Government policy and total fertility rates: an analysis of Germany in stage five of the demographic transition model

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A Thesis

Entitled

Government Policy and Total Fertility Rates: An Analysis of Germany in Stage Five of
the Demographic Transition Model

By

Elyse R. Osterday

Submitted to the Graduate Faculty as partial fulfillment of the requirements for the

Master of Arts Degree in Geography

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The University of Toledo

December 2013
An Abstract of

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Germany, like many developed countries, is in what some refer to as Stage 5 of the Demographic Transition Model. In fact, this country is one of the first with an active shrinking population, despite its large numbers of immigrants each year. In 2007, Germany passed a series of parental friendly laws through the Parental Allowance and Parental Leave Act. These laws were clearly enacted to encourage its citizens to have more children and increase fertility rates. Are economic incentives enough to promote fertility in a country? This research explores these issues through the lens of population trends in Germany by analyzing state level statistics, cultural and social factors, policy making, and immigration. Further, four research objectives guide the study: 1) What are potential variables impacting crude birth rates in Germany; 2) Which German cultural and social values affect family planning; 3) How has the implementation of government family planning policies affected both historical and contemporary population trends; and 4) How have immigrants shaped Germany’s modern population? This study reveals that social and cultural trends have an indirect impact on Germany’s continued low fertility
rates, and that these trends are not considered to a full extent in Germany’s political family policies.
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Chapter 1

An Introduction

Introduction

The Demographic Transition Model (DTM) has been significant for explaining population change in societies over time through their crude birth rates (CBR)\(^1\), crude death rates (CDR)\(^2\), and natural increase rates (NIR)\(^3\). The model was based on population trends in Western Europe from pre-industrialization to post-industrialization as well as other countries that have gone through similar stages related to industrialization. Originally, the model was divided into four stages, where countries transition from high death and birth rates in Stage 1 to low death and birth rates in Stage 4 through industrialization, modernization, and urbanization. Several more developed countries (MDCs) have reached Stage 4, and a few such as Japan and Germany are past Stage 4 and have entered what some scholars refer to as Stage 5, where the crude birth rates (CBR) are less than crude death rates (CDR), resulting in a negative population growth rate. This has created a crisis, as the population slowly shrinks. A shrinking population can have a significant impact on a society’s economy and social welfare, such

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\(^1\) CBR is measured how many live births there are per 1000 people.
\(^2\) CDR is measured by all deaths per 1000 people; cause of death is not significant in this measurement.
\(^3\) NIR is measure by subtracting CDR from CBR.
as the economic burden of an aging population and the social issues associated with an influx of new immigration to supplement a declining workforce.

Migration and political policy have been the two main solutions to deal with the population outcomes related to Stage 5. First, immigration is one way to increase the country’s population and bolster the workforce. Several factors have to be considered regarding an expanding immigrant population in a country:

- Why are the immigrants relocating?
- How does the host country welcome immigrants?
- Do the immigrants plan on staying permanently?
- What kind of jobs will the immigrants occupy?
- How many children will they have to contribute to the natural increase rate (NIR)?

Second, government policy can have motivating factors and provide access to certain child amenities for new families: childcare, parent-leave, and tax incentives. The government has an option to promote family planning in hopes to facilitate fertility rates. Yet despite these two solutions, some of these countries in Stage 5 are not seeing an increase in fertility rates, and continue to have shrinking populations.

**Problem Statement**

Throughout all stages of the DTM, children can be seen as an economic benefit or an economic challenge. In the early stages children were seen as an advantage to help with agricultural work and to provide security for aging parents. In the later stages of the DTM, children were seen as an economic burden in societies undergoing industrialization and urbanization, leading in some cases to declining population growth and top-heavy
population pyramids. Governments have attempted to alter the NIR, either designed to decrease or increase the rate, through population policies. For example, China created incentives for its citizens to have fewer children to recoil rapid population growth the country experiences during Stage 2 of the demographic transition. In the case of Germany, the country is trying to find ways to rejuvenate its population. After a cultural shift towards having smaller families and/or waiting to start families in Germany, can the government inspire Germans to start having families through economic benefits? In other words, will economic incentives implemented by the government create enough momentum to increase the national increase rate within Germany? Or does the German government have to consider other factors that are affecting fertility rates?

My thesis will address these issues through the following research objectives:

1. What variables affect CBRs in Germany at the state level?
2. What German cultural values and social trends impact family planning?
3. Are there other historical instances when government policy altered family planning?
4. What are Germany’s current family planning and population polices, and how have they affected population trends in the country?
5. How has immigration shaped Germany’s population today?

**Study Area**

Because Germany has a mixture of several key variables that help put into perspective the reasons for declining birth rates and ways to stabilize its population, the research and analysis of this thesis applies to trends in this country. These variables are shaped by the fact that the country is a significant world player, receives a high number
of immigrants annually, has low fertility rates, and has recently implemented population policies that provide economic incentives for citizens to have more children. Chapter 2 includes an examination of the many reasons why I chose to focus my research within the country of Germany as well as a detailed statistical analysis of the country at the state level.

**Methodology**

1.) *What variables affect CBRs in Germany at the state level?*

This research objective is the focus of Chapter 2. Several variables were considered to address this question: gross domestic product (GDP), CDR, population density, foreign population density, and religion. A correlation matrix was created to confirm that none of the selected data were too similar to use in the statistical analysis. Then the collected data were compiled and calculated in the SPPS program, which resulted in the creation of several models. A selection of five models were collected and applied into an equation format. Then, regression models were calculated and mapped. Finally, an analysis was conducted from observations of results, and prior knowledge of various German regions.

2.) *What German cultural values and trends impact family planning?*

This question is explored in Chapter 3. Various German cultural and social trends were analyzed and synthesized in order to theorize why there are low fertility rates. One example is the concept of *Rabenmutter* or Raven Mother, which explains that society claims that mothers are abandoning their children if they go back to work full-time. Another characteristic examined is the unique school system and its schedule, which complicates family planning due to the shorter hours that most schools have. The third
observation of German culture is the lack of availability for child care and day care systems. The argument is that these three cultural and social trends will continue to contribute low fertility rates if the government and society do not attempt to alter these strong cultural viewpoints.

3.) Are there other historical instances when government policy altered family planning?

The beginning of Chapter 4 addresses this objective statement. Two case studies were reviewed for this research that examines how a population shifts from Stage 2 to Stage 3 in the DTM. The first case study deals with the French Bourgeoisie, and how the wealthy class of French society illustrated some motivational factors, which influenced the common class to have smaller families, thus altering family planning. Industrialization, urbanization, improved farming techniques, and new child-protection laws were other factors that contributed to the DTM shift. Yet the argument is presented that the Bourgeoisie class helped in making a smoother transition in the DTM. The second case study is related to China’s so-call “One Child-Policy.” During this time frame, China also experienced urbanization and industrialization. The government introduced various family planning promotion policies, which eventually evolved into the modern One-Child Policy, providing tax incentives to those families, who only had one child. These case studies present an argument that government population polices had an effect on decreasing fertility rates. If so, then this would suggest they should be able to have the same effect in reverse through policies designed to increase fertility rates.

4.) What are Germany’s current family planning and population polices, and how have they impacted population trends in the country?
The second part of Chapter 4 reviews the various family planning policies in Germany, especially the newest policies created from the 2007 Parental Allowance and Parental Leave Act. Germany has several economic options and benefits that families can take advantage of when they begin to have offspring. These various benefits were analyzed through articles and Germany’s federal government website. By the end of the chapter, it becomes clear that while these benefits are available, they are complicated to understand, much less comprehend who is eligible for which benefits.

5.) How has immigration shaped Germany’s population today?

The final objective statement is answered in Chapter 5. Germany receives a large number of immigrants each year and they represent as a substantially large part of its population. Since post WWII, Germany’s immigration history has been unique in comparison to the rest of Europe. The chapter synthesizes various aspects of what types of immigrants are in Germany and how they are integrated into the society. The chapter reviews the history of Germany’s Guest Worker program, and what type of immigrants it receives today. Modern immigrants are divided into three categories: EU and Schengen Agreement, Ethnic Germans, and Humanitarian Asylum and Atonement immigrants. The final discussion point of this chapter is integration. Germany has adopted some integration policies to accept foreigners. However some of the integration concepts might not be as successful, especially where the foreigners do not have equal opportunities as native Germans.

At the end of exploring each of these objective statements, several more questions are presented. This means that the research is not complete, and that the problem statement is a more complex concept than initially thought. In the final chapter, chapter
6, a discussion is presented. That combines these extended questions, synthesizes these multiple observations, and analyzes fertility and population geography in this new demographic transition, which attempts to understand future population trends post Stage 5 in the DTM.

**Literature Review**

*Population Geography: Why study Fertility?*

“Population geography has traditional focused on the three themes of fertility, mortality and migration” (Jones, 1990). However most of the literature available on population geography is related to immigration and migration. It is easier to study location and analyze the movement of people rather than understand the complexities of fertility and mortality within societies. The demographic transition model is seen as a key geographical analysis of the study of fertility and mortality rates from a spatial perspective. The DTM is important for understanding a country’s future demographics and how it will shape its future in general.

Paul Boyle is an advocate for the significance of studying fertility and mortality rates of countries from a geographical standpoint. Yet Boyle argues that this research has continued to remain stagnant. He argues that demographic studies rely on the DTM for comprehending the decline of mortality and fertility rates in general, but limited research on how each country evolved individually is not considered for the most part. “However, the assumption that mortality declines consistently preceded falling fertility rates has not been upheld in geographical studies. … Furthermore, such geographical inconsistencies were apparent not only between countries but also within countries”

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This means that there should be continued research within a country to understand how the demographics vary within the individual country to be able to understand it as a whole.

Boyle also argues that to understand the change in the country’s fertility variation that cultural and social aspects need to be comprehended. Boyle stresses this point in the following quote:

Rather than focusing only on the relative contribution of economic, cultural or social forces to the single process of fertility decline, as many have been tempted to do, the work of Szreter, Garrett et al. and Woods (among others) has encouraged us to recognize the value of a geographical interpretation. Any explanation for fertility change requires an understanding of local cultures and social leanings (618).

Different regions within a country can vary in their cultural and social values, which in turn affect the choices in family planning and fertility rates. Boyle encourages others to take the opportunity to find spatial variations to create new theories on population change and to be able to predict future populations on fertility interests of the country. Perhaps what is most significant for this research is that Boyle stresses geographers should research fertility and mortality research at a cultural and social level.

*Over Population vs. Shrinking Population*

The typical belief about the current world’s population, around 7 billion, is that the world is becoming overpopulated. It is speculated by the Population Reference Bureau (PRB) that the reason why the world’s population is growing rapidly is due to the fact that many of the developing countries are stuck in Stage 2 and Stage 3 of the DTM. However, the population growth rate is declining in the developed world decide to

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have fewer or no children.

The fear of having a rapid growth rate of the population stems from Robert Thomas Malthus’ 1798 paper “An Essay on the Principle of Population.” He believed that as the world’s population continues to increase that Earth’s resources will not be able to sustain its population. Therefore, people will starve and Earth will run out of resources. Malthus did not account for modernization and technological advances, particularly for improvements in farming related to the agricultural revolution. Farming can now be done on smaller pieces of land and in varied terrains through inputs, such as irrigation, fertilization, and mechanization. Yet Malthus’ theory continues to reappear with different concepts in the literature. The idea that the world will exhaust its resources, such as gas, natural water, and other finite resources, is still prevalent. With this argument, several critics such as Paul Ehrlich⁷ and organizations like World Overpopulation Awareness believe that the world is overpopulated and resources are unevenly distributed, but perhaps not in a crisis situation yet. They argue that there is a need to spread the demonstration of contraception and educating the population on family planning. Yet they discredit humankind’s creativity to find alternative ways to live in this modernized era. For instance, mankind is farming on smaller pieces of land, and producing more crops than our predecessors, all due to the advancement of technology. In addition, currently humans are dealing with shrinking oil resources by creating biodiesel, ethanol, and electric energy supplies. As resources become more scarce and demand increases, humans find alternative methods through technology. They also

ignore the statistics of the decreased fertility and population growth rates and how the world’s population will alter in a few generations.

Ben Wattenberg’s book *Fewer: How the New Demography of Depopulation Will Shape Our Future* explores the decreased population throughout the world. He disagrees with the UN’s statistical classification of how they rank positive, stable, and decreasing growth rates. Wattenberg analyzes the different statistics of developing countries and notices that even their fertility rates have decreased at a rapid rate within the last 20 years. While their numbers are still about at replacement rates, they are still dropping faster. The momentum from the birth rates and increasing life expectancies is driving the increase in natural increase rates. However, Wattenberg strongly believes and argues that the world’s population will decrease sooner than predicted. Wattenberg does not believe that the population growth rate will reach zero, but he does believe in the need to discover a way to stabilize the world’s population.

*Demographic Transitions*

Adolphe Landry and Warren Thompson were the first to observe that there is a regular pattern of population change. Kingsley Davis and Frank Notestein were the ones who connected this population change to economic and social conditions, which signifies the DTM (Blue, 724). In Stage 1, or the pre-transition stage, of the DTM there are high birth and death rates. As technology advances to find newer ways of preventing death, the society moves into Stage 2, or the early transition phase, where CDR begins to drop, but CBR still remains high, resulting in high natural increase rates in this phase. Eventually there is an economic and cultural change in society through industrialization,

urbanization, and political policies that contributes to a decline in CBR. At the same time, there are continuing discoveries to prolong life expectancy, resulting in further decreasing the CDR. This describes Stage 3, or mid-transition. Eventually the prolonging of life tapers off, where the CDR just remains at a constant level as people live productive lives, and birth rates continue to decrease that enters society into Stage 4, the late transition. Typically the DTM ends here, where CBR just remains barely above CDR, but both are relatively low and population growth rates are low or approaching zero.

The DTM does not end at Stage 4 since Stage 5 has already been referenced. The model has expanded and has been referenced to go through a second and even a third transition to help explain the shift of populations that have gone through the first transitions. Stage 5 is an accepted addition to the DTM, and is named the second transition, where the CDR is higher than the CBR, therefore the NRI becomes negative. David Bloom states, “the most commonly cited potential drivers of lower fertility include increasing labour [sic] force participation by women, delay marriage and home-leaving, delay childbearing, and the increased social and financial costs of children” (131). These social, cultural, economic and institutional agencies were the factors that aided in the transition to Stage 5 where fertility rates are so low. Advanced technology and modernization has made life easier, food readily accessible, and medical advancements have prolonged lives, but life expectancies have reached a biological maximum because, for now, life is not eternal. Therefore, graying populations in more developed countries

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have slowly been increasing the CDRs, and combined with declining CBRs, have led to shrinking populations in this stage of the DTM.

David Coleman goes even further than van Kaa’s idea of the Second Demographic Transition Model and argues that there is a Third Demographic Transition Model that is taking place within the USA and Western Europe. Coleman believes that the second transition often only focuses on a new social, cultural modern revolution, where people settle into a comfort zone of having children out of wedlock and delaying childbirth. He believes that migration and its impact on recreating a population have been ignored as a transition.

The process described and projected here, resulting from low fertility combined with high immigration, are significant because they are changing the composition of national populations and thereby the culture, physical appearances, social experiences, and self-perceived identity of the inhabitants of European nations (Coleman, 402)\textsuperscript{10}.

Coleman states than van de Kaa only references immigration as a natural process with an aging population and shrinking working class, but believes that high immigration should be considered as the third demographic transition. Regardless of the different epistemologies of how migration is placed in the DTM, migration is still significant in the later stages of the DTM.

\textit{Net-Migration}

Dirk van de Kaa is one of the supporting theorists of the Second Demographic Transition Model\textsuperscript{11}. The developed regions of the world show how they have progressed through all four stages of the first demographic transition model. By the end of the fourth stage of


this model it shows crude birth rates below crude death rates, where the natural increase rate continues to decline until the population reaches zero. Unrealistically the population growth would not reach zero, yet the CBR and CDR for these countries appear to remain at a constant decline. Perhaps more realistically, net migration has been added to the second DTM. This is the fourth factor displayed in the demographic transition models. This new variable can easily be incorporated and analyzed within the original DTM and its graph of CBR, CDR and NIR to see how net-migration factors into Stages 1-4, even though net-migration was never one of the original variables. In Stage 5 of this model, the diagram shows how the in-net migration is higher than the CBR. Thus, the natural increase rate is stabilizing.

For many demographers, net-migration is the solution to countries that have reached this stage of the model. With a smaller working force and a non-working aged population, there is an economic and business crisis. Who will pay taxes, and who will provide for the aging population? Having working-age migrants come into an aging country seems like a win-win scenario. Immigrants are probably moving into the country in search of improved living situation, and are likely aiding a country that needs more workers. Gerda Neyer explains this:

Persistently low fertility, together with the prospects of population decline, a shrinking labor force, and an increasing old-age dependency ratio, have led many researchers to propose immigration as a compensatory measure for low birth numbers, and for a shortage of labor (Malmberg 2006). These suggestions aim at stabilizing or restoring a population structure that is seen as optimal for sustaining or enhancing Europe’s economic performance, and for maintaining its labor market structure, its pension systems, and its welfare levels. In other words, within a stationary demographic framework, the only solution is seen as: if not births, then immigrants. Proposals to increase immigration in order to counteract a
shortage of births and workers have drawn criticism from two sides (234)\textsuperscript{12}.

Neyer argues if the country does not have a positive or stable birth rate, then positive net-in migration seems to be a logical and beneficial solution. Some countries are not “open arms” about accepting immigrants into their country. In Europe, and even in Germany, there have been several right wing movements attempting to discourage unwelcome immigrants.

Yet what should countries do if they have a long tradition of accepting immigrants, but still are unable to stabilize their population, such as the case in Germany? Germany provides an excellent example with high intake of immigrants each year and with its lower fertility rates. This situation is optimal opportunity to observe Germany’s political policies with immigration and tax breaks to increase fertility rates.

*Political Laws: How they affect fertility*

Scandinavian countries, especially Sweden, have already been known to implement policies, which encourage businesses to have outstanding parental leaves, especially for fathers. Katharina Spiess and Katharina Wrohlich address new German policies in an article, “The Parental Leave Benefit Reform in Germany: Cost and Labour Market Outcomes of Moving towards the Scandinavian Model.” Their introduction explains that Germany has one of the lowest fertility rates in Western Europe, but also has one of the lowest percentages of mothers in the workforce. Within their research, Spiess and Wrohlich attempt to figure out who would benefit the most from the new

fertility laws, where they have discovered that the high-income households would actually benefit the most from the new proposed laws. Another aspect covered was to figure out how much more money could be inputted into the society through taxation if there was an increase of working mothers. Two factors were considered essential to increase parents in the workforce. The first was to have companies implement friendly parental leave policies. The second was to provide better access to childcare. They report that there are 40 open spots for childcare for every 100 children born in East Germany. For those same 100 newborns, there were only 10 open spots in West Germany (16). Thus, they also make the important point that there is a geographic discrepancy within Germany regarding childcare amenities.

Esther Geisler and Michaela Kreyenfeld’s article, “How Policy Matters: Germany’s Parental Leave Benefit Reform and Fathers’ Behavior: 1999-2009,” reflects how Germany’s parental leave laws are contradicting. Germany is known to have the longest parental leave within Western Europe, paying both parents a flat rate for a child for the first two years of their child’s life, as well as allowing a parent to have up to 36 months of paid parental leave. In 2007, the parental leave was reduced to 14 months. Geisler and Kreyenfeld ponder if this means that Germany is losing their identity as a conservative welfare state (6). The reduction of the parental leave is designed to economically boost Germany, and to maintain a working class, which is shrinking over the years (“Germany Population 2060”). At the same time though the government is providing incentives to families who do not use public daycare systems, which provides a

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contradiction to the system. On the one hand, the government is providing incentives to have both parents working, by having the mothers return to the workforce sooner, but on the other hand, the policies seem to favor male breadwinner families (7). This article addresses how Germany attempts to change its conception and identification of family life, while also attempting to maintain part of its heritage roots of the ideal German family.

*Why should government policy be considered within the Second Demographic Transition Model?*

Sometimes government policy can change cultural and social traditions, such as family planning, at times an unforeseen consequence. Culture and a society’s view of the “average” family are two factors that can alter the fertility rate within the DTM. The government could have enough momentum to alter a society’s beliefs of how large families should be. The nobility in the beginning of the industrial revolution began to have fewer children, and by example influencing citizens of lower economic classes to also have fewer children. China created policies to encourage its citizens to have fewer children, which has proven to have a significant impact on is population structure. If the governmental policies had the capacity to decrease fertility rates from Stage 2 to Stage 3, it is possible that they could have the reverse influence of increasing fertility rates from Stage 5 to Stage 6. I believe that economic incentives and childcare amenities financed by the government could be a starting point for changing a country’s culture of family size. I would like to look at aforementioned variables in the case study of Germany to explore these questions. Ultimately, I would like to suggest whether or not political policy could also be a significant variable within the new DTM.
Chapter 2

Study Area and Statistical Analysis

This thesis focuses on the fertility rates within Germany as related to both historical and social contexts as well as population and immigration policies. There are several countries that are in Stage 4/5 of The Demographic Transition Model (DTM): Japan, Italy, and many other western European countries. However, Germany was chosen to be the region of focus for my research for various reasons. First and foremost, I have a German background and qualifications that provide me with opportunities to comprehend the German culture, particularly language skills, that enhance my ability to understand the historical and social contexts, and to access relevant sources in German that address population and immigration policies.

Germany is a country with 16 states\textsuperscript{15}, centrally located within Europe with nine different countries\textsuperscript{16} bordering it (Figure 2.1). Its location aided the country in becoming an influential world power, in part as a destination for immigrants, and a great location.

\textsuperscript{15} View Figure 2-1 to see the 16 different labeled states: Baden-Württemberg, Bavaria, Berlin, Brandenburg, Bremen, Hamburg, Hesse, Lower Saxony, Mecklenburg-Vorpommern, North Rhine-Westphalia, Rhineland-Palatinate, Saarland, Saxony, Saxony-Anhalt, Schleswig Holstein, Thuringia (English Names)

\textsuperscript{16} Nine bordering countries: Netherlands, Denmark, Poland, Czech Republic, Austria, Switzerland, France, Luxembourg, and Belgium
for a thriving economic market. Germany is a member of the United Nations (UN), and the European Union (EU). According to the *Guardian*, Germany has the largest economy and contributes the most money proportionally in the EU. In 2011, Germany contributed 19.67 Billion Euros to the EU, but only received 12.13 Billion Euros from the EU. This means that Germany contributes more money than it receives from the EU. One of the reasons for the larger contributions is that the economy should gain from other markets and contracts with other member states.

![German States Reference Map](image)

**Figure 2-1.** German States Reference Map

*Bremen is located in to locations: 1.) Bremen the City-State within Lower Saxony, and 2.) its city port.*

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Germany is also one of the most populated countries within Europe, with a population reaching almost 82 million. According to EU’s statistical website, Germany has the largest population as a member of the EU. France is the second largest member state of the EU with a population of 65.6 million\(^{18}\). It is ranked to receive the third largest amount of immigrants per year behind the United States and Russia receiving around 5 million immigrants a year\(^{19}\). Despite the high numbers immigrating to the country, it still has a shrinking population of -.2 percent. All of these facts make Germany a good candidate for researching future population trends. Since Germany has such a strong economy that much of the EU relies on, it will need to have a stabilized population to keep its economy strong. These factors support the choice to choose Germany as a study area for this thesis. The remainder of this chapter focuses on Germany at a state level and compares various statistics to predict Crude Birth Rate (CBR) through regression analysis.

**Regression Analysis**

A major focus of this thesis is understanding and contextualizing declining population growth rates in Germany. There are various indicators that affect birth rates, which will be referenced in subsequent chapters but also analyzed first in this chapter. A regression analysis and correlation matrix was run from various data that were found online. The point of the regression analysis was to see what factors contributed and affected spatial variation in Germany’s birth rates.


Data Collection and Defining the Variables

All the data collected and used were divided into state level data. This was the smallest aggregated data that could be collected. Calculated CBR\(^{20}\) is used as the dependent variable, since the thesis is an attempt to analyze why birth rates within Germany are dramatically falling. Germany’s average CBR is 8.1 per 1000. The range of CBR for each German state is 7-10, which leaves little variation among the states (Figure 2.2). Perhaps one independent variable affects CBR in one state more than another. The following are a list of the independent variables and why they were chosen. These variables are subdivided into three categories: demographic, economic and cultural.

Demographic Data

The majority of the data collected for this research was demographic data. Because the focus of this thesis is on demographics, several demographic factors were analyzed to predict if they had any influence on population growth rates.

- **Germany’s total population (by state):** Total population is a key demographic factor, and it is readily available at the state level. The data from 2011 was retrieved from Germany’s national statistical website. The total population in German in 2011 was 81,843,743. Figure 2.3 depicts how many residents live in each state.

\(^{20}\) CBR was calculated from 2011 live birth data from Germany’s national statistical website. View Figure 2-2.
Figure 2-2. Crude Birth Rate by German State, 2011. Hamburg and Berlin (in red) have the highest CBR. Saxon-Anhalt has the lowest amount of foreigners of 1.9 percent.
Figure 2-3. Total Population by German State, 2011
North Rhine-Westphalia (in red) appears to have the largest number of people living within the state.
- **Foreign Population**: In Chapter 5, immigration is discussed. Immigration plays a major role within Germany. This country receives a huge portion of immigrants within the European Union. From 2011 data, Germany has 7.4 million foreigners living in the country. It is important to see the proportion of foreign population by each state. Perhaps foreigners choose to live in one location over another. These data were also retrieved from Germany’s national statistical website with 2011 data. Figure 2.4 illustrates where the foreign population lives within Germany.

- **Foreign Population- Percentage of Total Population**: While the total number of foreign population is useful, it does not illustrate how much foreign population is living within that state in comparisons with the total population. Therefore it makes sense to calculate the percentage of foreign population. This shows how much of the foreign population represents as a percentage of the total population, or rather how many foreigners are there mixed in with the total population. This number was hand calculated, but also provided through Germany’s national statistical website. Germany overall has a foreign population of 9.1 percent. Berlin has the largest foreign population living within its state at 14.1 percent, whereas Sachsen-Anhalt has the lowest amount of foreigners of 1.9 percent. Although this is not provided in map format, foreign population density is included (see Figure 2.7 and discussion below).
Figure 2-4. Foreign Population by German State, 2011.
• **Crude Death Rates (CDR):** This variable was calculated from Germany’s total deaths 2011 data from Germany’s statistical website. CDR is an important variable because it is one of the main factors in the DTM. The numbers appear to be large, which shows how much of Germany has an aging population. This graying population has an adverse effect on the CDR, increasing in value. The range of CDR within Germany is only between 9 and 13, with Germany’s national average at 10.4 per 1000 citizens. This number is 2.3 persons higher than its national CBR rate, which partially explains the decreasing population. According to the CIA World Factbook’s 2013 data\(^{21}\), the average CDR for all of the EU member states is 10.6. Of all the EU member states, Bulgaria has the highest CDR value of 14.31, and Ireland has the lowest CDR value of 6.41. Figure 2.5 shows Germany’s CDR at the state level.

**Excess of Births over Deaths:** These data were provided from Germany’s national statistical website for 2011. This number is calculated by subtracting total deaths from total births. It shows if a German state is having positive or negative growth. All states have more deaths than births, which results in negative natural increase rates occurring throughout the country. However, there are a few important exceptions in the cities of Hamburg and Berlin. Both locations are densely population, and receive a large number of immigrants each year. Hamburg has a positive 65, and Berlin has a positive 1695. Overall, these numbers for these two cities are relatively large positive number to show the

\(^{21}\) The CIA World Factbook data are 2013 data, which lists Germany’s CDR 11.7, which is an increase from Germany’s federal website data from 2011. The 2011 data were used due to the fact other data used in the regression analysis was from the same year and source.
difference between deaths and births that could prevent a shrinking population within the country as a whole.

Figure 2-5. Crude Death Rate by German State, 2011.
- **Land Area (per square Kilometer)**: This data was retrieved from Germany’s federal website. The data was collected so population density could be calculated.

- **Population Density (per square Kilometer)**: This was hand calculated with land area and total population. Population density explains how close people are living next to each other in a given space. Urbanization often is associated with decreasing fertility rates, related to living in smaller spaces, and increases in cost of living. Therefore, it could be theorized that the more densely populated each German state is, then the lower the fertility rates. Figure 2.6 shows how certain states are more densely populated than others.

- **Foreign Population Density (per square Kilometers)**: This was hand calculated as well with land area and total foreign population statistics. It was also important to determine how densely populated the foreign population was within each German State. Figure 2.7 displays where the majority of the foreign population is concentrated within Germany.
Figure 2-6. Density per square Kilometer. While Map 3 shows Nordrhein-Westfalen with the largest population, that state does not have the largest population. It would appear the population density is evenly distributed throughout all of Germany with the exception of its three City-States: Berlin, Bremen, and Hamburg, to have the highest population density.
Figure 2-7. Foreign Population Density, 2011. Density showed per squared Kilometer. It would appear that the immigrants settle in the same areas of high density, especially the City-States again: Berlin, Bremen, and Hamburg.
Economic Data

There are many ways to measure the wealth of Germany and its states. To begin this research, different economic measurements were gathered. Only one measurement will be used for the regression analysis, but several options were available to choose from. All this economic data was collected from the EU’s website, with 2008 statistics.

All the values are in Euros, Germany’s currency.

- **Gross Domestic Product (GDP):** This is a standard to measure the national wealth of Germany. GDP is defined as the monetary goods and products made within a country and its profits. This helps define a country’s wealth at the national scale, but does not illustrate the distribution of wealth within the country.

- **GDP per inhabitant:** Unlike GDP in general, this helps indicate how much wealth there is per citizen using the GDP and total population. Germany’s national average is 30,200 Euros per inhabitant. Figure 2.8 depicts this independent variable, which was used in the regression model.

- **GDP Purchasing Power Standards (PPS):** This is a standard used to measure the wealth of a country in comparisons with other countries. This means that price differences between countries and various costs of living are comparable.

- **GDP/inhabitant PPS:** This is similar to GDP Purchasing Power Standards (PPS). This value examines how much money an individual has to spend and meet the criteria of standard of living.

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Figure 2-8. Gross Domestic Product (GDP) per Person, 2008
Cultural Data

Cultural and social factors should also be included in any analysis of demographic trends. Religion, for example, is an interesting factor to consider when analyzing CBR. Does religion have any influence on families and family size? Some argue that historically Catholicism and other Christian religions have encouraged adherents to have larger families. However, the number of people claiming to practice a religion in Germany has slowly declined in recent years, much like many other more developed countries. In Germany, people who register with the church pay church taxes. The number of people showing registration has decreased. Nonetheless, religious registration is available at the state level, and is used as a part of this regression model to infer whether or not religion has any influence on CBR. All of this 2010 data come from Evangelische Kirche im Rheinland or Evangelical Church in the Rhine Provinces. Figure 2.9 shows all of the following categories next to each other to make a conglomeration.

- **Catholic Population (Percentage Total)**: This number represents all the Catholics within Germany, at least those registered to the Catholic Church. All of Germany’s Catholics represent 30.7 percent of the total population.

- **Evangelical Christian Population (Percentage Total)**: This number represents all the registered Evangelical Christians. It might seem odd to have one statistic for Evangelical Christians and another represents Catholics. However, the Protestant Reformation took place within Germany and the differences between the Catholics and other Christian religions can sometimes be quite present, but less so in the 21st Century than during the Protestant Reformation. The total
registered Evangelical Christians represents 29.9 percent of the total German population, almost equally proportional to Catholics.

Figure 2-9. Registered Religions in Germany Map. Notice that all former East German states (in addition to Berlin and Hamburg) have the highest percentages of non-registered religions.

- **Unregistered Religion (percentage Total)**: 39.4 percent of Germany’s population is unregistered to a specific church. This category is somewhat deceiving. The total percentage does not mean that almost 40 percent of Germany’s population is atheist. It could mean that some of them hold the Christian values to be important, but are not dedicated enough to be registered with a church, especially where they can avoid paying another tax. This portion
of the population could also represent some of the Islamic and Jewish population that does not have to pay taxes to their mosque and synagogue. However, this value was used quite often in the regression analysis. In the analysis, this data was viewed and applied as all non-religious people within Germany. This is a slight misnomer because some of this percentage could potentially represent religious Germans, who have chosen not to register to avoid taxation, and Germans with other religious affiliates.

**Challenges and Limitations**

Collecting foreign data can be quite a challenge. Often the data are provided in a foreign language, in this case German. Also European countries tend to keep this information private or very basic. Ideally, the data would have been collected at the county level, where several observations would be present at a smaller scale than by state. Then the data could be used to calculate spatial autocorrelations within the country. Unfortunately, the smallest data that could be found for free was at the state level. This causes issues in finding enough variances and differences with such minimal observations. However, despite this disadvantage, these data were still used an exploration technique, to see if any of these independent variables could have an influence on Germany’s population growth.

In addition, there were other variables that would have been helpful to have and to use in this regression analysis. Unfortunately, these data could not be found in either English or German for free at the state level. Because of time and budget constraints, 

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23 The idea is that neighboring communities are more connected and share similar attributes, and therefore have a spatial connection. This often becomes an issue with statistics because it is assumed that all observations are independent from one and another. An increase of observations at a smaller geographical scale would perhaps hopefully demonstrate that neighboring counties carried similar fertility rates.
these variables had to be omitted from the research and analysis. The following are examples of other data sets that could have enhanced the study, but were not easily or freely accessible:

- **Median Age**: Already mentioned, Germany has a graying population. With a larger percentage of Germany having an older population, this means that there is a smaller population available to have offspring. It would have been useful to see if one state has a significantly higher aged population in comparison to others. Currently the median age of Germany as a whole is 45.7. This shows that half the population is 0-45 and the other half of the population is older than 45 of years. This is a high median age for a country to have.

- **Number of females with university degrees**: There is discussion that more females are getting higher education. As females achieve a higher education, this means they tend to wait to start their families, in an attempt to jump-start their careers. This discussion is touched on briefly in Chapter 3. It would be nice to see if there was an increase of females with university degrees over time, but also in certain areas of Germany. And do these states with a higher level of educated women tend to have lower birth rates as well? This was a valued question to ask, but alas there has been no concrete data collection of how many females are earning higher education degrees.

- **Average percentage completed High School Degree (or equivalent)**: Once again, these data could help illustrate the relationship between education and fertility. Chapter 3 briefly explains the education structure within Germany, to

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24 “Germany: People and Society,” *CIA World Factbook*
show that there are different types of high schools. This is just another level to see if it corresponds with birth rates and completion of high school. It would be interesting to note where the majority of females are completing their education: *Hauptschule, Realschule,* and *Gymnasium.* According to OECD’s Better Life Index, “86% of adults aged 25-64 have earned the equivalent of a high-school degree, more than the OECD average of 74%.” This means that Germany on average has a more educated population in comparison to other OECD countries. Does this mean a more educated population results in a declining CBR?

- **Number of Females working full time:** In Chapter 3, there is a discussion related to the pressure German females feel to work only half time in order to raise their families. The chapter concludes by questioning how many females are trying to work full time and raise a family. It would be interesting to see the relationship between CBR and full-time working females. If there are more full time working females, is CBR up or down?

- **Islamic Population:** While it was beneficial to find the registered Christian and Catholic population of Germany, it would also be helpful to look at other religions practiced within Germany. According to CIA World Factbook, Germany Muslim religion represents 3.7 percent of all of Germany’s population. While this seems likes a small number, this is still an increase since the end of WWII. This population can mostly be accounted by the increase of the Turkish population, which is referenced in Chapter 5.

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While I recognize the challenges and limitation in my research in regards to access to some of the key variables needed to examine population trends in Germany, I devote Chapters 3-5 to exploring these voids in an attempt to further contextualize the demographic patterns of the past and present with an aim to making predictions for the future. Before proceeding to chapters on family, population policy, and immigration, I present my analysis of available demographic, economic, and cultural variables in the next section.

*Methodology and Results*

First the collected data were put into a correlation matrix (Table 2-1), which showed which variables were more closely related to others in order to decide which variables would be used in the regression analysis. The purpose of the correlation matrix was to choose the variables that did not have any multicollinarity, where two or more variables that are similar to one and another that there is a relationship that does not makes them a complete independent variable. This is important since the majority of collected economic and cultural data were similar. Due to so many of the variables having some multicollinarity, several of the variables could not be used in this regression analysis.
In the economic data, the GDP per inhabitant is used in the regression analysis. In the cultural data, the non-registered religion is used, due to it having the largest representation within Germany. But it would seem that the non-registered church population would be more likely to use preventative measures to have children, which explains lower population- even though as stated above that this category does not represent all non-religious Germans. For the demographic data, CDR, population density and percentage of foreign population are all used. CDR was chosen on the basis it is a
critical component of the DTM. Some form of foreign population data should be used in the regression model, since immigration is one factor considered within this thesis. Excel depicted that the percentage of foreigners of the total population had a better relationship with the other variables. Then due to rationality and hypothesis of the more densely populated the area is the lower the CBR should be. This would again confirm whether or not this variable does have an effect on CBR. In total five independent variables were chosen and used within the regression models: CDR, GDP/inhabitant (Euros), Percentage of Foreign Population, Population Density, and Unregistered Religion. Several models were used in IBM’s SPSS Statistics’ program. Five of the models were then set aside, compared and contrasted, and computed to create residuals. The SPSS results and variables can be seen in Table 2-2. This table shows the unstandardized Beta coefficient (abbreviated unstand. β Coef), standardized coefficient (abbreviated stand. Coef), and the P-value. Table 2-3 provides the residual results from each model, the difference between the estimated (abbreviated est.) CBR and the actual CBR. The results of these tables and the residual maps are discussed and analyzed below.
Table 2.2. Variable Results

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model 1 R²: .84</th>
<th>Model 2 R²: .76</th>
<th>Model 3 R²: .76</th>
<th>Model 4 R²: .81</th>
<th>Model 5 R²: .76</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unstnd β Stand β P-value</td>
<td>Unstnd β Stand β P-value</td>
<td>Unstnd β Stand β P-value</td>
<td>Unstnd β Stand β P-value</td>
<td>Unstnd β Stand β P-value</td>
</tr>
<tr>
<td>Constant</td>
<td>9.75 0.5897 0.5758 0.8739 0.10.974 0</td>
<td>-0.289 -0.49 0.056</td>
<td>N/A N/A N/A</td>
<td>-0.223 -0.379 0.09</td>
<td>-0.286 -0.49 0.056</td>
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<tr>
<td>CDR</td>
<td>0.289 0.547 0.019 0.522 0.003</td>
<td>0.017 0.581 0.002</td>
<td>N/A N/A N/A</td>
<td>N/A N/A N/A</td>
<td>N/A N/A N/A</td>
</tr>
<tr>
<td>Unregistered Religion</td>
<td>0.01 0.329 0.282 0.016 0.547 0.108</td>
<td>0.019 0.622 0.003</td>
<td>N/A N/A N/A</td>
<td>N/A N/A N/A</td>
<td>N/A N/A N/A</td>
</tr>
<tr>
<td>GDP</td>
<td>0.0000261 0.269 0.00000592 0.714 0.00000593 0.068 0.778</td>
<td>N/A N/A N/A</td>
<td>N/A N/A N/A</td>
<td>N/A N/A N/A</td>
<td>N/A N/A N/A</td>
</tr>
<tr>
<td>Pop Density</td>
<td>0.346 0.335 0.0000693 0.106 0.782</td>
<td>N/A N/A N/A</td>
<td>N/A N/A N/A</td>
<td>N/A N/A N/A</td>
<td>N/A N/A N/A</td>
</tr>
<tr>
<td>% of Foreign Pop</td>
<td>0.002 0.997 0.128 0.81 0.165</td>
<td>0.149 0.946 0.002</td>
<td>0.108 0.682 0.011</td>
<td>-0.012 -0.08 0.771</td>
<td></td>
</tr>
<tr>
<td>STATES</td>
<td>Observed CBR</td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
<td>Model 4</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Est. CBR</td>
<td>Residual</td>
<td>Est. CBR</td>
<td>Residual</td>
</tr>
<tr>
<td>Baden-Württemberg</td>
<td>8.23</td>
<td>8.32</td>
<td>-0.08</td>
<td>8.26</td>
<td>-0.02</td>
</tr>
<tr>
<td>Bavaria</td>
<td>8.23</td>
<td>8.09</td>
<td>0.14</td>
<td>7.87</td>
<td>0.36</td>
</tr>
<tr>
<td>Berlin</td>
<td>9.44</td>
<td>8.54</td>
<td>0.90</td>
<td>9.35</td>
<td>0.10</td>
</tr>
<tr>
<td>Brandenburg</td>
<td>7.32</td>
<td>7.88</td>
<td>-0.55</td>
<td>7.72</td>
<td>-0.40</td>
</tr>
<tr>
<td>Bremen</td>
<td>8.15</td>
<td>8.04</td>
<td>0.10</td>
<td>8.74</td>
<td>-0.59</td>
</tr>
<tr>
<td>Hamburg</td>
<td>9.52</td>
<td>8.88</td>
<td>0.64</td>
<td>9.22</td>
<td>0.30</td>
</tr>
<tr>
<td>Hesse</td>
<td>8.45</td>
<td>8.18</td>
<td>0.27</td>
<td>8.28</td>
<td>0.17</td>
</tr>
<tr>
<td>Mecklenburg-Vorpommern</td>
<td>7.73</td>
<td>7.81</td>
<td>-0.08</td>
<td>7.68</td>
<td>0.05</td>
</tr>
<tr>
<td>Lower Saxony</td>
<td>7.74</td>
<td>7.64</td>
<td>0.10</td>
<td>7.55</td>
<td>0.20</td>
</tr>
<tr>
<td>North Rhine-Westphalia</td>
<td>8.02</td>
<td>7.78</td>
<td>0.24</td>
<td>8.06</td>
<td>-0.04</td>
</tr>
<tr>
<td>Rhineland Palatinate</td>
<td>7.77</td>
<td>7.51</td>
<td>0.26</td>
<td>7.53</td>
<td>0.24</td>
</tr>
<tr>
<td>Saarland</td>
<td>6.99</td>
<td>7.18</td>
<td>-0.18</td>
<td>7.57</td>
<td>-0.58</td>
</tr>
<tr>
<td>Saxony</td>
<td>8.32</td>
<td>7.56</td>
<td>0.77</td>
<td>7.70</td>
<td>0.62</td>
</tr>
<tr>
<td>Saxony-Anhalt</td>
<td>7.28</td>
<td>7.38</td>
<td>-0.10</td>
<td>7.66</td>
<td>-0.38</td>
</tr>
<tr>
<td>Schleswig-Holstein</td>
<td>7.52</td>
<td>7.67</td>
<td>-0.16</td>
<td>7.47</td>
<td>0.05</td>
</tr>
<tr>
<td>Thuringia</td>
<td>7.69</td>
<td>7.53</td>
<td>0.16</td>
<td>7.48</td>
<td>0.20</td>
</tr>
</tbody>
</table>
Model 1:

All five of the independent variables were placed within this model. Population Density and Percentage of Foreign population’s unstandardized Beta coefficient value was 0, which implies that the values had little impact on Germany’s CBR. The P-values for all the variables were all above .05, which connotes that the variables are not statistically significant. The R-square explained that 83.6 percent of the variables could account for CBR values within Germany. The unstandardized Beta coefficients were used to calculate out the equation with the known values to predict CBR values. After that the calculations of the residuals, Model 1 had a range of -.55 to .90. This shows that their predicted Beta values were not too far off from the observed CBR.

Figure 2.10 is a map of the calculated residuals. The range of the residuals was not very large. The yellow represents the locations that had the lease amount of residual error. These states are all clustered together. The ones with highest residual results are depicted in the red: Hamburg, Berlin and Saxony. None of these are near each other; therefore location cannot explain their higher residual results. However, Berlin and Hamburg are more densely populated with higher GDPs, which could factor into their higher residual results. Saxony was also noted to have a higher CDR than some of the other German states, which might be one explanation for its red color. The green color represents mostly the negative residual results, which under predicted the CBR. The four states are located up North East are former East Germany states and are spatially connected. Saarland and Baden Wurttemberg are located in the South West. These two do not have specific relationships to make them have a unique value.
Figure 2-10. Model 1 Residual Map
Model 2:

All independent variables were used, excluding CDR. That means unregistered religion; GDP, population density and percentage of foreign population were used in this model. All of the p-values were above .05, meaning none of the variables were statistically significant for this model. GDP and population density had exceptionally low Beta values with an exceptionally high p-value of .7. The model on a whole was given a p-value of .002. Through the R-square value 76 percent of the independent variable could count for CBR rates. In the residual calculation, the difference ranged from -.59 to .62. Somehow these variables were able to calculate the CBR for each German state somewhat accurately.

Model 2 residual map is represented in Figure 2.11. The yellow represents the residuals through -.32 to .24. These are the mid-range of the residual results. Almost half of Germany is represented in the yellow, all of which is for the most part clustered together. Bavaria, Saxony and Hamburg are in the red, where CBR was over predicted. Bavaria is interesting because it is a country with a higher rate of Catholics and a high GDP. Hamburg also has a higher population and a slightly high GDP. These two factors might be reasons for the slight over-prediction. The green represents the under-predicted values, which are Saarland, Saxony-Anhalt, Bremen, and Brandenburg. While Saxony-Anhalt and Brandenburg are next to each other and share spatial relations, Bremen and Saarland are nowhere near the other two states to understand why they are so far apart.
Figure 2-11. Model 2 Residual Map
Model 3:

Since population density had the largest p-value in Model 2, and GDP or wealth\textsuperscript{26} would still influence birth rates, CDR and population density were excluded from Model 3. This left the regression analysis with three variables: GDP, unregistered religion, and percentage of foreign population. Finally, two variables had a P-value under .05. Unregistered religion had a p-value of .003 and foreign population had a p-value of .002. This denotes that unregistered religion and foreign population are significant at estimating CBR. GDP’s P-value went up to almost a .8. This model has an R-square value of .758, which could be better. This model was used as an equation, but found to have poor results in predicting CBR. The residuals ranged from -582 to -10. Since all the residuals were negative and inaccurate at predicting the real CBR, this model is the worst model created to estimate Germany’s population.\textsuperscript{27} The combination of GDP, unregistered religion, and percentage of foreign population are not good variables at predicting Germany’s CBR.

A residual map was created for Model 3, which is illustrated in Figure 2.12. Five colors had to be used to create this map, because at the three-color scheme, all states still received the same color, where no differences could be made. The two green colors represent the states that were the worst at predicting the CBR: Bremen, Hamburg and Berlin. These three are all of Germany’s city-states. The yellow is the median color, but still represented the larger number or residuals, which means that they were not the best at predicting Germany’s CBR. The yellow states were in the western, more southern part of Germany. The red displays the best at predicting the CBR, which was not really the

\textsuperscript{26} GDP also had a high P-value in model 2.
\textsuperscript{27} In the combined map, this model was excluded due to its poor results on estimated CBR.
best possible prediction: Mecklenburg Vorpommern, Brandenburg, Saxony-Anhalt and Thuringia. These states were all once in East Germany, but not all East Germany States were represented in the red. The orange is the next best at predicting the CBR, which is sporadic throughout the county. This map overall was very unclear regarding any spatial relations for this model, especially since the residuals were already so large.

Figure 2-12. Residual Map for Model 3
**Model 4:**

Since GDP and population density had high p-values in Model 2, they were excluded in Model 4. CDR p-value was actually the lowest in Model 1, so it was slipped back into the equation. This makes CDR, unregistered religion and percentage of foreign population. The p-values were all really low. Unregistered religion was .002, percentage of foreign population was .011 and CDR was .09. All of these values can be considered 90 percent significant or higher for estimating CBR in Germany. This model has the second highest R-square value of 81 percent. When this equation was used to predict the CBR, the residuals ranged from -.57 to .71. Model 4 was probably the best equation used. It was the only model with statistically significant variables, and with one of the smaller residual ranges.

Model 4’s residual map is depicted in Figure 2.13. This map shows some interesting spatial relationships with the model. The northern part of Germany was represented for the most part in the yellow, which was the mid-range of the best predictors of the model. The red, which represent the largest residuals between .13 and .71, was in most of southern Germany, with the exception of Hamburg. Then the lower residuals -.57 to -.24 are depicted in the green: Bremen, Brandenburg, Saarland, and Baden-Wurttemberg. These four states are not near each other, other than Saarland and Baden-Wurttemberg.
Figure 2-13. Residual Map for Model 4
**Model 5:**

In this last model, population density was considered once again. Therefore unregistered religion and GDP were left out of the equation, and variables CDR, population density and percentage of foreign population were used as independent variables. The regression analysis assigned the unstandardized Beta coefficient with the value of 0 to population density, but gave it a p-value of .01. Percentage of foreign population is found not to be statistically significant with a p-value of .77. And CDR is barely significant with a value of .056. When the model was computed, the residuals ranged from -.42 to 1.42. The R-squared value is .756.

Figure 2.14 represents the residual map of Model 5. There are some spatial relationships depicted in the map with this model. The majority of the states are in the color of yellow, which is the value closest at predicting the CBR. The green and red colors are not too closely related to each other individually. Saarland, Brandenburg and Schleswig-Holstein are in the green values, which show the negative residual values. Hamburg, Berlin and Saxony are depicted in red that show the positive residual values above the median. These six states show that there is a higher chance of not being able to predict the CBR accurately. Therefore, they might have special circumstances that make them unique and have a variable that controls the CBR at a level, which has not been considered.
Figure 2-14. Residual Map for Model 5.
**Combined Residuals Analysis**

The residual maps were combined together in one format in Figure 2.15. Model 3 was not placed in the combined map, due to its extreme high residual results, meaning that the three variables were not the appropriate combination to evaluate CBR. The combined map has Models 1, 2, 4, and 5. The range of the residuals of all four maps combined is -.59 to 1.42. This is still a small range of not being too far off at predicting CBR for all models.

Some states stayed the same color in all four models. For instance, Saarland and Brandenburg were always in the green color. Perhaps there is something in those states that would always under predict the correct CBR. Hamburg and Saxony were red in each residual map. Therefore perhaps these two states have a unique variable that allows various equations to overestimate the CBR. Lower Saxony, North Rhine-Westphalia and Hesse were yellow in all four models. These three states are neighboring states and probably share similar cultural and social trends. This region might have similar variables that aid in calculating more accurate CBR.

Which model is the best? If one wanted uniformity, choose Model 5. The majority of the states were in yellow with limited variation. Yet this model did not have the strongest R-square value, which was .756. If a higher R-square value was more important that choose model 1 (.836) or model 4 (.81). If one wanted a distinction between the north and south, perhaps model 4 would be the most appropriate to use. Depending on which was the most important when choosing the model, this will alter
which model is chosen.

Figure 2-15. Combined Residual Maps for Models 1, 2, 4, and 5.

None of these models are the true model at predicting Germany’s CBR. There are not enough observations to determine the appropriate analysis to create equations. Each time a selection of variables were inputted into SPSS, the majority of the time the
software relied on one or two variables. This could mean that more observations were needed to create better p-values and Beta coefficients, or could mean that different and new independent variables would be required to create a more accurate equation. This was the beginning step to see if any variables were important indicators for predicting further research.

**Discussion**

This chapter was designed to explore Germany and its state level demographic data to see if any variables could explain its population growth, particularly CBR through statistical analysis. While this study could have been more successful at a smaller geographic scale and with additional categorical data, the provided data still showed that effective equations could be created. Patterns are not as easy to pick up with little variances in the results. Depending which variables were combined together, created a different outcome as two what is significant in predicting CBR and what is not.

These variables were not predominately significant at the 95 percent level. Foreign population three out of five times was found to not be statistically significant in the models. This means foreign population in this analysis has little influence on Germany’s CBR. Population density was only significant once out of three trials. GDP was never found to be significant at the 95 percent level. Unregistered religion was found statistically significant two times out of four. CDR was never significant at the 95 percent level in three of the models, but found to be 94 percent significant twice and 91 percent significant once. CDR and CBR always have an interlinking connection, which is found in the DTM, which is not surprising that CDR was found to be slightly significant each time used.
In all five models, the R-square value was above a 75 percent. This means that these variables were able to define Germany’s CBR with some capacity. This also indicates that there are other factors that need to be considered in order explain Germany’s low CBR: such as cultural trends, population policies, and immigration structures. These variables are examined in greater detail in the following chapters. This exploration study is just the beginning of being able to predict what influences the CBR.
Chapter 3

German Culture in Child-Rearing and Family Planning

The next chapter will focus on some revolutionary fertility laws that assist German families with parental leave and parental laws. Since these laws appear to be new and on the cutting edge, Germany’s culture on family planning should appear to be radical. Yet, many German traditions on child rearing appear to be rather regressive, quite the opposite of the new political policy goals. This tendency toward traditional practices can be seen in the German concept of Rabenmutter, the school system, and availability of childcare.

Die Rabenmutter- the Raven Mother
A constant issue related to the feminist movement is that of balancing personal and professional goals: a woman wants to have a family, but she also wants to pursue a career. With most feminist movements, women have been able to have careers in all fields where they can climb the corporate ladder. In some western cultures, it has even been considered acceptable to raise a family and continue their careers. Yet in Germany, a modernized western country, this pursuit of an advanced career is not seen acceptable if the woman chooses to have children. The term the Germans use towards a female who is
both a mother and a full-time employee is *Rabenmutter*, or rather raven mother.

In Germany, the term *Rabenmutter* implies that the mother is cold-hearted, uncaring and loveless towards their children (2013 Duden). This is a term that is uniquely German, which is not referenced in any other cultures. There is limited entomology about this term. Duden claims that this is a folklore tale from an observation of seeing raven mothers kicking their young out of the nest before they could fly. However, there is no scientific evidence that can be found that ravens are actually bad parents. This popular belief of raven mothers abandoning their raven chicks is found to be false. The closest explanation of the origin of the term and its folklore representation can be found through an unaccredited online entomology website, which claims that this term might have come from the Old Testament, Job 38:41:

> Who provideth for the raven his food? When his young ones cry unto God, they wander for lack of meat.

The chapter of Job 38 is a speech from God explaining to Job how He does provides and creates several things in the world, and no one questions His wonderment. Perhaps, the Germans took this text to mean that the baby ravens had no food, because their parents had abandoned them, and over time this text has turned into folklore.

*Rabenmutter* can be found in multiple news articles: BBC News, Forbes, German Times, using female mentalities and reasons towards putting off having children while they attempt to develop their careers later. BBC reporter, Stephan Evans, states, “No

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29 Haarhoff, Heike. 2007. “Germany’s Popular ‘Rabenmutter:’ Family Affairs Minister Ursula von der Leyen Brings Family Policy into the Mainstream.” The German Times for Europe
more than 2.2% of senior management jobs in the biggest German companies are taken by women” (Evans 2011). German businesses do not support an increase in high management positions for females, because it will make them less competitive at the international level. Women face challenges in deciding what type of career they want to have, and expect to not reach high executive positions because they might one day have families and need to take care of their children. Child rearing responsibility is placed on the mothers, and the cultural environment of the workplace is not friendly towards women who decide to have families.

German females are often forced to decide whether they want a career or a family. When a German woman chooses a career that is not female-oriented with flexible work hours, initially she will decide to focus on her career and wait to have children, or have no children at all. If she does decide to have a family while working and use a daycare system, she will more than likely face external judgment and be told that she is a *Rabenmutter*. In Germany, women are often expected to leave the workforce when they start to have children. If they decide to remain in the workforce, it is perceived that they are not taking care of their children. This leaves them feeling as if they will fail either as a mother or as an employee (or even both). Traditionally, this concept and associated expectations might have kept females in the household and willing to give up their career dreams, but more and more the demographic statistics suggest that females are achieving their professional goals over motherhood.
In the Avdelidou-Fischer study she held interviews with women in Germany and the United Kingdom to see what challenges they faced when climbing the executive ladder in the workforce as females. In one instance, there was one German female hired into a company, where she would have to work as the only female with 15 men. She noted the different perception she and her male co-workers had about work and personal lives. Everyone would work long hours, but she was stressed about being away from home. After the long day she would always go home to attend to her children. Yet, her male colleagues had children too, but they had a life outside of work and home. Her male colleagues did not worry about needing to go back to the children (Avdelidou-Fischer 2011, 86).

This is an excellent example of the Rabenmutter feelings that females have. In this aspect this unnamed female felt she had two lives: work and home. These were her priorities and identities. This interview shows how men do have families, but they do not always have the direct connection or number one priority with their children. Yet this female employee still has this sense of obligation and priority to her family. She is left feeling the need to have to rush home to provide for her children. She does not consider what she can do for her free time outside of her home and work environment. She already has this sense of guilt of being away from home for her career.

There are several reports from the European Union (EU), Organisation [sic] for Economic Co-operation and Development (OECD), and Germany’s statistical websites,

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which indicate that women tend to work part-time jobs in Germany if they have families. The most recent report comes from the Institute of Economic and Social Research (WSI) posted on Germany’s Statistical website. WSI analyzed data to see how women employment changed in Germany. The discoveries supported previous statements regarding working women and work-life balance. While women in the workforce have increased from 1991 to 2010- from 57% to 66%, the women workforce supports the majority of part-time employment. These data indicate 47.5% of all employed women work part-time, whereas only 8.1% of all the employed men work part time. The study predicts that one of the reasons for having women in the workforce is due to families, which can be seen in table 3-1. The table presents the amount of women working part-time almost doubles when they have children (from 36.5% to 70%). There might be several reasons why mothers might choose to work part-time after they start a family, but the biggest one is to be home with their children. WSI’s study provides several startling statistics. The beginning of the article states that the most noticeable statistics was observing working females between ages 21 and 30, which is considered to be the most active family starting phase. It was found that 79% of 28-year-old women without children where actively employed full-time, whereas the same aged women who were also mothers, 40% of them were employed full time (30). The women who have committed to having a career and no family are employed full-time. Yet, when they decide to begin having a family, they appear to settle and only work part-time. But perhaps this is expected due the traditional standards and expectations of not wanting to feel like a Rabenmutter.

Table 3.1. Part-Time Employment among parents in 2010 (%)
* All persons living in a household with at least one child under the age of 18

Source: Keller and Haustein, 2012; WSI GenderDatenPortal, 2013

<table>
<thead>
<tr>
<th>Part-time employment among parents in 2010 (%)</th>
<th>All Germany</th>
<th>Western Germany</th>
<th>Eastern Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>Employed parents*</td>
<td>70</td>
<td>5.6</td>
<td>75.4</td>
</tr>
<tr>
<td>Employed without children</td>
<td>36.5</td>
<td>9.5</td>
<td>38</td>
</tr>
<tr>
<td>All employed</td>
<td>47.5</td>
<td>8.1</td>
<td>50.7</td>
</tr>
</tbody>
</table>

When Germany was split during the Cold War, there were different allowances mothers were provided in East Germany. Women were encouraged to work and were provided with jobs. This facilitated by the availability of unlimited daycare systems. During the 45-year separation, East Germany has adapted different viewpoints than West Germany regarding the balance of personal and professional aspects of women’s lives, particularly how females should raise their children. Avdelidou-Fischer suggests that former East German states are more progressive with their child-rearing concepts in comparison to West Germany:

…East Germans were found much more likely than West Germans to hold that a ‘working mother can establish just as warm and secure a
relationship with her children as a mother who does not work’ and reject the view that ‘a pre-school child is likely to suffer if his/her mother works’ (Avdelidou-Fischer 2011, 89).

This quote supports the idea that there is a clear difference in mentalities and cultures regarding pursuing careers and raising children in the formerly divided German East and West sides. Even though Germany was reunited in 1989, there is still a culturally altered attitude that was adapted from the former communist government in East Germany. This quote is also supported by the previously mentioned WSI study in Table 3-1, which shows that 75.4% of West Germany mothers work part-time, and 45.3% East Germany mothers work part-time. There is a distinct difference between how West German mothers feel obligated to stay home as the care-taker of the family; whereas the East German mothers do not have this guilt feeling for maintaining their careers.

The concept of Rabenmutter is one of the cultural impacts that could explain why there is a decrease in fertility rates within Germany. Female Germans want to follow forward in a modernized world and have a success in the business world. Yet they are raised to believe that they cannot have it all, because they believe they cannot successfully have a family and a career. Yet there are other German cultural traditions that prohibit females from wanting to have a family and potentially continuing their careers.

**Germany’s School System**

Germany has one of most complex school systems, and has a well-educated society. The school system is a unique one that trains children for future employment, whether they attend the university, or vocational school. Germans are prepared for the workforce as soon as they finish the required education. It is important
to understand the setup of the educational system as well as the culture of the school day and how it can also affect women in the workforce.

Each individual state is in control of their school system set-up, rather than the federal government. The main arrangement of the education has three levels: pre-primary, primary, and then secondary. Pre-primary is the optional pre-school *Kindergarten* for children between ages three to six. Then there is primary education, *Grundschule*, comparable to America’s elementary school, with grades 1 through 4, which is required when a student reaches age six. In some states, there is an orientation phase at grade 5 before the students enter secondary education. Secondary education is the most complex because there are different types of schools for various students; and each school has a different curriculum and duration of time for a student to graduate.

Germany’s secondary education system traditionally consists of three different types of schools to meet the learning style of each student in the majority of the states: *Hauptschule*, *Realschule*, and *Gymnasium*. At all three levels, Germans are introduced to several subjects, and often study more subjects in the course of a year than an American high-school student. A *Hauptschule* is the basic training for secondary education in Germany. It covers grades five through nine, or depending on the state, up to grade ten. The subjects are usually taught at a slow rate, when compared to the other schools. A *Realschule* is considered to be an extensive general secondary education, which also ends at grade nine. The course schedule is structured similarly towards the *Hauptschule* with the added courses in politics and the optional compulsory subjects like a second foreign language. A *Gymnasium* is the highest level of secondary education that prepares students for the university. The course schedule is the same as the *Realschule* only with a
few more foreign languages, and more difficult courses. After grade 10 in the
*Gymnasium* most students will continue *gymnasiale Oberstufe* or the upper lever
*Gymnasium*. At an upper level *Gymnasium* a student selects two major and two minor
subjects that they will study through grade 13. Before a student can be finish, they must
take an *Abitur* examination, which is an intense exam in all the subjects.

The typical school day for a student is different for Germans, especially when
comparing it to the American school system. Since the Germans only have a one-month
break in between the school years, they can afford to get out earlier in the day and thus
have shorter school days than in the United States. A typical German school student does
not eat lunch at school. In fact, a German student is done with their school day often by
lunchtime, or at the latest by 2 P.M. This also typically means that Germans often have
more homework than American students. Shorter school days and more homework have
a significant impact on the family. Who will be home to receive their children when they
come home from school? The children will need lunch, because it was not provided at
the school. This is particularly significant in Germany because lunch is traditionally the
largest meal of the day. Who is cooking and preparing lunch for the family? The
obvious choice for this role in Germany society is the mothers, because they are expected
to be there for their children when they get home.

As a result German school days are structured to limit the female’s ability to be
successful in a career outside of the home. Traditionally, it has been perceived that
someone needs to be home to take care of the children in the afternoons. There has been
little observation and connection regarding how the school day has affected what form of
employment women will choose to be able to be there for their children. If the federal
states offer limited to no after school programs or classes, both parents will have a
difficult time managing full time employment with no one to watch their children. Even
if Germany provides excellent maternity leave, what good does it do if the children are
still home early afternoon every work day? The structure of the school system has been a
barrier for females in pursuit of career opportunities.

While this issue has been prevalent, there have been some alterations in the school
system for some states. A few states have begun to take notice of the demand to have
extended school hours. This new trend was highlighted in one of Deutsche Welle’s news
stories33, that articulate that 85% of German students still only attend half-day school
hours (Fong 2007). Within the last five years several states have started to alter their
school hours, especially at the secondary level. Additional courses have started to be
offered within the last five years. At first this concept was considered to be unpopular,
because it went against German traditions. The reception is starting to become more
accepted. With this new development, mothers will be provided with a more flexible
schedule to be able to balance their professional and personal livelihood.

Germany’s Childcare Options

After a year of parental leave, it is time for the parents to decide how they would
want to take care of their family34. Do both parents return to the workforce and place the
child in childcare? Does one of the parents decide to take a longer leave from work, and
stay at home to raise their family, where they receive incentives from the government?
These are some challenges that all German families have to face when they start to have
children. There are limited options for many German families for alternative childcare

33 Fong, D. 2007. “School in the Afternoon is New to Germany, by Catching on.” Deutsche Welle.
34 Extensive details of Germany’s parental leave and allowances are discussed in Chapter 4.
outside of the home. Childcare placement within Germany is a competitive market. In 2012, Chancellor Angelia Merkel passed an incentive to have a parent stay at home and continue to raise children there by receiving a “child-care allowance,” since they are not using state funded childcare systems. These are two discouraging options that are presented to German families.

Germany publically and federally funds the majority of childcare facilities. Yet there are limited childcare options for families. One of the statistics listed within K. Spiess and K. Wrohlich’s article\(^{35}\) is that there are 40 open spots for childcare for every 100 children born in East Germany. For those same 100 newborns, there were only 10 open spots in West Germany (Spiess and Wrohlich 2006, 16). These statistics prove the stiff competition for families to be able to place their children within a childcare facility. Also the numbers show how the demand for childcare is provided at a steadier rate for East Germans in comparisons to the West Germans. This probably stems from the socialist traditions that the East Germans have had access during the Cold War. Yet throughout Germany, there is clearly not enough access for families to be able to place their children within the childcare facilities. Since these institutions are funded by the government, the government will need to open several more facilities.

Instead of creating new child-care facilities, Chancellor Merkel created a proposal in 2012, which was approved by the German government, to pay families who keep their children out if daycare between ages one and three. This new bill will pay a family an

allowance of 150 Euros per month if they do not place their children in daycare. This policy has been debated within the public media by several newspapers and journals: *Spiegel, Irish Times, BBC, and New York Times*. These articles stress how this policy encourages females to stay away from the work force and raise their own children. Since the childcare facility is a free institution, a family could potentially make some money by staying at home to raise the family instead of coordinating and searching for a placement of their children in a day-care system and remaining employed.

K. Hank and M. Kreyenfeld\(^ {36} \) discuss how the low number of open spots discourages families from relying on public day-care to return to work, but rather create their own patchwork system, where mothers use families and friends to watch their own children. They even state that the lack of available child-care facilities accounts for the females leaving the employment industry, or even might be why females choose to not have any children.

Given a generally low coverage level and a dominant position of subsidized public day-care providers in (western) Germany, the compatibility of women’s employment and fertility should rather depend on the local availability of children’s day care, either institutional or in social networks, than on the costs of day-care arrangements (Hank and Kreyenfeld 2004, 12-13).

These two researchers used a multi-variant analysis to argue that Germany is in a desperate need to increase the number of day-care facilities for their children. The lack of availability has assisted in hindering fertility rates for Germany as couples choose to

have fewer or no children in order to pursue careers given the current systems and culture that discourages them from having both a career and a family.

The limited options for child-care and the “Child Care Allowance” are yet other examples of how a German female feels prohibited from continuing onwards in their professional career or deciding to wait to have families or not have any children. They are left in a tricky situation trying to find ways to have their children taken care of during the day time while they are in the work force. Yet the government provides an incentive to remain at home for three years to provide for their children, instead of attempting to place a child in day-care and return to the workforce. These factors encourage the German mothers to stay at home and provide for their children.

Discussion

German women seem to have a lose-lose situation if they attempt to pursue both their professional and motherhood goals and are unable to have it all. If a female is able to overcome the criticism of being considered a raven mother, they then have to face limited opportunities to have their children provided for in the current educational system, whether it is in the school or in day-care. The school system is relatively dated, because until recently the children were released early in the day, which requires a parent to come home early or work part-time. And when the child is even younger, families are forced to compete to have their children in a day-care system, or consider receiving incentives from the government to keep their children at home. These are discouraging odds for the female, who wishes to have both a family and a career. These cultural aspects contribute to the difficult decision of females to choose between their
professional or family lives. They are left feeling guilty and hopeless if they attempt to have both a career and a family.
Chapter 4

Population Policy

The government can have a strong influence on its population and their livelihood, such as the types of professions that are in demand, taxes, and governmental funding programs. Government policies can even indirectly influence family planning. This chapter takes a look at the historical effects of family planning through the examples of the French Bourgeoisie and China’s so-called One Child Policy. In addition this chapter includes an analysis of Germany’s most recent family planning policies, which is a primary focus of the thesis. In the conclusion of this chapter various debates surrounding the new policy in Germany and its effects on family planning and population trends will be presented.

Historical Policy Effects on Family Planning

Case Study 1: French Bourgeoisie

The Industrial Revolution was one of the pivotal movements that pushed France from Stage 2 to Stage 3 in the Demographic Transition Model (DTM). However, if it were not for the wealthy upper class, the Bourgeoisie, the transition of decreasing birth rates might not have happened as rapidly. The wealthy and the upper class can often
influence the actions and culture for the rest of society, whether it is fashion, politics, or family planning. This relationship can be compared with today’s society relating to the pop stars such as actors/actresses and singers and wanting to follow their fashion and cultural tastes. The French Bourgeoisie had the same trend setting techniques back in the 18th Century as today’s current pop stars in the 21st Century. During the Industrial Revolution, the wealthy were moving into the city with limited space to have multiple offspring. Therefore the Bourgeoisie began to have fewer children.

The common Frenchman saw children as an economic benefit to their families rather than a burden. Although larger families are often considered more costly to maintain, such as providing food, clothing and shelter, the common folk did not see more children as extra mouths to feed, but rather as extra sets of arms to be put to work. Education was not yet mandatory or even thought of as a necessity for the peasants. Therefore, children could go to work in the fields or in the factories, and weren’t viewed as economic burdens at that time. More children meant extra potential income, which would often offset the economic responsibilities that a family might have with larger size. Also with infant mortality rates still not stabilized, parents were often not sure how many of their children would reach adulthood. Extra children also provided the parents with stability when they reached an elderly age when one of their children could provide for them in an old age when they could no longer work. Often the French peasants did not have to worry about inheritance property. In the medieval times often the land was divided equally among all the sons of the family. Later on, the common folk did not divide the land or worry about who would inherit the land. At the same time, the Bourgeoisie was having larger families, where they had little concern about the wealth
inheritance. The Bourgeoisie had stabilized enough wealth, land and titles to pass down to their children, where they did not have to worry about their children’s future. In French society, both cultural and economic changes resulted from the Industrial Revolution, and also influenced the population and family planning changes.

In E. Weber’s book, *Peasants into Frenchmen*, he includes a detailed summary of the family demographics. Weber suggests that there were many illegitimate conceptions, which were covered up with rushed marriages. Daughters were seen as economic burdens to be married off, whereas the sons were seen as benefits with capabilities. Weber also argues that there is a correlation between birthrates, marriages, and economic wealth. “It is clear enough that the birthrate declines, the proportion of people getting married rises, and the age of first marriages drops in direct relations to economic activity, prosperity, and easier communications (Weber, 178).”

The relationship between these three variables seems peculiar and almost illogical. However, Weber explains that the people in the poorer parts of France were getting married sooner and having several children, whereas, those in the wealthier parts of France postponed marriage and procreation.

Central to his theories is the importance of communication. The poor and the rich had different language dialects, which could contribute to or inhibit proper exchange of information in clear communication channels. Weber cites Van de Welle’s theory about the differentiating linguistic barriers for the delayed knowledge of birth control to the common Frenchmen. Also the poor, especially the farmers were isolated from the wealthy and the new technological advances. With isolation, news and communication

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did not come as fast. However, when communication began to flow more freely, and the poor had more interaction within the city, the poor began to learn the ways of family planning methods, such as birth control. Weber illustrates this in his book:

It seems that men- and sometimes women, too, perhaps- however poor and isolated they may have been, were not beyond devising or adopting means of their own manipulating life. …[T]he imperial prosecutor at Agen in 1863 … noted that the number of married women killing unwanted children was increasing because so many wives were determined to limit the number of their offspring (Weber 1976, 182-183).

While family planning began in the 18th Century for the bourgeoisie, the entire population accepted the concept by the middle of the following century.

When the common folk noticed that the wealthy were indeed having fewer children, they began to mimic the Bourgeoisie’s family planning models too. Other factors contributed to family planning leading to smaller family sizes as well. Several families were moving from the countryside into the city due to job location for factories. While it was seen as a benefit to have children who could work in the factories, laws began to be implemented that prohibited children from working there. Slowly child labor laws and mandatory education laws were a part of the French society in the late 18th Century. The economic benefits of large families in an agrarian, subsistence economy were no longer valid as society urbanized and industrialized. Weber alludes to the fact that the peasants took notice of the smaller family size of the Bourgeoisie, and thought perhaps that they too could have smaller family sizes. Weber also referenced that the decrease in child rearing also meant that there was a smaller demand for wet nurses, a commoner female job. This then adversely affected peasant females from getting pregnant as often, since they were fewer options to breast-feed.
There are several factors that contributed to the decrease of fertility rates during the Industrial Revolution: migration to the city, industrial jobs, improved farming infrastructure, and child-protection laws. Often the popular trends set by the wealthy bourgeoisie, such as having smaller families, were also a push that motivated the common French family to replicate this family planning trend. While these other economic and political factors were pulls, this cultural trend helped speed up the process of shifting France from Stage 2 to Stage 3 in the DTM.

Case Study 2: China’s One Child Policy

China’s One Child Policy is perhaps one of the most easily identifiable policies that have affected a country’s population growth. Up to the 1960’s, China’s government was encouraging its citizens to have as many children as possible, with a belief that the population needed to grow. In the beginning of the 1960’s, it appeared that China was stuck in the middle of Stage II of the DTM with high birth rates and lowering death rates. China was dealing with the crisis of rapid population growth that characterizes Stage II of the DTM. While the country’s population was increasing exponentially, China knew that soon it would not be able to support its citizens if the country continued to grow at this rate. Therefore the government began experimenting with various family planning policies, such as birth control, family planning, and abortions to decrease its birth rates. The government especially encouraged couples to delay getting married and have children later. This can be seen in their 1971 family policy called, “‘wan-xi-shao’ (later, longer, fewer), meaning ‘later marriages, longer period between births, and fewer
They encouraged couples to only have two children maximum. When China’s population continued to rise, despite the new family planning campaign, the Chinese government believed that more drastic measures would need to be implemented. In 1980, the government began the so-called “One Child Policy”. The policy provided tax benefits to the families that only had one offspring. However, the policy was relaxed for those who had twins, minority ethnic groups, or people in the rural communities.

According to Fei Wang there are four stages of how the Chinese Communist government implemented family planning policies. The first stage was between the years 1949-1963, when there were no family planning policies. The second period was between 1963 and 1971, and the family planning policies were mild with limited enforcement. The third period between 1971 and 1980 was when the government began to have strong and stricter enforcement. Then the final stage began in 1980 and is still active today is the one-child policy, which is considered to be the strictest enforcement by the Chinese government.

When the People’s Republic of China was founded, the leader Mao Zedong wanted a large population for its country and embraced traditional Chinese slogan Duo Zi Fu (more children, more happiness) (Wang, 5). Zedong believed that a larger population would strengthen the country with a larger workforce. This concept reinforces Zedong’s two major goals for China: industrialization and self-sufficiency (Zhang, Mount and

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Boisver 4)\textsuperscript{40}. The increase of population led to urbanization. In the second phase, the Chinese government had a new family policy, “setting of a population target, late marriage, the establishment of family planning institutions, and dissemination of family planning knowledge and technology” (Wang, 6). During this time frame there was just encouragement to have no more than three children in families, but there was little to no enforcement other than a few subsidies if families were smaller in size. The third phase is what aforementioned Pascu referred to as the \textit{wan-xi-shao} or later, longer, fewer. This policy was enforced at stricter rates since Zedong was promoted it. There were subsidies given out, as well as penalties. The final and current policy went beyond the previous family planning, but altered the Constitution and amended it again in 1982 to include the “one-Child policy” (Wang, 8). Now it is legal to use monetary penalties and subsidies to confirm that the policy is being enforced.

Since the creation of the People’s Republic of China, there has been industrialization, urbanization, and a shift in China’s own DTM. Zedong had a vision of making China self-sustainable with its large population. He wanted to replicate other Western countries’ models for industrialization and modernization. China industrialized through welcoming its businesses to bring manufacturing jobs to its country. As factories started to come to the cities, several of the farmers did too. K.H Zhang research shows that 75% of the urbanization between 1978 and 1999 is due to rural to urban migration (387)\textsuperscript{41}. This process of rural to urban migration is important for China to have a successful industrialized country.

This “one-child policy” has led to several consequences that have altered China’s demographics, which were described within Pascu’s article: gender disparities, stinting population growth, unregistered children, uneven aging of population, and one dimensional family tree structures. China has effectively stabilized its population growth to such an extreme that it will have issues of procreating in future generations that might result in a shrinking population. However, the policy was effective in the way that the government intended: to halt the rapid increasing population, thus shifting its demographics from Stage 2 to Stage 3.

*Can government influence fertility rates for the country?*

These two case studies present issues and instances, where the government was able to help persuade its population to implement family planning practices that resulted in smaller families and declining population rates. Whenever a country begins to implement family policy planning and health and sex education related to abstinence, birth control, the Morning After pill, abortions, and other methods for reducing the number of children born in a society, then the fertility rates decline. However, fertility rates do not necessarily drop enough for a country to enter Stage 3 of the DTM, such as in several African countries. Yet there are overpopulation programs, such as World Overpopulation Awareness (WOA), that exist to help educate underdeveloped nations about family planning. Even the Red Cross has some programs in underdeveloped countries to educate females about family planning designed to decrease fertility rates. Yet these programs are not always successful, because they do not consider the other factors that are needed to progress in the DTM, like the economic, social, cultural improvements within the country.
Both case studies were referenced to examine how governments can influence population trends that result in movement through the DTM towards both low birth and death rates and low population growth overall. While some might argue that the Bourgeoisie is not a governmental figure, they had a direct impact on the government of France at the time because the wealthy were able to establish their own sets of laws, whether they funded politicians or became politicians themselves. In both historical cases, a mixture of political, economic, and cultural changes were necessary elements for a transition from high to low population growth rates.

This thesis argues that if the government and influential figureheads had the capacity to encourage a drop in fertility rates such as in these two referenced case studies, then why can they not have the same influence to increase fertility rates for countries such as Germany? In fact, some countries offer an economic incentive to families that have multiple offspring. For example, this can be seen in the case of the USA and its taxation breaks for children. For instance, a USA family can receive $1000 tax credit for each child they have under the age of 17 living with them. The amount decreases if a married parents filing separately make more than $55,000, a single parent making more than $75,000 and a family filing jointly at $110,000 a year. Parents can also receive up to $2500 a year in tax credits through the American Opportunity Tax Credit program if they have children registered in college for four years. Germany has its own set of laws that aid new parents with tax breaks, allowances and friendly parental leave laws. Yet are these policies enough incentives to increase fertility rates? Is political policy going to

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43 2013. “American Opportunity Tax Credit.” IRS.
be enough of a pull to alter the culture of the country, and make it acceptable to have more children?

**Germany’s 2007 Parental Allowance and Parental Leave Act**

Germany spends on average €185 billion on measures to support families, but still has an ever increasingly shrinking population and family sizes (Honekamp, 453). This amount of economic support is still higher than the average suggested spending for a standard European Union (EU) country. The EU has mandatory parental leave requirements, which were set in place by the 1996 EU Parental Leave Agreement and Directive. In 1997 within the framework of the Maastricht Treaty, the EU created a set of parental leave laws as part of the social policy agenda for all EU members to adhere, with the exception of the United Kingdom, who opted out of the treaty. The main provisions of the agreement are parental leave for childcare, protection of the job to receive these benefits; each state could create their own national laws and standards to entitle the parental leave credentials. The agreement also mandates that companies offer 14 weeks of maternity leave, where two of those weeks are compulsory. The companies also have to pay for the leave or provide an adequate allowance for the family. The EU also states that both parents are to be paid a minimum of a three-month allowance by their employment industries. Mothers are also guaranteed to be working in a safe environment while pregnant and nursing. During parental leave, the positions or an

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equivalent position need to be held in place (Ray, 3). In comparison to the US, that mandates only six weeks of maternity leave, the EU regulations appear to be much more family friendly. These were just minimum standards; a country could decide to extend its parental leave and allowances. Ray’s article summarizes 21 Organisation[sic] for Economic Co-operative Development (OECD) countries’ parental leave laws at the basics, and some countries provide an extensive leave period, and/or higher monthly allowances, whereas others do not go above the EU requirements from the 1997 signed agreement.

In 2002, Germany started what is known as their third model of family planning policy called “sustainable family policy.” This new model attempted to combine the two previous models based on the East German and West German family planning models: dual earners versus the male breadwinner. “The new policy model conceives of children as society’s future assets, seeks to encourage childbearing by supporting parents to be workers and attempts to reduce families’ poverty by boosting mothers’ employment” (Ostner, 211). This means that Germany began starting to think of new policies and economic incentives to boost up fertility rates and motivate Germans to have families while also encouraging everyone to be employed. The combination of the two previous models is quite complicated and almost impossible to reconcile. Both sides are from such extremes, that there are several factors and benefits that the new model needs to address in order to meet in the middle. In fact German politicians have created several new economic benefits for families, which are almost too overwhelming and confusing to

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47 Ostner, I. 2010. “Farewell to the Family as We Know it: Family Policy Change in Germany.” Germany Policy Studies, 6(1): 211-244
comprehend. Yet this policy has also been created to mediate and satisfy several majority German political parties: Christian Democrat Party, the Green Party, and the Social Democrats. Christian Democrats and the Green Party did not want Germany to appear pro-natalist. Christian Democrats wanted laws and policies that are social and support the labor market, such as opening more spots for Kindergartens and daycares (Ostner, 215). Ostner defined this as a “positive familization” process, which provides adequate parental leave, and enough childcare systems that allow families to have two full-time head of household workers. The Social Democrats prefer to have more financial support from the government to help the families, especially those with lower education (Ostner, 216). This was identified with “negative familization” process, which lacks the availability of childcare openings, and provides individualized tax breaks for families. Currently Germany’s policies are a mixture of reprieve time, financial aid, and government daycare institutions.

Germany ranks in the middle of being generous when comparing their policies to the protocols of the EU. The country does not extend maternity leave beyond the protocol set in place by the EU. Maternity leave is fully paid for the first 14 weeks. Eight of those 14 weeks have to be used after child birth. However what is uniquely German is that both parents can take up to three years of shared parental leave. The first two years have to be used between birth and the third year of the child’s life. The last year of the parental leave can be used at any time during the first eight years of the child’s life. This provides an excellent opportunity for both parents to set up and organize a schedule that best suits their newly extended family. After the 14-week parental leave is completed, the remaining extended leave paid benefit will drop down to
67 percent of the parents’ normal salary. The mother has protection, or Mutterschutz, by the law to not lose her job due to the use of maternity leave.

Germany provides a wide variety of economic incentives for parents. The Elterngeld or parental allowance is the most well-known form of economic incentive in Germany’s family policy. This concept was first implemented in the 2007 Parental Allowance and Parental Leave Act. During the parental leave a family is eligible for Elterngeld for the first year. The parental allowance is typically 67% of the usual income. A father can receive two additional months of parental allowance if he decides to take a two-month leave from work. Elterngeld may not be less than €300 per month, but cannot exceed €1,800 per month. For many Germans this is still considered to be significantly lower than their 67 percent of their income (Ray 15). However, if a family does receive less than €1000 a month, then they will receive higher benefits. These benefits have a chance to increase up to 10 percent if a second child is born within 24-months after the first.

A mother can receive up to 13 Euros a day if she files for Mutterschaftsgeld or Mother’s Allowance if they participate in a 12 week statutory insurance program four to ten months before the birth of the child. Mutterschaftsgeld pays for full wages of the mother up to 13 Euros a day and the remaining wages have to be compensated by the employer. If the mother is uninsured, but still eligible for Mutterschaftsgeld, they can receive up to a limit of €210. If a woman is not eligible for this mother’s allowance, they still have the opportunity of receiving Entbinungsgeld, or a maternity grant, which is a one-time payment of €77 (Ray 13-14).
Both parents have the option to collect an allowance, but parents can also cash in an allowance for their children called *Kindergeld* or child allowance. This child allowance is for the first eighteen years of the child’s life. The allowances can carry out to the child’s 21st birthday if the child remains unemployed. Sometimes the allowance can be carried out until their 27th birthday or their 25th if they were born after 1982, if the child is enrolled in higher education or training. For the first two children the parents can collect €154 per month, per child. If a family has more than two children, the parents can collect €179 for each additional child.

There are several tax cuts and benefits that parents can receive for having children. For instance, there is *Kinderfreibetrag und Freibetrag für Betreuung oder Ausbildung*, or Dependent Child Allowances for Child and Education Care. Parents can also collect tax abatements each year for their children. The regular abatement for couples is €3648 a year for basic expenses. Parents can request an additional abatement of €2160 a year for additional child-care, education and training costs (Honekamp, 455). Parents also have an option to receive tax abatements for children under fourteen. This tax abatement is calculated through a program called *Kinderbetreuungskosten absetzen*, or Child Care Costs in Income Tax Calculations. Since 2006, parents can receive tax abatements to cover two-thirds of child-care costs, as long as it does not exceed €4000 a year (Honekamp, 455). Both of these tax abatements were created to help decrease the cost of education and training and child-care services for families. Germany was one of the first countries to create and implement mandatory education for its population. It is a part of German’s tradition to have free education for its people. Therefore, it has been important to provide amenities and aids to parents to help educate their children.
One of the sustainable policies can be seen through the *Kinderzuschlag* or Supplementary Child Allowance policy. This is a goal for the government to decrease the child poverty rates. The government will pay €140 per child if they live within the household and can be covered by the universal child benefits (Honekamp 456). This policy was designed to motivate families to remain employed in order to receive this monthly allowance from the government.

If a child is being raised by a single parent, they are able to receive *Unterhaltsvorschuss* or Advance Child Maintenance Payment from the government. The payments can vary from €111 to €170 a month, depending on the child’s age and where they live. This payment only occurs if one partner is unable to pay a form of child support. A parent can only collect *Unterhaltsvorschuss* for seventy-two months if the child is under the age of twelve (Honekame, 456). This is perhaps one of the few benefits that are offered to single parents. Most of all the other previously mentioned economic benefits are designed for heterogeneous, married couples.

**Discussion**

These are just the basics of the complicated family planning policies that Germany supports. Germany is attempting to grasp at several different aspects to make it more economically affordable to raise a family. However, German politicians do not find a way to address cultural issues and tendencies related to why Germans are deciding not to have large families. German politics appear to be non-motivational and unattached from the general public who cannot see what the politicians have envisioned for their country. A common German citizen is most likely not considering what would happen to their country with a shrinking population, and what that indicates for the country’s future.
However, did China and the French Bourgeoisie know what they were doing when they attempted to decrease fertility rates? China knew that they wished to shrink their population growth rates, but were perhaps unprepared for the consequences. The French Bourgeoisie were probably unaware of the consequences that they were making when they began their family planning through birth control, and perhaps even more oblivious of their influence on the general public. There are definitely several economic incentives that the German government provides to those who have children, but they are complicated to understand, differentiate, and a challenge to know which ones are applicable towards a certain family situation. In the next chapter, these economic incentives will be analyzed further and considered if they are effective in increasing fertility rates.
Chapter 5

Immigration

Rich countries are losing people and are concerned about it, for good reason. Poor countries are growing substantially, albeit at much slower rates than expected, and they regard population growth as a liability, at least temporarily. It takes no giant policy theoretician to say, Why don’t we move some of the “extra” Third Worlders to the emptying lands of the First World (Wattenberg, Chapter 12)\(^\text{48}\).

Wattenberg makes a case regarding how immigration can be a partial aid towards helping a country with a shrinking population. Immigrants can provide a labor source, taxpayers, and economic stability in their host country. They can, however, also contribute to social and political turmoil, such as xenophobia and anti-immigration views associated with right wing movements. Sometimes immigrants plan to relocate only on a temporary basis. They plan on advancing themselves and their families economically, and then returning to their countries of origin. Other immigrants relocate permanently, planning to

establish new homes in new countries. The integration process for these immigrants, whether they are temporary or permanent, is important. If a country provides immigration and integration friendly policies, the immigrants are more likely to stay within their host country for a longer period of time.

While this paper focuses on fertility, immigration cannot be ignored as an important factor for population stability, especially within Germany. In fact, Germany received over a million immigrants in 2012, and immigrants account for nine percent of its overall population. The goal of this chapter is to reflect on Germany and immigration. The chapter will look at the history of Germany immigration, and current integration processes.

**History of Guest Workers (Gastarbeiter) and Turkish Germans**

In post-World War II, Germany had a shortage of men and workers. There was a brief period when the women of the country were forced to remove the rubble and rebuild their destroyed cities. These women were known as Trümenfrauen or women of the rubble. The reconstruction of the country required relying on more than these women; it would require some other form of labor. With a smaller population after the war, the country looked elsewhere to find a work force. Immediately after the war, there was a small recruitment of Fremdarbeiter or foreign workers. These workers came in and left Germany during the occupation of the four allies. At the time of occupied Germany, there were no regulations on immigration or any agreements with other countries to entice foreigners to work within the country.
In the 1950s and 1960s, West Germany began making bilateral recruitment agreements with various countries including: Italy, Spain, Greece, Portugal, Yugoslavia, and most importantly Turkey (Constant and Massey, 5-6)\(^49\). These countries were picked due to the economic hardships and limited economic opportunities within them. These agreements were made to recruit workers for industrial employments. The workers did not need a lot of skills or special qualifications for these types of jobs. The plan was that the migrants would only stay in West Germany for one to two years to earn a decent income for their families at home, and then they would return to their home countries. The immigrants received a one-year visa when entering West Germany and the place of employment could only provide one-year contract forms to the employees. This is where the terminology of *Gastarbeiter* or Guest Worker came from. These immigrants were truly meant to only visit temporarily and work for short terms before returning to their home countries. The difference between foreign and guest worker made an enormous difference to the Germans. This meant that guest workers were welcomed, as long as they returned to their homes.

However, Turkish guest workers were more pronounced and a special case because they were the largest group of foreigners coming into Germany post WWII. The *Gastarbeiter* agreement with Turkey ended in 1973. The German government stated that they ended the agreement, because economic opportunities were more prevalent in Turkey at the time. This meant that Turkish Guest Workers were supposed to return to their native country. However, many of the Turks did not return to their home country. In 1961 when the *Gastarbeiter* agreement was signed, over 7,000 Turks moved to

Germany. Today, there are 2.8 million Turkish residents in Germany, making them the largest immigration population in the country. Several Turks decided to remain within Germany, and often relocated their families from Turkey to Germany. While Turkey has a slightly higher fertility rate of 2.08, these fertility rate trends do not appear to affect the Turkish-Germans population. There is limited research on the family size of Turkish-Germans, but there has been some research on immigrants’ fertility trends. Often the first generation of immigrants will keep their home nation’s fertility rates, while second and third generations tend to follow the family planning trends of their host country through assimilation.

Even after several generations of living in the country, these immigrants are having a hard time feeling accepted within Germany. One of the reasons the Turkish Germans feel excluded is due to the fact that most of them are Muslims and seen to be different from the predominantly Christian German population. There have been several studies attesting that Turkish Germans, even third generations, are having trouble relating to the German population and feeling integrated. One of the reasons for the Turkish-Germans not feeling integrated is due to one of Germany’s law passed in 1999 that allows children to have dual citizenship only up to the age of 23. EU citizens can maintain dual-citizenship, but Turkish-Germans have to choose to keep their German citizenship or hand over their German passport and claim Turkish citizenship. This law is discussed in a New York Times article, which expresses several third generation

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Turkish immigrants have a hard time choosing their identity. They speak German, were educated in German schools, yet often feel like they do not belong in the country they grew up in, due to the way they look. Another example is how many young Turkish-Germans actually decide to maintain their Turkish identity and relocate to Turkey. According to an NPR article, one of the reasons is that they cannot find a job in Germany. “They finished the university, they know three or four languages, everything is perfect—but their name is Turkish” (Kenyon). This suggests that one of the reasons the Turkish-Germans are not hired is due to their ancestors, discrimination, and a lack of integration. A Spiegel article examines how immigrants do not have equal standing with Germans who have no immigration background, especially when it comes to educational attainment levels. Germans were shown to have greater educational opportunities. Only 16.9% of immigrants had a general high school diploma, 11.3% did not finish high school and 5.6% are unemployed. In comparison to Germans 17.1% have a general high school diploma, 1.7% did not complete high school, and 3.1% are unemployed. Another statistic the article highlights is “The share of young Turks with no professional qualifications rose from 44 to 57 percent between 2001 and 2006. This figure alone—57 percent—perfectly illustrates the sheer magnitude of failure on both sides.” Both Turkish-Germans have been unable to feel completely Germans, and the Germans have not openly accepted or discovered a way to successfully complete the integration process. The distinction between Germans and Turkish-Germans is still prevalent and an important discussion within Germany’s political and social media arenas.

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54 P. Kenyon. 2013. “Foreigners at Home: Turkey Beckons to Germany’s Turks.” NPR.
Without the historical foreign and economic policies, Germany might not have been able to rebuild itself successfully. Germany has relied on and used guest workers to help improve their country. The policy was set up as a win-win scenario, where unemployed workers from poorer countries could receive employment, and send back their income to their home countries, which would support their families and the country’s economy. Several males took advantage of this bilateral agreement between the countries. The Guest Worker agreement has also had an unexpected effect of making Germany a destination for immigrants today.

**Immigrants Today**

The previous section stresses the large Turkish German population; there are also a large number of immigrants from other countries as well. The workers that moved to Germany as a result of the bilateral agreements are still considered to be a part of the foreign population. Second and third generation terminology is used as an identifier of the foreign population counts, even though these generations are born in Germany, speak German, and have no way of identifying with their descendants’ origins. There are various reasons why people continue to choose to migrate to Germany. However, the sure mass numbers of German foreigners is hard to imagine, until it is compared with other countries’ immigration numbers. “Measure by the number of inflows, Germany is the second most important ‘immigration’ country in the OECD after the United States. Indeed, with almost 13% of its total population born abroad, the share of the foreign-born in its population is even slightly higher than that of the United States” (Liebig, 13)\(^56\).

These immigrants come in many forms: EU citizens, ethnic Germans from other countries, and asylum and atonement migrants. These different groups each have specific reasons for traveling to Germany.

The European Union and the Schengen Agreement
A huge portion of today’s German immigrants can be accounted from EU countries, mostly from the East. These EU citizens have taken advantage of their rights as EU citizens and the freedoms from the Schengen agreement. The Schengen agreement was signed in 1995 to open up borders between almost all the EU countries and other neighboring European countries. This means that European citizens living in one of the Schengen countries are able to travel to another Schengen country without having to apply for a visa, or requiring a passport check. EU citizens also have the right to move to another EU country and become employed there without having to complete any special paperwork.

Figure 5.1 displays the various immigrants that Germany received in 2012 from EU countries. The map estimates that in 2012 that Germany received almost a half a million immigrants from other EU countries. Several EU citizens, especially Eastern EU countries, have taken advantage of the Schengen agreement, and immigrated to Germany in search of employment. According to 2008 EU statistics, 3.1% of Germany’s foreign population, a total of around 2,530,700, came from other EU countries (73). Both of these statistics prove that Germany has been receiving and continues to grow, particularly by receiving several EU immigrants. While 3.1% of the population does not appear to be a large proportion of Germany population, it still is significant enough to take notice of

the different types of nationalities within the country. This percentage is almost one third of the total claimed foreign population within Germany.

**Destination Germany**

In the first nine months of 2012, over 500,000 people* immigrated to Germany from other EU member states. Most of them came from Eastern Europe and EU countries in economic distress.

* Including seasonal workers

![Map showing immigration destinations to Germany](image)

*Figure 5-1 “Destination Germany.”

**Ethnic Germans**

This section had more relevance back in the 20th Century, after WWII and when the Cold War ended. The Basic Law, or Germany’s constitution, Article 116 states that anyone with German heritage that was relocated during WWII can have the option to move to Germany and receive German citizenship. These ethnic Germans also are able to request funding that will help them assimilate in Germany. This law allowed several people to claim their German heritage and relocate to Germany. After WWII, this was important for Germans located in territories that once were claimed by Germany, but no longer were part of Germany after the war. This provided validation for many ethnic
Germans to relocate to Germany. At the end of the Cold War, there was a signed agreement between German Chancellor Kohl and Russian President Yeltsin to help rebuild Germany by bringing back any ethnic Germans who were forced to remain within the Soviet Union during the Cold War. Over three million ethnic Germans took the opportunity in the 1990’s to relocate within Germany (Liebig 14)⁵⁸.

Although, ethnic Germans might not account much for any of the new immigrants or foreign population in Germany’s statistics, they are still considered to be a vital part of Germany’s new population. These ethnic Germans were able to receive German citizenship due to their heritage immediately, even if they did not speak German. This can be frustrating for some second and third generation immigrants in Germany who were unable to receive German citizenship, even though they have lived in Germany their entire lives and speak German fluently.

**Humanitarian: Asylum and Atonement Immigrants**

Germany’s Basic Law has several elements that make it easy for people to seek asylum or become recognized as refugees within their country, especially within Article 16 and 16a. These articles were originally created to make amends for Germany’s action during WWII. Article 16 states that no German may be denied its citizenship or be forced to be extradited to another country. Article 16a is about asylum. If a person is being persecuted on political grounds and is within the European Communities, asylum is granted immediately. If the person is outside the European communities, then he/she can

apply to the Bundesrat. After the war, there was also a law stating that any Jew that was ostracized during WWII, is welcome to return to Germany and receive German citizenship.

At first both of these humanitarian laws were not taken advantage of until the last few decades. Germany’s Jewish population has risen up to 200,000 (Bernstein)\textsuperscript{59}. This number rose dramatically since the end of the Cold War. In 1993, statistics show that the Jewish population was around 25,000, where most of them came from the Soviet Union (Liebig, 14). Several Jewish persons choose Germany for various reasons: cheaper higher education, safer politically (in comparison to Israel), and better economic opportunities. There will always be a potential for any number of Jewish migrants with German heritage to relocate back to Germany, and this number could continue to increase in the future.

The first major use of the asylum clause of the Basic Law was during the outbreak of the Yugoslavia Civil War. Several refugees from that territory relocated to Germany to escape persecution. Liebig calculated various immigrants that moved to Germany due to humanitarian reasons between 1993 and 2003. Excluding Jewish immigrants, Liebig’s total for humanitarian immigration was around 900,000 by the end of 2003\textsuperscript{14}. This number appears to be small, especially when comparing it to the total immigrants Germany receives. Yet through calculations with Leibig’s 2003 data and the 2011 statistical data of Germany’s total foreign population, the math\textsuperscript{60} shows that roughly 12% of Germany’s foreigners represent asylum seekers. This is a significant portion of

\begin{footnotesize}
\textsuperscript{60} Equation: $900000/7409754 = .1215$
\end{footnotesize}
Germany’s foreign population that cannot be ignored. Especially during the Yugoslavia Civil War, Germany was the number one country to host the largest amount of asylum seekers. Germany has been the number one European country to provide and receive asylum citizens up until 2000, when the United Kingdom surpassed Germany.\textsuperscript{61} This means that Germany had the largest foreign population within their country due to the asylum policies. Between the years 1988 to 1997, Germany was receiving over 100,000 asylum applications, over 300,000 between 1991 and 1993(Schuster 229).\textsuperscript{62} Schuster points out that due to Germany’s relaxed laws and geographical location, being in the center of Europe with nine bordering countries, it was an ideal place to seek asylum. While asylum seekers are not the largest representation of the foreign population in Germany, the country still received a disproportional amount of immigrants when compared to other countries, which could have created tension between Germany and other EU countries.

Germany’s population grew after WWII and the Cold War, partially due to their laws. Even if Germany alters its immigration laws, the country cannot stop receiving immigrants from the EU, ethnic Germans, and asylum seekers. These three categories are important because Germany cannot necessarily predict how many people it will receive each year, especially from the Schengen agreement. Germany also has no clear definition of how many immigrants they allow into their country each year. Yet as Germany is turning into an Immigration country, how do they intend to integrate their ever-increasing foreign population?

\textsuperscript{61} 2001. “Asylum Seekers: Europe’s Dilemma.” \textit{BBC News.}

Integration

Immigrants either feel welcomed or excluded when entering a new country. Some immigrants keep their traditions from their home country, while others attempt to blend in as much as possible with their host countries. There are varying degrees of integration within the host country. Liebig expresses that there are numerous ways to define and view integration.

The concept of ‘integration’ with respect to immigrants can take on a number of meanings. At one end of the spectrum is the notion of an economic or social convergence between the immigrant and native population with respect to a number of statistical measures, such as the unemployment rate, the employment/population ration, average earnings, school achievement, home ownership, fertility rates, voting behavior, participation in community organizations, etc., without this convergence necessarily implying any abandonment of home country culture and beliefs. At the other end is the much broader notion of integration as assimilation, i.e. acceptance of, and behavior in accordance with, host-country values and beliefs, including similarity of economic and social outcomes (9).^{63}

The way immigrants adapt to their new surroundings can have an effect on society’s acceptance of these immigrants. The host-country will have varying policies and laws that will assist the immigrants in integration within society. Some countries have programs that help immigrants assimilate and to feel more welcome in their country. For instance, they provide them with language courses and help them find jobs. Other countries provide opportunities to allow the immigrants to maintain their heritage and culture; perhaps by providing bilingual education for the children, and having bilingual signs. The EU’s motto is “unity in diversity” where they promote each country’s individuality and culture (diversity), but promote the union and the support of all the

various countries to be held together through the support of the EU as a supranational organization. The EU has attempted to unite its member states through the motto, flag, national anthem and currency. Yet the EU has the member states maintain their identities, such as through their languages or being able to design a national logo for the Euro. A member state can preserve its national identity, but how can an EU citizen retain their home identity when they relocate to other states? The EU still has to figure out how to have EU citizens feel welcomed no matter which member state they reside in. Germany not only has to have EU members feel welcome in their country but also non-EU citizens. Since immigration is prevalent in Europe, it becomes imperative that integration procedures are successful, where immigrants feel welcomed and can adjust to their new surroundings to the best of their capabilities.

In 2005, Germany implemented a new Immigration Law. Before this law, immigration was loose and up to each state’s authority to decide how long a foreigner can stay and work with them. This law is an attempt to create a standardized immigration policy throughout all of Germany. EU law dictates that EU citizens have to be considered first for a job. However, the new law allows German companies and corporations to present non-EU citizens a green card to live in Germany permanently if they present a specialized skill. The federal government also began a €200 million program that is optional for foreigners. The foreigners are able to take German language classes, learn about the government system, and other German cultural traditions. The law also became stricter for accepting refugees, and confirming that terrorists do not receive permanent German citizenship.\textsuperscript{64}

\textsuperscript{64} 2012. “Immigration Act.” Germany’s Federal Foreign Office.
One of the key goals to successfully integrate foreigners within Germany is to conquer the language barriers. Many German companies and corporations continue to use German as their primary language, and many of the foreigners are coming into the country with limited or no decent German skills. While the skill set is more important for German companies in making hiring decisions, they still are found to prefer to hire someone with whom they can communicate freely\textsuperscript{65}.

Germany never expected to have such a large population of immigrants, who attempted to permanently reside within Germany. The country never created policies prior to 2005 regarding immigrants’ integration, or what to do with its new foreign population. Germany’s original policies were created to have immigrants only be “guests” to later return to their home countries. Triadafilopoulous and Schönwälder explained that Germany’s Guest Worker agreement program failed, due to the fact that the country did not determine a rotation program, or create a concrete timeframe for when immigrant had to return to their countries.\textsuperscript{66} The 2005 Immigration Law symbolizes that the country recognizes itself as a country of immigration. The law is also one of the first ways that Germany shows how they are attempting to integrate its citizens into society. It appears that the law is designed to have foreigners feel more accepted in their country. There is almost little to no research on the success or failures of these integration procedures. Only time will tell if these laws and programs show signs of successful immigration policies.


Discussion

While Germany receives a high number of immigrants each year, the country also has an emigrant population. According to one Spiegel article OECD reported that Germany is having an issue retaining their immigrants. “In 2012, with one million new immigrants to Germany, the country ended up with just under 400,000 more people, when one factors in the number of those emigrating. About 4,000 or more people emigrated to Turkey than came to Germany from the country last year” (Sommer, 1). 67 This might be a sign that Germany integration procedures are not as successful as some had hoped. Germany definitely needs a stabilizing population to support its graying and shrinking population. Immigration is one of the hopeful solutions to help stabilize Germany. However, if Germany is losing almost as many people as it is receiving, what does this mean for its demographic outlook? What other actions can the country take to retain its population of immigrants?

Chapter 6

Conclusion

Final Notes

The main aim of this thesis was to see if population policies and economic incentives enacted by the German government provided enough motivation to alter people’s decision to have children. Based on the research and analysis in the thesis, I argue that these population policies are not enough. As discussed in Chapter 1, Paul Boyle stressed the importance of understanding the cultural and social traditions of a population. Cultural traditions of a society often move the society forward, for better or for worse, while shaping their actions and behavior. Because these traditions impact population trends in a society, one component of this research included an overview of German cultural and social characteristics, particularly those that influence the crude birth rate (CBR) and the natural increase rate (NIR) of the country.

To begin to see the connections between culture and demographics, Chapter 2 included an examination of state level demographic, cultural, and economic data to contextualize what alters CBRs. The goal of Chapter 2 was to determine what variables contribute to CBR and population growth. Crude death rate (CDR), gross domestic product (GDP), percentage of foreign population, population density, and unregistered
religion were the variables considered. Overall, none of these variables had clear relationships. Further data exploration, using free, state level data, revealed the application of the variables displayed minimal distinct evidence of spatial variation or outliers. As a result, it was necessary to analyze other variables that could not necessarily be defined in a numerical format.

Chapter 3 synthesized different cultural traditions prevalent within Germany to begin to have a more nuanced understanding regarding decreased birth rates over time. Chapter 3 is particularly important because it shows how there is a tremendous struggle for females when adapting to motherhood and professional lives, or better known as work-life balance. The German government might not have carefully considered its current cultural and social traditions when creating its population policies. There is a lack of acknowledgement of what hinders Germans from having families: a shortage of day care openings, shorter school hours, limited after school options, acceptance of working mothers in society, and the Raven Mother phenomena. The government needs to become aware of issues such as these in order to alter the social mentality to perhaps then facilitate personal family planning. Germany is changing through its demographic structure and composition. In a few decades its society is not going to be able to support itself with such a small working class. The government needs to find a friendly balance which supports the new demographic structure, but provides the freedom and opportunity for the society to have a potentially larger baby population. Both chapters 2 and 3 were designed to show why there are lower birth rates at various locations related to culture and cultural awareness.

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Chapter 4 included an examination of historical examples of family planning policies as well as Germany’s twenty-first century policies in response to its shrinking population. The first historical case study related to social and cultural change in French society among the Bourgeoisie as economic change associated with emerging industrialization led to smaller family sizes. Similarly, China has been transitioning from a traditionally agricultural, rural society to a more industrial, urban country. Because of rapid population growth, China implemented its so-called “One Child Policy.” Through the economic transition, the Chinese government determined there was a need to alter the traditional family planning practices. In these case studies, governments established policies to encourage smaller family sizes. Unlike these cases, there is a demographic alteration in Germany, which shows that there is a need to increase the birth rates. I believe that the government has the capabilities to have a similar influence in reverse: to create policies that encourage its citizens to have larger families. For example, the creation of economic tax breaks for individuals and families with children suggests that the government recognizes the need to have an increase in birth rates. However, the government and its policies have yet to truly acknowledge the need to change the cultural mindset of the population. It is clear that economic incentives are not enough to change demographic patterns of the population. In fact, even the statistical analysis in Chapter 2 showed that the Beta value for GDP was low. This could mean that if one had extra access to economic resources, this does not guarantee an increase in population growth. I argue that both economic and cultural factors need to be considered when interpreting the population patterns of a society.
Chapter 5 focused on the role of immigration in the demography of a country. Immigration could not be ignored, especially since it is a key topic in population geography. In addition, Germany has a long history of immigrants, and continues to receive large portions of immigrants compared to other European Union countries. If it were not for the immigrants that Germany has been receiving, its shrinking population would have occurred at an even more accelerated rate. An influx of immigration has been one solution for Germany’s declining population. Yet with several other countries experiencing similar population shrinking issues, they have also become popular destinations for immigrants. Germany is now in a position of competition with many other countries to keep and welcome immigrants in their country.

The original problem statement of this thesis was would economic incentives implemented by the government create enough momentum to increase the national increase rate within Germany? Or does the German government have other factors that are affecting fertility rates? Originally the thesis would show that through a mixture of increased economic opportunities that there would be a motivational pull to have an increase in fertility rates, but the statistical analysis of the state level data showed that an increase of GDP did not have a significant impact on CBR. Thus there were other factors and variables that needed to be explored in order to learn what was hindering or assisting fertility rates.

As a result, this thesis needed more than quantitative analyses at the state level, but also needed qualitative analysis of Germany at the national level. This is when other topics of population geography were examined with the focus on Germany: cultural and social traditions, political family planning policies and immigration. These other topics
were significant because they were the other potential indicators that influenced fertility rates within Germany. Chapters 3 through 5 were included as a way to contextualize each topic of population geography individually to see how that concept was affecting Germany’s fertility rates. Each one of the topics addressed in those chapters are important for understanding why Germany’s fertility rates are low today and how its population will continue to alter and shrink, despite the government efforts and immigration. If the German government wants to find another way to increase its NIR, then perhaps it should consider how to address the cultural and social traditions that hinder the mindset of its citizens from having children.

**Future Research**

Research on whether political policy with economic incentives can positively affect higher total fertility rates within Germany has just begun. This thesis has included research and analysis on selective cultural traditions, government family planning policies, and immigration within Germany. However, there are many other factors that could be considered regarding this research topic. For instance, it would be ideal to be able to conduct a survey based on the key components suggested in this thesis. Another example of future research is to conduct another statistical analysis at a smaller regional scale such at the county level. These two additional components would only strengthen the current analysis for Germany’s case study. Similar research could be made for other western countries that are also in Stage 5 of the Demographic Transitions Model.

The smaller sample sizes would be beneficial to examine what areas have significantly higher or lower birth rates due to other variables. The disadvantage of gathering smaller sample sizes is that the costs for accessing data at that smaller scale
could be potentially high because the German government would likely charge for the data. Doing the statistical analysis with only country data limited the capabilities of configuring what variables affect birth rates. The larger sample size also limited finding any spatial autocorrelation or outliers. The statistical analysis would also be enhanced by additional detailed variables, such as those that were referenced in Chapter 2. A better analysis could then be made to calculate which variables have a larger impact on the crude birth rate, and better residual results and maps could be produced that would designate certain areas that are unique and unlike the results generated from the entirety of Germany.

The goal of the survey would be to see whether or not the current German population is aware of the potential economic benefits of having children through the governmental taxes. This would provide more data at a personal level to be able to understand what the population felt and thought about these policies. One question could relate to what people think about when they want to have children, or are deciding how to balance their personal and professional lives. The ideal survey respondents would be females ages 20 to 40, but both males and females could be chosen for the survey because work-life balance and family planning decisions involve both genders. I would focus, however, on females who are of child-producing ages, due to the already discovered research, such as the ideas from Chapter 3, on the challenges that several females have when balancing families and a career. Choosing the location to conduct the survey might be a challenge, but if a more detailed residual map were created from the improved statistical analysis, then it might be beneficial to choose a location where the birth rates were higher than average for the survey. Ideally, this survey would be
conducted in several different cities, so it can be determined whether or not the same characteristics and results carry over to different locations. The ultimate goal is to have the survey groups be able to explain what components they consider for having or not having children. Once there is an understanding of what factors are considered for family planning, then it will be easier to determine what actions a society and government can take to encourage increased birth rates.

In conclusion, I must stress the importance of cultural influences. The cultural and social tendencies of various societies need to be examined to understand the rationale of how the population acts. It seems indicative to say this, but there needs to be a change in the mindset of the German population. From my perspective, the society needs to learn to recognize that it is culturally acceptable to work full-time and support the family. Then society and the government need to create a system which can support this model. These support systems could be various programs, whether it is more day-care centers, or longer school hours, or extracurricular activities for students, or education about females having equal opportunities to have families and careers. The economic incentives provided by the government are a great start, but it needs to work jointly with these new modern cultural mind-sets. This greying of the population is not unique to Germany and soon other countries will face similar demographic issues and dilemmas. It is happening throughout the majority of the Western world. Many other European countries are having similar scenarios as the Germans. These issues need to be examined further to either help countries find incentives and promote an increase in birth rates, or suggest alternatives for sustaining their economies with shrinking populations.
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