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Bachelorarbeit, Wintersemester 2023

Gutachter*in: Seelkopf, Prof. Dr. Laura

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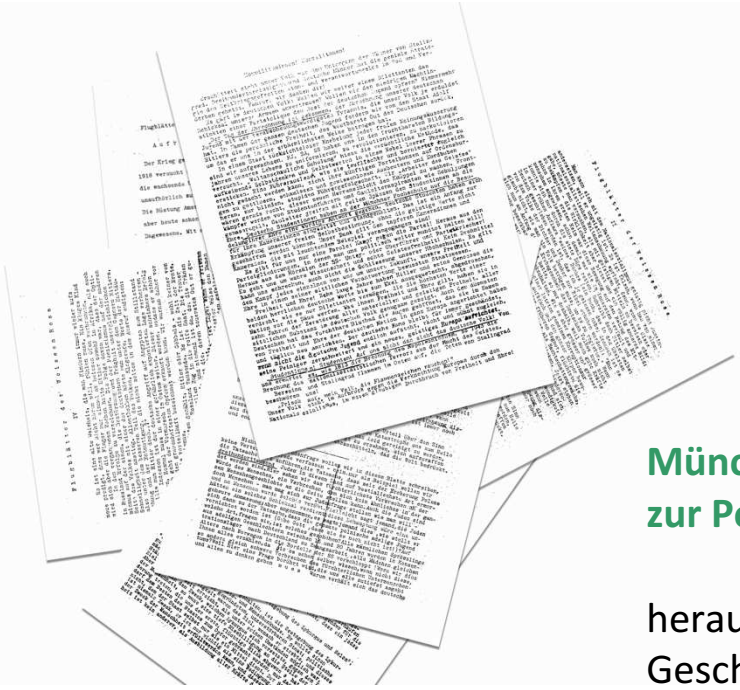

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Michail Khrapak

Autocracy and Economic Growth: Has the Effect of Regime Type on Economic Growth Changed After the Onset of the Third Wave of Autocratization?

Bachelorarbeit bei
Prof. Dr. Laura Seelkopf
2023

Abstract

In light of the current systemic competition between democracies and autocracies, the question of which regime type is better at promoting economic growth remains central to the field of political economy. Despite a large body of literature on the subject, the evidence is frustratingly inconclusive. Prior research has largely overlooked the significance of different time periods in explaining the mixed results. By utilizing the third wave of autocratization, this thesis aims to shed some light on the varying effect of regime type on growth. Based on the distinct characteristics of the third wave, I hypothesize that the effect has changed after the onset of the third wave due to the (i) shift in the dominant regime type and (ii) the type of autocratic transition. Drawing on a large dataset of 162 countries from 1900 to 2018, I conduct numerous Ordinary Least Squares (OLS) Regressions with panel-corrected standard errors (PCSE). The results suggest that the effect has indeed changed. While democracies have grown faster overall, the growth advantage has diminished since the onset of the third wave. However, I could not corroborate my two arguments and several limitations urge for caution when interpreting my results. This thesis illustrates the complexity of the issue and paves the way for further analysis of autocratisation waves and the varying growth effect of regime type over time.

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1 Introduction

The world is increasingly defined by a systemic competition between democracies and autocracies. Leading policymakers and analysts argue that the dictatorial regimes in Moscow, Beijing, and Tehran actively try to reshape the liberal, rules-based international system established by Western powers (Bunde and Eisentraut 2023). The conflict is seen as a struggle between liberal and illiberal values, a "battle between democracy and autocracy" (The White House 2022), which will ultimately determine the dominant regime type and the structure of the international order in the 21st century. The geopolitical contest is ubiquitous, including various policy fields, such as global infrastructure, the energy and nuclear order, and human rights (Bunde and Eisentraut 2023).

In this systemic conflict, economic development stands out as a particularly crucial area of competition. The economic performance of different regime types plays a significant role in their appeal, although it's obviously not the sole factor. This aspect has garnered increased attention due to China's rapid economic development. China boasts an impressive growth track record and has succeeded in lifting hundreds of millions out of poverty. Hence, the "China Model" of authoritarian capitalism - a mix of a selectively free market economy with substantial government intervention (Zhao 2010) - is seen "as the most significant potential ideological rival to liberal democratic capitalism since the end of communism" (Ash 2008), and as an increasingly attractive alternative by Western observers (Friedman 2009). This has reignited the longstanding debate over whether democracies or autocracies are more effective at facilitating economic growth.

There is a substantial body of research on the effect of regime type on economic growth, including both theoretical arguments and statistical studies. In theory, both plausible arguments for democracy and autocracy exist, which necessitates empirical studies to test the respective arguments. However, these statistical papers have largely produced inconclusive results. There is growing evidence suggesting that the inclusion of different time periods might be driving these inconclusive results (Krieckhaus 2004; Colagrossi et al. 2020; Doucouliagos and Ulubaşoğlu 2008). It seems that the effect of regime type on growth is not constant but varies over time. Although time could be a crucial factor in reconciling theoretical perspectives and empirical findings, little research has explored possible reasons why time matters on a theoretical basis.

Concurrently, we also know that democracies and autocracies spread in waves within certain time periods. The world is currently engulfed in a third wave of autocratization (since 1994), a "time period during which the number of countries undergoing democratization declines while, at the same time, autocratization affects more and more countries." (Lührmann and Lindberg 2019b: 1102)

If we think of a spectrum with democracy on the left and autocracy on the right, autocratization refers to any move towards autocracy, while democratization refers to any move towards democracy (Lührmann and Lindberg 2019b: 1099-1100).

I argue that studying waves of autocratization, particularly the third wave, provides a valuable perspective for understanding the evolving dynamics between regime type and economic growth over time and could help reconcile the theoretical and empirical impasse. There are strong theoretical reasons to believe that the effect of regime type on growth has changed with the start of the third wave, as it is associated with two distinct characteristics compared to the pre-third wave period: the dominant regime type and the type of autocratic transition. The economic outcomes of the third wave and autocratization waves in general, which have received limited scholarly attention, could provide valuable insights into the effectiveness and attractiveness of different regime types, particularly in the context of the systemic competition. Hence, the following research question: has the effect of regime type on economic growth changed after the onset of the third wave of autocratization? In the second step, I will examine whether my two arguments explain a possible change in effect. While my study does consider democracies, it primarily focuses on autocracies, given that most research predominantly explores the relationship between democracy and economic growth. By analyzing the third wave, I hope to contribute, more generally, to both the theoretical and empirical understanding of the relationship between regime type and growth.

To address the research question, this thesis begins with a literature review on the determinants of economic growth, concentrating on the central fundamental determinant: regime type. Subsequently, I analyze the distinctive dynamics introduced by the third wave of autocratization and derive my two arguments. Next, my data sources, key variables, and methodology will be introduced. Using a large dataset of 162 countries over the period 1900-2018 and a total of 11,615 observations in the main models, I run numerous Ordinary Least Squares regressions (OLS) with panel-corrected standard errors (PCSE) to test whether the effect has changed and subsequently examine my two arguments. I then present my findings, which indeed indicate that the effect has changed after the onset of the third wave. While democracies seem to have grown faster overall, the growth effect seems to have slowed down with the beginning of the third wave. Finally, I conduct various robustness checks and present the limitations of my study, which suggest that my results must be treated with caution and that a causal interpretation is probably not feasible.

2 Determinants of Economic Growth

In this chapter, I will provide an overview of the extensive literature on the determinants of economic growth with a focus on the relationship between regime type and growth. To begin, I will discuss the proximate determinants of economic growth according to neoclassical growth theory and briefly contrast exogenous and endogenous growth models. Second, I will turn to alternative factors that may affect the proximate determinants of growth, such as demography, geography, culture, and the international economic context. Subsequently, I will focus on the nexus between regime type and economic growth and juxtapose the different theoretical arguments. Lastly, I will review empirical studies on how regime type impacts economic growth, which are marked by mixed evidence.

2.1 Proximate Determinants of Economic Growth

Economic growth theory considers labor, the accumulation of physical and human capital, and technology as the key immediate factors that determine economic growth. Solow (1956) and Swan (1956) have proposed the most influential model on economic growth, which has been the workhorse of "nearly all theoretically informed empirical studies of economic growth." (Baum and Lake 2003: 334) The Solow-Swan or neoclassical model assumes an aggregate production function with labor (N) and capital (K) as input factors that are combined with technology (A), which captures the efficient combination of input factors as well as technological innovation. Together, they produce a certain output/production (Y). The Solow-Swan Model is a product of its time (post-world war II era) with a heavy emphasis on physical capital, especially for transitionary growth and income level (Audretsch 2014: 314-315). However, a key assumption of the model is also that the input factors exhibit diminishing returns: the more one already has of e.g. capital, the less extra output every additional unit of capital produces. This implies that growth due to capital accumulation will eventually reach a ceiling, and after doing a few computations, one can derive that exogenous technological progress is the only source of long-term growth. This is a serious shortcoming since "we end up with a model of growth that explains everything but long-run growth." (Barro 2001: 6) Therefore, endogenous growth models (e.g. Funke and Strulik 2000; Mankiw et al. 1992; Lucas 1988) have focused on endogenizing the technological growth rate. They built on the traditional neoclassical model and integrated factors such as knowledge, skills, and research into the framework, which also aligns more closely with today's knowledge-driven economies, where innovations and human capital are central to growth. Hence, a fourth crucial input factor emerged: human capital (H), and the general growth model takes nowadays usually the following form:

$$Y = F(A, K, N, H) \tag{1}$$

For my research objective, two properties of the neoclassical production function with human capital are important. First, a central insight of neoclassical growth theory, the convergence hypothesis, can be derived from the assumption of diminishing returns on capital.[1] Depending on the starting position and the distance to their long-term equilibrium (steady state), which is determined by factors such as the savings rate and population growth, countries with a low initial capital stock per worker (relative to their steady state) will grow faster. Hence, the accumulation of physical capital is crucial for short- and medium-term growth and will lead to conditional convergence across countries (Barro 2001: 4). In other words, under some simplifying assumptions, the essence of convergence is that poor countries will grow faster than rich countries. Second, the aggregate production function does not include politics, specifically regime type, as a determinant of economic growth. Instead, it is reasonable to assume that there is an indirect effect of regime type on economic growth via the proximate determinants (Baum and Lake 2003: 334).

2.2 Deeper Determinants of Economic Growth

Before turning to the relationship between regime type and economic growth, I briefly discuss the four most important factors suggested by the literature that may affect these proximate determinants and hence economic growth (see for a more extensive overview Knutsen 2011c). These factors are crucial as they represent alternative explanations and serve as potential control variables (if they also correlate with my independent variable) in my regression analysis. The first aspect to consider is demography. Contrary to the classic Malthusian perspective and some neoclassical growth models (for an overview of the discussion Becker et al. 1999; Klasen and Nestmann 2006), the ”New Growth Theory” (e.g. Romer 1993, 1990; Aghion and Howitt 1990) suggests that an increase in population level drives economic growth through technological progress, which follows from the non-rival nature of technology (see for a more detailed version of the argument Kremer 1993). Additionally, a larger population is often associated with higher population density, leading to positive spillover effects as individuals interact with each other. This interaction, in turn, enhances human capital and technological progress (Becker et al. 1999; Klasen and Nestmann 2006; Knutsen 2011c).

The second deep determinant is the geographical and physical environment, a highly influential strand of literature in recent decades. There have been various channels proposed through which geography might matter, but I will concentrate on the two most influential set of arguments (for more comprehensive overviews, see Acemoglu et al. 2005; Knutsen 2011c). On the one hand, proponents

[1] Some of the endogenous growth models have actually dropped the convergence hypothesis (see Islam 2003). However, I am taking an agnostic position in this debate, and I include the convergence hypothesis for reasons of caution.

of the ”geography hypothesis” argue that climate and disease environments affect productivity and technological progress, particularly in the agricultural sector, which has been historically a foundational element for economic prosperity (Bloom et al. 1998; Diamond 1999; Sachs 2001). However, this line of reasoning has faced extensive criticism, most notably by Acemoglu et al. (2005, 2001). On the other hand, the resource curse literature presents a more compelling argument that abundant natural resources encourage rent-seeking behavior and thereby *can* hinder economic development. This occurs as resources are diverted away from sectors that are beneficial for society and crucial for long-term growth, such as human capital and technology[2] (for a recent overview Ross 2015).

A third prevailing perspective argues that cultural differences can account for varying levels of economic development. Originally, this hypothesis was proposed by Weber (2001), who contended that Protestantism contributed to the emergence of the Industrial Revolution in Western Europe due to its emphasis on work and saving (investment). More recently, cultural arguments have been revived to explain the growth miracles of the Asian Tigers and China (Barr 2000; Zakaria and Yew 1994). However, these explanations fail to convince, as they are often constructed ex-post, cannot explain differences in growth performances, and are used to justify repression (e.g. for critiques Sen 1997; Acemoglu et al. 2001, 2005).

Finally, international economic factors play a role in explaining growth rates. Global business cycles, the structure of the international economic system, the role of financial transactions, access to relevant technology, trade, and economic openness seem to be components that influence the proximate determinants (Knutsen 2011c). In summary, four fundamental determinants have been proposed: demography, geography, culture, and international economic climate. These, in turn, affect the proximate determinants, mostly human capital, technology, and investment. Labor stands apart from these factors and will be discussed in more detail in the following section. As already indicated, not all of these factors are convincing. I will revisit this topic in the chapter on control variables, where I will also provide a more detailed analysis of the relationship between these determinants and regime type. Despite the four factors mentioned earlier, there is a consensus that institutions are the central, deeper determinant of economic growth (Rodrik et al. 2004; Acemoglu et al. 2005; North 1989). In particular, the authoritarian-democratic divide has received a great deal of attention in the literature, as will be discussed in the following section.

[2]This is, of course, a simplified version of the argument

2.3 Theoretical Arguments: Regime Type and Economic Growth

The theoretical literature exploring the relationship between regime type and economic growth is extensive and can generally be divided into two schools of thought: skeptical and developmental theories. The former highlights the negative impacts of democracy on growth, while the latter underscores the benefits of democratic institutions (Papaioannou and Siourounis 2008a: 1523-1525). As indicated by the growth literature, the effect of regime type on economic growth appears to be indirect via the proximate determinants and various mechanisms that, in turn, affect the proximate determinants. There have been a variety of arguments proposed through which regime type might affect economic growth, such as corruption (Saha and Sen 2021), economic openness (Pitlik 2008), and political stability (Feng 1997). However, one can identify five *central* channels through which regime type affects growth. These channels simultaneously also present the arguments for or against democracy/autocracy. The influential paper of Przeworski and Limongi (1993) evaluated four central arguments: property rights, investment, the autonomy of the state, and checks on predatory rulers. However, with the rise of globalization and information technology, the world has changed significantly since the authors published their seminal study. Knutsen (2012) revisits these four influential arguments in the context of these changes and furthermore introduces a fifth argument regarding technological change. Below, I briefly summarize the five key arguments of the debate. In addition, I contend that Przeworski and Limongi (1993) and Knutsen (2012) adhere to different growth models, which also partly explains the different theoretical conclusions regarding investment and technology.

Both Przeworski and Limongi (1993: 54-55) and Knutsen (2012: 400-401) agree that autocracies are, on average, better at promoting investment in physical capital. As discussed in the chapter on proximate determinants, the accumulation of physical capital can lead to higher growth rates in the short to medium term. Autocracies can resist immediate pressures for consumption since they face fewer constraints and are therefore able to implement higher savings rates, which, in turn, can boost aggregate investment in the economy. In addition, the authors agree that authoritarian regimes often have greater autonomy from external pressures, which can promote economic growth as it is easier to implement long-term policies that may be painful in the short run compared to democracies. Despite the accumulation of physical capital, this autonomy also facilitates allocative efficiency, a key factor represented by 'A' in the neoclassical production function (Knutsen 2012: 400-401; Przeworski and Limongi 1993: 55-57).

However, these two arguments assume a benevolent dictator who genuinely prioritizes the economic well-being of the nation over the interests of a select few. In reality, this assumption obviously often does not hold. The history books are full of examples of autocratic rulers who wielded

enormous power and autonomy but were not interested in the pursuit of economic growth. Instead of promoting investment and technological progress, these predatory rulers, such as Mugabe or Marcos, focused on personal enrichment. The Achilles heel of authoritarian regimes is the quality of leadership. Once in power, it becomes extremely difficult to remove a poor leader because of the lack of accountability mechanisms. In this point, Przeworski and Limongi (1993: 57-60) and Knutsen (2012: 401-402) agree that democracies provide essential safeguards through mechanisms such as elections, the judiciary, the legislature, and other institutions to avert potential economic disasters.

In addition, it is worth noting that dictatorships are not entirely insulated from external influences, and there exists a significant variation regarding the level of institutionalization within authoritarian regimes. Over the past few decades, autocratic regimes have increasingly become more institutionalized, and many exhibit political parties and legislatures (Lührmann et al. 2018; Levitsky and Way 2010; Schedler 2013). This shift has given rise to a strand of literature suggesting that institutionalized autocracies tend to experience faster economic growth than other forms of less constrained authoritarian rule. Proponents argue that these institutions curtail the unchecked power of autocrats, foster accountability, and hence contribute to enhanced economic development (Gandhi 2008; Wright 2008; Bizzarro et al. 2018).

Despite these agreements, Przeworski and Limongi (1993) and Knutsen (2012) show notable differences in their analyses. The first disagreement is regarding the relationship between regime type and property rights. Strong safeguards for property rights are essential for fostering investment and spurring innovation, as they ensure firms to reap the benefits of their research and development. Hence, property rights affect investment in physical and human capital as well as technological innovation, which in turn leads to economic growth (Knutsen 2011b: 115-116). However, "[w]hile everyone seems to agree that secure property rights foster growth, it is controversial whether democracies or dictatorships better secure these rights." (Przeworski and Limongi 1993: 51) On the one hand, autocratic regimes, characterized by unaccountable leadership and minimal institutional constraints, may be more likely to engage in property expropriation. On the other hand, based on an argument from the 19th century, the authors argue that democracy leads to greater demands for redistribution via universal suffrage (Przeworski and Limongi 1993: 52-54). In contrast, Knutsen (2012: 399) argues in favor of democracy and emphasizes the role of institutions, which distribute power and serve as safeguards against property expropriation (Knutsen 2012: 399). Consequently, the differing theoretical conclusions about property rights do not stem from distinct underlying growth models but rather from each author's varying emphasis on the arguments.

However, when considering the debate over investment and the role of technology, the different underlying growth models become apparent. As already mentioned Knutsen (2012) acknowledges that dictatorships are likely, on average, superior in promoting investment in physical capital. However, he argues that this view adopts an overly narrow definition of capital. Drawing on the endogenous growth model outlined by Mankiw et al. (1992), Knutsen (2011c) emphasizes the importance of human capital. When human capital enters the equation, the overall impact of regime type on economic growth via investment becomes more ambiguous. While autocracies have an advantage in the accumulation of physical capital, democracies are generally more successful in enhancing human capital (Knutsen 2011c: 400). This difference in viewpoints illustrates the different underlying growth models of the authors. Whereas Przeworski and Limongi (1993) primarily align with traditional growth models focused on physical capital, Knutsen (2012) aligns more closely with the more recent endogenous growth models. This is not surprising, given the rising importance of human capital in today's knowledge-driven economy. Additionally, the omission of technological progress by Przeworski and Limongi (1993) in their analysis is consistent with their reliance on the traditional neoclassical model, where technology is "exogenous to the actions of any particular government" (Baum and Lake 2003: 334). In contrast, Knutsen (2012) proposes a direct relationship between regime type and technological progress, thereby treating technological innovation as endogenous. He argues that democracies, as free and open societies, are conducive to the free flow of ideas, which in turn is a driver of innovation. Authoritarian regimes, on the other hand, suffer from a loss of information and innovation potential due to repression and restrictions on freedom of speech (Knutsen 2012: 402-403).

Arguments	Przeworski and Limongi (1993)	Knutsen (2012)
(i) Property Rights	Either Way	Democracy
(ii) Investment	Autocracy	Either Way
(iii) Autonomy	Autocracy	Autocracy
(iv) Checks	Democracy	Democracy
(v) Technological Innovation	-	Democracy

Table 1: Theoretical Debate (Knutsen 2012: 404)

Hence, there is a general consensus that the relationship between regime type and growth is likely indirect, as suggested by the growth literature. This is an important finding to which I will return later in this thesis. The mechanisms discussed previously affect the proximate determinants — physical capital, human capital, and technology/efficiency — which, in turn, lead to economic growth. For a simplified conceptual representation of a possible causal chain, refer to Figure 1.[3]

[3]One could theoretically also draw a direct line from regime type to physical and human capital without investment

Note that labor is not included in this analysis. Although there are theoretically policy instruments, such as influencing fertility rates through education (Przeworski et al. 2000: 254) or immigration, that can impact labor dynamics, it still presents significant challenges in terms of manipulation (Knutsen 2011c: 102-103) and is therefore not a focus of this study.

To summarize, the literature identifies five central arguments for and against democracy/autocracy (see Table 1). Przeworski and Limongi (1993) indicate that the overall effect is somewhat ambiguous, with a slight tendency towards autocracy, while Knutsen (2012) strongly advocates for the benefits of democracy. The observed disagreements can be partially attributed to different underlying growth models, which also reflect the periods when the respective articles were written and the evolution of economic growth theories over time. This is an interesting insight, which I will further explore in the next section. Although endogenous growth models already existed when Przeworski and Limongi (1993) wrote their article, they have become arguably increasingly important in the context of today's knowledge-driven economy. Overall, as shown in this chapter, there are compelling theoretical arguments for both democracy and autocracy. Hence, theory alone will not provide a conclusive resolution to the debate and one has to turn to empirical evidence to answer the question of whether democracies or autocracies grow faster.

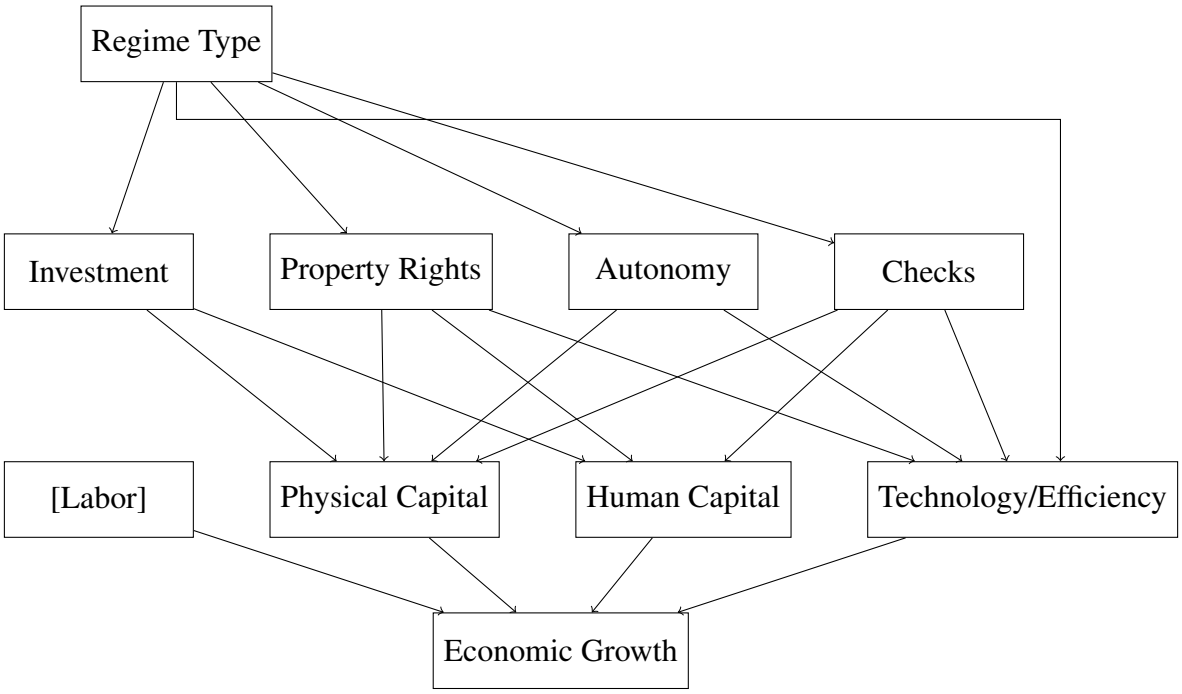

Figure 1: A Simplified Model of How Regime Type Influences Economic Growth

2.4 Empirical Relationship: The Evidence Is Inconclusive

Generally, it is observed that democracies tend to enhance economic growth via the accumulation of human capital (Baum and Lake 2003; Doucouliagos and Ulubaşoğlu 2008), technological innovation (Jamali et al. 2007; Knutsen 2015), and property rights protection (Clague et al. 1996; Knutsen 2011b). Moreover, it is a well-established stylized fact that democratic regimes show less variance in their growth rates compared to autocracies, which dominate both 'growth miracles' and 'growth disasters' (Knutsen 2018; Przeworski et al. 2000). This is a result of checks and balances inherent in democratic systems (see also Boese-Schlosser et al. 2023). However, as briefly discussed in the theoretical part, also autocracies nowadays exhibit institutions, which indeed seem to increase growth (Gandhi 2008; Bizzarro et al. 2018; Wright 2008; Moon 2019). On the other hand, autocracies seem to foster investment in physical capital and benefit from greater autonomy (Tavares and Wacziarg 2001). Hence, when assessing the five specific mechanisms, the evidence seems to align more with Knutsen's evaluation. However, this does not necessarily imply that the aggregate effect of democracy is also larger. Hence, the central question remains: What is the overall effect of regime type on economic growth?

The empirical evidence on the overall effect of regime type on economic growth is inconclusive. Earlier studies tended to find a positive effect of authoritarianism on economic growth (see for good summaries e.g. Przeworski and Limongi 1993; Sirowy and Inkeles 1990). However, the majority of these studies suffered from several methodological and conceptional shortcomings (Papaioannou and Siourounis 2008a: 1521-1522). More recent methodologically sound studies indicate that democracy either affects economic growth positively (Eberhardt 2022; Madsen et al. 2015; Papaioannou and Siourounis 2008a; Acemoglu et al. 2019; Persson and Tabellini 2006) or that there is a negligible effect of democracy on growth (Nannicini and Ricciuti 2010; Pozuelo et al. 2016; Tavares and Wacziarg 2001; Rodrik and Wacziarg 2005). The different results can be partly explained by different regime type measures, control variables, sample choices, and other econometric specifications (Doucouliagos and Ulubaşoğlu 2008; Krieckhaus 2004; Colagrossi et al. 2020).

However, arguably, the most important reason for the inconclusive empirical results in the research literature is time. As in the case of the different growth models and the theoretical debate, time seems to be a crucial factor driving the ambiguous findings. There is growing evidence suggesting that the effect of regime type on economic growth is not constant but varies across time (Krieckhaus 2004; Doucouliagos and Ulubaşoğlu 2008; Colagrossi et al. 2020). Although it might possibly help to resolve the theoretical and empirical deadlock, this has surprisingly received little attention in the research literature. Prior studies mostly either analyzed a longer single time period or merely controlled for decades without providing a thorough analysis based on theoretical reasoning. A

notable exception is Knutsen (2011a), whose findings suggest that democracy is more conducive to economic growth in the current era. In line with endogenous growth models, he argues that human capital has become an essential input factor in the contemporary economy, and democracies are better at fostering it. Therefore, the aggregate growth effects of democracy have increased. This leads to the hypothesis that the effectiveness of mechanisms may be contingent on the specific historical context and time period. However, this cannot be considered established knowledge, and future research has to test this and verify the argument empirically[4]. Second, beyond Knutsen's valuable insights, there may be other underlying causes for the observed differences in the aggregate growth effect of autocracy/democracy.

Motivated by the different theoretical perspectives, inconclusive empirical evidence, and the unexplained variance over time, this research turns to the third wave of autocratization. This study's empirical investigation of the third wave, a period that has not been extensively studied in terms of its economic consequences and coincides with the systemic competition between democracies and autocracies, provides a unique lens through which to analyze the evolving relationship between regime type and economic growth. Do patterns in economic growth tend to support skeptical or developmental theories? Which overall evaluation is more substantiated by evidence in the third wave: Knutsen's or Przeworski's? Does the impact of regime type on growth indeed vary over time? The analysis of the third wave could help reconcile these varied findings and contribute to a more nuanced understanding of the regime type-growth nexus.

3 The Third Wave of Autocratization: Exploring the Shift in Dynamics

Democracies and Autocracies spread in waves. This phenomenon was initially observed by Huntington (1991), who found three democratic and two reverse waves. Building on Huntington's seminal work, Lührmann and Lindberg (2019b) enhanced the operationalization of these waves and notably introduced a third ongoing reverse wave since 1994. Huntington's work had several methodological shortcomings, including issues with the measurement of democracy and transitions (Lührmann and Lindberg 2019b: 1102). Consequently, my focus is on the work of Lührmann and Lindberg (2019b). They identified three distinct reverse waves: the first one occurring from 1926 to 1942, the second from 1961 to 1977, and the third, which began around 1994. Of particular interest is a comparison between the third wave (1994-) and the pre-third wave period (1900-1993) due to two significant changes that have accompanied the third wave regarding i) the dominant regime type and ii) the

[4]Knutsen (2011a) only tested whether the aggregate effect has changed

dominant type of transition. Hence, there are strong theoretical reasons to believe that the effect of regime type on growth has changed, and analyzing the reasons for the change can contribute to a better understanding of the regime type-growth nexus. Note here that these are obviously two extremely heterogeneous periods, with considerably more observations available for the pre-third wave period. In the limitations chapter, I will discuss this problem in more detail. Having this in mind, I proceed to elaborate on the distinctive characteristics of the third wave before continuing with the theoretical implications.

First, as already discussed, contemporary autocracies, on average, have become more institutionalized compared to their historical counterparts. The majority of modern authoritarian regimes exhibit multiparty elections, legislatures, and other democratic institutions (Lührmann and Lindberg 2019b: 1108). This development has received substantial academic attention, and leading researchers have proposed terms such as *Competitive Authoritarianism* (Levitsky and Way 2010) and *Electoral Authoritarianism* (Schedler 2013) to describe this dominant new type of autocracy. V-Dem's Regimes of the World (ROW) builds upon the work of these authors and distinguishes between closed and electoral autocracies based on the presence of multiparty elections for the executive or the legislature. Additionally, it further differentiates between electoral and liberal democracies by assessing more extensive criteria, such as the rule of law and other liberal characteristics (Lührmann et al. 2018: 63). Tables A.7-A.10 in the appendix give an overview of the countries in the third wave and their regime type based on ROW. Figure 2 illustrates the evolution of regime types from 1900 to 2022 based on the ROW index. Three aspects of the graphic are particularly noteworthy. Firstly, it shows a consistent increase in the number of democracies over this period. Secondly, there has been a continuous decline in the number of closed autocracies, while the number of electoral autocracies has continuously risen. Most significantly, however, the third wave marks a pivotal shift where electoral autocracies have emerged as the dominant regime type. This change represents a notable departure from the pre-third wave era, where closed autocracies, characterized by the absence of multiparty elections and/or legislatures, were the prevailing form of governance. This is, therefore, also the focus of this study. Indeed, this trend has been ongoing, but the graphic clearly demonstrates that this change has approximately occurred with the third wave.

Second, the dominant type of transition has changed. In the first two waves, sudden transitions such as military coups, foreign invasions, and autogolpes were the most common type of autocratization. However, such sudden events have become increasingly rare. Most autocratization processes in the third wave are creeping and gradual, primarily affecting democracies.[5] Democratic erosion,

[5]The first wave affected both democracies and autocracies, while the second primarily hit electoral autocracies. (Lührmann and Lindberg 2019b: 1103)

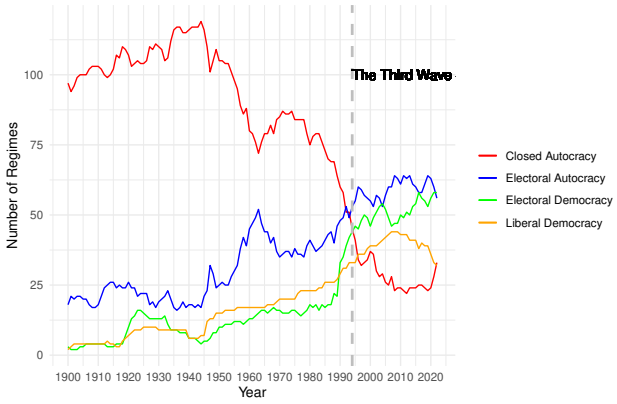

Figure 2: Regime Types Across Time (1900-2022)

as seen in countries such as Hungary, Poland, and Israel, has become the dominant form. This, in turn, implies that autocracies rarely become even more authoritarian in the third wave (Lührmann and Lindberg 2019b: 1104-1105). Table 2 provides an overview of the differences between the pre-third and third wave concerning the two aforementioned aspects.[6] It is evident that the third wave represents a significant shift in these two aspects. What do these differences now mean for the economic performance of regimes? Based on the analyzed aspects, it is possible to derive theoretical predictions on how the effect of regime type on growth has changed.

	Pre-Third Wave	Third Wave
Type of Transitionn	Sudden	Gradual
Dominant Regime Type	Closed Autocracy	Electoral Autocracy

Table 2: The Third Wave is Different...

For the sake of clarity, I will briefly outline the key assumptions underpinning my first argument before delving further into the discussion on the theoretical predictions. First, a simple binary division between democracy and autocracy fails to capture relevant differences, especially with the rise of hybrid regimes such as electoral autocracies. Therefore, a more nuanced differentiation is necessary. Second, the subtypes of authoritarianism (electoral and closed) and democracy (electoral and liberal) are associated with different growth rates because they particularly differ in the degree of institutionalization, which could affect the functioning of the mechanisms. This has been suggested, for example, by the literature on institutions in authoritarian regimes (Gandhi 2008; Wright 2008; Bizzarro et al. 2018). Third, the third wave, in which electoral autocracies have become

[6]Note that there are also regional differences (Lührmann and Lindberg 2019a: 8). However, these do not seem significant enough to draw any valid theoretical implications. Therefore, and due to the limited scope of my thesis, I leave this for future research

the dominant regime type, may have changed the aggregate effect of regime types (autocracy vs. democracy) on growth, not necessarily because the importance of the mechanisms has changed, as suggested by Knutsen (2011a), but because the different subtypes (e.g. electoral autocracy), which are associated with different growth rates, now have a greater influence, which in turn affects the aggregate effect of democracy/autocracy. Now, back to the theoretical implications.

Two opposing effects are possible from the shift in regime type constellations during the third wave, as suggested by theoretical literature on the mechanisms between regime type and economic growth. As already mentioned, skeptical theories emphasize the benefits of authoritarianism due to autonomy and the promotion of investment. If one follows the theoretical reasoning of this school of thought, one should observe a decrease in the aggregate growth effect of autocracies as closed autocracies, which are associated with higher autonomy, have continuously declined. The dominant autocracy type in the third wave, electoral autocracies, characterized by the presence of institutions, legislatures, and parties, impose at least some constraints on the executive's autonomy, which could negatively impact the rate of investment, long-term planning and thus growth according to the skeptical line of thinking. Conversely, developmental theories suggest a different theoretical prediction — a potential increase in economic growth for autocracies. In this perspective, the introduction of institutions and a degree of accountability in these regimes, albeit obviously less robust than in democracies, could act as safeguards. This development might hinder the rise of predatory leaders and decrease the likelihood of growth disasters, thereby potentially enhancing growth. Additionally, these institutions could strengthen property rights protection compared to closed autocracies since they may reduce the risk of property expropriation, although they fall short of the standard in democracies. Hence, theoretically, both effects are plausible, and an empirical analysis of the third wave may resolve the impasse. This provides an opportunity to explore how the varying degree of institutionalization affects economic growth.

A second factor potentially influencing the aggregate economic effect is the change in the nature of transitions since they affect the investment climate. Freund and Jaud (2014) argued that lengthy democratic transitions negatively affect growth because the increased uncertainty that is associated with gradual transitions inhibits investments. While this might also be true for autocratic transitions, it could also be that rapid transitions, like military coups, are associated with lower growth since they may lead to upheaval and plunge the country into economic chaos. Given the recent trend of more gradual transitions over sudden ones, this shift is likely to impact the overall economic effect of autocratization and, hence, regime types. As already mentioned, the third wave of autocratization mainly affects democracies, with the majority resulting in regime change. Hence, the initial and final regime types likely influence the economic outcomes of autocratization and must be taken into

account.

In summary, the theoretical analysis of the third wave reveals significant changes in regime types and transitions compared to the pre-third wave period, suggesting a potential shift in how regime type influences growth. Note also that I take an agnostic position and make no finite assumptions about the direction of the effect. Instead, I argue that the sign of the effect might provide some insight into which set of arguments is more convincing. In the following, I will test my two arguments empirically.

4 Data and Methodology

This chapter provides an overview of the data, variables, and methods used to address my research question. To assess whether the effect of regime type on economic growth has changed after the onset of the third wave and test my two arguments, I conduct numerous OLS Regressions with PCSE. The dataset is structured in a long TSCS format, with country-year as the unit of analysis. It includes information for growth rates (dependent variable), regime types (independent variable), and various control variables. Observations span from 1900 to 2018. The year 1900 is selected as the starting point to align with the beginning of the pre-third wave period, as detailed by (Lührmann and Lindberg 2019b). The end year, 2018, corresponds to the latest available data in the Maddison dataset. A total of 162 countries are included (see table A.1 for an overview of the countries and the time period covered). Hence, it is a large-N study that enables me to analyze both temporal analysis within individual countries and across different states. Firstly, I will introduce the relevant variables before explaining the choice of my method.

4.1 Dependent Variable

The dependent variable in this study is economic growth per capita, which is operationalized as the annual real GDP growth rate per capita, adjusted for purchasing power parity (PPP) in 2011 dollars. I use real GDP per capita instead of nominal to accurately distinguish between actual economic growth and inflation-induced growth. Additionally, PPP-adjusted GDP accounts for varying price levels across countries, which provides a more accurate comparison of economic performance. I follow Knutsen (2011c) and Gerring et al. (2005) and use annual growth rate as the dependent variable instead of non-overlapping averages over a period since it associated with a loss of information and the aggregation problem (see also Attanasio et al. 2000; Gerring et al. 2005; Papaioannou and Siourounis 2008a). Lastly, while using GDP per capita growth as a proxy has its limitations (Knutsen 2011c: 185-186), it remains a standard measure in economic analysis.

The data for the dependent variable is collected from the Maddison project. I chose the Maddison dataset for its comprehensive historical coverage and inclusion of countries such as North Korea and Myanmar, which are often omitted in other studies due to data availability issues. Although there are several limitations associated with the estimation of historical GDP figures and hence the Maddison dataset, which are discussed in the limitations chapter, the Maddison dataset remains a state-of-the-art resource.

4.2 Independent Variable

The independent variable of interest is regime type. Measuring democracy and autocracy is not as straightforward as assessing economic growth, and a lively debate exists regarding the most appropriate methods and the best indices to use. The debate centers around three key aspects (definition, measurement, and aggregation), which also represent the general steps for constructing a regime type indicator. First, the underlying definition of democracy (by and large these are primarily democracy indices) and how it is distinguished from autocracy has to be clarified. Second, the chosen components representing democracy must be quantified for measurement. Third, a method for combining these components into a single index must be established. Each of these elements has its own set of potential issues. Should one opt for a minimalist approach, as proposed by Schumpeter (1976), or a maximalist perspective, following Dahl (1971)? What scale is most appropriate for measuring the instruments? How should each component be weighed and aggregated to form a coherent and theoretically sound index? Is democracy a multidimensional, continuous, dichotomous, or polychotomous concept? (Boese 2019; Gründler and Krieger 2016). These complexities have resulted in a variety of indices. Historically, the two most commonly used indices for measuring regime type have been the Freedom House Index and the Index by Polity. However, they are associated with several flaws, such as a questionable aggregation strategy, historical impreciseness, and missing values. It was shown that the measures by V-Dem outperform the two indices regarding definition, measurement and the aggregation procedure (see for a comparison between the three indices Boese 2019).

This thesis, therefore, employs the ROW measure from the V-Dem Project. I have already introduced it briefly in the chapter discussing the third wave. In this section, I will go into more detail. ROW adopts the polyarchy concept of Dahl (1971) as its foundational definition of democracy, thus embracing a maximalist approach. Conversely, countries that do not fulfill Dahl's criteria are classified as autocracies. Dahl's six institutional guarantees (elected officials, free and fair elections, freedom of expression, alternative sources of information, associational autonomy, and inclusive citizenship) are quantified by the continuous electoral democracy index, which ranges from 0

(not democratic) to 1 (fully democratic). Unlike the Freedom House and Polity indices, V-Dem's aggregation procedure is theoretically justified, incorporating the 'weakest link' argument (see for more detail e.g. Lührmann et al. 2018; Boese and Eberhardt 2021). As already mentioned, it is a categorical measure, which distinguishes between electoral and closed autocracies based on the presence of multiparty elections. Moreover, it categorizes democracies as either electoral or liberal, contingent upon the fulfillment of fundamental liberal principles like the rule of law. Of course, categorical measures, especially dichotomous ones, come with limitations. Generally, they can be overly simplistic and may result in a loss of information, as they imply homogeneity within each category (Gründler and Krieger 2016). However, this problem is partially mitigated by subdividing into additional subcategories. Additionally, a categorical measure is most suitable for my research question since I am interested in the growth rates of different forms of autocracy and democracy. ROW was explicitly developed to accurately identify the new types of regimes, a task that has become more challenging with the rise of hybrid regimes. Furthermore, ROW provides comprehensive historical coverage (see also Table A.5 in the appendix). Due to its maximalist definition, ROW tends to be more conservative and historically accurate in its classifications, particularly during periods like the early twentieth century when women's suffrage was restricted (Lührmann et al. 2018: 70). In some cases, I will merge the two subcategories and employ a simple binary distinction between autocracy and democracy to assess the aggregate effect.

4.3 Control Variables

To reduce the chance of omitted variable bias, I include a set of control variables, which might affect economic growth and also correlate with regime type. The inclusion of relevant control variables is crucial since it can lead to biased regression coefficients. However, two major challenges arise in this context. First, one has to be careful not to include "bad controls" (Angrist and Pischke 2008: 47-51). Many prior studies did not differentiate between the direct, indirect, and overall effect of regime type on growth. The authors included variables that act as channels through which regime type affects economic growth (Baum and Lake 2003: 335). As discussed in the chapters on proximate determinants and the relationship between regime type and growth, these channels are investment, human capital, technological progress, property rights, autonomy, and checks. These mechanisms act as mediators in the causal relationship between regime type and economic growth. Incorporating them leads to the overcontrol bias (Cinelli et al. 2022: 8). As the focus of this study is on the overall effect, they are thus not included in the baseline models. However, I acknowledge that the exclusion of control variables in this case involves a trade-off. While fewer control variables increase the possibility of omitted variable bias, I also have less risk of including bad controls. I partially address this problem in the robustness checks by adding more control variables. Second,

studies in this field exhibit considerable variation in the control variables used (see for an overview of possible controls Doucouliagos and Ulubaşoğlu 2008; Colagrossi et al. 2020). I turn to the theoretical literature previously presented to identify the relevant control variables.

Based on the theoretical literature, the following control variables are included in the baseline models: initial GDP per capita, population level, and regional dummies. The inclusion of initial GDP follows from the neoclassical growth model and is a proxy for the discussed convergence hypothesis. It is possibly correlated with democratization and also affects economic growth. Although Acemoglu et al. (2008) challenge this by using fixed effects models, it is one of the few universally used variables and "has become a mandatory control in statistical analyses of growth." (Krieckhaus 2006: 325) Data for initial GDP is taken from the Maddison dataset.

Moreover, I incorporate population level as a control variable, interpreting it as a proxy for country size. Alternative measures such as total geographical area and population density were considered, but I decided to follow the approach of Barro (1999) and Knutsen (2011c) and opted for population level due to two major reasons. First, as discussed earlier in the section on deeper determinants, the demographic literature suggests that higher population levels are expected to positively impact economic growth by fostering advances in technology, efficiency, and productivity. Hence, there are strong theoretical reasons to include it. Second, population level and/or growth is frequently included in statistical analyses and has been shown to significantly affect growth (Colagrossi et al. 2020: 39). In addition, country size might also be correlated with democracy. Historically, it has been argued that there is an inverse relationship between the size of the polity and democracy, but this has recently been challenged (Gerring et al. 2015). In my analysis, population is measured in thousands and data is sourced from the Maddison dataset.

Furthermore, drawing from the literature on geography, I include regional dummies. This allows me to control for regional specifics, including geographic, cultural, and political historical factors, and to some extent, the availability of natural resources, which affect growth and correlate with regime type. In total, I have decided to divide into six politico-geographic regions (based on geographical proximity and regional understanding): (1) Eastern Europe and Central Asia, (2) Latin America and the Caribbean, (3) The Middle East and North Africa, (4) Sub-Saharan Africa, (5) Western Europe and North America, and (6) Asia and Pacific (see Table A.6 in the Appendix for an overview of countries by region). Of course, it's important to recognize the heterogeneity within these regions. However, even further subdividing into more categories would decrease efficiency and approach a fixed effects model (Knutsen 2011c). Therefore, I follow Knutsen (2011c) and work with broader geographical categories that capture the most essential similarities. Moreover, regional dummies

are also frequently included in regime type-growth studies (Doucouliagos and Ulubaşoğlu 2008; Colagrossi et al. 2020). Data is drawn from the V-Dem dataset. Hence, all my baseline models include initial GDP, population level, and regional dummies as controls.

However, the international economic environment, as outlined in the section on deeper determinants, likely affects growth rates and varies with time. Additionally, time matters also for periods of democratization and autocratization. This suggests that one should also control for time-specific effects. In some baseline models, I only divide between the pre-third wave period and the third wave, which are heterogeneous periods and do not capture all the nuances. However, incorporating controls for detailed temporal factors may filter out important information and should also be approached with caution (Knutsen 2011c: 207-208). I have, therefore, chosen to run the baseline models without decade dummies first, while recognising that this potentially biases my results. To reduce the risk of omitted variable bias, I include decade dummies in the robustness checks to see if the results change.

By contrast, cultural controls are omitted from all models for two reasons. First, the theoretical arguments supporting their inclusion are not compelling, as highlighted in the literature, particularly by Acemoglu et al. (2005, 2001). Second, these aspects are, to some extent, indirectly represented by the inclusion of regional dummies. While this approach is admittedly somewhat simplistic, it provides a basic level of differentiation based on cultural and ethnic factors that vary by region. In addition, I remain extremely skeptical about including variables that are likely to be other mechanisms through which regime type affects growth, such as government size, corruption, and openness. However, I have decided to incorporate political stability, operationalized by regime duration and drawn from the V-Dem dataset, into my most comprehensive model. Although this might also be a mechanism (e.g. Feng 1997), there is also a danger of confusing the effects of stability and regime type (see for a discussion Knutsen 2011c: 197-199). As noted above, this needs to be interpreted with caution.

4.4 Methodology

To analyze whether the effect has changed after the onset of the third wave and to test my two arguments, I turn to OLS-Regressions with PCSE. The final dataset is an unbalanced panel, meaning the length of the time series varies across different countries. From the initial dataset, I excluded 6 countries that had no data on regime type (refer to Table A.2 in the appendix) and another 20 that lacked data on economic growth (refer to Table A.3 in the Appendix). This process resulted in a final sample of 162 countries. Given the TSCS nature of the data in this study, the use of

a simple OLS regression is unsuitable due to autocorrelation, contemporaneous correlation, and heteroskedasticity (see for more details Beck and Katz 1995). To adequately address this concern, the study adopts an appropriate method for panel data. A possible option would be the use of fixed effects models to account for unobservable characteristics and reduce the risk of omitted variable bias. However, these models come with limitations, often resulting in a loss of information and decreased capability for drawing conclusions (Knutsen 2011c: 166-167).

Another approach to consider would be the use of a time-varying instrumental variable and, for example, Two Stage Least Squares (2SLS) regressions for panel data to address the issue of endogeneity, a major limitation of this study. There exists a well-established theoretical discourse surrounding the hypothesis that higher income levels may lead to democracy and potentially trigger democratic transitions (e.g. Lipset 1959; Epstein et al. 2006; Papaioannou and Siourounis 2008b; Przeworski and Limongi 1997; Boix and Stokes 2003; Acemoglu et al. 2009). However, finding a viable instrumental variable for regime type poses a significant challenge. Several potential instruments for democracy/democratic institutions have been suggested, including settler mortality rates during colonial times (Acemoglu et al. 2001), the historical prevalence of democratic governance (Helliwell 1994), the share of European language speakers (Hall and Jones 1999). However, all these proposed instrumental variables violate the basic assumptions of a valid instrument (Knutsen 2011c:213-214). Additionally, even regional waves of democratization and reversal have been proposed as an instrument (Acemoglu et al. 2019; Knutsen 2011c). The fundamental assumption is that both democratization and autocratization processes are independent of national politics and economic growth. Instead, geopolitical events and contagion effects can explain these dynamics. However, these assumptions are extremely stringent and debatable, potentially violating the exogeneity assumption (Pozuelo et al. 2016).

Therefore, I follow the methodology used by (Knutsen 2011c) and opt for OLS regressions with PCSE instead. This approach is particularly suitable for datasets that have more cross-sectional units than time points (Beck and Katz 1995). OLS with PCSE addresses the unbalanced structure and ensures accurate estimation of coefficients (Knutsen 2011c: 164). It accounts for autocorrelation, contemporaneous correlation, and heteroskedasticity (Beck and Katz 1995). To mitigate the issue of endogeneity, I have chosen to lag all independent variables in the analysis by five years. Generally, lagging the variables is intended to help establish a cause-and-effect relationship, although it is acknowledged that this method only partially addresses the problem. Additionally, initial GDP per capita is also included as a control variable since it might affect both regime type and economic growth. In the absence of better alternatives, these methodological choices are made with the understanding that they represent a compromise given the constraints of available instruments.

Moreover, to account for a potential non-linear relationship and varying marginal effects, I take the natural logarithm of initial GDP per capita and population level. My regression models include economic growth as the dependent variable, regime type (either binary or ROW) as the independent variable, and a set of control variables. I have chosen not to interpolate my data, which I will discuss in the limitations chapter, and the baseline regressions are hence based on the unbalanced panel. Comprehensive descriptive statistics are provided in Tables B.1-B.6 in the appendix.

5 Results

The results of the regression models are presented in Table 3 and reveal a number of interesting findings. However, as I will show in the next two chapters, these should be treated with caution. Beginning with the first model, which uses a binary regime type dummy to assess the overall effect of regime type on economic growth over the entire period (1900-2018), we can see that democracy appears to have a positive and significant effect on economic growth. The obtained coefficient is 0.640, which suggests that democracies have, on average, a higher growth rate of 0.640 percentage points compared to autocracies, holding all other variables constant. The effect is significantly different from zero at the significance level of 0.01. This is roughly in line with other studies on this topic (if they find a positive effect), which generally estimate an effect of between 0.5 and 1.5 percentage points (Papaioannou and Siourounis 2008a; Knutsen 2011c). Hence, the results of the first model are consistent with developmental theories and the overall evaluation of Knutsen (2012).

In the second model, I test my research question: whether there has been a change in this aggregate effect of regime type with the onset of the third wave. I include a dummy for the third wave and an interaction effect between regime type and the third wave. A statistically significant interaction coefficient would indicate that the effect has changed. Indeed, it seems that the third wave is associated with higher growth rates compared to the pre-third wave period and that the effect of regime type has changed. The interaction coefficient indicates that the growth effect of democracy (compared to autocracy), on average, is by 1.210 percentage points smaller than the effect of democracy in the pre-third wave period, ceteris paribus. Surprisingly, given the findings by Knutsen (2011a), democracies appear to grow on average slower by 0.415 percentage points compared to autocracies in the third wave, holding all other factors constant.

Having tentatively established that the effect has changed, I turn to my two arguments. Based on the theoretical analysis of the third wave, the aggregate effect could have changed due to the different subtypes of regimes and their respective influence on the overall effect. My idea for testing this is as follows. If the subtypes demonstrate similar growth rates before and during the third wave, it

Table 3: Results of the Regression Models (OLS with PCSE)

	Dependent Variable:			
	Economic Growth			
	(1)	(2)	(3)	(4)
Democracy	0.640***	0.795***		
	(0.177)	(0.226)		
Closed Autocracy			−0.246	-0.245
			(0.158)	(0.190)
Electoral Democracy			0.625***	0.626**
			(0.206)	(0.297)
Liberal Democracy			0.297	0.581*
			(0.266)	(0.320)
Third Wave		2.040***		1.324***
		(0.185)		(0.250)
Third Wave * Democracy		−1.210***		
		(0.286)		
Third Wave * Closed Autocracy				1.781***
				(0.365)
Third Wave * Electoral Democracy				−0.371
				(0.406)
Third Wave * Liberal Democracy				−0.615
				(0.386)
Initial GDP per Capita	−0.391***	−0.682***	−0.375***	−0.683***
	(0.082)	(0.087)	(0.086)	(0.091)
Population Level	−0.145***	−0.235***	−0.155***	−0.230***
	(0.041)	(0.041)	(0.041)	(0.041)
Eastern Europe and Central Asia	0.799***	0.553**	0.764***	0.706**
	(0.274)	(0.274)	(0.274)	(0.276)
Latin America and Caribbean	−1.393***	−1.192***	−1.477***	−1.176***
	(0.232)	(0.231)	(0.238)	(0.239)
MENA	0.176	0.121	0.159	0.065
	(0.275)	(0.274)	(0.277)	(0.276)
Sub Saharan Africa	−1.912***	−2.364***	−1.957***	−2.277***
	(0.228)	(0.231)	(0.229)	(0.232)
Western Europe and North America	−0.738***	−0.184	−0.679***	−0.088
	(0.251)	(0.262)	(0.260)	(0.271)
Constant	7.499***	10.168***	7.639***	10.260***
	(0.801)	(0.842)	(0.848)	(0.887)
Observations	11,615	11,615	11,589	11,589
R^2	0.014	0.025	0.015	0.027
Adjusted R^2	0.014	0.024	0.014	0.026
F Statistic	21.090*** (df = 8; 11606)	29.695*** (df = 10; 11604)	17.302*** (df = 10; 11578)	23.118*** (df = 14; 11574)

Note: *p<0.1; **p<0.05; ***p<0.01. Standard errors in parentheses; Clustered by country

would suggest that the effect of the subtypes on economic growth is actually time-independent. This may indicate that the change is indeed being driven by a different constellation of regime types (e.g. more electoral autocracies). However, a deviation from this pattern would indicate the influence of other factors and strengthen the argumentation of Knutsen (2011a). Model 3 includes three regime type dummies based on ROW to gauge the effect of the subtypes. My reference category is electoral autocracy. The results of Model 3 show that electoral autocracies are not statistically significantly different from closed autocracies and liberal democracies. However, electoral democracies seem to grow faster, on average, than electoral autocracies, assuming other factors are held constant. This is surprising and contradicts the literature, which argues that differences in the degree of institutionalization are important for growth and casts doubt on my argument.

Turning to Model 4, where I analyze whether the effect of the subtypes has changed with the onset of the third wave. This tests my first argument. However, as I was unable to detect any difference between the subtypes in the first place, it is extremely difficult to conclude whether the change is due to a change in the regime type constellation. In any case, in line with the descriptive statistics, it seems that closed autocracies (compared to electoral autocracies) grew faster on average in the third wave than in the period before the third wave, while there seems to be continuity in the growth effect of electoral and liberal democracies, ceteris paribus. The respective coefficients are not statistically significantly different from zero. This suggests that there seems to be some other underlying factor at work that has led to an increase in the growth performance of closed autocracies. To briefly summarize: on the basis of these models, we can say that democracies have grown faster overall during this period. However, this effect seems to be changing with the onset of the third wave. The growth effect of democracies has declined compared to autocracies, which has been partially driven by an increase in the growth rates of closed autocracies. However, I cannot say, based on my argument, why the growth rates of closed autocracies have increased. Moreover, as discussed, the number of closed autocracies compared to electoral autocracies has been steadily declining, which also casts serious doubt on my argument.

The regression coefficients of the control variables also reveal some interesting results. In all models, as expected, the coefficient of initial GDP per capita is negative and significant at the 1 percent level, corroborating the convergence hypothesis. On average, the higher the initial GDP per capita, the lower the growth rate, ceteris paribus. In addition, the regression coefficient of population level also takes negative values, which goes against the New Growth Theory. Lastly, also regional differences matter. Surprisingly, the only region with higher growth rates compared to Asia and Pacific (reference category) was Eastern Europe and Central Asia. Note also that R^2 and Adjusted R^2 are extremely low, and therefore, my model explains only a small part of the variance. However,

this is not necessarily a cause for concern and is a typical finding in growth regressions given the complexity of the subject.

The second proposed reason for the change in effect is that the dominant type of transition has changed. Theoretically, if only the nature of the transition mattered (gradual vs sudden), one would expect that the economic effects of the transitions are consistent over time, implying no significant difference between the third wave and the pre-third wave period. However, the current predominance of gradual transitions, likely associated with distinct growth rates compared to rapid transitions, could have altered the aggregate economic effect. Disparities observed between these periods would indicate other influencing factors at play. For example, changing global attitudes toward rapid transitions, reflected in less tolerance to such drastic shifts and in the willingness to impose sanctions, which in turn inhibit economic development. Of course, a binary categorization is a simplification but it captures the relevant characteristics for my research question. Results are presented in Table C.1 in the Appendix. One can see that sudden transitions are, on average, associated with lower growth rates, ceteris paribus. These results clearly contradict the argument that gradual transitions are associated with lower growth rates (Freund and Jaud 2014). In addition, there is evidence that this negative effect is now even more pronounced.

However, a serious limitation of this argument becomes apparent. With only 32 autocratic transitions in the third wave and some of them limited in scope, the number of transitions is extremely low. So, I conclude that this argument does not explain the change in effect. Since further analysis of transitions will not answer my research question and the limited scope of my thesis, I do not consider further interaction effects between the initial and end regimes. But the reasoning and these tentative results may still be of interest for related studies of transitions, so I have deliberately chosen to include the argument and the basic results in this thesis. Further research could build on these findings and on my basic idea. However, for the rest of my thesis, I focus on the first argument. While I have not identified supporting evidence for the first argument either, this could stem from specific methodological choices. Conversely, the second argument encounters a fundamental structural issue that will not be resolved through adjustments in methodology or data. Next, I do robustness checks to assess the validity of my findings from the baseline models before addressing the limitations of my study in more depth.

6 Robustness Checks

The results obtained in Table 3 may be sensitive to certain specifications. Given that literature suggests that the growth effects of regime type can be easily influenced by small changes in the

model (Doucouliagos and Ulubaşoğlu 2008; Colagrossi et al. 2020), different specifications should be thoroughly tested. Therefore, in order to assess the validity of my results, I conduct several robustness checks. First, I use alternative lag structures to test whether the effects are sensitive to the choice of lag specification since the choice of five years is, by nature, arbitrary and could affect the results. Using alternative lag structures is frequently done in studies on regime type and growth to verify the results (Knutsen 2011c; Acemoglu et al. 2019). The results for no lag on the independent variables and lags with two, three, five, and seven years are reported in Tables C.2 to C.5 in the appendix. In the models, with two and three-year lags, liberal and electoral democracies grow overall faster, on average, compared to electoral autocracies over the whole period (Model 3), ceteris paribus. While there is no difference between closed and electoral autocracies. This is already more in line with the school of thought that argues that different levels of institutionalization matter for growth and suggests that the subtypes of democracies have a growth advantage. However, the growth effects of liberal democracies (compared to electoral autocracies) are lower in the third wave than in the pre-third wave period. In addition, the growth advantage of Eastern Europe and Central Asia is no longer statistically significant. Other than that, the results are pretty consistent. So far, the bottom line is that democracies grow faster overall, while the growth advantage has diminished with the onset of the third wave. The models with seven-year lags do not differ significantly from the main models. In the no-lag model, the democracy coefficient is insignificant, and the convergence hypothesis is not supported. While this is interesting, it should be treated with caution as we know that it takes time for the effect to materialize (Papaioannou and Siourounis 2008a).

Second, instead of annual GDP per capita growth rate, I use non-overlapping smoothed five-year average growth rates to account for short-term fluctuations (refer to Table C.6 in the appendix). Interestingly, both electoral and liberal democracies grow faster, on average, compared to electoral autocracies, while closed autocracies grow slower. All these effects are significantly different from zero at the 1 percent level. This principally aligns with the school of thought that argues that varying degrees of institutionalization matter for growth performance. Economic growth tends to be higher in democracies due to their extensive institutional framework. This is followed by a more constrained form of authoritarian rule, with closed autocracies lagging behind. Moreover, the growth effect of closed autocracies is twice as low in the third wave compared to the baseline model. These are all interesting insights that question the findings of my baseline models. However, my argument again is not corroborated since the effect of the subtypes has changed, which suggests other factors driving the change. In line with the findings of two and three year lags models, the advantage of electoral and liberal democracies has slowed down with the onset of the third wave.

Third, I use other starting points for the third wave (1992-1996) to assess how the results change.

This is important due to two key reasons. First, one cannot rule out possible measurement error in identifying the third wave. By broadening the time frame to include two years before and after the initially identified period, I aim to mitigate the impact of any measurement inaccuracies. Second, year-specific idiosyncrasies could be driving the results. My approach helps to distinguish between these year-specific characteristics and capture the broad trend of the third wave. In, Model 2 (see Table C.7 in the appendix) this is clearly not the case and the results are consistent with the findings when 1994 was chosen as a starting point. This also does not seem to be the case for Model 4 (refer to Table C.8 in the appendix). The only major difference is that if you choose the third wave from 1996 onwards, liberal democracies grow more slowly than they did before the third wave.

Fifth, I use growth and population data from a dynamic latent model by Fariss et al. (2022), which addresses systematic measurement error and the issue of missing values. Due to the structure of my data (see Table A.1 in the appendix), I often do not have any observations before, for example, 1950. Linear interpolation is likely, therefore, unsuited, and I prefer the dynamic latent model. There are several interesting findings presented in Table C.9. With more observations, the growth effect of democracy is significantly higher, and although it has been reduced in the third wave, democracies still grow faster. This suggests that there may be a systematic error due to missing values that overstates the economic growth of autocracies. In general, the results are quite similar to the models where I used the five-year average growth rate as the dependent variable.

Sixth, I had relatively sparse baseline models in order not to control for potential mechanisms. In these models, I further add control variables to reduce the risk of omitted variable bias. These include the natural logarithm of regime duration (from V-Dem), a proxy for political stability (see Knutsen 2011c), and decade dummies. However, these models must be treated cautiously for three reasons. First, as mentioned, political stability might represent an additional mechanism through which regime type influences economic growth. However, by not including it, I risk confusing the growth effect due to stability with regime type. Second, decade dummies could remove relevant information. Third, in models 3 and 4 I have overlapping time dummies with the third wave dummy. Although I have not found a theoretical reason why this should be a problem, it is definitely unusual and I cannot rule out that it could be problematic. These results should, therefore, be treated with great caution. The results are presented in Table C.10. The overall effect of democracy is no longer significant, and there is also no difference between the different subtypes. However, the effect still seems to have changed with the onset of the third wave, with democracies growing more slowly and closed autocracies growing more quickly than in the pre-third wave period.

In the end, I have run numerous regressions. What was the point of this exercise? The bottom

line of the robustness tests is that Model 3 and Model 4, in particular, which test my argument, are extremely sensitive to minor specifications that affect the statistical significance of the regression coefficients. While there is some evidence that the degree of institutionalization may indeed matter for growth performance, I have not been able to establish that the change in aggregate effect is due to a different constellation of regime types. In most models, the effect of the subtypes has also changed. This suggests that there are other factors at work. Overall, the robustness checks show the sensitivity of the results and suggest caution. However, some findings were fairly robust. In most models, democracies seem to grow faster overall, and the effect has changed with the third wave, with democracies growing slower and closed autocracies growing faster. But even these basic findings must be treated with great caution, as will be discussed in the next chapter.

7 Limitations

In light of the mixed evidence, it is important to emphasize my study's limitations and treat the obtained results with caution. These shortcomings primarily fall into three categories: theoretical considerations, data constraints, and methodological challenges. First, there are theoretical issues. It is important to note that the two periods are heterogeneous, with substantially more observations available for the pre-third wave period. This discrepancy is a limitation of my study. It would have been optimal to compare all three reverse waves, as these tend to be more comparable regarding the time horizon. However, Lührmann and Lindberg (2019b) did not extensively differentiate the distinct characteristics of the second and third reverse waves. Instead, they focused on a binary comparison between the pre-third wave and the third wave. Future research could address this limitation and further analyze the first and second waves to explore the specific dynamics and characteristics of these historical periods. In addition, there are selection effects. Countries in the third wave are likely to be different from the other two waves or the pre-third wave period. Many of them have not even existed before as independent states. While the data are often disaggregated by regime type and growth, allowing for historical analysis, other authors could use more advanced statistical techniques to test and account for selection effects, such as selection models, although these also have their own problems. Moreover, it also coincides with fundamental shifts in the realms of, for example, globalization, information technology, and demography, which could explain the change in effect. However, the problem is that we often lack historical data, and it was beyond the scope of my thesis to analyze these factors further. Further research could consider these factors as explanatory variables. In conclusion, I admit that while the third wave of autocratization as a theoretical lens certainly offers valuable insights, it also has its limitations.

Second, there are also several data-related challenges. The first concern is missing data, with data

on economic development for many countries only available from 1950 or later. Although the Maddison dataset offers a more comprehensive scope compared to other datasets, only about 30 percent of countries, have observations in the first decade (see Appendix Table A.4). This gap could potentially introduce a systematic bias in the analysis. Interpolation is a potential method for dealing with missing data. However, given the structure of my data, where countries often lack the initial 50 or 60 years of data, a simple backward interpolation over such an extended period will likely not yield reliable estimates. Instead, I have opted for data from a dynamic latent model. While this approach does not eliminate the issue of missing data completely, it is considered to provide more precise estimates compared to a simple interpolation. Indeed, as was shown, this has altered my results, which suggests that missing data may significantly impact the growth effects of regime type. Despite this shortcoming, this study has been one of the most extensive in this field, with a total of 162 countries included and a total of 13,684 observations in the most extensive models. The second issue is regarding data reliability. It tends to decrease, and measurement errors are prone to increase as one looks further into the past. This is amplified by using PPP-adjusted GDP data since one also has to estimate local price levels. An even more significant issue is a systematic bias related to data quality. Studies have shown that authoritarian regimes systematically overreport their growth figures (Martínez 2022; Magee and Doces 2015). This is a valid concern and suggests that the actual growth rate of autocracies might be even lower. To address potential data manipulation, primarily by autocracies, this study could have employed Night Time Light (NTL) data as an alternative measure of economic growth. Unfortunately, no historical data are available. Therefore, possible data manipulation should be taken into account when interpreting my results and may explain why closed autocracies seem to grow faster. Future research could try to expand these databases and then evaluate my findings.

Lastly, there are also methodological issues. A critical concern, already briefly mentioned, is endogeneity. I tried to partially address this issue by incorporating lags and initial GDP per Capita as a control variable. However, I acknowledge that this is not an optimal solution and my results may be biased. OLS assumes that regime type is exogenous to growth. This is a highly stringent assumption since the literature suggests that income influences the probability of being a democracy, and regime durability may be different during economic crises for democracies compared to autocracies. If this is indeed the case, this would introduce a bias. Future research could use even more advanced statistical methods and further explore possible instruments for democracy. Additionally, the risk of omitted variable bias remains a challenge, and I cannot rule out that other factors are driving my results. The decision to include a relatively limited number of variables was intentional to avoid the overcontrol bias and the potential dilution of key variables' effects. However, this approach means that certain factors, possibly influential, have not been accounted

for in the analysis. On a more general note, a problem for many control variables is that they lack historical data. In addition, since I have not used fixed effect models, I also cannot rule out that some unobservable characteristics are biasing my results. Despite these limitations, I have incorporated the most common variables and even further added more controls in the robustness checks to reduce the risk of omitted variable bias. Overall, however, all these limitations suggest that my study should be treated with caution and that a causal interpretation is problematic.

8 Conclusion

The purpose of this thesis was to analyze whether the effect of regime type on economic growth has changed after the onset of the third wave of autocratization, and to test my two proposed arguments that might explain a potential change. More generally, the aim was to contribute a new perspective to the broader discourse on the relationship between regime type and economic growth and try to reconcile the inconclusive results. Motivated by conflicting theoretical arguments, mixed empirical findings, and the unexplained variance over time, I proposed the third wave of autocratization as a theoretical lens to analyze regime effects on growth. The central hypothesis of this study is that a potential change in the aggregate growth effect of regime type may be due to the distinct characteristics of the third wave compared to the pre-third wave period. I contributed two new arguments to the literature. First, I stated that a binary regime type classification overlooks crucial factors that might explain a potential change in the effect. Using the ROW categorization and the literature suggesting that the varying degree of institutionalization matters within democracies and autocracies for growth, I argued that the different subtypes of democracy and autocracy are associated with different growth rates. This, in turn, has an impact on the aggregate effect when the regime type constellation changes (e.g. we observe more of one subtype), as in the third wave. Second, based on a similar reasoning, I argued that the increase in gradual transitions may also have altered the effect.

However, after conducting my empirical analysis based on OLS with PCSE, I could not find robust evidence for either argument. While I have found support for a change in the effect after the onset of the third wave, I have not been able to establish that it is due to a change in the constellation of regime types or in the type of transition. Particularly, the second argument does not seem convincing and cannot explain the change in effect due to the low number of transitions. Only a few findings seemed fairly robust. Democracies seem to have grown faster on average over the period from 1900 to 2018, although this disappears when decade dummies are included. However, on the other hand, these may control away some important information. Moreover, the growth effect of democracy appears to diminish during the third wave of autocratization, which suggests a shift in the growth

dynamics of regime types in recent times. But even these fairly robust findings should be treated with caution. The heterogeneity of the periods before and after the onset of the third wave, missing data and data reliability, methodological specifications, selection effects, and endogeneity concerns do not allow for a finite causal interpretation. Further studies with more sophisticated methods are needed to verify my results.

Although I have been unable to find conclusive evidence to support my first argument, this does not necessarily imply that it is wrong. In fact, I believe that it, and my thesis in general, has some merit and could be a promising avenue for future research. While I could not resolve the debate between skeptical and developmental theories and the discussion between Knutsen (2012) and Przeworski and Limongi (1993) with my thesis, I did present additional evidence that the effect seems to vary across time. Given that my initial hypotheses could not be substantiated, I believe the next logical step is to test the argument of Knutsen (2011b) and investigate whether the mechanisms through which regime types influence economic growth have evolved. Unfortunately, the scope of my thesis did not allow for such an in-depth analysis. In addition, my thesis provides a first idea of economic outcomes in the third wave and paves the way for further analysis of autocratization waves. Future research could explore the distinct characteristics of the first two waves in order to enable comparisons. I guess it is also a sin of economists to focus on the narrow cause of economic growth. Although I think it has its merits because of its correlation with other important factors, future research could build on this and look at other indicators, such as well-being or inequality.

Despite the shortcomings and limitations, there are also some theoretical and empirical implications. My study clearly underlines the complexity of the issue and the sensitivity of the results. Even minor changes in specifications can significantly change the findings. The results seem to be highly dependent on the choice of the statistical model. Empirically, this study suggests, albeit with caution, that democracies may lag in growth performance in the current era of systemic competition. Theoretically, one might think that autocracies spread because they perform better economically and become more attractive. But I am only speculating.

After running numerous regressions and reviewing a large amount of literature, my main conclusion is that one should be wary of authors who propose definitive answers on such a complex subject at this stage. Despite extensive research, our understanding of the relationship between regime type and economic growth is still severely limited. The fact that we know so little about such an important topic is obviously both frustrating and unsatisfactory. Exactly thirty years after Przeworski and Limongi (1993) published their seminal study on the relationship between regime type and economic growth, the central conclusion remains: ”[...] we do not know whether democracy fosters

or hinders economic growth" (Przeworski and Limongi 1993: 65), although this topic is as timely and important as ever. This calls for further research.

References

Daron Acemoglu, Simon Johnson, and James A Robinson. The Colonial Origins of Comparative Development: An Empirical Investigation. *American Economic Review*, 91(5):1369–1401, December 2001. ISSN 0002-8282. doi: 10.1257/aer.91.5.1369. URL https://pubs.aeaweb.org/doi/10.1257/aer.91.5.1369.

Daron Acemoglu, Simon Johnson, and James A. Robinson. Institutions as a Fundamental Cause of Long-Run Growth. In *Handbook of Economic Growth*, pages 385–472. Elsevier, 2005. ISBN 978-0-444-52041-8. doi: 10.1016/S1574-0684(05)01006-3. URL https://linkinghub.elsevier.com/retrieve/pii/S1574068405010063.

Daron Acemoglu, Simon Johnson, James A Robinson, and Pierre Yared. Income and Democracy. *American Economic Review*, 98(3):808–842, May 2008. ISSN 0002-8282. doi: 10.1257/aer.98.3.808. URL https://pubs.aeaweb.org/doi/10.1257/aer.98.3.808.

Daron Acemoglu, Simon Johnson, James A. Robinson, and Pierre Yared. Reevaluating the Modernization Hypothesis. *Journal of Monetary Economics*, 56(8):1043–1058, November 2009. ISSN 03043932. doi: 10.1016/j.jmoneco.2009.10.002. URL https://linkinghub.elsevier.com/retrieve/pii/S0304393209001299.

Daron Acemoglu, Suresh Naidu, Pascual Restrepo, and James A. Robinson. Democracy Does Cause Growth. *Journal of Political Economy*, 127(1):47–100, February 2019. ISSN 0022-3808, 1537-534X. doi: 10.1086/700936. URL https://www.journals.uchicago.edu/doi/10.1086/700936.

Philippe Aghion and Peter Howitt. A Model of Growth Through Creative Destruction. Technical Report w3223, National Bureau of Economic Research, Cambridge, MA, January 1990. URL http://www.nber.org/papers/w3223.pdf.

Joshua D. Angrist and Jörn-Steffen Pischke. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press, December 2008. ISBN 978-1-4008-2982-8 978-0-691-12034-8. doi: 10.2307/j.ctvcm4j72. URL http://www.jstor.org/stable/10.2307/j.ctvcm4j72.

Timothy Garton Ash. China, Russia and the New World Disorder, September 2008. URL https://www.latimes.com/la-oe-ash11-2008sep11-story.html.

Orazio P. Attanasio, Lucio Picci, and Antonello E. Scorcu. Saving, Growth, and Investment: A Macroeconomic Analysis Using a Panel of Countries. *Review of Economics and Statistics*, 82

(2):182–211, May 2000. ISSN 0034-6535, 1530-9142. doi: 10.1162/003465300558731. URL https://direct.mit.edu/rest/article/82/2/182-211/57184.

David B. Audretsch. From the Entrepreneurial University to the University for the Entrepreneurial Society. *The Journal of Technology Transfer*, 39(3):313–321, June 2014. ISSN 0892-9912, 1573-7047. doi: 10.1007/s10961-012-9288-1. URL http://link.springer.com/10.1007/s10961-012-9288-1.

Michael D. Barr. Lee Kuan Yew and the "Asian Values" Debate. *Asian Studies Review*, 24(3): 309–334, September 2000. ISSN 1035-7823, 1467-8403. doi: 10.1111/1467-8403.00080. URL https://onlinelibrary.wiley.com/doi/10.1111/1467-8403.00080.

Robert J. Barro. *Determinants of Economic Growth: a Cross-Country Empirical Study*. The Lionel Robbins lectures. MIT Press, Cambridge, Mass., 5. print edition, 2001. ISBN 978-0-262-52254-0 978-0-262-02421-1.

Robert J. Barro. Determinants of Democracy. *Journal of Political Economy*, 107(S6):S158–S183, December 1999. ISSN 0022-3808, 1537-534X. doi: 10.1086/250107. URL https://www.journals.uchicago.edu/doi/10.1086/250107.

Matthew A. Baum and David A. Lake. The Political Economy of Growth: Democracy and Human Capital. *American Journal of Political Science*, 47(2):333–347, April 2003. ISSN 0092-5853, 1540-5907. doi: 10.1111/1540-5907.00023. URL https://onlinelibrary.wiley.com/doi/10.1111/1540-5907.00023.

Nathaniel Beck and Jonathan N. Katz. What to Do (and Not to Do) with Time-Series Cross-Section Data. *The American Political Science Review*, 89(3):634–647, 1995. ISSN 0003-0554. doi: 10.2307/2082979. URL https://www.jstor.org/stable/2082979. Publisher: [American Political Science Association, Cambridge University Press].

Gary S Becker, Edward L Glaeser, and Kevin M Murphy. Population and Economic Growth. *American Economic Review*, 89(2):145–149, May 1999. ISSN 0002-8282. doi: 10.1257/aer.89.2.145. URL https://pubs.aeaweb.org/doi/10.1257/aer.89.2.145.

Fernando Bizzarro, John Gerring, Carl Henrik Knutsen, Allen Hicken, Michael Bernhard, Svend-Erik Skaaning, Michael Coppedge, and Staffan I. Lindberg. Party Strength and Economic Growth. *World Politics*, 70(2):275–320, April 2018. ISSN 0043-8871, 1086-3338. doi: 10.1017/S0043887117000375. URL https://muse.jhu.edu/article/691091.

David E. Bloom, Jeffrey D. Sachs, Paul Collier, and Christopher Udry. Geography, Demography, and Economic Growth in Africa. *Brookings Papers on Economic Activity*, 1998(2):207, 1998.

ISSN 00072303. doi: 10.2307/2534695. URL https://www.jstor.org/stable/2534695?origin=crossref.

Vanessa A Boese. How (Not) to Measure Democracy. *International Area Studies Review*, 22(2): 95–127, June 2019. ISSN 2233-8659, 2049-1123. doi: 10.1177/2233865918815571. URL http://journals.sagepub.com/doi/10.1177/2233865918815571.

Vanessa A. Boese and Markus Eberhardt. Democracy Doesn't Always Happen Over Night: Regime Change in Stages and Economic Growth. *SSRN Electronic Journal*, 2021. ISSN 1556-5068. doi: 10.2139/ssrn.3786755. URL https://www.ssrn.com/abstract=3786755.

Vanessa A. Boese-Schlosser, Markus Eberhardt, and WZB. How Does Democracy Cause Growth?, 2023. Volume: SP V 2023-501.

Carles Boix and Susan Stokes. Endogenous Democratization. *World Politics*, 55:517–549, July 2003. doi: 10.1353/wp.2003.0019.

Tobias Bunde and Sophie Eisentraut. Munich Security Report 2023: Re:vision. Technical report, Munich Security Conference, February 2023. URL https://securityconference.org/en/publications/munich-security-report-2023/.

Carlos Cinelli, Andrew Forney, and Judea Pearl. A Crash Course in Good and Bad Controls. *Sociological Methods & Research*, page 00491241221099552, May 2022. ISSN 0049-1241. doi: 10.1177/00491241221099552. URL https://doi.org/10.1177/00491241221099552. Publisher: SAGE Publications Inc.

Christopher Clague, Philip Keefer, Stephen Knack, and Mancur Olson. Property and Contract Rights in Autocracies and Democracies. *Journal of Economic Growth*, 1(2):243–276, June 1996. ISSN 1381-4338, 1573-7020. doi: 10.1007/BF00138864. URL http://link.springer.com/10.1007/BF00138864.

Marco Colagrossi, Domenico Rossignoli, and Mario A. Maggioni. Does Democracy Cause Growth? A meta-Analysis (of 2000 Regressions). *European Journal of Political Economy*, 61:101824, January 2020. ISSN 01762680. doi: 10.1016/j.ejpoleco.2019.101824. URL https://linkinghub.elsevier.com/retrieve/pii/S0176268019300552.

Robert Alan Dahl. *Polyarchy: Participation and Opposition*. Political science. Yale University Press, New Haven (Conn.), 1971. ISBN 978-0-300-01565-2.

Jared M. Diamond. *Guns, Germs and Steel: The Fates of Human Societies*. Norton & Comp, New York, 1999. ISBN 978-0-393-31755-8.

Hristos Doucouliagos and Mehmet Ali Ulubaşoğlu. Democracy and Economic Growth: A Meta-Analysis. *American Journal of Political Science*, 52(1):61–83, January 2008. ISSN 0092-5853, 1540-5907. doi: 10.1111/j.1540-5907.2007.00299.x. URL https://onlinelibrary.wiley.com/doi/10.1111/j.1540-5907.2007.00299.x.

Markus Eberhardt. Democracy, Growth, Heterogeneity, and Robustness. *European Economic Review*, 147:104173, August 2022. ISSN 00142921. doi: 10.1016/j.euroecorev.2022.104173. URL https://linkinghub.elsevier.com/retrieve/pii/S0014292122000976.

David L. Epstein, Robert Bates, Jack Goldstone, Ida Kristensen, and Sharyn O'Halloran. Democratic Transitions. *American Journal of Political Science*, 50(3):551–569, July 2006. ISSN 0092-5853, 1540-5907. doi: 10.1111/j.1540-5907.2006.00201.x. URL https://onlinelibrary.wiley.com/doi/10.1111/j.1540-5907.2006.00201.x.

Christopher J. Fariss, Therese Anders, Jonathan N. Markowitz, and Miriam Barnum. New Estimates of Over 500 Years of Historic GDP and Population Data. *Journal of Conflict Resolution*, 66(3): 553–591, April 2022. ISSN 0022-0027, 1552-8766. doi: 10.1177/00220027211054432. URL http://journals.sagepub.com/doi/10.1177/00220027211054432.

Yi Feng. Democracy, Political Stability and Economic Growth. *British Journal of Political Science*, 27(3):391–418, July 1997. ISSN 00071234. doi: 10.1017/S0007123497000197. URL http://www.journals.cambridge.org/abstract_S0007123497000197.

Caroline L. Freund and Melise Jaud. Regime Change, Democracy, and Growth. *SSRN Electronic Journal*, 2014. ISSN 1556-5068. doi: 10.2139/ssrn.2485489. URL http://www.ssrn.com/abstract=2485489.

Thomas L. Friedman. Opinion | Our One-Party Democracy. *The New York Times*, September 2009. ISSN 0362-4331. URL https://www.nytimes.com/2009/09/09/opinion/09friedman.html.

Michael Funke and Holger Strulik. On Endogenous Growth with Physical Capital, Human Capital and Product Variety. *European Economic Review*, 44(3):491–515, March 2000. ISSN 00142921. doi: 10.1016/S0014-2921(98)00072-5. URL https://linkinghub.elsevier.com/retrieve/pii/S0014292198000725.

Jennifer Gandhi. Dictatorial Institutions and their Impact on Economic Growth. *European Journal of Sociology*, 49(1):3–30, April 2008. ISSN 0003-9756, 1474-0583. doi: 10.1017/S0003975608000015. URL https://www.cambridge.org/core/product/identifier/S0003975608000015/type/journal_article.

John Gerring, Philip Bond, William T. Barndt, and Carola Moreno. Democracy and Economic Growth: A Historical Perspective. *World Politics*, 57(3):323–364, April 2005. ISSN 0043-8871, 1086-3338. doi: 10.1353/wp.2006.0002. URL https://muse.jhu.edu/article/194583.

John Gerring, Maxwell Palmer, Jan Teorell, and Dominic Zarecki. Demography and Democracy: A Global, District-level Analysis of Electoral Contestation. *American Political Science Review*, 109(3):574–591, August 2015. ISSN 0003-0554, 1537-5943. doi: 10.1017/S0003055415000234. URL https://www.cambridge.org/core/product/identifier/S0003055415000234/type/journal_article.

Klaus Gründler and Tommy Krieger. Democracy and Growth: Evidence from a Machine Learning Indicator. *European Journal of Political Economy*, 45:85–107, December 2016. ISSN 01762680. doi: 10.1016/j.ejpoleco.2016.05.005. URL http://linkinghub.elsevier.com/retrieve/pii/S0176268016300222.

R. E. Hall and C. I. Jones. Why do Some Countries Produce So Much More Output Per Worker than Others? *The Quarterly Journal of Economics*, 114(1):83–116, February 1999. ISSN 0033-5533, 1531-4650. doi: 10.1162/003355399555954. URL https://academic.oup.com/qje/article-lookup/doi/10.1162/003355399555954.

John F. Helliwell. Empirical Linkages Between Democracy and Economic Growth. *British Journal of Political Science*, 24(2):225–248, April 1994. ISSN 0007-1234, 1469-2112. doi: 10.1017/S0007123400009790. URL https://www.cambridge.org/core/product/identifier/S0007123400009790/type/journal_article.

Samuel P Huntington. Democracy's Third Wave. *Journal of Democracy*, 2(2):12–34, 1991. ISSN 1086-3214. doi: 10.1353/jod.1991.0016. URL http://muse.jhu.edu/content/crossref/journals/journal_of_democracy/v002/2.2huntington.pdf.

Nazrul Islam. What have We Learnt from the Convergence Debate? *Journal of Economic Surveys*, 17(3):309–362, July 2003. ISSN 0950-0804, 1467-6419. doi: 10.1111/1467-6419.00197. URL https://onlinelibrary.wiley.com/doi/10.1111/1467-6419.00197.

Khurram Jamali, Kirsten Wandschneider, and Phanindra V. Wunnava. The Effect of Political Regimes and Technology on Economic Growth. *Applied Economics*, 39(11):1425–1432, June 2007. ISSN 0003-6846, 1466-4283. doi: 10.1080/00036840500447906. URL http://www.tandfonline.com/doi/abs/10.1080/00036840500447906.

Stephan Klasen and Thorsten Nestmann. Population, Population Density and Technological Change. *Journal of Population Economics*, 19(3):611–626, July 2006. ISSN 0933-1433,

1432-1475. doi: 10.1007/s00148-005-0031-1. URL http://link.springer.com/10.1007/s00148-005-0031-1.

Carl Henrik Knutsen. Democracy and Economic Growth. A Changing Relationship? In Dag Harald Claes, editor, *Governing the Global Economy: Politics, Institutions, and Economic Development*, Routledge/Warwick Studies in Globalisation, pages 328–359. Routledge, Abingdon, Oxon ; New York, 2011a. ISBN 978-0-415-66535-3 978-0-415-66536-0 978-0-203-81374-4. OCLC: ocn690089940.

Carl Henrik Knutsen. Democracy, Dictatorship and Protection of Property Rights. *Journal of Development Studies*, 47(1):164–182, January 2011b. ISSN 0022-0388, 1743-9140. doi: 10.1080/00220388.2010.506919. URL http://www.tandfonline.com/doi/abs/10.1080/00220388.2010.506919.

Carl Henrik Knutsen. *The Economic Effects of Democracy and Dictatorship*. PHD Thesis, 2011c.

Carl Henrik Knutsen. Democracy and Economic Growth: A Survey of Arguments and Results. *International Area Studies Review*, 15(4):393–415, December 2012. ISSN 2233-8659, 2049-1123. doi: 10.1177/2233865912455268. URL http://journals.sagepub.com/doi/10.1177/2233865912455268.

Carl Henrik Knutsen. Why Democracies Outgrow Autocracies in the Long Run: Civil Liberties, Information Flows and Technological Change. *Kyklos*, 68, August 2015. doi: 10.1111/kykl.12087.

Carl Henrik Knutsen. Autocracy and Variation in Economic Development Outcomes. *SSRN Electronic Journal*, 2018. ISSN 1556-5068. doi: 10.2139/ssrn.3286949. URL https://www.ssrn.com/abstract=3286949.

M. Kremer. Population Growth and Technological Change: One Million B.C. to 1990. *The Quarterly Journal of Economics*, 108(3):681–716, August 1993. ISSN 0033-5533, 1531-4650. doi: 10.2307/2118405. URL https://academic.oup.com/qje/article-lookup/doi/10.2307/2118405.

Jonathan Krieckhaus. The Regime Debate Revisted: A Sensitivity Analysis of Democracy's Economic Effect. *British Journal of Political Science*, 34(4):635–655, October 2004. ISSN 0007-1234, 1469-2112. doi: 10.1017/S0007123404000225. URL https://www.cambridge.org/core/product/identifier/S0007123404000225/type/journal_article.

Jonathan Krieckhaus. Democracy and Economic Growth: How Regional Context Influences Regime Effects. *British Journal of Political Science*, 36(2):317–340, April 2006. ISSN 0007-

1234, 1469-2112. doi: 10.1017/S0007123406000172. URL https://www.cambridge.org/core/product/identifier/S0007123406000172/type/journal_article.

Steven Levitsky and Lucan A. Way. *Competitive Authoritarianism: Hybrid Regimes after the Cold War*. Problems of International Politics. Cambridge University Press, Cambridge, 2010. ISBN 978-0-521-88252-1. doi: 10.1017/CBO9780511781353. URL https://www.cambridge.org/core/books/competitive-authoritarianism/20A51BE2EBAB59B8AAEFD91B8FA3C9D6.

Seymour Martin Lipset. Some Social Requisites of Democracy: Economic Development and Political Legitimacy. *American Political Science Review*, 53(1):69–105, March 1959. ISSN 0003-0554, 1537-5943. doi: 10.2307/1951731. URL https://www.cambridge.org/core/product/identifier/S0003055400000034/type/journal_article.

Robert E. Lucas. On the Mechanics of Economic Development. *Journal of Monetary Economics*, 22(1):3–42, July 1988. ISSN 03043932. doi: 10.1016/0304-3932(88)90168-7. URL https://linkinghub.elsevier.com/retrieve/pii/0304393288901687.

Anna Lührmann and Staffan I. Lindberg. Appendices: A Third Wave of Autocratization is Here: What is New About It? *Democratization*, 26(7):1095–1113, October 2019a. ISSN 1351-0347, 1743-890X. doi: 10.1080/13510347.2019.1582029. URL https://www.tandfonline.com/doi/full/10.1080/13510347.2019.1582029.

Anna Lührmann and Staffan I. Lindberg. A Third Wave of Autocratization is Here: What is New About It? *Democratization*, 26(7):1095–1113, October 2019b. ISSN 1351-0347, 1743-890X. doi: 10.1080/13510347.2019.1582029. URL https://www.tandfonline.com/doi/full/10.1080/13510347.2019.1582029.

Anna Lührmann, Marcus Tannenberg, and Staffan I. Lindberg. Regimes of the World (RoW): Opening New Avenues for the Comparative Study of Political Regimes. *Politics and Governance*, 6(1):60–77, March 2018. ISSN 2183-2463. doi: 10.17645/pag.v6i1.1214. URL https://www.cogitatiopress.com/politicsandgovernance/article/view/1214.

Jakob B. Madsen, Paul A. Raschky, and Ahmed Skali. Does Democracy Drive Income in the World, 1500–2000? *European Economic Review*, 78:175–195, August 2015. ISSN 00142921. doi: 10.1016/j.euroecorev.2015.05.005. URL https://linkinghub.elsevier.com/retrieve/pii/S0014292115000707.

Christopher S. P. Magee and John A. Doces. Reconsidering Regime Type and Growth: Lies, Dictatorships, and Statistics. *International Studies Quarterly*, 59(2):223–237, June 2015. ISSN 00208833.

doi: 10.1111/isqu.12143. URL https://academic.oup.com/isq/article-lookup/doi/10.1111/isqu.12143.

N. G. Mankiw, D. Romer, and D. N. Weil. A Contribution to the Empirics of Economic Growth. *The Quarterly Journal of Economics*, 107(2):407–437, May 1992. ISSN 0033-5533, 1531-4650. doi: 10.2307/2118477. URL https://academic.oup.com/qje/article-lookup/doi/10.2307/2118477.

Luis R. Martínez. How Much Should We Trust the Dictator's GDP Growth Estimates? *Journal of Political Economy*, 130(10):2731–2769, October 2022. ISSN 0022-3808, 1537-534X. doi: 10.1086/720458. URL https://www.journals.uchicago.edu/doi/10.1086/720458.

Chungshik Moon. Political Institutions and FDI Inflows in Autocratic Countries. *Democratization*, 26(7):1256–1277, October 2019. ISSN 1351-0347, 1743-890X. doi: 10.1080/13510347.2019.1627520. URL https://www.tandfonline.com/doi/full/10.1080/13510347.2019.1627520.

Tommaso Nannicini and Roberto Ricciuti. Autocratic Transitions and Growth. *SSRN Electronic Journal*, 2010. ISSN 1556-5068. doi: 10.2139/ssrn.1563996. URL https://www.ssrn.com/abstract=1563996.

Douglass C. North. Institutions and Economic Growth: An Historical Introduction. *World Development*, 17(9):1319–1332, September 1989. ISSN 0305750X. doi: 10.1016/0305-750X(89)90075-2. URL https://linkinghub.elsevier.com/retrieve/pii/0305750X89900752.

Elias Papaioannou and Gregorios Siourounis. Democratisation and Growth. *The Economic Journal*, 118(532):1520–1551, October 2008a. ISSN 0013-0133, 1468-0297. doi: 10.1111/j.1468-0297.2008.02189.x. URL https://academic.oup.com/ej/article/118/532/1520-1551/5088814.

Elias Papaioannou and Gregorios Siourounis. Economic and Social Factors Driving the Third Wave of Democratization. *Journal of Comparative Economics*, 36(3):365–387, September 2008b. ISSN 01475967. doi: 10.1016/j.jce.2008.04.005. URL https://linkinghub.elsevier.com/retrieve/pii/S0147596708000218.

Torsten Persson and Guido Tabellini. Democracy and Development: The Devil in the Details. *American Economic Review*, 96(2):319–324, April 2006. ISSN 0002-8282. doi: 10.1257/000282806777212396. URL https://pubs.aeaweb.org/doi/10.1257/000282806777212396.

Hans Pitlik. The Impact of Growth Performance and Political Regime Type on Economic Policy Liberalization. *Kyklos*, 61(2):258–278, May 2008. ISSN 0023-5962, 1467-6435. doi: 10.1111/j.1467-6435.2008.00401.x. URL https://onlinelibrary.wiley.com/doi/10.1111/j.1467-6435.2008.00401.x.

Julia Ruiz Pozuelo, Amy Slipowitz, and Guillermo J. Vuletin. Democracy Does Not Cause Growth:The Importance of Endogeneity Arguments. *SSRN Electronic Journal*, 2016. ISSN 1556-5068. doi: 10.2139/ssrn.2956693. URL http://www.ssrn.com/abstract=2956693.

Adam Przeworski and Fernando Limongi. Political Regimes and Economic Growth. *Journal of Economic Perspectives*, 7(3):51–69, August 1993. ISSN 0895-3309. doi: 10.1257/jep.7.3.51. URL https://pubs.aeaweb.org/doi/10.1257/jep.7.3.51.

Adam Przeworski and Fernando Limongi. Modernization: Theories and Facts. *World Politics*, 49 (2):155–183, January 1997. ISSN 0043-8871, 1086-3338. doi: 10.1353/wp.1997.0004. URL https://muse.jhu.edu/article/36370.

Adam Przeworski, Michael E. Alvarez, Jose Antonio Cheibub, and Fernando Limongi. *Democracy and Development: Political Institutions and Well-Being in the World, 1950–1990*. Cambridge University Press, 1 edition, August 2000. ISBN 978-0-521-79032-1 978-0-521-79379-7 978-0-511-80494-6. doi: 10.1017/CBO9780511804946. URL https://www.cambridge.org/core/product/identifier/9780511804946/type/book.

Dani Rodrik and Romain Wacziarg. Do Democratic Transitions Produce Bad Economic Outcomes? *American Economic Review*, 95(2):50–55, April 2005. ISSN 0002-8282. doi: 10.1257/000282805774670059. URL https://pubs.aeaweb.org/doi/10.1257/000282805774670059.

Dani Rodrik, Arvind Subramanian, and Francesco Trebbi. Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development. *Journal of Economic Growth*, 9(2):131–165, June 2004. ISSN 1381-4338. doi: 10.1023/B:JOEG.0000031425.72248.85. URL http://link.springer.com/10.1023/B:JOEG.0000031425.72248.85.

Paul Romer. Idea Gaps and Object Gaps in Economic Development. *Journal of Monetary Economics*, 32(3):543–573, December 1993. ISSN 03043932. doi: 10.1016/0304-3932(93)90029-F. URL https://linkinghub.elsevier.com/retrieve/pii/030439329390029F.

Paul M. Romer. Endogenous Technological Change. *Journal of Political Economy*, 98(5, Part 2):S71–S102, October 1990. ISSN 0022-3808, 1537-534X. doi: 10.1086/261725. URL https://www.journals.uchicago.edu/doi/10.1086/261725.

Michael L. Ross. What Have We Learned about the Resource Curse? *Annual Review of Political Science*, 18(1):239–259, May 2015. ISSN 1094-2939, 1545-1577. doi: 10.1146/annurev-polisci-052213-040359. URL https://www.annualreviews.org/doi/10.1146/annurev-polisci-052213-040359.

Jeffrey Sachs. Tropical Underdevelopment. Technical Report w8119, National Bureau of Economic Research, Cambridge, MA, February 2001. URL http://www.nber.org/papers/w8119.pdf.

Shrabani Saha and Kunal Sen. The Corruption–Growth Relationship: Does the Political Regime Matter? *Journal of Institutional Economics*, 17(2):243–266, April 2021. ISSN 1744-1374, 1744-1382. doi: 10.1017/S1744137420000375. URL https://www.cambridge.org/core/product/identifier/S1744137420000375/type/journal_article.

Andreas Schedler. *The Politics of Uncertainty: Sustaining and Subverting Electoral Authoritarianism*. Oxford University Press, August 2013. ISBN 978-0-19-968032-0. doi: 10.1093/acprof:oso/9780199680320.001.0001. URL https://doi.org/10.1093/acprof:oso/9780199680320.001.0001.

Joseph A. Schumpeter. *Capitalism, Socialism and Democracy*. Routledge, 1976. ISBN 978-1-134-84151-6. doi: 10.4324/9780203202050. URL https://www.taylorfrancis.com/books/9781134841516.

Amartya Sen. Human Rights and Asian Values. (Cover story). *New Republic*, 217(2/3):33–40, July 1997. ISSN 00286583. URL https://search.ebscohost.com/login.aspx?direct=true&db=dfg&AN=9707013354&authtype=shib&site=ehost-live. Publisher: TNR II, LLC.

Larry Sirowy and Alex Inkeles. The Effects of Democracy on Economic Growth and Inequality: A review. *Studies In Comparative International Development*, 25(1):126–157, March 1990. ISSN 0039-3606, 1936-6167. doi: 10.1007/BF02716908. URL http://link.springer.com/10.1007/BF02716908.

Robert M. Solow. A Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics*, 70(1):65, February 1956. ISSN 00335533. doi: 10.2307/1884513. URL https://academic.oup.com/qje/article-lookup/doi/10.2307/1884513.

T. W. Swan. Economic Growth and Capital Accumulation. *Economic Record*, 32 (2):334–361, 1956. ISSN 1475-4932. doi: 10.1111/j.1475-4932.1956.tb00434.x. URL https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1475-4932.1956.tb00434.x. https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1475-4932.1956.tb00434.x.

José Tavares and Romain Wacziarg. How Democracy Affects Growth. *European Economic Review*, 45(8):1341–1378, August 2001. ISSN 00142921. doi: 10.1016/S0014-2921(00)00093-3. URL https://linkinghub.elsevier.com/retrieve/pii/S0014292100000933.

The White House. Remarks of President Joe Biden – State of the Union Address As Prepared for Delivery, March 2022. URL https://www.whitehouse.gov/briefing-room/speeches-remarks/2022/03/01/remarks-of-president-joe-biden-state-of-the-union-address-as-delivered/.

Max Weber. *The Protestant Ethic and the Spirit of Capitalism*. Routledge, London ; New York, 2001. ISBN 978-0-415-25559-2 978-0-415-25406-9.

Joseph Wright. Do Authoritarian Institutions Constrain? How Legislatures Affect Economic Growth and Investment. *American Journal of Political Science*, 52(2):322–343, April 2008. ISSN 0092-5853, 1540-5907. doi: 10.1111/j.1540-5907.2008.00315.x. URL https://onlinelibrary.wiley.com/doi/10.1111/j.1540-5907.2008.00315.x.

Fareed Zakaria and Lee Kuan Yew. Culture Is Destiny: A Conversation with Lee Kuan Yew. *Foreign Affairs*, 73(2):109–126, 1994. ISSN 0015-7120. doi: 10.2307/20045923. URL https://www.jstor.org/stable/20045923. Publisher: Council on Foreign Relations.

Suisheng Zhao. The China Model: Can it Replace the Western Model of Modernization? *Journal of Contemporary China*, 19(65):419–436, June 2010. ISSN 1067-0564, 1469-9400. doi: 10.1080/10670561003666061. URL http://www.tandfonline.com/doi/full/10.1080/10670561003666061.

Appendices

A Overview over Data and Variables

Table A.1: Countries Included in the Dataset

	Country	First Year	Last Year
1	Afghanistan	1950	2018
2	Albania	1900	2018
3	Algeria	1913	2018
4	Angola	1950	2018
5	Argentina	1900	2018
6	Armenia	1973	2018
7	Australia	1900	2018
8	Austria	1900	2018
9	Azerbaijan	1973	2018
10	Bahrain	1950	2018
11	Bangladesh	1950	2018
12	Barbados	1950	2018
13	Belarus	1973	2018
14	Belgium	1900	2018
15	Benin	1950	2018
16	Bolivia	1900	2018
17	Bosnia and Herzegovina	1952	2018
18	Botswana	1950	2018
19	Brazil	1900	2018
20	Bulgaria	1905	2018
21	Burkina Faso	1950	2018
22	Burma/Myanmar	1901	2018
23	Burundi	1950	2018
24	Cambodia	1950	2018
25	Cameroon	1950	2018
26	Canada	1900	2018
27	Cape Verde	1950	2018
28	Central African Republic	1950	2018
29	Chad	1950	2018

30	Chile	1900	2018
31	China	1900	2018
32	Colombia	1900	2018
33	Comoros	1950	2018
34	Costa Rica	1920	2018
35	Croatia	1952	2018
36	Cuba	1902	2018
37	Cyprus	1950	2018
38	Czechia	1970	2018
39	Democratic Republic of the Congo	1950	2018
40	Denmark	1900	2018
41	Djibouti	1950	2018
42	Dominican Republic	1950	2018
43	Ecuador	1900	2018
44	Egypt	1913	2018
45	El Salvador	1920	2018
46	Equatorial Guinea	1950	2018
47	Estonia	1973	2018
48	Eswatini	1950	2018
49	Ethiopia	1950	2018
50	Finland	1900	2018
51	France	1900	2018
52	Gabon	1950	2018
53	Georgia	1973	2018
54	Germany	1900	2018
55	Ghana	1913	2018
56	Greece	1900	2018
57	Guatemala	1920	2018
58	Guinea	1950	2018
59	Guinea-Bissau	1950	2018
60	Haiti	1945	2018
61	Honduras	1920	2018
62	Hong Kong	1913	2018
63	Hungary	1900	2018
64	Iceland	1950	2018
65	India	1900	2018

66	Indonesia	1900	2018
67	Iran	1913	2018
68	Iraq	1913	2018
69	Ireland	1913	2018
70	Israel	1950	2018
71	Italy	1900	2018
72	Ivory Coast	1933	2018
73	Jamaica	1900	2018
74	Japan	1900	2018
75	Jordan	1913	2018
76	Kazakhstan	1973	2018
77	Kenya	1950	2018
78	Kuwait	1950	2018
79	Kyrgyzstan	1973	2018
80	Laos	1950	2018
81	Latvia	1973	2018
82	Lebanon	1913	2018
83	Lesotho	1950	2018
84	Liberia	1950	2018
85	Libya	1950	2018
86	Lithuania	1973	2018
87	Luxembourg	1950	2018
88	Madagascar	1950	2018
89	Malawi	1950	2018
90	Malaysia	1900	2018
91	Mali	1950	2018
92	Malta	1950	2018
93	Mauritania	1950	2018
94	Mauritius	1950	2018
95	Mexico	1900	2018
96	Moldova	1973	2018
97	Mongolia	1950	2018
98	Montenegro	1952	2018
99	Morocco	1913	2018
100	Mozambique	1950	2018
101	Namibia	1950	2018

102	Nepal	1913	2018
103	Netherlands	1900	2018
104	New Zealand	1900	2018
105	Nicaragua	1920	2018
106	Niger	1950	2018
107	Nigeria	1950	2018
108	North Korea	1911	2018
109	North Macedonia	1952	2018
110	Norway	1900	2018
111	Oman	1950	2018
112	Pakistan	1950	2018
113	Panama	1906	2018
114	Paraguay	1939	2018
115	Peru	1900	2018
116	Philippines	1902	2018
117	Poland	1900	2018
118	Portugal	1900	2018
119	Qatar	1950	2018
120	Republic of the Congo	1950	2018
121	Romania	1900	2018
122	Russia	1960	2018
123	Rwanda	1950	2018
124	Sao Tome and Principe	1950	2018
125	Saudi Arabia	1913	2018
126	Senegal	1950	2018
127	Serbia	1952	2018
128	Seychelles	1950	2018
129	Sierra Leone	1950	2018
130	Singapore	1900	2018
131	Slovakia	1985	2018
132	Slovenia	1952	2018
133	South Africa	1900	2018
134	South Korea	1911	2018
135	Spain	1900	2018
136	Sri Lanka	1900	2018
137	Sudan	1950	2018

138	Sweden	1900	2018
139	Switzerland	1900	2018
140	Syria	1913	2018
141	Taiwan	1901	2018
142	Tajikistan	1973	2018
143	Tanzania	1950	2018
144	Thailand	1913	2018
145	The Gambia	1950	2018
146	Togo	1950	2018
147	Trinidad and Tobago	1950	2018
148	Tunisia	1913	2018
149	Turkey	1913	2018
150	Turkmenistan	1973	2018
151	Uganda	1950	2018
152	Ukraine	1973	2018
153	United Arab Emirates	1950	2018
154	United Kingdom	1900	2018
155	United States of America	1900	2018
156	Uruguay	1900	2018
157	Uzbekistan	1973	2018
158	Venezuela	1900	2018
159	Vietnam	1913	2018
160	Yemen	1950	2018
161	Zambia	1950	2018
162	Zimbabwe	1950	2018

Table A.2: Excluded Countries (No Data on Regime Type)

Country
Czechoslovakia
Dominica
Saint Lucia
Puerto Rico
Former USSR
Former Yugoslavia

Table A.3: Excluded Countries (No Data on Economic Growth)

Country
Suriname
South Yemen
South Sudan
Republic of Vietnam
Kosovo
Bhutan
Timor-Leste
Maldives
Papua New Guinea
Eritrea
Somalia
German Democratic Republic
Palestine/Gaza
Somaliland
Fiji
Guyana
Solomon Islands
Vanuatu
Palestine/British Mandate
Zanzibar

Table A.4: Relative Frequencies of Country-years in Decades for Economic Growth

	Decade	N	Relative Frequency
1	1900	48	0.30
2	1910	19	0.12
3	1920	5	0.03
4	1930	2	0.01
5	1940	1	0.01
6	1950	70	0.43
7	1960	1	0.01
8	1970	15	0.09
9	1980	1	0.01

Table A.5: Relative Frequencies of Country-years in Decades for Regime Type

	Decade	N	Relative Frequency
1	1900	113	0.70
2	1910	20	0.12
3	1920	6	0.04
4	1930	1	0.01
5	1940	5	0.03
6	1960	1	0.01
7	1970	2	0.01
8	1980	1	0.01
9	1990	13	0.08

Table A.6: Included Countries By Region

N	Asia and Pacific	Sub-Saharan Africa	Eastern Europe and Central Asia	Middle East and North Africa	Latin America and the Caribbean	Western Europe and North America
1	Afghanistan	Angola	Albania	United Arab Emirates	Argentina	Australia
2	Bangladesh	Burundi	Armenia	Bahrain	Bolivia	Austria
3	China	Benin	Azerbaijan	Algeria	Brazil	Belgium
4	Hong Kong	Burkina Faso	Bulgaria	Egypt	Barbados	Canada
5	Indonesia	Botswana	Bosnia and Herzegovina	Iran	Chile	Switzerland
6	India	Central African Republic	Belarus	Iraq	Colombia	Cyprus
7	Japan	Ivory Coast	Czechia	Israel	Costa Rica	Germany
8	Cambodia	Cameroon	Estonia	Jordan	Cuba	Denmark
9	South Korea	Democratic Republic of the Congo	Georgia	Kuwait	Dominican Republic	Spain
10	Laos	Republic of the Congo	Croatia	Lebanon	Ecuador	Finland
11	Sri Lanka	Comoros	Hungary	Libya	Guatemala	France
12	Burma/Myanmar	Cape Verde	Kazakhstan	Morocco	Honduras	United Kingdom
13	Malaysia	Djibouti	Kyrgyzstan	Oman	Haiti	Greece
14	Nepal	Ethiopia	Lithuania	Qatar	Jamaica	Ireland
15	Pakistan	Gabon	Latvia	Saudi Arabia	Mexico	Iceland
16	Philippines	Ghana	Moldova	Syria	Nicaragua	Italy
17	North Korea	Guinea	North Macedonia	Tunisia	Panama	Luxembourg
18	Singapore	The Gambia	Montenegro	Turkey	Peru	Malta
19	Thailand	Guinea-Bissau	Mongolia	Yemen	Paraguay	Netherlands
20	Taiwan	Equatorial Guinea	Poland		El Salvador	Norway
21	Vietnam	Kenya	Romania		Trinidad and Tobago	New Zealand
22		Liberia	Russia		Uruguay	Portugal
23		Lesotho	Serbia		Venezuela	Sweden
24		Madagascar	Slovakia			United States of America
25		Mali	Slovenia			
26		Mozambique	Tajikistan			
27		Mauritania	Turkmenistan			
28		Mauritius	Ukraine			
29		Malawi	Uzbekistan			
30		Namibia				
31		Niger				
32		Nigeria				
33		Rwanda				
34		Sudan				
35		Senegal				
36		Sierra Leone				
37		Sao Tome and Principe				
38		Eswatini				
39		Seychelles				
40		Chad				
41		Togo				
42		Tanzania				
43		Uganda				
44		South Africa				
45		Zambia				
46		Zimbabwe				
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Table A.7: Closed Autocracies in the Third Wave

	Country	Start Year	End Year
1	Afghanistan	1994	2003
2	Algeria	1994	1994
3	Angola	1994	2009
4	Bahrain	1994	2018
5	Bangladesh	2007	2007
6	Bosnia and Herzegovina	1994	1995
7	Burma/Myanmar	1994	2010
8	Burundi	1996	2004
9	Central African Republic	2004	2004
10	Chad	1994	1996
11	China	1994	2018
12	Comoros	2000	2001
13	Cuba	1994	2018
14	Democratic Republic of the Congo	1994	2005
15	Egypt	1994	1998
16	Egypt	2013	2013
17	Equatorial Guinea	1994	1995
18	Eswatini	1994	2018
19	Guinea	2009	2009
20	Guinea-Bissau	2013	2013
21	Haiti	1994	1994
22	Haiti	2005	2005
23	Hong Kong	1994	2018
24	Iraq	1994	1994
25	Iraq	2000	2004
26	Jordan	1994	2018
27	Kuwait	1994	2018
28	Kyrgyzstan	1994	1994
29	Laos	1994	2018
30	Lesotho	1995	1997
31	Lesotho	1999	2001
32	Liberia	1994	1996
33	Liberia	2004	2004

34	Libya	1994	2011
35	Libya	2014	2018
36	Madagascar	2010	2012
37	Mauritania	2006	2006
38	Morocco	1994	2018
39	Nepal	2002	2007
40	Niger	2010	2010
41	Nigeria	1994	1998
42	North Korea	1994	2018
43	Oman	1994	2018
44	Pakistan	1999	2001
45	Peru	1994	1994
46	Qatar	1994	2018
47	Republic of the Congo	1998	2001
48	Rwanda	1994	2002
49	Saudi Arabia	1994	2018
50	Sierra Leone	1994	2001
51	Sudan	1994	1995
52	Syria	2013	2018
53	Taiwan	1994	1995
54	Thailand	2007	2018
55	The Gambia	1995	1995
56	Turkmenistan	1994	2017
57	Uganda	1994	1995
58	United Arab Emirates	1994	2018
59	Uzbekistan	2014	2018
60	Vietnam	1994	2018
61	Yemen	2016	2018

Table A.8: Electoral Autocracies in the Third Wave

	Country	Start Year	End Year
1	Afghanistan	2004	2018
2	Albania	1994	2004
3	Albania	2018	2018
4	Algeria	1995	2018
5	Angola	2010	2018
6	Armenia	1995	2017
7	Azerbaijan	1994	2018
8	Bangladesh	2002	2006
9	Bangladesh	2008	2018
10	Belarus	1996	2018
11	Bosnia and Herzegovina	1996	1996
12	Burkina Faso	1994	1999
13	Burkina Faso	2015	2015
14	Burma/Myanmar	2011	2018
15	Burundi	1994	1995
16	Burundi	2005	2018
17	Cambodia	1994	2018
18	Cameroon	1994	2018
19	Central African Republic	1994	2003
20	Central African Republic	2005	2018
21	Chad	1997	2018
22	Comoros	1994	1999
23	Comoros	2002	2018
24	Croatia	1994	1999
25	Democratic Republic of the Congo	2006	2018
26	Djibouti	1994	2018
27	Dominican Republic	1994	1995
28	Egypt	1999	2012
29	Egypt	2014	2018
30	El Salvador	1994	1998
31	Equatorial Guinea	1996	2018
32	Ethiopia	1994	2018
33	Gabon	1994	2018

34	Georgia	1994	2003
35	Georgia	2008	2011
36	Ghana	1994	1995
37	Guatemala	1994	1996
38	Guinea	1994	2008
39	Guinea	2010	2018
40	Guinea-Bissau	1994	2012
41	Guinea-Bissau	2014	2014
42	Haiti	1995	2004
43	Haiti	2006	2018
44	Honduras	2009	2018
45	Hungary	2018	2018
46	India	2017	2018
47	Indonesia	1994	1998
48	Iran	1994	2018
49	Iraq	1995	1999
50	Iraq	2005	2018
51	Ivory Coast	1994	2015
52	Kazakhstan	1994	2018
53	Kenya	1994	2013
54	Kenya	2017	2018
55	Kyrgyzstan	1995	2018
56	Lebanon	1994	2018
57	Lesotho	1994	1994
58	Lesotho	1998	1998
59	Liberia	1997	2003
60	Liberia	2005	2005
61	Libya	2012	2012
62	Madagascar	2001	2007
63	Madagascar	2009	2009
64	Madagascar	2013	2018
65	Malawi	1994	1994
66	Malawi	2000	2009
67	Malaysia	1994	2018
68	Mali	2012	2013
69	Mauritania	1994	2005

70	Mauritania	2007	2018
71	Mexico	1994	1995
72	Moldova	2005	2009
73	Montenegro	1998	2018
74	Mozambique	1994	2018
75	Nepal	1994	2013
76	Nicaragua	2007	2018
77	Niger	1996	2009
78	Nigeria	1999	2011
79	North Macedonia	1994	2016
80	Pakistan	1994	2018
81	Peru	1995	2000
82	Philippines	2004	2018
83	Republic of the Congo	1994	2018
84	Russia	1994	2018
85	Rwanda	2003	2018
86	Serbia	1994	2018
87	Seychelles	1994	2012
88	Sierra Leone	1996	2002
89	Singapore	1994	2018
90	South Africa	1994	1994
91	Sri Lanka	1994	2014
92	Sudan	1996	2018
93	Syria	1994	2012
94	Taiwan	1996	1996
95	Tajikistan	1994	2018
96	Tanzania	1994	2018
97	Thailand	1994	2013
98	The Gambia	1994	2016
99	Togo	1994	2018
100	Tunisia	1994	2011
101	Turkey	2013	2018
102	Turkmenistan	2018	2018
103	Uganda	1996	2018
104	Ukraine	1998	2018
105	Uzbekistan	1994	2013

106	Venezuela	2002	2018
107	Yemen	1994	2015
108	Zambia	1994	2018
109	Zimbabwe	1994	2018

Table A.9: Electoral Democracies in the Third Wave

	Country	Start Year	End Year
1	Albania	2005	2017
2	Argentina	1994	2018
3	Armenia	1994	1994
4	Armenia	2018	2018
5	Bangladesh	1994	2001
6	Barbados	1994	2014
7	Belarus	1994	1995
8	Benin	1994	2012
9	Benin	2015	2018
10	Bolivia	1994	2018
11	Bosnia and Herzegovina	1997	2018
12	Botswana	1994	1998
13	Brazil	1994	2018
14	Bulgaria	1994	2018
15	Burkina Faso	2000	2014
16	Burkina Faso	2016	2018
17	Cape Verde	1994	2018
18	Chile	1994	1995
19	Colombia	1994	2018
20	Croatia	2000	2018
21	Cyprus	1994	2003
22	Dominican Republic	1996	2018
23	Ecuador	1994	2018
24	El Salvador	1999	2018
25	Estonia	1994	1995
26	Georgia	2004	2007
27	Georgia	2012	2018
28	Ghana	1996	2002
29	Ghana	2015	2016
30	Greece	2018	2018
31	Guatemala	1997	2018
32	Guinea-Bissau	2015	2018
33	Honduras	1994	2008

34	Hungary	2010	2017
35	India	1994	2016
36	Indonesia	1999	2018
37	Ivory Coast	2016	2018
38	Jamaica	1994	2018
39	Kenya	2014	2016
40	Latvia	1994	2005
41	Latvia	2013	2013
42	Latvia	2016	2016
43	Lesotho	2002	2018
44	Liberia	2006	2018
45	Libya	2013	2013
46	Lithuania	2016	2018
47	Madagascar	1994	2000
48	Madagascar	2008	2008
49	Malawi	1995	1999
50	Malawi	2010	2018
51	Mali	1994	2011
52	Mali	2014	2018
53	Malta	1994	2018
54	Mauritius	2014	2018
55	Mexico	1996	2018
56	Moldova	1994	2004
57	Moldova	2010	2018
58	Mongolia	1994	2018
59	Montenegro	2004	2012
60	Namibia	1994	2018
61	Nepal	2009	2018
62	Nicaragua	1994	2006
63	Niger	1994	2018
64	Nigeria	2012	2018
65	North Macedonia	1998	2018
66	Panama	1994	2018
67	Paraguay	1994	2018
68	Peru	2001	2018
69	Philippines	1994	2017

70	Poland	2016	2018
71	Romania	1994	2018
72	Sao Tome and Principe	1994	2018
73	Senegal	1994	2018
74	Serbia	2001	2013
75	Seychelles	2013	2014
76	Sierra Leone	2003	2018
77	Slovakia	1994	1998
78	South Africa	1995	2018
79	Sri Lanka	1995	2018
80	Taiwan	1997	1999
81	Tanzania	1996	1999
82	Thailand	1998	2012
83	The Gambia	2017	2018
84	Togo	2014	2015
85	Trinidad and Tobago	1994	2004
86	Tunisia	2012	2018
87	Turkey	1994	2012
88	Ukraine	1994	2009
89	Venezuela	1994	2001
90	Zambia	2002	2012

Table A.10: Liberal Democracies in the Third Wave

	Country	Start Year	End Year
1	Australia	1994	2018
2	Austria	1994	2018
3	Barbados	2015	2018
4	Belgium	1994	2018
5	Benin	2013	2014
6	Botswana	1999	2018
7	Canada	1994	2018
8	Chile	1996	2018
9	Costa Rica	1994	2018
10	Cyprus	2004	2018
11	Czechia	1994	2018
12	Denmark	1994	2018
13	Estonia	1996	2018
14	Finland	1994	2018
15	France	1994	2018
16	Germany	1994	2018
17	Ghana	2003	2014
18	Ghana	2017	2018
19	Greece	1994	2017
20	Hungary	1994	2009
21	Iceland	1994	2018
22	Ireland	1994	2018
23	Israel	1994	2018
24	Italy	1994	2018
25	Japan	1994	2018
26	Latvia	2006	2012
27	Latvia	2014	2015
28	Latvia	2017	2018
29	Lithuania	1994	2015
30	Luxembourg	1994	2018
31	Mauritius	1994	2013
32	Netherlands	1994	2018
33	New Zealand	1994	2018

34	Norway	1994	2018
35	Poland	1994	2015
36	Portugal	1994	2018
37	Serbia	2007	2012
38	Seychelles	2015	2018
39	Slovakia	1999	2018
40	Slovenia	1994	2018
41	South Africa	1996	2012
42	South Korea	1994	2018
43	Spain	1994	2018
44	Sweden	1994	2018
45	Switzerland	1994	2018
46	Taiwan	2000	2018
47	Trinidad and Tobago	2005	2018
48	United Kingdom	1994	2018
49	United States of America	1994	2018
50	Uruguay	1994	2018

B Descriptive Statistics

Table B.1: Growth Rate By Regime Type (Binary)

Regime Type	Count	Mean	Sd	Median	Min	Max
Autocracy	8174	2.13	7.86	2.10	-61.24	173.89
Democracy	4217	2.49	4.60	2.63	-58.45	65.94

Table B.2: Growth Rate By Regime Type (ROW)

Regime Type	Count	Mean	Sd	Median	Min	Max
Closed Autocracy	4384	2.09	8.22	2.00	-61.24	173.89
Electoral Autocracy	3749	2.18	7.28	2.20	-57.47	130.87
Electoral Democracy	1988	2.48	5.60	2.87	-58.45	29.23
Liberal Democracy	2244	2.49	3.69	2.49	-18.53	65.94

Table B.3: Growth Rate By Period

Period	Count	Mean	Sd	Median	Min	Max
Pre-Third Wave	8764	1.88	7.21	2.01	-61.24	173.89
Third Wave	4050	3.06	6.21	2.92	-55.78	130.87

Table B.4: Growth Rate By Regime Type (Binary) and Period

Regime Type	Period	Count	Mean	Sd	Median	Min	Max
Autocracy	Pre-Third Wave	6198	1.71	7.75	1.78	-61.24	173.89
Autocracy	Third Wave	1976	3.44	8.04	3.28	-55.78	130.87
Democracy	Pre-Third Wave	2147	2.32	5.38	2.59	-58.45	65.94
Democracy	Third Wave	2070	2.68	3.60	2.66	-31.98	21.12

Table B.5: Growth Rate By Regime Type (ROW) and Period

Regime Type	Period	Count	Mean	Sd	Median	Min	Max
Closed Autocracy	Pre-Third Wave	3793	1.76	8.11	1.79	-61.24	173.89
Closed Autocracy	Third Wave	591	4.19	8.62	3.85	-55.78	62.72
Electoral Autocracy	Pre-Third Wave	2379	1.63	7.01	1.78	-57.47	80.88
Electoral Autocracy	Third Wave	1370	3.14	7.63	3.03	-38.10	130.87
Electoral Democracy	Pre-Third Wave	899	1.98	6.76	2.60	-58.45	29.23
Electoral Democracy	Third Wave	1089	2.89	4.38	2.97	-55.23	21.12
Liberal Democracy	Pre-Third Wave	1248	2.54	4.11	2.58	-18.53	65.94
Liberal Democracy	Third Wave	996	2.42	3.08	2.42	-15.93	12.40

Table B.6: Growth Rate By Region

Region	Count	Mean	Sd	Median	Min	Max
Eastern Europe and Central Asia	1248	2.73	9.08	3.39	-44.55	173.89
Latin America and the Caribbean	2324	1.82	5.32	2.05	-34.46	34.63
The Middle East and North Africa	1296	3.09	10.77	2.90	-61.24	130.87
Sub-Saharan Africa	3154	1.63	6.28	1.67	-44.66	90.80
Western Europe and North America	2601	2.28	5.47	2.40	-58.45	68.57
Asia and Pacific	1770	2.94	6.27	3.10	-31.46	62.72

C Further Results and Robustness Checks

Table C.1: Regression Results for Transitions

	Dependent Variable:	
	Economic Growth	
	(1)	(2)
Sudden Transition	-2.897^{***}	-1.845^{***}
	(0.509)	(0.632)
Third Wave		1.427^{**}
		(0.662)
Sudden Transition * Third Wave		-2.932^{***}
		(1.115)
Initial GDP per Capita	-0.004	-0.230
	(0.298)	(0.321)
Population Level	0.060	-0.049
	(0.162)	(0.171)
Eastern Europe and Central Asia	-1.046	-1.480^{*}
	(0.849)	(0.867)
Latin America and Caribbean	-1.810^{**}	-2.059^{***}
	(0.777)	(0.781)
MENA	-1.989^{**}	-1.887^{*}
	(0.987)	(0.987)
Sub Saharan Africa	-1.752^{**}	-2.194^{***}
	(0.806)	(0.831)
Western Europe and North America	-2.413^{***}	-2.068^{**}
	(0.908)	(0.948)
Constant	2.902	5.169
	(2.932)	(3.165)
Observations	866	866
R^2	0.061	0.070
Adjusted R^2	0.053	0.059
F Statistic	7.017^{***} (df = 8; 857)	6.436^{***} (df = 10; 855)
Note:	*p<0.1; **p<0.05; ***p<0.01. Standard errors in parentheses; Clustered by country	

Table C.2: Regression Results With No Lag on the Independent Variables

	Dependent Variable:			
	Economic Growth			
	(1)	(2)	(3)	(4)
Democracy	0.059	0.376*		
	(0.172)	(0.216)		
Closed Autocracy			−0.320**	−0.044
			(0.157)	(0.185)
Electoral Democracy			0.051	0.044
			(0.199)	(0.279)
Liberal Democracy			−0.494*	0.298
			(0.259)	(0.311)
Third Wave		1.557***		1.395***
		(0.193)		(0.248)
Third Wave * Democracy		−1.271***		
		(0.284)		
Third Wave * Closed Autocracy				0.436
				(0.390)
Third Wave * Electoral Democracy				−0.409
				(0.392)
Third Wave * Liberal Democracy				−1.795***
				(0.380)
Initial GDP per Capita	0.535***	0.329***	0.581***	0.402***
	(0.079)	(0.085)	(0.083)	(0.089)
Population Level	−0.115***	−0.179***	−0.128***	−0.180***
	(0.040)	(0.041)	(0.040)	(0.041)
Eastern Europe and Central Asia	−0.818***	−0.942***	−0.885***	−0.957***
	(0.267)	(0.268)	(0.267)	(0.270)
Latin America and Caribbean	−1.572***	−1.437***	−1.698***	−1.461***
	(0.230)	(0.230)	(0.235)	(0.237)
MENA	−0.577**	−0.624**	−0.624**	−0.725***
	(0.272)	(0.272)	(0.272)	(0.272)
Sub Saharan Africa	−1.325***	−1.626***	−1.381***	−1.603***
	(0.225)	(0.229)	(0.227)	(0.230)
Western Europe and North America	−1.622***	−1.327***	−1.533***	−1.253***
	(0.248)	(0.259)	(0.256)	(0.267)
Constant	−0.155	1.752**	−0.184	1.222
	(0.782)	(0.832)	(0.826)	(0.872)
Observations	12,331	12,331	12,305	12,305
R^2	0.012	0.017	0.013	0.019
Adjusted R^2	0.011	0.016	0.012	0.018
F Statistic	18.695*** (df = 8; 12322)	21.574*** (df = 10; 12320)	15.944*** (df = 10; 12294)	16.665*** (df = 14; 12290)

Note: *p<0.1; **p<0.05; ***p<0.01. Standard errors in parentheses; Clustered by country

Table C.3: Regression Results With Two-Year Lags on All Independent Variables

	Dependent Variable:			
	Economic Growth			
	(1)	(2)	(3)	(4)
Democracy	0.689***	0.937***		
	(0.174)	(0.220)		
Closed Autocracy			−0.167	0.004
			(0.157)	(0.186)
Electoral Democracy			0.629***	0.766***
			(0.202)	(0.287)
Liberal Democracy			0.575**	1.144***
			(0.262)	(0.315)
Third Wave		2.174***		1.686***
		(0.189)		(0.249)
Third Wave * Democracy		−1.438***		
		(0.284)		
Third Wave * Closed Autocracy				1.574***
				(0.380)
Third Wave * Electoral Democracy				−0.718*
				(0.397)
Third Wave * Liberal Democracy				−1.203***
				(0.382)
Initial GDP per Capita	−0.273***	−0.577***	−0.270***	−0.595***
	(0.080)	(0.085)	(0.084)	(0.089)
Population Level	−0.144***	−0.237***	−0.151***	−0.230***
	(0.040)	(0.041)	(0.041)	(0.041)
Eastern Europe and Central Asia	0.026	−0.203	0.001	−0.045
	(0.269)	(0.269)	(0.270)	(0.272)
Latin America and Caribbean	−1.385***	−1.190***	−1.421***	−1.077***
	(0.230)	(0.230)	(0.236)	(0.237)
MENA	0.217	0.161	0.214	0.105
	(0.273)	(0.272)	(0.274)	(0.273)
Sub Saharan Africa	−1.770***	−2.226***	−1.803***	−2.114***
	(0.226)	(0.228)	(0.227)	(0.230)
Western Europe and North America	−0.856***	−0.335	−0.885***	−0.315
	(0.248)	(0.259)	(0.257)	(0.268)
Constant	6.483***	9.301***	6.647***	9.311***
	(0.786)	(0.829)	(0.832)	(0.872)
Observations	12,126	12,126	12,100	12,100
R^2	0.010	0.021	0.010	0.023
Adjusted R^2	0.009	0.020	0.009	0.022
F Statistic	15.239*** (df = 8; 12117)	25.842*** (df = 10; 12115)	12.280*** (df = 10; 12089)	20.185*** (df = 14; 12085)

Note: *p<0.1; **p<0.05; ***p<0.01. Standard errors in parentheses; Clustered by country

Table C.4: Regression Results With Three-Year Lags on All Independent Variables

	Dependent Variable:			
	Economic Growth			
	(1)	(2)	(3)	(4)
Democracy	0.720***	0.949***		
	(0.174)	(0.222)		
Closed Autocracy			−0.264*	−0.238
			(0.157)	(0.187)
Electoral Democracy			0.669***	0.756***
			(0.202)	(0.290)
Liberal Democracy			0.481*	0.884***
			(0.262)	(0.436)
Third Wave		2.049***		1.339***
		(0.187)		(0.248)
Third Wave * Democracy		−1.351***		
		(0.284)		
Third Wave * Closed Autocracy				1.904***
				(0.374)
Third Wave * Electoral Democracy				−0.518
				(0.399)
Third Wave * Liberal Democracy				−0.799**
				(0.381)
Initial GDP per Capita	−0.321***	−0.605***	−0.315***	−0.619***
	(0.080)	(0.085)	(0.084)	(0.089)
Population Level	−0.149***	−0.237***	−0.159***	−0.231***
	(0.040)	(0.041)	(0.041)	(0.041)
Eastern Europe and Central Asia	0.357	0.128	0.319	0.307
	(0.270)	(0.270)	(0.270)	(0.272)
Latin America and Caribbean	−1.366***	−1.175***	−1.448***	−1.137***
	(0.230)	(0.229)	(0.236)	(0.237)
MENA	0.250	0.194	0.245	0.145
	(0.272)	(0.271)	(0.273)	(0.272)
Sub Saharan Africa	−1.794***	−2.225***	−1.843***	−2.116***
	(0.225)	(0.228)	(0.227)	(0.229)
Western Europe and North America	−0.820***	−0.320	−0.825***	−0.279
	(0.248)	(0.259)	(0.257)	(0.268)
Constant	6.913***	9.536***	7.130***	9.688***
	(0.787)	(0.829)	(0.834)	(0.872)
Observations	11,951	11,951	11,925	11,925
R^2	0.012	0.022	0.012	0.024
Adjusted R^2	0.011	0.021	0.011	0.023
F Statistic	17.413*** (df = 8; 11942)	26.351*** (df = 10; 11940)	14.344*** (df = 10; 11914)	20.885*** (df = 14; 11910)

Note: *p<0.1; **p<0.05; ***p<0.01. Standard errors in parentheses; Clustered by country

Table C.5: Regression Results With Seven-Year Lags on All Independent Variables

	Dependent Variable:			
	Economic Growth			
	(1)	(2)	(3)	(4)
Democracy	0.774***	0.985***		
	(0.183)	(0.232)		
Closed Autocracy			−0.313*	−0.472**
			(0.161)	(0.195)
Electoral Democracy			0.693***	0.623**
			(0.213)	(0.306)
Liberal Democracy			0.436	0.683**
			(0.274)	(0.329)
Third Wave		2.120***		1.151***
		(0.186)		(0.255)
Third Wave * Democracy		−1.334***		
		(0.292)		
Third Wave * Closed Autocracy				2.156***
				(0.361)
Third Wave * Electoral Democracy				−0.188
				(0.419)
Third Wave * Liberal Democracy				−0.525
				(0.396)
Initial GDP per Capita	−0.433***	−0.730***	−0.424***	−0.736***
	(0.085)	(0.090)	(0.089)	(0.095)
Population Level	−0.144***	−0.237***	−0.156***	−0.233***
	(0.042)	(0.042)	(0.042)	(0.042)
Eastern Europe and Central Asia	0.794***	0.550*	0.760***	0.713**
	(0.283)	(0.282)	(0.283)	(0.284)
Latin America and Caribbean	−1.457***	−1.239***	−1.551***	−1.265***
	(0.237)	(0.237)	(0.243)	(0.244)
MENA	0.180	0.107	0.171	0.056
	(0.283)	(0.282)	(0.284)	(0.283)
Sub Saharan Africa	−1.973***	−2.449***	−2.028***	−2.373***
	(0.233)	(0.236)	(0.235)	(0.237)
Western Europe and North America	−0.857***	−0.291	−0.821***	−0.227
	(0.257)	(0.269)	(0.266)	(0.277)
Constant	7.849***	10.549***	8.105***	10.843***
	(0.828)	(0.868)	(0.875)	(0.914)
Observations	11,277	11,277	11,251	11,251
R^2	0.015	0.027	0.015	0.030
Adjusted R^2	0.014	0.026	0.015	0.029
F Statistic	21.531*** (df = 8; 11268)	30.801*** (df = 10; 11266)	17.670*** (df = 10; 11240)	24.649*** (df = 14; 11236)

Note: *p<0.1; **p<0.05; ***p<0.01. Standard errors in parentheses; Clustered by country

Table C.6: Regression Results with Five-Year Average Growth Rates as Dependent Variable

	Dependent Variable:			
	Economic Growth			
	(1)	(2)	(3)	(5)
Democracy	0.667***	0.971***		
	(0.108)	(0.108)		
Closed Autocracy			−0.303***	−0.221**
			(0.075)	(0.090)
Electoral Democracy			0.596***	0.786***
			(0.099)	(0.141)
Liberal Democracy			0.346***	0.813***
			(0.128)	(0.153)
Third Wave		1.466***		1.052***
		(0.088)		(0.119)
Third Wave * Democracy		−1.212***		
		(0.137)		
Third Wave * Closed Autocracy				0.969***
				(0.174)
Third Wave * Electoral Democracy				−0.639***
				(0.194)
Third Wave * Liberal Democracy				−0.973***
				(0.184)
Initial GDP per Capita	−0.073*	−0.257***	−0.061	−0.245***
	(0.039)	(0.041)	(0.041)	(0.043)
Population Level	−0.113***	−0.173***	−0.124***	−0.172***
	(0.020)	(0.020)	(0.020)	(0.020)
Eastern Europe and Central Asia	0.018	−0.125	−0.021	−0.057
		(0.131)	(0.131)	(0.131)
Latin America and Caribbean	−1.258***	−1.115***	−1.353***	−1.136***
	(0.111)	(0.110)	(0.114)	(0.113)
MENA	−0.089	−0.152	−0.101	−0.192
	(0.132)	(0.131)	(0.132)	(0.131)
Sub Saharan Africa	−1.504***	−1.801***	−1.558***	−1.764***
	(0.109)	(0.110)	(0.110)	(0.110)
Western Europe and North America	−0.975***	−0.685***	−0.953***	−0.650***
	(0.120)	(0.125)	(0.124)	(0.129)
Constant	4.327***	6.003***	4.545***	6.038***
	(0.384)	(0.401)	(0.407)	(0.422)
Observations	11,662	11,662	11,636	11,636
R^2	0.035	0.057	0.036	0.060
Adjusted R^2	0.034	0.056	0.035	0.059
F Statistic	52.079*** (df = 8; 11653)	70.295*** (df = 10; 11651)	43.635*** (df = 10; 11625)	52.844*** (df = 14; 11621)

Note: *p<0.1; **p<0.05; ***p<0.01. Standard errors in parentheses; Clustered by country

Table C.7: Regression Model 2 With Different Starting Points for the Third Wave

	Dependent Variable:			
	Economic Growth			
	(1)	(2)	(3)	(4)
Democracy	0.801***	0.798***	0.835***	0.882***
	(0.229)	(0.228)	(0.224)	(0.222)
Third Wave (1992)	1.799***			
	(0.181)			
Third Wave (1992) * Democracy	−1.059***			
	(0.284)			
Third Wave (1993)		1.879***		
		(0.183)		
Third Wave (1993) * Democracy		−1.117***		
		(0.285)		
Third Wave (1995)			2.137***	
			(0.187)	
Third Wave (1995) * Democracy			−1.357***	
			(0.288)	
Third Wave (1996)				2.128***
				(0.190)
Third Wave (1996) * Democracy				−1.464***
				(0.289)
Initial GDP per Capita	−0.660***	−0.665***	−0.681***	−0.666***
	(0.087)	(0.087)	(0.087)	(0.086)
Population Level	−0.228***	−0.230***	−0.235***	−0.231***
	(0.041)	(0.041)	(0.041)	(0.041)
Eastern Europe and Central Asia	0.590**	0.577**	0.547**	0.567**
	(0.274)	(0.274)	(0.274)	(0.274)
Latin America and Caribbean	−1.208***	−1.204***	−1.185***	−1.192***
	(0.232)	(0.231)	(0.231)	(0.231)
MENA	0.124	0.122	0.118	0.116
	(0.275)	(0.275)	(0.274)	(0.274)
Sub Saharan Africa	−2.340***	−2.343***	−2.359***	−2.331***
	(0.231)	(0.231)	(0.230)	(0.230)
Western Europe and North America	−0.227	−0.219	−0.197	−0.247
	(0.263)	(0.263)	(0.262)	(0.262)
Constant	9.952***	10.003***	10.170***	10.031***
	(0.846)	(0.844)	(0.840)	(0.839)
Observations	11,615	11,615	11,615	11,615
R^2	0.023	0.024	0.026	0.025
Adjusted R^2	0.022	0.023	0.025	0.024
F Statistic (df = 10; 11604)	27.253***	27.964***	30.459***	29.828*** (df = 10; 11604

Note: *p<0.1; **p<0.05; ***p<0.01. Standard errors in parentheses; Clustered by country

Table C.8: Regression Model 4 With Different Starting Points for the Third Wave

	Dependent Variable:			
	Economic Growth			
	(1)	(2)	(3)	
Closed Autocracy	−0.301	−0.246	−0.236	−0.215
	(0.193)	(0.192)	(0.188)	(0.186)
Electoral Democracy	0.563*	0.609**	0.659**	0.741**
	(0.303)	(0.300)	(0.293)	(0.289)
Liberal Democracy	0.551*	0.580*	0.644**	0.693**
	(0.325)	(0.323)	(0.318)	(0.316)
Third Wave (1992)	1.117***			
	(0.248)			
Third Wave (1992) * Closed Autocracy	1.556***			
	(0.351)			
Third Wave (1992) * Electoral Democracy	−0.190			
	(0.407)			
Third Wave (1992) * Liberal Democracy	−0.541			
	(0.384)			
Third Wave (1993)		1.237***		
		(0.249)		
Third Wave (1993) * Closed Autocracy		1.526***		
		(0.358)		
Third Wave (1993) * Electoral Democracy		−0.313		
		(0.407)		
Third Wave (1993) * Liberal Democracy		−0.620		
		(0.385)		
Third Wave (1995)			1.381***	
			(0.251)	
Third Wave (1995) * Closed Autocracy			1.953***	
			(0.372)	
Third Wave (1995) * Electoral Democracy			−0.457	
			(0.406)	
Third Wave (1995) * Liberal Democracy			−0.747*	
			(0.387)	
Third Wave (1996)				1.388***
				(0.253)
Third Wave (1996) * Closed Autocracy				1.978***
				(0.381)
Third Wave (1996) * Electoral Democracy				−0.613
				(0.406)
Third Wave (1996) * Liberal Democracy				−0.842**
				(0.389)
Initial GDP per Capita	−0.653***	−0.660***	−0.685***	−0.671***
	(0.092)	(0.092)	(0.091)	(0.091)
Population Level	−0.225***	−0.226***	−0.230***	−0.226***
	(0.042)	(0.042)	(0.041)	(0.041)
Eastern Europe and Central Asia	0.704**	0.697**	0.722***	0.748***
	(0.276)	(0.276)	(0.277)	(0.277)
Latin America and Caribbean	−1.222***	−1.203***	−1.159***	−1.160***
	(0.239)	(0.239)	(0.239)	(0.239)
MENA	0.070	0.069	0.058	0.059
	(0.276)	(0.276)	(0.276)	(0.276)
Sub Saharan Africa	−2.275***	−2.274***	−2.258***	−2.225***
	(0.232)	(0.232)	(0.231)	(0.231)
Western Europe and North America	−0.145	−0.131	−0.093	−0.137
	(0.272)	(0.271)	(0.270)	(0.270)
Constant	10.038***	10.066***	10.258***	10.118***
	(0.891)	(0.889)	(0.885)	(0.884)
Observations	11,589	11,589	11,589	11,589
R^2	0.025	0.025	0.028	0.028
Adjusted R^2	0.024	0.024	0.027	0.026
F Statistic (df = 14; 11574)	21.025***	21.434***	23.969***	23.450*** (df = 14; 11574)

Note: *p<0.1; **p<0.05; ***p<0.01. Standard errors in parentheses; Clustered by country

Table C.9: Regressions Results With Data From Dynamic Latent Model

	Dependent Variable:			
	Economic Growth			
	(1)	(2)	(3)	(4)
Democracy	0.981***	1.083***		
	(0.101)	(0.128)		
Closed Autocracy			−0.565***	−0.440***
			(0.086)	(0.101)
Electoral Democracy			0.782***	0.648***
			(0.118)	(0.165)
Liberal Democracy			0.507***	0.823***
			(0.151)	(0.183)
Third Wave		1.606***		1.095***
		(0.105)		(0.141)
Third Wave * Democracy		−0.987***		
		(0.164)		
Third Wave * Closed Autocracy				0.988***
				(0.209)
Third Wave * Electoral Democracy				−0.087
				(0.232)
Third Wave * Liberal Democracy				−0.822***
				(0.223)
Initial GDP per Capita	−0.167***	−0.393***	−0.186***	−0.388***
	(0.043)	(0.046)	(0.045)	(0.048)
Population Level	−0.064***	−0.131***	−0.083***	−0.136***
	(0.022)	(0.022)	(0.022)	(0.022)
Eastern Europe and Central Asia	0.624***	0.551***	0.587***	0.587***
	(0.141)	(0.140)	(0.141)	(0.141)
Latin America and Caribbean	−0.826***	−0.695***	−0.989***	−0.803***
	(0.126)	(0.125)	(0.128)	(0.129)
MENA	−0.277**	−0.255*	−0.239*	−0.261*
	(0.140)	(0.139)	(0.140)	(0.139)
Sub Saharan Africa	−0.980***	−1.274***	−1.092***	−1.296***
	(0.119)	(0.120)	(0.120)	(0.120)
Western Europe and North America	−0.406***	0.026	−0.386***	0.043
	(0.142)	(0.148)	(0.147)	(0.154)
Constant	2.645***	3.008***	3.193***	3.367***
	(0.195)	(0.195)	(0.212)	(0.214)
Observations	13,684	13,684	13,654	13,654
R^2	0.022	0.040	0.026	0.042
Adjusted R^2	0.022	0.039	0.025	0.041
F Statistic	39.298*** (df = 8; 13675)	56.431*** (df = 10; 13673)	36.229*** (df = 10; 13643)	42.995*** (df = 14; 13639)

Note: *p<0.1; **p<0.05; ***p<0.01. Standard errors in parentheses; Clustered by country

Table C.10: Regression Results with Decade Dummmies and Political Stability

	Dependent Variable:			
	Economic Growth			
	(1)	(2)	(3)	(4)
Democracy	0.125	0.725***		
	(0.188)	(0.235)		
Closed Autocracy			0.121	−0.203
			(0.171)	(0.203)
Electoral Democracy			0.252	0.554*
			(0.215)	(0.308)
Liberal Democracy			0.015	0.538
			(0.277)	(0.335)
Third Wave		2.932***		2.055***
		(0.384)		(0.428)
Third Wave * Democracy		−1.404***		
		(0.294)		
Third Wave * Closed Autocracy				1.895***
				(0.385)
Third Wave * Electoral Democracy				−0.500
				(0.419)
Third Wave * Liberal Democracy				−0.810**
				(0.396)
Regime Duration	−0.144***	−0.116**	−0.148***	−0.121**
	(0.049)	(0.049)	(0.049)	(0.049)
Initial GDP per Capita	−0.534***	−0.527***	−0.511***	−0.536***
	(0.101)	(0.101)	(0.104)	(0.105)
Population Level	−0.190***	−0.197***	−0.189***	−0.193***
	(0.043)	(0.043)	(0.043)	(0.043)
1910s	−1.199*	−1.231**	−1.194*	−1.221**
	(0.612)	(0.610)	(0.612)	(0.609)
1920s	0.778	0.684	0.783	0.680
	(0.604)	(0.602)	(0.605)	(0.603)
1930s	−1.074*	−1.217**	−0.982*	−1.115*
	(0.590)	(0.589)	(0.592)	(0.591)
1940s	−0.002	−0.116	−0.009	−0.089
	(0.606)	(0.605)	(0.609)	(0.607)
1950s	0.687	0.601	0.702	0.652
	(0.560)	(0.559)	(0.561)	(0.559)
1960s	1.640***	1.556***	1.662***	1.600***
	(0.549)	(0.548)	(0.550)	(0.549)
1970s	1.147**	1.047*	1.164**	1.095**
	(0.554)	(0.553)	(0.554)	(0.553)
1980s	−0.757	−0.871	−0.740	−0.817
	(0.558)	(0.557)	(0.558)	(0.557)
1990s	0.961*	−0.634	0.991*	−0.590
	(0.560)	(0.600)	(0.561)	(0.600)
2000s	2.557***	0.069	2.596***	0.265
	(0.566)	(0.670)	(0.567)	(0.670)
2010s	1.224**	−1.258*	1.267**	−0.991
	(0.578)	(0.680)	(0.580)	(0.682)
Eastern Europe and Central Asia	0.510*	0.555*	0.502*	0.714**
	(0.285)	(0.285)	(0.285)	(0.287)
Latin America and Caribbean	−1.274***	−1.186***	−1.257***	−1.165***
	(0.244)	(0.243)	(0.250)	(0.251)
MENA	−0.151	−0.235	−0.177	−0.299
	(0.283)	(0.283)	(0.284)	(0.284)
Sub Saharan Africa	−2.470***	−2.461***	−2.453***	−2.375***
	(0.250)	(0.249)	(0.251)	(0.250)
Western Europe and North America	−0.077	−0.251	0.010	−0.120
	(0.282)	(0.286)	(0.293)	(0.295)
Constant	9.635***	9.383***	9.379***	9.494***
	(1.058)	(1.056)	(1.092)	(1.099)
Observations	10,807	10,807	10,783	10,783
R^2	0.038	0.044	0.038	0.046
Adjusted R^2	0.036	0.042	0.036	0.044
F Statistic	21.269*** (df = 20; 10786)	22.445*** (df = 22; 10784)	19.275*** (df = 22; 10760)	20.008*** (df = 26; 10756)

Note: *p<0.1; **p<0.05; ***p<0.01. Standard errors in parentheses; Clustered by country