Attitudes Concerning Immigration in Post-Communist Europe:

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Abstract

The current rise in nationalist sentiments and emphasis on developing immigration policies around the world led to the question of how have attitudes towards immigration and non-native people affected the differences in economic growth across post-communist countries in the Central and Eastern Europe regions? Using survey data from two waves of the World Value Survey as well as quantitative control data and proxy variables, this study contradicts expectations based on current literature in that it shows how negative attitudes towards others are correlated with higher growth. Such results demonstrate what could be a recurring phenomenon for countries in transition. However, the possibilities of inaccurate survey responses and data limitations due to survey inconsistencies must be kept in mind. The following research is not an all-encompassing answer to the aforementioned question. Instead, it illustrates a divergence from current literature and demonstrates a need for continuous investigation into how personal values are affecting nations as a whole.

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Introduction

Post-communist countries, also referred to as countries in transition or Second World countries, occupy a distinct yet simultaneously similar position compared to developed, First World, and developing, Third World, countries. They are nearly equal to Third World countries in terms of their percent of the world's gross national product, nineteen percent compared to eighteen percent; they are almost the same as First World countries in terms of percent of world area, twenty-six percent compared to twenty-three percent; and they are precisely between First and Third World countries in terms of percent of the world population, thirty-three compared to fifteen and fifty-two percent, respectively (Hague, Harrop, and Breslin 1992, as cited in Ma 1998). Because of how transitioning post-communist nations can be equated to other countries in different ways, yet stand out due to their own tumultuous history, they provide unique data for research as well as applicable results on a wide range of topics.

In my research, I analyze post-communist countries and the topic of immigration. More specifically, I work toward answering the question: to what degree, if at all, have attitudes towards immigration and non-native people affected the differences in economic growth across post-communist countries in the Central and Eastern Europe regions? Intuitively, I would think that greater openness and acceptance would result in greater economic growth following the fall of communist regimes. Therefore, I posit the null hypothesis that on average, there is no effect between post-communist European countries' growth since the end of the 20th century and the attitudes of each countries' native population towards migrants and foreign workers. On the other hand, my alternative hypothesis is that on average, there is an effect between attitudes and

economic growth; furthermore, the post-communist European countries that have experienced greater, positive economic growth since the end of the 20th century contain a native population that has relatively more positive attitudes and beliefs towards migrants and foreign workers.

By focusing on survey results from waves, or rounds of data collection, three (1995-1998) and five (2005-2009) of the World Value Survey (WVS), I am able to find quantified data on personal opinions. The immigration and foreign worker-related survey responses range in concerns from how welcoming people think their nation's immigration policy should be to whether or not individuals would fight in a war in support of their country. These responses, as well as other survey results and control factors outlined below, not only illustrate the sentiments and performance of countries in transition but also serve as cases of precedent as nations and governments continuously evolve around the world.

What is most notable about my study is that after an initial regression analysis, I fail to reject the null hypothesis in a cross-sectional analysis using wave three data (1995-1998), in a panel data set analysis using a combination of wave three data and wave five data (2005-2009), and in a reduced-sample size data set using wave three data again. The coefficient on the variable that reflects the most significant survey variables, Attitude, resulted in regression outputs where as attitudes become more positive (an increase in individuals willing to have an open immigration policy and a decrease in dislike for having an immigrant or foreign worker as a neighbor), the gross domestic product per capita grew slower than in those countries where attitudes were negative. It is important to note that I assume in this study that WVS responses are accurate and that people tell the truth in surveys asking about personal beliefs, despite the

possibility that people may not accurately assess or honestly respond to the survey questions. Nevertheless, my results run counter to initial intuition and reviewed literature.

Additionally, the results lack power in the panel and second cross section data sets. While this lack of robustness does not allow for unquestionably strong statistical evidence, the fact that the coefficient directions and magnitudes do align validates the results. Through the following research and analysis, one can see how personal beliefs and values held on average in a post-communist European nation affect their nation's economic growth and productivity.

The following literature review will look at the widespread research already done on how values and trust in general are connected to economic outcomes. The papers I reference highlight the importance of countries in transition as research subjects, how industrialization connects to value shifts and therefore economic growth, how trust as an exogenous factor in economic growth maintains robustness in quantitative studies, and the effects of immigration on economies.

The current literature written on beliefs and values within a population analyzes a variety of subjects ranging from trust to business ethics to religion and more. Unlike these papers, my study will explore attitudes through a more narrow lense by looking strictly at survey data and value systems pertaining to immigration and foreign workers. By doing so, I seek to connect with the today's international interest in migrants. Additionally, there are other papers that focus on immigration, but look at immigration trends using ex-post statistics whereas I use ex-ante attitudes on immigrants to forecast future economic outcomes. This intersection of immigration beliefs and economic outcomes therefore adds to today's literature and provides a new perspective for the ongoing conversations regarding immigration. The papers discussed below

have helped to shape and guide my research as I aim to uncover if and how the effects of personal survey responses create a national set of beliefs that influence economic growth in a lagged, time-oriented framework.

Literature Review

Post-communist European countries provide an optimal pool from which to gather data and perform studies because of their state of transition and continuing development from a command economy to a market economy. As Jan Fidrmuc (2001) indicates in his analysis of economic reform and democracy, studying countries in transition is as if one is conducting a controlled experiment. This control-like situation is useful because of the clear cause and effect analysis that can be drawn from the data, which can then be applied to studying other transitioning or developing nations. Because these nations are so newly formed, this reasoning can be applied to my study on attitudes towards immigration and trust in the post-communist region of Central and Eastern Europe.

The paper "Modernization, Cultural Change, and the Persistence of Traditional Values" has strongly influenced the direction of my research as well as the collection of publications on culture and how a society's values play a role in economic development. In this paper, Ronald Inglehart and Wayne E. Baker (2000) use WVS data to show that countries around the world tend to hold certain values and lean in one direction over another in terms of beliefs. When a country has a very clear perspective on a value, such a belief tends to remain prevalent despite other changes taking place within the nation's borders (Inglehart and Baker 2000). However, depending on the degree to which a country is industrialized, the nation is likely to be associated

with either traditional or secular-rational values and survival or self-expression values (Inglehart and Baker 2000). Subsequently, the shift from being a pre-industrial to post-industrial society causes major changes, often pushing a country from being more traditionalist to more secular, for example being more religious and respectful of authority to being more skeptical and conscious of personal economic and physical security (Inglehart and Baker 2000). The two authors find that the more industrialized, secular, and self-expressionist a country is, the higher its gross national product is; in other words, places where people report higher levels of well-being, trust, tolerance, gender equality, and environmental and political activism have more prosperous economies (Inglehart and Baker 2000).

In Inglehart and Baker's study (2000), country-specific values influence how each nation particularly evolves and how well the society progresses economically compared to the others. Inglehart and Baker (2000) include in their results a graph that illustrates where the studied countries fall in terms of survival versus self-expression values, as well as traditional versus secular values. One can see that on this graph, Figure 1 in the publication of "Modernization, Cultural Change, and the Persistence of Traditional Values" (not shown here), the post-communist countries from Central and Eastern Europe are plotted in the same general area, but do not fall in exactly the same place. Therefore, attitude-based data, such as country-specific degrees of hostility and openness, provide valuable and varied information for studying the more narrow focus of attitudes towards immigration particularly when using WVS responses.

Additionally, the gross domestic products of post-communist countries have grown at different rates after the fall of communism (Katchanovski 2000). Katchanovski (2000) explains that this phenomenon can be partially attributed to how the level of ethnic and linguistic

similarity among a country's residents decreases transaction costs, lessens conflicts, and supports a single nation, which in turn increases economic modernization. This piece of literature provides significant motivation for studying the effects of attitudes towards immigration in the development of post-communist European countries since it succeeded in finding that cultural values have influenced this region's growth. Katchanovski (2000) looks at multiple cultural values: religion, business ethics, trust, civil society (meaning non-family and non-government networks), and historical experience, to name a few. However, this study touches upon a broad range of cultural aspects and faces a multicollinearity problem, which makes differentiating between impacts of different cultural values difficult (Katchanovski 2000). Rather than having a wide-ranging collection of values, studying the impact of values and opinions regarding immigration narrows the number of directions in which the study points, therefore avoiding confusion regarding high levels of correlation between religion or historical experience and Western culture variables (Katchanovski 2000). Furthermore, Katchanovski (2000) cites and highlights research by Fukuyama (1995) when he notes that trust is an important aspect of a culture's characteristics, and that trust allows for openness to economic exchange outside of immediate family and friends, which therefore allows for greater business opportunities and fewer uncertain relationships.

Trust as an indicator of economic growth continues to be relevant in economic research as shown by Sjoerd Beugelsdijk, Henri L.F. de Groot, and Anton B.T.M. van Schaik (2004). Their research proves that studies by both Knack and Keefer (1997) and Zak and Knack (2001), who each use trust as an exogenous variable that factors into economic growth, provided analyses that were robust – statistically significant – enough to be valid. The research shows that

data limitations, not omitted variable bias, are more of a concern when studying trust as an economic growth indicator (Beugelsdijk et al. 2004). After testing four dimensions of the 1997 and 2001 studies on various countries' development, this literature demonstrates that trust is statistically significant in 99.9% of cases, the choice of conditioning variables is insignificant in terms of the relationship between trust and growth, the effect of trust on growth remains robust after other exogenous variables are switched to different yet similar variables, and adding more countries to the study (as Zak and Knack (2001) did to Knack and Keefer (1997)) increased the effect size and significance of trust as an economic growth determinant. Beugelsdijk et al. (2004) demonstrate that trust is a valid variable in which to base a study, and the fact that the robustness of prior research became more evident when including less-trusting countries provides support for using beliefs-based variables in studies on Europe's post-communist region, since this area has been found to tend towards survivalist, more skeptical, perspectives over self-expressionist values (Inglehart and Baker 2000).

Guiso, Sapienza, and Zingales (2004) also add to the literature that strongly demonstrates how culture has a significant impact on economic outcomes. Their studies look specifically at how beliefs shape international trade and investments, and find that trust has a positive and significant effect on trade (Guiso et al. 2004), which motivates research into how trust and attitudes regarding immigration may also significantly affect GDP per capita outcomes. While Guiso et al. (2004) point out that there may be reverse causality so that trade leads to trust among foreign nations and although they did not find any conclusions or significant results on welfare, the overall findings reveal that distrust results in first order economic losses over time and that culture, trust, and economics are intertwined. Therefore, my research into how tolerance and

values regarding individuals coming into and going out of specific countries will add to the findings of Guiso et al (2004).

Literature by Mikk Titma and Denis Trapido (2002) supports previous evidence of differences among post-communist countries' levels of success. The authors note that since nations in this region are no longer under command economies, employees must now compete with each other (Titma and Trapido 2002). This is an important change since it means that those native to a post-communist country must compete with immigrants, and this competition may affect attitudes towards immigration as a whole and have detrimental economic consequences.

Despite the many sources proving how culture impacts economies, others have found that economic outcomes influence behavior and opinions. According to a study by Rafaela M. Dancygier and Michael J. Donnelly (2012), the health of an economy may change how people native to a country view the immigrant population and policies concerning non-EU migrants. Dancygier and Donnelly's paper turns away from many of the other current pieces of literature by showing that depending on how a specific sector is doing, the industry's economic well-being influences openness towards immigrants entering the nation and workforce. The research also shows how employment in growing sectors leads to positive opinions of migrant workers because growing industries increase workers' feelings of job security and therefore willingness to accept more immigrant workers in order to continue growing the sector (Dancygier and Donnelly 2012). However, the opposite effect occurs among sectors not doing well. While these findings support reasoning for reverse causality, it also supports the literature by showing that there does exist a connection between immigration and growth. Furthermore, the breadth of findings outside of Dancygier and Donnelly's paper for how culture influences economies

motivates research into attitudes towards immigration in the development of post-communist countries in Central and Eastern Europe.

Additionally, Ingrid Kubin and Peter Rosner (2002) find that immigration and how immigrants often times increase the quantity of low skill workers change how an economy runs. Due to discrimination and the need for immigrant skills to be transformed before being efficient in a new country, immigrants often flood the low-skill job market and drive down wages (Kubin and Rosner 2002). While this literature shows how immigration can affect wages in low-skill industries, these new employees complement the high-skill workers who rely on low-skill labor, therefore making the high-skill workers better off and driving greater income inequality (Kubin and Rosner 2002). While this study does not show how attitudes towards immigration affect the economy, the research into how immigrants shift the labor market provides reasoning other than prejudice for why natives may or may not look kindly upon incoming migrants.

In the paper "The Effect of Immigration on Output Mix, Capital, and Productivity," authors Myriam Quispe-Agnoli and Madeline Zavodny study how changes in labor supply because of immigration may affect changes in the U.S. manufacturing industry's output, capital, and productivity. Results on productivity in particular indicate that immigration changes slow down productivity for both high- and low-skilled sectors (Quispe-Agnoli and Zavodny 2002). Quispe-Agnoli and Zavodny attribute this slowness to how assimilation takes time and long-term effects require additional research (Quispe-Agnoli and Zavodny 2002). Although the study explores this effect using U.S. states as observations, not countries, it is still a valuable as it emphasizes small, closely connected economies, much like the clustered post-communist nations in Central and Eastern Europe.

Finally, as noted earlier, Fidrmuc (2001) highlights the fact that studying post-communist countries is, in some ways, as if one is looking at a controlled experiment. Because decisions are being made by emerging nations with little to no prior precedent by their own government, these countries allow for a clear cause and effect analysis on a topic such as attitudes towards immigration. Additionally, findings related to transitioning countries are important for seeing how such countries may progress, but also for indicating how underdeveloped countries may progress in the future (Fidrmuc 2001). A study looking particularly at how attitudes towards immigration have caused differences in economic outcomes among post-communist countries adds to the existing literature on culture, values, immigration, and countries in transition – bringing these concepts together to analyze factors in a specific area during a time of migrant crises and many nationalist movements.

Methodology: Cross Section One

Studying people's attitudes regarding a specific topic requires data that reflect individual opinions. For this reason, the following research uses mostly survey data, and specifically WVS data from waves three and five, which are collections of results gathered from 1995 to 1998 and 2005 to 2009, respectively, in over fifty present-day countries, East Germany, West Germany, and Puerto Rico. For this study, I selected the Central and Eastern European countries that had previously been under communist regimes (as well as Armenia, Azerbaijan, and Georgia, which have been considered European and Asian in different contexts). The exact set of countries surveyed and the number of responses from each country vary: most range from 1,000 to 2,000 individual responses per country, though Moldova and Ukraine are the extremes at 984 and

2,811 responses, respectively (Inglehart et al. 2014). I use additional economic and empirical data for control and possible causal analysis purposes.

To test how attitudes towards immigration have affected growth in post-communist Europe, this study uses the change in logged values for gross domestic product (GDP) per capita between 1998 and 2015 (logGDPpcPeriod) as the outcome variable in an individually constructed cross-sectional data set. Equation 1 below illustrates how this variable was created after gathering the GDP per capita values from the World Bank Databank database and converting the data to their log form.

$$1) \quad logGDPpcPeriod = log(GDPpc2015) - log(GDPpc1998)$$

I focus on these years, 1998 and 2015, because 1998 is the year in which the WVS results from wave three were finished being gathered as well as a year following all communist regimes and significant periods of violence in the region being studied. On the other end of the time period, 2015 is a very recent year for which sources have published data that can be compared to data both under communism and directly following communist regimes.

After defining the period of interest and determining the outcome variable, I gather specific exogenous variables and build a full data set. Each wave of the WVS, completed by thousands of individuals around the world, includes many questions that result in answers used as exogenous variable values. Such values are along the same lines as the exogenous factors used in the previously described literature. These factors include if surveyed respondents highlight tolerance for others as an important quality to instill in children (ChildTol), would prefer not to

have immigrants or foreign workers as neighbors and believe the government should allow anyone to enter their country who wants to (two belief measurements that are combined in this study to create the variable called Attitude), prefer that available jobs go to people of that country's nationality during times of high unemployment (JobsToCitizens), and would be willing to fight in a war for their country if necessary (War).

I also included control variables that come from non-survey sources. The percent of each country's population over the age of forty in 1998 is used as the first control (Senior). These World Data Bank-based figures account for a trend described by Inglehart and Baker (2000), which is that younger generations in twentieth century industrial societies differ from older generations in terms of survivalist attitudes. The younger the generation is, the greater their sense of security and the less appreciative they are for their life (Inglehart and Baker 2000). Because older individuals demonstrate a more survivalist perspective, including the percent of each country's population older than forty accounts for the fact that having more adults and elderly people would increase the presence of survival-oriented views. In turn, this may cause them to see immigrants and foreign workers as invaders and then lead to detrimental economic outcomes in GDP per capita.

In addition to population statistics as controls, I analyze the log of the GDP per capita in 1998 (logGDP1998). By extracting this data from the World Bank Databank and including it in my analysis, the results account for and consider how convergence might be the reason for successful growth. If convergence theory holds, one expects that lower GDP per capita levels in 1998 would result in comparatively faster growth by the end of the 1998 - 2015 period studied here. However, higher values of logGDP1998 that correspond with greater growth throughout

the period would be misaligned with convergence theory. This is an important control factor for studying attitudes towards immigration and growth because takes into consideration the forces of the catch-up effect on developing countries.

A third non-survey control included is the accumulation of gross fixed capital formation (GFCFGDP9815) for the period 1998 through 2015. For this indicator, the World Bank Databank includes a range of infrastructure improvements such as those to fences, drains, roads, railways, schools, hospitals, machinery, plants, residences, and more. Including this variable in the cross-sectional analysis requires calculating the sum of gross fixed capital formation for 1999 - 2015 as shown in equation 2.

$$2) \qquad x = \sum_{t=1999}^{2015} GFCF_t$$

Through GFCF, I evaluate how a nation's investment in capital may lead to GDP per capita growth in the future. This is an important control since it takes into consideration the fact that transitioning countries, having in many cases recently fought in dissolution wars, build fixed capital quickly.

In addition to the survey and control variables, this study includes the percent of GDP comprised of foreign asset stocks (FDI), which can be considered a proxy for Attitude. To calculate this exogenous variable, I divide each nation's 1998 foreign asset stock by its 1998 GDP and recording it as a percentage. Input values come from data gathered by Trinity College Dublin economist Philip Lane. The intuition behind using FDI was that a country is less likely to have savings abroad if citizens have negative attitudes towards foreigners, therefore more

investments equals more positive feelings. As an independent variable, FDI's percent of GDP takes into consideration actual expenditure as a representation of beliefs, which connects to a nation's overall expenditure and GDP, and therefore the GDP per capita used here.

Lastly, this study uses the role of net official development assistance and official aid received (ODA) from 1998, measured in current U.S. dollars, as a way to account for countries' willingness to support people of other nations. I gather these non-survey values using the World Bank Databank and demonstrate how aiding others could influence a country's economic well-being. Like FDI, ODA is used as a proxy variable for Attitude and is tested as an objective measure of beliefs in addition to the subjective survey responses. The thought process behind this variable is that a nation with more positive attitudes towards others would most likely give more in foreign aid. Therefore, one would expect this coefficient to be positive and significant - accounting for how helping others has domestic benefits.

I consider many other variables and possibly causal factors given the literature reviewed and intuitive thought, such as education, the change in the number of migrants, the belief that most people can be trusted, and more. However, these and other factors and controls proved to be statistically insignificant and not considered moving forward.

With two main categories of data, survey variables and non-survey controls, the following basic cross-sectional regression equation was created based on those variables that were most significant in literature and through statistical software.

$$\text{3a) } \text{logGDPpcPeriod} = \alpha + \boldsymbol{\beta}_1(\text{ChildTol}) + \boldsymbol{\beta}_2(\text{Attitude}) + \boldsymbol{\beta}_3(\text{JobsToCitizens}) + \boldsymbol{\beta}_4(\text{Senior}) + \boldsymbol{\beta}_5(\text{logGDP1998}) + \boldsymbol{\beta}_6(\text{GCFCGDP9815}) + \boldsymbol{\varepsilon}$$

$$4a)\ \text{logGDPpcPeriod} = \alpha + \boldsymbol{\beta}_1(\text{Attitude}) + \boldsymbol{\beta}_2(\text{logGDP1998}) + \boldsymbol{\beta}_3(\text{GCFCGDP9815}) + \boldsymbol{\varepsilon}$$

Out of the six variables used in equation 3a, the most significant survey variable in terms of affecting the change in GDP per capita from 1998 to 2015 is Attitude, so I use this and the most significant control variables for additional analysis, as seen in equation 4a above. Following these two regressions, I use the proxy variables FDI and ODA instead of Attitudes to see if the effect is comparable. Equations 3b and 4b represents the change to proxy variables rather than the principal exogenous variable, Attitude. The same process was used twice: once with FDI and once with ODA.

$$3b)\ \text{logGDPpcPeriod} = \alpha + \boldsymbol{\beta}_1(\text{ChildTol}) + \boldsymbol{\beta}_2(\text{FDI}) + \boldsymbol{\beta}_3(\text{JobsToCitizens}) + \boldsymbol{\beta}_4(\text{Senior}) + \boldsymbol{\beta}_5(\text{logGDP1998}) + \boldsymbol{\beta}_6(\text{GCFCGDP9815}) + \boldsymbol{\varepsilon}$$

$$4b)\ \text{logGDPpcPeriod} = \alpha + \boldsymbol{\beta}_1(\text{FDI}) + \boldsymbol{\beta}_2(\text{logGDP1998}) + \boldsymbol{\beta}_3(\text{GCFCGDP9815}) + \boldsymbol{\varepsilon}$$

Following these approaches, I run the same regressions, but change the growth rate variables to average annual growth rates. Specifically, I divide the logGDPpcPeriod and GFCFGDP9815 (and the change in net migration between 1998 and 2015, which got dropped because if its insignificance) by seventeen, which is the length of the period of interest. By making this change to the data, I aim to see how mean year-to-year changes play a role in this research question.

By looking at individual significance levels and comparing coefficient signs and magnitudes, I am able to make connections and come closer to answering the question: to what degree, if at all, have attitudes towards immigration and non-native people affected the differences in economic growth across post-communist countries in the combined Central and Eastern Europe region?

Results and Discussion: Cross Section One

After running preliminary regressions, the most significant survey variable is Attitude, which combines survey results for the percent of participants who did not respond saying that they would not want an immigrant or foreign worker as a neighbor and the percent of participants who said that their country's immigration policy should allow anyone who wants to come into the country to enter. According to the Stata output, Attitude has a negative coefficient of -0.0132539 and t-statistic of -2.49, which supports evidence of it being a strong coefficient. Figure 1 in the Appendix illustrates this significance as well as the results for the other variables in equation 3a. According to the Stata output, *ceteris paribus*, Attitude shows that as a country's individuals reported being more open to having immigrant neighbors and willing to let them enter the country during the 1995 to 1998 survey period, their nation's GDP per capita grew more slowly relative to others. This outcome runs counterintuitively to initial expectations formed by literature and intuition.

Another significant variable is Senior. This independent variable appears highly significant compared to the set of exogenous variables included in this initial regression. With a t-statistic of -2.65 and p-value of 0.018 in the first regression, Senior, the percent of each

country's population over the age of forty in 1998, expresses that all else equal, a nation containing a comparatively older population in 1998 saw slower growth throughout the 1998 to 2015 period. Potential explanations may be that older workers are less productive due to ailments, greater physical inabilities, or more widespread retirement. However, Inglehart and Baker's research on survivalist versus traditionalist mentalities supports the possibility that post-communist countries with higher levels of people over age forty experience slower growth in terms of GDP per capita due to their perspective that foreigners are detrimental to their nation and should not be trusted. While this result supports the current literature in which positive attitudes lead to greater growth, it contradicts this study and the Attitude variable, which show that negative attitudes lead to greater growth. In additional regression trials with a more selective set of variables, Senior becomes insignificant and is later dropped from the core set of exogenous factors, thus eliminating concern for this contradiction.

The log of GDP per capita in 1998 is another exogenous variable that is relatively correlated with the endogenous variable, and illustrates that the greater one's GDP per capita was in 1998, the less it grew between then and 2015. Not only does this comparable significance support convergence theory, in which less developed countries grow more quickly than developed countries among the twenty-two post-communist countries of interest, but it also indicates that both quantitative factors as well as qualitative factors like beliefs are influencing GDP per capita outputs in this region.

Gross fixed capital formation was surprisingly less significant in this regression than anticipated. By examining equation 3a and the corresponding Stata results, one sees that there are many exogenous variables being considered and there is an apparent difference between

R-squared and adjusted R-squared. Therefore equation 4a and other trials are important for further investigating the impact of attitudes towards immigration on economic growth in post-communist countries.

I then narrowed the pool of exogenous variables to only the most significant and relevant. As indicated in Figure 2, Attitude remains significant and negative, GDP per capita in 1998 is much more statistically significant, but the gross fixed capital formation fails to remain noteworthy. The coefficient on Attitude supports the previous regression findings, though additional analysis will determine whether these output values are reliable.

When I ran the regressions shown by equations 3b and 4b, which uses FDI as a proxy for Attitudes, as well as the ODA versions to investigate the possibly comparable effect using a proxy variable, the results were not tremendously similar. The t-statistics for FDI and ODA both have an absolute value of around 0.5 and the p-values are 0.575 and 0.622, respectively, for the first of the two regression models. When the regressions are run again for each proxy, this time with fewer exogenous variables, the power of FDI weakens and that of ODA is nearly identical. Therefore, using FDI or ODA as a proxy for Attitudes is not relevant to the understanding of attitudes towards immigration being a causal factor in the different changes in economics growth among post-communist countries in the Central and Eastern European region. For full regression outputs using FDI and ODA, see Figures 3 and 4.

While the use of proxy variables did not prove to be statistically significant, as illustrated by the results from replacing Attitudes with FDI and then ODA, using Attitudes instead still demonstrates a viable correlation. Because the emphasis of this study is on personal beliefs and their specific effect on economic growth, using a proxy that is more representative of

governmental decision-making may have caused the discrepancy between the various first cross-sectional outcomes. Rather than GDP per capita resulting directly from actual, enforced foreign policy and opinions, for which FDI and ODA serve as proxies, the outcomes found in this study support the argument that economic outcomes can be forecasted through prior attitudes and beliefs.

Turning to the same regressions, but this time using average annual growth rates for the endogenous variable, GDP per capita, as well as gross fixed capital formation, I find results similar to the ones before: all else equal, as attitudes towards immigrants and foreign workers become more negative, economic productivity increases in post-communist countries in Eastern and Central Europe. Figures 5 and 6 illustrate this outcome and in the latter, the results show that all else equal, a 1% increase in the number of citizens who have positive attitudes towards immigrants and foreign workers (and who respond to the WVS) leads to a 0.06882% decrease in GDP per capita per year. Furthermore, given the standard deviation for Attitude, I find that the effect on average annual GDP growth from a one standard deviation change in Attitudes results in a significant 39.39 basis point decrease in GDP per capita per year. This calculation supports that there exists a connection between values and economic growth.

Figure 7 illustrates how testing the joint significance of variables and the results of removing even the most insignificant factors in terms of t-statistic is difficult. Because ChildTol, JobsToCitizens, and GFCFGDP9815 lead to the lowest t-statistics among exogenous factors in equation 3a and as illustrated in Figure 1, I test their combined role in the equation. The resulting Stata output statistics, where the p-value restricts one from rejecting the null hypothesis, prevents a clear conclusion on whether they are or are not important factors up to this point in the study.

Because of insignificance, the inability to account for country-specific characteristics, and the time comparison nature of the study, I continue by implementing additional data. I construct a panel data set to take into consideration fixed effects using WVS results from waves three and five and reexamine survey and control variables gathered for the cross-sectional data set used above.

Methodology: Panel One

As Inglehart and Baker note in their study, "different societies follow different trajectories even when they are subjected to the same forces of economic development, in part because situation-specific factors" (Inglehart and Baker 2000). Therefore, the following panel data set construction and analysis controls for nuances held by each post-communist European nation. In gathering data for a panel data set, the number of countries used in the analysis had to decrease. Because of inconsistencies in which countries were surveyed and which questions were asked during wave five compared to wave three, the panel data set shrinks to ten countries, less than half of the original cross section. Figure 8 shows the countries left available for a fixed effects panel study as well as the WVS variables and lagged GDP control factor associated with each country and wave.

In constructing the output variable, GDP per capita, the two waves require different calculations in order to capture how the countries' economies compare over the post-communism period. Equations 5 and 6 below illustrate these computations. I also calculate the average annual GDP per capita growth by dividing equation 5 by eleven and equation 6 by six in order to control for the fact that one period is almost twice as long as the other. Through the variable

AvgAnnualGDP, each term in the panel for GDP per capita will be standardized and more comparable.

5) Wave 3: $logGDP = log(GDP\ per\ Capita\ 2009) - log(GDP\ per\ Capita\ 1998)$

6) Wave 5: $logGDP = log(GDP\ per\ Capita\ 2015) - log(GDP\ per\ Capita\ 2009)$

Similar recalculations had to be done for gross fixed capital formation since these values must be an accumulation over two time periods rather than numbers directly coming from the World Bank Databank or other data set. Therefore, the equations below illustrate how the time period being studied is captured through GFCF across wave three and wave five. Although this variable does not prove to be as significant as anticipated in the first cross section, I analyzes it with a two-part time perspective to determine whether or not it provides any additional support for the hypotheses. Furthermore, like my outcome variable, GDP per capita, I divide equations 7 and 8 by eleven and six, respectively, to produce average annual accumulation of gross fixed capital formation, AvgAnnualGFCF.

7) $$Wave\ 3\ (1995-1998) = \sum_{t=1999}^{2009} GFCF_t$$

8) $$Wave\ 5\ (2005-2009) = \sum_{t=2010}^{2015} GFCF_t$$

The final edits made to variable data include additional GDP per capita information. The variable log(laggedGDP) represents the logged values for GDP per capita when surveys are

collected. This means that for panel observations from wave three, log(laggedGDP) is the GDP per capita in 1998 while panel observations from wave five would use the GDP per capita from 2009. This would ensure that the model accounts for the state of the economy when individuals made decisions regarding the survey questions.

With the new endogenous and exogenous GDP per capita values, GFCF values for each country in each wave, and survey-based data for a narrowed selection of independent variables, I run new regressions controlling for country-specific fixed effects with each trial containing one or no more than two exogenous variables.

The chief equation I analyzes, equation 9, looks specifically at Attitude with fixed effects:

$$9)\ \text{logGDP} = \alpha_i + \boldsymbol{\beta}_1(\text{Attitude}) + \boldsymbol{\varepsilon}$$

This enables me to look at how wave three and wave five survey results change over time and then affect GDP per capita in the ten post-communist countries. Additionally, doing this regression with the log of lagged GDP per capita values as a control is done as a check since previous GDP per capita in these nations has consistently been a significant exogenous factor in this study. The following section illustrates the outcomes of these trials.

Results and Discussion: Panel One

The variable of greatest interest in this section is once again Attitude and the results of this first panel data regression can be seen in Figure 9. According to the Stata output coefficient, as a nation's citizens' positive attitudes towards foreigners increased during the 1998 to 2015 period, the country's GDP per capita grew at a slower rate. This result is reassuring because it

matches the output from the cross section data previously discussed. What is most surprising upon initial review of these results, however, is that the t-statistic decreases from -2.43 to -0.68. While this drop was unanticipated, it is reasonable to believe that the change is largely because of the greatly reduced sample size. By reducing the number of countries from twenty-two to ten, the results lose robustness.

When changing the outcome variable from the GDP per capita for the general time period of each wave for each country to the average annual GDP per capita, the coefficient naturally remains negative, which is consistent. Additionally, I find that the effect on average annual GDP growth from a one standard deviation change in Attitudes results in a substantial 79.83 basis point decrease (or roughly 0.8% decrease). This result is much higher than the same calculation done following in the initial cross section, which leads me to conclude that not only is the panel data strong evidence, but the overall trend of more positive attitudes leading to comparatively slower growth is viable and significant.

Another regression tested includes both Attitude and the log of GDP per capita from the beginning of each wave. In this regression, log(laggedGDP) serves as a control and tests how the panel's fixed effects model runs regarding survey data alongside quantitative data. As seen in Figure 11, Attitude is again insignificant in terms of p-value and t-statistic. However, the coefficient on Attitude remains negative, which is consistent with the previous cross section results. Interestingly, in the fixed effects model, the log of lagged GDP per capita shows results that are far more significant than the others thus far seen in this study: all else equal, higher GDP per capita at the time survey results/waves are completed correlates with GDP per capita increasing faster throughout the beginning of the 21st century, which was a time of heavy

rebuilding in the post-communist region in Central and Eastern Europe. Again, when using AvgAnnualGDP for the endogenous variable, the results become slightly stronger in terms of attitudes being influential and significant, which is illustrated in Figure 10. When this change to the dependant variable was made while using the log(laggedGDP) control, the control's t-statistic decreased by almost half, which I interpret as previous economic statuses become relatively less influential than attitudes regarding economic growth when considering average year-to-year changes (Figure 12). However, the yearly effect of attitudes on GDP per capita while implementing lagged GDP as a control is still a notable 0.2% decrease, or 20 basis point decrease. Returning to the results for Attitude, the mixture of consistency and statistically irrelevant information leads me to turn to additional fixed effects trials.

Just as the independent variable Attitude reacted differently in the panel than anticipated, so did War, the survey variable that represents how many participants responded "yes" to whether or not they would fight for their country. In the original cross-sectional analysis, this variable was highly insignificant and removed from the core group of variables. However, now that a panel data set is utilized, country-specific factors are taken into account, and time is more carefully considered, War is greatly significant. Figure 13 demonstrates how instrumental War is to GDP per capita in this model. Here, one can interpret the results as all else being equal, when more citizens express being willing to fight for their country, GDP per capita grows faster compared to other European countries in transition. Intuitively this make sense because engaging in war requires supplies, so being inclined to go to war would make a nation inclined to being more productive. In relation to attitudes concerning foreign people, being more willing to fight in war means accepting the fact that one's fellow citizens are attacking others. Therefore, a

willingness to harm others precipitates greater economic growth, setting aside opinions that this outcome has troubling moral, ethical, and political implications.

Because War is not significant in the cross-section results reviewed earlier, but highly significant in the panel data, this study looks at each survey variable's results in regressions using the panel's fixed effects model. Figure 14 below summarizes these findings. By looking at all of the fixed effects regressions for the panel, one can easily compare the coefficients as well as the t-statistics directly below in parentheses. Here, it is clear how much more significant, in terms of t-statistics, War is compared to the other survey variables. While the survey variable representing how respondents feel about an open immigration policy, ImmPolicy, is the next most significant, it pales in comparison and does not serve as a strong case for immigration policy being a crucial casual factor. However, because the variable Attitude is comprised of ImmPolicy and Neighbor, having ImmPolicy be the second most significant variable in this comprehensive table supports the importance of looking at the effects of beliefs and values on economic outcomes. As a final component to this study's statistical analysis, we return to cross-sectional data.

Methodology: Cross Section Two

To see how the decrease in observations affects the cross-sectional data I use in the initial statistical review, the original cross section of countries was reduced to match the group used in the panel data set. Now, rather than twenty-two observations, I limit the study to ten nations.

The same six exogenous variables used in the first cross-sectional analysis are used in a regression for this investigation of how attitudes towards immigration affect growth in today's

Central and Eastern European countries in transition. Following this regression, the results were used to determine how to narrow the series of variables in order to limit the likelihood of multicollinearity, increased error, and weak output statistics.

Results and Discussion: Cross Section Two

As the panel regression results demonstrate, regression results that use a limited number of observations lack power in the coefficients as well as t-statistics. Having only ten observations greatly restricts the amount of meaningful information and trustworthy results concerning causality that can be gained from statistical data. Here, the data are not very powerful, but they are still advantageous to my research question.

Similar to how Zak and Knack (2001) show how robustness and the power of results increases as sample size increases when adding countries to the set of observations by Knack and Keefer (1997), this study on attitudes towards immigration highlights the same effect in the opposite direction. Here, significance for the main variable Attitude decreases as the number of observations decreases. However, the results of the Stata outputs still add to this study as can be confirmed by a second round of cross-sectional evaluation of data.

Compared to the independent variables analyzed in the first cross section, none proved to be significant according to the t-statistic and p-value. Additionally, the adjusted R-squared value greatly decreases - so much so that it shows the regression holding very little value at all. Figure 15 below lays out the full Stata output for this first regression using countries identical to those in the panel data set.

The lack of causality rooted in the exogenous variables is not surprising since the panel data results are also not robust. To further explore the data, I run another regression using fewer left-hand side variables. The selection of these variables matches the initial cross section and stems from choosing those that highlight attitudes towards immigration (namely, Attitude), have been previously significant (logGDP1998), are of interest given a holistic view of current literature and reflections on present-day international affairs, and continue to be significant given multiple rounds of testing. While other combinations of variables may provide equally significant results on paper, the output table, Figure 16, provides a set of results that mirrors and reinforces earlier analyses.

The coefficient Attitude is particularly telling in this regression that uses a narrowed pool of exogenous variables. By taking a close look at similarities between Stata output tables, one sees that the Attitude coefficient -0.0178878 in this most recent regression (Figure 16) nearly matches that of the Attitude coefficient -0.0172897 in the panel regression (Figure 9). This illustrates that while the output data are not particularly powerful, the results are valid and do affirm the interpretation that citizens' attitudes towards immigration affect a nation's economic growth.

Furthermore, I again use the average annual growth rates for the dependant variable and gross fixed capital formation. Figures 17 and 18 show the results that use the same regression terms as previous trials. Like earlier outputs, the results illustrate a justifiable connection between attitudes and growth, which validates my results. This time, the effect on average annual GDP growth from a one standard deviation change in Attitudes results in a substantial 85.23 basis point decrease (or roughly 0.85% decrease). Looking again at the coefficients in Figure 18

and the panel's Attitude result, a simple comparison for regressions with AvgAnnualGDP outcomes as the endogenous factor shows the values are still comparable: -0.0017363 and -0.0016262.

Again, logGDP1998 is a significant variable while once more validating convergence among transitioning nations' economies. I implement this left-hand side variable as a control factor among opinion-based survey data and it remains important for isolating factors and explaining economic growth as a whole. Additionally, despite the possibility of GFCF being an interesting control variable to investigate, Figure 16 illustrates that in terms of the 1998 to 2015 time period, this exogenous variable is nonessential.

Therefore the null hypothesis that on average, there is no effect between post-communist European countries' growth since the end of the 20th century and the attitudes of each countries' native population towards migrants and foreign workers cannot be rejected.

Survey and Political Limitations

One cannot look at these outputs without also accounting for some basic assumptions. First, survey responses are subjective. Individuals completed the surveys themselves and there is no telling how many may have lied or misreported their true beliefs. Whether inaccurate survey responses were by accident as people think they are more or less open that they truly are, or on purpose, misrepresentations most likely exist among the thousands of survey responses included in this study.

Second, the study does not fully account for the fact that Georgia, Armenia, Azerbaijan, Moldova, and countries in the Balkan peninsula (particularly in Bosnia, but also in Croatia and

Serbia) were still imbedded in violent conflict after the dissolution of communist-party governments (Hall 2010). Furthermore, UN forces were sent to Macedonia amidst conflicting ownership claims of the area with Greece (Hall 2010). Because of these many conflicts, the countries' ability to build gross fixed capital formation would have been greatly diminished in the last decade of the 20th century and very beginning of the 21st century, which may explain why the regression results for gross fixed capital formation were ultimately less influential than originally anticipated.

A third assumption is that the estimates for Montenegro in particular are accurate. Despite the fact that Yugoslavia dissolved many years ago, Montenegro and Serbia remained part of a state union until May of 2006 (Djurović 2009). The two states were designed to be equal in their partnership, both send ministers to a joint assembly, and coordinate a common market between each territory (Fraser 2003). However, the two states were joined under the Constitutional Charter of Serbia and Montenegro and held one collective seat at the United Nations (Fraser 2003), so the way in which data was collected from each state prior to 2006 is not made unquestionably clear in the databases used for data. Nevertheless, because the two states had their own ministers and departments, one can see how surveys and economic analyses could be conducted separately, though the exact methods are not lucid. Therefore, this study assumes that the state union's data collection was conducted accurately and separately within each state despite the inability to confirm such accuracy.

Lastly, Germany was not included in this study, but it provides an interesting case study for openness and economic growth. The history of Germany being divided then reunited during a time of animosity and unrest as well as West and East Germany once following different

economic systems illustrate how attitudes and economies are interconnected. Surprisingly, the World Value Survey provides survey data for East and West Germany as separate entities for wave three, and the results are illustrated below in Figures 19 and 20. However, this is the only period that includes these governments and therefore no comparison regarding attitudes can be made over time.

What one can learn from the survey data on East and West Germany is that the people of West Germany had more open attitudes towards immigration across all variables. At the same time, if one separates GDP per capita in West and East Germany after unification, West Germany maintains a stronger economy as East Germany catches up (CEIC Data 2018). According to CEIC (2018), even when excluding Berlin from West Germany GDP per capita data and including Berlin in East Germany data, West Germany surpasses East Germany's GDP per capita by over ten thousand Euros.

These results offer a counterpoint to this study, which may be attributed to the fact that Germany is widely considered a Western country. Therefore, one can conclude that while my study finds that negative attitudes towards immigration are connected to stronger GDP per capita growth in a country, this may only hold true for nations that are non-Western and still transitioning. How attitudes concerning immigrants in fully developed countries is related to economic growth may depict more open-minded results and conclusions that reflect the current literature on values and prosperity.

Conclusion

The importance of studying differences in economic growth among post-communist nations cannot be understated. These countries in transition have provided and will continue to provide information on how states and nations develop after substantial governmental and societal changes, which can be used as precedents for development in other countries.

This study in particular looks at how attitudes towards immigration affect GDP per capita while also controlling for non-personal value variables. Specifically, the research focuses on rejecting or not rejecting the null hypothesis that on average, there is no effect between post-communist European countries' growth since the end of the 20th century and the attitudes of each countries' native population towards migrants and foreign workers. In terms of significant explanatory variables, Neighbor, individuals who did not answer that they prefer not to have immigrants or foreign workers as neighbors, and ImmPolicy, individuals who answered that they believe the government should allow anyone to enter their country who wants to enter, combine to create Attitude as the most significant WVS variable. For non-survey control variables, the log of GDP per capita in 1998 is consistently the most significant as shown by its dependably high t-statistic, whereas GFCF could not be relied on as a factor perhaps due to the tumultuous political and military scene in Eastern Europe during the period of interest. Nevertheless, regression outputs demonstrate that there are noteworthy effects of attitudes on GDP per capita, and according to these results, one cannot reject the null hypothesis that on average, there is no effect between post-communist European countries' growth since the end of

the 20th century and the attitudes of each countries' native population towards migrants and foreign workers.

By coming to this conclusion, the study supports current literature because it also finds that personal values are significant when analyzing growth, and it also adds to the literature by showing that immigration attitudes make a difference. Furthermore, the study narrows in on the post-communist area, compared to Inglehart and Baker (2000) who look at countries on multiple continents, while expanding upon case study research on Estonia and Latvia by Titma and Trapido (2002). Moving forward, additional research would be beneficial since existing literature is contradictory. If other studies were able to access data that could be used to expand a cross sectional analysis and panel data set similar to the one I use in my research as well as be able to track country responses consistently over a longer period of time, more conclusive evidence on causality may result.

Additionally, while it is outside the scope of this paper, research on how immigration policies actually implemented affect economic growth in the European post-communist region would provide valuable information as well. A difference-in-difference model would be enlightening in terms of such policy implications for countries that have undergone major political changes since separating from communist regimes. Here, we analyzed opinions on immigration policy, but investigating how beliefs become actions and actions become implications may strongly influence the ways in which individual citizens think about others.

Returning to Inglehart and Baker's paper, which heavily motivated this study, the authors determine that industrialization leads to survivalist and self-expressionist values, which are correlated with trust and tolerance, and leads to higher GNP per capita (2000). Their work looks

at how cultural shifts correspond with simultaneously measured beliefs and economic outcomes. The difference in their results versus mine may reflect the time factor and emphasis on trust rather than immigration in my study. Inglehart and Baker use survey data from 1990-1991 and 1995-1998 as well as GNP per capita data from 1995 Purchasing Power Parity analyses gathered by the World Bank (Inglehart and Baker 2000). I, on the other hand, use similar 1995-1998 survey data, but also incorporate 21st century survey results and use the responses as forecasts for how these attitudes predict future growth up to 2015. Additionally, I focus on immigration and foreign workers whereas Baker and Inglehart analyze trust and other broad cultural values. This difference in data usage helps to explain my results' deviance from existing literature and supports continuation of similar and supplemental research.

Determining the consequences of values regarding immigration is particularly important today as opinions become increasingly polarizing. Using this research in conjunction with analyses on social norms could influence individual perspectives on immigrants and foreigners as national and international discourses develop. Although this study indicates that being more closed off towards others leads to greater growth, it motivates additional research into how to achieve both welcoming values and economic prosperity.

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Appendix

Figure 1.

```
. reg logGDPpcPeriod ChildTol Attitude JobsToCitizens Senior logGDP1998 GFCFGDP9815
```

Source	SS	df	MS	Number of obs	=	23
				F(6, 16)	=	6.25
Model	.437276012	6	.072879335	Prob > F	=	0.0016
Residual	.186513318	16	.011657082	R-squared	=	0.7010
				Adj R-squared	=	0.5889
Total	.62378933	22	.02835406	Root MSE	=	.10797

logGDPpcPeriod	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ChildTol	-.0037376	.0028059	-1.33	0.202	-.0096858	.0022106
Attitude	-.0132539	.0053233	-2.49	0.024	-.0245388	-.0019691
JobsToCitizens	-.0030385	.0015877	-1.91	0.074	-.0064043	.0003274
Senior	-.016544	.0062543	-2.65	0.018	-.0298026	-.0032855
logGDP1998	-.0881176	.0459929	-1.92	0.073	-.1856181	.0093829
GFCFGDP9815	4.91e-14	2.90e-14	1.69	0.110	-1.24e-14	1.11e-13
_cons	2.971542	.5002957	5.94	0.000	1.910963	4.032122

Figure 2.

```
. reg logGDPpcPeriod Attitude logGDP1998 GFCFGDP9815
```

Source	SS	df	MS	Number of obs	=	23
				F(3, 19)	=	7.92
Model	.346604933	3	.115534978	Prob > F	=	0.0013
Residual	.277184397	19	.014588652	R-squared	=	0.5556
				Adj R-squared	=	0.4855
Total	.62378933	22	.02835406	Root MSE	=	.12078

logGDPpcPe~d	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Attitude	-.0117	.0056071	-2.09	0.051	-.0234359	.0000358
logGDP1998	-.1748281	.0366737	-4.77	0.000	-.251587	-.0980692
GFCFGDP9815	2.71e-14	3.04e-14	0.89	0.385	-3.66e-14	9.07e-14
_cons	2.425031	.4795069	5.06	0.000	1.421411	3.42865

Figure 3.

```
. reg logGDPpcPeriod ChildTol FDI JobsToCitizens Senior logGDP1998 GFCFGDP9815
```

Source	SS	df	MS	Number of obs	=	22
				F(6, 15)	=	3.85
Model	.369746018	6	.061624336	Prob > F	=	0.0159
Residual	.240014417	15	.016000961	R-squared	=	0.6064
				Adj R-squared	=	0.4489
Total	.609760435	21	.029036211	Root MSE	=	.12649

logGDPpcPeriod	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ChildTol	-.0041231	.0033122	-1.24	0.232	-.011183	.0029367
FDI	.0127882	.0222892	0.57	0.575	-.0347202	.0602965
JobsToCitizens	-.0017332	.0019003	-0.91	0.376	-.0057836	.0023172
Senior	-.0175354	.0073981	-2.37	0.032	-.0333041	-.0017667
logGDP1998	-.0454494	.0532379	-0.85	0.407	-.1589233	.0680246
GFCFGDP9815	4.43e-14	3.87e-14	1.15	0.270	-3.81e-14	1.27e-13
_cons	1.987435	.333812	5.95	0.000	1.275932	2.698939

Figure 4.

```
. reg logGDPpcPeriod ChildTol ODA JobsToCitizens Senior logGDP1998 GFCFGDP9815
```

Source	SS	df	MS	Number of obs	=	22
				F(6, 15)	=	3.82
Model	.368549605	6	.061424934	Prob > F	=	0.0164
Residual	.24121083	15	.016080722	R-squared	=	0.6044
				Adj R-squared	=	0.4462
Total	.609760435	21	.029036211	Root MSE	=	.12681

logGDPpcPeriod	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ChildTol	-.0037468	.0033792	-1.11	0.285	-.0109494	.0034558
ODA	-7.36e-11	1.46e-10	-0.50	0.622	-3.85e-10	2.38e-10
JobsToCitizens	-.0023554	.0018726	-1.26	0.228	-.0063468	.001636
Senior	-.0172247	.0074021	-2.33	0.034	-.033002	-.0014475
logGDP1998	-.0383721	.0508824	-0.75	0.462	-.1468254	.0700811
GFCFGDP9815	7.44e-14	5.24e-14	1.42	0.176	-3.73e-14	1.86e-13
_cons	1.968564	.3290166	5.98	0.000	1.267282	2.669846

Figure 5.

```
. reg AvgAnnualGDP ChildTol Attitude JobsToCitizens Senior logGDP1998 AvgAnnualGFCF
```

Source	SS	df	MS	Number of obs	=	23
				F(6, 16)	=	6.25
Model	.001513066	6	.000252178	Prob > F	=	0.0016
Residual	.000645375	16	.000040336	R-squared	=	0.7010
				Adj R-squared	=	0.5889
Total	.002158441	22	.000098111	Root MSE	=	.00635

AvgAnnualGDP	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ChildTol	-.0002199	.0001651	-1.33	0.202	-.0005698	.00013
Attitude	-.0007796	.0003131	-2.49	0.024	-.0014435	-.0001158
JobsToCitizens	-.0001787	.0000934	-1.91	0.074	-.0003767	.0000193
Senior	-.0009732	.0003679	-2.65	0.018	-.0017531	-.0001933
logGDP1998	-.0051834	.0027055	-1.92	0.073	-.0109187	.0005519
AvgAnnualGFCF	4.91e-14	2.90e-14	1.69	0.110	-1.24e-14	1.11e-13
_cons	.1747966	.0294292	5.94	0.000	.1124096	.2371836

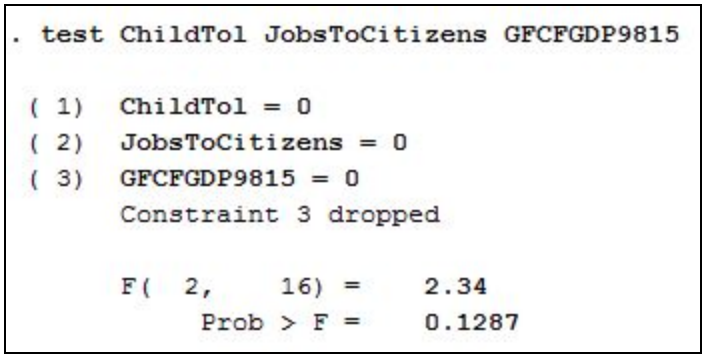
Figure 6.

```
. reg AvgAnnualGDP Attitude logGDP1998 AvgAnnualGFCF
```

Source	SS	df	MS	Number of obs	=	23
				F(3, 19)	=	7.92
Model	.001199325	3	.000399775	Prob > F	=	0.0013
Residual	.000959116	19	.00005048	R-squared	=	0.5556
				Adj R-squared	=	0.4855
Total	.002158441	22	.000098111	Root MSE	=	.0071

AvgAnnualGDP	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Attitude	-.0006882	.0003298	-2.09	0.051	-.0013786	2.11e-06
logGDP1998	-.010284	.0021573	-4.77	0.000	-.0147992	-.0057688
AvgAnnualGFCF	2.71e-14	3.04e-14	0.89	0.385	-3.66e-14	9.07e-14
_cons	.1426489	.0282063	5.06	0.000	.0836124	.2016853

Figure 7.



```
. test ChildTol JobsToCitizens GFCFGDP9815

 ( 1)  ChildTol = 0
 ( 2)  JobsToCitizens = 0
 ( 3)  GFCFGDP9815 = 0
       Constraint 3 dropped

       F(  2,    16) =    2.34
            Prob > F =    0.1287
```

Figure 8.

Wave	Country	Log GDP	Avg Annual GDP	Child Tol	Trust	-Neighbor	ImPolicy	Attitude	JobsToCitizens	War	GFCF sum	AvgAnnualGFCF	Log (lagged GDP)
3	Bulgaria	0.5933	0.05393	46.4	23.7	84.4	5.8	45.1	79.6	55	82032469765	7457497251	3.258
3	Georgia	0.5265	0.04786	54.1	17.7	89.1	15.6	52.4	80.9	65.1	16485157625	1498650693	2.906
3	Hungary	0.4382	0.03984	63.5	22.5	75.1	1.2	38.2	86.5	61.8	2.52608E+11	22964363636	3.677
3	Moldova	0.5314	0.04831	63.4	21.8	86.8	11.6	49.2	58.1	72	8342005959	758364178.1	2.668
3	Poland	0.4075	0.03705	81.5	16.9	79	5.7	42.4	88.3	72.2	6.85122E+11	62283818182	3.654
3	Romania	0.6574	0.05977	72.1	17.9	67.2	9.3	38.3	71.8	70.5	3.05066E+11	27733272727	3.271
3	Russia	0.6690	0.06082	69.5	23.2	88.1	6.2	47.2	70.5	68.9	1.6105E+12	1.46409E+11	3.264
3	Serbia	0.3819	0.03472	50.2	28.4	76.1	19.1	47.6	78.9	70.8	59462918055	5405719823	3.383
3	Slovenia	0.3437	0.03124	72	15.3	82	2.9	42.5	79.6	81.9	1.02893E+11	9353909091	4.048
3	Ukraine	0.4839	0.04399	61.2	28.8	87.5	18.2	52.9	56.4	59.4	1.96422E+11	17856545455	2.922
5	Bulgaria	0.001489	0.0002482	53	19.6	82.4	11.7	47.1	74.4	38.5	69021142968	11503523828	3.843
5	Georgia	0.1433	0.02388	72.1	17.6	76.1	8.3	42.2	85.4	56.5	21219621341	3536603557	3.432
5	Hungary	-0.01859	-0.003098	76.1	28.7	76.1	4.4	40.3	76.6	45.3	1.65039E+11	27506500000	4.115

5	Moldova	0.07962	0.01327	66.5	17.6	81.2	12.7	47	75.1	57.4	10045778704	1674296451	3.183
5	Poland	0.03748	0.0062459	84.9	18.1	86.3	11.8	49.1	78.6	64.9	6.0764E+11	1.01273E+11	4.062
5	Romania	0.02507	0.004178	58.6	19.3	83.7	21.7	52.7	61.1	56.6	2.80142E+11	46690333333	3.928
5	Russia	0.03723	0.006205	68.6	24.6	68.1	-	-	78.8	60.3	2.46364E+12	4.10607E+11	3.933
5	Serbia	-0.04591	-0.007652	63.9	13.6	75.6	12.8	44.2	43.9	48.2	46302249833	7717041639	3.765
5	Slovenia	-0.07194	-0.01199	75	17.5	82.4	6.8	44.6	72.7	60.2	56821071290	9470178548	4.392
5	Ukraine	-0.07847	-0.013079	56.1	24.5	81.4	19.1	50.3	67	56.4	1.47463E+11	24577166667	3.406

Figure 9.

```
. xtreg logGDP AttitudeNum, fe

Fixed-effects (within) regression               Number of obs      =        19
Group variable: countrynum                      Number of groups   =        10

R-sq:                                           Obs per group:
     within  = 0.0553                                         min =         1
     between = 0.0514                                         avg =       1.9
     overall = 0.0073                                         max =         2

                                                F(1,8)             =      0.47
corr(u_i, Xb)  = -0.3931                        Prob > F           =    0.5129

------------------------------------------------------------------------------
      logGDP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 AttitudeNum |  -.0172897    .025254    -0.68   0.513    -.0755256    .0409463
       _cons |   1.063365   1.163588     0.91   0.387    -1.619874    3.746603
-------------+----------------------------------------------------------------
     sigma_u |  .17219925
     sigma_e |   .3536783
         rho |  .19162729   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(9, 8) = 0.27                     Prob > F = 0.9646
```

Figure 10.

```
. xtreg AvgAnnualGDP AttitudeNum, fe

Fixed-effects (within) regression               Number of obs      =        19
Group variable: countrynum                      Number of groups   =        10

R-sq:                                           Obs per group:
     within  = 0.0676                                         min =         1
     between = 0.0519                                         avg =       1.9
     overall = 0.0084                                         max =         2

                                                F(1,8)             =      0.58
corr(u_i, Xb)  = -0.3884                        Prob > F           =    0.4681

------------------------------------------------------------------------------
AvgAnnualGDP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 AttitudeNum |  -.0017363   .0022795    -0.76   0.468    -.0069928    .0035202
       _cons |   .1045177   .1050285     1.00   0.349    -.1376784    .3467138
-------------+----------------------------------------------------------------
     sigma_u |  .01695758
     sigma_e |  .03192392
         rho |  .22006611   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(9, 8) = 0.35                     Prob > F = 0.9303
```

Figure 11.

```
. xtreg logGDP AttitudeNum loglaggedGDP , fe

Fixed-effects (within) regression               Number of obs      =        19
Group variable: countrynum                      Number of groups   =        10

R-sq:                                           Obs per group:
     within  = 0.9826                                         min =         1
     between = 0.2227                                         avg =       1.9
     overall = 0.4334                                         max =         2

                                                F(2,7)             =    197.16
corr(u_i, Xb)  = -0.7994                        Prob > F           =    0.0000

------------------------------------------------------------------------------
      logGDP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 AttitudeNum |  -.0025674   .0037471    -0.69   0.515    -.0114279    .0062931
loglaggedGDP |  -.9707618   .0503245   -19.29   0.000     -1.08976   -.8517633
       _cons |    3.81885   .2213047    17.26   0.000     3.295548    4.342153
-------------+----------------------------------------------------------------
     sigma_u |   .336407
     sigma_e |  .0513775
         rho |  .97720695   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(9, 7) = 24.97                     Prob > F = 0.0002
```

Figure 12.

```
. xtreg AvgAnnualGDP AttitudeNum loglaggedGDP , fe

Fixed-effects (within) regression               Number of obs      =        19
Group variable: countrynum                      Number of groups   =        10

R-sq:                                           Obs per group:
     within  = 0.9405                                         min =         1
     between = 0.2740                                         avg =       1.9
     overall = 0.4634                                         max =         2

                                                F(2,7)             =     55.28
corr(u_i, Xb)  = -0.7768                        Prob > F           =    0.0001

------------------------------------------------------------------------------
AvgAnnualGDP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 AttitudeNum |  -.0004385    .000629    -0.70   0.508    -.0019258    .0010488
loglaggedGDP |  -.0855733   .0084474   -10.13   0.000    -.1055484   -.0655983
       _cons |   .3474157   .0371481     9.35   0.000     .2595743     .435257
-------------+----------------------------------------------------------------
     sigma_u |  .02825089
     sigma_e |   .0086242
         rho |  .91475325   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(9, 7) = 6.70                     Prob > F = 0.0101
```

Figure 13.

```
. xtreg AvgAnnualGDP War, fe

Fixed-effects (within) regression               Number of obs      =        20
Group variable: countrynum                      Number of groups   =        10

R-sq:                                           Obs per group:
     within  = 0.7792                                         min =         2
     between = 0.0056                                         avg =       2.0
     overall = 0.3416                                         max =         2

                                                F(1,9)             =     31.75
corr(u_i, Xb)  = -0.6186                        Prob > F           =    0.0003

------------------------------------------------------------------------------
AvgAnnualGDP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         War |   .0027284   .0004842     5.64   0.000     .0016331    .0038237
       _cons |  -.1429036   .0297926    -4.80   0.001    -.2102992    -.075508
-------------+----------------------------------------------------------------
     sigma_u |  .02225056
     sigma_e |  .01584811
         rho |  .66343358   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(9, 9) = 2.43                     Prob > F = 0.1006
```

Figure 14.

```
. esttab ChildTol Trust Neighbor ImmPolicy Attitude JobsToCitizens War GFCFsum Attitude_loglaggedGDP
```

	(1) AvgAnnualGDP	(2) AvgAnnualGDP	(3) AvgAnnualGDP	(4) AvgAnnualGDP	(5) AvgAnnualGDP	(6) AvgAnnualGDP	(7) AvgAnnualGDP	(8) AvgAnnualGDP	(9) AvgAnnualGDP
ChildTol	-0.00122								
	(-0.82)								
Trust		0.00215							
		(0.84)							
Neighbor			0.000903						
			(0.60)						
ImmPolicyNum				-0.00332					
				(-1.49)					
AttitudeNum					-0.00174				-0.000439
					(-0.76)				(-0.70)
JobsToCiti~s						0.000771			
						(0.76)			
War							0.00273***		
							(5.64)		
GFCFsum								-4.44e-14	
								(-0.84)	
loglaggedGDP									-0.0856***
									(-10.13)
_cons	0.103	-0.0211	-0.0488	0.0605*	0.105	-0.0327	-0.143***	0.0398	0.347***
	(1.06)	(-0.39)	(-0.40)	(2.43)	(1.00)	(-0.44)	(-4.80)	(1.95)	(9.35)
N	20	20	20	19	19	20	20	20	19

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Figure 15.

```
. reg logGDPpcPeriod ChildTol Attitude JobsToCitizens Senior logGDP1998 GFCFsumPeriod
```

Source	SS	df	MS	Number of obs	=	10
				F(6, 3)	=	1.32
Model	.172947402	6	.028824567	Prob > F	=	0.4420
Residual	.065389577	3	.021796526	R-squared	=	0.7256
				Adj R-squared	=	0.1769
Total	.238336979	9	.026481887	Root MSE	=	.14764

logGDPpcPeriod	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ChildTol	-.001312	.0085551	-0.15	0.888	-.0285381	.0259141
Attitude	-.0181701	.0152894	-1.19	0.320	-.0668278	.0304876
JobsToCitizens	.0044338	.0079459	0.56	0.616	-.0208537	.0297213
Senior	-.0015697	.0236001	-0.07	0.951	-.0766758	.0735364
logGDP1998	-.2003535	.1228412	-1.63	0.201	-.591289	.190582
GFCFsumPeriod	6.17e-14	4.61e-14	1.34	0.273	-8.49e-14	2.08e-13
_cons	2.632551	1.809129	1.46	0.242	-3.124904	8.390005

Figure 16.

```
. reg logGDPpcPeriod Attitude logGDP1998 GFCFsumPeriod
```

Source	SS	df	MS	Number of obs	=	10
				F(3, 6)	=	4.03
Model	.159237146	3	.053079049	Prob > F	=	0.0692
Residual	.079099833	6	.013183305	R-squared	=	0.6681
				Adj R-squared	=	0.5022
Total	.238336979	9	.026481887	Root MSE	=	.11482

logGDPpcPer~d	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Attitude	-.0178878	.0101947	-1.75	0.130	-.0428333	.0070577
logGDP1998	-.1719321	.0558346	-3.08	0.022	-.3085545	-.0353097
GFCFsumPeriod	5.44e-14	3.10e-14	1.75	0.130	-2.15e-14	1.30e-13
_cons	2.58991	.8191102	3.16	0.020	.5856196	4.5942

Figure 17.

```
. reg AvgAnnualGDP ChildTol Attitude JobsToCitizens Senior logGDP1998 AvgAnnualGFCF
```

Source	SS	df	MS	Number of obs	=	10
				F(6, 3)	=	1.32
Model	.001429317	6	.00023822	Prob > F	=	0.4420
Residual	.00054041	3	.000180137	R-squared	=	0.7256
				Adj R-squared	=	0.1769
Total	.001969727	9	.000218859	Root MSE	=	.01342

AvgAnnualGDP	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ChildTol	-.0001193	.0007777	-0.15	0.888	-.0025944	.0023558
Attitude	-.0016518	.0013899	-1.19	0.320	-.0060753	.0027716
JobsToCitizens	.0004031	.0007224	0.56	0.616	-.0018958	.0027019
Senior	-.0001427	.0021455	-0.07	0.951	-.0069705	.0066851
logGDP1998	-.018214	.0111674	-1.63	0.201	-.0537535	.0173256
AvgAnnualGFCF	9.54e-14	7.12e-14	1.34	0.273	-1.31e-13	3.22e-13
_cons	.2393228	.1644662	1.46	0.242	-.2840822	.7627278

Figure 18.

```
. reg AvgAnnualGDP Attitude logGDP1998 AvgAnnualGFCF
```

Source	SS	df	MS		
				Number of obs	= 10
				F(3, 6)	= 4.03
Model	.001316009	3	.00043867	Prob > F	= 0.0692
Residual	.000653718	6	.000108953	R-squared	= 0.6681
				Adj R-squared	= 0.5022
Total	.001969727	9	.000218859	Root MSE	= .01044

AvgAnnualGDP	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Attitude	-.0016262	.0009268	-1.75	0.130	-.0038939	.0006416
logGDP1998	-.0156302	.0050759	-3.08	0.022	-.0280504	-.00321
AvgAnnualGFCF	8.40e-14	4.79e-14	1.75	0.130	-3.32e-14	2.01e-13
_cons	.2354464	.0744646	3.16	0.020	.0532381	.4176546

Figure 19.

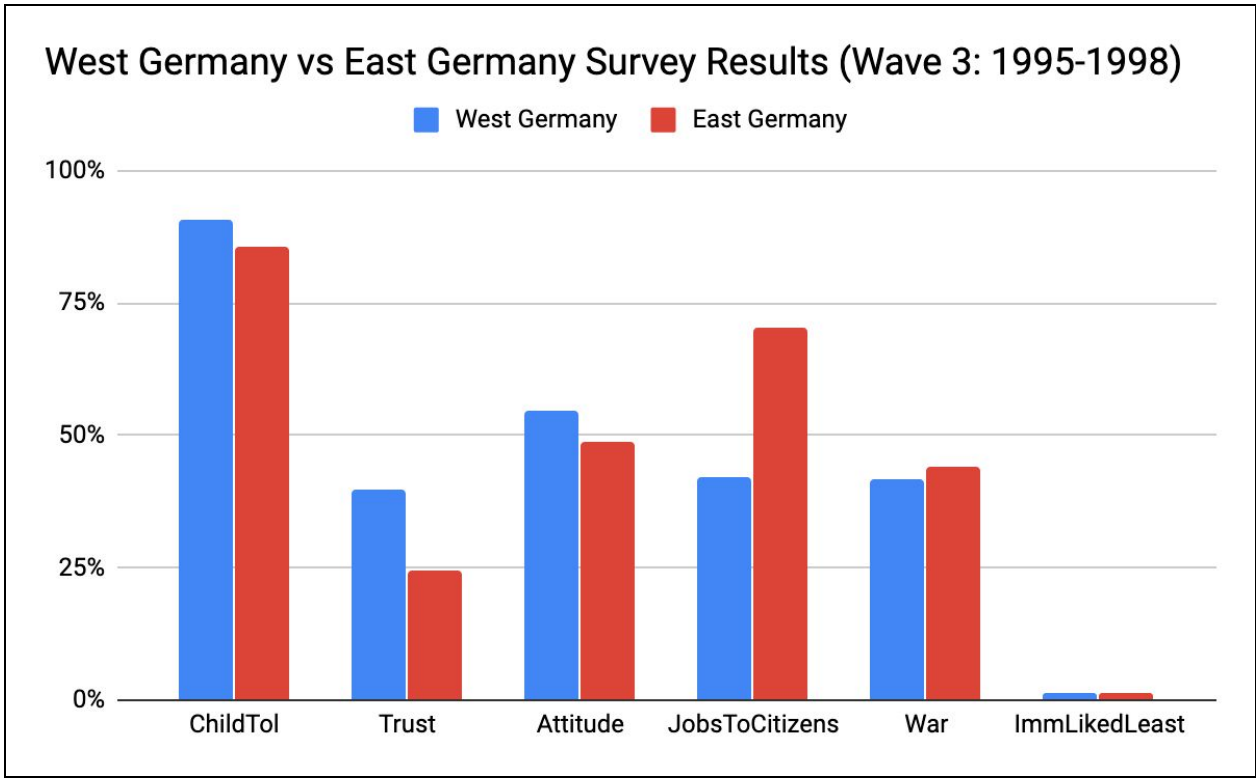


Figure 20. World Value Survey Results for West Germany and East Germany during wave three

	West Germany	East Germany
ChildTol	90.9 %	85.7 %
Trust	39.9 %	24.3 %
Attitude	54.55 %	48.9 %
JobsToCitizens	42.3 %	70.4 %
War	41.9 %	44 %
ImmLikedLeast	1.2 %	1.4 %