the 20th century and continued to be inadvertently afterwards. The legacy of former population redistributions largely determined the direction of flows after the regime collapsed, which were characterised, especially in the initial years, by the return of people to their respective origins. As the Baltic States had clearly become countries of immigration under the Soviet arrangements, they immediately began to lose the incomers as soon as the ban on free movement was lifted. What should be considered is that these three countries had very small populations to begin with and growth had been rather artificial and facilitated by the Russian expansion. The people who emigrated from the region were mainly Russians, Belarusians and Ukrainians, leading to the mixed picture in the two latter countries. These two countries had experienced exchange with Russia as well, but in a more mutual character. Thus, the post-Soviet region is characterised by great dynamicity. In addition to the deliberate and state-controlled population resettlement, post-Soviet migration is also assisted through linguistic and regional ties. After the disintegration of the USSR, the successor countries, excluding the Baltics, formed another type of arrangement - the Commonwealth of Independent States (CIS) - which largely centres on economic and political affairs, among other aspects. This has kept the countries closer together for the past two decades providing opportunities for all the member states and their citizens, one being the no visa travel within the region. What helps facilitate the opportunities of labour migration is also the wide use of the Russian language throughout the former territories of the USSR. Ivakhnyuk (2006) describes the Eurasian migration system by the following factors: historical ties, geographical proximity, 'transparent' borders (visa-free movements), common transport infrastructure, psychological easiness to move (language, former common territory), demographic complementarity (disparity between growing and declining populations within the region), mutual interest towards common labour market and regional cooperation aimed at coordinated migration management. In addition, new entities continue to form and have since the 1990s; the most recent being the anticipated Eurasian Economic Union (EEU) in 2015 between Belarus, Kazakhstan and Russia. This arrangement serves to establish a broader common market and several other countries have expressed interest in joining. This type of effort comes close to the model of the European Union, and with increasing geopolitical tensions between East and West over the recent crisis in Ukraine this may be symbolic of a more official divide. Nonetheless, the privileges that go along with membership clearly contribute to the flow of migration movements just as they do in the EU. Ivakhnyuk (2006) explains that ethnic and political factors of migration were further supplemented and later replaced by economic ones because of the surfaced socio-economic disparities during the post-Soviet era. For example, although Belarus and Ukraine have not made the same progress as the countries of Central Europe, they are considerably attractive to the relatively poorer areas of the remaining CIS sphere. On the other hand, the three Baltic States are in some way not congruent with the

rest of the former Soviet republics, and since their independence in 1991, have expressed continuous attempts at distancing themselves from Russia. The three countries, small both in territory and population, have a long history of foreign domination and have often struggled to maintain their national identities precisely because of this. "For now, historical memory and national identity in the Baltic countries are being shaped mainly by a sweeping rejection of Soviet rule" (Kramer, 2012, p. 6). Today, Lithuania, Latvia and Estonia are part of the European Union and the North Atlantic Treaty Organization (NATO), among other associations. This heavily distinguishes them from the rest of the post-Soviet sphere and has rather closed the doors on some of the migratory processes which could have taken place. In other words, the Baltic region does not provide the same exposure to migration as do other former Soviet states due to its different geopolitical circumstances, which in turn demonstrates that citizens within the CIS are more likely to move to another member state than elsewhere. Thus, discussing migration without examining the historical context in the region would inevitably lead to an incomplete picture.

Just as the CIS sphere of influence and similar geopolitical arrangements, the EU also serves as a stepping stone for member states, allowing for easier movement between states. Some states have become more attractive in recent years and others have been for much longer. The economic push and pull factors which exist within the EU cannot be overlooked. Still, disparity between the Union's older and newer members in some cases is quite drastic. For example, on two ends of the spectrum, minimum wages in Bulgaria and Romania, the poorest members of the EU, are €158.00 and €157.00 per month, respectively; whereas, they are €1,501.00 and €1,469 in Belgium and the Netherlands, respectively. (Eurostat, 2013) Indeed, salaries are adjusted according to the expense and standard of living of an individual country, yet such contrasting figures undoubtedly reveal the socio-economic differences between the two pairs of countries. The same can be witnessed when making a simple comparison between the earnings from prestigious professions in the fields of medicine, engineering and law, to name a few. For this reason, many qualified individuals from the less advantageous member states of the EU choose to pursue better opportunities in other member states. Thus, accession into the EU by Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia has played a role in shaping to some extent migration processes for the respective countries, whether they are characterised as temporary or more permanent. Yet, as mentioned previously, Central Europe acts as a transit region which has also attracted its own migrants. When looking at the graphs, although modest, an increase can be observed for Czech Republic, Hungary and Slovenia. Referring back to Figure 3 on page 19, net-migration figures have been considerably positive for the last two decades, precisely explaining this upward curve. The almost even net-migration rate for Poland and Slovakia which has hovered around 0 for the same time period is also expressed, as their lines are relatively even with some minor exceptions. Thus, migration plays a direct role in shaping the ORR's course through time.

Several movement patterns should be considered when observing the ORRs in the study for the countries which had not been previously part of the Soviet Union. They are also historically and ethnically dependent. In the case of Czech Republic and Slovakia where the two countries had been one entity under the name Czechoslovakia for much of the 20th century, today, because of Czech Republic's relatively better economic situation than that of its neighbour, many Slovakians choose to cross the border in pursuit of better opportunities, considering the close

linguistic, cultural and historical ties. As both countries are also members of the EU, movement between the two countries is easily enabled. Another aspect to consider is Slovenia's former Yugoslav membership, again throughout much of the 20th century. After its succession from the former socialist federation and the Yugoslav Wars that transpired shortly afterwards, Slovenia has been the host of forced migration and refugee flows from elsewhere in the region. With its current membership in the EU, its relative economic progress in the region and its linguistic and cultural features, it has reasonably attracted migrants from the remaining former Yugoslav states. When looking at the countries which had once been part of the greater Soviet Union, Czechoslovakia and Yugoslavia, one needs to consider their place in their respective historic context to understand some of the migration waves which took place after disintegration.

Two countries where considerable ethnic minorities fled before and after the collapse of communism, which adds to the explanation of the ORR decline in the respective diagrams, are Bulgaria and Romania. As one of the exceptions to leave the Eastern Bloc had been the right to repatriate, several substantial waves of ethnic minorities fled Bulgaria throughout the course of the regime. These waves included Armenians and Jews, but were mainly comprised of Bulgarian Turks seeking refuge in Turkey. After the forced assimilation campaign of ethnic Turks intensified in 1985 (the "Revival Process" as it was called), it was estimated that by 1989 an overall 360,000 had left the country for political reasons (Markova, 2010). After the fall of the regime, almost as many migrated, but this time, for economic reasons as a result of the turbulent transition offset. Similarly, Romania also saw substantial out-migration predominantly composed of Hungarians, Germans and Jews throughout the communist period. Horváth (2007, p. 1) describes this process in Romania, which complements the overall context of this study, as follows:

> "It is noticeable that in the 20th century a considerable part of the migratory flows was directly or indirectly connected with ethnic minorities, a type of migration largely characteristic for other countries of Central and Southeastern Europe. These minorities were not simply refugees: they moved to states to which they had historical ties (e.g. Germany, Hungary), both in reaction to general and ethnic-based discrimination in Romania, and because they hoped for a safer and better life in those states."

Horváth's remark that the above statement applies to much of the current region in question, precisely depicts the complexity of migration processes in addition to the economic-demographic relationship which also exists. Each of the countries in this study has considerable diasporas outside of their current respective territories as a result of the historical developments of the region.

5. Conclusion and Discussion

5.1 Conclusion

The purpose of this research is to determine the type of relationship that exists between economic growth and demographic development in the economic transition countries of Central and Eastern Europe and in what way is it being mediated by context-specific factors. Providing a closer look at how these demographic processes have transpired could be a useful tool for policy makers to implement the necessary changes to attempt to counter some of the awaiting negative consequences if current trends continue to persist. This is crucial for the countries encountering population decline. This connects us back to the structural functionalism paradigm, where individual parts in society each fulfil a specific function to contribute to the overall stability of the social body. Underperformance by certain key mechanisms, consequentially, leads to an imbalance on a variety of levels, in this case, one being demographic. Here, this is largely the concept behind the nature of the economic-demographic relationship for each of the selected countries. This study is unique because of its pursuit in analysing a select group of countries which have all undergone a distinct economic and political shift and where overall replacement has not yet been exposed. The findings in this study depict a general picture as follows: Central European countries (Czech Republic, Hungary, Poland, Slovakia and Slovenia) exhibit a more balanced and even, in some cases, an improved overall replacement with time. This we see for Russia as well. The opposite holds for the remaining countries in this study, Bulgaria, Romania and the rest of the former Soviet republics (Belarus, Estonia, Latvia, Lithuania, Moldova and Ukraine). These countries are characterised by the moderate to severe inability to maintain cohort replacement through time. The picture is clearly more complex, as it does not strictly conform to a simple black and white, as is typically the case when analysing such a broad array of study subjects. Diversity is displayed not only between the two contrasting groups, but also within each. Finally, the gradual decline in TFR for the past few decades can be seen, for the most part, through the lower starting point for each consecutive cohort. This, however, is more apparent and consistent for Bulgaria, Lithuania, Romania and Slovenia.

5.2 Discussion

The summarised findings above yield to some interesting and important conclusions. Through the use of the presented diagrams and statistical measurements in this study, it is clear that a relationship between economic circumstances and demographic developments exists, provided the context of Central and Eastern Europe's transition economies. This relationship is essentially a positive one, as higher income leads to a higher likelihood that a country achieves higher cohort replacement or possibly even surpasses it. Applying the same reasoning, countries which have not reached optimal economic standards are more likely to encounter instability. This is precisely why we see contrasting developments between the higher and lower income groups. Czech Republic, Hungary, Russia and Slovenia, in particular, have all managed to improve their initial replacement levels. In comparison to the middle income countries, Poland and Slovakia have considerably better cohort replacement figures, although they too have experienced slight decline, but only for the older cohorts. For Russia, the improvement is both economically and historically dependent, which points to some diversity in the otherwise more straightforward

economic-demographic relationship. When analysing population dynamics in the former Eastern Bloc countries, one must consider the greater socio-political entities some had once been a part of. This is especially important for the former USSR. The disintegration of the socialist state led to particular migratory processes which were initially more of a reaction to the previous population rearrangements under Soviet rule than anything else. As a result, they were mainly determined by ethnicity, as previous voluntary and involuntary resettlements and displacements caused the high volume of repatriation following the changes in migration policies after the Union's collapse. Previous types of population exchanges between countries largely determined the direction and amount of flow afterwards. The Baltic countries with their originally small populations had become the receivers of migrants during the Soviet period. As a result, their populations became very mixed and were characterised by artificial growth which would not have taken place had it not been for the distribution of Slavic people into the region. Following the changes in 1991, the Baltics saw a heavy outflow characterised by mainly ethnic migration in the direction of Russia, Belarus and Ukraine. Having a different geopolitical orientation than the rest of the former USSR due to grim memories of Russian domination, the Baltics are now unique in the sense that they are not exposed to migration in the same character as are the rest of their former regional allies. Since the offset of transition, the three countries of Estonia, Latvia and Lithuania have been dominated by consistent out-migration. The ethnic and geopolitical aspects of migration for the tree countries, which are largely reactions to the former Soviet environment, are two possible explanations as to why they do not conform to the rest of the high income countries. This precisely explains some of the diversification in the economic-demographic relationship and why pre-transition historical aspects should not be overlooked. Nonetheless, as the transition progressed, economic migration gradually replaced ethnic migration in the territories of the former USSR, with Russia being the primary destination. Belarus and Ukraine, both middle income countries, have experienced decline, yet this decrease has been eased in comparison to the rest of the countries in the same income group because of the mix of migration patterns that have transpired as a result of the former Soviet arrangements. For Bulgaria, Moldova and Romania, which are in the same income group, the downward trend is more pronounced and rather concerning.

Through the computations of the ORRs for the selected cohorts and age range 0 to 35, it is clear that migration plays a crucial role in facilitating or exacerbating the economic-demographic relationship, precisely because the direction of migration flows (in or out) is largely determined by the economic circumstances of a country. In essence, they go hand in hand, and countries with better economies attract newcomers who contribute to the balance or improvement of the ORR. Although immigration is not enough to fully counter the negative effects of low fertility, it nonetheless alleviates them to some extent. This can only be beneficial in cohort replacement. At a time when mortality is largely absent between the ages 0 to 35, the volume and direction of migration flows are precisely what determine the course of the overall replacement ratio. Unfortunately, the most troubling pictures are those of Bulgaria, Estonia, Latvia, Lithuania, Moldova and Romania, where the alarming population decline is not showing any signs of stopping. With the exception of Romania, all countries have very small populations, especially the Baltics and Moldova, where persistent emigration coupled with low fertility and ageing, leads to additional deterioration in the demographic structure, which, if unaltered, will inevitably lead to unfavourable societal circumstances in the future.

References

Åslund, A. (2008). Transition economies. *The Concise Encyclopedia of Economics. Library of Economics and Liberty*. http://www.econlib.org/library/Enc/TransitionEconomies.html (retrieved April 18, 2014).

Babbie, E. (2012). *The practice of social research*. 13th edition. Belmont: Wadsworth

Billari, F., Liefbroer, A. C., & Philipov, D. (2006). The Postponement of Childbearing in Europe: Driving Forces and Implications. *Vienna Yearbook of Population Research, 4*, 1-17.

Billingsley, S. (2010). The post-communist fertility puzzle. *Population research and policy review, 29(2),* 193-231.

Blanchflower, D. G., Saleheen, J. & Shadforth, C. (2007). The impact of the recent migration from Eastern Europe on the UK economy. *IZA Discussion Papers, No. 2615. Bonn: Institute for the Study of Labor.*

Bobak, M., Pikhart, H., Rose, R., Hertzman, C., & Marmot, M. (2000). Socioeconomic factors, material inequalities, and perceived control in self-rated health: cross-sectional data from seven post-communist countries. *Social science & medicine, 51(9),* 1343-1350.

Bongaarts, J., & Feeney, G. (1998). On the quantum and tempo of fertility. *Population and development review*, 271-291.

Bongaarts, J. & Sobotka, T. (2010). Demographic explanation for the recent rise in European fertility: Analysis based on the tempo and parity-adjusted total fertility. Paper presented at the European Population Conference (EPC) in Vienna (Session 12) and the Annual Meeting of the Population Association of America, April 2011, Washington, DC (Session 161).

Bradatan, C., & Firebaugh, G. (2007). History, Population Policies, and Fertility Decline in Eastern Europe A Case Study. *Journal of family history, 32(2)*, 179-192.

Campos, N. & Coricelli, F. (2002). Growth in transition: What we know, what we don't, and what we should. *William Davidson Institute Working Paper, 470, February 2002.*

Davis, C. & Feshbach, M. (1980a). Rising Infant Mortality in the U.S.S.R in the 1970's. *U.S. Department of Commerce, Bureau of the Census. International Population Reports, Series P-95, No. 74.*

Davis, C., & Feshbach, M. (1980b). Rising Soviet infant mortality. *Intercom, 8(17),* 12-4.

Easterlin, R. A. (2009). Lost in transition: Life satisfaction on the road to capitalism. *Journal of Economic Behavior & Organization*, 71(2), 130-145.

Ekiert, G. (1998). Why some succeed and others fail? Eight years of transition in Eastern Europe. *Woodrow Wilson International Center for Scholars: East European Studies March– April, 5-10.* http://www.wilsoncenter.org/publication/149-why-some-succeed-and-others-fail-eight-years-transition-eastern-europe (Retrieved on April 18, 2014).

Engbersen, G., & Jansen, J. (2013). Chapter 1. Emigration from the Baltic States: Economic impact and policy implications. In *Coping with Emigration in Baltic and East European Countries. (pp. 14-28).* OECD Publishing.

Engbersen, G., Okólski, M., Black, R. & Panţîru, C. (2010). 1 Introduction: Working out a way from East to West. In: Black, R., Engbersen, G., Okólski, M., & Panţîru, C. (Eds.), *A continent moving west?: EU enlargement and labour migration from Central and Eastern Europe.* (pp. 7-22). Amsterdam: Amsterdam University Press.

Eurostat (2013). Minimum wages - EUR/month (tps00155). http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database (Retrieved August 1, 2014)

Eurostat (2014). Population on 1 January by age and sex (demo_pjan). http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database (Retrieved April 17, 2014).

Figueras, J., McKee, M., Cain, J., & Lessof, S. (2004). Health systems in transition. *Copenhagen: WHO.*

Havrylyshyn, O. (2007). Fifteen years of transformation in the post-communist world: Rapid reformers outperformed gradualists. *Cato Development Policy Analysis Series Paper*, (4).

Heer, D. M. (1977). Three issues in Soviet population policy. *Population and Development Review, 229-252.*

Heleniak, T. (2011). Migration destinations within post-Soviet Russia. Extended abstract submitted to the 2011 Annual Meeting of the Population Association of America, March 31- April 2, 2011, Washington, DC.

Horváth, I. (2007). Country profile 9: Romania. Focus Migration. *Hamburg Institute of International Economics (HWWI) in cooperation with the German Federal Agency for Civic Education Hamburg and Network Migration in Europe.* http://focus-migration.hwwi.de/Romania.2515.0.html?&L=1 (Retrieved on July 2, 2014).

Ickes, B. W. (2007). Introduction to transition. http://econ.la.psu.edu/~bickes/intro(1).pdf (retrieved April 26, 2014).

Ivakhnyuk, I. (2006, June). Migration in the CIS region: common problems and mutual benefits. In *International Symposium on International Migration and Development, Population Division. UN DESA, Turin.*

Kaczmarczyk, P. (2010). 8 Brains on the move? Recent migration of the highly skilled from Poland and its consequences. In: Black, R., Engbersen, G., Okólski, M., & Panţîru, C. (Eds.), *A continent moving west?: EU enlargement and labour migration from Central and Eastern Europe*. (pp. 165-186). Amsterdam: Amsterdam University Press.

Kaczmarczyk, P., & Okólski, M. (2005, July). International migration in Central and Eastern Europe–current and future trends. In *United Nationals expert group meeting on international migration and development, mimeo*.

Kaplan, H. S. & Bock, J. (2001). Fertility theory: Caldwell's theory of intergenerational wealth flows. *International Encyclopedia of the Social & Behavioral Sciences, 5557-5561*.

Kogan, I. (2007). *Working through barriers: Host country institutions and immigrant labour market performance in Europe*. Springer.

Kramer, M. (2012). The Baltics after two decades of independence: achievements, setbacks, internal challenges. *PONARS Eurasia Policy Memo No. 200, June 2012*.

Markova, E. (2010). 10 Optimising migration effects: a perspective from Bulgaria. In: Black, R., Engbersen, G., Okólski, M., & Panţîru, C. (Eds.), *A continent moving west?: EU enlargement and labour migration from Central and Eastern Europe*. (pp. 207-230). Amsterdam: Amsterdam University Press.

McKee, M. (2004). Chapter 2 Winners and losers: The consequences of transition for health. In: Figueras, J., McKee, M., Cain, J., & Lessof, S. (Eds.), *Health systems in transition* (pp. 33-50). Copenhagen: WHO.

Migration Policy Centre (2013). MPC - migration profile: Ukraine. http://www.migrationpolicycentre.eu/publications/migration-profiles-fact-sheets/ (Retrieved on May 28, 2014)

Papadopoulos, A. G. (2011). Migration and security threats in south-eastern Europe. *Southeast European and Black Sea Studies, 11(4),* 451-469.

Pejovich, S. (2006). The uneven results of institutional changes in Central and Eastern Europe: The role of culture. *Social Philosophy and Policy*, *23(01),* 231-254.

Popov, V. (2009). Lessons from the transition economies: Putting the success stories of the postcommunist world into a broader perspective, UNU-WIDER Research Paper No. RP2009/15. *World Institute for Development Economics Research*, *United Nations University: Helsinki.*

Popov, V. (2010). Russia's mortality crisis: will we ever learn?. *Washington/DC: PONARS Eurasia*.

Potančoková, M., Sobotka, T., & Philipov, D. (2008) Estimating tempo effect and adjusted TFR. Documentation to the European Demographic Datasheet 2008. Vienna Institute of Demography, Vienna.

 Pusca, A. (2007). Shock, therapy, and postcommunist transitions. *Alternatives: Global, Local, Political, 32(3),* 341-360.

Rangelova, R., & Vladimirova, K. (2004). Migration from central and eastern Europe: the case of Bulgaria. *SEER-South-East Europe Review for Labour and Social Affairs, (03),* 7-30.

Safaei, J. (2012). Post-communist health transitions in Central and Eastern Europe. *Economics Research International, 2012.*

Sobotka, T. (2002). Ten years of rapid fertility changes in the European post-communist countries: evidence and interpretation. *Population Research Centre Working Paper Series,02-1, July 2002.*

Stloukal, L. (1999). 2. Understanding the 'abortion culture' in Central and Eastern Europe. In David, H. P. (Ed.) *From abortion to contraception: A resource to public policies and reproductive behavior in Central and Eastern Europe from 1917 to the present* (pp. 23-37). Westport: Greenwood Press.

Stuckler, D., King, L., & McKee, M. (2009). Mass privatisation and the post-communist mortality crisis: a cross-national analysis. *The Lancet, 373*(9661), 399-407.

UN (2012). Life expectancy at birth, detailed indicators. Estimates developed by the United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects: The 2012 Revision. http://esa.un.org/unpd/wpp/unpp/panel_indicators.htm (Retrieved June 25, 2014).

UN (2012). Net migration rate, detailed indicators. Estimates developed by the United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects: The 2012 Revision. http://esa.un.org/unpd/wpp/unpp/panel_indicators.htm (Retrieved June 23, 2014).

UN (2012). Total fertility, detailed indicators. Estimates developed by the United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects: The 2012 Revision. http://esa.un.org/unpd/wpp/unpp/panel_indicators.htm (Retrieved June 23, 2014).

UN (2013). Annual population by age – female, interpolated data. Estimates developed by the United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects: The 2012 Revision. http://esa.un.org/unpd/wpp/Excel-Data/Interpolated.htm (Retrieved April 5, 2014).

UN (2014). Per Capita GDP at current prices in US Dollars (all countries). Estimates developed by the United Nations, Department of Economic and Social Affairs, Statistics Division, National Accounts Main Aggregate Database. http://unstats.un.org/unsd/snaama/dnllist.asp (Retrieved July 26, 2014).

Vassilev, R. (2005). Bulgaria's Demographic Crisis: Underlying Causes and Some Short-Term Implications. *Southeast European Politics, 6(1*), 14-27.

Wallace, C. (2002). Opening and closing borders: migration and mobility in East-Central Europe. *Journal of Ethnic and Migration Studies, 28(4*), 603-625.

Wilson, C., Sobotka, T., Williamson, L., & Boyle, P. (2010). A simple method for estimating inter-generational replacement based on fertility and migration European examples. *ESRC Centre for Population Change, Working Paper Series, (9).*

Wilson, C., Sobotka, T., Williamson, L., & Boyle, P. (2013). Migration and intergenerational replacement in Europe. *Population and Development Review, 39(1)*, 131-157.

Wilson, C., & Williamson, L. (2011). Intergenerational replacement and migration in the countries and regions of the United Kingdom, 1971–2009. *Population trends, 145(1*), 90-105.

World Bank (2013). Country and Lending Groups Data. http://data.worldbank.org/about/country-and-lending-groups (Retrieved April 2, 2014).

Zaionchkovskaya, Z. A. (1996). Migration patterns in the former Soviet Union. In the *Conference Report Cooperation and Conflict in the Former Soviet Union: Implications for Migration, RAND* (Vol. 15).

Zatoński, W., Mańczuk, M., Sulkowska, U., & HEM project team (Eds.). (2008). Closing the health gap in European Union. *Cancer Epidemiology and Prevention Division, Maria Skłodowska-Curie Memorial Cancer Center and Institute of Oncology, Warsaw.*

Zivec, S. (2013). Neo-liberal vs. socialist fertility policies: The German case. The Center for European Studies – IDC Herzliya.

Zvidrins, P. (n.d.). Changes of ethnic composition in the Baltic States. Centre of Demography, University of Latvia, Latvia. http://epc2008.princeton.edu/papers/80280 (Retrieved on June 23, 2014)