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Impact of Populism on Macroeconomic Situation Within a Country

Master's thesis

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Declaration of Authorship

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Adam Slavik

Abstract

With populism on the rise across the world, we create a synthetic control model to test their impacts on economy. There are 18 populist leaders chosen for the analysis, also divided between left-wing and right-wing populists. In each of these cases, we ask how the populist's rise to power impacted some of the major economic factors. We show that there is an initial positive impact on GDP growth, which then diminishes after approximately 10 years. There is a substantial difference of how the elections of left- and right-wing populists impact income inequality and investor confidence.

JEL Classification	C31, E25, E27, J31, O11, O47
Keywords	Macroeconomics, Populism, Synthetic Control Method, Econometrics
Title	Impact of Populism on Macroeconomic Situation Within a Country

Abstrakt

Vzhledem k rostoucím populistickým tendencím po celém světě vytváříme syntetický kontrolní model s cílem otestovat jejich vliv na ekonomiku. Pro analýzu bylo vybráno 18 populistických vůdců, kteří jsou rovněž rozděleni na levicové a pravicové populisty. V každém z těchto případů zjišťujeme, jak nástup populisty k moci ovlivnil některé z hlavních ekonomických ukazatelů. Zjišťujeme, že existuje počáteční pozitivní dopad na růst HDP, který se pak přibližně po 10 letech svytrácí. Existuje podstatný rozdíl v tom, jak volby levicových a pravicových populistů ovlivňují příjmovou nerovnost a důvěru zahraničních investorů.

Klasifikace JEL	C31, E25, E27, J31, O11, O47
Klíčová slova	Makroekonomie, Populismus, Synthetic Control Method, Ekonometrie
Název práce	Vliv Populismu na Makroekonomickou Situaci ve Státě

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Acronyms

DiD Difference-in-Differences

FDI Foreign Direct Investment

GDP Gross Domestic Product

II Income Inequality

NATO North Atlantic Treaty Organization

OECD Organisation for Economic Co-operation and Development

OPEC Organization of the Petroleum Exporting Countries

PPP Purchasing power parity

SCM Synthetic Control Method

WI Wealth Inequality

Master's Thesis Proposal

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Proposed topic	Impact of Populism on Macroeconomic Situation Within a Country

Motivation In recent years, the rise of populism has captured the attention of both academics and policymakers worldwide. Populist movements and leaders have gained significant prominence in various countries, challenging established political systems, and shaping the socio-economic landscape. While populism's impact on political dynamics has been widely examined, its implications for macroeconomic conditions and long-term progress remain an area that requires further investigation. Understanding the relationship between populism and a country's economic trajectory is crucial for policymakers and researchers alike, as it sheds light on the potential consequences of populist policies and informs the design of effective economic frameworks.

The motivation behind this thesis stems from the need to comprehensively explore how populism influences a country's future macroeconomic situation and progress. By examining the interplay between populist movements and economic policies, we can gain insights into the potential drivers, mechanisms, and implications of populism on key macroeconomic indicators such as growth, inflation, employment, income distribution, and fiscal stability. Such an analysis holds immense importance in a world characterized by increasing political polarization and the resurgence of populist narratives.

Hypotheses

Hypothesis #1: Countries with a higher prevalence of populist movements or leaders will experience lower economic growth rates compared to countries with lower levels of populism.

Hypothesis #2: Higher levels of populism will be associated with increased income inequality within a country, as populist policies often prioritize short-

term benefits for certain segments of the population at the expense of long-term inclusive growth.

Hypothesis #3: Populist rhetoric and policies that undermine the independence of central banks and the rule of law will have adverse effects on investor confidence, resulting in higher borrowing costs and reduced foreign direct investment inflows.

Methodology The first step of meta-analysis is the collection of primary studies. I will examine all studies used by the most recent meta-analysis (Brons et al., 2008), but because the sample used by Brons et al. (2008) ends in 1999, I will additionally search the EconLit and Scopus databases for new studies published. To be able to use modern meta-analysis methods and correct for publication bias, I need the standard error of each estimate of elasticity; therefore I will have to exclude studies that do not report standard errors (or any other statistics from which standard errors could be computed). Concerning the definition of short- and long-term elasticity estimates, I will follow the approach described in the first meta-analysis on this topic, Espey (1998).

In the absence of publication bias the estimates of elasticities are randomly distributed around the true mean elasticity. Nevertheless, if some estimates end in the "file drawer" (Rosenthal, 1979) because they are insignificant or have a positive sign, the reported estimates will be correlated with their standard errors (Ashenfelter et al., 1999; Card and Krueger, 1995). For example, if a statistically significant effect is required, an author who has few observations may run a specification search until the estimate becomes large enough to offset the high standard errors. In this specification the regression coefficient corresponding to the standard error measures the magnitude of publication bias and the intercept measures the magnitude of the elasticity corrected for publication bias (thus, the specification directly addresses hypotheses 1 and 2). Because such a regression is likely heteroscedastic (the explanatory variable is a sample estimate of the standard deviation of the response variable), in practice it is usually estimated by weighted least squares with the inverse of standard errors (precision) taken as weights.

In meta-analysis I have to take into consideration that estimates coming from one study are likely to be dependent. A common way how to cope with this problem is to employ the mixed-effects multilevel model (Doucouliagos and Stanley, 2009), which allows for unobserved between-study heterogeneity. Between-study heterogeneity is likely to be substantial since in our case the primary studies use data from different countries. I will specify the model following Havranek and Irsova (2011): the overall error term now breaks down into study-level random effects and estimate-level disturbances. To address hypothesis 3 I will add an interaction term between the

year of publication of the study and the reported standard error. I expect that the magnitude of publication bias to decrease in time, which would be in line with the economics-research-cycle hypothesis (Goldfarb, 1995; Stanley et al., 2008).

ADAM Pappas (2014) defines a new term, the Populist Democracy, which he bases on the definition of populism as "Democratic Illiberalism". This new definition fits two countries - Greece (after 1974) and OrbĂˇn's Hungary (after 1989). The goal of this thesis is to use the Synthetic Control Method to analyse how different the macroeconomic situation would be in these two countries, were they run by non-populist governments.

Economic growth data can be obtained from sources such as the World Bank's World Development Indicators database, which provides annual GDP growth rates. The World Income Inequality Database provides comprehensive data on income inequality metrics, such as the Gini coefficient, for a wide range of countries. To measure investor confidence, I could examine interest rates or government bond yields as proxies for borrowing costs. Data on interest rates can be obtained from central bank websites or financial data providers. Credit ratings could be used for the same effect as well. Foreign direct investment inflow data can be sourced from the World Bank. Effects of populism on wealth inequality could be analyzed as well, as there is strong historical evidence of this relationship.

This data will then be analyzed using the Synthetic Control Method. The findings will then be used to test the hypotheses and derive conclusions.

Expected Contribution The thesis aims to contribute to the existing academic literature by deepening our understanding of the complex relationship between populism and macroeconomics. It would provide empirical evidence, theoretical insights, and rigorous analysis, helping to fill gaps in knowledge and offering new perspectives on this topic.

The thesis could have practical implications for policymakers and stakeholders. By investigating the economic consequences of populism, the research findings could inform policy debates and decision-making processes. It may highlight the potential risks and challenges associated with populist policies and offer insights into designing more effective economic frameworks and policy strategies.

Outline

1. Introduction: Background and context of populism and its rise in various countries. Statement of the research problem and objectives. Significance and relevance of studying the relationship between populism and macroeconomics.

2. Literature Review: Review of existing literature on populism, its drivers, and consequences. Synthesis of previous research on the relationship between pop-

ulism and macroeconomic indicators, such as growth, inequality, fiscal stability, and trade.

3. Theoretical Framework: Development of a conceptual framework that explains the potential mechanisms through which populism can influence macroeconomic outcomes.

4. Methodology: Comprehensive explanation of the Synthetic Control Method, its exact use within the thesis and ways to test the hypotheses set in the beginning of the thesis. Consideration of potential limitations and strategies to address them.

5. Empirical Analysis: Testing of the hypotheses using the Synthetic Control Method. Interpretation and discussion of the empirical results in relation to the research questions and theoretical framework.

6. Findings and Discussion: Summary of the main findings from the empirical analysis. Discussion of the implications of the findings for understanding the relationship between populism and macroeconomic outcomes. Comparison with existing literature and interpretation of any inconsistencies or novel insights.

7. Conclusion: Recapitulation of the research objectives and main findings. Reflection on the limitations and potential avenues for future research. Final remarks and concluding thoughts.

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Chapter 1

Introduction

The aim of this thesis is to test its three main hypotheses. Per hypothesis one, the impact of electing a populist leader will have a detrimental effect on the economic growth of the country. The second hypothesis states that this election will have a negative impact on income inequality, widening the gap between the poor and the rich. The third hypothesis states that there will be a negative impact on investor confidence, as populist leaders are often unpredictable. The third hypothesis focuses mainly on foreign investors.

This testing is performed using a synthetic control method. This is a tool developed by Abadie & Gardeazabal (2003) and Abadie *et al.* (2010) that utilizes several countries and multiple predictors to create the best possible synthetic version of the examined country. This approach maximizes effectivity. These models are then created for each country that has elected a populist leader, taking the election of the populist as the so-called "treatment". We then measure post-treatment differences between the real country and its synthetic version.

This first section serves as an introduction to the thesis. The second chapter goes over the motivation behind this thesis and delves into the literature concerning populism and the econometric methods this thesis uses, specifically the Synthetic Control Method, its development and uses. The third chapter describes the model used, the variables used in the model, and the data used for the analysis. A critical part of the thesis are the countries chosen for the analysis. The author goes into detail on why certain countries were chosen, together with countries used as their controls. The fourth chapter shows and discusses results of the econometric analysis. The fifth chapter is used to discuss some of the results further, together with asking questions about what research could follow. The sixth chapter draws conclusions.

Chapter 2

Literature Review

The idea for this thesis comes from two term papers the author has written (one in cooperation with Ing. Petra Kohoutová) over the last two semesters at the Institute of Economic Studies. Both of those were mostly empiric works, the purpose of which was to determine the links between macroeconomic indicators and democracy. The first term paper found almost no measurable impact of democracy on GDP growth, while the second was aimed at links between democracy and inequality and ended with a similar result.

One of the crucial problems of both papers was to find a suitable measure of democracy. This metric had to be available for each of the countries included in the study, replicable, but mainly based on thorough research and measurable indicators. A second large problem was finding the right econometric model for the data gathered, since there exist multiple models that work well with panel data, yet are often not suitable due to different reasons. Both of these problems are translated into this thesis as well.

An issue with measured democracy is that its effects are very long-term, and these long periods of time were out of the scope of those term papers. Only a few academic works found the impact between GDP growth and measured democracy, most notably Huntington (1991), who conducted research all the way back to the 1820s to identify the three major waves of democratisation and links the data to them[1]. In addition, the democratic indices that were used are extremely complex ways to measure democratic levels. They are made of multiple measures, including electoral process, civil liberties, electoral culture, and many more (e.g., the EIU index, 2023). The downfall of these indices as measurements of democracy may be that not all of those statistics are relevant

[1]This is however not an econometrics-based research.

towards the economic growth, or other macroeconomic variables, i.e. a country with restricted freedom of press may perform economically very well.

2.1 Populism

Populism is a very well-researched and well-known term that has been around for centuries. Some of the first well-known populists were Greek, notably the tyrants of Syracuse[2]. Champion (2021) gives us the timeline of multiple tyrants of Sicily. These tyrants needed the common people to keep them in power, therefore redistributing wealth from the wealthy to the masses. This is a prime example of populism in history.

In recent years, populism has been on the rise not only in the Czech Republic but also in multiple countries with longer democratic traditions. This trend is clearly visible in Europe (2023 Dutch general election won by the Party for Freedom; Brexit exit polls; Marine Le Pen's National Rally party's growing popularity (Nussbaum, 2023)[3]), as well as in the Americas (the ongoing popularity of Donald Trump; Javier Milei elected Argentine president). The current popularity of populist movements and their growing power across the world incited the author to try and measure their possible effects on impacted countries. The rise of populist leaders can be seen in Figure 2.1.

2.1.1 Defining populism

Determining which countries have populist leaders or governments is beyond the scope of this thesis and outside the expertise of the author. Hence, a need arises to find a good definition of populism given by political science or sociology research. The populist definition has been researched and sought after by a plethora of authors in the past.

There is no shortage of politicians who describe themselves as socialists, libertarians, conservatives, or even communists, yet no sight of self-described populists. The question is how to define something almost no person will willingly avow to.

According to Funke *et al.* (2022), the current workhorse definition for identifying populist leaders in political science is that "populism is a political strategy

[2]Ancient Greece is only one of the examples of this kind of populism in history.

[3]NUSSBAUM, Ania. French Poll Finds Far-Right Le Pen Is More Popular Than Macron. Online. Bloomberg, 2023. Available at: https://www.bloomberg.com/news/articles/2023-04-20/french-poll-finds-far-right-le-pen-is-more-popular-than-macron.

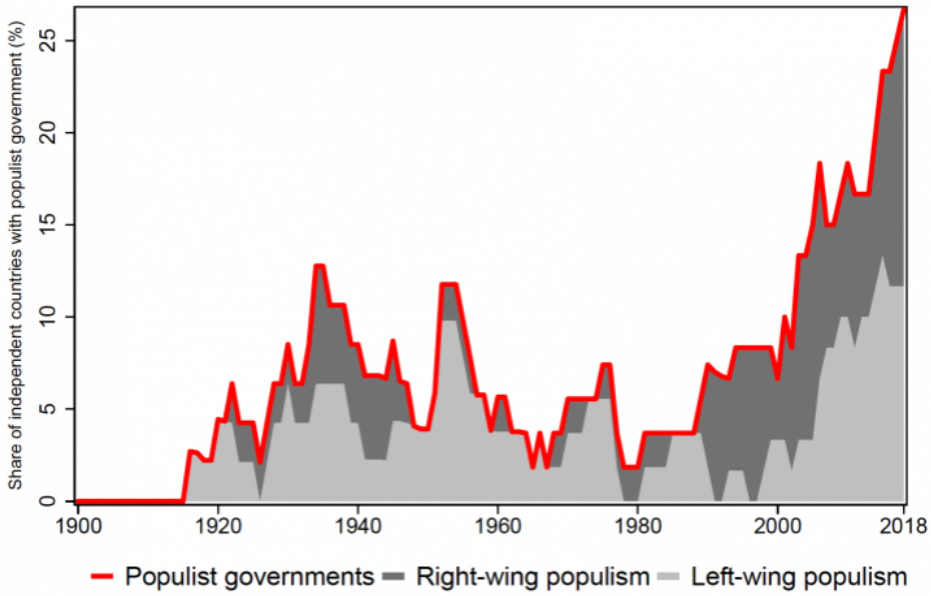


Figure 2.1: The rise of populism in recent years
Source: Schularick *et al.* (2021).

that focuses on the conflict between "the people" and "the elites", for example, used by Mudde (2004). A crucial point made by Mudde, defining populism further, is that it is "a thin-centered ideology which is easily combined with other ideologies".

A different, viable and interesting definition is given by Pappas (2014), however, it is much stricter. He comes with a new term, the "populist democracy", which he defines as a democratic country, within which the leading party is populist, and at the same time (at least) the major opposition party is also populist. This gives less room for reasonable voice in the government, as the main two forces both push their own populist policies, and the opposition fights the party in power with more populism. In this paper, populism is defined as "democratic illiberalism". Sadly, only two European countries fit this definition of Pappas in modern history, the post-authoritarian Greece (since 1974) and post-socialist Hungary (since 1989). Another problem with the paper is that it does not state the exact times in which these two countries fit this definition of populist democracies. For example, the policies implemented by Orbán immediately after the fall of communism were not necessarily populist. In Greece, the political system was dominated by two parties from 1974 to 2012, but after the 2012 elections the situation became much more complicated with the emergence of new parties (Kovras & Loizides 2014).

2.1.2 Left and Right-wing populism

Given the fact that populism is a thin-centered ideology, usually paired up with other ideologies, for our purpose we can define Left-wing and Right-wing populism. This thesis will abstain from those types of populism which are not primarily political (such as Eco-populism, or Agrarian populism).

There is a large debate between scholars on what makes populism a left-wing or right-wing ideology. Some papers, like Norris & Inglehart (2016), recognize only right-wing populism, blaming the current US trends on the aging white male population, "which has been rid of their privileged standing in society and does not approve of the newly accepted progressive values". This in turn makes the "endangered" group lash out against the new cultural norms. Jeremiah Morelock (2018) argues that although this argument might be valid, the study neglects the most critical issues due to its narrow point of view. According to him, the populist governments try to "institutionalize their agendas, thereby changing the rules of the game". Some of the examples of this institutionalization are gerrymandering, voter suppression, and mass incarceration, which Michelle Alexander (2012) calls the "New Jim Crow"[4]. All of these trends have been accelerated during the presidency of Donald Trump Morelock (2018).

The difference in policies implemented by left- and right-wing populists is often vast. Sometimes, one or the other type is preferred by foreign investors or global policy makers. This thesis does not assume a position on which of these types, if any, is better in any way. It solely tries to measure their possible impacts on economy as a whole. From this, the aim will be to draw measurable conclusions.

Right-wing political populism

Differentiating between the two types of populism by the political spectrum from which they originate can be a difficult task. Some of the features may be very similar in both types, while others differ significantly. It is also worth noting that the lines drawn by this distinction can often be blurred and that no two populists are exactly the same. Some care more about the economic agenda, others about social relations and human rights within a society they

[4]Alexander points out that an inappropriately large percentage of inmates in the United States are men of African-American origin. She goes into detail on how exactly this is done through the judicial system.

try to influence. Most populists combine these and more characteristics in a specific, individual mix.

Since populism, according to most definitions, is the fight of "the people" against "the other side", or "the others", Jeremiah Morelock (2018) makes the primary distinction in the overall outlook of the regime (the populist) on who "the people" and "the others" are. Per his definition, right-wing populism sees the "embattled nation confronting its external enemies: Islamic terrorism, refugees, the European Commission, the International Jewish conspiracy, and so on."

It is also helpful to define the figure of an authoritarian leader at this point, as right-wing populism is most often associated with authoritarianism. In his recent book, titled The Rise of Trump: America's Authoritarian Spring, Matthew C. MacWilliams (2016) defines it based on the works of Hetherington & Weiler (2009) and Altemeyer (2009). In short, Marc J. Hetherington explains authoritarianism as "a distinct way of understanding political reality that shapes political behavior and identity", while the latter book adds a three-part description of what authoritarians do. According to Bob Altemeyer, the key characteristics are that they: "Submit to authority, prefer the conventional, and may act aggressively to those out-groups who question authority, are deemed unconventional, or both."

Matthew MacWilliams (2016) builds on this description further, adding four contemporary characterizations of authoritarians:

- First, authoritarian submission to authority is deeply rooted and compelled. Authoritarians follow authority because they seek order Authoritarians' need for order impels their submission to authority.

- Second, authoritarians' need for order compels them to act to defend it. When usurpers-through their actions or simply their existence-question, challenge, or seek to change an accepted order and norms, authoritarians rise aggressively to defend them.

- Third, authoritarians' sense of order is not necessarily or solely defined by worldly powers. To authoritarians, there are higher powers that delineate right from wrong and good from evil. There are transcendent ways of behaving and being that are enduring, everlasting, and the root of balance and order." These authorities are "morally and ontologically superior" to state or institutional authority and must be obeyed." The higher authority

may be otherworldly, or a text (for example, the Constitution) imbued with enlightened, transcendent power when its meaning is interpreted originally.

- Finally, authoritarianism is universal and transcends society, culture, politics, and race. Authoritarianism is not limited to Europeans or whites. It does not discriminate. It is found in every culture and among members of every race.

(MacWilliams 2016)

Another way we can differentiate between the two is through their perspectives on human rights. Authoritarian populists are very likely to restrict the rights of minorities, as they create a threat of "the others", both at the socio-economic and cultural levels Morelock (2018). Some of the most classic examples of authoritarian populist leaders in this sense would be Recep Tayyip Erdoğan, Nigel Farage, and Donald Trump.

A distinction should be made between the economic policies that both types of populists usually implement.

Left-wing political populism

"While right-wing or authoritarian populism defines the enemy in personalized terms; while this is not always true, left-wing populism tends to define the enemy in terms of bearers of socio-economic structures and rarely as particular groups. While the right, in a tradition stemming back to Hobbes (2017), takes insecurity and anxiety as the necessary, unavoidable, and indeed favourable product of capitalist social relations, and transforms such insecurity and anxiety into the fear of the stranger and an argument for a punitive state, the left seeks to provide an account of the sources of such insecurity, in the processes that have led to the dismantling of the welfare state, and corresponding phenomena such as "zero-hours" contracts, the casualization of labour, and generalized precarity, and proposes concrete policy solutions to these. Of course, left populism can also turn authoritarian - largely due to the interference and threatened military intervention of the global hegemon and its allies - with an increasing vilification of the opposition, as we are seeing today in Venezuela and Ecuador with Rafel Correa." (Morelock 2018)

2.1.3 Good and Bad Populism

While it is not the objective of this thesis, it is interesting to note that some authors have also drawn a line between good and bad intentions behind populist movements. In particular, Rodrik (2018) also defines populism as "claiming to represent and speak for the people", while also distinguishing between left-wing and right-wing populism. What Rodrik adds to the debate is the motive for such politics. The self-serving policies which undercut democracy are in this case called "political populism". This definition would be very similar to that of Mudde (2004). The government in power seizes more control for itself, thus creating the situation in which it can serve itself or its beneficiaries better on behalf of others.

Rodrik also recognizes "economic populism". He bases this term on policies implemented by Franklin D. Roosevelt during his presidency, dealing with the Great Depression and the Second World War. He points out that sometimes need arises for the government to take more power for itself, in order to change already implemented policies. This type of populism is desirable in those cases, when it helps "to prevent the majority from harming itself in the future" (Rodrik 2018).

As stated above, this thesis will not try to distinguish between good and bad intentions behind the populist movements it tries to analyze. However, if there is a dispersion between long-term consequences of populist leadership between countries, the reasons for populist movements behavior may be one of the fields worth inspecting closer.

2.2 Synthetic Control Method

The Synthetic Control Method, or the SCM, has been a widely used econometric model for the past twenty years. It was first introduced by Abadie & Gardeazabal (2003) to investigate and measure the economic impacts of an armed conflict in the Basque country. In the study, they create a synthetic version of the Basque Country which has not (unlike the real Basque Country) been hit by thirty years of terrorist and political conflicts. They find a very significant increase in GDP per capita in the synthesized country.

Were the authors to simply compare the results in Spain and the Basque Country, the differences in economic performance could be caused by the terrorist group machinations, but a certain level of differences would stem from

the differences between the Basque Country and Spain itself. No two countries are exactly the same and, if left without intervention, would not run in the exact same course, especially economy-wise. For a perfect comparison, one would require the exact copy of the country in question and then test the effects of one policy at a time. There are no countries that could serve this purpose, but we can create a synthetic "copy" of the country in question using data from the period before the policy in question is implemented. From there we can measure the effects of the policy. This is the central idea of the SCM.

Already, there are similarities in the setting of the first study of Abadie and Gardeazabal and this thesis. Both works attempt to measure the economic impact of a political intervention. A second study by Abadie *et al.* (2010) uses the SCM to estimate the effect of California's tobacco control programme on tobacco consumption. In addition to the first paper by Abadie on the SCM, it adds new inferential methods in the form of randomized placebo tests. Applying the same procedure on all countries in the sample, not only the one affected by the intervention, they can calculate whether the difference in the outcome variable is significantly larger in the affected country, compared to the average.

The versatility of the SCM is clear from its widespread use. It is used by scholars and researchers across fields. Although it was first introduced as a tool to measure the impacts of political instability on the economy, it was later adopted by other fields as well. Opatrny (2021) uses the SCM for three separate research questions: quantifying the effects of a central bank exchange rate commitment, secondly to measure shocks in farm production due to the Czech Republic joining the EU, and lastly to measure the impact of the Brexit vote on the UK financial markets. In a completely different study, Azzolini & Guetto (2017) use the SCM to find whether a positive shift in immigrants acquiring citizenship leads to increased intermarriages in Italy.

The following text is taken from a Ph.D. thesis by Matěj Opatrny (2021), as it is an excellent description of the SCM:

"The synthetic control method (SCM) introduced by Abadie & Gardeazabal (2003), Abadie *et al.* (2010) and Abadie, Diamond, & Hainmueller (2015) serves as a powerful tool to find the counterfactual development of a unit (hereforth treatment unit), which was exposed to some idiosyncratic event (treatment). In general, the SCM defines how to systematically choose comparison units (usually countries or regions, which are frequently termed control units or synthetic controls) in comparative case studies. Specifically, the SCM assigns weights

to control units so that these units best fit the pretreatment characteristics of the treated unit. Given these features, the SCM quantitatively estimates the effect of the treatment in the post- intervention period. The main idea of the SCM is that a combination of units should provide a better comparison for the treatment unit than a single unit alone (Abadie, Diamond, & Hainmueller 2010)." ... "Abadie, Diamond, & Hainmueller (2010) stress that transparency and safeguards against extrapolation are the main attractive features of the SCM. Transparency is secured by the fact that SCM makes explicit the relative contribution of each control unit to the counterfactual of interest by giving the unit a positive weight, and the weights of all control units sum to one. For the extrapolation, Abadie & Gardeazabal (2003) and Abadie, Diamond, & Hainmueller (2010) refer to the paper of King & Zeng (2006). Using their example about the problem with extrapolation (p.134): *If a linear model indicates that one more year of education will earn you an extra $1,000 in annual income, the model also implies that 10 more years of education will get you $10,000 in extra annual income. In fact, it also says that 50 years more of education will raise your salary by $50,000. At 50 years of education, the counterfactual is so far from the data that it is downright silly. But somewhere past one year, but well before the question becomes obviously silly, comes a distance from the data at which inferences become sufficiently model dependent that conclusions become based more on small modelling assumptions than on the data.* Therefore, to avoid the problem with extrapolation, Abadie & Gardeazabal (2003) and Abadie, Diamond, & Hainmueller (2010) proposed the weights to be non-negative and sum to one."

Chapter 3

Methodology

3.1 Model

The model used for this research will be the same as the one used by Abadie *et al.* (2015), based on works by Abadie *et al.* (2010) and Abadie & Gardeazabal (2003). This method assumes a balanced dataset and a positive number of pre-intervention periods.

The setup of the model is from Abadie *et al.* (2015) and is as follows:

- Let $J+1$ be the total number of units in the study. Unit 1 is the treated unit (e.g., Greece), and units $2, \ldots, J+1$ are potential control units (the donor pool).

- Let T_0 be the number of pre-intervention periods and T_1 the number of post-intervention periods. Thus, $T_0 + T_1 = T$, the total number of periods.

- A synthetic control can be represented by a (J x 1) vector of weights $W = (w_2, ..., w_{j+1})'$, with $0 \leq w_j \leq 1$ for j = 2,...J and $w_2 + ... + w_{j+1} = 1$

- Let X_1 be a (k x 1) vector containing the values of the preintervention characteristics of the treated unit that we aim to match as closely as possible, and let X_0 be the k x J matrix collecting the values of the same variables for the units in the donor pool. The preintervention characteristics in X_1 and X_0 may include preintervention values of the outcome variable.

- The difference between the preintervention characteristics of the treated unit and a synthetic control is given by the vector $X_1 - X_0W$. The synthetic control W^* is selected through minimizing this difference.

- For m = 1,...,k, let x_{1m} be the value of the m-th variable for the treated unit and let X_{0m} be a 1 x J vector containing the values of the m-th variable for the units in the donor pool.

- Based on Abadie & Gardeazabal (2003) and Abadie *et al.* (2010), we choose W^* as the value of W that minimizes:

$$\sum_{m=1}^{k} v_m \left(X_{1m} - X_{0m}W\right)^2,$$

  where v_m is a weight that reflects the relative importance that we assign to the m-th variable when we measure the discrepancy between X_1 and X_0W. According to Abadie *et al.* (2015), "it is of crucial importance that the synthetic controls closely reproduce the values that variables with a large predictive on the outcome of interest take for the unit affected by the intervention". These values should also be assigned large weights v_m.

- Abadie *et al.* (2015) apply a cross-validation method to choose v_m: Let Y_{jt} be the outcome of unit j at time t. In addition, let Y_1 be the (T_1 x 1) vector collecting the postintervention values of the outcome for the treated unit. That is, $Y_1 = (Y_{1T_0+1}, ..., Y_{1T})'$. Similarly, let Y_0 be a (T_1 + J) matrix, where column j contains the postintervention values of the outcome for unit $j + 1$. The synthetic control estimator of the effect of the treatment is given by the comparison of postintervention outcomes between the treated unit (that unit being exposed to the intervention), and the synthetic control (not exposed to the intervention), $Y_1 = Y_0W^*$. That is, for a postintervention period t (with $t \geq T_0$), the synthetic control estimator of the effect of the treatment is given by the comparison between the outcome of the treated unit and the outcome for the synthetic control at that period:

$$Y_{1t} = \sum_{j=2}^{J+1} w_j^* Y_{jt}.$$

The matching variables in X_0 and X_1 are supposed to predict the outcomes caused by the intervention. Per Abadie *et al.* (2015), critics of the method stress that that the applicability of the method can be significantly hampered

by the presence of unmeasured factors affecting the outcome variable, paired with heterogeneity of unobserved and observed factors. Abadie *et al.* (2010) argue that using a large enough donor pool will result in inclusion of only those countries that are affected by the same unobserved and observed determinants of the outcome variable. Simply put: if the synthetic version of the country and the real country behave similarly prior to the intervention, both the unobserved and observed factors should be covered within the synthetic control. Any further explanations of the model, together with proofing and step-by-step calculation can be found in Abadie *et al.* (2010).

3.2 Donor pool

We will need data for all the countries chosen as being run by populists, as well as a larger group of countries to use as controls. These countries should be economically similar to those chosen to be treated. This will significantly increase the effectiveness of the model as it will deal with less pollution and outliers in the data. For example, if the populist country is Hungary, then the control countries used in the SCM should be post-soviet European countries which rely heavily on agriculture (at least in the observed period). The problem of choosing the right countries is well explained by Abadie *et al.* (2015), cited in Section 3.1.

The number of countries chosen will be variable on the treated country, as there may be only a small number of countries similar enough. Abadie *et al.* (2015) used 16 countries as such, as the treated country was a western European country. Their research also included an average of OECD countries. The philosophy of the data sets, mostly in the countries used, varies for this thesis. The data set described above was created to measure and create a synthetic West Germany. The authors used most western European countries, but USA, Japan and New Zealand were included as well. When recreating their study, approximately only 2-4 countries are chosen by the SCM to contribute to the newly created synthetic country, and the other countries get zero weight. The author believes that while New Zealand or Japan may have similar trends in macroeconomic variables over the measured period, these can be coincidental, or similar for different reasons. This is why the countries chosen for creating synthetic countries in this thesis are chosen to be more similar in major aspects and proximity to each other.

For the purpose of this thesis, the author chooses the definition of populism

by Funke *et al.* (2022), and also uses their table of identified populist regimes in time.A very welcome addition is the differentiation between left- and right-wing populist regimes within the table. This table can be seen in Figure 3.1. Not all populist leaders presented in the table will be used. While it would be fascinating to measure whether the economy of the USA took a hit by electing Donald Trump president in 2016, or possibly the economic impact of Andrej Babiš-led government in the Czech Republic, there are not enough data to properly measure their impacts into the future, especially since there is typically a delay in the effects of populism.

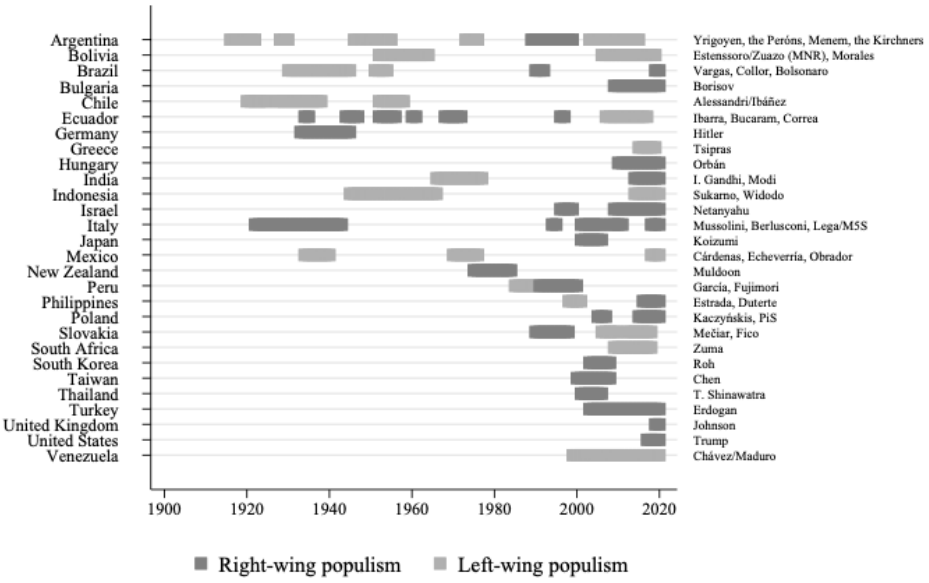


Figure 3.1: Populist leaders since 1920s
Source: Funke *et al.* (2022).

A list of the countries led by populists chosen for the analysis can be found in Figure 3.1, together with the year when the populist regime took power. The left column shows left-wing populist regimes, whereas the right column shows right-wing ones. There are countries that appear on both lists, namely Argentina, Ecuador, and Slovakia. The gaps between the former right-wing government and the ensuing left-leaning rule are quite small, especially in Argentina. The possible spillover from former populist leadership will have to be taken into account. As visible from the table, there will be nine iterations of both left-wing and right-wing populist-led countries. The results will then be analyzed, each with their specific factors taken into consideration.

Choosing these countries came down to the most probable data availability, since we need at least 10 years before the populist took power and, ideally,

ten years after[1]. As World Bank is the main database for this thesis and it starts in 1960, this excludes all countries with populist leaders before 1970s. Countries with populist leadership taking power after 2014 are also excluded. Previous works have shown a possible lag between policy implementation and the policy's effect on economy.

Left-wing populists	Right-wing populists
Argentina (2003)	Argentina (1990)
Bolivia (2006)	Brazil (1990)
Ecuador (2007)	Ecuador (1996)
Greece (1974)	Hungary (2010)
Indonesia (2014)	Italy (1994)
New Zealand (1974)	Japan (2001)
Slovakia (2006)	Poland (2005)
South Africa (2009)	Slovakia (1990)
Venezuela (1999)	Turkey (2003)

Table 3.1: Countries used in analysis, divided by left and right-wing populism

3.2.1 Political Situation and Control Countries Chosen

South American countries

Selecting suitable non-populist countries in South America seems quite difficult, as many of them ended up on the list of Funke *et al.* (2022). An argument can be made for some of those that did not make the list that their leadership has at some point in time been quite populist, or is still populist today. Theoretically, we could use the countries that are "clean" in a certain observed period. For example, Brazil had a populist leader in Fernando Collor de Mello between March 1990 and December 1992. We could include Brazil in the pool of control countries for the Chávez/Maduro-led Venezuela since the beginning of 1999. However, the political and economic stability of Brazil would still be hindered. Therefore, only countries that have not had a populist leader before and during the analyzed period will be used. In South America, the countries most used as controls will be those that did not make it on the list at all. These countries are: Colombia, Chile, Guyana, Paraguay, and Uruguay. These seven countries will be used to create synthetic versions of Argentina, Bolivia, Brazil,

[1]Even with Indonesia this data is quite limited.

Ecuador, and Venezuela. Parts of Central America may also be included if data are insufficient. Indonesia and Iran have been added as control countries for Ecuador and Venezuela in a secondary model, as they could have more similar features than other countries in South America.

Greece

In 1953 Greece made huge changes to its economic policy. They liberalized imports and devalued their currency. Prior to these changes, the drachma was greatly overvalued, restricting foreign investment. This helped improve domestic price stability and the overall economic situation, which was in part negatively impacted by World War II (Gerakis & Wald (1964)). What followed was called the Greek economic miracle. At its peak, the Greek economy was the second-most growing economy in the world, the first being Japan[2].

Italy is a solid candidate for the donor pool, with the fascist government gone after 1945 and being a part of the Marshall plan, just like Greece. After Mussolini, Italy saw a non-populist leadership until 1994, when Silvio Berlusconi took power. Another two beneficiaries of the Marshall plan were France and Turkey. Both will be used as controls for synthetic Greece. During the examined period, Turkey was politically quite unstable, with multiple military coups happening. It was, however, never classified as populist until 2003. The other countries that will be used include Croatia (part of Yugoslavia at the time), Cyprus, Portugal, and Spain.

Hungary

The main persona in Hungarian populist politics is Viktor Orbán. He became well known as a student leader in 1989, protesting against the former regime. He became the prime minister in 1998 and served his whole term until 2002. He then led the opposition until 2010, when he again took power and became prime minister. Orbán has led the country since. Based on the author's personal experience, the people of Hungary regard Orbán's first term as prime minister as very successful. He helped improve the economic situation, and Hungary joined NATO, which was seen as a large improvement by most of the demographic and the right step towards becoming a Western power. However,

[2]Interestingly, when testing the synthetic control method on Greece with unrestricted controls pool (data taken from Abadie *et al.* (2015), Japan was one of the leading contributors to the synthetic version of Greece after 1974. Their similar economic growth may be one of the main factors.

after being reelected, his policies have been questionable. From his formerly pro-Western views he turned more towards the East, mainly towards Russia, and has passed laws making his reelection easier, together with gaining control of the media.

Before 1989, Hungary was part of the Soviet bloc, together with Bulgaria, Czechoslovakia, East Germany, Poland, and Romania. It is quite logical to use most of the Bloc for comparison, excluding East Germany, since it had no real continuation after the Soviet Union collapsed. Germany was added as the data from east Germany could serve well in training the model. Serbia was added due to its proximity and shared border. Bulgaria is omitted, as Borisov comes into power, as is Poland with the Kaczyński brothers and Slovakia with Mečiar and Fico. The other two countries that will be added to the pool will be Austria and Albania. Although both of these countries took significantly different routes after the end of WW2, their economies are agriculture-heavy and are both in quite close proximity to Hungary.

Indonesia

Populists were ruling the newly independent Indonesia since its true and proper establishment and its gaining of independence from the Dutch rule in 1945 up until 1967. What continued was the era of General Suharto, who led the country from 1967 to 1998. His time as president of Indonesia is known as the New Order. Although not populist, his administration was, according to the rest of the world, interwoven with corruption and dictatorship-like acts. While we may question the morality of his actions, Indonesia saw large economic growth during his time in office. However, in 1997, Indonesia was among those countries that suffered the most from the Asian financial crisis. This was paired with Suharto's problems with international lending institutions, which accused him of embezzlement of funds. The political situation in Indonesia became unstable and later led to protests against Suharto, ending with him stepping down in 1998. The country has become a better-established democracy since then. This thesis is mostly concerned with the rule of Joko Widodo, at the time of writing this thesis the sitting president of Indonesia, currently finishing his second term in the office. He was first elected in 2014, after serving two years as the governor of Jakarta and gaining a large following. Mietzner (2015) writes about the feud between Joko Widodo and his election rival, Prabowo Subianto. He describes Widodo as a technocratic populist, while Subianto is

described as a full-blown, typical populist. A very interesting point made by Mietzner, regarding why Indonesians elected the lesser of the two populists, is the current state of the country. As Indonesia was not in a complete economic or humanitarian crisis, the typical populism did not work as well. The people did not need to be promised a huge reform, just lessening of the autocratic tendencies left from the Suharto era.

The control countries for Indonesia will include mostly East Asian countries. Their development levels were very high in the second half of the 20th century. To list those that will be used: Brunei, Cambodia, China, Laos, Malaysia, Singapore and Vietnam.

Italy

After the end of WWII, Italy formally became a republic in 1946 due to a public referendum. The 1948 general election was dominated by Christian Democrats, who were in power consecutively until 1994. Among other European countries, Italy was also on the receiving end of the Marshall Plan, with its economy booming throughout the 1950s and early 1960s. This era is called the Italian economic miracle. During the 1970s, Italy became the fifth largest industrial economy in the world. However, the era between the late 1960s and late 1980s was uneasy for Italy, known as the Years of Lead. This era was associated with social conflicts and terrorist attacks. In the early 1990s, Clean Hands was a national investigation of political corruption. Its results led to dissolving of the main historical political parties, which were present since the creation of the Italian Republic, and creation of new ones.

The populist leadership in question of this thesis is that of Silvio Berlusconi. As discussed above in the Greece section, he took power in 1994. The whole persona of Berlusconi is the perfect example of a contemporary populist. A media mogul turned politician, the man from the people, who will fight against the ill will of the elites, the foreigners, the "others". His party, Forza Italia, was founded just months before the 1994 general election. Its image was mostly dependent on Berlusconi himself, not necessarily on its policies and political goals. The Berlusconi government is usually classified as neoliberal, promising lower taxes for everyone, together with deregulation. After gaining power, he is credited with installing fear of and disgust with public institutions in Italy, together with the justice system. He is often credited as the politician who was ahead of his time, even by more than twenty years, with his political

campaigns and twisting the truth and the facts. The current Italian government is following the path laid out by Berlusconi.

The countries used for synthetic Italy: Austria, Denmark, France, Germany, the Netherlands and the UK[3].

Japan

How and even if populism works and exists in Japan is unclear, even for most Japanese people. According to Nishikawa (2023), the Japanese media describe populists as mainly right-wing leaders who "pander to the common people". He makes the case that this does not satisfy the definition of populism as most Japanese academics take it and claims that Japan does not really have any left- or right-wing populists. Many articles written about populism in Japan highlight that the main populists are elected at the local levels of government, rather than the higher levels (prime minister, etc.). This is due to the nature of populism; the regional politicians can much more easily criticize the leading party, which they may not be a part of, although Nishikawa (2023) says that even this assumption is wrong.

Why did Funke *et al.* (2022) then classify Junichiro Koizumi as a right-wing populist? Junichiro held the position of Prime Minister of Japan from April 2001 to September 2006. Before that, he served two short terms as both the Minister of Post and Telecommunications and the Minister of Health and Welfare. The reason why we (or rather Schularick et al.) would classify him as a populist is mainly his rhetoric. He put himself into the position of defender of the average man against the political elites, more so than his predecessors. Together with becoming Prime Minister, he also became the President of the Liberal Democratic Party (LDP), the main political force in Japan [4]. According to Harris (2019), he promised the people of Japan economic reforms, criticizing former leaders of the LDP as those who stand against change and want to keep power. Harris (2019) declares Koizumi a neoliberal populist.

The countries used to create synthetic Japan are: Australia, China, France, Germany, Norway, the UK and the USA.

[3]Belgium Portugal, Slovenia and Spain were supposed to be included as well, but in the database they lack sufficiently long time series data.

[4]The party has been in power since 1955 with two short breaks - 1993-1994 and 2009-2012

New Zealand

In the middle of the 20th century, New Zealand was one of the most prosperous countries in the world. They were a large exporter of agricultural products and had a well-established trading system with the UK, who guaranteed them high buying quotas for fixed prices, in exchange for New Zealand imposing tariffs on imported products outside of the UK. During this time, New Zealanders enjoyed the third highest living standard in the world (1953), and the political situation was very stable, with two major parties mostly agreeing on economic decisions. When the economic situation worsened, mainly throughout the late 1960s and early 1970s, major disagreements started over how the economic policies should look like going forward. While the Labour Party (at the time in government) wanted to liberalise trade and make social spending lower, the National Party went the other way, focusing on protectionism and continuation of large social spending. Dalio *et al.* (2017) Up until this point, the National Party served as the more conservative wing of New Zealand politics, but before the 1975 elections, under the leadership of Robert Muldoon, they went the traditional populist route, promising welfare to all and government intervention wherever needed. Muldoon won the 1975 New Zealand general elections as the leader of the National Party. He was in power until 1984. His third term as Prime Minister ended prematurely, when he dissolved the Parliament and called for an early election, which he then lost to the Labour Party Gustafson (2010).

The control countries for New Zealand are Australia, USA, UK, Canada, Spain, Germany, Austria

Slovakia

As part of the bloc of socialist European countries, Slovakia gained independence from the Soviet Union in 1989. We saw the emergence of Slovakia as a standalone country in 1993. However, right after the fall of communism, a little known lawyer by the name of Vladimír Mečiar starts gaining political power. He has four short stints as the prime minister of Slovakia, first two during Slovakia's being a part of the federation with Czech Republic, then one year as independent Slovakia and then a full term between 1994 and 1998. In 1998, his party received 27% of the votes, winning the general elections narrowly, but he was unable to form the government. Mečiar's full term as prime minister was filled with autocratic decisions and scandals. These include taking captive the son of the then-Slovakian president in 1995 and the sudden death of one of the

main witnesses in 1996. The international support for Slovakia was weakening during this time. After Mečiar's move to opposition, the country was led by Mikuláš Dzurinda for eight years. After the 2006 general elections, Robert Fico took power, which marks the beginning of another populist leader in Slovakia's recent history. His party has been in power since, with a short break between 2020 and 2023.

Countries to include as controls for Slovakia are the post-soviet countries, i.e. Bulgaria, Czech Republic, Hungary, Poland, but also Austria and Germany. These will be rounded up by Latvia and Lithuania. The inclusion of Hungary as a control country for Slovakia is debatable. According to Funke *et al.* (2022) it is usable, as Orbán's rule becomes populist after the end of millennia (in 2010 to be precise), but papers have been written about him being a populist right after 1989, for example by Pappas (2014). For the purpose of keeping the same source, it will be included. Poland can be used with the similar reasoning: the populist influence starts around the same time as in Slovakia. As most of the years on which the SCM is learning are unaffected, it will be included.

South Africa

South Africa is a former colony of the United Kingdom. As such, it has suffered its share of abuse, but also inherited some good infrastructure and political order, which had influence on its economic growth and prosperity after gaining independence. The country has had its share of social conflicts, mainly its racial segregation laws, called apartheid, which were in place from 1948, up until the early 1990s. In 1962 the United Nations General Assembly passed a resolution condemning Apartheid and called on its members to impose economic sanctions on South Africa. From the 1980s to 1996, the country faced trade sanctions from 25 of its former trade partners. When these sanctions were lifted, the economy started growing. However, its growth has been quite slow, especially compared to other emerging markets and its own projected potential growth.

The populist in question is Jacob Zuma. He took the presidential office in 2009, after winning the general election. As a former member of the South African Communist Party, his policies were progressively more and more left-wing oriented. He is a former anti-apartheid activist. This helped him create a persona of anti-establishment fighter and an anti-elitist. According to Resnick (2015), he criticises the opposition parties as "a gathering of rich people", yet

he does not target minorities and does not resort to xenophobia in his rhetoric. This makes him the ideal left-wing populist.

Countries used as the donor pool for South Africa: Algeria, Angola, Australia, Namibia, New Zealand, UK, USA

Poland

Before the fall of the communist regime, Poland (Polish People's Republic at the time) was under martial law for a short period between 1981 and 1983. This did not help the popularity of the communist party. In 1989, after its fall, pro-capitalist reforms came, together with non-communist government. "Since 1989, the country has experienced sustained annual GDP growth of around 4%. Almost uniquely in Europe, Poland also escaped a downturn after the 2008-2009 financial crisis" (Tacconi 2019). In the next fifteen years, Poland joined NATO (1999) and the European Union (2004). During this time, most governments were led by left-leaning, yet democratic parties. Although the joining of the European Union was generally a positive decision by the government, there were multiple corruption scandals and incompetency claims against them. This resulted in their loss in the 2005 parliamentary elections. Together with the parliamentary elections, in which the Law and Justice (PiS) party, led by Jarosław Kaczyński won, Poland also held its third presidential election, which was won by another founding member of PiS and twin brother of Jarosław, Lech Kaczyński. This marks the beginning of the Kaczyńskis era in Polish politics.

According to Tacconi (2019), Jarosław Aleksander Kaczyński has ran his campaigns on the basis of the country's poor economic performance, which he promised to improve. As part of his populist rhetoric, he claimed that parts of the Polish population were "defeated" and "left behind". In the 2015 elections (which PiS won by a landslide) Kaczyński ran with the slogan "Poland in ruins".

The countries that will be used to create a synthetic Poland are mostly its neighbors with communist history. Unlike the other post-Soviet countries in this thesis, Poland will also use data from the Balkan countries. To name the countries, these are: Austria, Czech Republic, Estonia, Germany, Latvia, Lithuania and Romania.

Turkey

The period concerning this thesis begins with the election of Recep Tayyip Erdoğan Turkey's prime minister. Looking back in history, Turkey is a prime example of the differences between populism and oppressive or militant regimes. The Turkish military body has been playing the role of protectors of secularism since Mustafa Kemal Atatürk founded the modern republic (Amraoui & Edroos 2018). Every time Islam started to have a bigger influence on politics, the military would end that government's rule. On one hand, these military coups could be perceived as antidemocratic, since they go against the results of free elections. On the other hand, an argument can be made that through guarding Turkey's secularist roots, they guarded the most important principle of Turkish democracy. Since the establishment of Turkey as a multiparty democracy, there have been multiple coups, most of them successful (mainly in 1960 and 1980). Even through these interventions and great political instability in the 1970s, the Turkish government had never been headed by a populist until Erdoğan. Erdoğan slowly gained more power as prime minister, ending up being the first directly elected president of Turkey. In 2016, the military, continuing their tradition, tried to stage a coup against Erdoğan. This attempt failed, leading to a purge in the military and its neutralisation (Amraoui & Edroos 2018). In a referendum following this, Erdoğan was successful in abolishing the parliamentary republic system and replacing it with a presidential republic. In 2023, he was elected president for the third consecutive time.

His rule, at least in its beginnings, was focused on bringing Turkey closer to Europe, both politically and economically. According to Amraoui & Edroos (2018), this is one of the reasons why the military did not take action against Erdoğan earlier, as their goals were mostly aligned. We may very well see his positive impact on the Turkish economy right after 2003.

The countries that will be used to create the synthetic Turkey will be Cyprus, Egypt, Greece, Iran, Iraq, and Saudi Arabia.

Detailed research on each of the populists mentioned can be found in Appendix D of Funke *et al.* (2022), where the authors go into more detail on the exact classification, even highlighting the core phrases spoken or written by individual politicians that determine their political leaning. A list of all countries contained in the dataset can be found in Appendix B.

3.3 Data

The Synthetic Control Method is one of the panel data models. Its main idea is that the combination of several units provides a better comparison for the treatment unit than a single unit alone (Opatrny 2021). As such, we need large amounts of data from multiple countries for multiple years. A downside of SCM is that it cannot, in its base state, work with unbalanced data. This can, however, be worked around. For example, if only a single data point exists each five years, we can take an average of those values for the entire period. This approach was utilized by Abadie *et al.* (2015).

Given the three hypotheses of this thesis, we need suitable variables to measure economic growth, income inequality (or wealth inequality, or possibly both, as it may be interesting to see whether there is difference in their reactions to populism), and investor confidence. Each of these variables will then be used as the outcome variable in their own models.

Each of the outcome variables will of course need a set of its specific predictors. These will be chosen on the basis of past research using the synthetic control method.

3.3.1 Economic Growth

While there are many proxies for economic growth, it is most often proxied by the real GDP of the country in question. For our purpose, since we are talking about a multitude of countries, it makes sense to use the real GDP per capita. Following Abadie *et al.* (2015), we will use the Per Capita GDP at chained PPPs as the dependent variable and a standard set of economic growth predictors, which include:

- Per Capita GDP
- Inflation Rate
- Industry Share of Value Added
- Investment Rate
- Schooling
- Measure of Trade Openness

More predictors may be tried during the process.

3.3.2 Inequality

The best measurement of inequality in a country has always been debated among scholars. There are multiple types of inequality, each with its unique positives and negatives, and each suitable in a different environment. The two main types of inequality measurements are income inequality and wealth inequality. Some authors use less known measurements, for example Midlarsky (1992) uses land inequality. Consumption inequality is also a valid measurement.

Income inequality (sometimes also referred to as II) measures the difference between the incomes of the rich and the poor. Wealth inequality (also referred to as WI) measures the amount of assets the rich own, compared to the assets the poor own. Some countries have been successful in battling one of the types of inequalities (usually II), while the other type has been worsening.

Another topic for debate is what range between classes (e.g. percentiles in earnings) is optimal for a good measurement. To explain this on a concrete example, the II is measured (as mentioned above) as the difference between the income of the rich and the poor. However, how does one define the rich and the poor? Are the rich the top 10% of earners, while the poor are the lowest 10%? An argument can be made (for some countries more than others) that the lowest 30% of earners live in poverty, so this percentile should be used for the measurement. This specific percentage will change for every country. As such, there is no "one-size-fits-all" measurement.

However, there are some generally accepted measurements of both inequalities. Possibly the most commonly used measurements are the Gini coefficients, which exist for both II and WI. Calculation of the Gini coefficient uses the Lorenz curve, which shows the distribution of income or wealth in an economy. Gini coefficient then measures the area taken up by the curve compared to the total space in the "triangle". The coefficient takes a value between 0 and 1, with 0 being a total equality.

There are other popular measurements. In an older study, Muller (1988) uses "the size of the upper 20 percent income share" to measure income inequality. Bagchi & Fagerstrom (2019) measures wealth inequality using billionaire wealth as a percentage of GDP. This measurement has high variability between the observed countries, since there are countries with no billionaires at all, while in Belize (2012), billionaires owned the equivalent of 69.9% of GDP. Their control variables will not be suitable, as the authors were trying to measure the

impact of widening wealth inequality on democracy.

For the purpose of measuring the second hypothesis, we will use the income GINI coefficient taken from the World Income Inequality Database. A second option was to use the *20:20* ratio from the same source, which compares the incomes of the richest 20% of people in the country with the incomes of the poorest 20%. The GINI coefficient was chosen for two reasons. First, it is a more standardized measurement of inequality. The second reason was more pragmatic: there were fewer gaps in the database.

The measurement of income inequality and the variables that can affect inequality in the particular country will be taken loosely from Berg & Ostrý (2011) and Hartwell *et al.* (2019). In their paper, Hartwell *et al.* mostly research how long periods of economic boom, so-called "growth spells", significantly lower inequality and what are the reasons behind prolonging these growth spells. Not every single measurement that the authors tried will be used in this thesis. The dependent variable is the income GINI coefficient. The explanatory variables chosen for the inequality SCM model are the following:

- Income GINI Coefficient
- Inflation Rate (Macroeconomic Volatility)
- Human Capital (Credit Market Imperfections)
- Investment Rate
- Share of Government Consumption on GDP
- Measure of urbanization

3.3.3 Investor Confidence

Economic growth and inequality are extremely popular measurements in macroeconomic studies. Another important factor for the growth of economies is the attraction of foreign investors. So why would investor confidence be impacted by populists? Jeremy Ko (2017) of the US Securities and Exchange Commission decomposes investor confidence into two parts. First, investors are concerned with the fundamental risks associated with their investments. A confident investor is optimistic about the fundamental risk and return on his investments. Secondly, the investor "trusts in protections provided to investors in financial markets against potential losses from expropriations by other market participants". Populists often run on strong rhetoric and exaggerated promises.

Oftentimes, these promises may destabilize the financial markets as they go against best practices.

Like with inequalities, there are some common ways to measure investor confidence. The most straightforward measurements are credit ratings. The three major rating agencies are Moody's, Standard and Poor's, and Fitch[5]. These ratings are measurements of credit risk, the risk a debtor is carrying, whenever loaning to the rated subject. In short, the better the rating, the higher the chance that the country will pay back its debts.

However, the variable chosen for investor confidence for this thesis is foreign direct investment (FDI) at the national level. The rational investors look for opportunities in the countries that offer them. As investors, they are also very aware of the risks associated with their investments. This makes total FDI a good proxy for the overall confidence of investors. The risks mentioned above include political stability, rule of law, tax system stability, and many others. All of these variables may be influenced by populist leaders, especially those with strong rhetoric.

According to Root & Ahmed (1979), the main determinants of FDI are of three groups: economic, social, and political. The political factors are what this thesis is interested in. The dependent variable will be the FDI for this model. The explanatory variables used are listed below, loosely based on the findings of the aforementioned paper.

- Foreign Direct Investments
- Per Capita GDP
- Measure of Trade Openness
- Share of Government Consumption on GDP
- Human Capital
- Investment Rate

[5]There are multiple others that issue ratings as well, but the most important are "the big three".

3.3.4 Summary of variables

Dependent variables

- The dependent variable for the first hypothesis is GDP per capita. It is taken from the Penn World Tables and is measured by dividing Expenditure-side real GDP at chained PPPs (in mil. 2017US$) by total country population (in millions). Additional information about the measure can be found at the Groningen Growth and Development Centre website.

- For the second hypothesis, the dependent variable is the income GINI coefficient. The GINI coefficient takes a value between zero and one and is measured using the Lorenz curve. A measure of zero would mean a completely egalitarian society, where every household has the same income. A measure of one would mean that one household makes all the money within this society. It is then often denominated as a percentage (the value is multiplied by 100). While the World Bank has its own GINI coefficient in the database, it is largely incomplete. The measurement for this thesis comes from the World Income Inequality Database. Although this database covers more data, it is also incomplete, as the data needed for its measurement are collected in different intervals for each country. The SCM needs balanced data for its main predictors. Thus, the author declares the GINI coefficient data adjusted. The gaps in the database were filled in from previous years until the next measurement was recorded. Not every gap in the database was filled, as some countries had too little data and its adjustments would not be able to reflect reality.

- The third hypothesis is based on foreign direct investment. The data for FDI is taken from the World Bank. The measure is calculated as Foreign direct investment, net inflows (% of GDP). World Bank used many sources for the FDI measurement, namely: International Monetary Fund, International Financial Statistics and Balance of Payments databases, World Bank, International Debt Statistics, and World Bank and OECD GDP estimates.

Independent variables

- First, we use a measure of trade openness. The trade measure is the sum of exports and imports of goods and services measured as a share of GDP. The measure is taken from the World Bank database, which sources

it from the World Bank national accounts data, and OECD National Accounts data files. This is in line with former literature.

- A crucial part of the models is the measurement of inflation. It is taken from the World Bank. Per the World Bank: "Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. The Laspeyres formula is generally used". The data is taken from International Monetary Fund, International Financial Statistics and data files.

- Next is the investment rate. It is also taken from the World Bank databank and is measured as the gross capital formation as a % of GDP. It makes the investment part of GDP, when measured as:

$$GDP = C + I + G + NX$$

meaning Household Consumption, Investment, Government Spending and Net Exports. The investments in this measure are represented by both household investments and government investments. The sources are the World Bank national accounts data and the OECD national account data files.

- A related measurement is the share of government consumption at current PPPs, taken from the Penn World Tables. The measure takes a value between 0 and 1. It is the percentage of G on the total GDP (per the formula above) each year. Additional information about the measure can be found at the Groningen Growth and Development Centre website.

- Last measure taken from the Penn World Tables is human capital. It is a synthetic measure, based on years of schooling and returns to education. The higher it is, the better for the country. A complete explanation, together with its methodology can be found in the 9th iteration of the Penn World Tables.

- We also use the level of urbanization. The data is again taken from the World Bank. This data represents the percentage of population living in urban areas. Sources of the data is the United Nations Population Division. World Urbanization Prospects: 2018 Revision.

The dataset as well as the code used for creating the models can be obtained from the author at request.

Chapter 4

Empirical analysis

The problem with the synthetic control method and replicating the results achieved in previous studies is difficult. This problem depends on multiple factors. Most studies will use at least slightly different datasets, different variables, or pick different control countries. This makes the SCM a tough instrument for precise recreation of results. Some may even call the SCM a "black box" of sorts, into which data are input and, without much control, a *statistically best* result is achieved.

During the construction of the models, especially while trying to limit the control countries to a small subset, problems arose. This chapter is divided by the three main hypotheses, but more differentiation is also used.

Most time was spent interpreting the results of the first hypothesis, i.e., whether populist governments influence the economic growth of a country. When looking at the results, certain groups of results formed naturally.

4.1 Hypothesis 1 - GDP

We start with the hypothesis that has been most thoroughly researched in the SCM literature. How GDP is affected by a populist is one of the main topics of Funke *et al.* (2022). Their results show that, on average, GDP per capita decreases after a populist is voted into office, regardless of them being a left- or right-wing populist. However, there is a difference between the two, left-wing populists causing larger reductions in economic growth compared to their right-wing counterparts.

This thesis borrows the populist leaders thoroughly researched in the aforementioned paper but uses different variables in its model and a different database.

The variables used by Funke *et al.* (2022) are GDP, Institutions, Banking crises, Debt crises, and Inflation. We may therefore come to different results. The R package created by Abadie and his colleagues utilizes mainly two plots. First is the *path plot*, which shows the evolution of the dependable variable in time in two forms: the actual variable and the same variable, only for the synthetic version of the country. The second is the *gap plot*, which only shows the difference between the actual and synthetic variable. The path plot is more versatile, as it shows the full picture, with growing or declining trends as well, and puts the gaps into perspective. The gap plot is good for the simpler vision of "better or worse", which can sometimes be lost in the path plot. Most of the time, both of these graphs will be shown next to each other, as they are both beneficial for drawing conclusions.

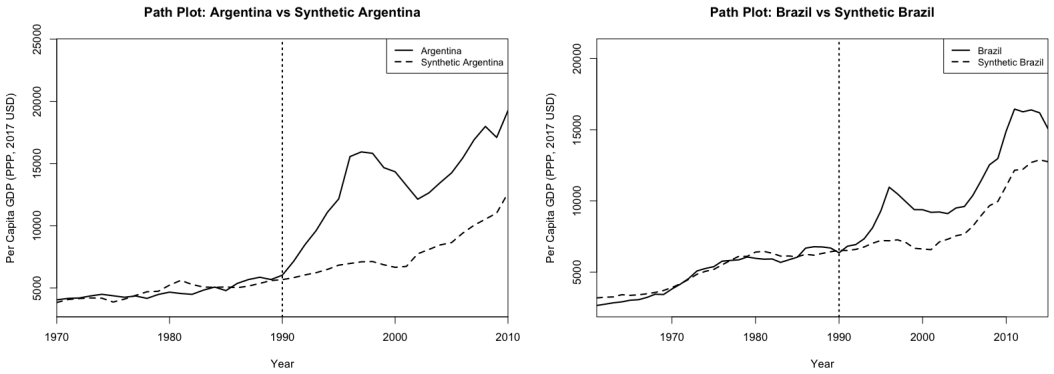
4.1.1 Periods of economic growth

While the aim was to find a strong relationship between populist leadership and economic growth, there are factors that will undoubtedly drive an economy in an upward trend, regardless of political leadership. This is the first naturally formed group of countries. All of the examples in this section experienced rapid growth in GDP.

South America, 1990s

There are several reasons for rapid economic growth. Historically, these include war efforts (USA during WWII), exclusive trade agreements (formerly mentioned New Zealand's trade pact with the UK), and opening the country to trade in general. Most of the factors are fundamental changes at the country level, such as switching to a free-market economy. For example, between 1979 and 1990, Brazil's GDP per capita grew by less than 5 percent in total. In comparison, it grew by 47.7 percent between 1990 and 2000. Even more rapid growth can be seen in Argentina (137.7% growth between 1990 and 2000).

In 1990, in both Argentina and Brazil, a populist leader took power. The estimated synthetic countries can be seen in Figure 4.1. Due to the unprecedented growth of the two countries and the lack of such growth in the donor pool, they both outperform the synthetic versions of themselves. A second version of the SCM was created for these countries, where some of the OECD countries were



((a)) Argentina 1990 ((b)) Brazil 1990

Figure 4.1: The rapid growth of Argentina and Brazil in the 1990s

included in the donor pool[1]. The idea is that the developed countries within the larger donor pool will better simulate the future of Argentina and Brazil.

It was both Carlos Menem for Argentina and Fernando Collor de Mello who implemented the free market economy as their policy. While both their presidencies were plagued by corruption, Carlos Menem even being sentenced to combined 11.5 years in prison and de Mello being investigated for several years, their policies certainly helped the economy grow. Both countries saw a peak in GDP per capita around 1995, with the measure then rapidly decreasing for a few years. This may be caused by mismanagement of other economic policies. Nevertheless, their short-term positive impact on GDP per capita is undeniable.

Surprisingly, showing the second model for each of the countries would be pointless, as they look almost identical to the first one. The SCM did not take nearly any weight from the added donors. Table 4.1 shows the weights of the countries in the donor pool before and after the inclusion of additional donors for Argentina and Brazil in 1990. It may be worth mentioning that both the populist leaders elected in these countries in 1990 are classified as right-wing. When we compute the difference between the measured gaps of the two models, the largest difference is -20.20 for Argentina and -15.38 for Brazil. When the overall gap is in the thousands, these are completely irrelevant.

[1]Namely, the second donor pool for both Argentina and Brazil now contains: Australia, Chile, Colombia, Denmark, France, Finland, Netherlands, Paraguay, Panama, UK and Uruguay

Donor Pool	Argentina	Argentina v.2	Brazil	Brazil v.2
Chile	17.929%	17.479%	0%	0%
Colombia	0.021%	0%	61.265%	60.626%
Paraguay	71.813%	71.737%	38.734%	39.291%
Panama	10.198%	10.783%	0%	0.019%
Uruguay	0.039%	0%	0%	0.018%
Australia		0%		0%
Denmark		0%		0%
France		0%		0%
Finland		0%		0%
Netherlands		0%		0%
UK		0%		0%

All donors have some significance. For better readability, all weights were converted into % and shortened to three decimals. All weights less than 0.1% were converted into 0s.

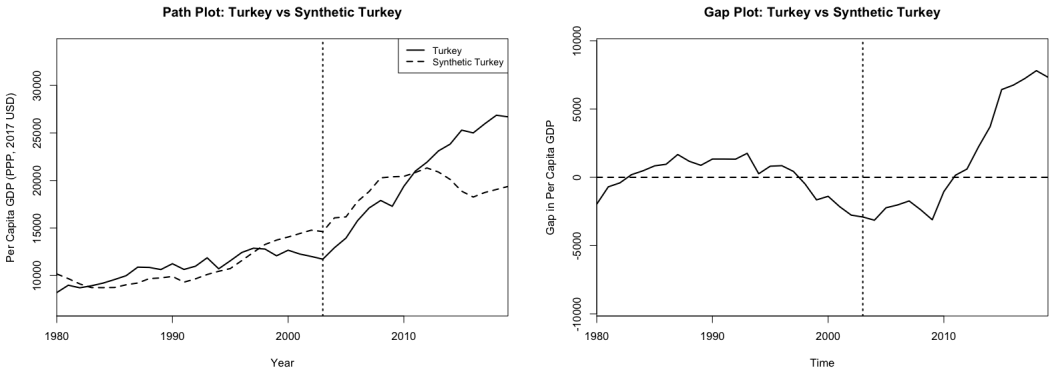
Table 4.1: Donors pre- and post-inclusion of new donors; Argentina and Brazil 1990.

Turkish economic boom, 2000s

Another example of a fast-growing country is Turkey. After the economic crisis in 2001, the government implemented a new economic program, launching new policies. Starting in 2002, the Turkish economy began to grow rapidly, barely slowing down during the 2008 economic crisis. The new economic policies were implemented right before Recep Tayyip Erdoğan's election in 2003. This makes the effect of him entering the office as a populist figure very difficult to measure. More on the topic of foreign investment later, but those doubled around 2005 and steadily maintained their level since. The created synthetic version of Turkey can be seen in Figure 4.2. The right-hand graph shows the gap between the real Turkey and its synthetic version. As seen in the graph, the gap steadily grows from the late 1990s to 2002, when the new policies take effect. According to the author, this effect cannot be attributed solely to Erdoğan, as it was the previous government that implemented these changes. Credit is due to Erdoğan for keeping these policies in place. An argument can be made that this is helped by him being a right-wing populist, more focusing his hatred on the enemies outside of Turkey's border, rather than the establishment and all previous corrupt governments.

The gap graph mentioned above raises an interesting point for debate. In their study called "Populism: The Phenomenon", Dalio *et al.* (2017) thoroughly

classify populists and attempt to find the reasons for populism's latest resurgence across the world. A part of this study focuses on the reasons for the individual populist's election and the circumstances during which the elections took place. The three main conditions that are observed are whether the economy was weak at the time, whether the income inequality was high, and whether the country was is political paralysis. Except for Pierre Poujade from France, every populist on the list was elected while either of the first two conditions was true, most of them while the country had weak economy and high income inequality. Recep Tayyip Erdoğan's election can be added to the list, as the economic conditions were at their lowest at the point when he was campaigning.



((a)) Turkey 2003 ((b)) Gaps between observed and SCM

Figure 4.2: Turkey and its synthetic version

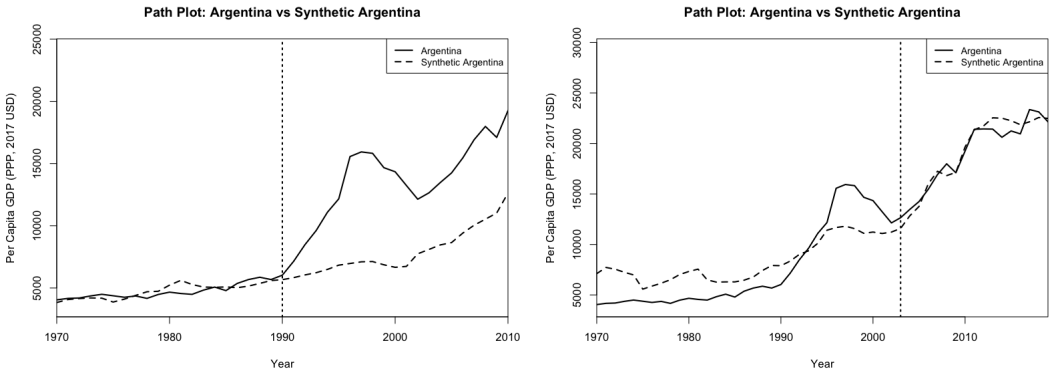
4.1.2 Countries with continuous populism

Another group that formed naturally were those countries in which two populist leaders were elected in a short period of time. The instances when the second populist was elected are Argentina in 2003, Ecuador in 2007 and Slovakia in 2006. If electing a populist leader has any effect, these countries will still be affected by the previous shock. This hinders our ability to assess the new shock correctly.

Argentina, 2003

First, let us examine the second iteration of Argentina. In Figure 4.3 we see the original SCM of Argentina on the left side and the 2003 version, trained on newer data, on the right side. Training the model on newer data clearly

helps narrow the gap between the real Argentina and its synthetic version. However, the unexpected "bump" during the latter part of the 1990s persists. This indicates that the exceptional growth was really specific to Argentina at the time. This may support the opposite of the author's hypothesis: a populist leader bringing unprecedented growth. Starting in 2003, we see no exceptional divergence from the synthetic version of Argentina, maybe except for the stagnation around 2011. At that time, the Kirchners still held power. The stagnant economy may have something to do with their populist policies, but for the purpose of this thesis we cannot say that their entering into office caused a significant shock.



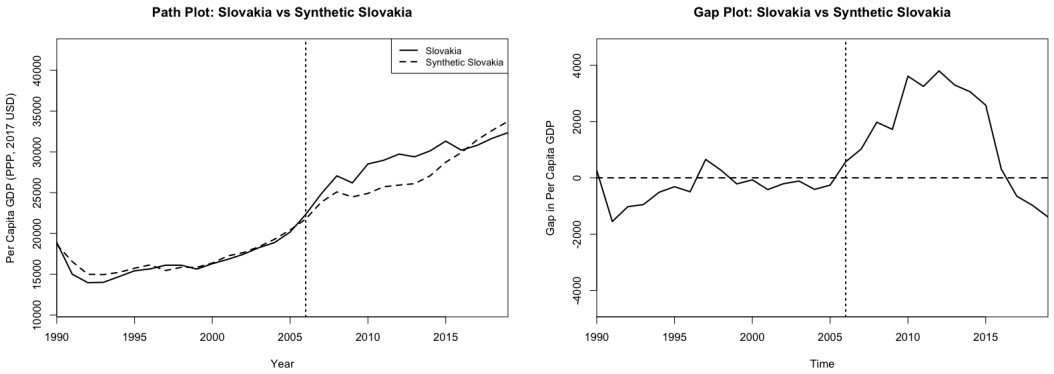
((a)) Argentina 1990 ((b)) Argentina 2003

Figure 4.3: Argentina 1990 compared to its 2003 version

Slovakia, 2006

Next, we examine Slovakia. Regrettably, the economic impact of Vladimír Mečiar's coming into office could not be modeled, as most of the data for Slovakia only begin in 1990. As a post-Soviet country gaining its independence, changing from a centrally planned economy to a free market one, one would expect a similar growth to the two Latin American countries analyzed above. The opposite is true for most of them. There was a period of short economic recession around 1990-1992, followed by steady growth, the slope of which is then dependent on each country. This trend applies to Slovakia, Czech Republic, Poland, Romania, Ukraine (in which the recession was much more significant and long-lasting), and even Serbia and Croatia (those two may have been also affected by the Yugoslav wars around that time).

Fortunately, we were able to model the situation when Robert Fico came



((a)) Slovakia 2006 ((b)) Gaps between observed and SCM

Figure 4.4: The SCM of Slovakia with effect in 2006

into power. The SCM graph for Slovakia can be seen in Figure 4.4. We will abstract from the gap formed in early 1990s, as the model did not have previous data. Thus, we cannot attribute any part of that gap to Mečiar's government. The path plot is very well fitting, most likely due to the similar evolution of GDP per capita in post-Soviet republics. In fact, the model puts 96.9% of weight on GDP per capita as the determining factor in building the SCM. Regarding the countries, the most influential is the Czech Republic with 45.15%, followed by Bulgaria (24.29%), Latvia (17.80%), and Hungary (12.55%). Austria, Germany, and Lithuania are insignificant.

Unlike the small gap in the first years of the graph, the gap opening around Orbán's coming into power is both significant and relevant. The positive change compared to the synthetic version of Slovakia increases to almost $4000 in 2012. However, in 2016 the GDP per capita is almost back at the level of the synthetic country and in the next year it drops below the synthetic version and seems to keep dropping. The growth effect also seems to start a year or two before Orbán takes power again, but a gap this small could just be a statistical error. It seems Orbán's reelection brought economic growth to Slovakia. He is classified as a left-wing populist.

Ecuador, 2007

Figure 4.5 shows the two models created for Ecuador, the last in the group of countries with recurring populists. Unlike in Argentina's case, in the latter model, the synthetic version of Ecuador stays very close to the original one,

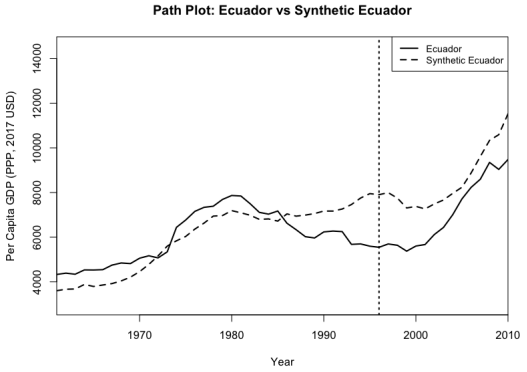
trained on older data. Both the path and gap plot of 2007 Ecuador look as if the original graph was moved by several years forward and prolonged.

Regarding the results: In the first two graphs, covering the election and short presidency if Abdalá Bucaram, Ecuador is already drastically behind its synthetic version. In the years following the election of Bucaram, the gap seems to close by a lot. While this could be attributed to Bucaram, it is worth noting that his term as president only lasted about half a year, until he was declared unfit for office due to the lack of mental capacity by Congress. The economic reforms proposed (and never implemented) by him also seemed quite unpopular. The last successful and modern economic reform are attributed to his predecessor, Sixto Durán. The improvement in economic growth may be caused by these reforms, rather than having anything to do with Bucaram.

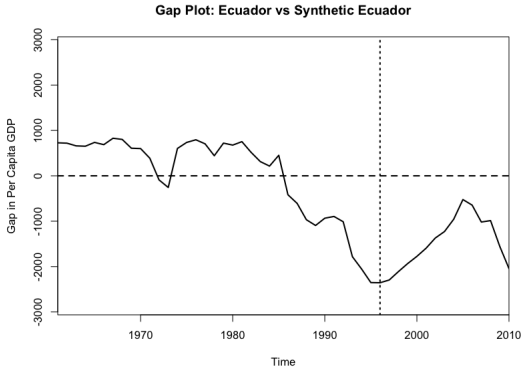
In 2007, the country is much closer to its synthetic version, having largely recovered from the economic problems during the 1980s and 1990s. However, after the election of Rafael Correa the economy seems to grow slower than predicted by the SCM, stopping to grow completely in 2014. Correa is a leftist populist. Before becoming president, he served a short stint as the minister of finance, during which one of his major acts was refusing to sign a free trade agreement with the USA. After taking the presidential seat, he was took a negative stance towards the World Bank and the IMF. He declared himself to be a socialist, which showed in the policies implemented by his government.

The gap between the real and synthetic Ecuador in 1985 to the mid-2000s is likely caused by the drop of oil prices in the 1980s, on which Ecuador is very dependent. Paired with earthquakes in 1987 that damaged the oil pipelines, stopping oil production for six months. As these are unpredictable effects, it makes sense that the synthetic control would not account for these, especially with the donor pool not including any major exporters of oil. In an attempt to close this gap, a second synthetic version was created for Ecuador, including other OPEC countries into the donor pool. Sadly, only Indonesia and Iran had sufficient data in the database for all necessary variables. The newly fitted models are shown in Figure 4.6.

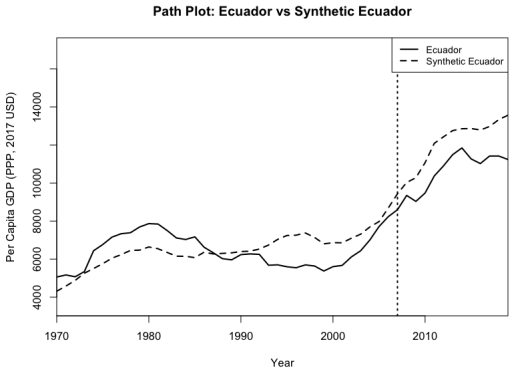
Inclusion of the OPEC countries seems to improve the historical fit, especially of the first model (1996). It also predicts the synthetic Ecuador to grow even faster than the old specification of the model. This does not carry to the second model, which stays almost the same as the original version.



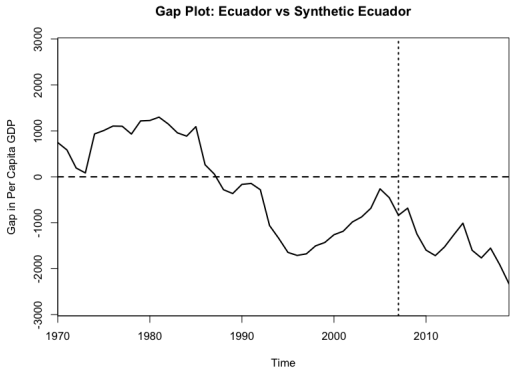
((a)) Ecuador 1996



((b)) Gaps between observed and SCM



((c)) Ecuador 2007



((d)) Gaps between observed and SCM

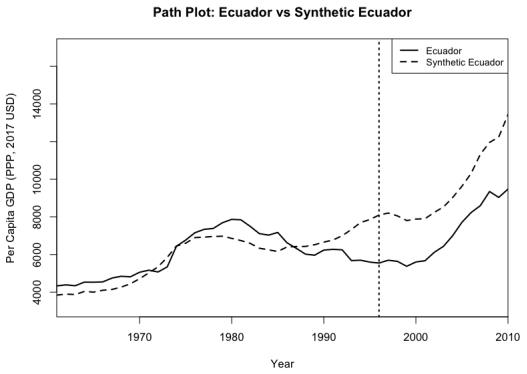
Figure 4.5: The SCM of Ecuador in 1996 and 2007

4.1.3 Steady economies

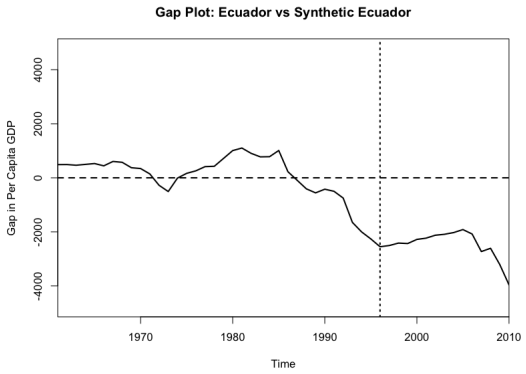
The last group consists of the countries with the best-fitting models prior to treatment. These are Hungary, Italy, Indonesia, Japan, Poland, and South Africa. The path plots of all these countries are in Figure **??**.

In the cases of Hungary, Indonesia, and Poland, the election of the populist did not have any significant impact on GDP growth. If there were some short-term differences, these aligned with the SCM very shortly afterwards. The case for Indonesia is difficult, as the election is close to the last year of the dataset. This leaves 2014 to 2019 for the populist's policies to take effect. From the short sample that we have we see no divergence from the path predicted by the SCM. In these three cases, we can argue that the treatment had almost no effect on the treated unit.

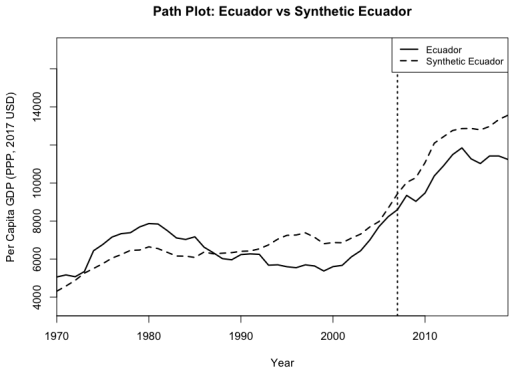
Italy, Japan, and South Africa all see a decline in GDP per capita compared to their controls. For Italy and Japan, these declines mostly begin about 6 to 8 years after treatment. In the case of South Africa, the fit of the model is not



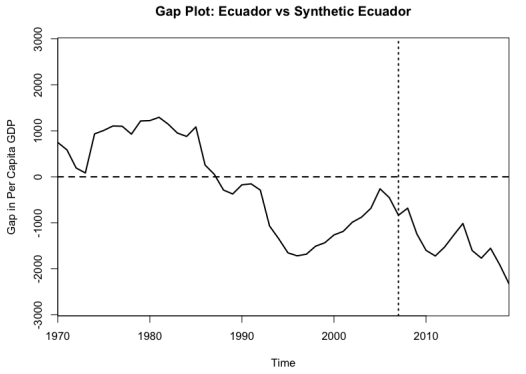
((a)) Ecuador 1996



((b)) Gaps between observed and SCM



((c)) Ecuador 2007



((d)) Gaps between observed and SCM

Figure 4.6: The SCM of Ecuador in 1996 and 2007, OPEC countries included in donor pool

perfect to begin with. It then does not follow the SCM in its upward trend, which may have been forecast based on one or more of the controls used for its creation without being the best possible fit. Nevertheless, the gap between real South Africa and its control stabilizes in the last few years. We argue that in Italy and Japan, the reason for these slower-growing economies may be populist leaders.

Bad fits

The only country where the synthetic version and the real version never meet is Bolivia. This is most likely due to the donor pool not being similar enough. The author tries to fix this issue by including more countries from central America and some developed countries, but the graph was not improved. This takes Bolivia out of the valid SCMs created for this thesis regarding the economic growth.

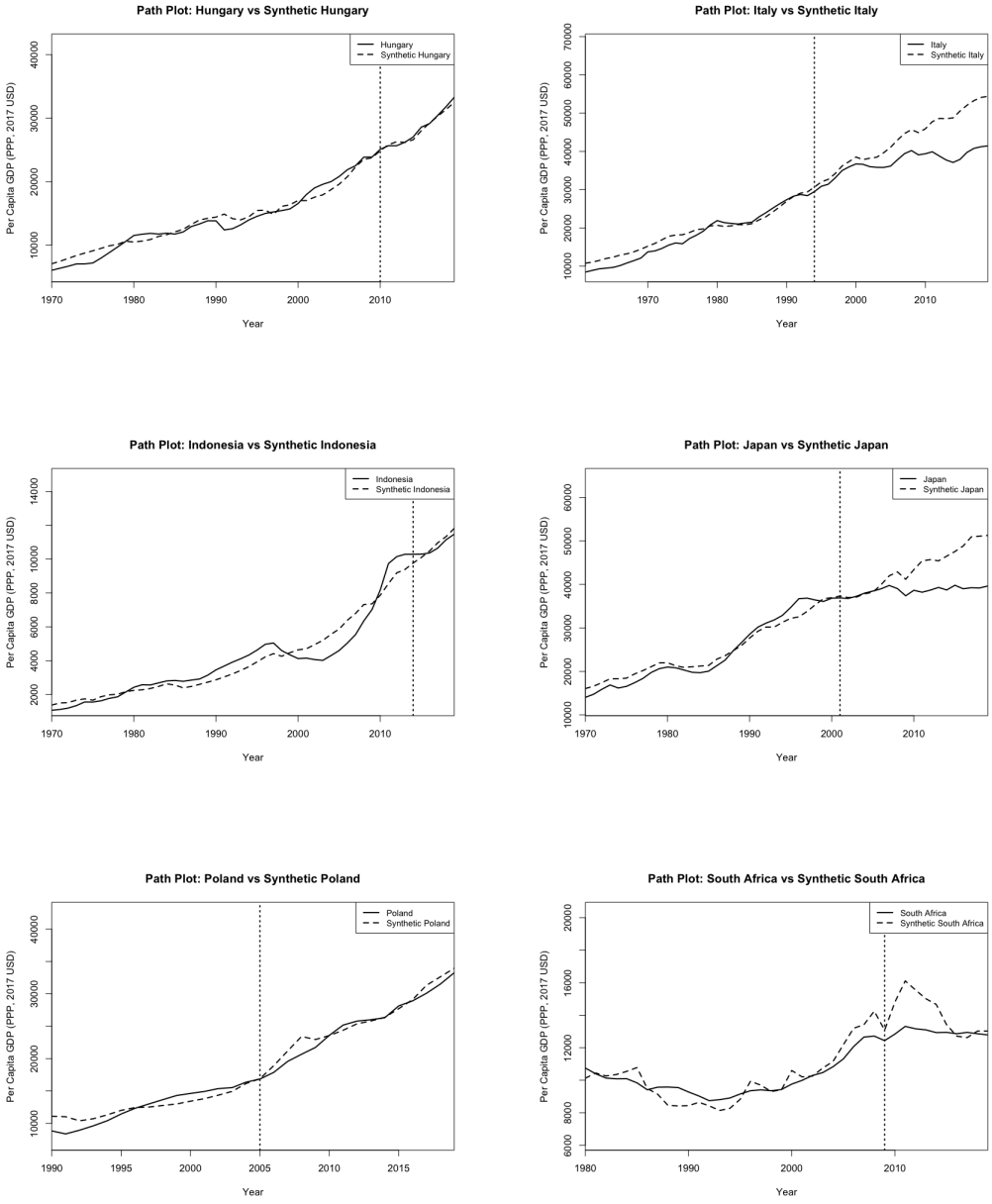


Figure 4.7: Path plots of the steady economies

Venezuela is on this list because of its GDP per capita measurement. Per most sources, the worst the situation was in Venezuela was between 2002-2003, which is approved by the military coup in 2002 and oil strike in 2002-2003 Bull & Rosales (2020). The data on GDP per capita taken from the Penn World tables show that the GDP rose until 2012, dropping significantly from 2014 and further. While it is a clear example of a populist mismanagement of a country, it would not be appropriate to include Venezuela further, as it would show an 11 year long prosperity phase, which it did not have.

4.1.4 Average gaps

The majority of SCM studies focus on one country, county, or other political or geological entity. Thus, they rarely deal with quantifying the effects of many different SCM models. Due to this thesis being more quantity-oriented, a need arises for this quantification.

The author attempted to put all the calculated gaps together in order to create an average gap between real GDP per capita and the synthetic versions. The problem with this approach is the different years during which the populist enters the government for each of the models. This was solved by calculating the years after the event, rather than focusing on the true timeline.Figure 4.8 shows all the gaps together. A limit of 12 years after the treatment was included, as most countries do not have longer continuation in the SCM model, and the average gaps later become skewed by a few observations. There will be differences arising from different timelines. These differences may be caused by unpredictable shocks into the economy, such as wars or economic crises (the global economic crisis of 2008-2009 for example).

The graph shows a slightly lagged response. Contrary to the hypothesis, the impact is then strictly positive between years 3-8, abstaining from the initial gap, which will be discussed later. After this period of growth, the average economy stops growing, and the synthetic country outperforms the real one by almost the same amount as the initial gap by year 11 after treatment.

It is good to measure the average impact of populists, but one of the goals of this thesis is to highlight the differences between impacts caused by populists based on them being left-wing or right-wing. To achieve this, separate averages are calculated for each of the two groups, with the same restriction of 12 years after treatment applied. The average impact of left-wing populists can be seen in Figure **??**. The right-wing counterpart to this graph is in Figure 4.10.

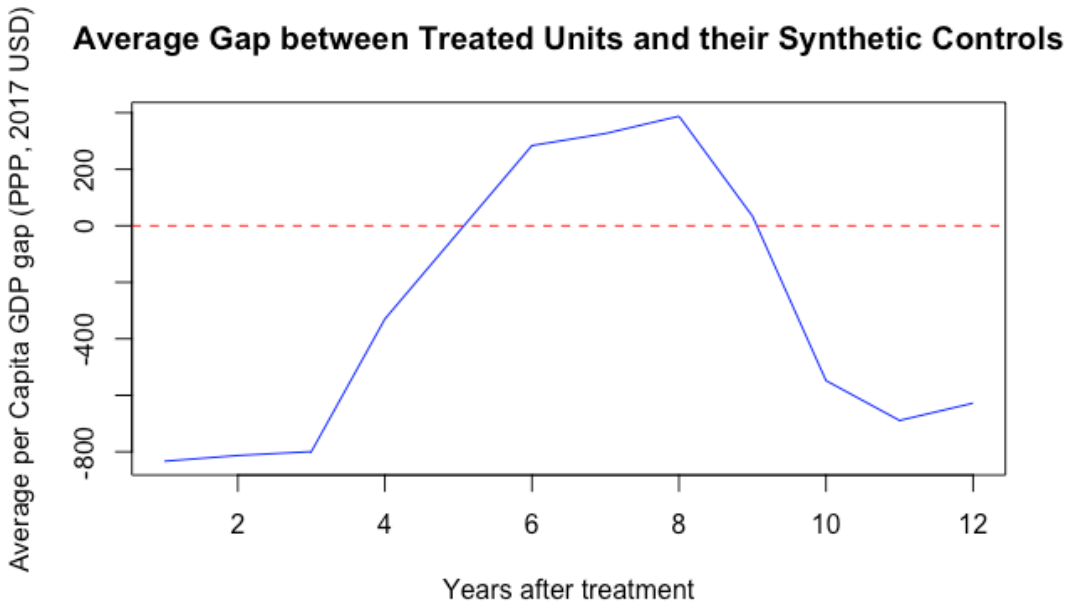


Figure 4.8: The average gap between real and synthetic countries in the years following treatment

Both these graphs follow a similar path as the one with all countries included. However, there are some differences. First, the impact of right-wing populists is strongly positive at first and decreases after 11 years, yet not to the level of the initial gap. The countries led by left-wing populists see a minimal increase in GDP per capita compared to the control, but drop after the initial positive period even more than the right-wing ones. This makes the impact of left-wing populists much worse.

As discussed, there were some issues with this averaging approach. First of all, every model that is ill fitted, specifically those models where the synthetic version is not close to the real country at the moment of treatment, creates a starting gap. In Figure 4.8, these ill-fitting models create an initial gap of more than $800. To battle this issue, three iterations of the model were excluded. Namely, these are the SCMs of Bolivia, Ecuador (1996 treatment), and Venezuela. In total, there are 12 iterations of the model remaining. The calculated average gaps, excluding these countries, can be seen in Figure 4.11. The same was done for the average gaps in left-wing and right-wing populist-led countries. These effects, cleaned of most of the initial gaps, are displayed together in Figure 4.12.

From these graphs, we still see mostly the same results. An initial period of faster growth approximately 3-4 years after treatment, followed by a short but fast decrease compared to the control. The assessment of impacts of left- and

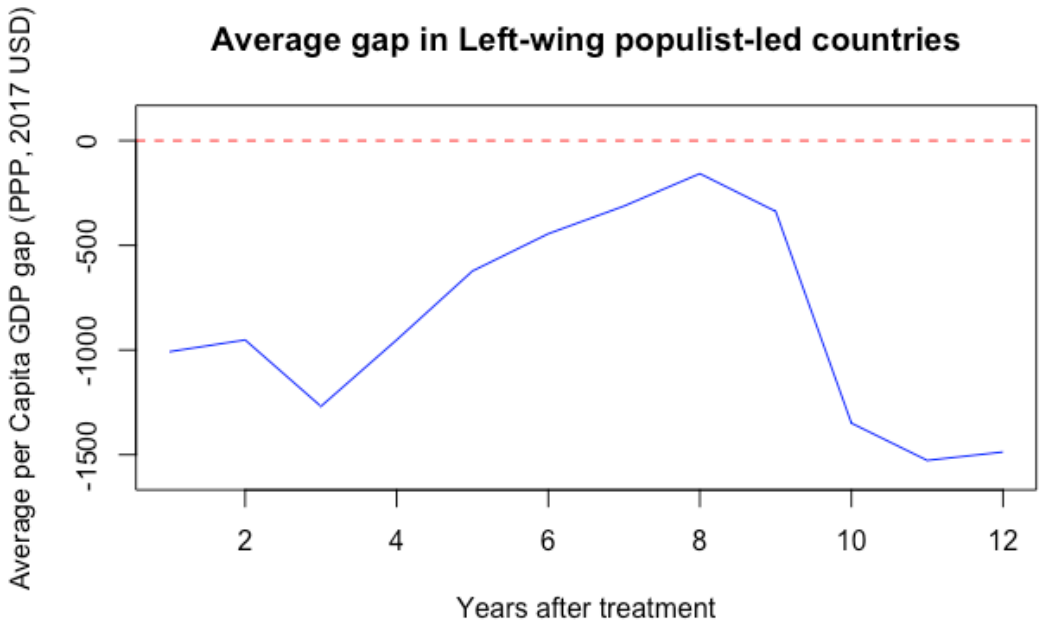


Figure 4.9: Average impact of electing a left-wing populist

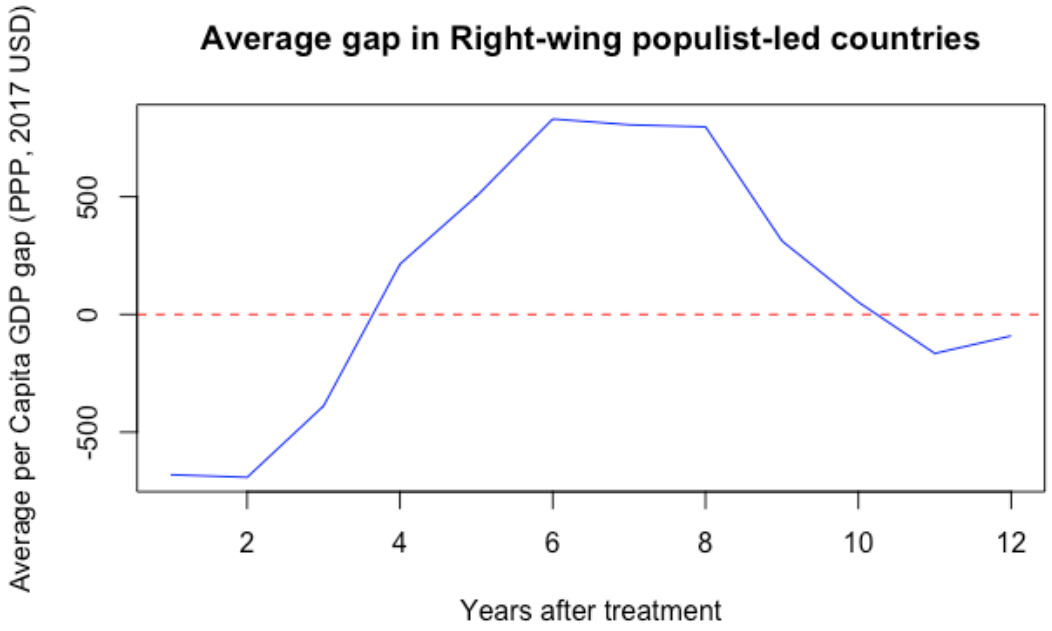


Figure 4.10: Average impact of electing a left-wing populist

right-wing populists stays the same as before, even with lowering the initial gaps and excluding ill-fitting countries.

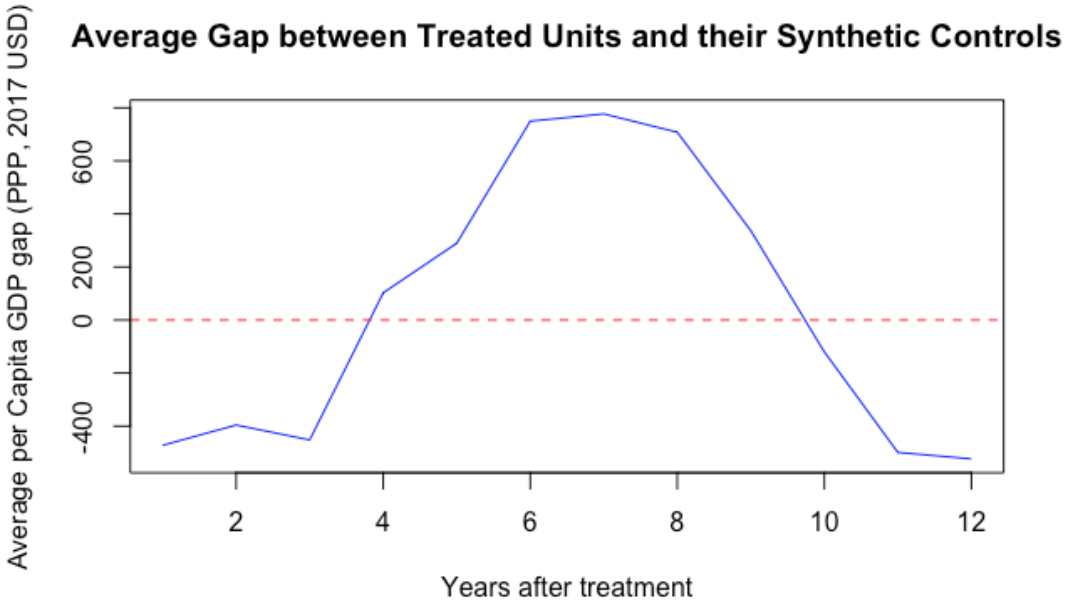


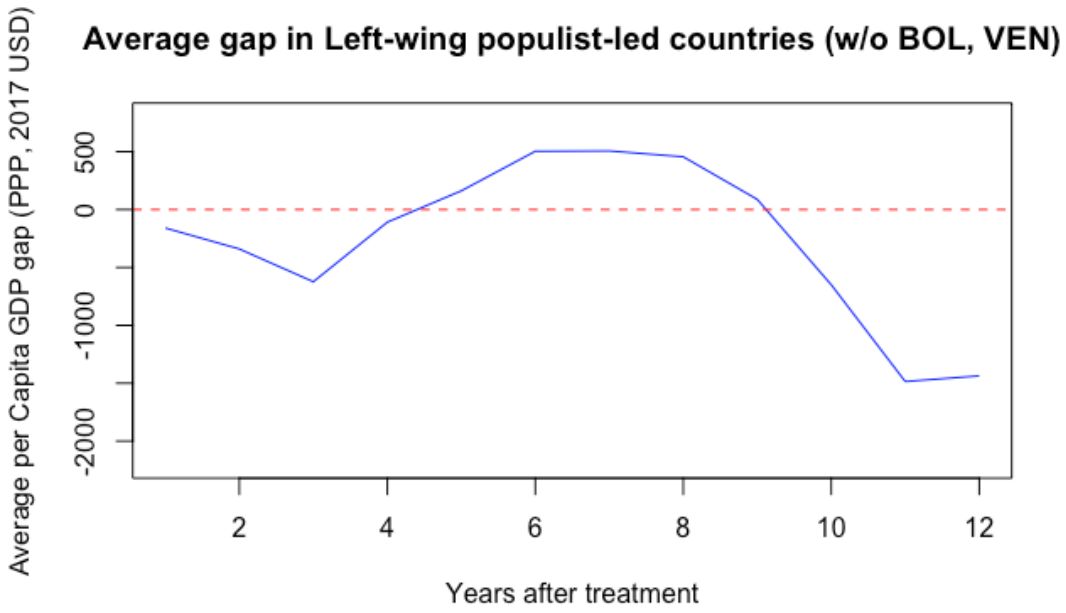
Figure 4.11: The average gap between real and synthetic countries in the years following treatment, restricted

4.1.5 Unused countries

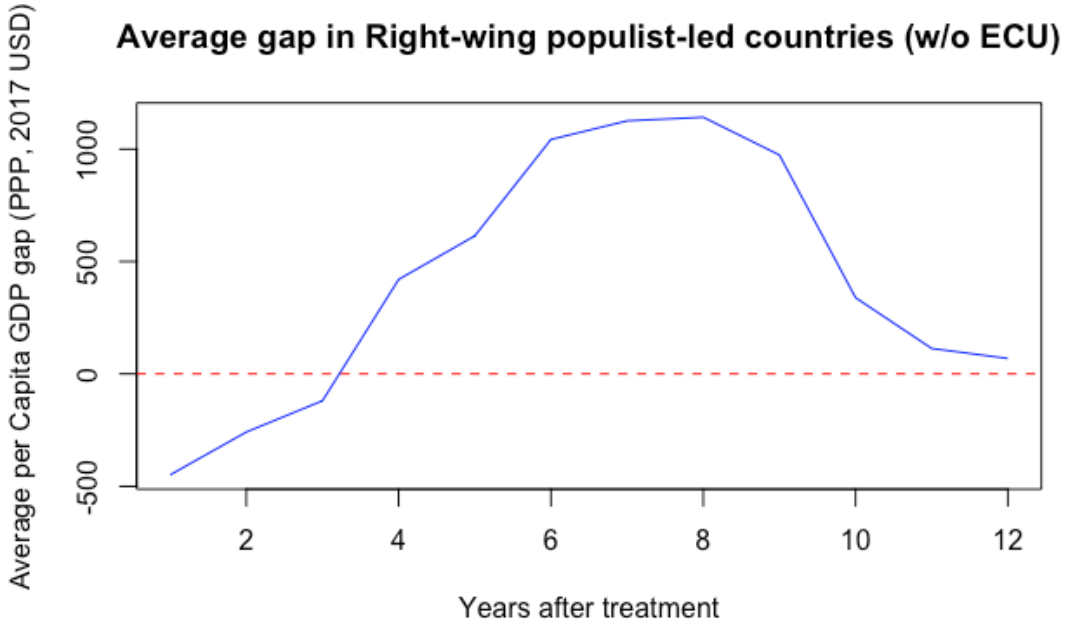
Greece was one of the first two countries chosen for this topic, together with Hungary, both based on the study by Pappas (2014). Using the data provided by Abadie *et al.* (2015), the author was able to create a synthetic version of Greece. The gap between the real Greece and its synthetic version is shown in Figure 4.13. The dataset used in this thesis does not include all the relevant data needed for replicating this model.

Another model which we were unable to create was New Zealand for the same reasons. A synthetic version of it was created using the same data as the one for Greece. The path plot of New Zealand can be seen in the same figure.

Both these graphs show a large difference in GDP per capita 5-10 years after the treatment. The synthetic versions also follow the real countries better in the pre-treatment years. The author assumes three possible reasons for this. The dataset of Abadie *et al.* (2015) is more complete than the one used in this thesis, especially with some of the independent variables. The second reason could be that these synthetic countries were created from the whole sample of OECD countries, with an unrestricted donor pool. However, when we try to restrict the donor pool to better reflect the one based on our previous analysis and mentioned in Chapter 3, the pre-intervention synthetic controls are still very close to the real GDPs. The third reason could be that both of the



((a)) Left-wing



((b)) Right-wing

Figure 4.12: Average impact of electing a left-wing and right-wing populist with restricted donor pool

countries in question are well-developed countries without large shocks in the observed period. Italy and Japan also had very similar pre-intervention SCMs.

The last on the list of models for which this thesis did not have enough data is Slovakia in 1990. The country was just established, and there is not enough data available for the Slovak part of Czechoslovakia. The data from Abadie

et al. (2015) also do not contain data on Slovakia.

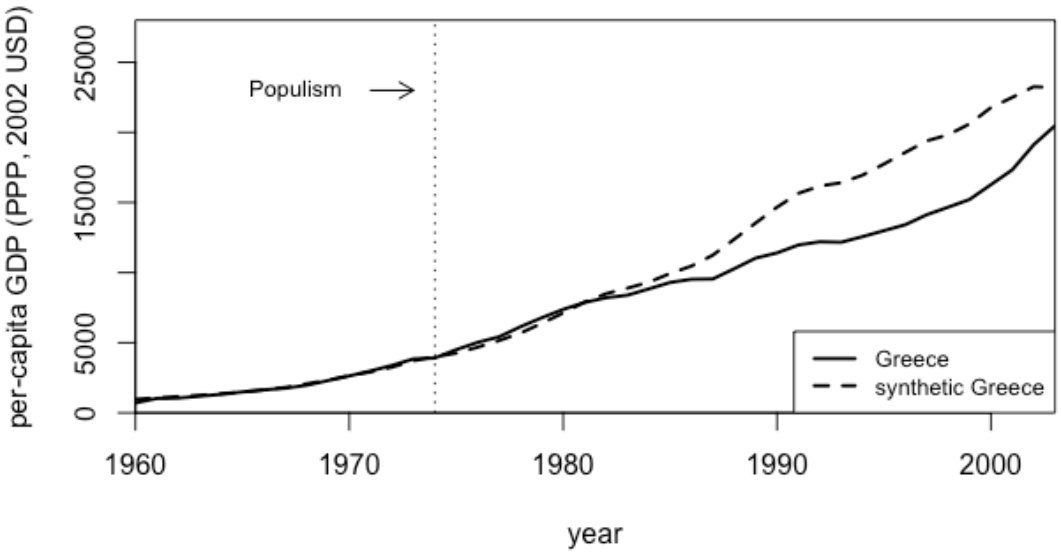


Figure 4.13: The SCM of Greece on data by Abadie *et al.* (2015)

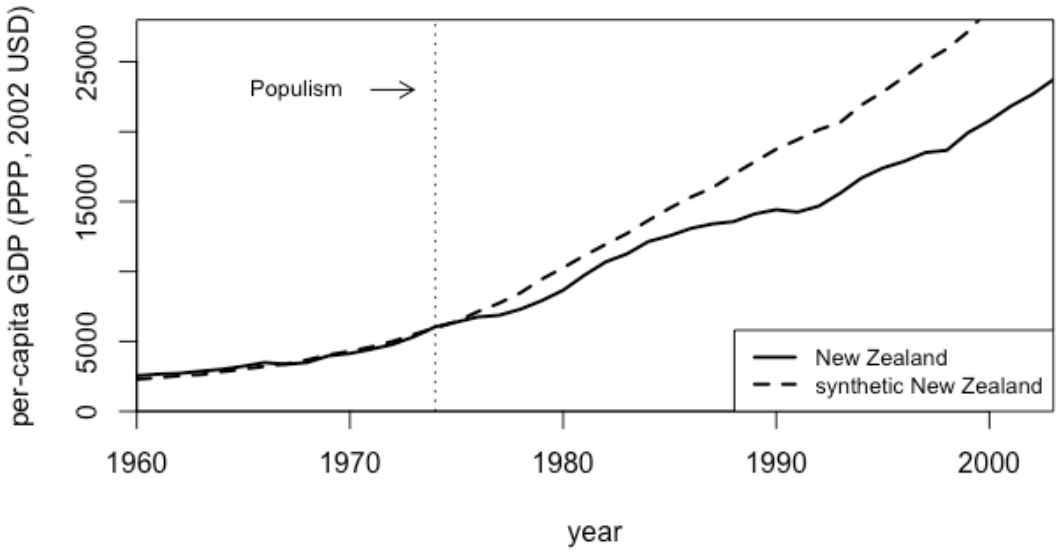


Figure 4.14: The SCM of Greece and New Zealand on data by Abadie *et al.* (2015)

4.2 Hypothesis 2 - Inequality

Without going into too much detail on each of the affected countries, the average differences in income inequality are created. The method is the same as for the case of economic growth measurement, the average gaps are computed for all the countries, as well as for both populist groups. The graph containing the

average gaps for all countries together is shown in Figure 4.15. The averages for left- and right-wing populists are in Figure 4.16.

The graph showing all countries follows an up-and-down path, that averages on a similar GINI coefficient as it started at, mostly decreasing in the first 10 years. This is somewhat of a similar result to the GDP per capita averages but with the opposite effect. A more interesting part of these averages is shown when we divide them between left- and right-wing effects.

Left-wing populists seem to be, on average, decreasing the GINI coefficient in the observed time frame. The decrease is of approximately 3%, which is significant. This is in line with their rhetoric and pre-campaign promises and rejects the null hypothesis of populists widening the income gaps in their countries.

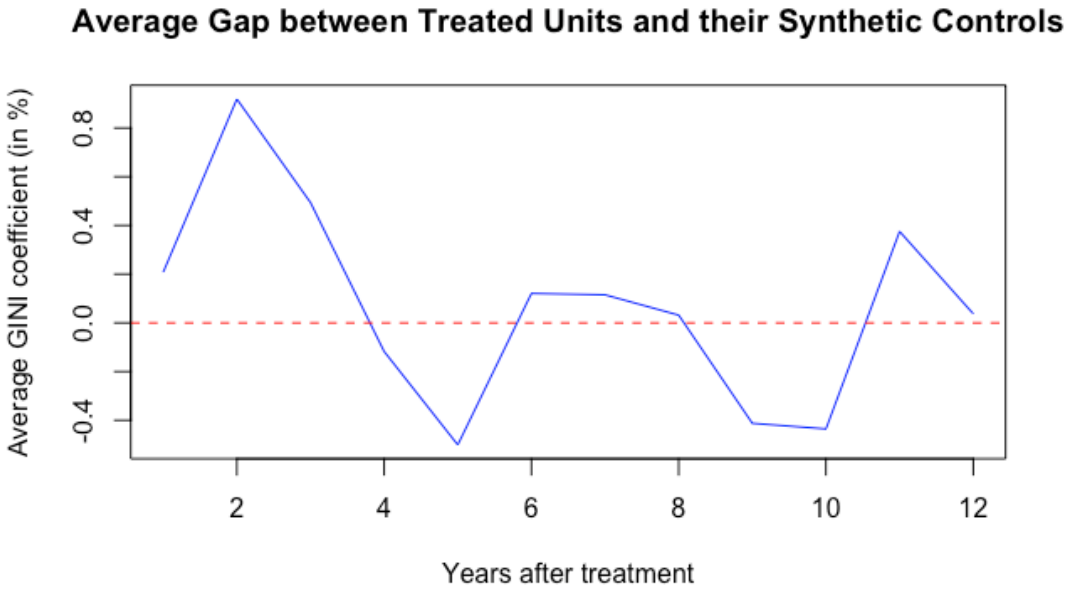
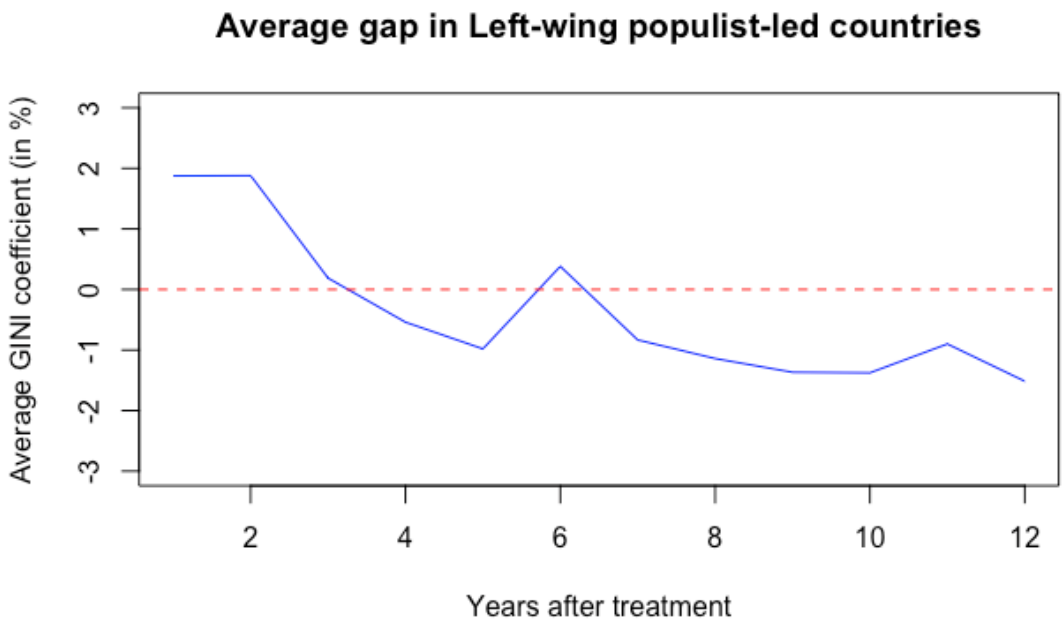


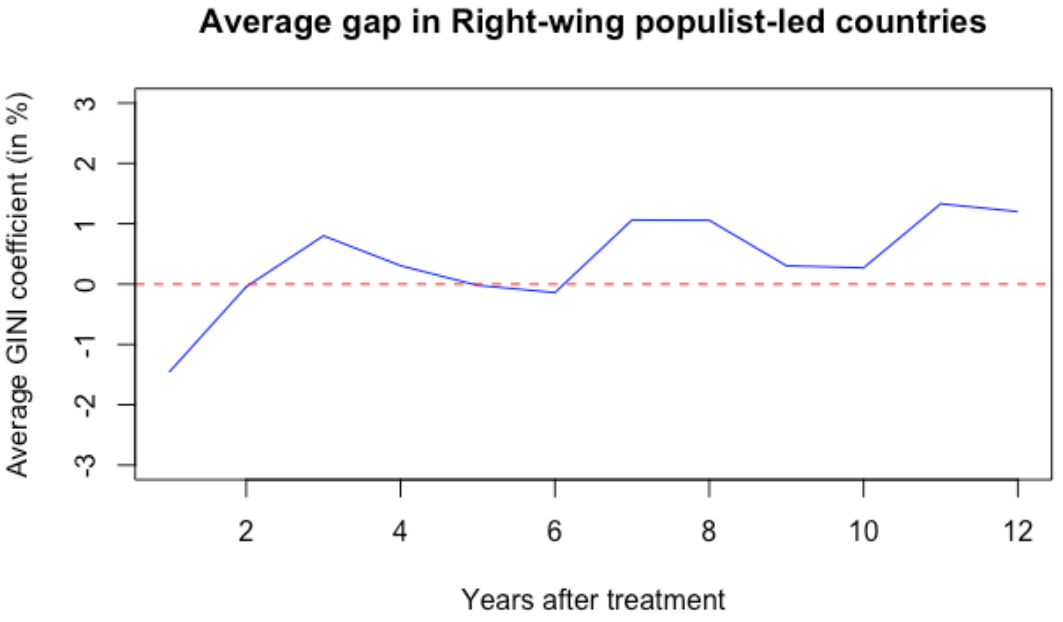
Figure 4.15: Average impact on income inequality, all countries

When averaged, the effect caused by left-wing populists is counteracted by right-wing ones. These populists increase the GINI coefficient by nearly the same amount as the left-wing populists decrease it by. We note that these are only averages, for example, the GINI coefficient has been decreasing since 2005 when Kaczyński took power, which was not predicted by the SCM. Both graphs supporting this claim can be found in Appendix A.

The author would like to note that many of the SCM models created for measuring income inequality are somewhat skewed at the time of treatment. As there are many of these gaps, the models are not omitted from the averages



((a)) Left-wing



((b)) Right-wing

Figure 4.16: Average impact on income inequality

like during testing of the previous hypothesis. The overall averages still seem to be relevant for drawing conclusions.

4.3 Hypothesis 3 - Investor confidence

The same approach was applied for the third hypothesis. Average impacts are calculated for all countries and then the two groups. The averages are shown in the same fashion as before, the average gaps calculated based on all SCMs are in Figure 4.17. Those created from only left-wing or right-wing populist cases are shown in Figure 4.18.

We start with the impact made by left-wing populists. The average seems to point towards them lowering the foreign direct investments going to their countries, but only by 1% of GDP. The impact of right-wing populists seems to be almost nonexistent. There are jumps around 9-11 years after treatment, but these may be one-off events caused by one of the countries in the sample. The overall level of investor confidence seems to decrease be a little, but more robust tests would have to be performed for us to be confident in these findings. For the purpose of this thesis, the third null hypothesis is not rejected, as populists seem to be affecting investor confidence in a bad way, if only slightly.

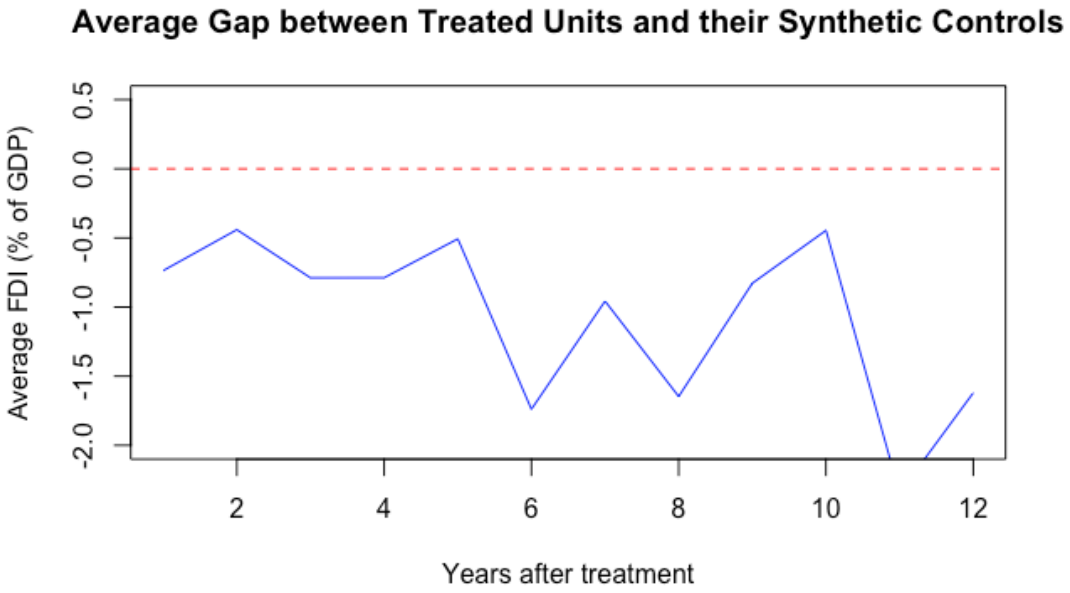
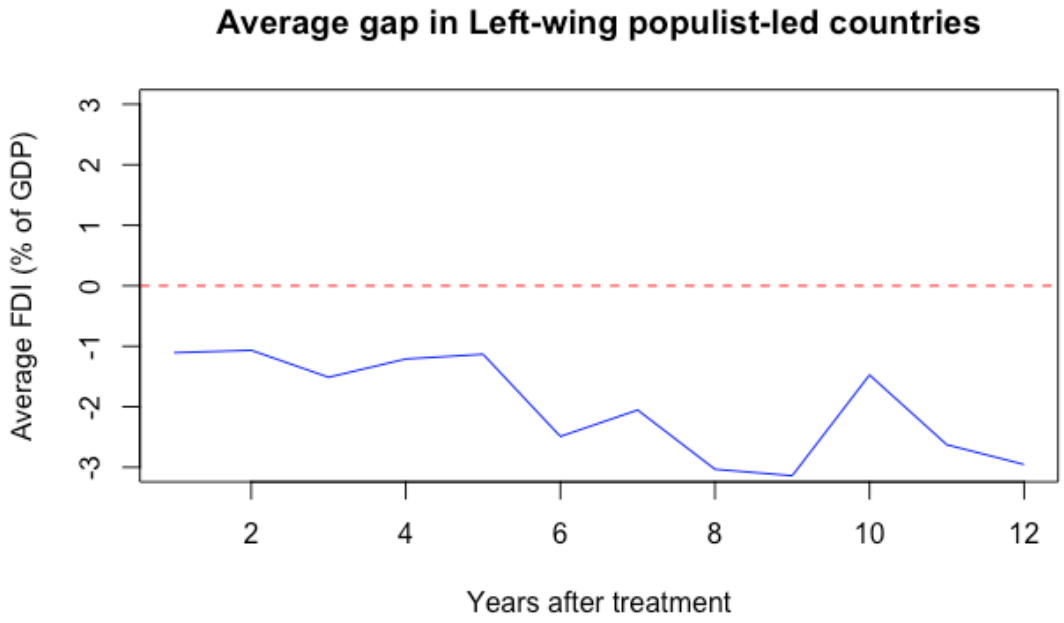
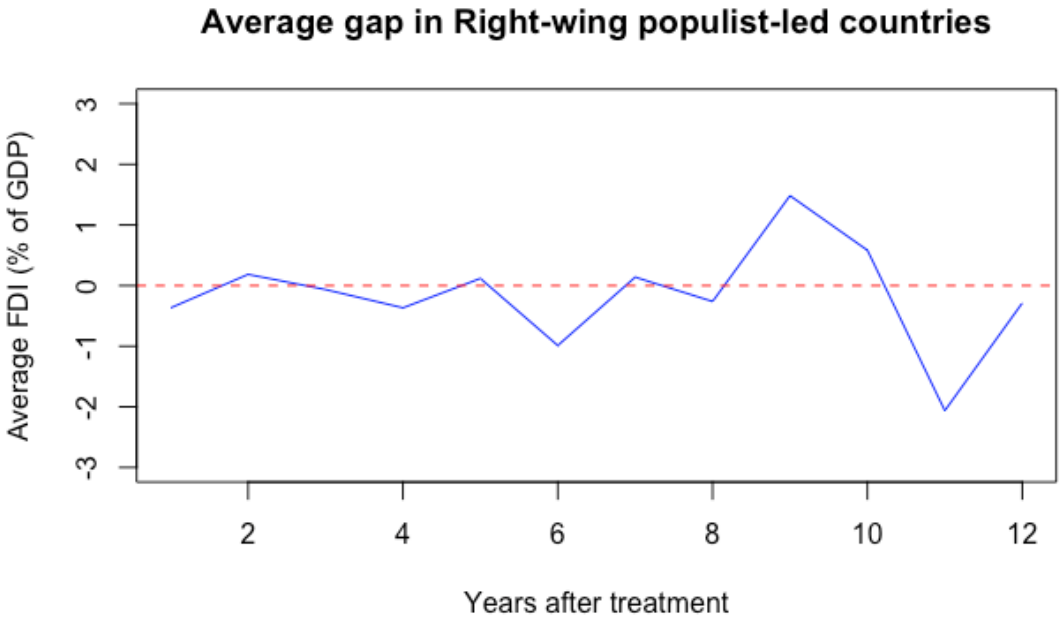


Figure 4.17: Average impact on investor confidence, all countries

The countries included in these averages were once again restricted, namely by Ecuador (2007) and Indonesia on the left-wing populist spectrum and by Japan and Hungary on the right. The initial gaps between the synthetic countries and their real counterparts were too large and made inferences about the data quite difficult. These SCM models also had quite bad fits.



((a)) Left-wing



((b)) Right-wing

Figure 4.18: Average impact on investor confidence

4.4 Robustness checks

Each of the models created for this thesis takes a certain weight of each of the countries provided from the donor pool. Originally, the robustness checks performed by Abadie *et al.* (2015) include mainly finding the countries that create the synthetic country and then taking the least influential countries out

of the donor pool. In their case, they started with five and went all the way to making the SCM based only on one country. In this case, robustness checks were performed in the opposite way for certain countries. When including developed countries in the donor pool for Argentina and Brazil, these developed countries did not make any significant difference in the created SCMs. In the other cases, robustness checks were not made for all countries. This is partially due to some of the models being ill-fitting. This approach to selecting the donor pools by hand does seem to lower the model fit. A secondary reason is that researchers using SCM draw inferences from one model that is specified for one purpose. This thesis tries to work with inference through quantity.

All initially created[2] path and gaps plots can be found in Appendix A.

[2]Not including the additionally created graphs, i.e. Ecuador and Venezuela with OPEC countries.

Chapter 5

Findings and Discussion

First, the author would like to comment briefly on the selection process of control units for the synthetic control method. The general agreement in the research community seems to be that it is better to provide a large dataset and let the SCM "choose" its own control units based on similarity of predictors. This approach without a doubt leads to better specified models. One of the aims of this thesis was to find out whether handpicking a smaller number of control units would be a viable, maybe even better, option. This approach aims to create more accurate synthetic countries, rather than basing the future GDP per capita of a landlocked European country on Asian island nations, just because their GDP per capita grew similarly fast over the observed period. The author is aware that his choice of countries based on proximity, historic connections, and ties to the same organizations (e.g., OPEC countries) is not perfect and not thorough enough. The author was unable to find a study that attempted to compare these two approaches to the SCM. For the sake of simplicity and statistical accuracy, the more commonly used process may be superior. A good practice could be partially limiting the donor pool from countries that are completely different, especially if the model specification and its variables are quite vague. On the other hand, a study like the one performed by Abadie *et al.* (2010) could have a data set as large as the authors could find, since smoking cigarettes is a worldwide phenomenon.

Another point for a debate is the changing of left- and right- wing populists, if two or more populists are elected shortly one after the other. This can be clearly seen from Figure 3.1 in 3, and from the fact that all such countries used in this thesis follow this exact path. Whether these changes are brought about by economic policies, social issues, or for a different reason may be an

interesting topic to follow further.

Many of the populists in this thesis were voted into office during the time of economic crisis. While Dalio *et al.* (2017) create a solid historical database with detailed economic activity at the time, the topic could be explored on more recent data. This theory is validated by the initial gaps between real and synthetic countries. Especially in the case of GDP per capita, the initial gaps could be showing the desperate states of economies in their respective countries. The gaps are evident especially in Figure 4.8. It would be fascinating to investigate whether the same principles apply or whether we have entered a more severe populist crisis which is no longer mainly driven by economic crises. Given the recent rise of populist figures in European politics, without the EU or most of its members being in economic peril, the question arises: What are the leading factors for this trend? Without completing any substantial research on this topic, the author hypothesizes that the reasons may be at least twofold. The number of immigrants entering the EU in the last 30 years has increased significantly from its previous levels. This may spark some nationalist tendencies. Another reason could be the emergence of social media. The traditional media has always played a crucial role of moderating politicians in their rhetoric and correcting false arguments and blatant lies. Without this moderating device, politicians have free rule over what the current truth is, as most people will not find the time to research if what they are saying is the truth, or will trust the politician implicitly. A perfect example is Donald Trump's own social media, Truth Social. On this platform, he is free to say whatever he wants, and there is no person who can stop him, or even moderate anything he says. The fact that this is becoming the norm is quite alarming.

Former works have researched the immediate impact of populists' coming into office. From the research done in this thesis, the long-term impacts of a populist rule could be even more interesting topic for research. As evident from the cases of Argentina, Brazil, Ecuador, Slovakia, and Venezuela (and a case could be made for including other countries), there are evident positive impacts on GDP per capita in the short term, but these growth spells end abruptly and the GDP returns to the predicted level, or even dips below what the synthetic country achieves in a long run. These short- and long-term impacts should be individually inspected. What are the reasons for the immediate jump in economic growth and why does it stop after 5-10 years?

While the average impact of populists on GDP growth seems to be positive in the first years, many of these cases can be explained by other phenomena in

the economies of the respective countries. It would be counterproductive and detrimental to this thesis to simply exclude all of the populists that ruled while other factors were taking place. Incorporating the other reasons is the job of the SCM. This function is, of course, hindered by the restricted donor pool and country-specific events.

The populists' impact on income inequality seems to be mostly in line with the general image of left-wing and right-wing populists. Those who are against the "rich elite" push forward laws that help the lower classes, while the often more pro-business right-wing populists may do the exact opposite.

The right-wing populists making almost no impact on investor confidence is an interesting outcome. An explanation of this could be that investors know that a populist is in charge, but this detriment is offset by the probability that such politician will make pro-business choices in their economic policies. The left-wing populists seem to lower investor confidence by a little bit. The overall effect is then slightly detrimental to the observed country's economy.

Chapter 6

Conclusion

This thesis uses the synthetic control method to find whether and how electing a populist changes the economic situation of a country. There were 18 such situations selected across 15 countries, which were then analyzed using the SCM and data from multiple resources. The thesis also distinguishes between left-wing and right-wing populists in order to find out whether their impacts on the economy differ.

The three hypotheses of this thesis were the following:

1. A populist taking office will be detrimental to the country's economic growth,

2. Inequality would rise,

3. Foreign investor confidence would be lower than before.

In the short run, we reject the first null hypothesis. On average, populists seem to have a positive impact on economic growth in their country. After approximately 8 years, this growth slows significantly, and the country's GDP per capita returns to its formerly predicted values. When differentiating between left- and right-wing populists, there is a large difference. Even when controlling for outliers, the positive impact of left-wing populists on the economic growth is significantly smaller, and, more importantly, when the economic growth slows, the countries start under performing their synthetic versions. The impact of right-wing populists is much more straightforward. After their election, the economy rapidly outgrows its synthetic version. This growth tops out after 6 years and then the country's GDP per capita is slowly normalized to its predicted level (but not below). It should be noted that most of this average growth is achieved by two countries in the sample.

When we take populist leaders as a homogeneous group, we reject the second hypothesis as well. There is no significant impact of populists on income inequality. However, when we differentiate between the groups, we see that the left-wing populists improve the Gini coefficient by a few percent, while the other group does the opposite. This results in almost zero net difference.

The impact of populist leaders on investor confidence seems to be almost nonexistent. The third hypothesis cannot be rejected, as the left-wing populists seem to lower foreign direct investment by a little, while their right-wing counterparts do not make any difference.

We use a smaller amount of control countries for estimating the SCM, which goes against the more commonly used techniques. This may be the cause of some models being ill-fitted to the SCM and possibly detrimental to the results of this research. It is outside of the scope of this thesis to include all possible reasons for the individual countries' divergence from the path estimated by the SCM. The author also acknowledges that computing average differences that populists create with such a small amount of treated units may be misleading, as the number of observations is not high enough for us to be able to draw concrete conclusions.

As stated in the Introduction, the economic impact of democracy on the economy (and similar topics) have been the interest of the author before. In the future, the author would like to focus on some of the topics discussed in Chapter 5, preferably a more in-depth analysis of one subject at a time.

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Appendix A

All initial SCM graphs

Every pair of graphs is included in the same format: The path plot on the left and the gaps plot on the right. For each of the treatments the GDP per capita graph is put in first, followed by the GINI graphs and then the FDI graphs.

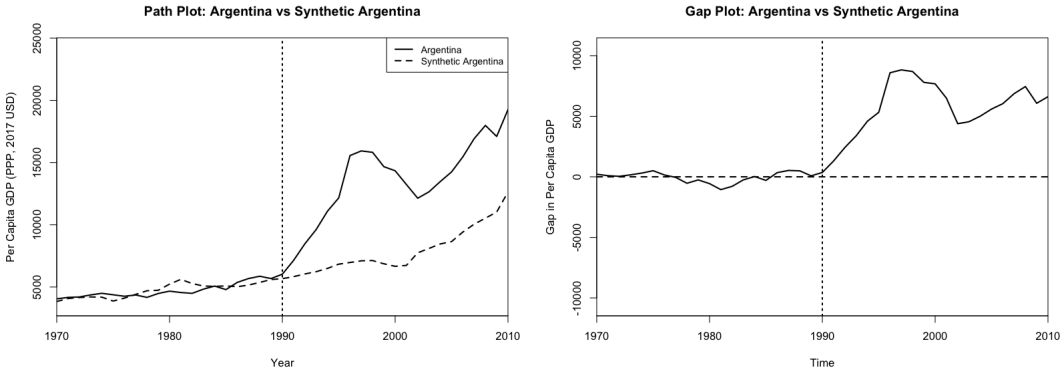

Figure A.1: Argentina 1990, GDP

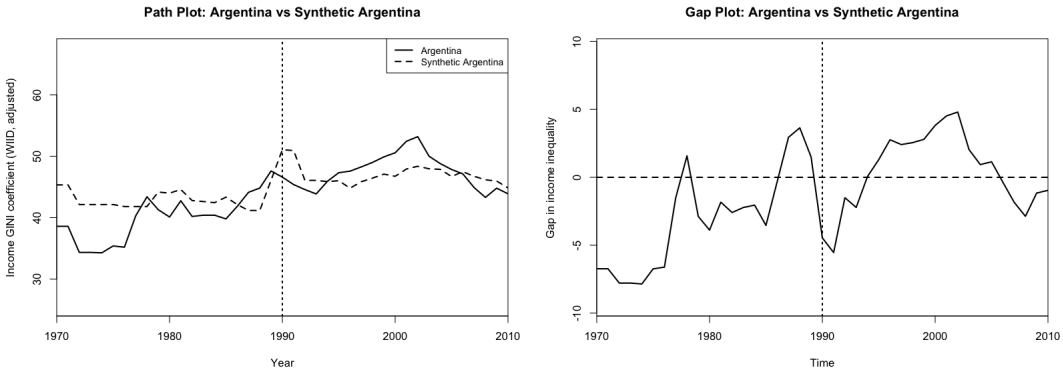

Figure A.2: Argentina 1990, Inequality

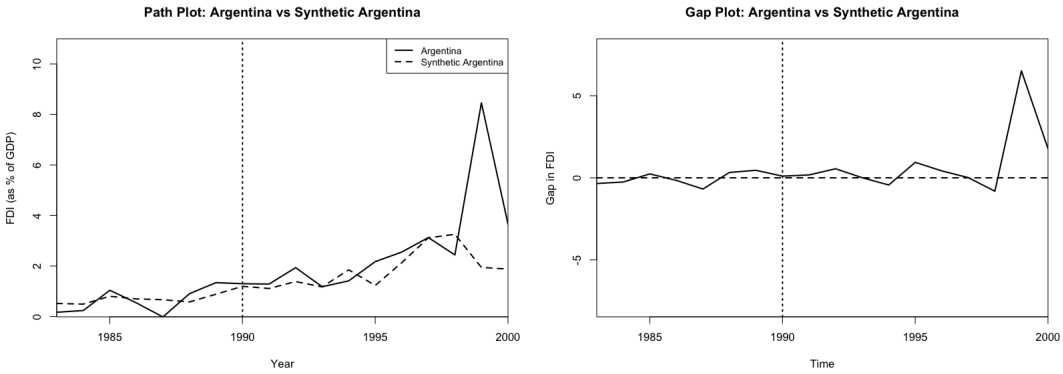

Figure A.3: Argentina 1990, Investor confidence

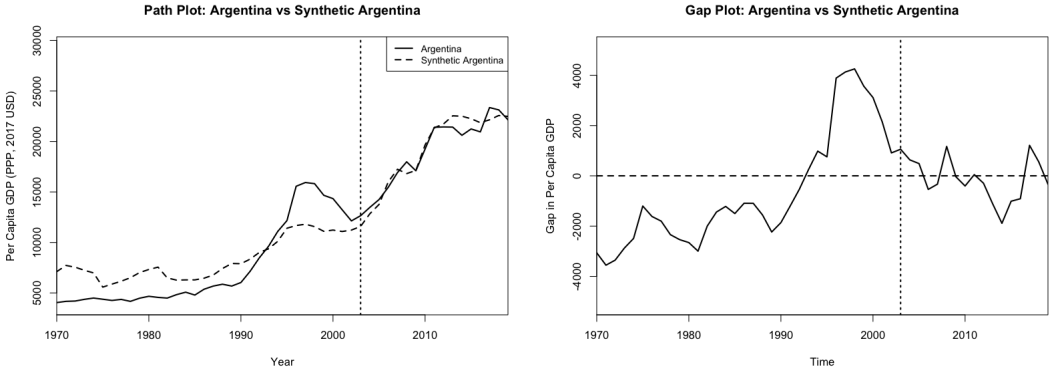

Figure A.4: Argentina 2003, GDP

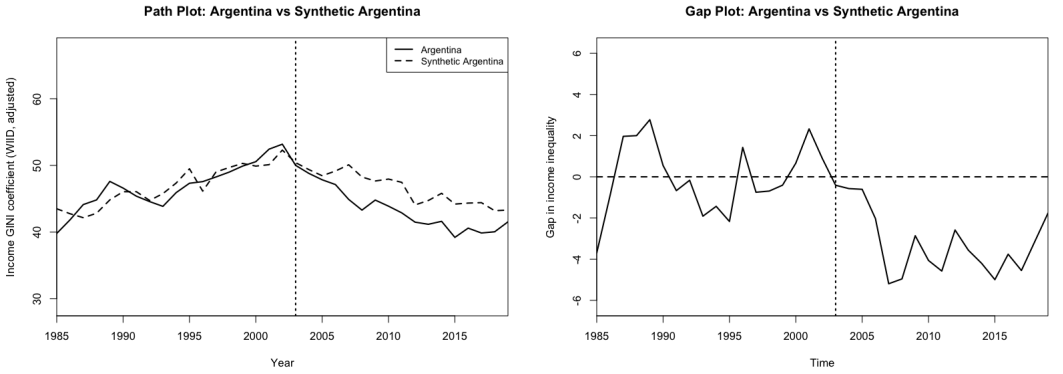

Figure A.5: Argentina 2003, Inequality

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[1]Brazil does not have sufficient data for the FDI model to be created.

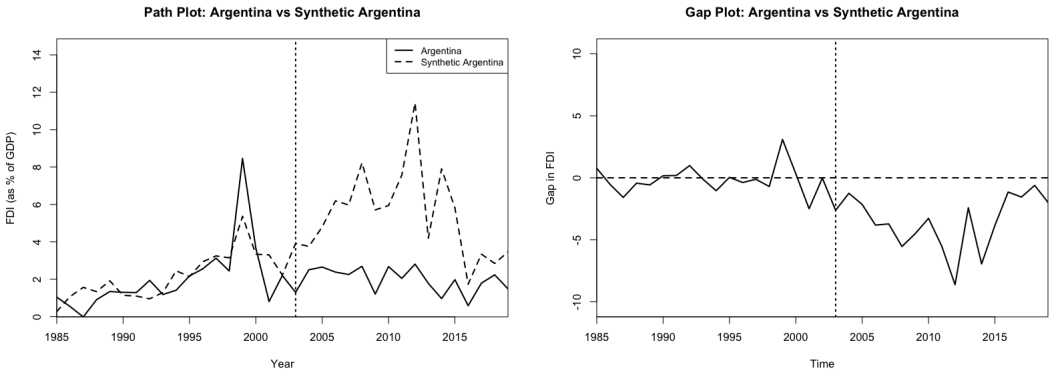

Figure A.6: Argentina 2003, Investor confidence

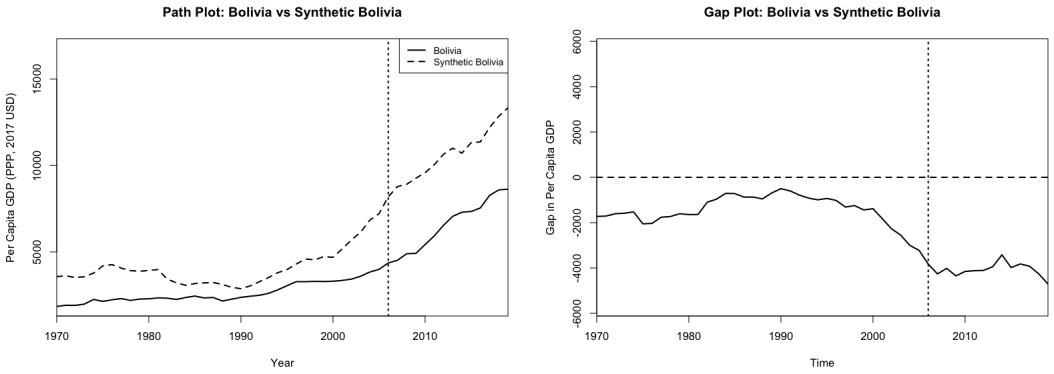

Figure A.7: Bolivia 2006, GDP

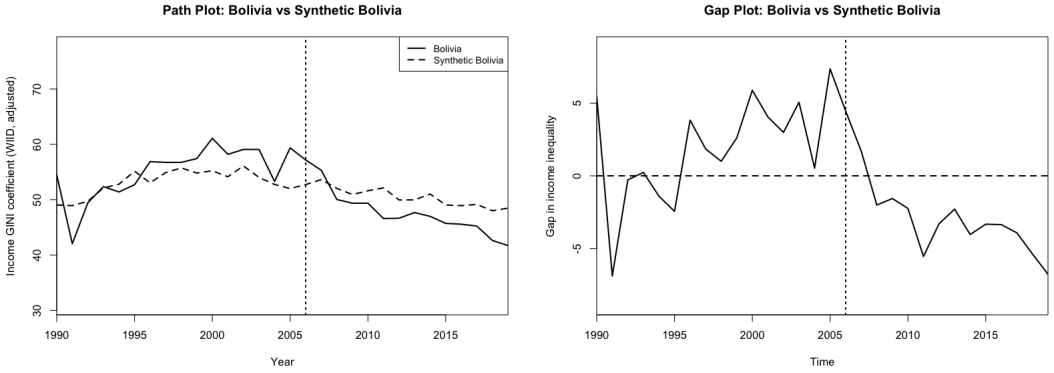

Figure A.8: Bolivia 2006, Inequality

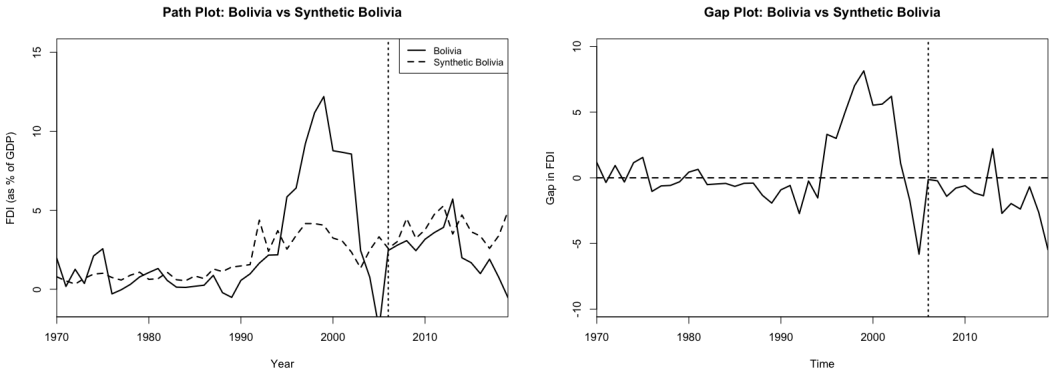

Figure A.9: Bolivia 2006, Investor confidence

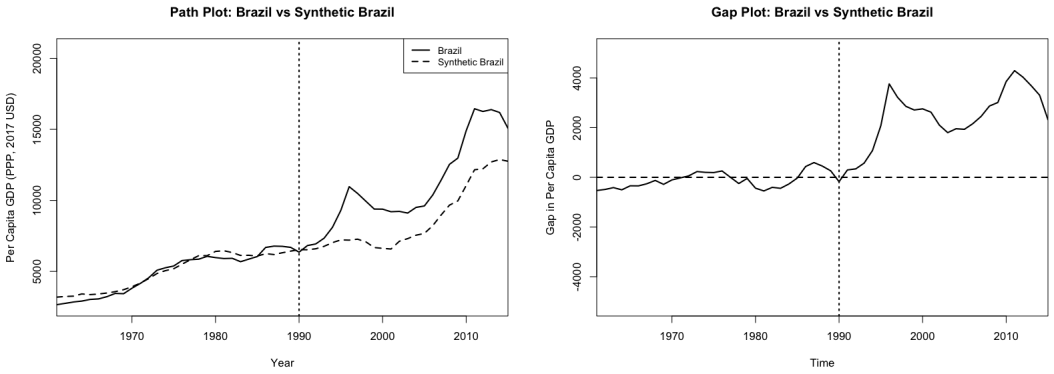

Figure A.10: Brazil 1990, GDP

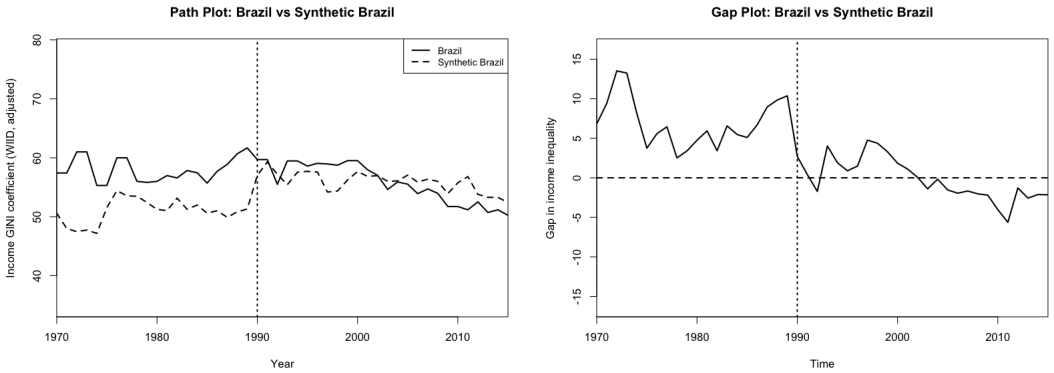

Figure A.11: Brazil 1990, Inequality

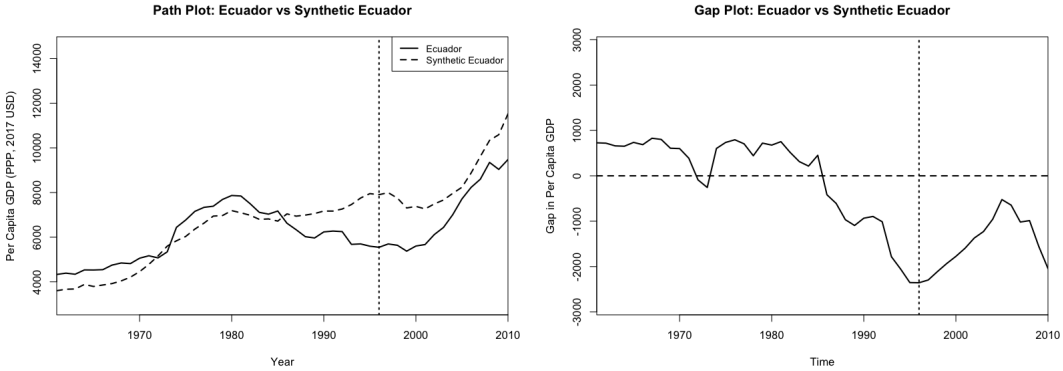

Figure A.12: Ecuador 1996, GDP

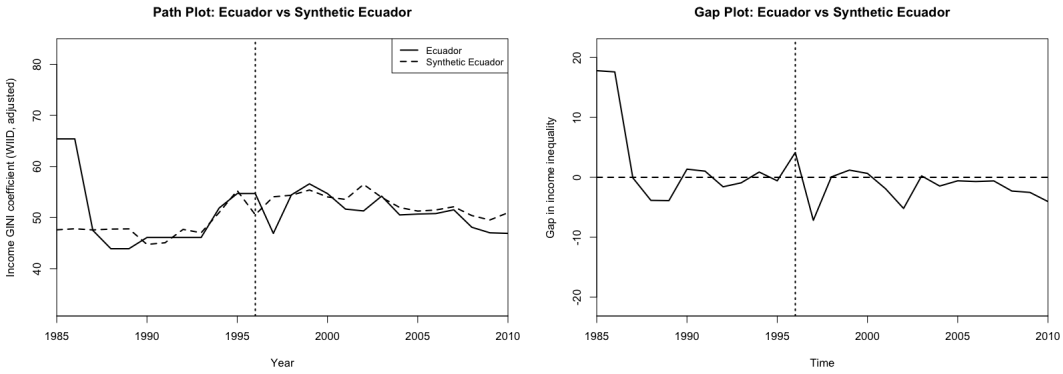

Figure A.13: Ecuador 1996, Inequality

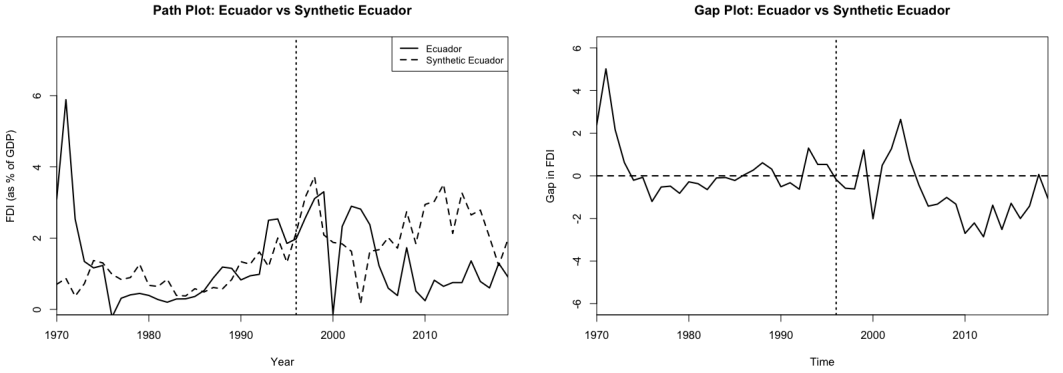

Figure A.14: Ecuador 1996, Investor confidence

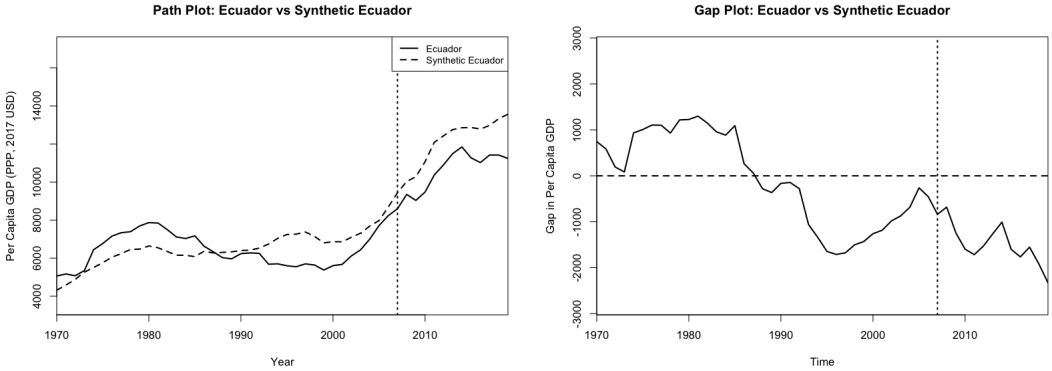

Figure A.15: Ecuador 2007, GDP

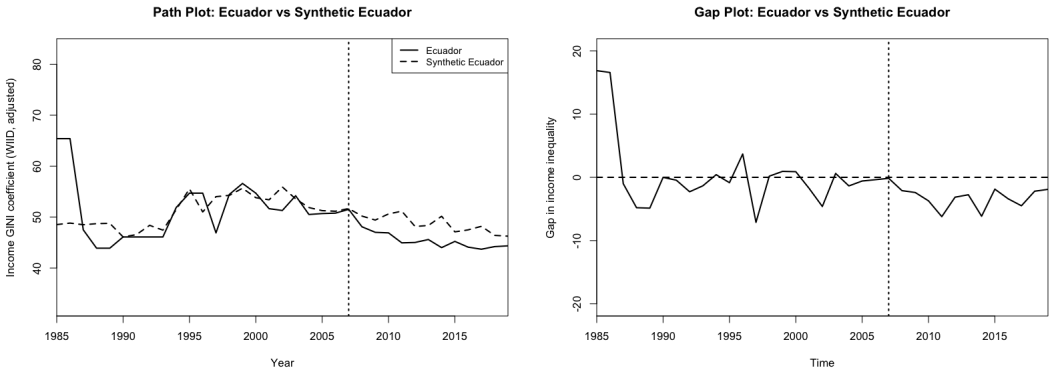

Figure A.16: Ecuador 2007, Inequality

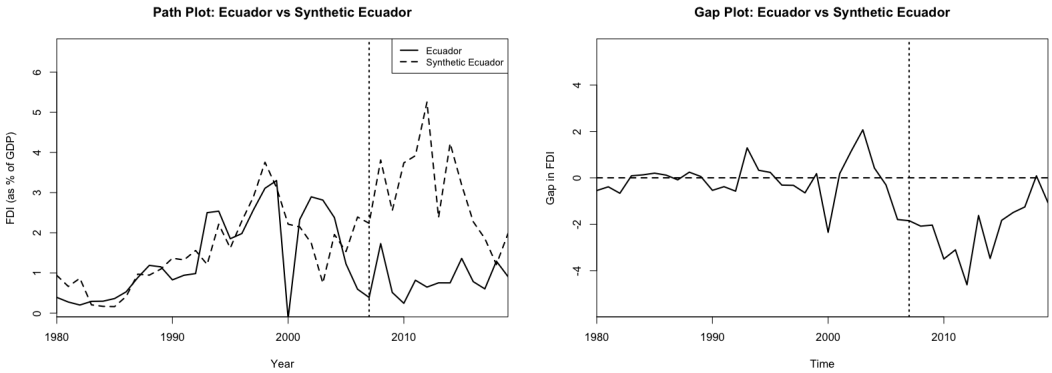

Figure A.17: Ecuador 2007, Investor confidence

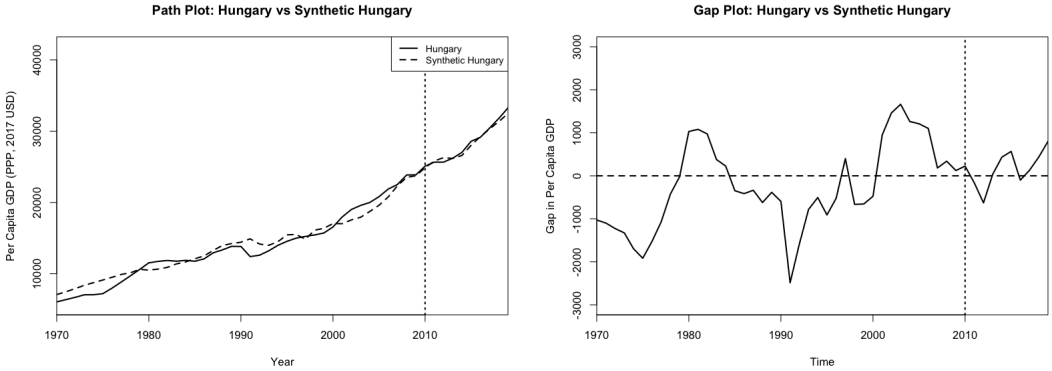

Figure A.18: Hungary 2010, GDP

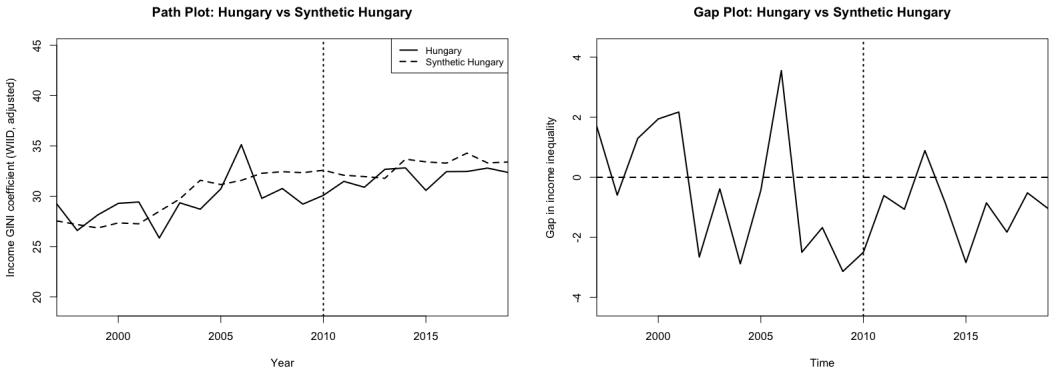

Figure A.19: Hungary 2010, Inequality

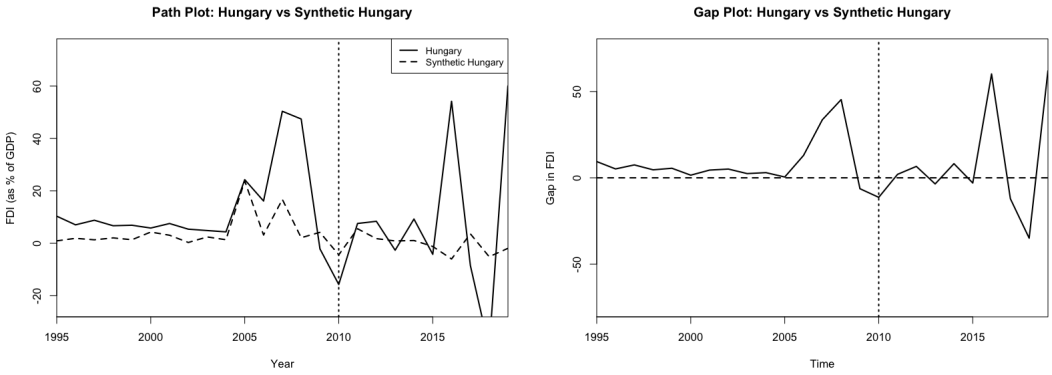

Figure A.20: Hungary 2010, Investor confidence

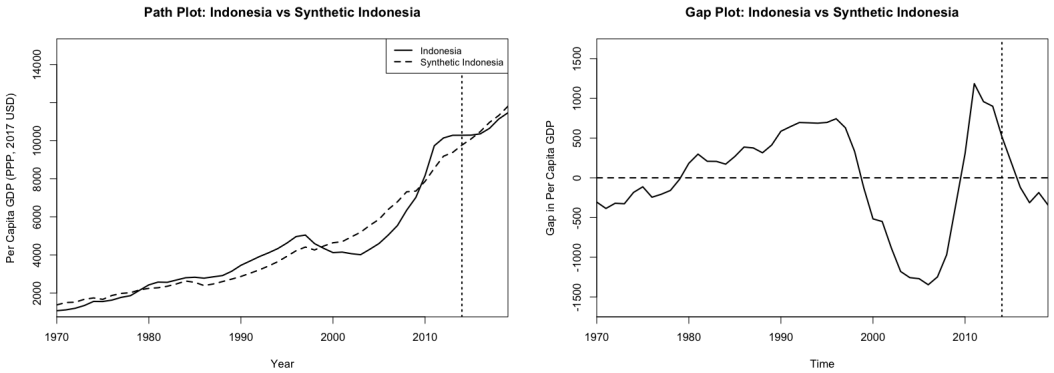

Figure A.21: Indonesia 2014, GDP

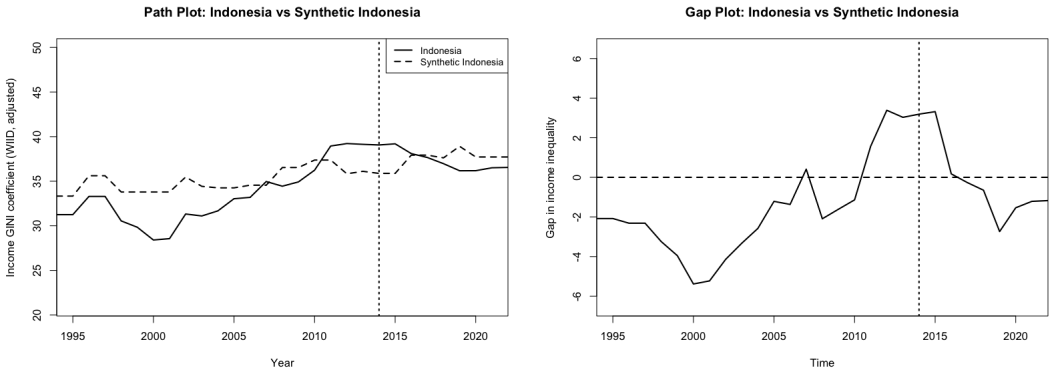

Figure A.22: Indonesia 2014, Inequality

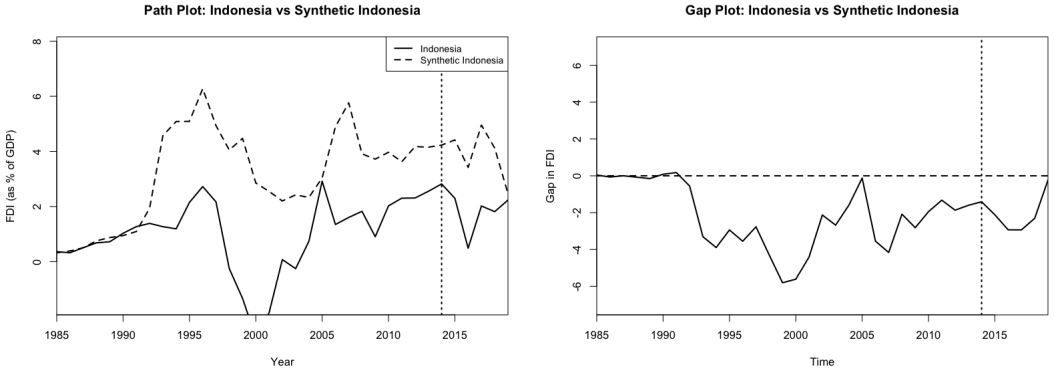

Figure A.23: Indonesia 2014, Investor confidence

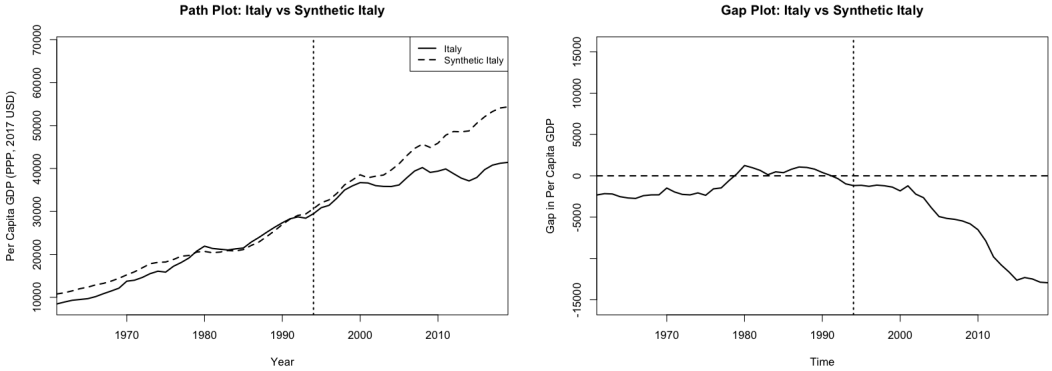

Figure A.24: Italy 1994, GDP

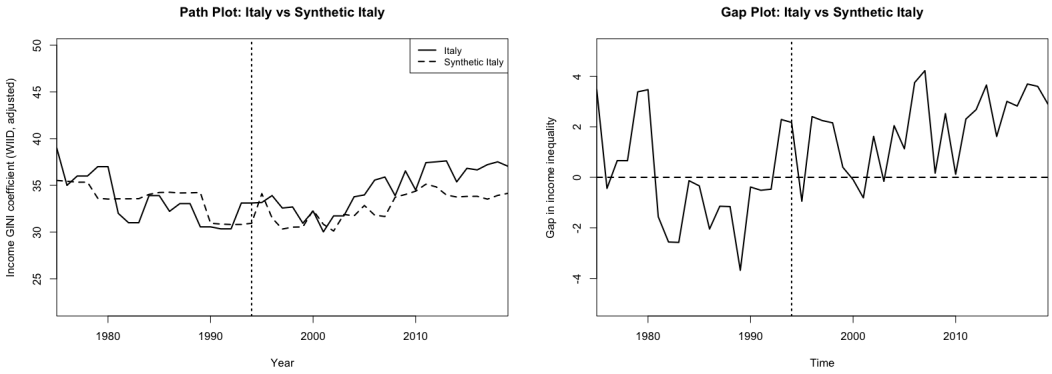

Figure A.25: Italy 1994, Inequality

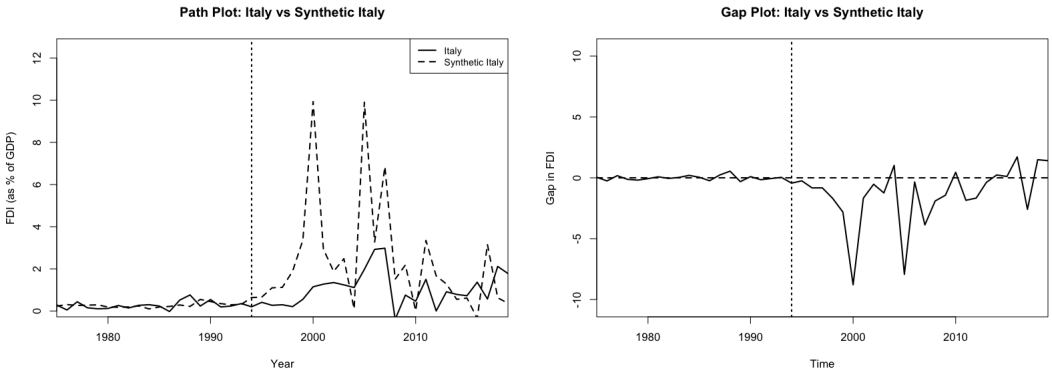

Figure A.26: Italy 1994, Investor confidence

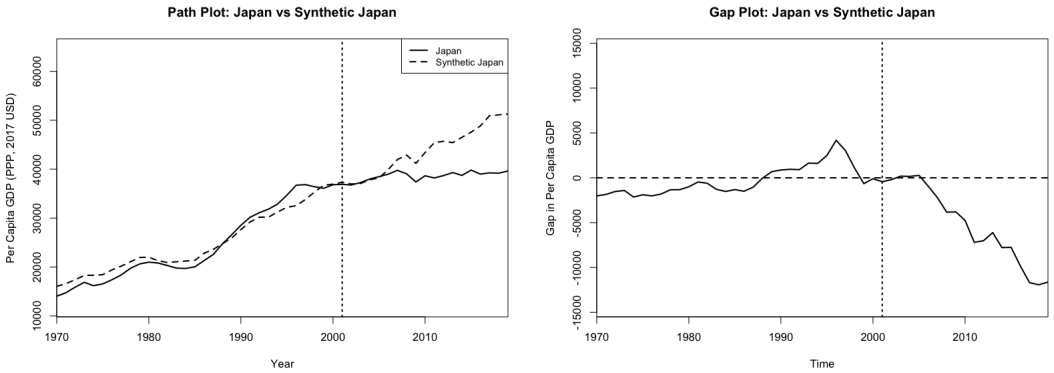

Figure A.27: Japan 2001, GDP

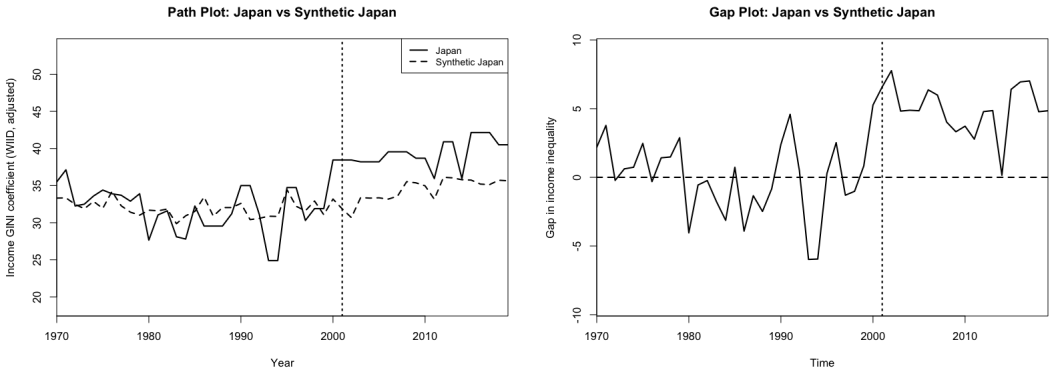

Figure A.28: Japan 2001, Inequality

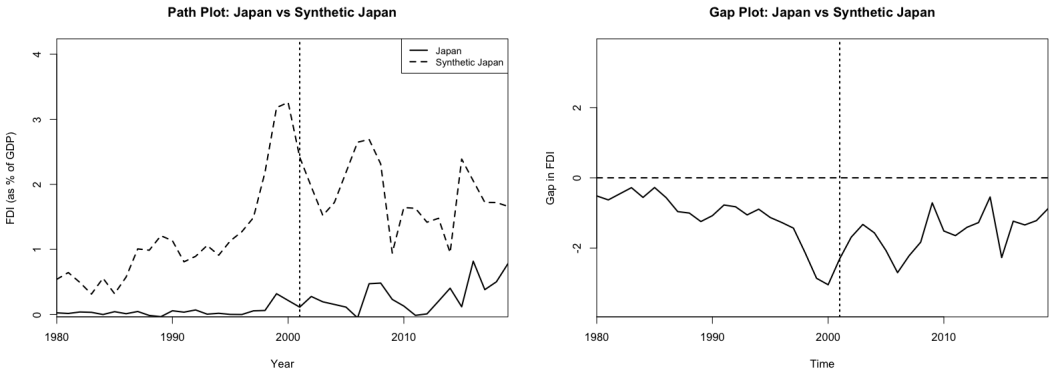

Figure A.29: Japan 2001, Investor confidence

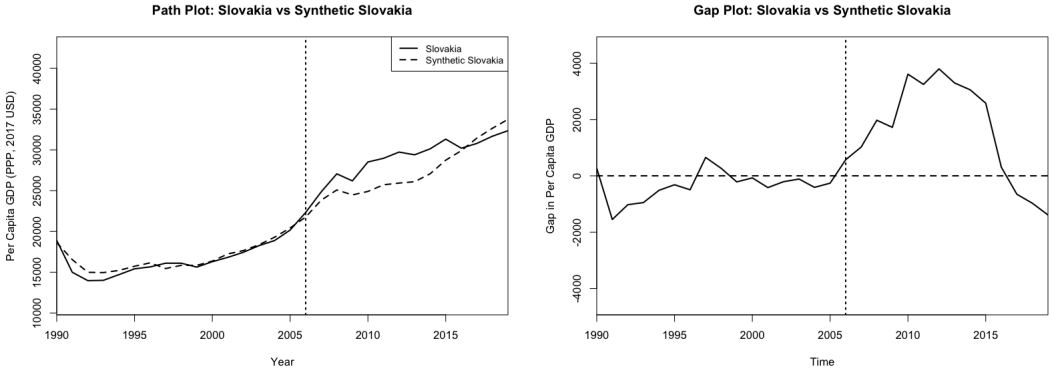

Figure A.30: Slovakia 2006, GDP

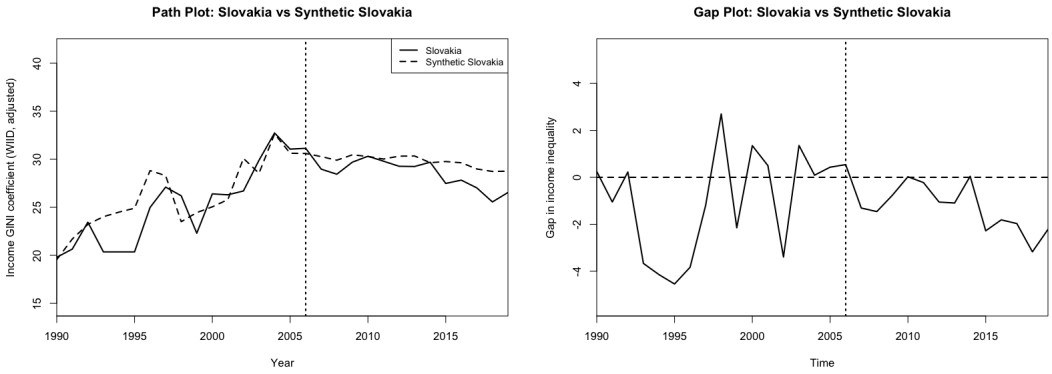

Figure A.31: Slovakia 2006, Inequality

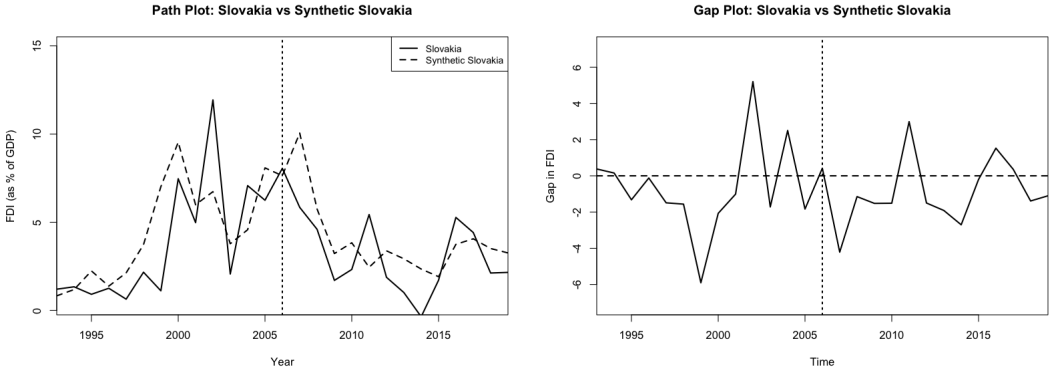

Figure A.32: Slovakia 2006, Investor confidence

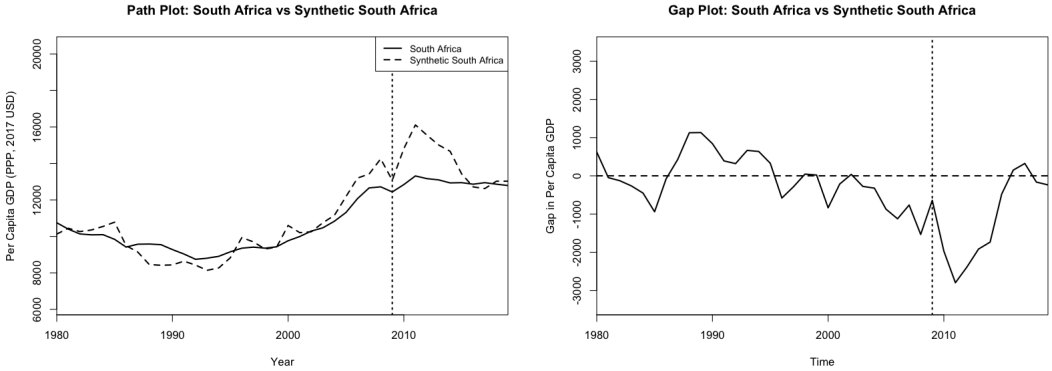

Figure A.33: South Africa 2009, GDP

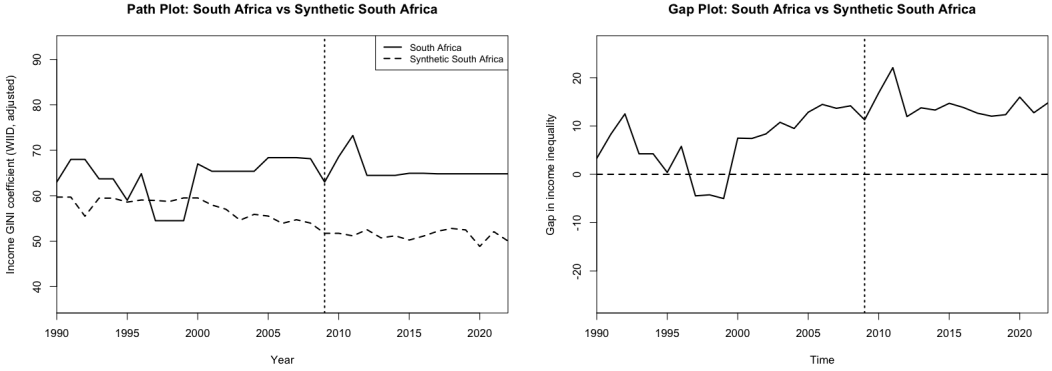

Figure A.34: South Africa 2009, Inequality

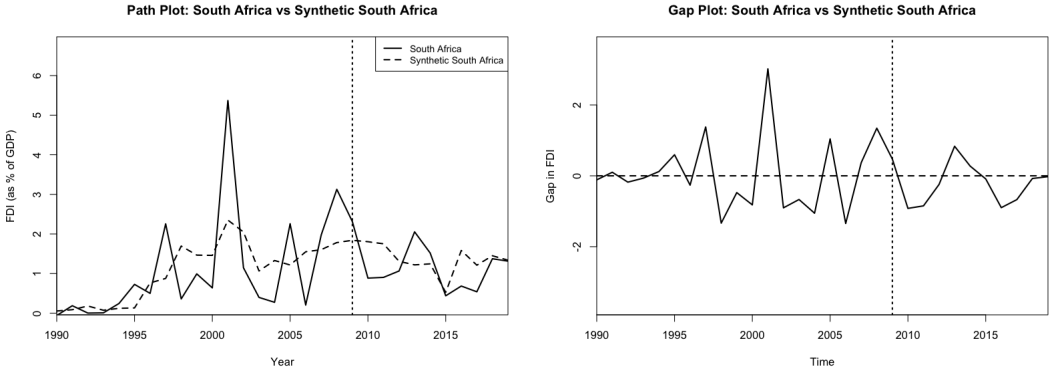

Figure A.35: South Africa 2009, Investor confidence

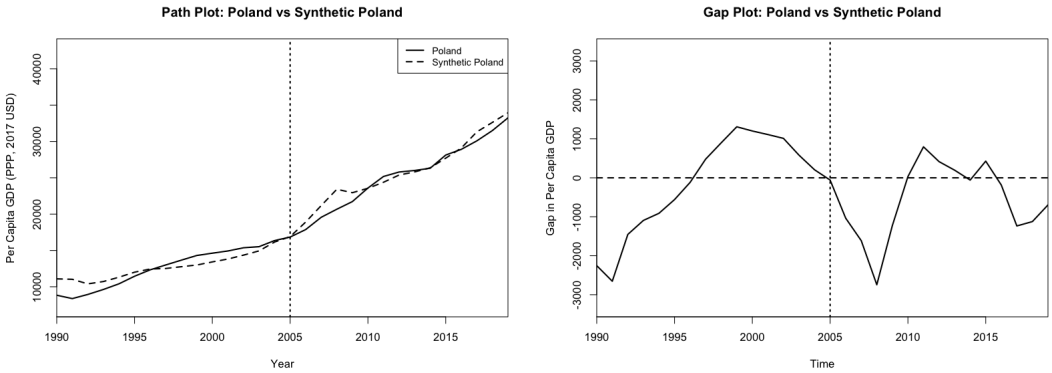

Figure A.36: Poland 2005, GDP

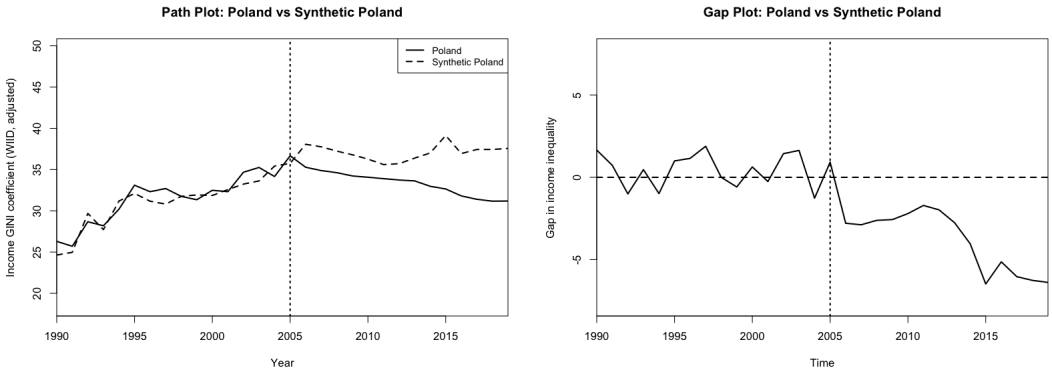

Figure A.37: Poland 2005, Inequality

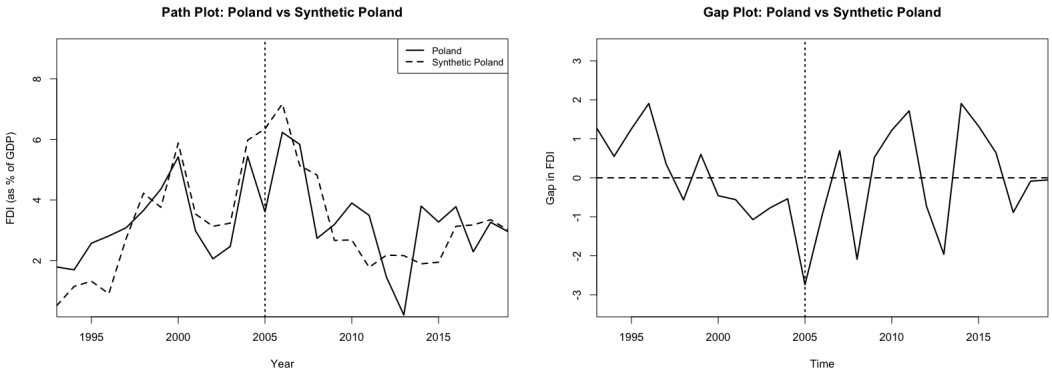

Figure A.38: Poland 2005, Investor confidence

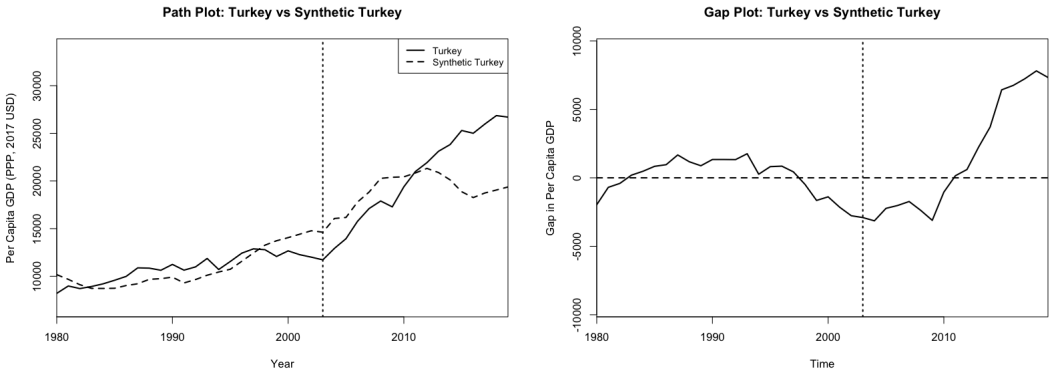

Figure A.39: Turkey 2003, GDP

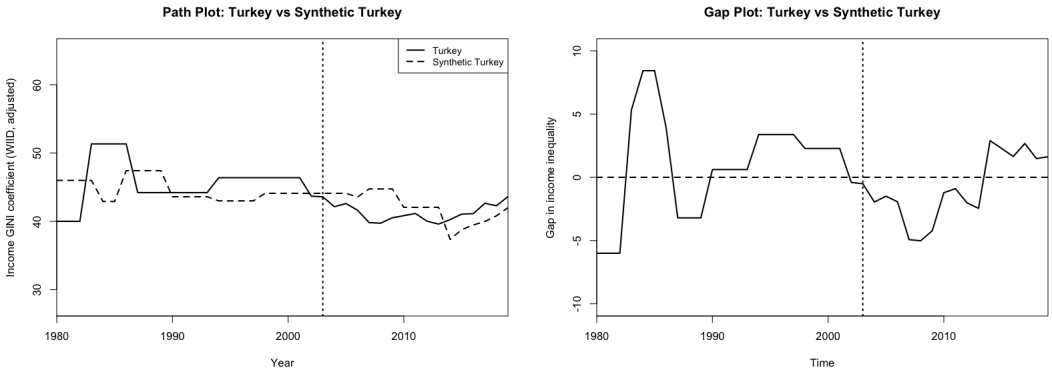

Figure A.40: Turkey 2003, Inequality

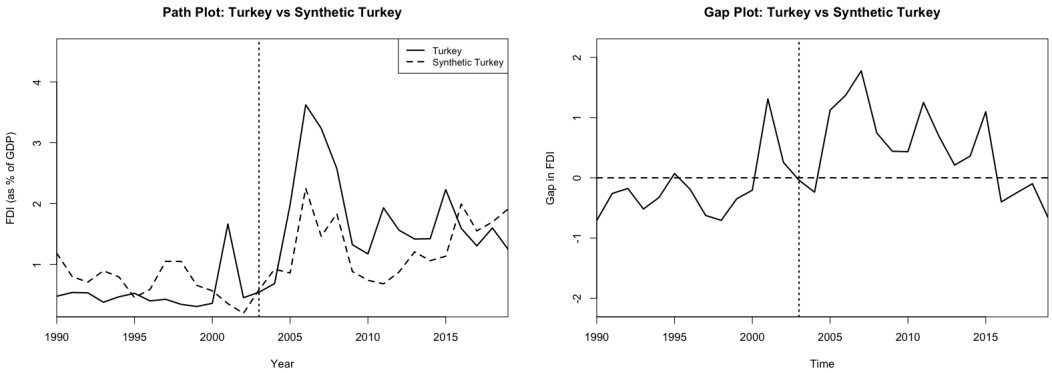

Figure A.41: Turkey 2003, Investor confidence

Appendix B

List of all countries in the dataset

Afghanistan, Albania, Algeria, Angola, Argentina, Armenia, Australia, Austria, Bangladesh, Belgium, Bolivia, Brazil, Brunei, Bulgaria, Cambodia, Canada, Cayenne, Chile, China, Colombia, Croatia, Cyprus, Czech Republic, Czechia, Denmark, Ecuador, Egypt, Estonia, Finland, France, French Guyana, Georgia, Germany, Greece, Guyana, Hungary, Indonesia, Iran, Iraq, Italy, Japan, Laos, Latvia, Lithuania, Malaysia, Namibia, Netherlands, New Zealand, Norway, Paraguay, Poland, Portugal, Romania, Russia, Saudi Arabia, Serbia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Turkey, United Kingdom, United States, Uruguay, Venezuela, Vietnam.