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# Long-term Impact of Ideology on Economic Development

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# I. Abstract.

This thesis is aimed to provide empirical evidence for long-term effects of ideology on economic and financial development. Combining data from Soviet universities and institutional statistics of developing countries, which sent students to Moscow, allows to explore the long-lasting effects of ideological schooling. I find that participating non-communist least-developed countries are more equal, inclusive to women and corrupt, while being less globalized than non-effected countries. Moreover, economic freedoms, public finances and governmental efficiencies are significantly lower. An instrumental variables approach gives further insights in the causality and significance of the ideological variables. Other contributing factors, such as direct donations or financial support in terms credits and grants, cannot explain the results.

*Keywords: Political Ideology, Financial Development, Economic Institutions, Communist Ideology, Soviet Union and Third World*

# 1. Introduction

"All men are enemies. All animals are comrades" (George Orwell, 1945)[1]

Ideology matters. As Thomas Piketty concludes in "Capital and Ideology" (2020): "Inequality is neither economic or technological; it is ideological and political. […] In other words, the market and competition, profits and wages, capital and debt, skilled and unskilled workers, natives and aliens, tax havens and competitiveness – none of these things exist as such. All are social and historical constructs, which depend entirely on the legal, fiscal, educational, and political systems that people choose to adopt and the conceptual definitions they choose to work with."[2] The system of ideas, imaginations, and ideals based on economic and political theories can be defined as ideology. Since all economic and political systems, and therefore law, education, and state underly ideological perceptions, disaggregation of the components and effects of ideology are highly relevant to understand inequality and economic development.

The Soviet Union (SU) implemented its ideology in national institutions and tried to spread it globally. A major approach was the introduction of a schooling program designed for academic students from the so-called "Third World" in the Khrushchev era. For that, more than 167,000 students from non-communist least developed countries (LDC) graduated from Soviet institutions between 1961 until 1991.[3] Receiving both academic education and ideological schooling in communism the students returned to their home countries and became local elites. As presidents, ministers, and high-ranking officials, they actively shaped their countries political, economic, and financial institutions. The question, therefore, is how the ideological schooling influences the countries nowadays. Even though, no country officially declared to be communist or socialist in the 21st Century,[4] their institutions are expected to have similar orientations in terms of equality, gender roles, and economic structures as the Soviet Union.

## 1.1 Long-term impact

Throwing back to the introductional quote by Thomas Piketty in the beginning of the chapter, understanding the impact of ideology might be a silver bullet to detect the ingredients of developed and developing, equal and inequal, poor and rich countries. Hence, the research

[1] Orwell (1945), page 3.
[2] Piketty (2020), page 7.
[3] Figure 1 provides an overview of the origins of the total number of students in Soviet Union.
[4] The countries, which officially declare themselves as communists, are China, Cuba, Laos, and Vietnam.

question is “How ideology influences economic and financial outcomes in the long-run?”. The subsequent questions concern how intense the impact is. Following the communist ideology, certain characteristics about the foundation of state, economics, and finances should be given. This includes the role of women, equality, internationalization, weak economic freedoms, and a strong role of governments. The personal connections between state officials in developing countries and their academic host country is clearly a relevant factor. As a contrast to elites, who studied in Paris or New York, the officials in the Soviet Union received an indoctrination in communist ideology. Therefore, an empirical assessment, which embodies the differences in socioeconomic, economic and financial characteristics based on the ideological influence of Soviet education, is needed. Moreover, the SU encountered developing countries with sophisticated strategies using different aid instruments, such as financial aid, donations, military support and economic guidance. Can these instruments provide robust explanations of development?

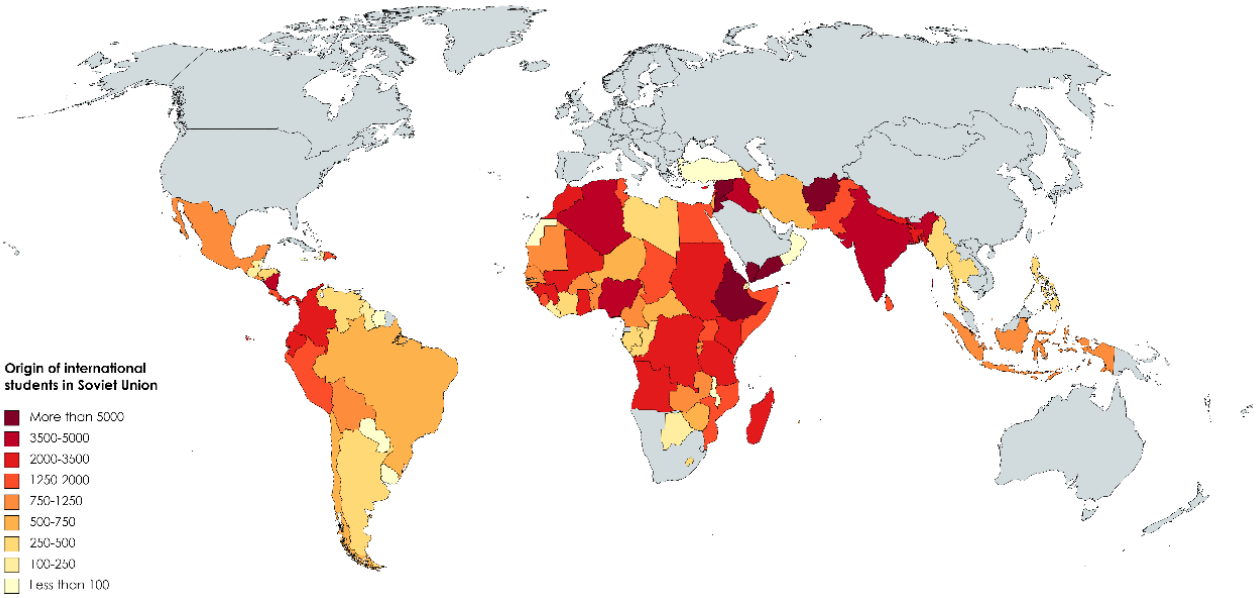
The motivation for conducting the empricial research is based on four arguments. First, understanding long-term effects of ideology has a great importance per se since they shape a country’s economic orientation and financial institutions, which finally determines a failing and rising state. Second, history matters. Studies have shown empirically, how historical events still influence economics and politics nowadays.[5] A great example for this long shadow is Nunn (2008), who discovered a robust impact of high slavery export in Africa between 1400 and 1900 and weak economic development today. Since historical data usually is rare, incomplete, and weakly reliable, many historical connections cannot be justified empirically. Third, in the case of this study, full and reliable data is given. Even though, there have been accurate estimates about the number of international students in SU by Western organizations, their data can now be confirmed with the original sources from Russian archives. Fourth, there is a remarkable gap in the academic literature regarding the SU’s activities in developing countries and its long-term effects, as it will be shown in *chapter 2*. The few existing studies assess the political and historical dimension, but exclude economic and financial effects. Moreover, studying the long-term effects of communism mainly focusses on post-socialist or post-communist countries, while the indirect impact in developing countries is exluded. Hence, this research aims to close the literature gap.

[5] Nunn (2008), page 162.

## 1.2 Assessment of the Research Question

After this *introduction*, a description of the *literature review* follows in chapter 2. In chapter 3, I provide a historical background to give insights in the magnitude and content of the schooling. Turning from theoretical approach to the empirical, chapter 4 provides the *methodology* of the empirical model. The summary statistics and description of *data* are found in chapter 5 to give a more precise reasoning for the accountability of sources. Chapter 6 gives a detailed description of the empirical model's *results* and provides an analysis of statistical robustness. The *conclusion* in chapter 7 summarizes the answers for the research question and hypothesis. Finally, the *discussions* in chapter 8 encourage further research and subsequent analysis for remaining questions.

**Figure 1. World Map of Student's Origins.**




Source: National Assessment Center (1989); GARF

# 2. Literature Review

This chapter provides a profound review of existing studies regarding the geographical, cultural, and institutional hypotheses for long-term success and failure of states. As different scholars stress the importance of each factor, a structural overview is needed to develop suitable hypotheses. The literature review also takes a closer look at the impact of ideology, early-life experiences, and post-socialism to show how micro-level experiences have a high long-term influence.

By addressing the importance of ideology from a long-term perspective, the thesis aims to contribute to one of the most relevant questions of economic, political, and social history: why are countries failing or succeeding in their development? In other words: what are the factors of poverty and wealth? These questions have been studied from various angles and scientific fields to be gathered in three central schools of thought. The first one answers the question with cultural and racist reasoning. Scholars of this mindset argue that there are fundamental differences in cultures including macro-level – such as religion or gender perception, and micro-level differences, such as trust or time-preferences. The second school of thought locates differences in development in the irregular endowments of cultivation of plants, domestication of animals, the contamination of areas through mosquitoes and diseases, and the occurrence of minerals. Hereby, geography and biology play a significant role. The third school stresses the importance of society-shaped institutions for long-term development. "Institutions are the humanly devised constraints that structure political, economic and social interaction. They consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct) and formal rules (constitutions, laws, property rights)." (D. North, 1991).[6]

## 2.1 Why Nations Fail or Succeed

Regarding the cultural hypothesis, Guiso, Sapienza and Zingalis (2009) link overall trust and cultural biases, such as religious, genetic, and physical similarities between countries with economic exchange.[7] They find that there is less trade, portfolio investment and FDI between the countries when countries are less trusting or appear to be different from each other. Hence, they conclude that economic development is affected by cultural biases.

[6] North (1991), page 97.
[7] Guiso, Sapienza, and Zingalis (2009).

Alesina, Giuliano and Nunn (2013) examine the connection between agriculture and the role of women in society.[8] According to their findings, societies, which intensively used plough agriculture, have higher inequality between genders. Women participate less in production, politics, and as entrepreneurs. Moreover, the authors stress that the same results are found within countries to share the same institutions indicating that traditional agricultural societies matter.

Galor and Özak (2016) investigate the origins of differences in time-difference in a culture.[9] Using the Columbian exchange[10] as a natural experience, they find significant results for higher outputs initializing a long-term orientation, which is even relevant today for economic behavior and decisions on education, saving and smoking. Time preferences are furthermore important for economic growth since individuals tend to first consume rather than invest or save capital. The outlook to yield higher returns from the Columbian exchange triggered a long-term orientation in saving and investment.

As Galor and Özak (2016) already based the cultural influence on agricultural origins, a significant number of scholars stress the importance of biological and geographic differences between the countries. Gallup, Sachs, and Mellinger (1998) address the connection between geography and macroeconomic growth to find large effects on income and growth.[11] They describe certain regions, which lack of modern growth, share the status of being landlocked, tropical (disease burden) and geographic seclusion. Therefore, geography prevents those regions from developing as fast as conducive countries.

Diamond (1997) finds similar results for geographic and biological influence in his famous book "Guns, Germs, and Steel", while using the historical development of the Polynesian Islands as a natural experiment.[12] In contrast to the other habitable continents, which were colonized by mankind thousands of years ago, the most of Zealandia and the Polynesian Islands in the Pacific Ocean experienced their colonization after anno domini. Therefore, Diamond draws conclusions, why some islands developed powerful agricultural societies to conquer weaker hunter-gatherer societies, such as in the case of the Maori people attacking the isolated

[8] Alesina, Giuliano and Nunn (2013).
[9] Galor and Özak (2016).
[10] The Columbian exchange refers to the circular exchange between Europe, Africa, and America after Columbus' discovery of the Americas in 1492. Beside slaves, diseases, and firearms, Europeans brought cattle, pigs, horses, bananas, coffee, pears, sugarcane, onions, and olives to the New World. In exchange, they introduced beans, corn, tomatoes, tobacco, potatoes, squash, and pineapple to the Old World. The exchange triggered a new era in both European and American agricultural and economic development.
[11] Gallup, Sachs, and Mellinger (1998)
[12] Diamond (1997)

Moriori people on the Chatham Islands. He concludes that both favorable biological and geographical endowments allowed the Maori in New Zealand to generate surpluses in agriculture to form a kingdom-like society. The isolated Chatham islands in the sub-Antarctic Pacific, however, had no favorable conditions for agriculture and sticked to hunting seals and flightless birds.

Even though, Diamond's theories have important drawbacks for the difference in the development of countries, they still lack explanatory power for difference within countries. Mitton (2016) compares the economic development of 1867 subnational regions in the world to find that geography can also explain within-country differences.[13] He acknowledges several geographical factors, such as terrain, climate, ocean access, temperature, extreme weather frequency, and natural resources, to be endowed very differently within-countries. In addition, he stresses the positive effects of institutions on regional economic development.

While both the geographical and cultural hypotheses provide significant results, especially for the early development of human during the Neolithic Revolution[14], they still fail to explain modern economic growth worldwide. Acemoglu and Robinson (2012) provide examples of this failure in their groundbreaking book "Why Nations Fail".[15] When looking at the border between Mexico and the United States, one finds that both sides absolutely have the same geographic and biological endowment. Still, the Mexican economic development is much weaker than in the US: in 2018 the GDP per capita in the Mexican city Ciudad Jurarez was $22,787 and $29,985 in its neighbor city El Paso (Texas).[16] [17] A more drastic example is the border between North and South Korea, where both countries shared a long common history and still speak the same language. However, a look from space at night on the Korean peninsula reveals the real backward development since the North is almost entirely dark.[18] Therefore, Acemoglu and Robinson conclude that geographical or cultural hypotheses cannot be the final explanation for differences in development. They furthermore argue that only the existence of inclusive institutions, which embody human capital and participation in the decision-making-process, can offer a fundamental explanation.

[13] Mitton (2016).
[14] The Neolithic Revolution describes the end of the nomadic hunter-gatherer stage in human development. Societies in the fertile Crescent, Mesoamerica, China, Sahel, the Andes, and West Africa turned towards the cultivation of plants and the domestication of animals between 10.000-5000 B.C.
[15] Acemoglu and Robinson (2012).
[16] OECD (2022).
[17] It should be mentioned that Ciudad Juarez ranks on 12 of 32 major cities in Mexico, while El Paso is only on 335 out of 382 cities in the US.
[18] The picture is in the appendix (figure 7).

Prior to "Why Nations Fail", Acemoglu, Johnson, and Robinson (2005) described in detail how power allocation and political institutions can encourage economic growth.[19] They argue that institutions are shaped through a competition of social choices, which are concluded by the more powerful group in a society. When in such cases economic and political institutions are created to empower a broad majority in free participation with property rights enforcement and constraints to powerholders, long-term economic growth can be achieved. La Porta, Lopez-de-Silanes, and Shleifer (2008) further explain the legal origins of economic development.[20] They differ between English, German, French, Scandinavian and Socialist legal regimes, which have tremendous effects on private and business law (from free to restrictive).

## 2.2 Long-lasting personal Experiences

Summarizing the hypotheses on long-term economic development, the cultural and geographical approach fail to develop a common explanation for the differences. The design of inclusive and extractive institutions is from all known the best hypothesis.[21] Recalling Piketty's and North's quotes, institutions are chosen by people and shaped by their beliefs and ideologies. As this paper contributes to the literature by addressing the question how long-term ideology is affecting development, a further review of the existing literature on ideology and communist long-term influence is needed.

Laudenbach et al. (2018) analyzed how communist and anticapitalistic doctrines affect financial risk-taking today.[22] Their remarkable results show that investors from East Germany, who experienced socialism, are more likely to invest in friend-countries (China, Vietnam, Russia) and less in former foe-countries (USA). The investments also are smaller, less risky, less diversified and have lower risk-adjusted returns. Moreover, the funds are more actively managed, which make it less efficient and expensive. These findings underline the significance of long-lasting effects of communism.

Growing up under an ideological regime or in times, when historical shocks occur, have long lasting effects as Malmendier, Tate and Yan (2010) show in their analysis of early-life experience on financial policies.[23] The authors tested how military service and the Great Depression influence a CEO's managerial behavior. Military-experienced CEOs tend to be

[19] Acemoglu, Johnson, and Robinson (2005).
[20] La Porta, Lopez-de-Silanes, and Shleifer (2008).
[21] Institutions themself are based on cultural and historical characteristics, which further depend on geographic and biologic matters.
[22] Laudenbach, Malmendier, and Nissen-Ruenzi (2018).
[23] Malmendier, Tate and Yan (2010).

more aggressive in their financial and corporate decisions. CEOs who experienced the Great Depression as children are debt averse.

Liang, Wang, and Zhu (2019) explore the historical setting of the transition from Mao Tsetung's idealist communist doctrine towards Deng Xiaoping's pragmatist regime and its effects on firm-level.[24] The authors find that companies in cities, which are ruled by "Deng's mayors", have a higher inequality, make fewer social contributions and are more globalized than Mao's mayors. Using a Regression Discontinuity Design (RDD) with 1978 as a sharp decline for communist party schooling under Mao or Deng, the authors stress the importance of the long-term impact of the indoctrinated ideology at a young age.

The literature review also reveals that there is a lack of research regarding both Soviet Union's relation to developing countries and more specific its long lasting (economic) influence. Even though, studies discover the bilateral relations between individual countries and SU, such as Pakistan (Ahmed, 2022)[25] and Kenya (Prince, 2015)[26], wider approaches are missing. Moreover, most of the existing research assesses the relations between SU and developing countries from a political or military perspective underlining the background of the Cold War era in research. Numerous studies analyze strategic cooperation (Scalapino, 1986; Duncan, 1989; and Goodman, 1989)[27] [28] [29] excluding the economic, social, and financial sphere. Moreover, the long-lasting effects of SU's spending in developing countries are not assessed yet. Therefore, this paper aims to fill the research gap by providing empirical insights in the ideological influence of SU in developing countries and their economic institutions.

## 2.3 Development of Hypothesis

Following the literature review, 13 testable hypotheses are developed to measure the influence of SU's ideological investments in developing countries. Liang, Wang, and Zhu (2019) tested the ideological impact of "Deng's mayors" on firm-level in China as written above. Their three hypotheses follow the ideology of the Chinese Communist Party (CCP), whereafter firms with traditional orientation (Mao's ideology) should make higher social contributions, have a higher within-firm equality, and be less international. Transferring this approach to the country level,

[24] Liang, Wang, and Zhu (2019).
[25] Ahmed (2022).
[26] Prince (2015).
[27] Scalapino (1986).
[28] Duncan (1989).
[29] Goodman (1989).

I hereby conclude that countries that underwent intense ideological schooling with SU are more equal within society, and less globalized.

As Lenin stated, "The first proletarian dictatorship is a real pioneer in establishing social equality for women" (Lenin, 1920), thus, the third hypothesis should be whether women experience a higher economic emancipation in ideologically effected countries.[30] A downturn characteristic of socialist countries is the high degree of corruption due to economic inefficiencies as well as a lack of political participation (Pleines, 1997).[31] Therefore, corruption is expected to be higher than in other countries.

Furthermore, the Soviet Union collapsed due to numerous reasons from the failure in the arms race during Cold War after the drop of oil prices (Kolakowski, 1992)[32] to an instable foundation of its institutions, which were unable to reform non-violently (Gaidar, 2007).[33] However, the Soviet system also showed fundamental inefficiencies of a planned economy for individuals, firms, and government. Therefore, the following hypotheses argue that countries with ideological influence have lower scores in business and governmental performance constituted in various types of economic freedoms as well governmental and juridical efficiency.

Hence, the hypotheses are summarized as follows:

Hypothesis:

- *H1: Countries, whose leaders were ideologically indoctrinated in Soviet Union, are more equal than countries without.*
- *H2: Countries, whose leaders were ideologically indoctrinated in Soviet Union, are less globalized than countries without.*
- *H3: Countries, whose leaders were ideologically indoctrinated in Soviet Union, have higher participation of female workers in production than countries without.*
- *H4: Countries, whose leaders were ideologically indoctrinated in Soviet Union, are more corrupt than countries without.*
- *H5: Countries, whose leaders were ideologically indoctrinated in Soviet Union, are performing poorer in economics and public finances than countries without.*

After developing the hypotheses, the next step is to formulate a statistical model and describe suitable data to test empirically whether the hypotheses can be confirmed.

[30] Lenin (1920).
[31] Pleines (1997).
[32] Kolakowski (1992).
[33] Gaidar (2007).

# 3. Historical Background

To provide a profound overview of the past developments, the chapter *historical background* shows and discusses how the communist idea as well as the power constellation after World War II and the decolonization contributed to the research topic. The Soviet Union based its strategic commitment in the third world or non-aligned states on three pillars: direct material donation (aid), financial support and ideological education. In a historical coincidence of chronological parallelism, the liberalization movements in former British, French, Spanish, Belgian, and Portuguese colonies happened simultaneously with the handover of power to Nikita Khrushchev in Moscow. Khrushchev confronted the Soviet people with the shadows of the Stalin Era and rang for a change in the Soviet economic agenda internationally and within the Eastern Block. The decolonization movement in the aftermath of World War II opened new possibilities for the isolated Soviet Union to further spread its power and ideology overseas. Beside supplying financial and material aid, higher education became the central soft power tool for the implementation of communist ideology. For this matter, more than 167,000 students from 103 non-Communist less developed countries (LDCs) enrolled in Soviet universities.

## 3.1 World Revolution within National Borders

Taking a look at SU's previous orientation, 1917 became a revolutionary year in world history. The October Revolution was a remarkable event, which ended the 300-year Romanov Czar Era in the Russian Empire. After the coup d'état and the following civil war, the communist Bolsheviks led by Vladimir Lenin formed a communist regime and established the "Union of Socialist-Soviet Republics" in 1922. Lenin, who died in 1924, and his successor Joseph Stalin initiated a great economic and political transformation implementing the planned economy and a one-party state. As the construction of a communist system needed many years of establishment, which was followed by agricultural crises and waves of terror on civil society, the Soviet Union followed Lenin's idea of a "national communism". This strategy, which was described in Lenin's book "The State and Revolution", focused on the takeover of "bourgeois" institutions in the state to oppress civil powers and build a communist government before forcing a world revolution.[34] However, the communist thinkers Karl Marx and Friedrich Engels called for worldwide solidarity: "In short, the Communists everywhere support every revolutionary movement against the existing social and political order of things […] The

[34] Lenin (1917).

proletarians have nothing to lose but their chains, they have a world to win."[35]. They also doubted the idea of nationalism and stated: "The working men have no country."

Once the World War II and the Stalinist terror regime ended, the new-elected Nikita Khrushchev started an era of political and economic reforms. With the rise of confrontation between the socialist and democratic systems, the leaders on both sides searched for allies and partners. Since France and Great Britain greatly suffered from the aftermath of the war, they neither had the political nor economic resources to stabilize their colonial empires. Also, other European countries including Belgium and the Netherlands released their oversea territories into independence in subsequent years.[36] The zenith of the decolonization in Africa became the year 1960, when 18 former colonies including Nigeria, Cameroon, Ivory Coast and Madagascar declared sovereignty.[37] Many of these new states in Africa, Asia, and the Americas suffered from weak institutions, random demarcation, lack of governance, and ethnic favoritism. These problems and the overall poverty initiated lots of post-colonial conflicts. However, the young states also became ideal targets for the Soviet Union's new global strategy to spread both communist power and ideology.

## 3.2 The Communist Ideology and its Implications in the Third World

The Soviet Union based its communist ideology on the theoretical framework initiated by Karl Marx and Friedrich Engels and further refined by Vladimir Lenin, Leo Trotsky, and other Soviet thinkers. In order to spread both power influence and communist beliefs, the SU developed a strategic plan for non-communist least-developed countries (LDC) in the "Third World" during the decolonization process after World War II. The SU offered economic, financial, and military support and engagement in developing countries. In addition, a sophisticated scholarship program opened the gates for students from LDCs to study in Moscow and other Soviet academic centers. The students received both academic education in various fields and political schooling in communist ideology. As they returned home after their graduation, they became part of the local elite due to their advanced education, international experience, foreign languages, and networks. Many of the current political and economic elites in developing countries in Africa, Asia, and Latin America have academic roots in the Soviet Union.

[35] Marx, and Engels (1848), pages 25-34.
[36] Portugal and Spain experienced a first wave of decolonization in 19th Century and joined the second wave during 1970s.
[37] The full list of countries can be found in the appendix (table 19).

The communist ideology offered a holistic worldview with a framework for political, economic, fiscal, legal, educational, and even religious guidance. Therefore, young students were chosen to be indoctrinated with communist beliefs. Previous studies have shown that youth and early adult stages have been the most influential time with long-term impacts throughout the participants' lives.[38] Even though, some ideologies allow space for the combination of ideologies and beliefs, such as Christianity and Capitalism, communism excluded religious beliefs and opposing views entirely, while replacing it with the belief in the communist rule of the proletarians. Hence, it is assumed that the former students in SU transported their ideology back to their home countries, where they spread political, economic, and social beliefs in their leading positions.

When taking a closer look at communist ideologies, one may find numerous branches of the original communist idea by Karl Marx and Friedrich Engels. In the course of the last centuries since the publishing of the "Communist Manifesto" in 1848, many communist leaders and thinkers changed and replaced the political agenda, economic procedure, and state organization to their current matters. For example, for Vladimir Lenin the assumed world revolution of the proletarians proposed by Marx and Engels was of minor importance. Implementing a communist-oriented country within national borders became the main focus in the confusion of the October revolution and the civil war. The turn towards a world revolution as well as the spread of power and communist believes emerged after World War II under the rule of Nikita Khrushchev. Nowadays, the literature differs between numerous socialist schools of thought. However, all the different communist and socialist ideologies base on Marx' communist ideology, which share specific socio-economic orientations and characteristics. These implications include the absence of social classes, the elimination of capitalist and aristocratic elites, ownership of social property, gender equality, participation of women in the production, introduction of social institutions, and a central planned economy.

## 3.3 Aid with Soviet Flavor – Moscow's Strategy in the Third World

The Soviet commitment in developing countries was based on different approaches, namely on direct donation or military assistance, economic and financial support, and educational aid. In general, foreign aid always represents a tool in foreign politics pursuing a country's objectives. Apodaca (2017) states: "Aid can be withdrawn to create economic hardship or to destabilize an unfriendly or ideologically antagonistic regime. Or, conversely, aid can be provided to bolster

[38] Voigtländer et. al (2015), Malmendier, Tate and Yan (2010).

and reward a friendly or compliant regime.".[39] The Soviet Union started its development program with a focus on direct donation of products and financial assistance in the 1950s. Even though, one central goal was the spread of its ideology, Moscow's aid was opportunistic and differentiated: beside reaching governments and political leaders, the Soviets linked with academic, cultural, military, and economic groups from socialist and non-socialist organizations.[40] This strategy to influence non-state and civil actors became known as "informal penetration" (Scott, 1965) in international politics.[41]

Moreover, recipients, magnitude, and instruments in aid changed between the Khrushchev era and his successors. In 1950s, massive infrastructure investments were undertaken to buy political influence and to ensure dependency (first pillar of the strategy). Still, the SU experienced the ineffective nature of these projects especially in Africa, where some of their targeted leaders lost their power in Mali, Ghana, and Egypt.[42] Therefore, investments became more sophisticated and pragmatic. For example, the SU financed significant small-scale projects in Angola, Congo, and Madagascar and large-scale projects in Algeria, Morocco, and Guinea on strategic natural resources. However, 80% of the Soviet aid remained within the socialist or socialist-friendly states, such as Vietnam, Mongolia, and Cuba. The financial assistance covered loans, credits for governments and short-term credits for financing international trade according to trade agreements (swing credits). Even though, both loans and credits included grants (50% and 20%, respectively), the recipients still regarded high financial burden to pay back their debt. This created a dependency structure of debt towards the communist counterparts.

The second pillar includes all direct interventions apart from supplying capital and foreign direct investments as before. As the SU was blessed with natural resources, such as oil, gas, minerals, and fertile farmland, it used its products as instruments in international politics and aid. Since Ethiopia was chosen to be a strategic recipient in Africa, it was supplied with cheap oil and related goods by SU. Another strategic asset was the Soviet military, which supported favorited governments and rebels globally with equipment, military assistance, and weapons.

The third and for our purposes most important pillar was the educational aid in the form of academic scholarships. The SU developed a sophisticated strategy to invite foreign students from developing countries to its universities, where international students would have been

[39] Apodaca (2017) page 1.
[40] Donaldson (1983) page 313.
[41] Scott (1965), chapter 1.
[42] Guan-Fu (1983), pages 505-509.

taught in both academic subjects and ideological schooling. These students would later return to their home countries, become local elites due to their advanced education, and represent a political, economic, and ideological pro-Soviet actor.

For this matter, several famous universities introduced new faculties and research institutions regarding cultural, political, historical, and economic studies in developing countries. The Moscow State University (MSU) opened the "Institute of Asian and African Countries" in 1956 and began hosting students from overseas in its dormitories. The "flagship of Soviet internationalism" (Katsakioris, 2019)[43] was the People's Friendship University named after "Patrice Lumumba", which was found in 1960 in Moscow.

## 3.4 Soviet Aid and Education

The international students underwent an educational program at the Soviet universities, which was especially designed for training a soviet-friendly elite in developing countries. Meanwhile famous Russian universities established institutions and faculties with a focus on Africa, Asia and Latin America, the People's Friendship University named after "Patrice Lumumba" was founded in Moscow in 1960 particularly for the education of students from Third World countries. The goal of training students based on three assumptions, namely on a humanistic thinking, a power-dimension in Cold War, and a political and economic investment in the future (Katsakioris, 2019). Katsakioris argues that the experience of turning a backward-oriented autocratic Tsar regime into a functional industrial country should have been a role model for developing countries. Hereby, knowledge transfer and human development are essential. Furthermore, the author stresses the power implications of deepening connections between the SU and the Third World to "encircle the capitalist world and accelerate the march of communism towards victory" (Katsakioris, 2019).[44] Finally, proposing Moscow's leadership and solidarity should have been regarded with gratitude und loyalty from the elite. From an economic perspective, the educational program also had certain advantages, as it had low cost, low risks, and a tremendous impact. In contrast to regular military and economic aid, only limited expenditures in hard currencies were required.

However, the intensity and duration of ideological schooling differed between the institutions. Every student received a political indoctrination, which included around 70 hours of communist

[43] Katsakioris (2019), page 283-285.
[44] Katsakioris (2019), page 285.

ideological coursework per year (NAC, 1999)[45]. In a five-year curriculum, a student at the engineering faculty studied 4,210 hours in total, while the courses "history of the CPSU" was credited with 100 hours, "political economy" with 110 hours, "Marxist-Leninist philosophy with 70 hours and fundamentals of scientific communism with 70 hours.[46]

Selected students also intensified their studies in ideology, revolutionary underground activities, and party organization. Moreover, an approximate number of 10,500 students (around 6.3%) from non-communist countries were chosen for an additional elite program designed to prepare upcoming communist agitators in Communist, ideology, party organization, propaganda, and political underground work. The harsh and intense political indoctrination for African and Asian students was adressed by several students, such as Michel Ayih from Togo. Therefore, Ayih fled from Moscow to Cologne, where he published a book about his experiences.[47]

Beside the ideological training, the students studied in regular study programs as the Soviet students. The most popular academic fields in Lumumba University were Engineering (29%), Medicine (20.3%), Economics and Law (17.1%), Agriculture (12.1%), History and Philology (12%), and Physics and Mathematics (9.5%) (Katsakioris, 2019). Plus, the international students had to complete several Russian language courses within the first three years of schooling. The educational training scholarship usually covered the full study tuition fees as well as travelling, medical costs, housing, fees and around 100 rubles of monthly pocket money.[48]

## 3.5 International Students in Moscow

The selection of students incorporated both international agreements and national educational policies. In general, the target group of most educational programs in the SU were members of poor families and members of the working class, which originated from Nikita Khrushchev's idea of a "re-proletarianization" of the academic subjects.[49] Due to limited primary and secondary education in Third World countries, a full selection of proletarian students was not achieved. However, the share grew between 1960 and 1980 to approximately 67% (Katsakioris, 2019). Regarding the communist view on nationalism, the SU recruited international students

[45] National Assessment Center (1999), page 11.
[46] Full list can be found in appendix in table (table 22).
[47] Michel Ayih (1961), page 142.
[48] 100 Rubels can be converted to $142,86 in 1986.
[49]Laurent Coumel (2009) page 66–85.

with a focus on minorities and ethnic groups, such as Lebanese Druze, Kurds, Tutsis, and Palestinians (Katsiokioris, 2019). Empowering ethnic groups, which happened to be discriminated in their countries, is a central goal in the communist worldview to end social, political, and economic differences based on ethnic heritage. The third target group were female students. Even though, the SU achieved a high enrollment rate of women, the international universities lacked female students, who represented only 15.4%.[50] Given that those students mainly originated from Latin America and Cyprus, an entire fulfillment of the ideological aims to select student with a focus on working class, ethnic minorities and females could not have been completed in the recruitment.

Beside the national policies in the selection of international students, bilateral cultural and educational agreements have been signed between the SU and its partners. For example, the SU had agreements with Philippines and Nepal, however, the number of students often exceeded the agreed number of the scholarships. Also, some students came to the SU on an independent basis without the knowledge of their local governments. In both cases, the selection was not following the Soviet policy, but was subject of the sending country, which favorited offspring of the ruling ethnic and social elites – and mostly male students, especially from MENA countries.[51]

Figure 1 shows the origin of the international students from non-communist LDCs with regards to the density. The total number of international students is 167,000 excluding all Soviet republics, member countries of the Warsaw Pact, communist and socialist countries worldwide, such as Vietnam, China Yugoslavia and Cuba, and countries of the Western allies in Europe and North America. The most students came in total from Afghanistan (19,615 students), Syria (9,805), and Jordan (8420). In Africa, the most students originated from Ethiopia (7,905), Nigeria (4,960) and Algeria (4395). In Latin America, Nicaragua (4,960), Colombia (3,210) and Ecuador (2,930) were the most common origin countries. In Asia, Yemen (7,690), India (4,050) and Iraq (3,655) were favorited.

In *Table 1*, the continental origins of the international students are presented for selected years. In general, students from African countries and the Middle East dominated the enrolment of international students in SU, while Asia and Latin America have been significantly smaller. Two major developments throughout the Soviet education plan can be seen in the table as well.

[50] Katsakioris (2019), page 287.
[51] MENA refers to the group of Middle Eastern and North African states, which usually includes Morocco, Algeria, Libya, Tunisia, Egypt, Syria, Lebanon, Iraq, Iran, Saudi-Arabia, Jordan, Oman, United Arab Emirates, and Yemen.

First, the overall number of international students grew rapidly between 1961 and 1988 from 1,933 students until 13,056. Second, the importance of the flagship namely the Lumumba University decreased in the same period from 28.3% to 4.7%.

**Table 1. International students in Soviet Union from developing countries.**

| **Regions** | | **1961** | **1971** | **1980** | **1988** |
|---|---|---|---|---|---|
| Sub-Sahara Africa | USSR | 624 | 738 | 2,712 | 4,412 |
| | UDN | 161 | 89 | 173 | 216 |
| | UDN as % | 25.8% | 12.1% | 6.4% | 4.9% |
| North Africa and Middle East | USSR | 760 | 1,030 | 3,500 | 4,703 |
| | UDN | 92 | 180 | 139 | 1156 |
| | UDN as % | 12.1% | 17.5% | 4.0% | 4.0% |
| Asia | USSR | 372 | 542 | 1,820 | 2,481 |
| | UDN | 133 | 97 | 98 | 90 |
| | UDN as % | 35.8% | 12.9% | 5.4% | 3.6% |
| Latin America | USSR | 177 | 332 | 1,127 | 1,460 |
| | UDN | 161 | 199 | 222 | 157 |
| | UDN as % | 91.0% | 60.0% | 19.7% | 10.8% |
| Total | USSR | 1933 | 2,642 | 9,159 | 13,056 |
| | UDN | 547 | 565 | 632 | 619 |
| | UDN as % | 28.3% | 21.4% | 6.9% | 4,7% |

Source: Katsakioris (2019);

## 3.6 Long shadow of the past

Living under a communist rule has intense economic and political implications nowadays. As numerous authors have shown, individuals to grow up and experience a communist regime differ in various factors and worldview. Schündler et. al (2020) showed that tremendous long-lasting differences exist between both countries with a communist or socialist experience and age-groups within the countries.[52] Older age groups are more likely to support redistribution than younger groups, while showing less support for democracy, market economy, and gender equality. Therefore, the authors concluded that older cohorts to experience communism for a longer period favorited more the beliefs of their ideology than younger cohorts.

Eastern European countries and the Commonwealth of Independent States (CIS) experienced a sharp turnaround after the destruction of their socialist systems in 1989 and 1991, respectively. As a contrast to these states, countries from the Third World did not experience a revolutionary change due to the downfall of the Soviet Union and its socialist satillites. Even though, the support of Soviet aid, military cooperation and scholarships declined, the ideological footprint was made. After twenty years of reorientation and -organization within the country, the Russian Federation discovered Soviet roots and relationships in developing countries. Using well-known instruments, such as military equipment and technical support, export of wheat and

[52] Schündeln et. al (2020) page 172-191.

natural resources as well as academic scholarships, Russia renews bounds with international partners in politics and economics. Recent developments showed its remarkable success as most developing countries introduced none or minor economic measures as a response to the Ukrainian Crises in 2022. In the United Nations General Assembly of March 2nd 2022, the political solidarity of many developing countries was underlined. While only five countries including Russia and Belarus voted against the resolution to address "Humanitarian consequences of the aggression against Ukraine", a significant number of 50 states from Africa, Asia and Latin America did not support the resolution.[53] However, the reasons for this pro-Russian attitude may lay deeper than strategic orientation in international politics.

Therefore, the question remains if the Soviet influence still manifests itself in the Third World countries. When taking a closer look at the graduates of the Soviet academic institutes, one finds an impressive list of influential political, economic, and diplomatic elites in developing countries. Porfirio Lobo Sosa (President of Honduras), Michel Djotodia (Central African Republic), Joao Lourenco (Angola), and Mahmoud Abbas (Palestine) are examples for elites, who studied in Moscow and took over the leading power in their home countries. *Table 2* shows an excerpt of prominent graduates representing current and former top politicians.

**Table 2. Prominent Graduates from Soviet Universities (Excerpt).**

| **Name** | **Position** |
|---|---|
| Mahmoud Abbas | Current President Palestine |
| Porfirio Lobo Sosa | Current President Honduras |
| Jose Daniel Ortega | Current President Nicaragua |
| Michel Djotodia | Current President Central African Republic |
| Bharrat Jagdeo | Current President Guyana |
| Joao Lourenco | Current President Angola |
| Jeanne d'Arc Mujawannariya | Minister of Environment, Rwanda |
| Hillary Onek | Minister of Internal Affairs, Uganda |
| Hang Chuon Naron | Minister of Education, Cambodia |
| Khemmani Pholsena | Minister of President's Office, Laos |
| Mustafa Barghouti | Minister of Information, Palestine |
| Hifikepunye Lucas Pohamba | Former President Namibia |
| Timoleon Jimenez | Leader of FARC Colombia |

[53] UN General Assembly Resolution ES-11/1.

| | |
|---|---|
| Alpha Condé | Former President Guinea |
| Fatima Abdel Mahmoud | Former Party Leader Sudan |
| Bheri Sygmond Ramsaran | Former Minister of Health, Guyana |
| Thabo Mbeki | Former President, South Africa |
| John Mahama | Former President, Ghana |

Source: own research

Therefore, the SU tried to implement its actors and its ideology indirectly in politics and economics of developing countries for different strategic reasons in the era of Cold War. More than 30 years after the collapse of the SU, it remains unanswered if the educational investment was successful after all. For testing the long-term effects of ideology, the following chapter provides a methodological approach to develop an empirical model testing the hypotheses developed in *chapter 2*.

# 4. Methodology

In this chapter, the *methodology* of the empirical model is described. According to the communist ideology, states should orientate themselves on the basis of Marxist one-class-society and create a planned economy. Moreover, it is tested whether ideological indoctrination has long-term influences on state and economic development. Therefore, the previously described hypotheses in chapter 3 are tested with the following empirical model. The dependent variables represent the social characteristics of the country and their economic and financial performance, which are shown in *Table 3*. Each of the three components include several subcategories to provide a more detailed analysis. The central explanatory variably is the influence of the Soviet education, which is given as both, the total number as a schooling dummy and total student numbers. The index *i* refers to the country identification, which takes numbers between 1 and 134 for non-communist least-developed countries. The *t* index describes the time horizon for the variables between 2010 and 2020.

The analysis bases on an OLS regression on a panel data set, which is used to test the hypothesis. Hence, the empirical model looks as follows in equation (1):

$$Y_{i,t} = \alpha_0 + \alpha_1 Soviet\ Ideology + \alpha_2 Geography + \alpha_3 History + \alpha_4 Culture + \alpha_5 Macroeconomics + CountryFE + YearFE + \varepsilon_{i,t}$$

In order to provide sufficient robustness, different control variables are added as a first step to the model. These include both year and country fixed effects as well as geographical, macroeconomic, historical, political, and social control variables. These specific variables are chosen as they also represent the contrary theories about state success or failure including geographical and cultural aspects. As a second step for showing robustness, a set of statistical tests are implemented to check possible errors, such as overidentification, heteroskedasticity, and endogeneity.

**Table 3: Overview of dependent variables**

| | |
|---|---|
| *Socioeconomic Characteristics* | • Inequality<br>• Participation of Women in Production<br>• Globalization<br>• Corruption |
| *Economic Performance* | • Business Freedom<br>• Freedom<br>• Labor Freedom<br>• Monetary Freedom |

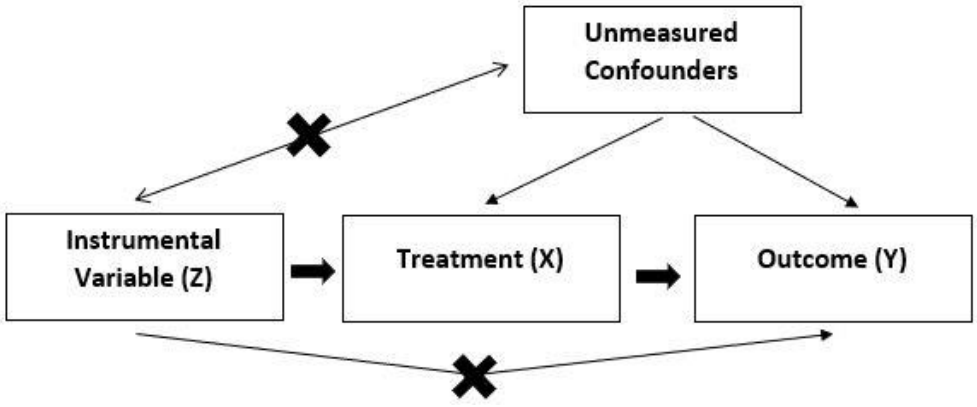
| | |
|---|---|
| *Financial Performance* | • Government Integrity<br>• Government Spending<br>• Juridical Effectiveness<br>• Tax Burden<br>• Fiscal Freedom |

For identification and causality explanation, an instrumental variable (IV) approach is used to show sufficiency and uniqueness of the variables in the model. Since an IV approach can control further confounding and measurement errors, it allows to draw causal conclusions of the treatment variable. Since the model cannot include every possible explanatory variable, which contributed to the outcome, higher error terms are likely. Therefore, the IV becomes an elegant technique. The instrument should be chosen based on different assumptions, namely:

- Correlation between instrument and outcome
- No causal effects of instrument on outcome
- Causal effects of instrument on treatment
- Random or quasi-random assignment

Since the IV should be correlated with the treatment and randomly assigned, no other confounders explain the outcome except the underlying treatment variable. In this case, the treatment value is ideological schooling (X) and the outcomes are the socioeconomic and performance results (Y). Since instrument should show correlations, but must be randomly selected, a favorited approach is the distance, which hereby is country's distance to Moscow (Z).

**Figure 2. Instrumental Variable Approach**



# 5. Data

In this chapter, the origin and meaning of the *data* are described. While most of the variables do not require further explanations, the indices and dummies used as dependent variables need a more detailed breakdown. This chapter also presents the summary statistics of all variables to give a further overview of the data distribution.

The dependent variables cover a list of 13 variables, which are used to describe social characteristics and economic performance of each country. For cross-country analyses, several observations per country are needed to provide a sufficient data set. Since only non-communist country from the Third World are covered in the analysis, the country list contains 134 countries from Afghanistan to Zimbabwe. For the time frame, available data between 2010-2020 are chosen, which sums up to 528 observation points.

## 5.1 Dependent Variables

The first four dependent variables are the characteristics developed from socialist or post socialist theories from the literature.[54] As described above, countries with socialist experience tend to be more equal, less globalized, more female inclusive and more corrupt. For testing the inequality within a country, the Gini coefficient (by the World Bank) is a favorited instrument because it shows the difference of wealth distribution on a scale from 0 to 100, whereby 100 is full inequality and 0 is an equal distribution.[55] In this sample, the most equal country is Algeria (27) and most unequal is South Africa (63), while the average is 40.

The rate of globalization is an artificial index, which includes the degree of integration in the political, social, and economic dimension.[56] Each dimension is measured in numerous sub-indices to catch both economic flows and restrictions. It is provided by the prestigious Swiss institution ETH Zurich. While smaller countries tend to be more open (Hong Kong, Mauritius, Singapore), larger states are less globalized (Iran, Ethiopia, Algeria).

The Gender Inequality Index (GII) by the United Nations Development Program (UNDP) is a composed index including a health, empowerment, and labor market dimension. As the role of women in production is remarkable in socialist countries due to proclaimed economic equality and large state support in child daycare, the female participation in production is a central

[54] The full list of variables, summaries and explanations can be found in the appendix (tables 3-6).
[55] World Bank Data (2022).
[56] ETH Zurich (2022), KOF Swiss Economic Institute.

characteristic. Hereby, the percentage is between 0 and 100% indicating non or full female employment. The difference between countries is very large (standard deviation of 17%).

As socialist countries had limited flexibility to react to changing demand or needs of the people, corruption is a common problem for both private people and businesses (Pleines, 1997).[57] Also, countries with large public sectors experience higher corruption. Since this phenomenon is highly restricted, trustable numbers are difficult to find. Transparency International, therefore, publishes its Corruption Perception Index (CPI) on a yearly basis indicating how people in each country regard corruption for their own purposes.[58] On a scale from 0 to 100, whereby 0 is full corruption perception and 100 non, Somalia, Syria and Venezuela have the lowest results and New Zealand, Singapore, and Australia the highest.

The following dependent variables are those to describe the economic development of a country. The variables include freedoms for economic activity on both private and state level, the role of government in economics, and rule of law. They are originating from the Heritage Foundation, a leading think tank and research institution, which provides detailed insights in the economic and financial performances of states for 30 years.[59] All freedom variables are measured on a 0 to 1000 scale, whereby higher numbers indicating a stronger impact of the underlying variables. However, this does not mean that higher values mean better results. For example, a high number in tax burden is an indicator for weak support of businesses since they have to pay a large amount to the state. In most cases, the countries show a great diversity from no freedom up to almost full score.

## 5.2 Explanatory Variables

The central explanatory variables of the data set are the number of international students from developing countries in SU as 1.) as a schooling dummy and 2.) the total numbers in natural logarithm.[60] Statistics about the Soviet educational programs have been published by different scholars already in 20th Century, but they based their measures on estimates. The American CIA performed such an estimation to be published in 1999. However, trustable statistics did not allow until the Russian archive provided access to international researchers in the recent years. The State Archive of the Russian Federation (GARF) holds records of educational data from

[57] Pleines (1997).
[58] Transparency International CPI (2021).
[59] Heritage Foundation (2022).
[60] Compare equation 1 in chapter 4.

all Russian institutions and their students. Therefore, it is now possible to analyze the data by a trustable organization.

The full list of students including all block-free and non-socialist states contains a sample of 167,000 individuals from 97 countries. As each continent was influenced by the Soviet educational program, but not every country. It is possible to use a dummy variable to test for the general impact of ideology. The dummy variable becomes 0 if the country did not send students to Soviet institutions, such as in the case of Australia, Saudi Arabia, Trinidad or South Africa, and 1 if the country sent students, such as Indonesia, Oman, Panama or Angola. A grouping analysis is also possible due to the diverse geographical, historical, and political background of the countries, which is checked later. To provide further details and density of the ideological schooling, the second variable is the actual number of students. As described above, Afghanistan had the biggest share of almost 20,000 students and the Solomon Island had the smallest of 10 students.

## 5.3 Control Variables

As the literature review showed, there are numerous theories on the question why countries are performing better than others. To provide significant results, it is needed to eradicate both theoretical and empirical issues, which hereby can be done simultaneously by adding control variables to the model.[61] It means that adding additional variables, which result from theories, can be tested themselves if they provide significant results. If they do not show it, they can still be used for the model to improve robustness further. For example, one might ask if geography is a major factor for globalization or religion for female participation.

The control variables are divided into geographical, historical, cultural, and economic dimensions. The analysis of the countries show that they are different from each other in various dimensions. In geography, the sample of 133 countries contains 85 from the northern hemisphere and 110 with access to the sea. In historical terms, 97 countries declared independence after 1945, while almost all countries (121) were colonized by Belgium (3), Great Britain (54), France (26), Germany (7), Italy (2), Netherlands (2), Portugal (7) or Spain (18). In 46 countries, Islam is the dominant religion with more 50% of Muslims in population. On a scale from 1 (worst) to 7 (best), the countries have an average freedom index of 4. There is also

[61] Found in Appendix (table 5-6).

a big difference in economic statistics, such that GDP per capita is between $83,000 in Qatar and $230 in Burundi.

As this panel data analysis requires further measures on year- and country-fixed effects, they also are added to the model. If a shock occurs, such as a fundamental economic crisis, the year-fixed effect should show a structural change for all data in the underlying years. Finally, the control variables underline the diversity of the countries, which show no structural explanation at first sight. In the second step, they are further analyzed and described in the next chapter.

Furthermore, the instrumental variable is the distance between the capital city of a country to Moscow. It is expected that distance, which is a randomly assigned variable, is positively correlated with numbers of students and the dependent variables. The distance data were manually taken from the Geo Data Source website.[62] Even though, Russia is the biggest country in the world, it makes sense to link the distance to its capital rather than to its geographic center because Moscow represents the economic and political center. Some larger countries experience a different issue that their capital cities do not represent neither the economic nor geographical center. This issue is ignorable due to the large distances of several thousand kilometers, wherefore the effect becomes redundant.

[62] Geo Data Source (2022).

# 6. Results

The results chapter shows detailed insights in the empirical assessment of the model. First the results of the hypotheses with both explanatory variables indicating the ideological impact are presented. In the following step the outcomes of the Instrumental Variables (IV) approach are shown. Finally, the robustness check gives a further insight regarding the significance of the results.

## 6.1 Empirical Results of OLS

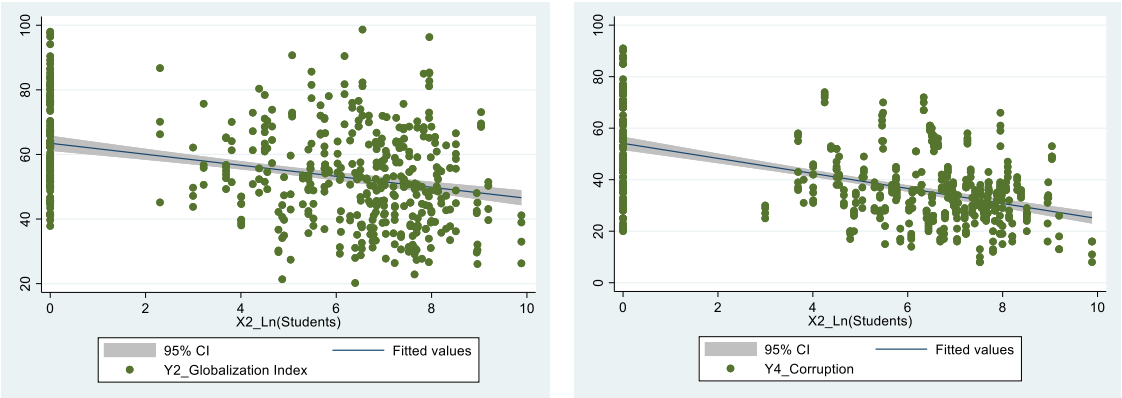
First, the relationship between institutions and ideological indoctrination is examined through an Ordinary Least Squared (OLS) analysis in panel data. *Tables 7-14* show the results of the analyses. In general, most of the underlying 13 socioeconomic characteristics and variables of economic and financial performance show both economic and statistic significant results.

Before installing the empirical model to the data set, panel data analysis requires the specification of the model type: fixed or random effect. For this matter, the "Hausman test" provides further insights. After running the regression in both types of models, the Hausman test checks a null hypothesis if there is not systematic difference in the coefficients. Figure 8 shows that the probability to have a higher value than the measured chi2 (0.32) is 57.18%. Therefore, it fails to reject the null hypothesis and I will use random effects model (RE).

The Soviet ideology has significant impact on globalization. In both variants of ideological measure as a dummy variable and in total numbers of student, the results show that if a country participated in the schooling program by Soviet universities, it reduces the country's international orientation by 3.968 points on the scale (see *Table 7*). Each additional student is associated with a rise of 0.7% points. Having in mind that the average student number for participating country is 1117 students (incl. all countries from sample), individual students have no economic significance, but samples of 10, 50, or 100 surely do. The control variables show results in accordance with the expected outcomes. While being south of the equator, colonized, independent after 1945, Islamic, and the freedom score do not have significant impact on globalization, a landlocked status (-3.067 points), the country size (-2.626 points per additional square kilometer), population (-0.0186 per additional million inhabitants) decrease the globalization score. This confirms the economic theory, in which smaller countries tend to be more open than bigger countries and more likely to maintain free trade (Alesina, 2005). As a result of that, the FDI from Russia are not surprisingly positively correlated with globalization.

Moreover, globalization generally grew since the 1970s and in the underlying time span between 2010 until 2020.

**Figure 3. OLS Scatterplots**




Source: own calculations

Corruption can perfectly be described with the Soviet education. With a p-value under 1%, the schooling dummy decreases the corruption score (the higher the score, the less the precepted corruption in a country) by 13.07 points. On a 100 points scale, the results are both economically and statistical highly significant. As written above, this outcome stands in accordance with the theory since communist and socialist systems tend to be corruptive due their lack of efficiency and inclusivity.

Business Freedom also is highly influenced by Soviet ideology. Each student decreases the score by 0.12 points (see *Table 12*). The schooling dummy shows even higher results since a country with ideology indoctrination has a decrease of 80.956 points on the scale. Both results are also statistically significant under a 5% p-value. This provides evidence for the underlying hypothesis since self-administration and authority for businesses is limited and political goals dominate over profit. The same counts on the personal level because individuals are not choosing their work based on interests and abilities, but on political goals and prescribed economic outcomes. Therefore, it is not surprising that both country dummy (-124.673 points) and student numbers (-0.19 points) with Soviet education show lower labor freedom.

On the governmental level, countries with Soviet educational experience provide significantly weaker results for property rights, governmental integrity, and juridical effectiveness. The schooling coefficient provides results between 95.92 and 104.64 decrease for the scores. Hence, countries with Soviet schooling experience have non-efficient, tendentious governmental and juristically institutions. The student numbers show a similar outcome since each additional

student decreases the score by 0.12 up to 0.17 points. Moreover, the p-values underline a high significance level under the 1% level.

The subsequent variables show results that indicate economic relevance, while having little statistical significance. This has two possible explanations, such that the underlying sample size is too small to provide stable results or the variety within the sample is too big. As the p-value describes the likelihood of the real value to be outside the confidence interval, the use of a variable without statistical significance could lead to misleading outcomes. Since the sample size of 134 countries in several years provides stable regressions, it is assumed that low statistical significance is due to variety within the sample. Therefore, doubts about the real value laying beyond confidence interval cannot finally be eliminated. However, they still provide some valuable insights in the rough direction of the variable.

The results of the socioeconomic variables (inequality and female work participation) also underline the communist goals of creating equality within society and between genders. Even though, their statistical significance is not fully given, both variables state positive coefficients as a contrast to all other variables. A country that participated in the Soviet educational program tends to have higher equality in society and participation of women in production.

The monetary freedom is influenced by each additional student in Soviet universities by a decrease of 0.06 points on the scale (see *Table 12*). Similar to that, the trade freedom score also shows negative outcomes for students (-0.03 points). Beside businesses' freedoms, country with Soviet influence also have higher tax burden. The dummy variable shows a 45.60 decrease, while each student decreases the outcome by 0.05 points. Finally, the government spending score is both economically and statistically significant for the students, who have a negative impact on the government spending score (0.13 points per student), and for the ideology variable (36.98 points decrease).

## 6.2 Robustness

*Statistical tests*

To specify the robustness of the empirical model further tests are applied to provide insights in the model and data structure. The first statistical concern is the existence of heteroscedasticity, which refers to the issue that with higher independent values one receives higher error terms to violate the homoscedastic assumption. The Breusch Pagan test was designed to test whether errors occur similar in the output. Since the test output for corruption is 290.24 and its p-value tends to zero, one rejects the null hypothesis (see *figure 9*). Therefore, heteroscedasticity occurs in this and other models. This can partly be explained with the zeros and outliers in the independent variable. Even though, the outliers have limited effects on the output due to the use of natural logarithm, the countries, which have zeros, skew the output. When using only countries, which took part in the educational program, the heteroscedasticity is eliminated. Hence, it only has limited effects on the overall outcomes.

Endogeneity refers to the statistical problem, after which the dependent variable affects the independent variable or both variables are influenced by a third unmeasured variable. The Durbin-Wu-Hausman test allows to test the null hypothesis whether the explanatory variable is exogeneous. In the sample, one finds that the dummy variable is endogenous in four cases and the academic students variable in five, respectively. The variables with an endogeneity problem need further discussion using an instrumental variable.

*Alternative explanatory variables*

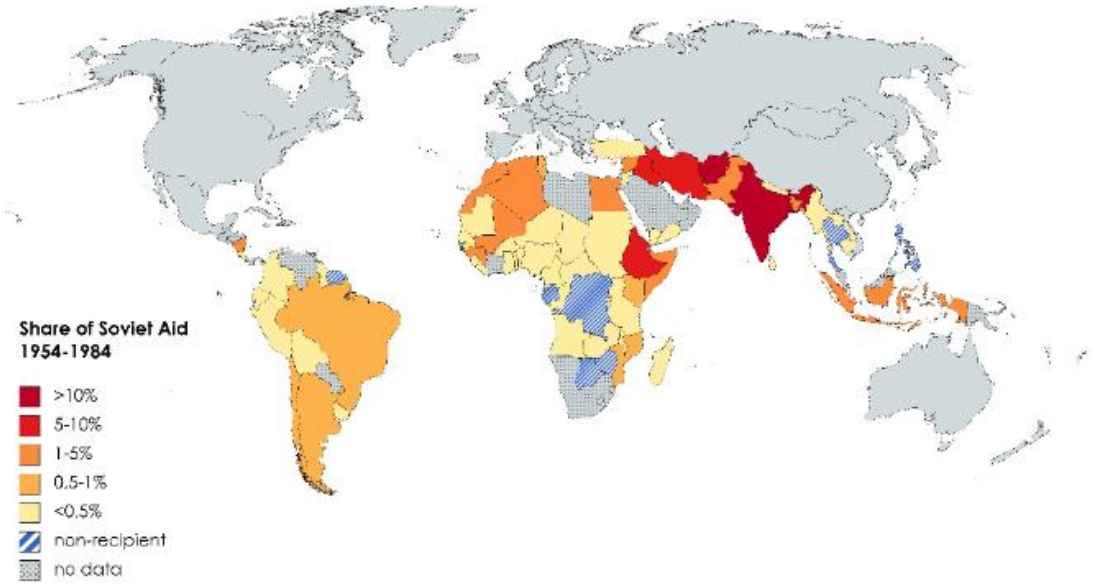
As described in *chapter 3*, the SU developed a sophisticated strategy in LDCs based on three pillars, namely educational scholarships for international students at Soviet universities, direct donation as well as economic and military consultation, and financial support as grants and credits. Since the student variables provide explanatory power for the model, the direct donation and financial support might explain the outcomes themselves.

*Direct donations* appeared in both economic and educational investments. [63] In contrast to the American focus on food and infrastructure, the Soviet aid mainly supported large state-funded industrial projects.[64] Following these investments, groups of so-called “economic technicians” were sent to the LDCs helping to build and to implement the aid investments.[65] Since more than

[63] Since this investment are complicated to quantify, therefore the economic technicians appear to be a suitable proximation.
[64] National Assessment Center (2000), page 6.
[65] National Assessment Center (2000), page 13.

100,000 of those technicians were sent to 77 countries, they could provide an alternative explanation for a country's institutional development. One expects them to have a similar outcome, such as the students, because technicians implemented both a communist working structure and trained local personnel in project management. However, the results provide no evidence since most results are neither economically nor statistically significant. For example, the technicians have a positive effect on business freedoms, while decreasing corruption and female participation. Furthermore, those economic projects were chosen to receive more support by technicians, which yielded a higher revenue, wherefore endogeneity issue is likely.

**Figure 4. Share of Soviet Aid 1954-1984**




Source: NAC (2000)

*Financial Support* was given in the form of grants and credits. Moscow's strategic interest was to 1.) gain access to resources, 2.) synchronize productions and 3.) fill gaps in Soviet output.[66] For these goals, the Council for Mutual Economic Assistance (CEMA) was found to ease the exchange of financial support for raw materials. In theory, financial support could further guarantee loyalty and dependence from LDCs to Moscow. However, as before the variable has limited explanatory power. Further, the few significant results show an ambivalent picture, such as more financial support has a positive impact of business freedom but lowers female work participation.

[66] National Assessment Center (2000), page 12.

Following the empirical findings and the underlying theory described in the literature review, one should find further evidence for the significance of the historical connection between Moscow and its past students. One central aspect to describe the financial cooperation between two countries are the foreign direct investments (FDIs). According to the theory, indoctrinated individuals tend to have a biased thinking in financial decisions (Laudenbach, Malmendier, and Nissen-Ruenzi, 2018). Therefore, one would expect that countries with schooled elite in Moscow have higher FDIs in Russia than those without.[67] The empirics confirm the theory because the sum of the FDI inflows in Russia between 2010-2020 is highly affected by the schooling dummy (307% increase) and students (0.4% per student).

The second aspect is political cooperation and influence. Even though, it is difficult to provide robust measurements how deep the dependency between countries is, situations like the UN voting on the Ukrainian Crisis in March show unique insights. While most of the member states of UN voted in favor of the resolution, a different picture reveals when looking at developing countries.[68] From 37 countries not voting in favor of the resolution, 32 countries were participating in the academic program in SU.[69] Even though, several short-term measures influence the voting behavior, a certain degree of favoritism towards Moscow may be visible.

*Selection Bias*

The selection bias is a typical statistical issue in the selection of groups for analyses, which must be eradicated to ensure a proper randomization. In this case, students could have been selected differently from each other based on their social backgrounds. For example, as children of the country leaders they could have been selected more likely for academic studies in the Soviet Union due to sponsorship of their powerful parents or previous ideologic schooling. Another critical issue is that students may have self-selected their studies in SU independently from their countries.

When taking a closer look at the strategic plan in Soviet academic education, the first issue does not apply here. The SU had a strong interest in following their selection of students based on Khrushchev's doctrine ("re-proletarianization of universities"), wherefore the universities tried to select students from working class.[70] Also, they tried to increase the number of female

[67] See figure 12 in the appendix.
[68] Only countries from Latin America, Africa, and Asia.
[69] The voting procedure in the General Assembly of the UN allow to vote in four categories: in favor, against, abstention and absence. See figure 6.
[70] Katsakioris (2019), page 286.

students as gender equality was a goal in communist ideology. Furthermore, students needed a recommendation of communist youth-organizations or parties to ensure their loyalty in many cases. Still, some countries tried to select students themselves to give priority to offspring of local elites and some Arabic countries refused to send female students. A suitable schooling also became a problem since some students from working class did not have a secondary education hindering them from studying at university-level. In 1970s, a remarkable number of approx. two thirds of international students in SU were from working class.[71] Also, the SU successfully included students from ethnic minorities, such as Kurds, Lebanese Druze, Palestinians, and Tutsis, in its educational programs, so that countries had minor choice in preselection of their elites.

The second issue of self-selection cannot be entirely eradicated because some students independently chose to study in SU without knowledge of their countries. Even though, these students can cause an empirical problem, they are in great minority compared to students studying on behalf of educational or cultural agreements. Furthermore, as mentioned above most of the students were chosen based on recommendation of a socialist institution, wherefore they had ideological contact issuing their accordance with the goals of communism.[72]

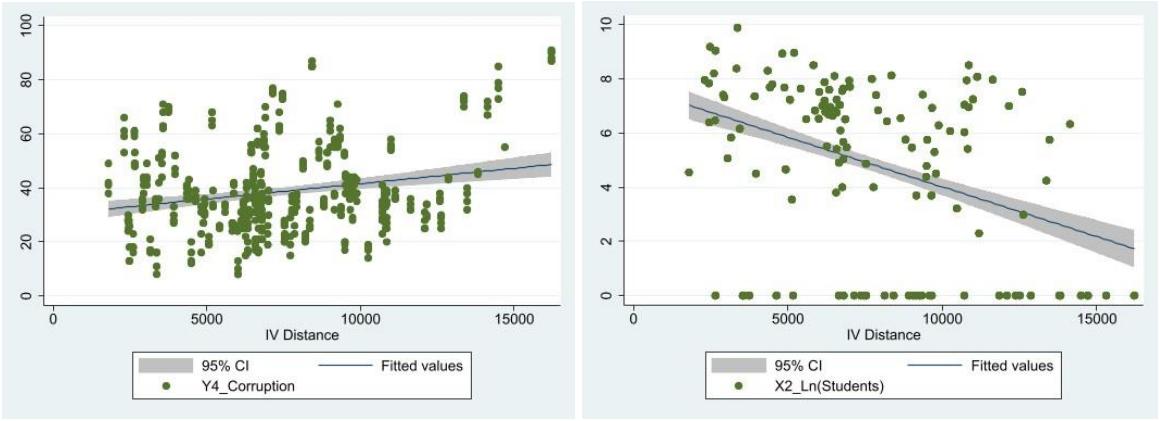
[71] Katsakioris (2019), page 287.
[72] Katsakioiris (2019).

## 6.3 IV Approach and Causality

As I found that the schooling dummy and student number do not function as exogenous variables for all dependent variables, those ones require further treatment using the instrumental variable (IV) approach. For the further discussion, I focus on the corruption variable since the Wu-Hausman Test showed that there is an endogeneity problem.

Distance to Moscow is a randomly assigned variable, which is correllated with the outcome, which hereby is corruption.[73] The closer a country is to Moscow, the lower its corruption perception index is. However, the correlation is assumed not to have a causal effect on the outcome but on the treatment (students). This is due, because distance has per se no direct causality on corruption as some countries with the lowest corruption in the world are very close to Russia (Finland, Sweden, Norway, and Iceland). Still, distance is collerated with students since the SU strategically tended to focus on regions, which were closer to its borders. Since the first stage test shows that distance has a high F statistics value, which is higher than every other measure, I conclude that it is a suitable instrument. As the instrument furthermore is randomly selected, is not correlated with any other explanatory effect except the ideological influence. The instrument shows a coefficient of -2.221 (before -1.963 in OLS), which means that every additional student increases the corruption by 0.02 points.

**Figure 5. IV Scatterplots**




Source: own calculations

In summary, the OLS approach explains ten out of 16 variables for academic students. The remaining variables are economically significant, but lack of statistical significance due to endogeneity. For them, the instrumental variable approach shows that causality between the

[73] The IV results for all variables can be found in the appendix in tables 15-18.

students and the dependent variable exists. Also, further tests state that distance as instrument is strong.

# 7. Conclusion

The thesis discusses the long-term effects of ideological indoctrination through academic schooling on socioeconomic characteristics and economic performance. For this, data from Soviet universities and academic institutions are combined with development statistics from countries of the former Third World. The results show a robust negative relationship between both explanatory schooling variables (country participation in academic exchange and density of students) and economic as well as financial performance. Moreover, typical socioeconomic characteristics of communist and socialist economies, such as equality, globalization, inclusion of women in production, and corruption, are found with economic and statistical significance.

In order to understand the causal relationship between the factors, a number of strategies were undertaken to show the robustness and explanatory power of the variables. Even though, the OLS outcomes already have robust results confirming the hypotheses, the instrumental variable underlines the causality and significance of the schooling variables. Despite minor statistical concerns, the model overall provides a robust insight in the effects of ideology over a longer period.

The model could be used furthermore in assessing different social, political, or economic aspects, which were not discussed in the paper. Since French, British, and American programs also provided academic scholarships for students from developing countries, its effects could be analyzed in a subsequent discussion and compared to the Soviet outcomes. As China is particularly interested in a closer cooperation with developing countries in Latin America, Africa, and Asia the long-term investment of educational schooling is becoming an impactful instrument in foreign relations again.

Assessing the long-term effects of ideology is a key to understand the design and shape of institutions, which are essential factors for successful economic development. Throwing back to Thomas Piketty's quote in the beginning of the paper, inequality is not a matter of sheer financial figures but created by political and social systems. Since this paper stresses the significance of long-term ideology, it may give guidance to policy makers and programs.

# 8. Discussion

Further questions and motivation for subsequent research are presented in this chapter. The thesis discusses historical connections through ideological education between Soviet Union and developing countries from a macroeconomic perspective. Even though, Russia nowadays does not have the same importance as an economic partner to countries from Africa or Latin America, China with its "Belt and Road Initiative" and massive investments on the African continent surely does. Dreher et al. (2016) drew the line between African leaders and China's foreign assistance finding that allocation of economic aid is highly connected with the leader's birthplace.[74] Such example of favoritism also is likely to be further influenced by ideological schooling. The concrete impact of leaders with education from communist institutions could be further assessed on a micro-level.

In addition, the paper uses on indices, which indicate a complex value for economic freedom or financial performance. However, another approach could be the assessment of real outcome data on country-level, such as income, growth rates, and market capitalization. Still, the indices already incorporate these figures, but the analysis is on an abstract level. Therefore, the use of real variables might improve the understanding and impact of ideology on performance. Moreover, the logic behind the ideological schooling is that graduates became elites in governments to change institutions and policies according to their believes. This analysis excludes the influence on firm-level, where elites certainly play a significant role as well. Hence, further studies could reveal whether the Soviet ideology also changes firm outcomes.

Despite the institutional dimension of the paper, the analysis provides insights in Soviet Union's strategy in developing countries and its long-term success. As intended by the politburo, the educational investments have created a long-term impact in the former Third World. With regards to the ongoing changes in international politics and economics, a new rise of Russia's involvement overseas may recover the Soviet experience. From a strategic perspective, Russia could have an interest in inviting a new generation of country leaders to its academic institutions to manifest future influence in developing countries. The same strategy could be applied by other countries seeking deeper long-term connections with developing countries.

[74] Dreher, Fuchs, Hodler, Parks, Raschky, Tierney (2016).

# A. References


Acemoglu, Daron, Simon Johnson, and James Robinson (2005). Chapter 6 Institutions as a Fundamental Cause of Long-Run Growth. Handbook of Economic Growth
Volume 1, Part A, 2005, Pages 385-472.
https://www.sciencedirect.com/science/article/abs/pii/S1574068405010063 (Last: August 11, 2022)

Acemoglu, Daron and James Robinson (2012). Why Nations Fail. Crown Publishers Random House New York. https://ia800606.us.archive.org/15/items/WhyNationsFailTheOriginsODaronAcemoglu/Why-Nations-Fail_-The-Origins-o-Daron-Acemoglu.pdf (Last: August 11, 2022)

Ahmed, Adeela (2022). Pakistan's Relations with Russia. Pakistan's Foreign Policy, First Edition. Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781003250920-13/contours-pakistan-relations-russia-adeela-ahmed (Last: August 11, 2022)

Alesina, Alberto, Paola Giuliano, and Nathan Nunn (2013). On the Origins of Gender Roles: Women and the Plough. Quarterly Journal of Economics, Vol. 128 Issue 2.
https://scholar.harvard.edu/files/nunn/files/alesina_giuliano_nunn_qje_2013.pdf (Last: August 11, 2022)

Apodaca, Clair (2017). Foreign Aid as Foreign Policy Tool. Oxford Research Encyclopedias, Politics.
https://doi.org/10.1093/acrefore/9780190228637.013.332 (Last: August 11, 2022)

Ayih, Michel (1961). An African in Moscow. Verlag Wissenschaft und Politik.
https://books.google.ru/books/about/Ein_Afrikaner_in_Moskau.html?id=7fExAQAAIAAJ&redir_esc=y (Last: August 11, 2022)

Coumel, Laurent (2009). The scientist, the pedagogue and the party official: Interest groups, public opinion and decision-making in the 1958 education reform. Soviet State and Society Under Nikita Khrushchev. Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9780203878330-12/scientist-pedagogue-party-official-interest-groups-public-opinion-decision-making-1958-education-reform-laurent-coumel (Last: August 11, 2022)

Diamond, Jared (1997). Guns, Germs and Steel: A short history of everybody for the last 13,000 years. Vintage Books Edition 2005. https://openlibrary.org/books/OL3437340M/Guns_germs_and_steel (Last: August 11, 2022)

Dreher, Axel, Andreas Fuchs, Roland Hodler, Bradley Parks, Paul Raschky, and Michael Tierney (2016). Aid on Demand: African Leaders and the Geography of China's Foreign Assistance. Centro Studi Luca D'Agliano Development Studies 400. https://www.cesifo.org/en/publikationen/2015/working-paper/aid-demand-african-leaders-and-geography-chinas-foreign-assistance (Last: August 11, 2022)

Donaldson, Robert (1982). The Soviet Union in the Third World. Current History, Vol. 81, No. 477, The Soviet Union pp.313-317, 339 https://www.jstor.org/stable/45317422 (Last: August 11, 2022)

Douglass, North (1991). Institutions. The Journal of Economic Perspectives
Vol. 5, No. 1, pp. 97-112. https://www.jstor.org/stable/1942704 (Last: August 11, 2022)

Duncan, Raymond (1989). Soviet Policy in Latin America Compared to Other Regions: Trends, Opportunities, and Constraints. The Soviet Union in the Third World. First Edition. Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9780429314926-5/soviet-policy-latin-america-compared-regions-trends-opportunities-constraints-raymond-duncan (Last: August 11, 2022)

ETH Zurich (2022). Globalization Index https://kof.ethz.ch/prognosen-indikatoren/indikatoren/kof-globalisierungsindex.html (Last: August 11, 2022)

Gallup, John, Andrew Mellinger, and Jeffrey Sachs (1998). Geography and Economic Development. NBER Working Paper 6849. https://www.nber.org/system/files/working_papers/w6849/w6849.pdf (Last: August 11, 2022)

Gaidar, Yegor (2007). Collapse of an Empire. Brookings Institution Press 2007.
https://www.brookings.edu/book/collapse-of-an-empire/ (Last: August 11, 2022)

Galor, Oded and Ömer Özak (2016). The Agricultural Origins of Time Preference. The American Economic Review, Vol. 106, No. 10 pp. 3064-3103 https://www.jstor.org/stable/43956943 (Last: August 11, 2022)

GARF (2022). 9606, op. 1, d. 869, 4754, 9121; and 9661, op. 1, d. 335. https://statearchive.ru/ (Last: August 11, 2022)

Geo Data Source (2022). Distance between Moscow and capital cities. (Last: August 11, 2022) https://www.geodatasource.com/distance-calculator

Goodman, Melvin (1989). The Role of Soviet Military and Economic Aid in the Third World Under Gorbachev. The Soviet Union in the Third World. First Edition. Routledge https://www.taylorfrancis.com/chapters/edit/10.4324/9780429314926-3/role-soviet-military-economic-aid-third-world-gorbachev-melvin-goodman (Last: August 11, 2022)
Guan-Fu, Gu (1983). Soviet Aid to the Third World an Analysis of Its Strategy. Soviet Studies, Vol. 35, No. 1, pp. 71-89. https://www.jstor.org/stable/151493 (Last: August 11, 2022)

Guiso, Luigi, Paola Sapienza, and Luigi Zingales (2009). Cultural Biases in Economic Exchange? The Quarterly Journal of Economics, Volume 124, Issue 3, August 2009, Pages 1095–1131, https://doi.org/10.1162/qjec.2009.124.3.1095 (Last: August 11, 2022)
Heritage Foundation (2022). Data on Economic Freedom Index https://www.heritage.org/index/explore (Last: August 11, 2022)

Katsakioris, Constantin (2019). The Lumumba University in Moscow: higher education for a Soviet–Third World alliance, 1960–91. Journal of Global History (2019), 14: 2, 281–300 https://doi.org/10.1017/S174002281900007X (Last: August 11, 2022)
Kolakowski, Leszek (1992). Mind and Body: Ideology and Economy in the Collapse of Communism. Constructing Capitalism. First Edition. Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9780429034497-2/mind-body-ideology-economy-collapse-communism-leszek-kolakowski (Last: August 11, 2022)
La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer (2008). The Economic Consequences of Legal Origins. Journal of Economic Literature, Vol. 46.2, 285-332. https://scholar.harvard.edu/files/shleifer/files/consequences_jel_final.pdf (Last: August 11, 2022)
Laudenbach, Christine, Ulrike Malmendier, and Alexandra Nissen-Ruenzi (2018). "The Long-lasting Effects of Living under Communism on Attitudes towards Financial Markets," NBER Working Papers 26818. https://ideas.repec.org/p/nbr/nberwo/26818.html (Last: August 11, 2022)
Lawson, Colin (1988). Soviet Economic Aid to Africa. African Affairs Vol. 87, No. 349, pp. 501-518. https://www.jstor.org/stable/722891 (Last: August 11, 2022)

Lenin, Vladimir Ilyich (1918). The State and Revolution. The Marxist Theory of the State & the Tasks of the Proletariat in the Revolution. Collected Works, Volume 25, p. 381-492. https://www.marxists.org/archive/lenin/works/1917/staterev/ (Last: August 11, 2022)
Lenin, Vladimir Ilyich (1920). Collected Works 1917-1920.Volume 44. https://www.marxists.org/archive/lenin/works/cw/pdf/lenin-cw-vol-44.pdf (Last: August 11, 2022)
Liang, Hao, Rong Wang, and Haikun Zhu (2019). Growing up Under Mao and Deng: On the Ideological Determinants of Corporate Policies. BOFIT Discussion Paper No. 20/2020. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3694783 (Last: August 11, 2022)
Malmendier, Ulrike, Geoffrey Tate, and Jonathan Yan (2010). Overconfidence and Early-life Experiences: The Impact of Managerial Traits on Corporate Financial Policies. The Journal of Finance Volume 66, Issue 5 p. 1687-1733. https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1540-6261.2011.01685.x (Last: August 11, 2022)

Marx, Karl and Friedrich Engels (1848). Manifesto of Communist Party. Selected Works, Vol. One, Progress Publishers, Moscow, 1969, pp. 98-137; https://www.marxists.org/archive/marx/works/1848/communist-manifesto/ (Last: August 11, 2022)

Mitton, Todd (2016). The wealth of subnations: Geography, institutions, and within-country development. Journal of Development Economics. Volume 118, pages 88-111. https://www.sciencedirect.com/science/article/abs/pii/S0304387815001030 (Last: August 11, 2022)
Nunn, Nathan (2008). The Long-Term Effects of Africa's Slave Trades. The Quarterly Journal of Economics 123 (1): 139-176. https://scholar.harvard.edu/nunn/publications/long-term-effects-africas-slave-trades (Last: August 11, 2022)

National Assessment Center (1998). Communist Cultural and Propaganda Activities in the Less Developed Countries. Historical Review Program 16441. https://www.cia.gov/readingroom/docs/DOC_0000313542.pdf (Last: August 11, 2022)
National Assessment Center (1999). Moscow's Third World Educational Programs: An Investment in Political Influence. Historical Review Program 23307. https://www.cia.gov/readingroom/docs/DOC_0000500645.pdf (Last: August 11, 2022)

National Assessment Center (2000). Communist Aid Activities in Non-Communist Less Developed Countries 1978. Special Collections 22924. https://www.cia.gov/readingroom/docs/DOC_0000499889.pdf (Last: August 11, 2022)
National Assessment Center (2000). Communist Aid Activities in Non-Communist Less Developed Countries 1978. Special Collections 22924. https://www.cia.gov/readingroom/docs/DOC_0000499889.pdf (Last: August 11, 2022)
Orwell, George (1945). *Animal Farm.* Penguin Randomhouse. https://www.glossopdale.derbyshire.sch.uk/Learning_Experiences/Revision/Animal_Farm_Whole_Text.pdf (Last: August 11, 2022)

National Geographic (2014). Space Station Photos Show North Korea at Night, Cloaked in Darkness. https://www.nationalgeographic.com/pages/article/140226-north-korea-satellite-photos-darkness-energy (Last: August 11, 2022)

Pleines, Heiko (1997). Korruption in den post-sozialistischen Staaten Osteuropas. Aktuelle Analysen / BIOst, 1/1998. https://www.ssoar.info/ssoar/handle/document/4727 (Last: August 11, 2022)

Prince, Ruth (2015). From Russia with love: medical modernities, development dreams, and Cold War legacies in Kenya, 1969 and 2015. Volume 90 Special Issue 1: Beyond realism: Africa's Medical Dreams. Cambridge University Press. https://www.cambridge.org/core/journals/africa/article/abs/from-russia-with-love-medical-modernities-development-dreams-and-cold-war-legacies-in-kenya-1969-and-2015/095AAC48AC761D26C6ECF31137414F12 (Last: August 11, 2022)
Piketty Thomas (2020). Capital and Ideology. The Belknap Press of Harvard University Press. https://books.google.ru/books/about/Capital_and_Ideology.html?id=VeQIyAEACAAJ&redir_esc=y (Last: August 11, 2022)

Scalapino, Robert (1986). Asia in a Global Context: Strategic Issues for the Soviet Union. The Soviet Far East Military Buildup. First Edition. Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781003108917-3/asia-global-context-strategic-issues-soviet-union-robert-scalapino (Last: August 11, 2022)
Schündeln, Matthias and Nicola Fuchs-Schündeln (2020). The Long-Term Effects of Communism in Eastern Europe. Journal of Economic Perspectives Volume 34, pages 172–191. https://www.aeaweb.org/articles?id=10.1257/jep.34.2.172 (Last: August 11, 2022)

Scott, Andrew (1965). The Revolution in Statecraft: Informal Penetration. Random House. https://journals.sagepub.com/doi/abs/10.1177/026569140803800205l2 (Last: August 11, 2022)

Transparency International (2022). Corruption Perception Index. https://www.transparency.org/en/cpi/2021 (Last: August 11, 2022)
United Nations (2022). GA Resolution 11/1. https://news.un.org/en/story/2022/03/1114632 (Last: August 11, 2022)
Voigtländer, Nico and Hans-Joachim Vogt (2015). Nazi indoctrination and anti-Semitic beliefs in Germany. Proceedings of National Academy of Sciences (PNAS) 112 (26) 7931-7936. https://doi.org/10.1073/pnas.1414822112 (Last: August 11, 2022)
World Bank (2022). Economic Data. Glossary | DataBank (worldbank.org) (Last: August 11, 2022)

# B. Appendix

### Table 4. Summary Statistics of Dependent Variables

The statistics of the variables provide an overview of the underlying variables including the number of observations, mean, standard deviation, minimum and maximum. It is relevant to show how the values are distributed within their scale and to observe unbalances.

| *Variable* | *Obs* | *Mean* | *Std. dev.* | *Min* | *Max* |
|---|---|---|---|---|---|
| Y1 Gini Coefficient | 528 | 41 | 7 | 28 | 63 |
| Y2 Globalization | 511 | 55 | 15 | 20 | 99 |
| Y3 FemaleParticipation | 528 | 51 | 17 | 12 | 84 |
| Y4 Corruption | 484 | 39 | 16 | 13 | 88 |
| Y5 Financial Freedom | 450 | 45 | 17 | 0 | 90 |
| Y6 Monetary Freedom | 490 | 657 | 230 | 0 | 901 |
| Y7 Business Freedom | 490 | 552 | 222 | 20 | 989 |
| Y8 Investm. Freedom | 487 | 51 | 21 | 0 | 90 |
| Y9 LaborFreedom | 493 | 547 | 219 | 20 | 989 |
| Y10 Property Rights | 492 | 254 | 260 | 0 | 971 |
| Y11 Trade Freedom | 485 | 601 | 261 | 48 | 948 |
| Y12 TaxBurden | 486 | 714 | 237 | 46 | 999 |
| Y13 Gov Intervention | 495 | 263 | 210 | 5 | 939 |
| Y14 Gov Spending | 489 | 668 | 253 | 0 | 984 |
| Y15 Fiscal Freedom | 245 | 586 | 337 | 0 | 999 |
| Y16 Jur. Effectiveness | 249 | 356 | 207 | 23 | 929 |

Source: own calculations

**Table 5. Summary Statistics of Independent Variables**

| *Variable* | *Obs* | *Mean* | *Std. dev.* | *Min* | *Max* |
|---|---|---|---|---|---|
| X1 Schooling_Dummy | 528 | 0.75 | 0.43 | 0 | 1 |
| X2 LnStudents | 528 | 4.8 | 3.1 | 0 | 9.89 |
| X3 Academi~U | 528 | 1257 | 2359 | 0 | 19615 |
| South of Equator | 528 | 0.36 | 0.48 | 0 | 1 |
| Landlocked | 528 | 0.18 | 0.38 | 0 | 1 |
| Country Size | 528 | 11.34 | 2.74 | 3.04 | 15.96 |
| Colonized | 528 | 0.91 | 0.29 | 0 | 1 |
| Independence | 528 | 0.74 | 0.44 | 0 | 1 |
| Religion | 528 | 0.35 | 0.48 | 0 | 1 |
| FDI Russia | 528 | 0.80 | 0.80 | 0 | 5 |
| Population | 528 | 37 | 122.78 | .01 | 1406.63 |
| Freedom | 396 | 3.74 | 2.03 | 1 | 7 |
| GDP | 528 | 1889.56 | 5420.29 | 0 | 50872.04 |
| IV Distance | 528 | 7731.27 | 3313.78 | 1794.84 | 16206.06 |
| LNIV | 528 | 8.85 | 0.48 | 7.5 | 9.693141 |

Source: own calculations

## Table 6: Variable Definitions

This table describes the meaning of the variables, their scale and source.

| Variable Name | Description |
|---|---|
| ***Dependent Variables*** | |
| Gini Index | Gini index measures how the distribution of income among individuals or households within economies deviates from an equal distribution. Hereby, the scale from 0 to 100 indicates perfectly equal to perfectly unequal distribution. Source: World Bank |
| Globalization | The index for the rate of globalization incorporates several factors about the trade openness, the amount of international goods and services as well as the permeability of borders. On the scale from 0 to 100, a higher number reflects a higher international orientation. Source: KOF Zurich |
| Female Work | The percentage of women's work participation shows how many women contribute to the economic production in a country per 100 women. Source: World Bank |
| Corruption | The Corruption Perception Index (CPI) measures how likely corruption is in a country on a scale from 0 to 100, whereby higher numbers indicate smaller degree of corruption perception. Source: Transparency International |
| Financial Freedom | An index variable, which incorporates 1.) the extent of governmental regulation, 2.) the degree of state intervention, 3.) governmental influence on credits, 4.) capital market and 5.) foreign competition. (Scale 0 to 1000) Source: Heritage Foundation |
| Monetary Freedom | An index variable, which shows how much inflation and price changes influence economic output. (Scale 0 to 1000) Source: Heritage Foundation |
| Business Freedom | An index variable, which shows how easy it is to start and to end a business including procedures, times, costs, and capital requirements. (Scale 0 to 1000) Source: Heritage Foundation |
| Investment Freedom | An index variable, which shows how free businesses and people can invest. (Scale 0 to 100) Source: Heritage Foundation |
| Labor Freedom | An index variable, which incorporates 1.) ratio between minimum wage and output per worker, 2.) easiness of hiring, 3.) working hours, 4.) firing, 5.) labor force participation and 6.) legal bureaucracy. (Scale 0 to 1000) Source: Heritage Foundation |
| Property Rights | An index variable, which shows the degree of legal protection and law enforcement including 1.) physical, 2.) intellectual, 3.) financial property, 4.) expropriation risk and 5.) administration (Scale 0 to 1000) Source: Heritage Foundation |
| Trade Freedom | An index variable, which shows the degree of tariff and non-tariff trade barriers affect both exports and imports. (Scale 0 to 1000) Source: Heritage Foundation |

| | |
|---|---|
| Tax Burden | An index variable, which analyzes the marginal tax on individual income, corporate income, and GDP. (Scale 0 to 1000) Source: Heritage Foundation |
| Government Integrity | An index variable, which shows how integer the government is affected by nepotism, extortion cronyism, patronage, and bribery. (Scale 0 to 1000) Source: Heritage Foundation |
| Government Spending | An index variable, which shows how large and efficient the spending of government is. (Scale 0 to 1000) Source: Heritage Foundation |
| Juridical Effectiveness | An index variable, which shows the degree of fairness and efficiency including quality and favorable decisions. (Scale 0 to 1000) Source: Heritage Foundation |
| Fiscal Freedom | An index variable, which shows the degree of fairness and efficiency including quality and favorable decisions. (Scale 0 to 1000) Source: Heritage Foundation |
| **Independent Variables** | |
| Soviet Ideology | An indicator variable, which equals 1 if the country sent students to study in Moscow's academic institutions and receive communist schooling, and 0 otherwise. Source: GARF |
| Academic Students | A numeric variable, which shows the total numbers of students sent to study in Moscow's academic institutions and receive communist schooling by the origin country (in logarithm), and 0 otherwise. Source: GARF |
| **Control Variables** | |
| South of Equator | An indicator variable, which equals 1 if the country's area is mainly south of the equator, and 0 otherwise. Source: Google Maps |
| Landlocked | An indicator variable, which equals 1 if the country has no natural access to the sea, and 0 otherwise. Source: Google Maps |
| Size of Country | A numeric variable, which indicates the size of a country in square kilometers (measured in natural logarithm). Source: World Bank |
| Colonized | An indicator variable, which equals 1 if the country was colonized in history, and 0 otherwise. Source: several |
| Colonizer | A categorial variable, which states the colonizer of the country. The colonizers are Britain, France, Spain, Germany, Portugal, Japan, Italy, Belgium, and Netherlands. Source: several |
| Independence | An indicator variable, which equals 1 if the country became independent after 1945, and 0 otherwise. Source: several |
| Religion | An indicator variable, which equals 1 if the country has a Muslim majority, and 0 otherwise. Source: World Population Review |
| FDI Russia | An ordinal variable, which shows the intensity of Russian foreign direct investment in the country on a scale from 0 to 10 points. Source: World Bank |
| Population | A numeric variable, which indicates the population of a country (in millions). Source: World Population Review |
| GDP | A numeric variable, which shows the value added in a country within one year. (Gross Domestic Product) Source: World Bank |

| | |
|---|---|
| GDP per capita | The ratio between Gross Domestic Product and Population. Source: World Bank |
| Freedom Score | An ordinal variable, which indicates the freedom score on a scale from 1 (free) until 7 (not free). Source: Freedom House |
| Year | Year ID, which ranges between 2010 and 2020 |
| Country | Country ID, which ranges from 1 to 134. |
| Distance to Moscow | A continuous variable, which shows the distance from a country's capital city to Moscow in kilometers (in natural logarithm). Source: Geo Data Source |
| **Extra variables** | |
| FDI to Russia | An ordinal variable, which shows the intensity of foreign direct investments from a country on a scale from 0 to 10 points. Source: World Bank |
| UN resolution | An indicator variable, which equals 0 if the country voted in favor of the UN resolution ES/11/1, and 1 otherwise. Source: UN |
| Economic Aid | A continuous variable, which states the economic aid as grants and credits by Soviet Union (in natural logarithm). Source: CIA |
| Economic Technicians | A continuous variable, which states the number of economic technicians by Soviet Union (in natural logarithm) in developing countries. Source: CIA |

## Table 7. OLS Results Soviet Ideology I

The following tables show the results from the OLS approach using the ideology variable for the different dependent variables. Each column represents one dependent variable from Y1 Gini coefficient until Y16 Juridical Effectiveness. The dependent variables are described with the same set of independent variables. The large variables Country Size, Population, and GDP are calculated with logarithms. Moreover, the p-values are only provided for the central explanatory variable (Soviet Ideology). The interpretation is that once a country participated in the educational program, the outcome of the dependent variable is the first coefficient, such as -3.968 points on the scale of globalization.

| | Y1 Gini | | Y2 Globalization | | Y3 Female | | Y4 Corruption | |
|---|---|---|---|---|---|---|---|---|
| **Variables** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** |
| Soviet Ideology | 0.747 | 1.569 | -3.968* | 2.145 | 0.753 | 2.737 | -13.074*** | 3.030 |
| South of Equator | 1.037 | 1.373 | 0.553 | 1.918 | 3.355 | 2.435 | 2.316 | 2.654 |
| Landlocked | 1.891 | 1.697 | -3.067 | 2.331 | 7.852 | 2.758 | -1.443 | 3.069 |
| Country Size | -0.008 | 0.350 | -2.626 | 0.486 | -0.335 | 0.548 | -2.476 | 0.622 |
| Colonized | 7.968 | 2.590 | 1.670 | 3.561 | -2.888 | 4.357 | -2.819 | 4.721 |
| Independence | -1.37 | 1.758 | 0.582 | 2.459 | 3.833 | 2.906 | -1.270 | 3.218 |
| Religion | -5.782 | 1.417 | -1.513 | 1.951 | -8.527 | 2.359 | -3.623 | 2.598 |
| FDI from Russia | -0.561 | 0.848 | 3.914 | 1.171 | 2.239 | 1.352 | 6.005 | 1.534 |
| Population | -0.005 | 0.005 | -.0186 | 0.007 | -0.005 | 0.008 | -0.008 | 0.009 |
| Freedom | 0.245 | 0.275 | 0.107 | 0.391 | -0.182 | 0.161 | -0.031 | 0.337 |
| GDP | 0.414 | 0.449 | 3.437 | 0.613 | 0.914 | 0.412 | 1.057 | 0.691 |
| Year | 0.550 | 0.268 | 3.014 | 0.451 | 0.115 | 0.085 | 0.201 | 0.201 |
| Constant | -1079.54 | 541.299 | -6022.44 | 910.88 | -173.17 | 173.503 | -333.59 | 407.43 |
| Observations | 223 | | 379 | | 359 | | 343 | |
| R-squared | 27.03 | | 44.64 | | 21.64 | | 47.23 | |

*** p<0.01; ** p<0.05; * p<0.1

Source: own calculations

## Table 8. OLS Results Soviet Ideology II

| | Y5 Finance | | Y6 Monetary | | Y7 Business | | Y8 Investments | |
|---|---|---|---|---|---|---|---|---|
| **Variables** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** |
| Soviet Ideology | -2.006 | 3.320 | -22.748 | 30.941 | -80.956** | 32.744 | 0.923 | 4.097 |
| South of Equator | 0.032 | 2.938 | -74.695 | 27.560 | 2.220 | 28.573 | -4.093 | 3.658 |
| Landlocked | 1.270 | 3.494 | -10.181 | 33.322 | -8.795 | 34.527 | 2.514 | 4.374 |
| Country Size | -1.478 | 0.713 | -5.885 | 7.133 | -30.476 | 7.386 | -3.222 | 0.911 |
| Colonized | 13.365 | 5.418 | 107.478 | 51.359 | -39.359 | 53.697 | 18.944 | 6.737 |
| Independence | -2.385 | 3.643 | -26.099 | 35.087 | 1.904 | 37.203 | -4.209 | 4.676 |
| Religion | -5.439 | 2.991 | -9.623 | 28.431 | 21.369 | 29.143 | -6.229 | 3.770 |
| FDI from Russia | 6.010 | 1.697 | 28.467 | 16.981 | 31.355 | 17.664 | 1.459 | 2.179 |
| Population | -0.023 | 0.010 | -0.322 | 0.102 | -0.167 | 0.107 | -0.0233 | .0134 |
| Freedom | -0.076 | 0.371 | -2.720 | 6.210 | -14.301 | 6.332 | -0.661 | 0.337 |
| GDP | 3.536 | 0.779 | -14.098 | 9.011 | 31.746 | 9.297 | 4.002 | 0.588 |
| Year | 0.172 | 0.218 | 4.345 | 14.290 | -5.023 | 11.281 | 1.231 | 1.072 |
| Constant | -316.7317 | 441.099 | -7987.2 | 28852 | 10996.89 | 22778.07 | -2428.76 | 829.99 |
| Observations | 335 | | 365 | | 366 | | 362 | |
| R-squared | 43.25 | | 32.27 | | 37.46 | | 27.48 | |

*** p<0.01; ** p<0.05; * p<0.1

Source: own calculations

**Table 9. OLS Results Soviet Ideology III**

| Variables | Y9 Labor | | Y10 Property Rights | | Y11 Trade | | Y12 Tax Burden | |
|---|---|---|---|---|---|---|---|---|
| | Coef. | Std. Err | Coef. | Std. Err | Coef. | Std. Err | Coef. | Std. Err |
| Soviet Ideology | -124.673*** | 34.723 | -101.942*** | 21.657 | 10.725 | 39.256 | -45.597 | 43.894 |
| South of Equator | 38.540 | 30.845 | 16.460 | 19.236 | 25.898 | 35.164 | 3.557 | 39.023 |
| Landlocked | 16.854 | 37.248 | 27.665 | 23.416 | 29.806 | 42.531 | -7.757 | 47.230 |
| Country Size | -15.581 | 7.970 | -24.183 | 4.983 | -6.796 | 9.164 | -12.625 | 10.141 |
| Colonized | -51.123 | 56.934 | -18.745 | 35.887 | 160.369 | 65.311 | 10.174 | 72.229 |
| Independence | 34.823 | 39.389 | 39.603 | 24.817 | -27.659 | 45.526 | -123.42 | 50.251 |
| Religion | 5.184 | 31.496 | -21.450 | 19.788 | -9.388 | 36.685 | 95.057 | 40.294 |
| FDI from Russia | 15.091 | 18.796 | 26.743 | 11.770 | 10.415 | 21.373 | -4.431 | 23.802 |
| Population | -0.147 | 0.115 | -0.221 | 0.072 | 0.017 | 0.130 | 0.191 | 0.145 |
| Freedom | -2.580 | 6.734 | -7.333 | 4.324 | 1.690 | 7.860 | 2.087 | 8.554 |
| GDP | 10.224 | 10.026 | 41.206 | 6.308 | 17.483 | 11.510 | -1.126 | 12.714 |
| Year | -15.183 | 11.060 | 236.382 | 10.046 | -11.063 | 15.817 | -6.173 | 13.167 |
| Constant | 31422.51 | 22331 | -6022.44 | 20283.7 | 22763.39 | 31936.81 | 13399 | 26585 |
| Observations | 368 | | 367 | | | | 363 | |
| R-squared | 24.70 | | 66.00 | | | | 11.04 | |

*** p<0.01; ** p<0.05; * p<0.1

Source: own calculations

**Table 10. OLS Results Soviet Ideology IV**

| Variables | Y13 Gov Integrity | | Y14 Gov Spending | | Y15 Fiscal | | Y16 Law | |
|---|---|---|---|---|---|---|---|---|
| | Coef. | Std. Err | Coef. | Std. Err | Coef. | Std. Err | Coef. | Std. Err |
| Soviet Ideology | -104.64*** | 29.115 | - 36.891* | 48.193 | 44.330 | 68.744 | -95.92*** | 36.688 |
| South of Equator | 8.565 | 25.705 | -104.856 | 43.090 | 42.292 | 60.408 | 6.686 | 32.644 |
| Landlocked | 27.515 | 31.118 | -3.945 | 51.914 | 43.168 | 72.623 | 22.998 | 39.325 |
| Country Size | -29.045 | 6.650 | 6.383 | 11.084 | -6.191 | 15.588 | -21.420 | 8.412 |
| Colonized | -16.226 | 47.672 | -43.151 | 78.971 | -113.86 | 112.66 | 57.679 | 60.472 |
| Independence | -2.097 | 32.975 | 53.020 | 54.656 | -20.927 | 78.561 | 31.568 | 41.766 |
| Religion | -37.220 | 26.209 | -35.523 | 44.218 | -85.795 | 61.375 | -12.890 | 33.273 |
| FDI from Russia | 44.862 | 15.732 | 6.509 | 26.043 | 47.722 | 37.208 | 32.509 | 20.06 |
| Population | 0-.108 | 0.096 | 0.0524 | 0.160 | -0.3851 | 0.222 | 0.025 | 0.120 |
| Freedom | -9.325 | 5.498 | 1.906 | 9.167 | 13.058 | 13.253 | -9.502 | 7.149 |
| GDP | 38.044 | 8.329 | 9.442 | 13.871 | 6.014 | 32.839 | 34.593 | 10.740 |
| Year | 32.232 | 7.639 | 28.891 | 12.074 | -54.890 | 32.839 | 33.492 | 20.327 |
| Constant | -64516.05 | 15423.3 | -57789.68 | 24378.98 | 111492.6 | 66320.13 | -67223.79 | 41050.14 |
| Observations | 371 | | 379 | | 242 | | 245 | |
| R-squared | 47.69 | | 44.64 | | 8.49 | | 29.36 | |

*** p<0.01; ** p<0.05; * p<0.1

Source: own calculations

## Table 11. OLS Results. Academic Students I

The following tables show the results from the OLS approach using the student number for the different dependent variables. Each column represents one dependent variable from Y1 Gini coefficient until Y16 Juridical Effectiveness. The dependent variables are described with the same set of independent variables. The large variables Students, Country Size, Population, and GDP are calculated with logarithms. Moreover, the p-values are only provided for the central explanatory variable (Students). The interpretation is that for each additional student to participate in the program, the outcome is the coefficient in percent due to logarithm. For example, each student decreases the globalization value by 0.07%. However, given that an average country sent 1257 students, the effect would be significantly higher.

| | Y1 Gini | | Y2 Globalization | | Y3 Female | | Y4 Corruption | |
|---|---|---|---|---|---|---|---|---|
| **Variables** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** |
| Students | -0.136 | 0.233 | -.0721** | 0.315 | 0.0902 | 0.393 | -1.963*** | 0.425 |
| South of Equator | 0.784 | 1.375 | .306 | 1.912 | 3.344 | 2.444 | 1.775 | 2.630 |
| Landlocked | 2.006 | 1.699 | -2.798 | 2.322 | 7.849 | 2.764 | -0.900 | 3.034 |
| Country Size | 0.0956 | 0.354 | -2.504 | 0.491 | -0.338 | .559 | -2.199 | 0.625 |
| Colonized | 8.697 | 2.595 | 2.233 | 3.553 | -2.828 | 4.361 | -2.325 | 4.666 |
| Independence | -1.779 | 1.756 | 0.382 | 2.441 | 3.802 | 2.901 | -1.189 | 3.164 |
| Religion | -5.465 | 1.440 | -1.040 | 1.965 | -8.555 | 2.388 | -2.705 | 2.598 |
| FDI from Russia | -0.707 | 0.848 | 3.833 | 1.163 | 2.221 | 1.346 | 6.071 | 1.507 |
| Population | -0.005 | 0.005 | -0.017 | 0.007 | -0.005 | 0.008 | -0.006 | 0.009 |
| Freedom | 0.231 | 0.276 | 0.080 | 0.389 | -0.182 | 0.161 | -0.082 | 0.337 |
| GDP | 0.377 | 0.447 | 3.457 | 0.607 | 0.912 | 0.412 | 1.160 | 0.684 |
| Year | 0.542 | 0.268 | 3.013 | 0.451 | 0.115 | 0.085 | 0.201 | 0.202 |
| Constant | -1062.34 | 541.48 | -6022.42 | 910.60 | -172.99 | 173.54 | -348.091 | 408.26 |
| Observations | 223 | | 379 | | 359 | | 343 | |
| R-squared | 26.99 | | 52.83 | | 21.64 | | 49.59 | |

*** p<0.01; ** p<0.05; * p<0.1

Source: own calculations

## Table 12. OLS Results. Academic Students II

| | Y5 Finance | | Y6 Monetary | | Y7 Business | | Y8 Investments | |
|---|---|---|---|---|---|---|---|---|
| **Variables** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** |
| Students | -0.298 | 0.485 | -6.371* | 4.551 | -11.952** | 4.797 | -0.127 | 0.601 |
| South of Equator | -0.017 | 2.951 | -78.960 | 27.656 | 0.006 | 28.728 | -4.391 | 3.680 |
| Landlocked | 1.349 | 3.503 | -6.285 | 33.413 | -5.150 | 34.663 | 2.696 | 4.392 |
| Country Size | -1.449 | 0.725 | -4.394 | 7.213 | -29.180 | 7.505 | -3.133 | 0.926 |
| Colonized | 13.348 | 5.396 | 119.143 | 51.521 | -37.355 | 53.931 | 19.857 | 6.762 |
| Independence | -2.382 | 3.638 | -31.332 | 35.006 | 2.489 | 37.138 | -4.663 | 4.666 |
| Religion | -5.303 | 3.026 | -4.0232 | 28.715 | 26.810 | 29.601 | -5.902 | 3.821 |
| FDI from Russia | 5.985 | 1.702 | 26.452 | 16.974 | 30.925 | 17.691 | 1.311 | 2.180 |
| Population | -0.022 | 0.010 | -0.306 | 0.103 | -0.156 | 0.107 | -0.022 | 0.0135 |
| Freedom | -0.076 | 0.371 | -2.920 | 6.199 | -14.615 | 6.337 | -0.668 | 0.5888 |
| GDP | 3.560 | 0.777 | -14.135 | 8.952 | 32.758 | 9.259 | 3.959 | 1.069 |
| Year | 0.171 | 0.218 | 4.345 | 14.261 | -5.078 | 11.278 | 1.229 | 0.411 |
| Constant | -317.008 | 441.207 | -7996.6 | 28852.71 | 11082.02 | 22770.25 | -2425.391 | 829.89 |
| Observations | 335 | | 365 | | 366 | | 362 | |
| R-squared | 43.34 | | 33.31 | | 37.40 | | 27.45 | |

*** p<0.01; ** p<0.05; * p<0.1

Source: own calculations

**Table 13. OLS Results. Academic Students III**

| Variables | Y9 Labor Coef. | Std. Err | Y10 Property Rights Coef. | Std. Err | Y11 Trade Coef. | Std. Err | Y12 Tax Burden Coef. | Std. Err |
|---|---|---|---|---|---|---|---|---|
| Students | -18.655*** | 5.095 | -12.002*** | 3.232 | -2.929 | 5.802 | -4.750* | 6.497 |
| South of Equator | 34.771 | 30.992 | 17.526 | 19.559 | 20.637 | 35.340 | 4.830 | 39.314 |
| Landlocked | 22.675 | 37.355 | 29.697 | 23.763 | 33.000 | 42.669 | -7.084 | 47.562 |
| Country Size | -13.520 | 8.085 | -23.869 | 5.114 | -5.148 | 9.289 | -12.758 | 10.309 |
| Colonized | -46.540 | 57.171 | -25.996 | 36.540 | 176.247 | 65.652 | 4.382 | 72.762 |
| Independence | 34.953 | 39.311 | 45.704 | 25.050 | -35.412 | 45.373 | -119.705 | 50.317 |
| Religion | 13.862 | 31.934 | -19.739 | 20.274 | -3.621 | 37.064 | 94.8335 | 40.899 |
| FDI from Russia | 14.297 | 18.804 | 27.781 | 11.928 | 7.858 | 21.397 | -3.592 | 23.909 |
| Population | -0.129 | 0.116 | -0.220 | 0.073 | 0.034 | 0.131 | 0.189 | 0.147 |
| Freedom | -3.008 | 6.733 | -7.508 | 4.376 | 1.428 | 7.860 | 2.067 | 8.578 |
| GDP | 11.722 | 9.975 | 43.089 | 6.349 | 16.731 | 11.449 | -0.191 | 12.687 |
| Year | -15.344 | 11.053 | 236.493 | 10.159 | -11.0398 | 15.816 | -6.177 | 13.167 |
| Constant | 31708.72 | 22317 | -477065.3 | 20513.19 | 22717.16 | 31934.41 | 13394.2 | 26585 |
| Observations | 368 | | 367 | | | | 363 | |
| R-squared | 24.73 | | 68.64 | | | | 10.58 | |

*** p<0.01; ** p<0.05; * p<0.1

Source: own calculations

**Table 14. OLS Results. Academic Students IV**

| Variables | Y13 Gov Integrity Coef. | Std. Err | Y14 Gov Spending Coef. | Std. Err | Y15 Fiscal Coef. | Std. Err | Y16 Law Coef. | Std. Err |
|---|---|---|---|---|---|---|---|---|
| Students | -17.714*** | 4.198 | -15.226** | 6.981 | 5.840 | 10.086 | -15.789*** | 5.356 |
| South of Equ. | 3.130 | 25.381 | -91.887 | 42.534 | 42.780 | 60.726 | 2.132 | 32.574 |
| Landlocked | 33.842 | 30.675 | -14.244 | 51.189 | 41.671 | 72.862 | 28.832 | 39.179 |
| Country Size | -26.391 | 6.638 | 1.978 | 11.033 | -6.611 | 15.837 | -19.282 | 8.474 |
| Colonized | -5.322 | 47.050 | -79.010 | 77.979 | -112.632 | 113.254 | 66.559 | 60.358 |
| Independence | -5.361 | 32.350 | 70.086 | 53.643 | -22.520 | 78.427 | 28.948 | 41.423 |
| Religion | -26.497 | 26.153 | -51.536 | 43.949 | -87.743 | 62.278 | -4.237 | 33.492 |
| FDI (Russia) | 43.074 | 15.474 | 12.246 | 25.608 | 47.708 | 37.264 | 30.835 | 19.947 |
| Population | -0.085 | 0.095 | 0.006 | 0.158 | -0.388 | 0.223 | 0.045 | .120 |
| Freedom | -9.87 | 5.417 | 2.230 | 9.024 | 13.222 | 13.253 | -9.952 | 7.101 |
| GDP | 38.943 | 8.151 | 10.279 | 13.563 | 5.325 | 19.718 | 35.679 | 10.608 |
| Year | 32.182 | 7.634 | 29.022 | 12.075 | -54.826 | 32.858 | 33.234 | 20.325 |
| Constant | -64450.12 | 15413.77 | -58037.95 | 24379.93 | 111377.9 | 66356.85 | -66734.35 | 41046.39 |
| Observations | 371 | | 379 | | 242 | | 245 | |
| R-squared | 49.62 | | 13.64 | | 8.38 | | 30.50 | |

*** p<0.01; ** p<0.05; * p<0.1

Source: own calculations

## Table 15. IV Results. Academic Students as Instrumented Variable I

The following tables provide the results for the instrumental variable approach for the Academic Students and Soviet Ideology, respectively. In the first stage, the instrumental variable, which hereby is distance, is tested to have an influence on the students and is a strong instrument using the Durbin-Wu-Hausman test. For further testing, Kleibergen Paap Wald F-Statistic was also used. As the tables show, distance has a significant impact on student numbers, but in most cases, endogeneity is not a problem. In the endogenous cases, the instrumental variables are strong. Therefore, it can be used in the second stage as a coefficient.

| **Model** | **Y1** | **Y2** | **Y3** | **Y4** | **Y5** | **Y6** | **Y7** | **Y8** | **Y9** |
|---|---|---|---|---|---|---|---|---|---|
| ***Second Stage. Dependent Variables are the Socioeconomic Characteristics and Economic Performance*** | | | | | | | | | |
| *Treatment* | 0.267** | 0.532 | -1.946** | -2.221*** | -0.851 | -1.774 | -13.21 | -1.684** | -10.639 |
| | (0.376) | (0.654) | (0.738) | (0.727) | (0.682) | (12.08) | (10.656) | (0.917) | (10.675) |
| | [-0.47,1.00] | [-0.75,1.18] | [-3.40,-0.49] | [-3.65,-0.791] | [-2.19,0.49] | [-25.53,21.98] | [-34.17,7.74] | [-3.48,0.12] | [-31.63,10.35] |
| *R2* | 0.15 | 0.37 | 0.04 | 0.52 | 0.44 | 0.11 | 0.22 | 0.23 | 0.13 |
| *F-stat* | 7.04 | 21.38 | 8.83 | 28.24 | 24.07 | 4.05 | 8.22 | 11.65 | 3.65 |
| *Number of obs.* | 223 | 379 | 359 | 343 | 335 | 365 | 366 | 362 | 368 |
| ***First Stage. Dependent Variable is the number of Academic Students in Soviet Institutions*** | | | | | | | | | |
| *Distance* | -2.746*** | -0.289*** | -2.798*** | -2.803*** | -3.502*** | -3.203*** | -3.15*** | -3.444*** | -3.217*** |
| | (0.378) | (0.409) | (0.419) | (0.427) | (0.453) | (0.419) | (0.41) | (0.431) | (0.413) |
| *R2* | 0.38 | 0.41 | 0.38 | 0.34 | 0.42 | 0.41 | 0.42 | 0.41 | 0.41 |
| *F-stat* | 29.43 | 49.90 | 44.38 | 42.99 | 59.65 | 58.27 | 59.01 | 63.66 | 60.47 |
| *Hausman (p-value)* | 0.01 | 0.03 | 0.00 | 0.65 | 0.31 | 0.68 | 0.89 | 0.06 | 0.39 |
| *Endogeneity?* | Yes | Yes | Yes | No | No | No | No | No | No |
| *Strong instrument?* | Yes | Yes | Yes | | | | | | |

*** p<0.01; ** p<0.05; * p<0.1

Source: own calculations

**Table 16. IV Results. Academic Students as Instrumented Variable II**

| Model | Y10 | Y11 | Y12 | Y13 | Y14 | Y15 | Y16 |
|---|---|---|---|---|---|---|---|
| ***Second Stage. Dependent Variables are the Socioeconomic Characteristics and Economic Performance*** | | | | | | | |
| *Treatment* | -10.543 | 3.846 | -1.033 | -21.903*** | -45.742*** | -62.961** | -22.136* |
| | (13.327) | (13.319) | (12.847) | (8.258) | (16.228) | (25.528) | (12.456) |
| | [-36.75,15.67] | [-22.35,30.04] | [-26.30,24.23] | [-38.14,5.66] | [-77.66,-13.83] | [-113.26,-12.66] | [-46.68,2.40] |
| *R2* | 0.12 | 0.04 | 0.06 | 0.35 | 0.32 | 0.13 | 0.21 |
| *F-stat* | 3.97 | 1.43 | 1.90 | 15.60 | 2.34 | 1.53 | 4.92 |
| *Number of obs.* | 367 | 360 | 363 | 371 | 365 | 242 | 245 |
| ***First Stage. Dependent Variable is the number of Academic Students in Soviet Institutions*** | | | | | | | |
| *Distance* | -3.266*** | -3.471*** | -3.367*** | -3.222*** | -3.158*** | -3.159*** | -3.195*** |
| | (0.415) | (0.431) | (0.43) | (0.411) | (0.421) | (0.512) | (0.511) |
| *R2* | 0.41 | 0.41 | 0.41 | 0.41 | 0.40 | 0.41 | 0.41 |
| *F-stat* | 61.73 | 64.54 | 61.21 | 61.30 | 61.30 | 37.84 | 38.9 |
| *Hausman (p-value)* | 0.91 | 0.58 | 0.76 | 0.59 | 0.00 | 0.00 | 0.58 |
| *Endogeneity* | No | No | No | No | Yes | Yes | No |
| *Strong instruments* | / | / | / | / | Yes | Yes | / |

*** p<0.01; ** p<0.05; * p<0.1

Source: own calculations

**Table 17. IV Results. Soviet Ideology as Instrumented Variable I**

| Model | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 | Y7 | Y8 | Y9 |
|---|---|---|---|---|---|---|---|---|---|
| ***Second Stage. Dependent Variables are the Socioeconomic Characteristics and Economic Performance*** | | | | | | | | | |
| *Treatment* | -8.757** | 4.082 | -14.871*** | -17.6*** | -6.564 | -12.927 | -99.357 | -12.10** | -79.752 |
| | (4.055) | (4.858) | (5.733) | (5.924) | (5.31) | (87.651) | (80.259) | (6.68) | (79.943) |
| | [-16.75,-0.76] | [-5.47,13.63] | [-26.14,-3.6] | [-29.25,-5.95] | [-17.01,3.88] | [-25.53,21.98] | [-257.2,58.5] | [-25.24,1.04] | [-236.98,77.47] |
| *R2* | 0.06 | 0.40 | 0.01 | 0.49 | 0.44 | 0.11 | 0.21 | 0.22 | 0.14 |
| *F-stat* | 5.80 | 22.24 | 7.85 | 24.42 | 21.74 | 3.71 | 7.52 | 10.6 | 3.47 |
| *Number of obs.* | 223 | 379 | 359 | 343 | 335 | 365 | 366 | 362 | 368 |
| ***First Stage. Dependent Variable is the Soviet Ideology*** | | | | | | | | | |
| *Distance* | -0.371*** | -0.380*** | -0.366*** | -0.354*** | -0.454*** | -0.442*** | -0.419*** | -0.4772*** | -0.429*** |
| | (0.073) | (0.062) | (0.061) | (0.061) | (0.068) | (0.0625) | (0.061) | (0.064) | (0.062) |
| *R2* | 0.30 | 0.30 | 0.31 | 0.29 | 0.32 | 0.32 | 0.32 | 0.32 | 0.31 |
| *F-stat* | 25.31 | 37.89 | 35.69 | 34.17 | 44.4 | 50.13 | 47.27 | 54.96 | 48.33 |
| *Hausman (p-value)* | 0.00 | 0.07 | 0.00 | 0.33 | 0.26 | 0.91 | 0.79 | 0.03 | 0.54 |
| *Endogeneity?* | Yes | No | Yes | No | No | No | No | Yes | No |
| *Strong instrument?* | Yes | | Yes | | | | | Yes | |

*** p<0.01; ** p<0.05; * p<0.1

Source: own calculations

**Table 18. IV Results. Soviet Ideology as Instrumented Variable II**

| Model | Y10 | Y11 | Y12 | Y13 | Y14 | Y15 | Y16 |
|---|---|---|---|---|---|---|---|
| ***Second Stage. Dependent Variables are the Socioeconomic Characteristics and Economic Performance*** | | | | | | | |
| *Treatment* | -89.073 | 28.137 | -7.806 | -163.515*** | -330.645*** | -478.26** | -163.61* |
| | (61.477) | (96.308) | (92.265) | (62.13) | (114.523) | (197.45) | (93.247) |
| | [-209.98,31.83] | [-161.28,217.6] | [-189.27,173.66] | [-285.71,-41.32] | [-555.88,-105.41] | [-867.31,-89.21] | [-347.32,20.11] |
| *R2* | 0.66 | 0.04 | 0.06 | 0.35 | 0.32 | 0.33 | 0.20 |
| *F-stat* | 55.53 | 1.35 | 1.90 | 15.07 | 2.45 | 1.41 | 4.6 |
| *Number of obs.* | 367 | 360 | 363 | 371 | 365 | 242 | 245 |
| ***First Stage. Dependent Variable is the number of Academic Students in Soviet Institutions*** | | | | | | | |
| *Distance* | -0.441*** | -0.48*** | -0.469*** | -0.431*** | -0.437*** | -0.419*** | -0.43*** |
| | (0.062) | (0.065) | (0.064) | (0.061) | (0.063) | (0.077) | (0.076) |
| *R2* | 0.31 | 0.32 | 0.32 | 0.31 | 0.31 | 0.31 | 0.31 |
| *F-stat* | 50.21 | 54.84 | 53.4 | 49.10 | 48.09 | 29.85 | 31.66 |
| *Hausman (p-value)* | 0.82 | 0.85 | 0.67 | 0.31 | 0.00 | 0.00 | 0.44 |
| *Endogeneity* | No | No | No | No | Yes | Yes | No |
| *Strong instruments* | / | / | / | / | Yes | Yes | / |

*** p<0.01; ** p<0.05; * p<0.1

Source: own calculations

**Table 19. Decolonization. Year of Independence**

| | |
|---|---|
| 1945 | Vietnam, Indonesia |
| 1946 | Jordan, Philippines |
| 1947 | Pakistan, India |
| 1948 | Myanmar, Sri Lanka, South Korea, North Korea |
| 1951 | Libya, Oman |
| 1953 | Cambodia, Laos |
| 1956 | Sudan, Tunisia |
| 1957 | Ghana, Malaysia |
| 1958 | Guinea |
| 1959 | Singapore |
| 1960 | Cameroon, Togo, Madagascar, Democratic Republic of Congo, Somalia, Benin, Niger, Chad, Ivory Coast, Central African Republic, Republic of Congo, Nigeria, Gabon, Mali, Mauretania, Cyprus |
| 1961 | Sierra Leone, Tanzania, Syria, Kuwait |
| 1962 | Uganda, Burundi, Rwanda, Algeria, Jamaica, Trinidad and Tobago, Samoa |
| 1963 | Kenya |
| 1964 | Malawi, Zambia, Belize, Bahamas |
| 1965 | Gambia, Zimbabwe, Maldives |
| 1966 | Botswana, Lesotho, Guyana, Barbados |
| 1967 | Yemen |
| 1968 | Mauritius, Eswatini, Equatorial Guinea, Nauru |
| 1970 | Tonga, Fiji |
| 1971 | Bangladesh, Bahrain, United Arab Emirates, Qatar |
| 1973 | Guinea-Bissau, Bahamas |
| 1974 | Grenada, |
| 1975 | Mozambique, Cabo Verde, Comoros, Sao Tomé and Principe, Angola, Suriname, Papua New Guinea |
| 1976 | Seychelles |
| 1977 | Djibouti |
| 1978 | St. Lucia, Dominica, Solomon Island, Tuvalu |
| 1979 | St. Vincent and the Grenadines, Kiribati |
| 1980 | Vanuatu |
| 1981 | Belize, Antigua and Barbuda |
| 1983 | St. Kitts and Nevis |
| 1984 | Brunei |
| 1986 | Marshall Island, Micronesia |
| 1990 | Namibia |
| 1991 | Armenia, Azerbaijan, Turkmenistan, Tajikistan, Georgia, Kyrgyzstan, Kazakhstan |
| 1993 | Eritrea |
| 1994 | Palau |
| 2002 | Timor-Leste |
| 2011 | South Sudan |

Source: own research

**Table 20. List of political leaders to study in Soviet Union**

| Name | Position |
|---|---|
| Mahmoud Abbas | President Palestine |
| Porfirio Lobo Sosa | President Honduras |
| Jose Daniel Ortega | President Nicaragua |
| Michel Djotodia | President Central African Republic |
| Bharrat Jagdeo | President Guyana |
| Joao Lourenco | President Angola |
| Jeanne d'Arc Mujawannariya | Minister of Environment, Rwanda |
| Hillary Onek | Minister of Internal Affairs, Uganda |
| Hang Chuon Naron | Minister of Education, Cambodia |
| Khemmani Pholsena | Minister of President's Office, Laos |
| Mustafa Barghouti | Minister of Information, Palestine |
| Ganesh Shah | Former Minister of Environment, Science and Technology, Nepal |
| Oswaldo Luizar | Party Leader, Peru |
| Hifikepunye Lucas Pohamba | Former President Namibia |
| Timoleon Jimenez | Leader of FARC Colombia |
| Alpha Condé | Former President Guinea |
| Fatima Abdel Mahmoud | Former Party Leader Sudan |
| Bheri Sygmond Ramsaran | Former Minister of Health, Guyana |
| Thabo Mbeki | Former President, South Africa |
| John Mahama | Former President, Ghana |
| Demetris Christofias | Former President, Cyprus |
| Mohammad Najibullah | Former President, Afghanistan |
| Jose Eduardo dos Santos | Former Minister of Foreign Affairs, Angola |
| Fikre-Selassie Wogderess | Former Prime Mister, Ethiopia |
| Legesse Asfaw | Former Minister of Administration, Ethiopia |
| Sklmelis Mazengia | Former Party Leader, Ethiopia |
| Alemu Abebe | Former Minister of Agriculture, Ethiopia |
| Henry Ruiz Hernandez | Former Minister of Foreign Cooperation, Nicaragua |
| Abdallah Khamiri | Former Minister of Ideological Matters, Yemen |
| Sayf Sayil Khalid | Former Minister of Governance, Yemen |
| Hosni Mubarak | Former President of Egypt |
| Arjun Bahadur Thapa | Diplomat, Nepal |
| Maria Ramos Urzagaste | Diplomat, Bolivia |
| Saiful Hoque | Diplomat, Bangladesh |
| Fayed Mustafa | Diplomat, Palestine |
| Augusto Aurelio Fabrega Donado | Diplomat, Panama |
| Sospeter Machage | Diplomat, Kenya |
| Samuel Tito Armando | Diplomat, Angola |

Source: own research

**Table 21. Soviet Schools and institutions built in LDCs**

| Country | Project |
|---|---|
| Afghanistan | Agricultural and Technical Training Centers |
| | Petroleum and Mining Institute Mazar-e-Sharif |
| | Polytechnic School Kabul |
| | Technical Institute Jangalak |
| | Communist Party School |
| | Teacher Training School |
| Algeria | Industrial and Agricultural Training Center |
| | Institute for Hydrotechnology Blida |
| | Teacher Training Institute |
| | Petroleum and Gas Institute |
| | Housing and Urban Institute |
| | Twenty Vocational Schools |
| Angola | Four Vocational Training Centers (900) |
| Brazil | Technical University |
| Cameroon | Agricultural School Dschang |
| | Forestry School Mbalmayo |
| Chad | Medical School |
| Congo | Three Technical Faculties University of Brazzaville |
| | Communist Party School |
| | Two Technical Training Center |
| Egypt | Seven Training Centers |
| Ethiopia | Technical School Bahir Dar |
| | Teacher Training Institutes |
| | Nursing School |
| | Vocational Training School Tema |
| Guinea | Technological Institute Conakry |
| | Renovation of University of Conakry |
| Guinea-Bissau | Nurse Training Facility |
| India | Technical Institute |
| | Oil and Gas Institute Baroda |
| Indonesia | Amboina School Moluccas |
| | Gadjah Mada University |
| Iran | Twelve Training Centers (4,800) |
| | Eight Vocational Schools (3,000) |
| Iraq | Oil Industry Training Center |
| Jordan | Five Training Schools Irbid |
| Kenya | Technical Schools Kakamega and Nyeri |
| Libya | Teacher Training Center |
| Madagascar | Agricultural School Antsirabe |
| Mali | Industrial Training Center |
| | Health, Administration, Agriculture, and Political Schools |
| Mauritania | Russian-Language Faculty University of Nouakchott |
| Mozambique | Sixteen Technical Schools |
| | Two Teacher Training Institutes |
| Myanmar | Technical Institute Rangoon |
| Nicaragua | Polytechnical School Leon |
| | Energy Technology School |

| | |
|---|---|
| | Agricultural Institute Cebaco |
| Niger | Oil Technical Training Center Warri |
| Pakistan | Metallurgical Institute |
| Sierra Leone | Marine Fisheries School Freetown |
| | Agricultural School Togwajaale |
| Somalia | Secondary School and Training Center Mogadishu |
| Sudan | School Laboraties |
| Syria | Polytechnical Institutions Hims and Latakia |
| | Industrial Teachers Training Institute |
| | Rallway Training Center Aleppo |
| | Oil Industry Training Center Rumaylan |
| Tanzania | Two Technical Schools Mbeya |
| Tunisia | National Technical Institute |
| Uganda | Agricultural Mechanization School Tororo |
| | Medical School Kampala |
| Yemen | Geological Training Center Aden |
| | Communist Party School |
| | Law Faculty University of Aden |
| | Technical Training Centers Aden and Mukalla |
| | Three Vocational Schools |
| | Vocational Institutes |
| Zaire | Technical School Mbandaka |
| Zambia | University Laboratories Equipment |
| Zimbabwe | Teacher Training College |
| | Vocational Training Schools |

Source: NAC (1989)

## Table 22. Curriculum of a student at Lumumba University in physics

This list of subjects shows how intense the ideological indoctrination during the studies at Lumumba University has been for the students of physics. In their five-year curriculum, they had to learn several subjects in communist subjects.

| Subject | Total hours | Subject | Total hours |
|---|---|---|---|
| Total | 4,210 | General Thermotechnics | 70 |
| History of the Communist Party of th Soviet Union | 100 | Technology of Metals and Welding | 72 |
| Political Economy | 110 | Construction Machines, incl. machine components | 106 |
| Marxist-Leninist Philosophy | 70 | Construction Mechanics | 220 |
| Fundamentals of Scientific Communism | 70 | General Electronics | 88 |
| Physical Education | 140 | Architecture of Industrial and Civil Buildings | 221 |
| Economics of Construction | 70 | Fundamentals of hydraulics, water supply, and drainage | 72 |
| Technology and Organization of Construction Production | 112 | Engineering Geology | 56 |
| Foreign Languages | 210 | Mechanics of Soil and Foundations | 98 |
| Higher Mathematics | 422 | Testing of Construction | 42 |
| Chemistry | 140 | Computer Technology and Engineering and Economic Accounting | 42 |
| Descriptive Geometry and Mechanical Drawing | 178 | Fundamentals of Automatics and Automization of Construction | 42 |
| Organization and Planning of Construction | 98 | Reinforced Concrete and Stone Construction | 168 |
| Physics | 261 | Wood and Synthetic Materials | 84 |
| Theoretical Mechanics | 173 | Metal Construction | 112 |
| Engineering Geodesy | 105 | Fundamentals of safety and Fire Prevention | 42 |
| Building Materials | 105 | Obligatory Courses established by the Council of the higher education | 98 |
| Resistance of Materials and Fundamentals of Tension and Plasticity Theory | 213 | | |

Source: NAC (1999)

**Figure 6. United Nations Resolution General Assembly Resolution ES11/1**


Source: UN (2022)

**Figure 7. Night light on the Korean peninsula from space**


Source: National Geographic (2014)

## Figure 8. Hausman Test

The Hausman test suggests using a random effect model since a systemic difference in using fixed or random effect models is captured.

```
. hausman fixed random
```

| | Coefficients | | | |
|---|---|---|---|---|
| | (b) fixed | (B) random | (b-B) Difference | sqrt(diag(V_b-V_B)) Std. err. |
| C_Population | .8044425 | -.0830631 | .8875056 | 1.569737 |

b = Consistent under H0 and Ha; obtained from xtreg.
B = Inconsistent under Ha, efficient under H0; obtained from xtreg.

Test of H0: Difference in coefficients not systematic

chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 0.32
Prob > chi2 = 0.5718

Source: own calculations

## Figure 9. Breusch Pagan Test

The Breusch Pagan test detects endogeneity since the null hypothesis of having exogenous variables is rejected.

```
. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        Y4_Corruption[Country_Id,t] = Xb + u[Country_Id] + e[Country_Id,t]

        Estimated results:
                         |       Var     SD = sqrt(Var)
                ---------+-----------------------------
                Y4_Corr~n |   269.8392       16.42678
                        e |   8.872267       2.978635
                        u |   134.6141       11.60233

        Test: Var(u) = 0
                                  chibar2(01) =   290.24
                              Prob > chibar2 =   0.0000
```

Source: own calculations

## Figure 10. Durbin-Wu-Hausman Test I

Two examples of the Durbin-Wu-Hausman Test show endogenous (I) and exogenous (II) results, which are used in the IV results tables 15-18.

```
estat endog

Tests of endogeneity
H0: Variables are exogenous

Durbin (score) chi2(1)          =  8.94406  (p = 0.0028)
Wu-Hausman F(1,349)             =  8.81634  (p = 0.0032)
```

Source: own calculations

## Figure 11. Durbin-Wu-Hausman Test II

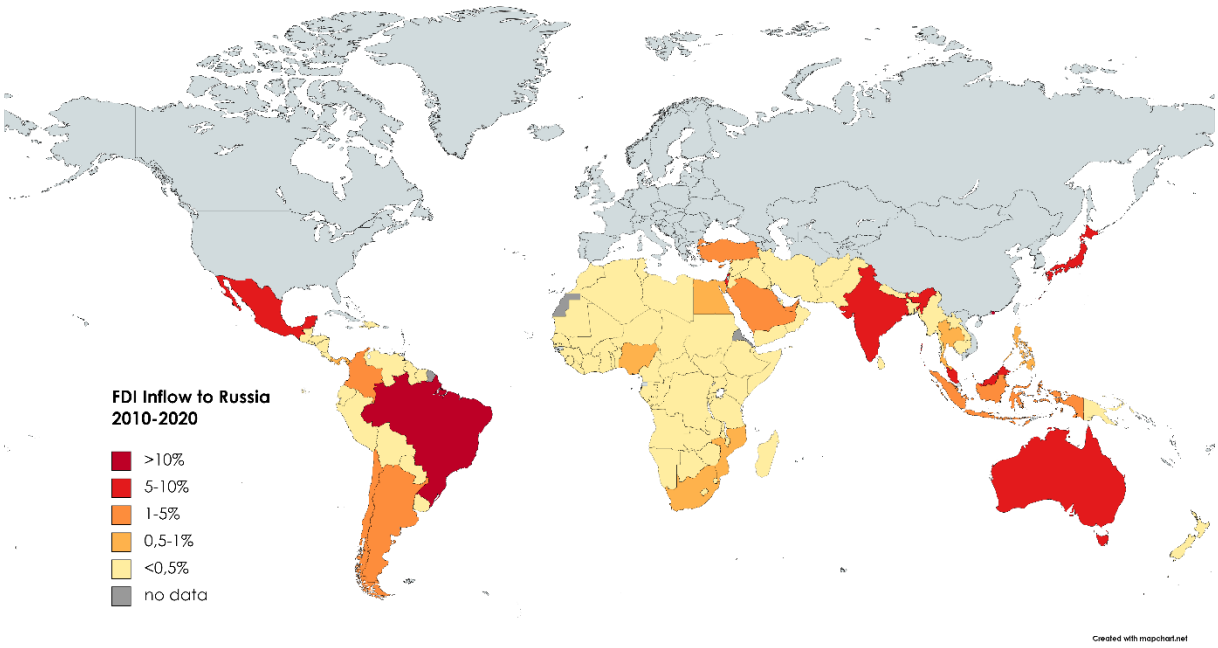
```
estat endog

Tests of endogeneity
H0: Variables are exogenous

Durbin (score) chi2(1)          =   1.1481  (p = 0.2839)
Wu-Hausman F(1,333)             =  1.10543  (p = 0.2938)
```

Source: own calculations

## Figure 12. FDI Inflows to Russia 2010-2020




Source: World Bank

## Table 23. OLS Results. Alternative Variable Economic Technicians

The following tables show the alternative results from an OLS approach using economic technicians and financial support as variables for the different dependent variables. Each column represents one dependent variable from Y1 Gini coefficient until Y16 Juridical Effectiveness. The dependent variables are described with the same set of independent variables. The large variables Country Size, Population, and GDP are calculated with logarithms. Moreover, the p-values are only provided for the central explanatory variable (Soviet Ideology). The interpretation is that each economic technician has an influence of the coefficient in percent (logarithm) on the dependent variables.

| | Business Freedom | | Gov Spending | | Fiscal | | Law | |
|---|---|---|---|---|---|---|---|---|
| **Variables** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** |
| Ec.Technicians | 21.520* | 11.809 | -45.07** | 18.990 | -63.580** | 27.857 | -24.369* | 12.915 |
| South of Equ. | 40.444 | 44.758 | 50.878 | 72.821 | 50.709 | 106.275 | 52.102 | 49.770 |
| Landlocked | -30.315 | 49.829 | 25.299 | 79.225 | 116.784 | 116.500 | 31.503 | 54.426 |
| Country Size | -27.901 | 14.834 | -22.083 | 23.198 | -34.505 | 34.378 | -45.154 | 16.062 |
| Colonized | -56.031 | 47.672 | -250.095 | 112.237 | -233.634 | 170.33 | -47.458 | 79.852 |
| Independence | -5.177 | 71.828 | 110.124 | 80.794 | -68.913 | 119.403 | 125.604 | 55.992 |
| Religion | -71.660 | 48.454 | 61.944 | 77.532 | 102.444 | 113.126 | 19.793 | 53.005 |
| FDI from Russia | 72.405 | 40.836 | 100.415 | 64.263 | -83.171 | 97.543 | -39.175 | 45.486 |
| Population | -0.178 | 0.124 | -0.034 | 0.198 | -0.121 | 0.286 | 0.140 | 0.134 |
| Freedom | -12.083 | 9.362 | -2.681 | 14.882 | 20.502 | 21.525 | -9.502 | 10.017 |
| GDP | 15.071 | 14.945 | 9.495 | 23.721 | 31.985 | 35.074 | 34.593 | 16.387 |
| Year | -16.582 | 17.848 | 24.188 | 20.264 | -42.793 | 47.346 | 33.492 | 19.997 |
| Constant | 34223.55 | 36038.29 | -47594.0 | 40916.31 | 87780.56 | 95620.45 | -94477.05 | 40388.72 |
| Observations | 371 | | 379 | | 242 | | 245 | |
| R-squared | 35.01 | | 32.87 | | 34.62 | | 48.77 | |

*** p<0.01; ** p<0.05; * p<0.1

Source: own calculations

## Table 24. OLS Results Alternative Variable Economic Aid

| | Business Freedom | | Gov Spending | | Fiscal | | Law | |
|---|---|---|---|---|---|---|---|---|
| **Variables** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** | **Coef.** | **Std. Err** |
| Economic Aid | 29.843** | 15.092 | -18.085 | 17.185 | -47.148 | 30.363 | -4.493 | 14.757 |
| South of Equator | 55.256 | 38.717 | .951 | 44.626 | 94.476 | 78.034 | 76.627 | 37.929 |
| Landlocked | 8.613 | 44.400 | -57.861 | 50.467 | 107.632 | 88.326 | 33.829 | 42.959 |
| Country Size | -38.990 | 14.339 | 27.110 | 16.272 | -8.112 | 28.336 | -42.005 | 13.787 |
| Colonized | -1.268 | 82.792 | -277.341 | 93.290 | -454.698 | 166.814 | -35.816 | 81.054 |
| Independence | -39.726 | 55.978 | 174.806 | 63.329 | 143.425 | 112.435 | 103.019 | 54.631 |
| Religion | -11.035 | 42.320 | -7.182 | 48.140 | -31.348 | 84.193 | 9.566 | 40.916 |
| FDI from Russia | 21.460 | 38.627 | 100.239 | 43.587 | 30.668 | 77.965 | -36.777 | 37.887 |
| Population | -0.096 | 0.130 | -0.073 | 0.147 | -0.448 | 0.256 | 0.121 | 0.124 |
| Freedom | -19.453 | 8.681 | -6.708 | 10.094 | 18.305 | 17.150 | -22.785 | 8.331 |
| GDP | 10.976 | 15.686 | -16.997 | 18.180 | 65.863 | 31.747 | 51.963 | 15.495 |
| Year | -27.822 | 14.622 | 32.828 | 17.491 | -33.156 | 40.935 | 29.848 | 20.135 |
| Constant | 57049.5 | 29523.47 | -65607.6 | 35317.78 | 67668.49 | 82670.53 | -59684.07 | 40663.63 |
| Observations | 202 | | 379 | | 133 | | 133 | |
| R-squared | 34.57 | | 32.87 | | 28.80 | | 38.68 | |

*** p<0.01; ** p<0.05; * p<0.1

Source: own calculations