



Hacettepe University Graduate School of Social Sciences

Department of Economics

ECONOMIC GROWTH IN AUTOCRACIES

Abdurezack Hussein AHMED

Ph.D. Dissertation

Ankara, 2018

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Abdurezack Hussein AHMED

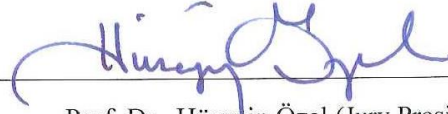
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ACCEPTANCE AND APPROVAL

The jury finds that Abdurezack Hussein Ahmed has on the date of 11-June- 2018 successfully passed the defense examination and approves his Ph.D. dissertation titled “Economic Growth in Autocracies”.



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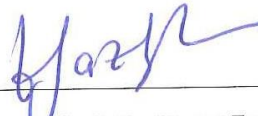
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Abdurazak Hussein AHMED

ETİK BEYAN

Bu alıřmadaki bütn bilgi ve belgeleri akademik kurallar erevesinde elde ettiđimi, grsel, iřitsel ve yazılı tm bilgi ve sonuları bilimsel ahlak kurallarına uygun olarak sunduđumu, kullandığım verilerde herhangi bir tahrifat yapmadığımı, yararlandığım kaynaklara bilimsel normlara uygun olarak atıfta bulunduđumu, tezimin kaynak gsterilen durumlar dıřında zgn olduđunu, Tez Danıřmanının **Dr. đr. y. M. Aykut ATTAR** danıřmanlığında tarafımdan retildiđini ve Hacettepe niversitesi Sosyal Bilimler Enstits Tez Yazım Ynergesine gre yazıldıđımı beyan ederim.



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ABSTRACT

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Previous studies on the effect of political regimes on economic outcomes largely consider autocracies as homogenous regimes. Given the internal heterogeneity in the political institutions and economies of autocracies, using dichotomous classification of political regimes to study their effect on economic outcomes is less informative. This dissertation first decomposes economic growth in autocracies and demonstrates the heterogeneity in the structure and growth of their economies both in distinction with non-autocracies and within the different autocratic regime types. Second, the dissertation addresses a more fundamental question in comparative political economy literature and asks whether autocratic regime types explain economic growth and income level differences across countries and over time. To offer a comprehensive answer, it estimates several static and dynamic panel models for growth rates and income levels. Short and long-run casual relationships are studied using balanced and unbalanced data, across Cheibub et al. (2010), Geddes et al. (2014) and Wahman et al. (2013) autocratic regime classifications over 37 years from 1972 to 2008. Results show that autocratic regime types are not informative in explaining growth differences once time effects are introduced to the model. The study of the effect of autocratic regime types on income levels follows the dynamic panel procedures also used in Acemoglu et al. (2017). Again, the explanatory power of regime types significantly reduces once time effect dummies are included. The results conclusively show that income and growth rate differences are mainly explained by other factors that are common to all regime types. It is also possible that there exists sizable arbitrariness in the way regimes are classified, and political institutionalization within regimes are too diverse that they fail to demonstrate a uniform and consistent effect on growth rates and income levels.

Keywords: Autocracies, Democracies, Economic Growth, Income Level, Decomposing Growth, Autocratic Regime Types, Dynamic Panel Model, Time Effects

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ABBREVIATIONS

C: Consumption

CAB: Current Account Balance

CGV: Cheibub, Gandhi and Vreeland [as in Cheibub et al. (2010)]

EFB: External Financial Balance

EU: European Union

FOD: Forward Orthogonal Deviation

G: Government Expenditure

GDP: Gross Domestic Product

GFB: Government Financial Balance

GMM: Generalize Method of Moments

GWF: Geddes, Wright and Frantz [as in Geddes et al. (2014)]

HTW: Hadenius, Teorell and Wahman [as in Wahman et al. (2013)]

I: Investment

IMF: International Monetary Fund

M: Import

NICs: Newly Industrializing Countries

PFB: Private Financial Balance

USD: United States Dollar

X: Export

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CHAPTER 1

INTRODUCTION

Mainstream economic theory has traditionally ignored politics (Acemoglu and Robinson, 2012). Accordingly, economic actors are assumed to interact in a political environment that has no effect on their decisions. In the presence of the almighty market forces, politics and politicians have little role to play. The government, as an institution populated by politicians, is no more than a collection of individual economic actors that do not possess any collective interest in the economy. Governments play the chief role of using their hold on the bureaucracy to maintain the working of the market mechanism. Any intervention to the working of the market was assumed to create turbulence in the system and inefficiency in allocation of resources.

With little intellectual challenge and empirical setbacks for years, the assumption of self-equilibrating market faced its greatest challenge in the late years of the 1920s. Against Jean-Baptiste Say's promise of "supply creates its own demand" and the expectation of Adam Smith's miraculous "invisible hand", a massive economic crisis swept across the industrialized nations. The prominence of government, which had long been kept at the backbench as a distant watcher, came to the front stage. Pioneered by John Maynard Keynes, the notion of an active government role in fiscal and monetary policies dominated economics for some decades to come. What were long been considered sources of distortions, governments were called in to bring stability to the system that miserably malfunctioned due to an excessive reliance on the laissez faire promise. What followed was active engagement of governments in creation of demand using expansionary macroeconomic policies that consequently raised Western economies from the ashes of the Great Depression in the 1930s.

Implicit in Keynesian analysis and policy recommendation is the assumption of a government that prefers stability and acts selflessly in accordance with societal interest. The government is depicted as a “benevolent dictator” and optimizer of “present value of society's well-being” (Edwards, 1994: 236), “platonic guardian of social welfare” (Snowdon and Vane, 2005: 518) and “omniscient benevolent dictator” (Holcombe, 2012: 116). A state bureaucracy run by such governments are assumed to be populated by “selfless bureaucrats” (Snowdon and Vane, 2005: 523) and “publicly-spirited, knowledgeable, and role-oriented politicians” (Killick, 1976: 171). Such an image of a government implied in the simple Keynesian analysis attracted criticisms both at theoretical and at empirical levels.

Kalecki (1943) is among the first economists to show the prospect of politically induced recession instigated by a partisan government in a capitalist economy. His analysis contends that governments could act in favor of capitalists when they are facing the prospect of reduction in profit due to an increase in workers’ bargaining power. Another criticism on the Keynesian assumption comes from Schumpeter who centers his argument on politicians’ behavior in capitalist democracies. In democracies where politicians compete for votes, Schumpeter (1939) argue, it is inevitable that politics would affect policy decisions and outcomes. Wagner (1977) further cautions macroeconomists on the possibility of politicians engaging in manipulation of economic outcomes for political profit.

Taking recurrent elections and ideological orientations to the center of analysis, political business cycle literature emerged as an intriguing area of research in the 1970s. The intellectual endeavor along this line of research further deepened our understanding of how politicians and incumbent governments manipulate major macroeconomic variables in pursuit of their reelection bids. Extensive theoretical discussions and repeated empirical findings once again confirm that governments are neither as dormant as how they are depicted in the classical framework nor as a collection of selfless benevolents as portrayed in simple Keynesian analysis.

Politicians and governments of the real world are, thus, far from what they had been assumed in earlier economic models. They are distinct set of actors that have their own egoistic quests and the political power to impose their will. Ignoring politics and political actors in economic modeling inevitably weakens the quality of any analysis. “Politics does matter” (Przeworski and Limongi, 1993: 65) because “it is obvious that politics will influence the choice of economic policies and consequently economic performance” (Snowdon and Vane, 2005: 517).

The inclusion of political institutions in economic growth literature has given the field new impulses (Jamali et al., 2007). An empirical work by Lipset in 1959 on the relationship between political factors and economic development triggered a large host of literature since then. Bulk of the study on their relationship was mainly centered on the disparities in economic performances between democracies and dictatorships (Gandhi, 2008). The principal focuses of these studies have been democracies. Autocracies were long been considered as residual categories and were loosely understood as internally uniform political systems (Wright, 2008).

1.1 THE STATEMENT OF THE PROBLEM

Considerable segment of the world population continues to live under the auspices of autocrats. Autocrats are political regimes that “methods other than competitive elections [are] used for distributing political power, and in such societies the political and civil rights of individuals are frequently violated” Linden (2014: 53). Besides the use of repression to silence the dissent, autocrats have little institutional and constitution restrictions on their actions (Weede, 1996). Unlike their democratic counterparts, they heed less to media, legislative and judicial restraints in advancing their agenda (Becker, 2010). The absence of what is called “democratic inaction” in autocracies gives an autocrat a greater capacity to pursue any course of action with less accountability (Wintrobe, 2002). The weakness of checks on autocrats’ power and the lack of threatening political repercussion on their action offer autocrats the opportunity to execute policies with less consideration of their popularity. Such an

executive freedom is less likely to happen in a democratic polity where the mechanisms in the system guarantee accountability of the government to the people.

Having been endowed with an unusually higher level of autonomy over their actions, the decisions autocrat make could affect any sort of policy their countries adopt; economic policy is not an exception. Their comparatively unconstrained legislative and executive power helps them draft and implement economic policies at considerable ease. These policies could sometimes be radical in nature. For instance, the theoretical literature on the subject persuasively argues that autocracies are less likely to back down from their policy stance in fear of “distributionist pressures” (Haggard, 1990) and are in a better position than democracies in the potential to enforce economic policies that trade long term growth for current consumption (Sirowy and Inkeles, 1990; Przeworski and Limongi, 1993; Jamali et al., 2007). The massively radical economic reforms of Augusto Pinochet in Chile, Deng Xiaoping of China and Park Chung-Hee of South Korea are among many examples in empirical researches on autocracies. Radical policy reforms such as these are big political gambles that are less likely to take place under democracy.

The economy being one of the most important factors in politics and autocracies being polities with little accountability over their actions, it is essential to understand how the two interact. Although there is an increase in recognition of autocracies as having their own ways of “organizing political life that have consequences for understanding policies, outcomes, and the stability of authoritarianism itself” (Cheibub et al., 2010: 143), studying autocratic economic performance separately is a more recent endeavor. Much of the work emphatically study democracies and consider autocracies as residual categories (Durham, 1999). Such a bias has restricted our understanding of major issues regarding autocratic regimes (Liden, 2014). Later developments in the study of political regimes and economic growth have begun to focus on the difference between democracies and autocracies (Jamali et al., 2007; Gandhi, 2008).

Given autocrats' unusually high level of discretion over their actions, their intervention in the economy could possibly be a source of creating a distinct form of economy with its own peculiarities. In line with this, the literature has cited the possibility of having a unique form of economy and economic policy options in these regimes (see for example Haggard, 1990; Sirowy and Inkeles, 1990; Przeworski and Limongi, 1993; Jamali et al., 2007). The limited endeavors in theoretical and empirical researches on autocracy-cum-economic growth often give an overwhelming emphasis to socio-political factors to explain economic growth in autocracies and fail to give a complete picture of the overall structural configuration of their economy. Major economic variables that represent the structural and sectoral dimensions of their economy that can better explain the nature of economic growth in these regimes are not extensively covered in the literature. If there are exceptions, investment, trade and natural resource endowments are seldom included as explanatory variables in some studies.¹ By doing so, they end up telling only one part of the growth story. A comprehensive study on the structure of autocracies' economy and the nature of their economic growth in terms of its decomposition into different activities and sectors are hardly present in the literature. This is a major problem in the related literature, and this thesis aims at presenting a comprehensive analysis of economic growth in autocracies.

Another shortcoming in the study of the political economy of autocrats is the overriding implicit assumption that these regimes are internally homogeneous polities. In reality, however, there are considerable differences among them. Their political institutions are even more diversified and unrelated than democracies. They, for instance, occupy at least 16 points in the 21-point POLITY IV index that characterize political regimes mainly based on their patterns of authority. Moreover, autocracies differ among themselves in their political organizations (Gandhi, 2008)

¹ While theoretical studies like (Overland et al., 2005) and (Shen, 2007) discussed the nature of investment in autocracies, investment GDP ratio is used as explanatory variable in (Wright, 2008) and Haile et al. (2008). Gandhi (2008) used mineral export as an explanatory variable. Using a less commonly used statistical technique, Chandra and Rudra (2015) used fuel export, economic openness and log GDP per capita and sectoral diversity to explain economic growth in autocracies.

and economic systems (Wintrobe, 2002) and their variation is as important as the distinction we make between autocracies and democracies (Wright, 2008). These differences within autocracies possibly entail different economic and political outcomes. The distinction among them reflects itself in the observed variance in democratization (Linz and Stepan, 1996; Geddes et al., 2014), democratic consolidation (Svolik 2008), regime stability (Geddes, 1999; Hadenius and Teorell 2007), conflict behavior (Peceny et al., 2002), quality of government (Charron and Lapuente, 2011) and economic growth (Gandhi, 2008; Wright 2008). Studying autocracies at regime level, Wright (2008: 342) suggests, may provide “answers to many of the enduring questions in comparative political economy”. An in-depth study of the political economy of autocracies, therefore, has to also scale down the level of analysis from aggregate autocracy level to the different sub-groups it constitutes.

In line with this gap in the literature, this dissertation analyzes economic growth in authoritarian regimes both at general autocracy level and its sub-groups. Economic growth is decomposed into its specific components in order to identify and understand emerging cross sectional and intertemporal patterns in autocracies. By disaggregating the aggregate demand into private consumption, government expenditure, investment, export and imports, contributions of each component to the overall growth are identified. From the production side, autocracies’ economy is once again decomposed into its sectoral components. The contributions of agricultural, industrial and service sectors in economic growth are analyzed so as to discern peculiarities in the nature of growth in autocracies. As each component contains different information about the nature of the economy and the source of growth, to find any similarity in the patterns of growth among autocracies in general or their sub-groups in particular is one of the main tasks of this work. After all, it is this distribution of total output into alternative uses that captures economist, and policymakers’ attention (Mankiw, 2005).

This project also attempts answering a more fundamental question in the political economy literature. The debate on whether political regimes explain the differences in income and economic growth continues to be a lingering question. While numerous works pursue the dichotomous classification of regime types as democracy and non-democracy and study the effects of these regime types on economic growth, studies that try to map the link between autocratic regime types to growth are rarely available. For one, recognition of the heterogeneity within autocracies is a later development in the literature; for another, researchers' attention has been more on investigating the effects of autocratic regime types on other political outcomes. In line with this, Wahman et al. (2013: 32) critically observes that “[t]he field has hitherto been somewhat preoccupied with the issue of ‘regime stability’, but there are many understudied aspects of authoritarian regime types concerning their nature, origin and consequences”.

In studying the effects of autocratic regime types on economic growth, based on the experiences from previous studies, the methodological approach adopted here is meticulously designed to make sure that the answers it provides is both comprehensive and adequate enough to push the discussion in the field to another level. The attempt to provide a comprehensive answer to this critical political economy question has necessitated a multi stage analysis of the issue. In all models, democratic regime type is set as a reference category against the different autocratic regime types so that the results we obtain address two important questions in the literature. Firstly, it addresses how specific autocratic regimes' economic performance is compared to democracies; and secondly, it helps us identify the good and bad performers within authoritarian regime types. Economic performance here is measured both at rates and levels of income; and both their short and long term relationships with autocratic regime types are estimated. These estimations are made on a balanced data of 71 countries and an unbalanced data of 99 countries that had an autocratic experience in any year from 1972 to 2008. To enhance the comprehensiveness of our findings in the comparative political economy literature, we have used the classifications of autocratic regime types from three different

datasets. Robustness of results is checked with the inclusion of control variables and re-estimation of models using alternative sets of estimators. The different stages of estimation have increased the number of models we measure, thereby providing details to the fundamental question of whether autocratic regime types affect economic performance or not.

The results of our study provide more detail regarding the structure and sources of growth of autocracies' economy. In comparison to the world and non-autocracies, average real per capita income is more than three and six times lesser in autocracies respectively. The aggregate demand decomposition of growth reveals that the leading sources of economic growth in autocracies are mainly export, import and investment while the consumption overwhelmingly dominates growth in world and non-autocracies' economy. At sectoral level, the primary and secondary sectors contribute 53.9% to the total growth in autocracies compared to 25.1% in world and 22.8% in non-autocracies economic growth. In general, the world without autocracies is more prosperous and adheres to a highly consumption and service-led economic growth. It has also been shown in this study that economic growth is more volatile and there is high level of heterogeneity in the structure as well as major sources of growth in autocracies.

The fact that autocracies are more politically diverse in their political institutions and structure of their economy than non-autocracies necessitates the need to study them in politically more homogenous small groups. Our study uses CGV, GWF and HTW autocratic regime classifications and decomposes growth across the different regime types. The result of the study shows that military and monarchs represent the poorest and richest autocratic regime types respectively. Comparison between the top and bottom ten performers of autocracies suggests that East Asians dominate the best performers list and the worst performers are dominated by autocrats from African and the Middle East. At regime level, the top performers were mainly civilian, dominant party and electoral autocrats while the worst performers are dominated by personalist

and military dictators. In terms of the leading growth contributing GDP components, we find in GWF classification, for example, that export led growth in dominant party and military regimes, consumption in personalist regimes and the import sector in monarchic autocracies. With regards to the sectoral decomposition, the primary and secondary sectors contributes much to growth in dominant and military regimes than other regime types and agriculture contributes the least in monarchic regime. Our research has also extensively studied the trends in the structure and sources of growth of autocracies at regime and country level.

As the successes of developmental states are closely associated with autocratic form of political regime, this thesis decomposes economic growths of six East Asian countries and shed light on their divergent paths to prosperity thereby addressing the difficulty of transferability of the development model to other contexts. The result from our study shows that there are significant differences in the leading growth sources of growth, in the pattern of sectoral transformation and the in type of growth paradigm they have pursued. We have consumption-led growth of South Korea, Indonesia and China compared to export and import dominated growth in Singapore and Malaysia. In terms of sectoral transformation, we see a quick transformation from primary to tertiary sector in China and South Korea compared to a much slower pace in Indonesia, Malaysia and Thailand. Finally, our sectoral financial balance analysis reveals that in the pre-Asian Financial Crisis, economic growth in Thailand, Indonesia, Malaysia and South Korea was debt-led consumption boom while China and Taiwan pursued export-led mercantilist growth paradigm all across the pre and post-crisis period.

The fifth chapter of this thesis exploits the heterogeneity within autocracies to reflect on the interaction between real per capita income growth rates and levels with autocratic regime types. Our study shows that the explanatory power of regime types depends on the outcome variable, the type of data, the time span, the estimation technique and our model specifications. Results have demonstrated that autocratic

regime types better explain cross-country income differences than growth rate differences. Our use of multiple model specifications has shown when and how autocratic regime types do and when and how they don't explain the differences in economic growth and income levels. In all these estimations, we have seen that across all robust estimations, those statistically significant autocratic regime types have negative signs implying the superior performance of democratic regimes over autocracies still holds irrespective of autocratic regime types. The most salient finding of our study is, however, associated with time effect dummies. The inclusion of time effect dummies in our models significantly absorbs autocratic regime type's explanatory power of cross-country growth rate and income differences. This clearly entails the presence of omitted variables that explain these differences that are common to all regime types.

This thesis contributes to the comparative political economy literature in three ways. First, it negates the general approach in the literature that considers autocracies as homogeneous and residual categories and provides extensive details on the structure and source of growth of autocracies' economy at different level. It has studied them in comparison to non-autocracies, across decades, in the different autocratic regime and at country levels. Second, it contributes to the debate in the transferability of developmental states model using a rarely used Post-Keynesian analysis tools. The financial balance analysis has demonstrated the divergent growth paradigms and the role of the Asian Financial Crisis in transforming the economy of East Asian developmental states. Third, it has done a pioneer work on an emerging literature on the use of multiple political regime types to explain cross-country growth rate and income level differences. The multiplicity of model specifications used to test these interactions comprehensively provides answer to this important pending issue in the comparative political economy literature. It has shown that in a robust and carefully executed model, autocratic regime classifications hardly explain cross-country growth rate and income differences.

1.2 ORGANIZATION OF THE DISSERTATION

The dissertation is composed of six chapters. It begins with this short introductory chapter that sets forth the specific research gap it pursues to address in the literature. It is then followed by a brief review of the literature on the interaction between political regimes and economic growth. This review focuses on the theoretical and empirical literature on democracy and autocracy and their relationships with economic performance. The third chapter constitutes the first analysis chapter that deals with understanding the nature of autocracies economy both at autocracy level and at different autocratic regime levels. More emphasis is given to the contribution to growth of each component and sector in GDP in order to identify major sources of growth in these regime types. As a specific case of autocracies, the economic growth in developmental states –for their developmental success stories are associated with authoritarian form of governance– is decomposed to identify the similarities, by implication the transferability, of these development miracles in chapter four. The fifth chapter estimates econometric models with panel data to identify the effects of autocratic regime types on economic growth and income level. While the first part analyze the relationship between economic growth and regime types, the second section employs dynamic panel data models to estimate the effect of autocratic regime types on income levels. It addresses these important political economy questions at multiple stages and across different settings. The final sixth chapter concludes and identifies some questions for future researches.

CHAPTER 2

DEMOCRACY, AUTOCRACY AND ECONOMIC GROWTH: A

REVIEW

The comparative theoretical and empirical political economy literature on the interaction between political regimes and economic growth is full of ambiguities. The inconclusiveness in superiority of democracy vis-à-vis autocracy in promoting economic growth is one area of disagreement. Another controversy is associated with the direction of causation. The question of whether more democracy causes economic development or more development triggers democracy is part of an ongoing debate in the literature.

Comparison of the two political regimes in promotion of growth can be made on three major areas: property right, long-term growth and wealth distribution. Better protection and enforcement of property rights encourages innovation and investment. While there is consensus in the positive role of protection of property rights for innovation, the notion that associate better protection of these rights with democratic form of political regime is seriously contested (see Przeworski and Limongi, 1993). In terms of promoting long-term growth, democracies perform well in creating conducive environment that facilitates investment in different forms of capitals, institutional reforms and policy stability. On the contrary, the nature of the system in democracies such as recurrent elections, critics argue, forces policymakers to pursue policies that favor short-term consumptions over long-term investments. In regards to wealth distribution, the limit on autonomous discretion in democracy forces incumbent leaders to distribute wealth from the elite to their subjects (Olson, 1993). Autocracies, on the other hand, do not have such institutional obligation to choose between further capital accumulation and redistribution.

The empirical literature on the performance of political regimes in promoting growth overwhelmingly finds democracy perform better than autocracy. There are, however, some exceptional forms of autocracies that managed to trigger extraordinary growth trajectories in some part of their history. The political economy literature identifies leaders of such autocracies “benevolent autocrats”.

2.1 DEMOCRACY AND ECONOMIC GROWTH

Democracy is a concept with numerous meanings. Cunningham (2002) identifies Aristotle, Tocqueville, and Schumpeter as touchstone democratic theorist. Aristotle describes democracy as rule by the poor and the majority, and categorized it alongside tyranny and oligarchy as bad forms of government (Aristotle, 320 BC/ 1999). Tocqueville on the other hand is comfortable with majority rule and conceives democracy as a rule by the people (Tocqueville, 1835–40/ 2002). Contemporary definitions of democracy often associate democracy with elections (Antić, 2004). Among alternative definitions that gauge democratic-ness using voter turnout, closeness of votes or other measures, Joseph Schumpeter’s definition better identifies features that most likely affect economic performance (Gerring et al., 2005). Schumpeter (1942: 269) defines democracy as an “institutional arrangement for arriving at political decisions in which individuals acquire the power to decide by means of a competitive struggle for the people's vote.”

The relationship between democracy and economic growth is theoretically ambiguous (Barro, 1996 and Acemoglu et al., 2014). Empirical endeavors end up with inconclusive results as well (Sirowy and Inkeles, 1990; Przeworski and Limongi, 1993; Feng, 1997; Heo and Tan, 2001; Doucouligos and Ulubasoglu, 2008). In their excellent review of the literatures on the subject, Sirowy and Inkeles (1990) identify three theoretical perspectives –‘conflict’, ‘compatibility’ and ‘skeptical’– that compile arguments on the relationship between democracy and economic growth. Proponents of the conflict perspective consider democracy as an obstacle to economic growth mainly in developing countries. The compatibility camp staunchly opposes them. ‘Skeptical’s, on the other hand, contend that economic growth is indifferent to

any type of political regime, and economic growth occurs in both democratic and autocratic regimes. They posit that what matters most to bring economic growth is the institutional structure of the state, not merely regime types.

2.1.1 Democracy, Property Rights and Economic Growth

Secure, well-defined and effectively enforced property rights encourage innovation and investment and raise productivity. These are the basis and the driving forces for what Schumpeter (1942) calls “creative destruction.” In their extended analysis of global prosperity and inequality, Acemoglu and Robinson (2012) forcefully argue that protection of property rights has been a major factor in explaining the “lay of the land” –a bird’s view of the world that portrays world poverty and prosperity along income groups. The key to economic growth and prosperity in the prosperous nations and underdevelopment and poverty in history, among other factors, has been significantly related to the security of property rights. A more secured legal right on property and income, Scully (1988) contends, reduces the level of uncertainty in transactions. This reduction in transaction costs inevitably increases capital accumulation, thereby positively contributing to economic growth. Equivalent to establishing property rights, however, credible commitment in the enforcement of property rights is crucial. In the absence of this, both the expected return from an investment and the incentive to invest diminish (North and Weingast, 1989).

Which forms of political regime promote and sustain property rights better is a source of controversy in the literature. Kuzman et al. (2002) argue that the safeguarding of property rights is one of critical features of democratic regimes that help promote long term economic growth. In terms of commitment to safeguarding property rights, democracies perform better than others as well. By solving the “credible commitment problem” through limits kept on sovereign discretion, Durham (1999) suggests that democracies are more effective to encourage economic growth than non-democracies. Olson (1991) makes a strong generalization on the advantages democracies have in maintaining and enforcing property rights by underlining the difficulty in forcing a non-democratic regime to credibly commit to a policy or a contract. He states that “[h]istory provides not even a single example of a long and uninterrupted sequence of

absolute rulers who continuously respected the property and contract-enforcement rights of their subjects” (Olson, 1993: 572).

The depiction of democracy as a political system that encourages economic growth through protection it gives to property rights has its own critics. Przeworski and Limongi (1993), for example, strongly criticize this notion as a “recent invention,” a “far-fetched” one and a “recently fashionable” claim. They reiterate the lack of an adequate explanation that explicates how democracy help secure property rights. As a counter argument, they point to some features of democracy such as the freedom to form unions and universal suffrage as possible democratic privileges that pose threats to the protection of property rights. Organized workers and peasants in democracy could threat properties of capitalists and landlords. Relatedly, the right that universal suffrage bestows ordinary citizens could also be used to expropriate the rich and destabilize resource allocation that the market mechanism establishes depending on initial distribution of resources. Przeworski and Limongi (1993: 53-54) then conclude that “[t]he widespread usage of democracy as a ‘proxy’ for guarantees of property rights in econometric studies is thus unjustifiable: democracy may promote growth but not via this particular mechanism.”

The essence of protecting property rights depends much on the temperament of the legal system. Protection from encroachment either by an individual or by any organized group or even by the government is safeguarded as far as there is an independent and fair legal system in the state. It is the presence of such a legal system that elevates a political system to democratic-ness. The absence of such a system is a defining characteristic of undemocratic polities. The link, therefore, between democracy and property rights is more obvious and stronger than what Przeworski and Limongi (1993) try to present.

2.1.2 Democracy and Long-run Economic Growth

Ambiguity in the relationship between growth and democracy fades away in the long run. The consolidation of democracy encourages long term growth through promoting investment in key factors of production, pushing far-reaching institutional reforms and maintaining policy stability.

Democracy supports the flourishing of different forms of capitals. If democracy endures, Gerring et al. (2005) suggests, it is more likely to foster the accumulation of human, physical, social and political capitals. Human capital has a greater tendency to flourish in democracies. Several studies show that human capital measured by improvements in education, public health and life expectancy and decreases in fertility rates benefit from democratic rules (Baum and Lake, 2003). Furthermore, a functioning democracy with sound political institutions, secure property rights and a working system of checks and balances invest more on physical and human capital and utilize these factors more appropriately to generate a higher level of income in the future (Acemoglu et al., 2001).

Functioning democracies are also more likely to drive permanent institutional transformations and reforms that would have positive repercussions on growth path and long-term development. Stiglitz (2002) identifies political attributes such as transparency, openness and participation as key elements of democracy that help promote these enduring institutional changes.

Another channel by which democracy encourages long-run economic growth is through promoting policy stability. Electoral reprisals that may originate from risky economic policies often exert influence on democracies to have relatively stable growth rates than non-democracies (Quinn and Woolley, 2001). Not only does democracy encourage policy makers to adopt moderate economic policies but also induces greater motivation of public to cooperate with such governments due to their accumulated consideration of 'losers,' particularly in societies that are affected by ethnic and/or class conflicts (Rodrik, 2000). Constraining political institutions that exist in democracies limit policy makers' discretion, thereby ensuring long-term

policy stability that would have a positive feedback effect on long-term growth by attracting more investment opportunities (Nooruddin, 2011). Through allowing a higher level of public deliberation, Chandra and Rudra (2015: 263) posits, “[d]emocracies will tend towards stable national economic performance”.

The prospect of a prosperous future in democracies is not without a strong theoretical challenge. The notion of the ‘trade-off perspective’ –that suggests the possibility of electorates to prefer current consumption over long-term investment– presents democracy as anemic to economic growth (Jamali et al., 2007). Investment as the major component in economic growth involves an intertemporal decision between current and future consumption levels. As the level of investment increases, so does the need to shift current consumption to a future generation. Such a reduction in consumption from current generation could be detrimental to the government in office. What political economy literature calls “pressure for immediate consumption” in democracies, thus, potentially forces the government to pursue short-term growth policies that favor current consumption against future investment and long-term growth. There are also some studies, e.g., Przeworski et al. (2000), which find no significant difference between economic growth in democratic and autocratic regimes in the long run.

2.1.3 Democracy and Wealth Redistribution

Democracy has a distinct role to play in wealth redistribution as well. Existing theoretical and empirical works postulate that an extended practice of democracy positively affects wealth distribution in a society (Gerring et al., 2005). The limit on sovereign discretion in democracy forces policymakers to distribute wealth from the elite to their subjects (Olson, 1993). Acemoglu et al. (2013) also argue that expanding decision making power to the unprivileged poorer section of the population facilitates wealth redistribution and decreases inequality. This is done by increasing the propensity to enact pro-poor and pro-majority policies that address issues adversely affecting poor voters and the majority at large (Acemoglu and Robinson, 2006). The wealth redistribution that democracy brings may take the form of social policies,

progressive taxation, land distribution or providing access to market and institutions by formerly excluded groups (Lenski, 1966). It may also take the form of expansion of public good investments or education (Lizzeri and Persico, 2004), particularly secondary education and a rapid structural transformation (Acemoglu et al., 2013). Against these expectations, however, historical study of wealth distribution in advanced economies of the world, where democracy has long history, gives mixed results. Piketty and Goldhammer (2014) depicts the share of wealth owned by top 1% of the population in selected advanced economies of Europe and the US and shows that wealth inequality that was in a continuous decline after the first world war has started rising since 1970s.

Wealth redistribution in democracies may not always support economic growth. The pressure to redistribute wealth from the rich to the poor and to the working class in democracies is mainly advanced by organized interest groups. The freedom to form unions and groups in democracy possibly increases the system's susceptibility to influences by interest groups. It could thus reduce its effectiveness in promoting growth (Rivera-Batiz, 2002), and these groups can even cause stagnation if they are sufficiently organized (Olson, 1982)². Same tendencies to ratify rich-to-poor redistribution policies and the larger role of interest groups are mentioned as disadvantages of democracies in Barro (1996). Persson and Tabellini (1994) further suggest that the redistribution in democracies could be distortionary and potentially depress economic growth. If the voluminous literature on wealth redistribution and democracy is closely studied, however, the "topic is far from a consensus or a near-consensus" (Acemoglu et al., 2013).

² Parente and Prescott (2000) used a closely related concept that emphasizes the role of interest groups in impeding growth to explain world income inequality. They linked the causes of underdevelopment in poor countries with the intensity of government protection to "industry insiders with vested interests tied to current production process". This protection creates a barrier to access and efficient utilization of "the stock of useable knowledge in production". Taking historical examples from Britain, Japan and other developed nations' experiences, they forcefully argue that democratization of the system brings more competition, therefore, less incentive to protect groups with "vested interest in the current production process".

2.1.4 Democracy and Economic Growth: Which Causes Which?

Similar to theoretical discussions in the relationship between democracy and economic growth, establishing a reliable causal relationship between the two empirically has resulted in ambiguous and inconclusive outcomes. The correlation between democracy and level of economic development, however, is a well-established relationship. Countries with the highest level of prosperity across generations are mostly established democracies (Olson, 1993). However, attempts to establish the direction of causality has proved to be a futile task. The work of Heo and Tan (2001), for example, uses Granger causality tests on levels of democracy and economic growth rates of 32 countries. The results, however, are vividly mixed and inconclusive.

Predictions by Marxists on the eventual fall of either capitalist economy or democracy due to their inherent incompatibility are yet to happen. In retrospect, such an “obviously too strong” conclusion is undermined by the existence of at least 14 countries which have been capitalist and democratic for more than half a century (Przeworski and Limongi, 1993). While history is largely reaffirming the presence of relationship between economic performance and democracy, identifying the direction of causation and other related factors that explain the cross-sectional relationship between the two has grasped social scientists’ attention for very long.

Causation 1: *From Democracy to Economic Growth*

Barro (1996) is one of the first studies that empirically estimate the effect of democracy on economic growth (Acemoglu et al., 2014). Using instrumental variables (IV) and ordinary least squares (OLS) techniques, Barro (1996: 24) concludes that democracy has a weakly negative effect on economic growth and “more democracy is not the key to economic growth.” Haan and Siermann (1996), Baum and Lake (2003), and Giavazzi and Tabellini (2005) among others also confirm that a statistically significant causation that runs from democracy to economic growth does not exist. Kuzman et al.(2002) estimate that democracy has little or no direct

effect on economic growth. Pinho and Madaleno (2009) show that, once fixed effects are taken into consideration, the causal effect of democracy on income completely disappears. For developing countries, Heo and Tan (2001) find no evidence for the causation from democracy to economic growth. Barro (1996), based on the finding that negates the causation between democracy and economic growth at lower level of income, goes on to recommend Western countries to work on exporting their economic system not their political system as the right policy that would contribute to welfare enhancement in poor countries. The view that democracy at best has no overall effect or at worst has a negative effect on economic growth is, as Gerring et al. (2005) observe, has become a “predominant view” both in academia and in policy discourse (Acemoglu et al., 2014).

On the other side of the debate, there are studies that estimate direct, positive and significant causal effects of democracy and democratization on economic growth. Rodrik and Wacziarg (2005), for example, demonstrate that democratization has a positive impact on growth. By constructing a measure of permanent democratization, Papaioannou and Siourounis (2008) also find a positive causal effect that runs from democratization to economic growth. Relatedly, Gerring et al. (2005) and Persson and Tabellini (2009) formulate distinct but closely resembling new measures of democracy as a stock and confirm the positive effect of *democratic capital*, political capital in the terminology of Gerring et al. (2005), on economic growth. A striking finding on the effect of democratization on economic performance comes from Acemoglu et al. (2014). Their estimates show that, in the long run, democratization increases per capita income by about 20%.

Perhaps a less controversial way through which democracy positively affects economic growth is through indirectly affecting growth-enhancing factors and institutions. Studies on these indirect relationships return sensible findings. Feng (1997: 391) finds that democracy has a positive effect on economic growth that is attributable to democracy’s potential to reduce the “probabilities of both regime

change and constitutional government change from one ruling party to another.” The presence of smooth transfers that do not necessitate repeated changes in the rule of the game help sustain the prevalence of predictive political environment that supports business activities. In their meta-analysis of previous works, Doucouligos and Ulubasoglu (2008: 78) conclude that democracy has positive effects on “human capital formation, and on the level of economic freedom, inflation, and political instability” where these are indirect channels through which democracy possibly enhances growth. Technological change, measured in terms of Total Factor Productivity growth rates, is also identified as a determinant of economic growth (Knutsen, 2011). Kurzman (2002) estimates a “marginally significant effect via investment and a robust effect via government expenditure.” Baum and Lake (2003) find a large and positive indirect effect of democracy on growth that passes through education and public health. Moreover, “greater economic reforms, greater investment in primary schooling and better health, and [...] greater investment, greater taxation and public good provision, and lower social unrest” are identified as feasible indirect routes through which democracy stimulates economic growth (Acemoglu et al., 2014: 24).

The relationship between democracy and economic growth could also take a non-linear form. Barro (1996) divides the level of democratic development into three levels and finds that the middle level is the most growth friendly level of democracy followed by the lowest and the highest levels. The same inverse U-shaped relationship is also documented for per capita income growth and democracy in Plümper and Martin (2003). Similarly, Kurzman (2002) estimate a robust non-linear indirect effect of democracy on economic growth via social unrest.

Causation 2: *From Economic Growth to Democracy*

Another line of research measures the effect of economic growth on democracy. Lipset’s (1959) is a pioneer study for this type of empirical work and argues that higher level of affluence stimulates democracy. In line with Lipset’s (1959) hypothesis, Feng (1997) also demonstrate that long run economic growth exerts a positive impact on democracy. These findings are supported by modernization theory

that suggests that the possibility of higher level of income causes regime switches to democracy and further extensions of democratic principles.

Relatedly, it is argued that effectiveness of political regimes including democracy in promoting growth depends on the existing level of economic development in a country (Durham, 1999). Acemoglu et al. (2014) note the presence of some critics that suggest that, for democracy to successfully promote growth certain preconditions related to the level of human capital and economic development have to be satisfied. Poser (2010) also reiterated that poor countries lack the institutional and cultural capacity to maintain the functioning democratic institutions. Other studies further show that democracy requires a prior economic development and could become a powerful constraint on growth for less developed countries (Barro, 1996; Aghion et al., 2008). Cross-country evidence by Barro (1996: 2) finds that “democracies that arise without prior economic development--sometimes because they are imposed from outside--tend not to last.” These types of findings support the long standing argument that democracy is a luxury good that only rich countries afford to enjoy (Barro, 1996; Gerring et al., 2005).

On the contrary, Acemoglu et al. (2008) strongly reject that economic growth has a causal effect on democratic development. If there is any, though, they suggest that per capita income ceases to be a major determinant of democracy when fixed effects are included in the model specification. Nonetheless, while attempting to explain the visible correlation between rich countries and their higher level of democracy in the world, they accept that the causal relationship can exist only in a very long horizon that extends to more than five hundred years.

The empirical evidence briefly discussed above clearly shows that the statistical relationship between democracy and economic growth and the direction of causation are inconclusive. One of the major explanations to these mixed outcomes could be related to the different model specifications used in these studies. Sirowy and Inkeles (1990) attribute the wide differences mainly to the huge differences in measurements,

designs and models used in these studies. Despite the wide range of modeling employed in these studies, Przeworski and Limongi (1993) suggest that earlier works were methodologically “seriously flawed” due to the lack of statistical knowledge to design their model in a way that address complexities like simultaneity, selection and attrition. Besides, the failure to consider the possibility of reverse causality and potential omitted variable biases are also identified by Acemoglu et al. (2008) as possible drawbacks.

Another reason could be the use of unrelated variables. Gerring et al. (2005) and Persson and Tabellini (2009) criticize the use of democracy *level* to measure its impact on economic growth. Like any institution, they argue, the effect of democracy unfolds over time and it is the accumulated value of the variable, not its level, which should be used to map its impact on economic growth. A related commentary on the use of the incorrect variable comes from Durham (1999). He refutes the representation of economic performance by the rate of per capita income growth and emphatically suggests that “no published evidence suggests that the *rate* of economic development affects regime type” (Durham, 1999: 94). In a specific note on studies that compare supremacy of autocracy versus democracy in promoting growth, Gandhi (2008) identifies significant differences in measures of regime type, variations in methodological approaches and sample sizes as the leading sources of inconsistencies in previous findings.

2.2 AUTOCRACIES

More than forty years after the Carnation Revolution that started the third wave of democratization and more than a quarter of a century after the end of the Cold War that overpowered the center of the major ideological antidote to capitalist democracy, billions of people in the world are still living under the auspices of autocrats. About one third of countries in the world are being governed by such regimes (Geddes et al., 2014). The attention given to the systematic study of autocracy is, however, largely disguised by an overriding emphasis on democracy.

Autocracies have for many years been treated as residual categories (Gandhi, 2008; Cheibub et al., 2010; Geddes et al., 2014). They have been defined with what they are not (Gandhi, 2008). What is not democratic has been considered autocratic. Geddes (1999), for example, classifies what she labels democracy into three sub-categories based on their system of governance and named the remaining polities as dictatorship. Such a bias in favor of democracy is problematic, and it restricts our understanding of major issues related to the political regimes (Liden, 2014). Recently, though, the topic has increasingly been capturing researchers' attention. There is an increase in recognition of autocracies as having their own ways of "organizing political life that have consequences for understanding politics, outcomes, and the stability of authoritarianism itself" (Cheibub et al., 2010: 83).

The frequently used definition of autocracy in recent scholarship in the field has its roots in the definition of democracy provided by the prominent economist Joseph Schumpeter. Schumpeter (1942) emphasizes the presence of a "competitive struggle for people's vote" in order for individuals to acquire power as the main trait of a democratic polity. The presence of both election and its competitiveness are, therefore, important in distinguishing democracy from autocracy. Alvarez et al. (1996) selectively put "the chief executive office and the seats in the effective legislative body" as the two important offices that should be filled through a contested election with full accountability to the electorate for a regime to pass as democracy. In other words, any form of government that fails to pass these criteria is considered dictatorship. The revised version of this earlier work, Cheibub et al. (2010), also follows the same criteria. Major frequently used datasets on autocracy like Hadenius and Teorell, (2007), Geddes et al., (2014), and Wahmana et al. (2013) also keep election and its competitiveness as primary tools to identify an autocratic state.

Defining autocracy through elections and the way elections are conducted probably show a departure from how such regimes are identified in the political science

literature. In that literature, the use of repression as a tool to extend their stay in power has long been the red line that distinguishes democracy from autocracy (Wintrobe, 2002). The repression of both political rights and civil liberties are embedded and implied in this understanding of autocracy. Perhaps for operational purposes, prominent datasets on autocracy emphatically consider elections to gauge the level of autocracy in a country. In a very recent review of major works in autocracy literature following the influential work of Linz (2000), Linden (2014: 53) incorporates both components and defines an autocratic state as one where “methods other than competitive elections [are] used for distributing political power, and in such societies the political and civil rights of individuals are frequently violated.”

2.2.1 Types of Autocracies

By juxtaposing non-democracies in a single group, autocracies are implied to be homogeneous. In reality, however, there is considerable variation among them. They vary in their political organizations (Gandhi, 2008), economic systems (Wintrobe, 2002) and their variation is as important as the distinction we make between autocracies and democracies (Wright, 2008). The literature is full of examples showing how the differences in autocracies account for different economic and political outcomes. Cheibub et al. (2010), for instance, record that the distinction among them reflects itself in the observed variance in their conflict behaviors, political survival, economic growth and investment, and prospects for democratization and democratic consolidations.

In an early influential work, Przeworski and Limongi (1993) indicate bureaucracy and autocracy as different forms of dictatorships. Jamali et al. (2007: 1425) also acknowledge the distinction and define bureaucracies as forms of “dictatorships that codify and announce laws” and autocracies as “dictatorships that rule in an extemporaneous manner.” In their empirical study, they show that the distinction really matters in analyzing countries’ economic performances. In terms of fostering economic growth, bureaucracies perform even better than democracies. Gandhi

(2008), on the other hand, differentiates between broadened and narrow dictatorships. Broadened autocracies that allow political institutions like legislatures and multiple parties do better in attracting investment, improving allocative efficiency, experiencing a higher economic growth rate and maintaining stability than narrow autocracies.

From a different perspective, Wintrobe (2002) introduces another interesting distinction among autocracies and hypothesizes that dictators always face the problem of knowing the level of support among their subjects and among those who can potentially depose him. The dictator in dilemma, thus, uses repression and loyalty as means to maintain his grip in power. More specifically, Wintrobe (2002) identifies four forms of dictatorship: tinpots, tyrants, totalitarians and timocrats. Tinpots and timocrats use low levels of repression while tyrants and totalitarians use high levels. In terms of loyalty, except tyrants that uses low level of loyalty, all other forms of dictatorships use high level of loyalty to rule over their people. Islam and Winer (2004) employ the concept of tinpots and totalitarian forms of autocracies and study their response to economic growth and schooling.

Widely used typologies of autocracies, however, use competitive elections as a basic tool to distinguish between democracies and autocracies. Cheibub et al. (2010) use a minimalist approach that differentiates among autocracies in accordance with the nature of the “inner sanctums” that form the autocrat’s inner circle. Accordingly, they propose three forms of dictatorships: (i) a monarchic autocrat who bears the title “king” and have hereditary successor or predecessor, (ii) a military autocrat who is from the military or has a military background, and (iii) a civilian autocrat that encompasses all that do not fall in either of the two. Despite its simplicity and its observational foundations, this classification is seriously criticized in its characterization of military form of autocracy and the lack of recognizing the differences in civilian dictatorships (Wahman et al., 2013).

Another frequently cited autocratic regime classification by Geddes et al. (2014) employs the lack of competitive elections in autocracies to distinguish among monarchic, military, indirect military, personalist, dominant-party, oligarchic and hybrids forms of autocracies. In an intriguing departure, first pioneered by Hadenius and Teorell (2007), Wahman et al. (2013: 19) introduce another novel category that corresponds to “the theoretically interesting class of ‘electoral authoritarian’ regimes”. They divide electoral autocratic regimes into limited multiparty, no-party and one-party regimes. In a sharp contrast to the previous two classifications of autocratic regimes that focus on the behavior of the leadership or the political elite at the top, (Wahman et al., 2013:21) emphatically base their categorization on the “the institutions on which these elites rely in order to regulate the access to and maintenance of public authority”. Which one of these classifications is to be used in a research project, nevertheless, very much depends on the research question at hand and the underlining theory we want to test in our study (Cheibub et.al, 2010; Geddes et.al, 2012; Wahman et.al, 2013).

2.2.2 Autocracies and Economic growth

Autocracies are known to have an almost absolute power in the legislative and executive wings of a government. This unchecked power gives them a higher discretion to enact and implement policies without any fear of possible political repercussion to their seats. The weakness of constitutional and institutional constraints gives the autocrat more sovereignty in decision making. Such independency, what Przewroski and Limongi (1993) call it “state autonomy”, gives an autocratic regime the prospect to design and implement economic policies with a better swiftness and enforcement power.

The outcomes of economic policies prepared and executed in autocracies have given contrasting results both at theoretical and at empirical levels. Sirowy and Inkeles (1990) document the major arguments regarding the suitability of autocracies in promoting economic growth. One dimension that favors autocrats in facilitating

growth is their ability “to exert firmer control over labor and labor market” and “to use coercion to break traditional patterns”. Both are related to the repressive tendencies in these regimes. The other dimension is associated with the absence of constraints in making swift decisions. These distinct features of autocracies put them in a better position to efficiently allocate resources and “collectively organize and direct economic policies.” Kurth (1979) also notes that dictatorships can effectively promote growth and investment by pursuing unpopular measures such as suppressing consumers and labor unions.

According to Przeworski and Limongi (1993) the “capacity” to follow “developmentalist” economic policies and the “insulation” from interest group pressures is the two building blocks of the “state autonomy” argument. As such autonomy is only available under authoritarianism, it helps them avoid distributionist pressures and to force savings, thereby commencing economic growth. A summary of earlier works, however, find no support to the superior ability of authoritarian regimes in mobilizing savings and studies with supporting evidence are seriously flawed. The autonomy of a state also increases government’s capability to “extract resources, provide public goods, and impose the short-term costs associated with efficient economic adjustment” (Haggard, 1990: 262). In an empirical paper, however, Durham (1999) shows that the freedom of action or policymakers’ discretion decreases investment in poor countries and negatively affects economic growth in developed nations.

Another interesting dimension in autocracies’ economic growth is its association with the level of development. In their extended review of theoretical and empirical works, Sirowy and Inkeles (1990) present the arguments of those who prescribe authoritarian form of government for a rapid economic growth in poor nations. As early stages of economic take off requires huge capital accumulation and investment, it calls in the need to have a type of government that has little institutional constraints to suppress consumption including workers’ wages and to promote saving. Coupled with already

fragile and weak political institutions in developing countries, such potentially unpopular economic measures would augment political pressures and force the government to “become preoccupied with the maintenance of internal order” had the form of government been a democratic one. Sirowy and Inkeles (1990: 1313) further note the bold conviction that “in the world facing developing nations after World War II, those with a more authoritarian form of government will experience more rapid economic growth than will democratic regimes”. Relatedly, Antić’s (2004) findings show that, in most of the post World War II period, dictatorships performed comparably equivalently with democracies while democracies were more successful than autocracies between 1820 and 1950. More specifically, at least 30% of autocracies show a comparable economic performance with democracies (Chandra and Rudra, 2015). Historically speaking, Gerring et al. (2005) argue that rich countries of today grew rich under authoritarian auspices. Poser (2010) further contends that the absence of cultural and institutional prerequisite for democracy would often make dictatorship optimal in poor countries with simple economies. In support of the theory, Schiffbauer and Shen (2010:59) confirm that, among economically comparable democratic and authoritarian countries, “poor but large and stable dictatorships” perform better in witnessing higher level of long-term economic growth rate. The same study, on the other hand, finds that overall performance of democracies is superior to that of autocracies.

2.2.2.1 Sustainability and volatility of growth in Autocracies

Economic growth in autocracies is criticized for different reasons; the first of which being its sustainability in the long run. King (1981), for example, claims that authoritarian regimes frequently pursue an unbalanced and capital-intensive development strategy that is detrimental to both the rural sector and the whole society in the long run. Olson (1993) additionally points to the failure to protect individual rights including property rights and contracts in autocracies as the main obstacle to economic progress in the long run. On the other hand, Barro (1996) forcefully refuted the blending of prevention of property rights solely with democratic polities. He

strongly argues that there is nothing in principle that prevents autocracies from upholding such freedoms and rights.

Another concern regarding autocratic economic growth is its susceptibility to volatility. Depending on whether the leaders are “developmentalist” or “thieves,” the performance of their economy varies dramatically (Sah, 1991). If there is any consensus in the decade-long debate, Chandra and Rudra (2015) suggests that it is the prevalence of growth volatility in autocracies and an increasing tendency towards a stable economic performance in democracies. Easterly (2011) also mention the same consensus as one of the two stylized facts in the growth literature. Almeida and Ferreira (2002) statistically shows the prevalence of both within-country and cross-country high variability in economic growth in less-democratic countries than democratic ones. Other studies such as those of Weede (1996) and Acemoglu et al. (2003) also estimate that being an autocracy has a robust effect on growth variability. Conversely, Easterly (2011) emphasizes “non-political variance-producing factors” that have strong correlations with being an autocracy such as wars, financial underdevelopment, low-tech and commodity prices. Przeworski et al. (2000), on the other hand, recognize the presence of factors that characterize autocracies, and wars and commodity export cycles robustly affect growth variability.

2.2.2.2 Benevolent Autocrats

Dictatorship is often viewed as totally outrageous, and dictators are known for their aggressive repression of citizens’ rights. State structures are submissive to their orders and citizens’ fates are largely at their mercy. There are those whose totalitarian rules cripple all forms of development in their countries and others who used their unchecked power to the betterment of their subjects’ economic life. The reduced constraints on the autocrat make his/her personal inclination to matter much more than the differences of personalities in a democracy (Weede, 1996). Becker (2010) also suggests that the same opinion that the reduced judicial, legislative, or media-related constraints they face in pursuing his/her agenda makes a visionary dictator to

have a higher accomplishment than his/her democratic counterparts. While such constraints may have prevented catastrophic economic programs of Zimbabwe's Robert Mugabe or Mozambique's Samora Machel, they at the same time might also have constrained policies that were behind the impressive economic successes of Xiaoping of China and Lee-Kwan Yew of Singapore (Jones and Olken, 2005). In addition to China and Singapore, some other "largest successes in development" in South Korea, Hong Kong and Taiwan are also attributed to autocrats who are popularly known in development discussions as benevolent autocrats³ (Easterly, 2011). The list goes on to include the Augusto Pinochet of Chile (Gilson and Milhaupt, 2011), Meles Zenawi of Ethiopia (Easterly, 2011) and Paul Kagame of Rwanda (Easterly, 2011; Russell, 2012).

Gilson and Milhaupt (2011) identify benevolent autocrats as leaders who are not "kleptocrat" and have a utility function that ranks "long-term growth in GDP" over their personal enrichment. They therefore persistently pursue "national economic transformation." These autocrats are perceived to altruistically use their absolute power "to better the lives of his [their] citizens and improve their existence" (Russell, 2011: 13). Their benevolence, however, is confined to the economic dimension of their rule; it is for this reason that Gilson and Milhaupt (2011) prefer to call such leaders as "economically benevolent autocracies" as almost all of them in this category have a malevolent side that represent their repressive, ugly face.

What explains obsessions of some autocrats with economic growth and prevent others from pursuing the same is a contentious issue in the literature. Prezworski and Limongi (1993) note that there is also an absence of explicit literature that addresses the puzzle "why benevolent dictators would be future-oriented?". As a partial explanation, Barro (1996) associates the emergence of pro-growth autocrats solely

³ The concept of "benevolent dictator" also features in economics literature that models the role of government intervention in the case of market failures. In the case of market failure where outcomes become non-optimal, economic policy recommendations call on the government to bring back the market to its optimal conditions. Such recommendations, Holcombe (2012) argues, are often taken without detailed discussions on the capability of the government to achieve the goal and implicitly presume that the government is an "omniscient benevolent dictator." Edwards (1994) also contend that policy actions in traditional economic policy discussions are assumed to be conducted by a benevolent dictator who maximizes the "present value of society's well-being."

with conformity of the dictator's personal objective with growth promotion or its conflict with it. Relatedly, Gandhi (2008) and Gilson and Milhaupt (2011) also associate the emergence of benevolent autocrats with the personal interest of the autocrat and add the specific historical circumstances of the country as a second explanatory factor for benevolent autocrats' emergence. When a "developmental leader" has eagerness for "catching up with developed countries" or "exigency of nation-building", then they are more likely to prioritize economic development of their country (Gandhi, 2008:6). Gilson and Milhaupt (2011) suggests that those who seek "Great Man status" and autocrats who came to power after witnessing "radically different national histories" that brought their country to "existential chaos," can be the driving force behind the rare cases of economic successes in autocracies. The "most prominent theoretical idea" that explain the emergence of growth-promoting autocrats is, nevertheless, that of Olson (1993) (Wintrobe, 2002).

Olson (1993) uses the concept of *stationary bandits* and *roving bandits* to theoretically analyze the emergence of benevolent autocrats; he calls them *rational autocrats*. In anarchy, competing roving bandits keep occasionally plundering people and depart after their theft. People living under the continuous threat of roving bandits are less likely to have the incentive to produce due to the consistent fear of ransacking by bandits. Stationary bandits on the other hand use taxation as a means to continuously steal from the people they administer. As far as the benefit collected from continuous taxation is greater than the expenses they incur in providing order and public goods, bandits prefer stationarity, not roving. Since taxation is their main form of extracting from the society, stationary bandits have an "encompassing interest" to support an increase in production and economic activities in their territory. It is, therefore, in the bandit's interest to provide public goods and peaceful order to the people. Olson (1993: 568) calls it "the first blessing of the invisible hand" that "the rational, self-interested leader of a band of roving bandits is led, as though by an invisible hand, to settle down, wear a crown, and replace anarchy with government". The autocrat decides to promote rapid growth after a certain level of capital that maximizes his consumption. Spagat et al. (2001) identify this shutting-down point as "bifurcation point".

On the empirical side, after a thorough qualitative study of the experiences of South Korea, Chile and China, Gilson and Milhaupt (2011) reveal the presence of business elites that were very close to the political establishment to play a significant role in economic transformations of these three countries. The Chaebol in South Korea, “The Piranhas” in Chile and “Princelings” (taizi dang) in China are exemplary instruments in implementing the radical economic reforms of developmental governments, thereby benefiting themselves and the political elite at the same time. These business elites have an “encompassing interest” in the society and they are at the center of both formal and informal institutions that maintain credible commitments to support investments on human capital and business initiatives. Despite different historical circumstances and development policies of these countries, it is their credible commitment to growth that made a key difference in the success of economically benevolent autocrats in South Korea, Chile and China.

A serious challenge to the benevolent autocrat explanation of some of the growth successes in autocratic regimes comes from Easterly (2011). He forcefully argues that “jumping too quickly to benevolent autocrat explanation” based on the presence of high variance in economic growth under autocracy is against the traditional skeptic behavior of economists towards stories that have shallow theoretical bases and little empirical validity. Using variance decomposition, Easterly (2011) finds results that go against the “stylized fact” that attribute the highly variable growth scenarios under autocracy to the existence of good and bad leaders or to autocracy itself as a regime type. Given these findings and the lack of a strong theoretical framework, Easterly (2011) argues that benevolent autocratic stories remain popular as a result of cognitive and political biases. His empirical results, however, is more of a methodological commentary, and it cannot be used to deny the existence of benevolent dictators. He elsewhere in the same article confesses that “[t]he benevolent autocrat story for any [one] autocrat and growth outcome is ultimately non-falsifiable” (Easterly, 2011: 46).

The future of an economy built by a benevolent authoritarian depends on the very nature of the regime. As regimes crafted by benevolent leaders are based on the

personal attributes of the dictator, their losses create a serious succession challenge. Such uncertainties regarding the succession affect the performance of the economy and their achievements barely last for more than a generation (Olson, 1993). Heo and Tan (2001) also argue that growth in dictatorial regimes lasts for only the ruling span of one or two autocrats. A study by Jones and Olken (2005) shows that accidental deaths of autocrats cause shifts in the growth trend. After all, a benevolent autocrat appears out of serendipity and not by planning (Gilson and Milhaupt, 2011). Beside its huge human and social cost, “autocracy is a gamble that could either yield Lee Kuan Yew (of Singapore) or Mobutu (of the Democratic Republic of Congo)” (Easterly, 2011: 9) and “[f]or every China case you will find dozens of Zimbabwe cases” (Shkolnikow, 2011: 6). Given the presence of both examples of impressive growth and disastrous experiences under autocracies “in an ex-ante sense, autocracy is no prescription for growth” (Almeida and Ferreira, 2002: 254).

2.3. CONCLUDING REMARKS

The theoretical discourse in democracy-cum-growth relationship has produced three distinct perspectives (Sirowy and Inkeles, 1990): “compatible perspective”, “conflict perspective” and “skeptical” perspectives. Major theoretical arguments also focus on three dimensions: property rights, autonomy of the sovereign and pressure for immediate consumption (Przeworski and Limongi, 1993). The property right argument is used both for and against democracy. The remaining two lines of theoretical arguments, however, are used to show the animosity of democracy to economic growth. In a recent work by Knutsen (2011) that reviews the literature extensively, Przeworski and Limongi’s (1993) classifications are slightly modified, and two more arguments in favor of democracy are added to the discussion. Knutsen (2011) further adds democracies’ institutional ability to constrain predatory rulers and their ability to create a favorable environment for technological change as additional features that make democracies growth-friendly.

Studies on the relationship between democracy and economic growth have produced four competing conclusions: democracy encourages growth, democracy harms growth, democracy and economic growth have a non-linear U-shaped relationship,

and the two do not have any significant relationship. Major methodological drawbacks have also been noted. Wide differences between theory and empirics reverberates Przeworski and Limongi's (1993: 66) conclusion put forth more than twenty years ago: "[c]learly, the impact of political regimes on growth is wide open for reflection and research."

The theoretical literature on economic performance of autocracies identifies the level of autonomy from influences of the people and interest groups as major factor that determine growth in their economy. The autonomy and lack of accountability puts autocrats in a better position to enforce long-term oriented unpopular growth policies and coercively break growth constraining traditional patterns. Such political power is especially essential at earlier stages of economic take off where mobilization of massive capital accumulation at the cost of current consumption is required.

Nonetheless, since good economic performance in autocracies are dependent on leading figures on the strongman of the regime and not on a strong system, they are prone to lack of sustainability in the long run and high susceptibility to volatility. Such dependency on personalities produces large disparity of growth among autocratic countries. While there are growth miracles lead benevolent autocrats who use their unconstrained power to the betterment of their economy, there are also –and often is the case – autocrats whose leadership created economic disasters.

CHAPTER 3

DECOMPOSING GROWTH IN AUTOCRACIES

Long after the democratic waves of the late 20th century, around one third of countries in the world are still under the autocrats' auspices (Geddes et al., 2014). Studies in political economy have given little attention to autocratic rules and treated them as residual categories (Durham, 1999, Gandhi, 2008; Cheibub et al., 2010; Geddes et al., 2014). Autocracies have been wrongly understood as internally uniform political systems (Wright, 2008), and most studies have focused on democratic regimes. Such a bias has restricted our understanding of major issues regarding autocratic regimes (Liden, 2014). Recently, though, there is an increase in recognition of autocracies as having their own ways of “organizing political life that have consequences for understanding politics, outcomes, and the stability of authoritarianism itself” (Cheibub et al., 2010: 83).

Since politics affect the economy in various ways and autocracies are political regimes populated with politicians with no or little accountability, an in-depth analysis of the nature of the economy and economic growth in autocratic regimes is an intriguing task. Autocrats, endowed with little institutional and constitutional restrictions on their actions (Weede, 1996), have the luxury of overruling media, judiciary and legislative bottlenecks in advancing their agenda (Becker, 2010). This gives autocrats unusually higher discretion in intervening in the economy and could possibly be a source of creating a distinct form of economy with its own peculiarities. In line with this, the literature has cited the possibility of having a unique form of economy and of economic policies set in these regimes (see for example Haggard, 1990; Sirowy and Inkeles, 1990; Przeworski and Limongi, 1993; Jamali et al., 2007).

Studies on economic performance of autocracies have appeared in the political economy literature recently. These limited endeavors in theoretical and empirical

researches on autocracy-cum-growth often give an overwhelming emphasis to socio-political factors to explain economic growth in autocracies and fail to give a complete account of the sources of economic growth. Specifically, there has not been a comprehensive study on the structure of autocratic economies and the nature of economic growth in terms of its decomposition to different activities and sectors.

The main objective of this chapter is to present a detailed study on autocratic economic structure and on economic growth in autocracies. The chapter deals with the decomposition of economic growth in autocracies into aggregate demand disaggregates and into sector level components. By doing so, the nature and role of major economic variables such as consumption, investment, government expenditure, exports, and imports are deciphered. Sectoral decomposition of growth into agriculture, industry, and service sectors sheds light on the contribution of each sector to overall economic growth. These decomposition exercises help us identify major components and sectors of the economy that play decisive roles in autocratic economies. They also help us identify evolving trends and emerging patterns.

This chapter implements the analysis at the regime level as well in order to characterize sources of and contributions to growth under different autocratic regimes. The decomposition and understanding of these cross-sectional and intertemporal patterns immensely help in making informed economic policy recommendations both at local and at international levels.

Our study has demonstrated that autocracies have level of income and structure of an economy distinctively different from non-autocracies and the world economy. Within the study period, a citizen in an autocratic regime on average earns income 1601.99 USD which lies in between middle and upper middle income of group averages. The growth rate of income in autocracies across the four decades is affected by internal growth volatility and exit of countries from autocracy. The aggregate demand and

sectoral decomposition of growth in autocracies compares the structure of autocracies economy with the world and non-autocracies averages. Economic growth in autocracies are found to be driven more by export, import and investment sectors compared to the overwhelmingly consumption-led growth in non-autocracies and the world economy. The dominance of the external sector in autocracies has been on the rise since early 1980s. When economic growth is decomposed into the three major economic activities, the primary and secondary sectors contribution to growth in autocracies is around 50% of the total growth compared to the less than 25% contribution in non-autocracies and the world.

When these decompositions are made at autocratic regime level and are compared among themselves, more illuminating results emerge. Across the three autocratic classifications, we have found that military and monarchic represent the poorest and richest regime types respectively. In the CGV classification, for example, average real per capita income in monarchic is 5.67 times higher than in military regime. The aggregate demand decomposition of growth among autocracies reveals some peculiar economic structure associated with specific regime types. In GWF classification, for instance, investment led growth in dominant party autocracies, export in monarchic regime and consumption dominates growth in personalist and military regimes. At sectoral level, agriculture and industry contribute more than 50% to growth in dominant party and military regimes, and the service sector contributes 60% and 70% to growth in personalist and monarchic regimes respectively. The study also identifies trends and patterns in the contribution of aggregate demand components and sectors across the four decades.

3.1 THE DATA

3.1.1 The List of Autocracies

The first task in the data collection process is to identify countries led by autocratic regimes. In this study, efforts have been made to avoid a wrong classification of a regime as an autocracy. For this purpose, three of the latest and most commonly used

datasets of autocracies are used. These datasets utilize different criteria to identify political regimes and to distinguish between democracies and autocracies. Here a country is identified as having an autocratic regime only when all the three datasets name that specific country on that specific year as an autocracy. It therefore avoids an over dependency on a single dataset and addresses the need for serious precaution while selecting one dataset over the other (Cheibub et al., 2010).⁴

The first data source used to identify autocratic regimes is Cheibub et al. (2010). The dataset, henceforth CGV, covers the period from 1946 to 2008 and has 5167 observations (country-year pairs) identified as autocracies. CGV dataset is an extension of earlier works by Alvarez et al. (1996) and Przeworski et al. (2000). It relies on “objective judgment and observational criteria” that mainly focus on “how incumbents are removed from office.” Based on three criteria related to elections, democratic and autocratic regimes are separated. The dataset looks into important factors like “the holding of elections, the existence of more than one political party, and change in the leadership of the government” (p.74) to determine the type of the regime in a country.

The second data source is the one developed by Geddes et al. (2014). This dataset, hereafter GWF, defines a regime as “basic informal and formal rules that determine what interests are represented in the authoritarian leadership group and whether these interests can constrain the dictator” (p.314). If the rules to select the leadership group that makes important policy decisions are not characterized by a fair election and a sizable participation of the electorate, a regime is identified as an autocracy. In a strict departure from other datasets, Geddes et al. (2014) reserve a separate section for countries that are not independent, that are under occupation, those led by provisional governments charged with conducting elections, and those led by warlords and do not have central governments. Few countries fall under these categories including

⁴ Even though their study uses a dichotomous classification of regimes as democratic and non-democratic and covers both regime types, Acemoglu et al. (2014; 2017), for example, have also used combinations of different datasets and indexes in identifying political regimes.

Somalia since 1992, Afghanistan between 2002 and 2009, Iraq since 2004, and someothers. The GWF dataset covers the period from 1946 to 2010 and has a total of 4591 country-year observations.

The third data source is a product of the joint work by Hadenius and Teorell (2007) and Wahmana et al. (2013). The latest release, henceforth HTW, is the modified and updated version of an earlier work by Hadenius and Teorell in 2007. In stark contrast to the above mentioned datasets that hinge on fair elections, HTW dataset identifies regimes as democracy and autocracy based on their average scores of Freedom House and Polity indexes, going beyond elections and considering other political and civil liberties in characterizing a regime. Accordingly, a combined average score of 7.0 is selected as a cutoff point between democracy and autocracy. HTW covers 39 years from 1972 to 2010 and includes 3846 country-year observations as autocracies.

Considering the disparities both in the definition of autocratic regimes and in the observations in these datasets, we prefer to be precautious in identifying a regime as an autocracy. Selecting only the country-year pairs that appear as autocracies in all of the three datasets at the same time, we increase reliability, representativeness, and the strength of conclusions that will be made in the following parts of this thesis. A regime is thus classified as an autocracy not only for the absence of fair elections as in CGV or GWF but also for its weak performance in guarantying political and civil liberties. Our identification criteria are thus in line with the latest definition of an autocratic state proposed by Linden (2014). The author defined an autocratic state as the one where “methods other than competitive elections [are] used for distributing political power and in such societies the political and civil rights of individuals are frequently violated”(p.23).

Table 3. 1: Autocracies in three datasets: a summary

Summary	Original Coverage	Original No. of Observations	1972-2008	Percent
GWF	1946-2010	4591	2940	91%
HTW	1972-2010	3846	3673	73%
CGV	1946-2008	5167	3486	77%
FINAL	1972-2008		2678	

Table 3.1 presents a summary view of data coverage. Combining the three datasets yields a sample of autocracies in the period from 1972 to 2008 where a total of 2678 county-year observations are identified as autocracies. The sample covers 115 countries and 37 years and comprises 91%, 73% and 77% of the observations in the GWF, HTW and CGV datasets respectively⁵. The full list of autocracies is presented in Appendix 1.

3.1.2 Economic Data

As the main variable of analysis, contribution of each component of the GDP to economic growth is studied. Computation of the variable involves the use of two other economic variables: economic growth and components' share in GDP. In our research, from alternative popular sources of data like the WDI of the World Bank, WEO of the IMF and the Penn world, the National Accounts Main Aggregates Database of the United Nations Statistical Commission is preferred for two main reasons. Firstly, data provided by the IMF and World Bank have both shorter time coverage and have significant missing values. Initial attempts to construct the dataset relevant for study using WDI dataset, which has a fairly long time coverage and depth compared to WEO, has implied the dropping of nearly 38% of the observation due to missing data problem. Such a large lose of observation inevitably affects the research results and we decided to abandon WDI as data source. The second problem

⁵ Disparities in the number of observations recorded in GWF and in other two datasets are mainly due to the criteria used in the GWF dataset to drop observations that are either non-independent or under occupation or led by provisional governments or warlords.

with the existing datasets, especially Penn world is provision of data in a different denominator that were found to be unhelpful to compute our variables of interest.

The United Nations Statistical Commission data, on the other hand, supply a fairly complete dataset that has a wider cross-sectional and temporal coverage. It presents data for GDP disaggregates of both aggregate demand components and sectoral output components. The data include both the growth rates of each component/sector and its share in the overall economy; making the computation of the contribution to the total growth by each component or sector much easier. All economic variables used from the data archive are in real terms (not nominal) and are presented in constant 2005 international dollars.

Table 3.2: Data availability

Total Observation	Fully unavailable	Partially unavailable	Aggregate demand contribution	Sectoral output contribution
2678	46	79	2559	2632
100%	1.72%	2.95%	95.55%	98.28%

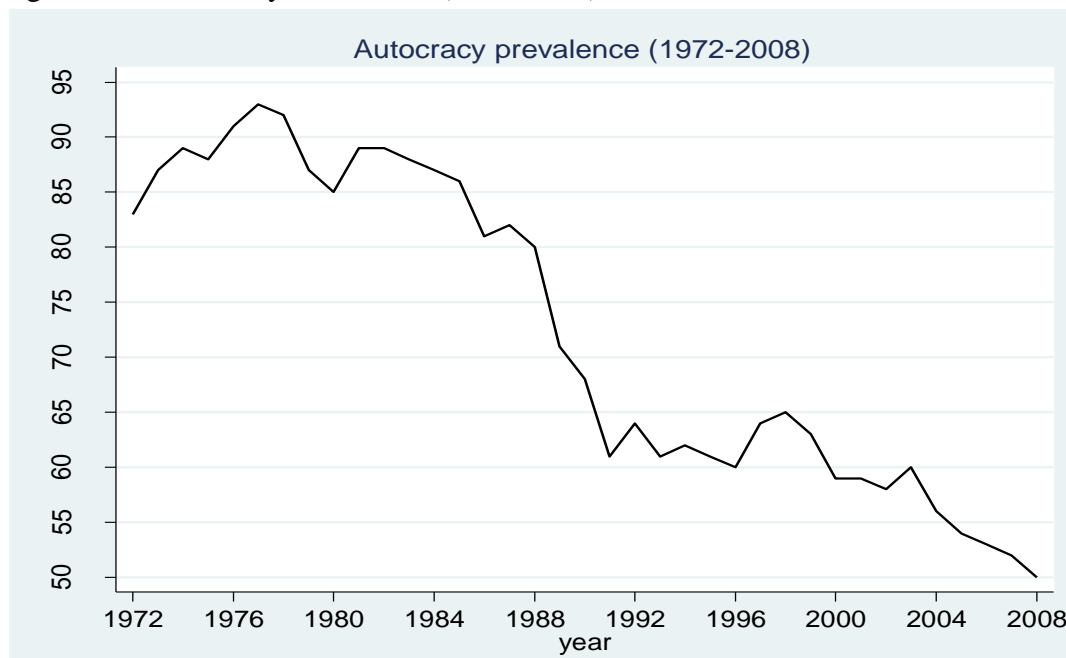
Of all observations identified as autocracies, data for Eastern Germany and Taiwan, comprising 1.71% of all observations, are missing. They are thus totally dropped from the list in the empirical analysis. Economic data, especially on the components of aggregate demand, are unavailable for few countries such as USSR, North Korea and Czechoslovakia. While these countries are excluded in estimations and analysis implemented on aggregate demand decomposition of economic growth, they have been reintroduced to the analysis when autocracies are studied at the sectoral level. For aggregate demand and sectoral output contributions, our sample attains 95.30% and 98.25% of data availability, respectively.

3.2 THE WORLD OF AUTOCRATS

Autocracy prevalence in the world has been continuously declining since mid-1970s. Within the study period, the average number of countries that appeared in the

autocracy list is approximately 73. The highest is 93 in 1977 and the lowest of 50 is recorded in the final year of the study. The prevalence of autocracy, thus, demonstrates a clear declining trend. As Figure 3.1 shows, the highest decline was seen between 1988 and 1991. Within this four-year episode, the number of autocratic states drops by 23.75% from 80 to 61 countries. This significant drop is associated with different political factors that have significantly reshaped the world since then.

Figure 3.1: Autocracy Prevalence (1972-2008)

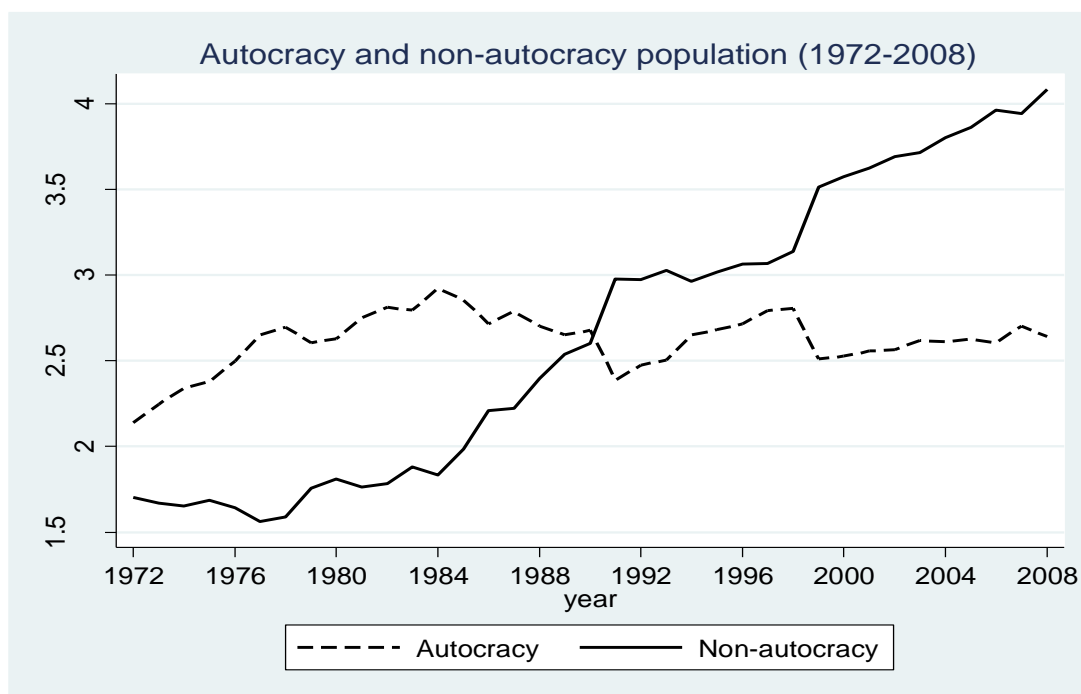


The four years from 1988-1991 had witnessed a sizable exit from autocracy. The substantial exit from autocracy in these years is evidence to what Huntington (1991) called “the third wave of democratization”. During this episode, the Cold War has ended, the center of gravity for the socialist camp of USSR has disintegrated, and the Berlin Wall has been demolished. Huntington (1991) identifies the decline in the autocrat’s legitimacy, the rise in economic prosperity, the doctrinal shift in the Catholic Church, policy changes in external actors, and the snowball effect as the underlining factors that facilitated the culmination of democratization waves and exits from autocracy.

Democratization waves have washed away some autocracies mainly from Europe and South America. In Europe, Poland and Czechoslovakia in 1988, Bulgaria, Hungary and Romania in 1989, and Albania in 1990 have appeared in the autocracy list for the last time. Chile, Panama and Paraguay are South American countries that permanently exited autocracy in 1989. The drop in the number of autocracies in these years can also be attributed to the formation and dissolution of states. North and South Yemen have dissolved to form Yemen in 1990 and the collapse of the socialist camp in Europe has terminated the existence of East Germany, USSR and Yugoslavia in early years of 1990s. The pace of the decline started in the early 1980s and reached its pick in 1991 has been interrupted in 1992 with the entry of new autocratic states. Most of these countries have been independent states created out of the Soviets' cradle.

The year 1991 is also the year that people living under non-autocratic polities outnumbered those being ruled by autocrats. This also shows that the shakeup in world politics related with the collapse of the USSR and the end of the Cold War has affected the daily lives of a large number of people across the globe. Figure 3.2 shows that, at the beginning of 1970s, people living under autocracy comprised 56% of the world population. The proportion reaches as high as 63% in 1977-78 and attains its lowest in 2008 (39%). In 1991 –arguably for the first time in world history– the percentage of people living under autocracy goes below the 50% threshold.

Figure 3.2: Trends in autocracy and non-autocracy population (1972-2008)



There are multiple entries and exits from autocracy across the study period, and there also exists a vivid difference in the persistence of autocracy in each country. Of the total number of autocracies, 26 (22.61%) of them are autocracies across the entire study period (37 years). Two countries (Greece and Turkey) enter the list only twice. Roughly speaking, 45 (39.13%) countries are autocracies for 75% of the period between 1972 and 2008 while 14 (12.17%) countries are administered by autocracies for around 25% years of the study period. The representation of the data as such, nevertheless, does not show the exact intensity of autocracy in countries under study. There are numerous entries into autocracies and exits from the list due to reasons other than transitioning to democracy. As the study period includes 1980s and 1990s that witnessed the creation and demise of new states, tallying the number of times a country occurs in the entire study period to measure the intensity of autocracy could lead to a misleading conclusion. Countries ruled by autocratic polities across the entire period before their demise or unification into brand new states appear in the list (e.g., USSR, East Germany, North and South Yemen, and North and South Vietnam). Some break away states from the USSR, on the other hand, are autocracies since their birth in the early 1990s. When the intensity of autocracy is measured not only by the

number of years a country appears in the autocracy list but also takes into account the years of state formation and termination, the percentage of countries that were led by autocrats for a significant portion of their age considerably increases. This adjustment increases the number of countries that were led by autocratic polity for more than 75% of their life from 45 (39.13%) to 64(55.56%).

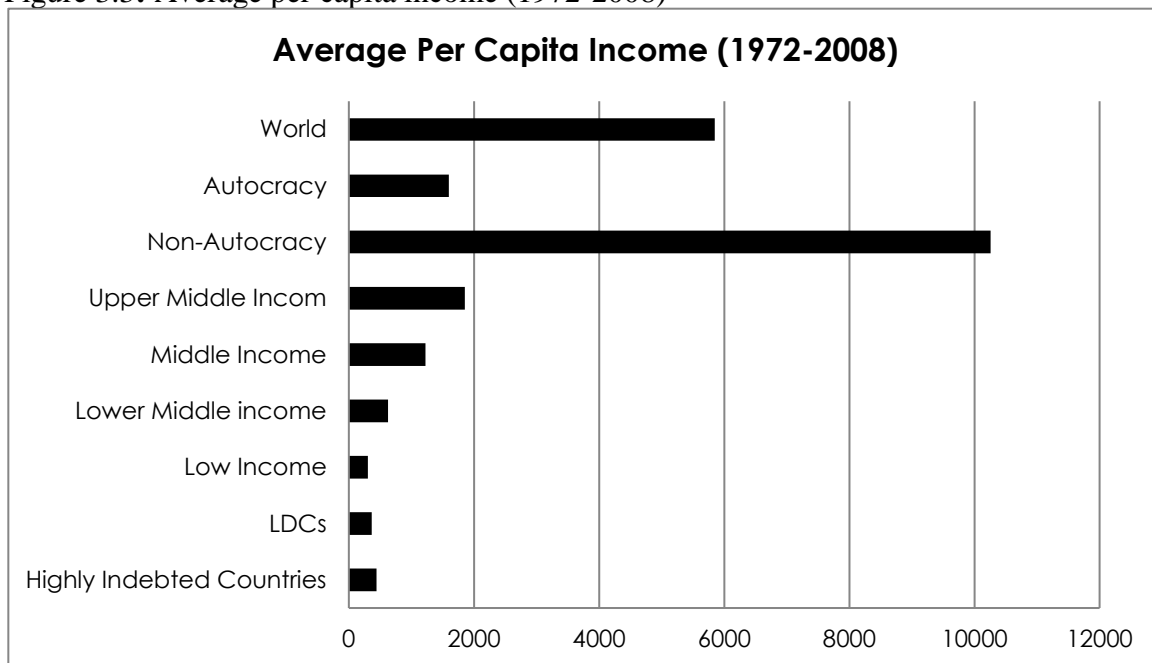
3.3 INCOME AND GROWTH IN AUTOCRACIES

Autocracies are often associated with low levels of living standards unlike democracies where prosperity and affluence prevail. Our data give an interesting insight on these claims. Despite constituting more than half of the world population until 1991, autocracies' share in the world income has never been more than 20% and its overall average share is only 14%. Though there has been a continuous decline in the number of countries living under autocrats' auspices, the decade after the turn of the new millennium showed a slight increase in the share of autocracies in the world income. The sustained increase has reached 13% in 2008 from the lowest share it attained (9%) in 2000 and 2001. The figures, however, still confirm the general perception that –at least for the past half a century– autocracies are populated with people whose earnings are significantly lower than those who reside in non-autocratic countries.

The exact location of autocracies among income groups shows the distinct nature of these polities. Autocracies have an average real per capita income of 1,601.09 USD, which is 6 and 3.6 times less than non-autocracies (10,236.05USD) and world average real per capita income (5,849.02 USD) respectively. These differences in average income indicate the differences in the composition of states in these clusters. The living standard composition of autocratic countries is neither similar to the world nor to non-autocracies. The fact that world average showed 57% increase in income when autocracies are excluded to compute non-autocracies average, nevertheless, clearly implies that autocracies constitute the bulk of lower income countries of the world. More interestingly, though, average real per capita income of autocracies is

greater than that of the middle income group (1,225.58 USD) and slightly less than that of the upper middle income cluster (1,855.69 USD); it is only after 1985 that average real per capita income of upper middle income countries has exceeded autocracies' average income. Average per capita income in autocracies, on the other hand, is more than five times larger than low income and LDCs' average per capital income of 302.61 and 367.8 USD respectively. This places autocracy, as Figure 3.3 shows, between upper middle income and middle income countries. While the figure negates the general association of autocracies with low income, it cannot also be used to claim the opposite. Autocracies are collection of countries from all ranges of income levels and a single type of income group cannot be easily associated with them. They are, for example, composed of countries like Ethiopia with a per capita income as low as 200USD in 2008 and as high as Kuwait with 34,879 USD in the same year. When per capita income is used as a measure of living standards, citizens living in autocracies enjoy *on average* a fairly better living standard than most other income groups.

Figure 3.3: Average per capita income (1972-2008)



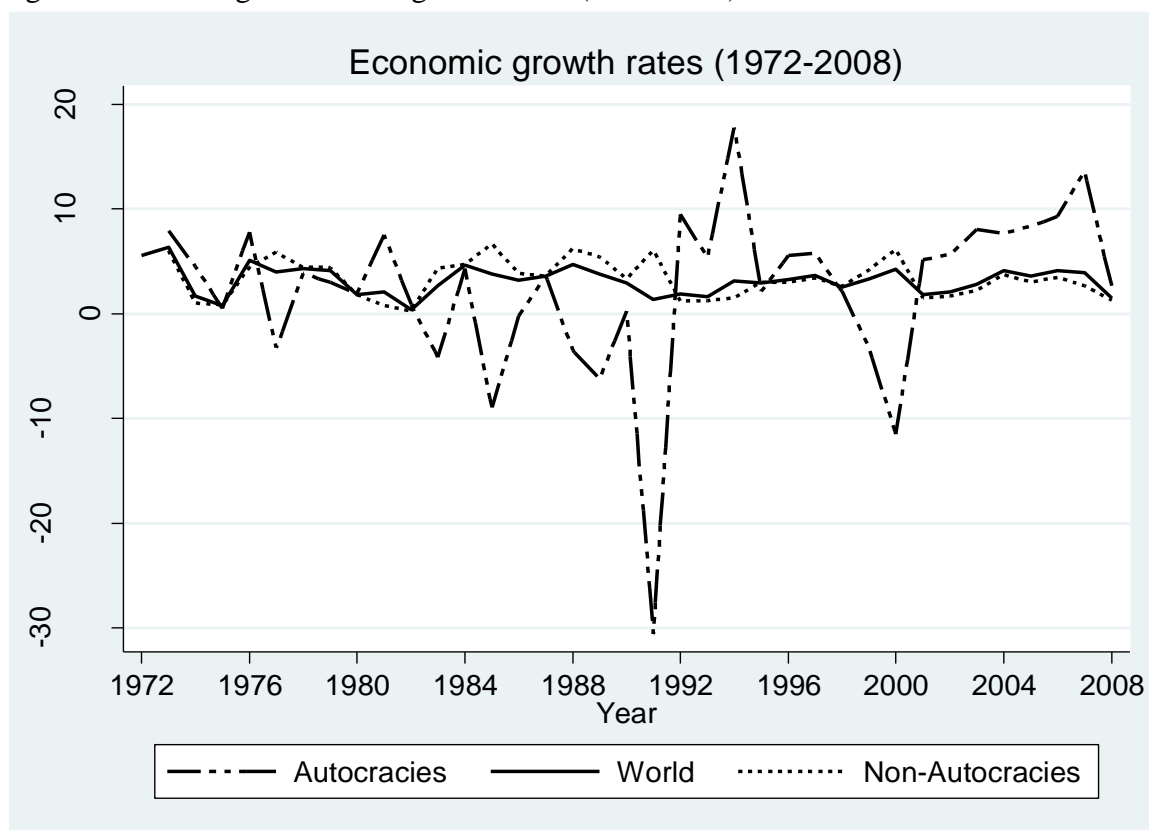
Note: Economic data on world and income groups are taken from World Development Index (World Bank, 2015). Values are in real terms using 2005 international US dollar. Autocracy income for each year is computed after we first find the total Real GDP and total population of autocracies in each year by horizontal summing the real GDP and population of countries identified in our data as autocratic in that specific year. These total real GDP of autocracies in that year is then divided by the total population in the same year to give real per capita income of autocracy in that year. Non-autocracy income is computed as a difference between world and autocracy income.

The historical data of per capita income of autocracies display its own peculiar trend. At the beginning of 1970s, autocracies' income level is much higher than upper middle income countries and remains largely constant for most part of the upcoming three decades. The historical significance of the year 1991 is once again seen by recording the lowest per capita income in the study period. Within 1972 and 2008, per capita income in autocracies exhibits an increase of about 62% –this is 10 percentage points less than the world average but nearly 70% higher than the non-autocracy average of 35.4%. Most of the increment is mainly due to the sustained increase in the average income in the first decades of the 21st century.

Economic growth in autocracies is a process exhibiting tall ups and deep downs. Autocracies on average grow by 2.31% every year which is lower than that of the

world and non-autocracy average and the lowest of all income groups. The most prevalent nature of growth in autocracies is its volatility. It has gone as low as -30.53% in 1991 and as high as 17.77% in 1994. While non-autocracies and world have been growing in a largely similar, stable and consistently positive rates all across the four decades, autocracies' growth has been unique in its hectic trends. At the outset, the growth trends in Figure 3.4 support the general consensus in the growth literature that autocracies are more volatile than non-autocracies.

Figure 3.4: Average Economic growth rates (1972-2008)



The volatility in economic growth of autocracies could be attributed to two main reasons. First, autocracies' aggregate GDP might be more sensitive to exits and entries of countries into and from autocracy than non-autocracies. This sensitivity displays itself in a more visible way in autocracies' growth patterns when

- a. the total GDP is too low that entry and exit of few states make a difference or when
- b. those exiting autocracy are economically well performing countries that their exits affect the total aggregate GDP of autocracies.

Since exits and entries alternate between autocracies and non-autocracies, the fact that non-autocracies do not display a closer level of volatility in their growth rates supports the argument that autocracies, following entry and exit events, are more prone to shocks in economic performance than non-autocracies. This is further supported by the association between population growth rates, which is mainly affected by entry and exit of countries, and economic growth rates. While the population growth rates of autocracies and non-autocracies exhibit a strong negative correlation (-0.9596), the correlation of economic and population growth rates in autocracies ($+0.6580$) is two times larger than that of non-autocracies ($+0.3211$): Non-autocracies are composed mainly of well performing countries while autocracies are largely populated by poor countries with low total output. This is another reinforcement of the general truth in the literature that the former are better than the latter in terms of income level. More interestingly, the finding that most countries that depart from autocracy are mainly from high income countries compared to those that remained autocratic can in general terms support the claim in the growth literature that positively associate the occurrence of democracy at high income levels.

The level of correlation between population and economic growth rates in autocracies, albeit high also implies that there are other factors that contribute to the fluctuation in the economic growth of autocracies. This leads us to the second explanation of the pronounced level of volatility in autocracies economic growth rates. The volatility in economic growth might also be caused by an internal volatility in the economic performances of autocratic states themselves. Several studies document that many economic and non-economic factors affect autocracies, thereby creating large fluctuations in their economic growth across time.

The real GDP annual growth rates in autocratic countries had significant disparities. The highest being Kuwait's 82.81% growth in 1992 and the lowest was also recorded in the same year in Turkmenistan (-71.38%). Between and within deviations of growth figures in these regimes are significant. With a standard deviation of 2.52 and

7.82 between and within country variations respectively, the cross sectional deviation in economic growth is much less than the within country variation across the study period. In other words, growth is on average more volatile within a country than across nations. This volatility in growth has been one of the major focus points in the autocracy literature. Chandra and Rudra (2015), for example, state that the prevalence of higher level of growth volatility is a point of consensus in literature, and Easterly (2011) underlines the same consensus as one of the stylized facts in the growth literature.

3.3.1 Achievers and losers in Autocracy

At country level, there are exceptional differences in economic growth and living standards among autocracies. For some countries like China, Azerbaijan, Singapore and South Korea, their autocratic stay⁶ is accompanied by high rates of sustained economic growth and large improvements in living standards and prosperity. On the contrary, autocratic stay for some others including Georgia, Afghanistan, Kyrgyzstan, Tajikistan and Republic of Congo is characterized by negative average growth rates and often by sizable deteriorations in living standards. Beyond looking at the average growth rates to measure the performance of a country in the years it stayed under autocracy, measuring real per capita income differences between the first and final year of autocracy gives a more appropriate picture of the changes in the standard of living in a country. It also helps identify highest achiever nations and poorest performers.

⁶ Autocratic stay is defined here as the number of years a country stayed under autocratic rule.

Table 3. 3: Highest achievers in standard of living⁷

Country	Autocratic Stay	Average Growth	Change in Real GDP PC (%)	Factor increase
China	37	9.2	1453.2	15.5
Singapore	37	7.4	433.4	5.3
Myanmar	36	5.8	364.4	4.6
Vietnam	33	6.6	320.5	4.2
Egypt	37	6.1	283.8	3.8
Malaysia	35	6.4	250.3	3.5
Oman	37	7.2	219.3	3.2
Laos	33	5.7	206.8	3.1
Indonesia	27	6.5	185.0	2.9
South Korea	15	9.7	178.9	2.8

The most impressive transformation in economic prosperity under autocracy is seen in China. The country manages to expand its per capita income 15.5 times higher than its 1972 value. As Table 3.3 shows, among the ten highest achiever autocracies, Singapore, Malaysia, Indonesia and South Korea that constitute the Eastern Asia growth miracles are boldly visible. In almost all of these top performer countries with the exception of South Korea, autocratic rule dominates more than 75% of the four decades under analysis. When the list of most achievers is seen side by side with Table 3.4 that constitutes the list of ten poorest achiever autocracies, a clear geical trend emerges. While the formers are populated almost entirely by East and Southeastern Asian countries, the latter list overwhelmingly includes African countries.

⁷ As there is large difference in autocratic stay of countries- the lowest being 2 years and the highest 37- it is assumed in this study that a country with autocratic stay of at least 25% (9 years) of the study period is deemed having enough autocratic experience to represent autocracy. In terms of election years, countries included in this comparison are those that have an autocratic experience of roughly more than two election terms.

Table 3. 4: Poorest performers in standard of living

Country	Autocratic Stay	Average Growth	Change in Real GDP PC (%)	Ratio
Congo, Dem. Rep.	37	4.6	-70.5	0.3
Afghanistan	26	-1.9	-67.4	0.3
United Arab Emirates	37	6.4	-64.0	0.4
Liberia	25	5.0	-63.5	0.4
Kuwait	37	3.1	-45.7	0.5
Niger	23	0.6	-43.2	0.6
Zimbabwe	28	0.7	-42.5	0.6
Madagascar	20	1.5	-37.5	0.6
Togo	36	1.6	-37.4	0.6
Saudi Arabia	37	3.8	-36.0	0.6

From the total of 99 countries that had more than nine years of autocratic experience, 31 of them shows deteriorations in living standards. The mineral rich but instability raged Democratic Republic of Congo demonstrates a 70.5% decline in the standard of living between 2008 and 1972. In other words, an average Congolese in 2008 earns only 30% of what her fellow citizen earns in early 1970s. A similar, significant weakening in the standard of living is seen in oil rich Gulf countries including United Arab Emirates, Kuwait and Saudi Arabia. The decline however mainly comes from the explosion in their population size and not from poor economic performance. In United Arab Emirates, for example, population grew by more than 2000% from a little more than three hundred thousand in 1972 to 6.9 million in 2008. The size of the population also tripled in Kuwait and quadrupled in Saudi Arabia.

3.3.2 Autocracies and Worldwide Trends in Income

Income disparities

Using the world's most populous twenty countries, Durlauf et al. (2004) showed the reduction of per capita income disparity relative to US between 1960 and 2000. Within the four decades Durlauf et al. (2004) studied, the overall the mean and median per capital income levels showed increment at the turn of the century compared to its initial level in 1960. Making a slight modification to the approach used in Durlauf et al. (2004), we can also demonstrate how well or how bad countries that have an autocratic stay of more than nine years on average performed at the beginning of their entry into autocracy and their exit years. Such presentation of results using entry and exit years rather than using the beginning and end years of the study period provides the opportunity to study the economic performance of nations that were not autocracies all across the study period yet spent a sizable portion of the period under autocracy.

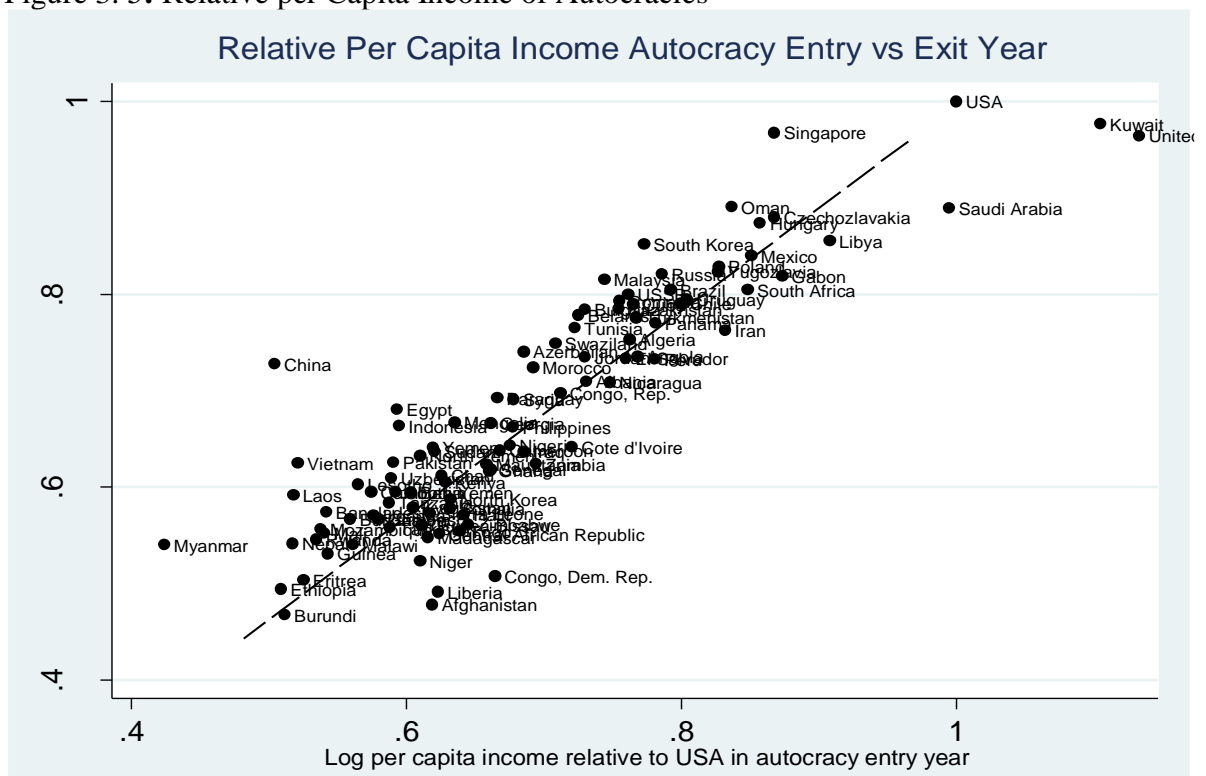
In sharp contrast with the international trend, the performance of autocracies is characterized by more disparity and relative deterioration in standards of living. Autocracies that had an autocratic experience of more than 25% of the study period on average show a decline in relative per capita income against US between their entry and exit years. While the mean of the ratio of autocracies income to US income at entry and exit year decreases from 0.14 to 0.09, the median of the ratio declines from 0.03 to 0.02. When these figures are coupled with the fact that the average autocratic stay of the countries studied is 26 years, it gives a strong impression that autocratic experience is generally associated with a relative reduction in income level and demotion in world economic ranking.

Entry and exist year income levels

One common feature with the international trend autocracies have across time is the relationship between initial and current time income levels. Easterly et al. (1993)

reported a Spearman rank correlation coefficient of 0.82 between per capita incomes of 28 countries in 1870 and 1988. Similarly, strong correlation (0.84) is also found among 20 most populous countries of the world between their 1960 and 2000 GDP per worker levels (Durlauf et al., 2004). Our study also produced a strong correlation in autocracies income between their entry and exit years comparable to what earlier studies found among other sets of countries. The Spearman correlation coefficient between the relative entry and exit year per capita income of autocracies is found to be 0.87, showing a strong predictability of exit year income levels from their entry year. This pattern can be seen in Figure 3.5 which plots the natural logarithm of per capita income relative to US at exit year against that at the entry year. The figure enforces the strong positive correlation seen between entry and exit years of income levels.

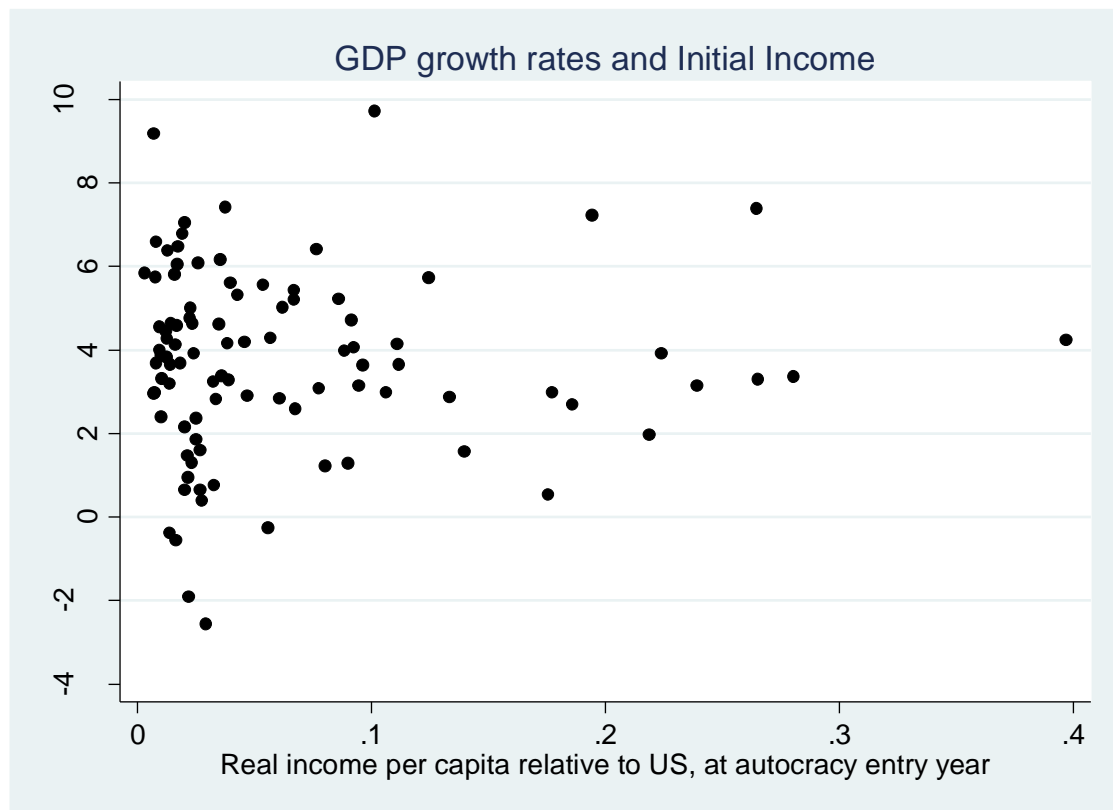
Figure 3. 5: Relative per Capita Income of Autocracies



Diversity and convergence of growth

Diversity of economic growth in autocracies also shares similarities with the worldwide experience. Average GDP growth rates of autocracies do not have a significant relationship with income level. The diversity of average GDP growth depicted in Figure 3.6 against the relative US per capita income at autocracy entry year shows large diversity in growth across wide ranges of income levels. In line with findings of the World Bank (1993) and Durlauf et al. (2004), diversity of growth is higher at lower levels of income than among richer countries. Furthermore, average economic growth in autocracies fail to support the convergence hypothesis that predicts higher average economic growth at lower levels of income, ultimately leading to countries' convergence to a common level of income at a future date.

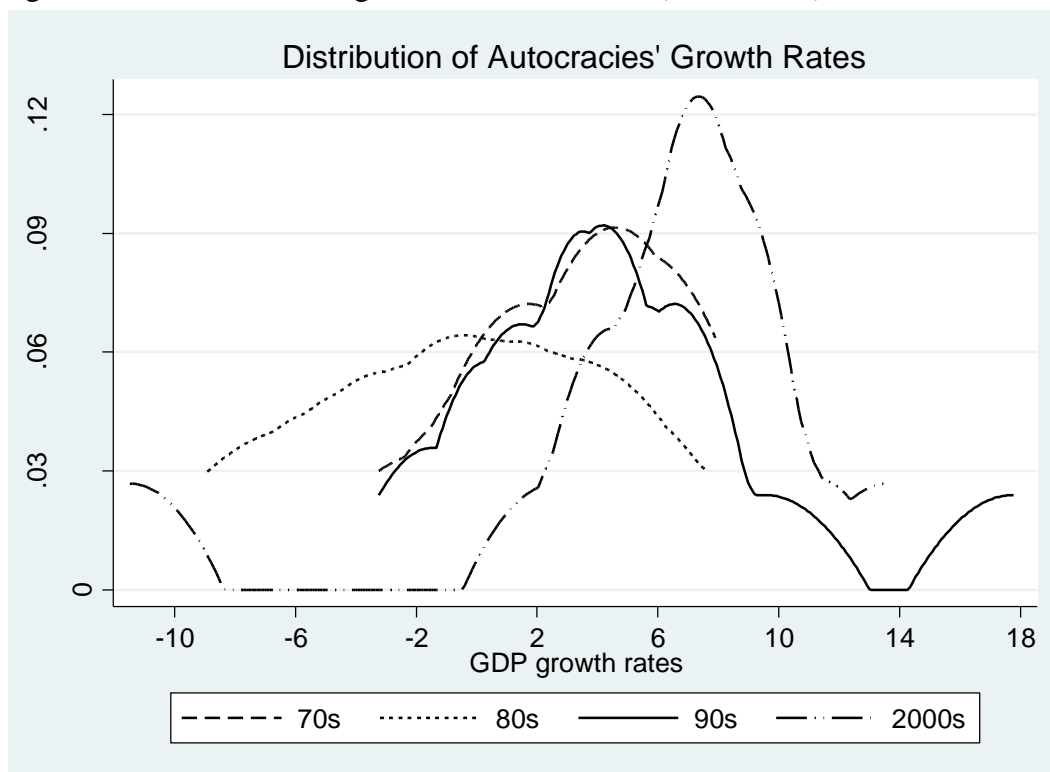
Figure 3. 6: Diversity and convergence of growth in autocracies



Economic growth across decades

Worldwide growth rates are lower between 1980 and 2000 than the decades before them (Durlauf et al., 2004). Decade-wise classification of economic growth rates in autocracies produces interesting results. The kernel density distribution of economic growth in autocracies in four decades of the study presented in Figure 3.7 shows that autocracies' economic growth in 1990s and 1970s had similar distributions both with a comparatively equivalent average growth rate and dispersion. 1980s and 2000s are the two extremes. While the former is characterized by a very low average growth rate and a wider variation in growth, the latter showed higher average growth rates with low dispersion.

Figure 3. 7: Distribution of growth in four decades (1972 -2008)



Besides economic factors, this distinct trend can be attributed to the general political environment in autocracies in these two decades. The 1980s signify both the height of political confrontations of the Cold War era and the intensification of the third democratic wave that resulted in mass dropout of countries from the autocracy list. While political confrontations could divert resources from their most productive use and spoil the favorable environment for economic growth, the mass exit from

autocracy by economically better performing countries together drag the overall average economic growth to its lowest. The last decade, on the other hand, is distinguished with a reduced international political pressure on autocracies, perhaps due to a shift in worldwide focus on terrorism. This has resulted in milder internal political instabilities and higher consolidation of power in autocracies which together has implied a comparatively favorable environment for growth and development for most parts of the decade.

3.4 AGGREGATE DEMAND DECOMPOSITION OF GROWTH

In decomposing the total economy into different components of GDP, the contribution of each component to the total economic growth provides useful information about the sources of growth, compared to alternative ways of disaggregation. Most studies use the share of GDP components in the economy as a primary variable to represent a specific component of the economy in their estimations. The share of investment in GDP for instance is frequently included as an explanatory variable in a number of studies to explain growth in political economy literatures.⁸ The use of only the share of a component in the total economy, however, is not an effective way to capture the dynamics in economic growth.

The share of an industry in GDP represents the weight of that industry in the total economy. The weights are initial value dependent and persist to have their visible presence in spite of the industry's performance in a specific year. An agrarian economy, for example, continues to show a higher share of agriculture in the economy even when the sector performs badly in a calendar year. While economic growth in a specific year can take any value –positive, negative or zero– the share of an industry is always positive, relatively static and cannot capture the full dynamics in growth rates. Similarly, the use of growth rates of sectors or components of GDP to explain the economic growth at aggregate level has also its drawbacks. Growth of

⁸ See for example Haan & Siermann (1996), Durham (1999), Gerring et al. (2003), Plümer T. & Martin (2003), Acemoglu et al. (2014) and others.

sectors or industries only measures the speed of the change in the sector without any reference to the weight of the industry in the economy. As Boustead (1998) notes, it is often the case that smaller components of GDP are the ones that are fastest growing while their contribution to the overall growth rate is proportionately less.

A good alternative approach to study economic growth and its decomposition into different components and sectors is using components' and sectors' *contributions* to the overall growth rates. Computing contributions to growth for GDP components and sectors involves both the growth rate of the specific sector and its overall weight in the economy. It therefore identifies components that genuinely affect GDP (Boustead, 1998). These techniques, Robjohns (2007) argues, quantify both the magnitude and the direction of the impact of GDP components or sectors have in the total economy and are “useful in informing commentary, and indeed policy, in discerning the key sources of economic growth” (Robjohns, 2007: 53).

Contribution to growth of a sector in GDP growth is computed as a product of the growth rate of the sector in the current year and its share in the overall economy in the previous year (Lequiller and Blades, 2014). Decomposition of GDP growth into its components contribution can be shown as follow:

$$Y_{it} = C_{it} + I_{it} + G_{it} + X_{it} - M_{it} \quad (3.1)$$

Where Y stands for GDP, C is private consumption, G is public consumption, I is investment, X is export and M denotes import of goods and services of country i at time t .

Computing the GDP growth rate from (3.1), we get (3.2)

$$\frac{\Delta Y_{it}}{Y_{it-1}} = \frac{\Delta C_{it}}{Y_{it-1}} + \frac{\Delta I_{it}}{Y_{it-1}} + \frac{\Delta G_{it}}{Y_{it-1}} + \frac{\Delta X_{it}}{Y_{it-1}} - \frac{\Delta M_{it}}{Y_{it-1}} \quad (3.2)$$

Let the percentage share of $j \in \{C, I, G, X, M\}$ component (sector) in GDP be δ_{jit} . Its previous year share in GDP for country i can thus be calculated as $\frac{j_{it-1}}{Y_{it-1}} = \delta_{jit-1}$ and replacing this in equation (3.2), we get

$$\mu_{Yit} = \delta_{Cit-1} \frac{\Delta C_{it}}{C_{it-1}} + \delta_{Iit-1} \frac{\Delta I_{it}}{I_{it-1}} + \delta_{Git-1} \frac{\Delta G_{it}}{G_{it-1}} + \delta_{Xit-1} \frac{\Delta X_{it}}{X_{it-1}} - \delta_{Mit-1} \frac{\Delta M_{it}}{M_{it-1}} \quad (3.3)$$

where μ denotes growth rates. It follows that

$$\mu_{Yit} = \delta_{Cit-1} \mu_{Cit} + \delta_{Iit-1} \mu_{Iit} + \delta_{Git-1} \mu_{Git} + \delta_{Xit-1} \mu_{Xit} - \delta_{Mit-1} \mu_{Mit} \quad (3.4)$$

It should be noted that, since growth rates are calculated using annual chain linked approach and the shares of GDP components are reported using current prices, the sum of GDP components contributions to growth may not strictly adds up to the total GDP growth in that specific year. This, however, is alleviated when data of annual level GDP components are available. From which, as the computation of the contribution to growth demonstrated above, real shares and real growth rates of GDP components are computed.

3.4.1 Components' Share in GDP and their Growth Rates

The composition of components in aggregate demand gives important economic information about the structural of an economy. These components theoretically have a strong dependence on the level of income. In high income earning nations, private consumers spend only some portion of their income for consumption and still remain with some funds to save for their future consumption. A higher income also implies the ability to pay more taxes. While the savings provide more loanable funds for investment, the wider tax base enable their governments to have more resources to finance public spending. Compared to low income nations, therefore, the share of private consumption in the total income (GDP) could be lower and the share of government expenditure and investment to be comparatively higher in high income countries. The income effect also extends to export and import components of GDP. As the level of income increases, owing to the increased capacity to produce high value products and the ability to satisfy the needs of local market, it reduces

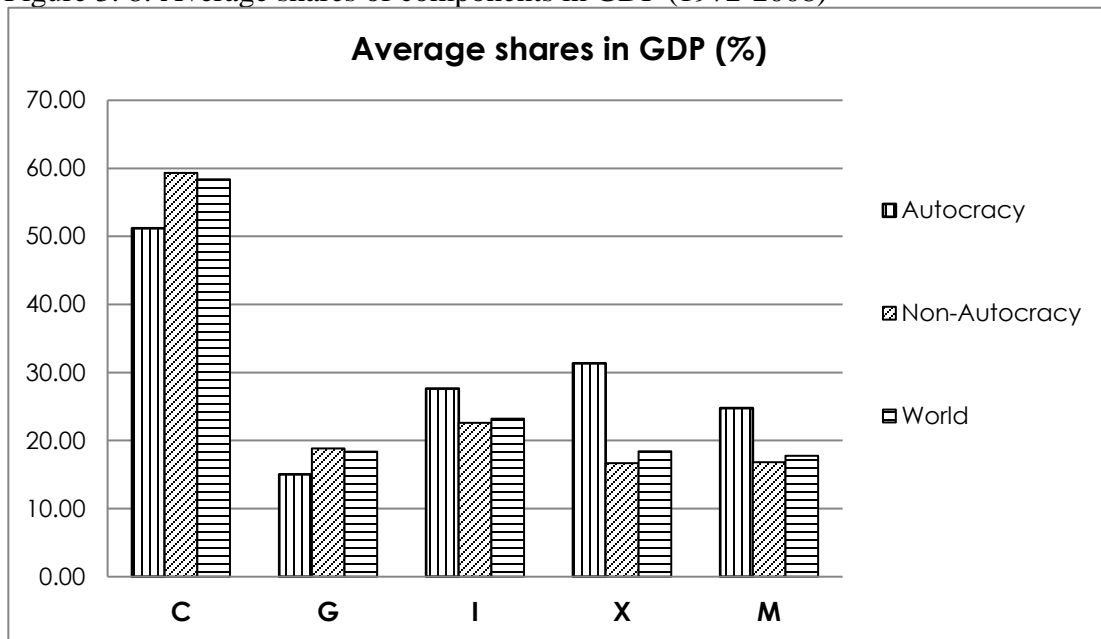
excessive dependence on exports, making the net export generally hovering around zero.

A study of international economic data also confirms such relationships and vividly shows the structure of an economy highly dependent on income levels. Within the four decades between 1972 and 2008, low income countries spend on average 80.95% of their income for consumption and their governments spending share in GDP is 12%. High income countries, on the contrary, spend 58.87% and 17.14% on private consumption and public spending, respectively. Moreover, in line with theoretical expectations, investment share in GDP is also slightly higher in high income groups (20.91%) than low income groups (19.88%). The higher dependency on imports and the lack of capacity to export high value outputs cause low income countries to have a trade deficit of 12.72% compared to only 0.02% in high income groups.

The structure of autocracies' economy is visibly different from any of the income groups. It is also distinctly different both from world and from non-autocracies that have very similar structural configurations with high income groups. With the exception of government expenditures which is comparatively closer to non-autocracy average, Figure 3.8 reveals that other components of GDP in autocracies are substantially different from non-autocracy averages and the world at large. The share of consumption is only 51.2%, which is by far the lowest from any of income groups or the world average. The contributions of government expenditure (15.05%) and investment (27.64%) to the economy have close resemblance with upper middle income countries, 13.78% and 28.8% respectively. Similar to the share of consumption, the share of export and imports are exceptionally different from any income group and reveals the remarkably higher level of participation and dependency of autocracies on international trade. Export and import comprise 31.35% and 24.77% of their GDP respectively, and autocracies thus have trade surplus which once again is hardly seen among any of the other income groups. The

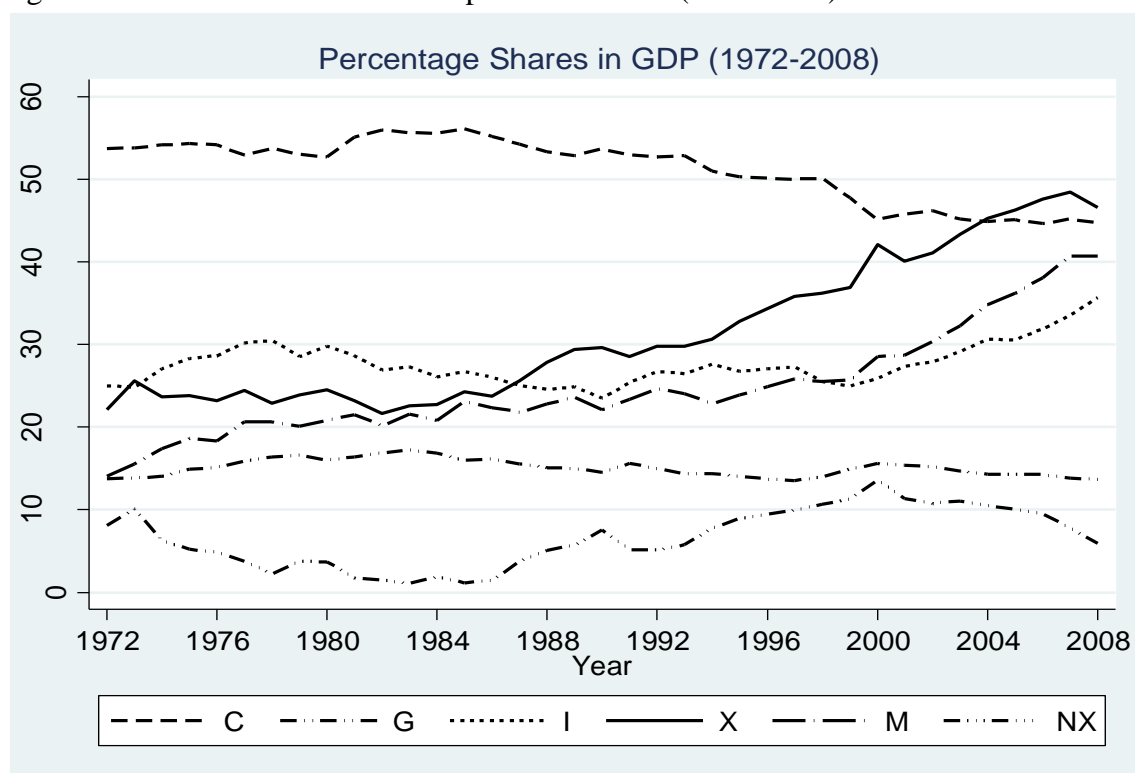
peculiar economic structure of autocracy as a group shows that the regime cannot be associated with any specific income group.

Figure 3. 8: Average shares of components in GDP (1972-2008)



When we look at the trends in the share of components in GDP, we see in Figure 3.9 a significant surge in the role of export and import that starts in the middle of 1980s. Though it is also a worldwide trend, autocracies' involvement in international trade exhibits an exceptional dominance in GDP. In the final few years of the sample period, the share of export even exceeds consumption's contribution to GDP. There is also a slight but consistent decline in the share of government expenditure and a similar increase in investment in the past three decades. The continuous decline in the share of consumption, however, is peculiar to autocracies. Given their high level of involvement in international trade and significantly lower share of consumption in the GDP, typical features of natural resource rich countries, it raises the suspicion that aggregate figures of autocracies are influenced by these nations and may fall short of representing the nature of most autocracies.

Figure 3. 9: Trends in shares of components in GDP (1972-2008)



Growth rates of GDP components too have peculiar features in autocracies. Import tops the list with an average growth rate of 5.88% followed by export (4.95%) and investment (3.89%) between 1972 and 2008. The growth rates in government expenditure and private consumption are lower than those of other components of GDP. When these figures are compared with non-autocracies and the world averages, as seen in Table 3.5, autocracies once again show distinct characteristics. Except for government expenditure and investment, other GDP components grow at lower average rates than that of non-autocracies and the world.

Table 3. 5: Average growth rates of GDP components in percent (1972-2008)

	Consumption	Government expenditure	Investment	Export	Import
Autocracy	2.26	2.73	3.89	4.95	5.88
Non-Autocracy	3.29	2.68	3.15	6.29	6.04
World	3.21	2.68	3.25	6.01	6.01

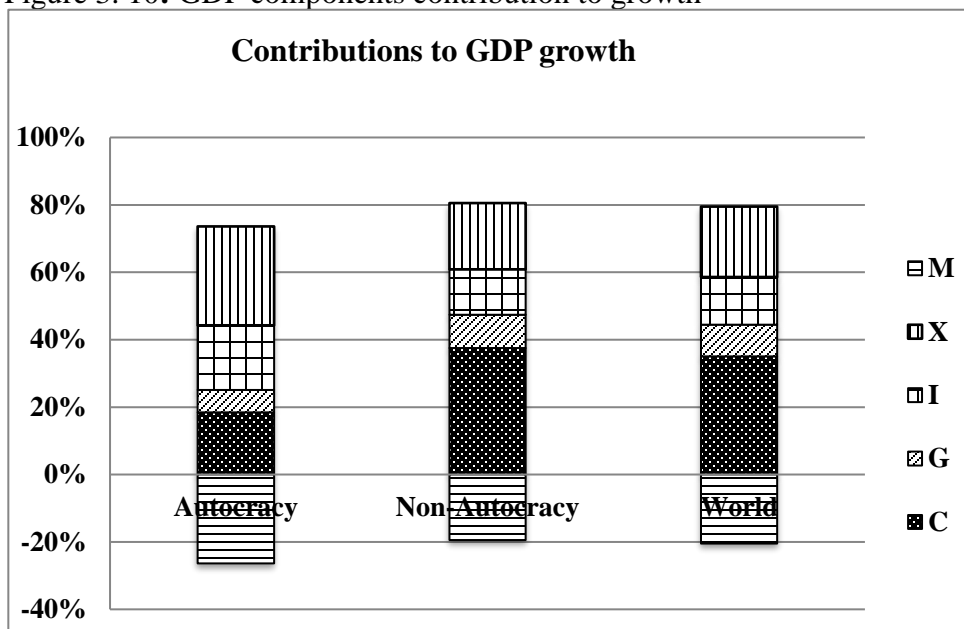
3.4.2 GDP Components' Contribution to Growth

The above discussion on components' share in GDP and their growth rates clearly shows the tricky nature of selecting either of the two to study the nature of an economy. The messages they give are often contradictory. If we take the average import and export values of autocracies, for example, compared to non-autocracies and the world averages, the higher share they have in GDP is accompanied by a lower average growth rate. The same holds true for consumption. While consumption is the sector with the highest share in GDP in all groups, the same level of importance is not reflected in its growth rates. Hence, characterizing an economy and identifying the nature of an economy solely depending on GDP shares, which shows the weight of a sector in the total or growth rates that represent the speed of change, may give a misleading result. It is mainly due to these drawbacks that the use of components' share to GDP growth becomes handy. It combines both measures and is helpful to figure out the importance of a sector and the source of growth in an economy.

Each component's contribution to total economic growth in autocracies displays peculiar features compared to world and non-autocracies figures. Despite having the highest share in GDP, private consumption's contribution to growth in autocracies is the second lowest to public consumption. This is in sharp contrast to world and non-autocracies average within the study period. While the main source of growth of the world at large and non-autocracies in particular was private consumption, autocracies highest contributor to growth were the investment and export sectors of the economy. In other words, when other economies are characterized by strongly private consumption led growth, autocracies were mainly led by the investment and export sector. This has its implication in the volatility of growth and their susceptibility to external shocks. An economy that is overly dependent not on domestic consumption but on foreign demands has a higher likelihood of contagion from foreign demand volatilities. Economic growth of autocracies that is exceedingly dependent on export, import and investment sectors, as can be seen in Figure 3.10, has this typical characteristic. The higher volatility in the economic growth of autocracies discussed in earlier part of this chapter can also be connected to this skewed dependency of

growth on the external sector which for many economic and political reasons was unstable for the past four decades.

Figure 3. 10: GDP components contribution to growth⁹



In annual average figures of GDP components' contribution to growth in autocracy, export sector dominates for the four decades under analysis. For 15 years, export is the leading contributor to GDP and the sector has the second largest share in growth for 10 years. Next to export, consumption is the dominant sector contributing to GDP growth for 10 different years. Nevertheless, the annual data do not show any discernible trend in the role of any of the sectors in economic growth.

An interesting exception is the trends in the export sector. The significance of the sector in GDP growth is visible after 1983. From this year onwards, the export sector is either the first or the second largest contributor to GDP growth in autocracies. The

⁹ The relevance of using sectors' contribution to growth rather than the mere share of each sector in GDP to study the dynamics in economic growth is evidently seen in this exercise. Consumption in autocracy is a good example in this respect. Despite occupying the highest share in GDP, consumption contributes comparatively little to economic growth than some other components like export and import, which relatively have lower shares in autocracy GDP. Measuring the importance of a component or sector in the economy and especially in economic growth only by its weight in GDP thus may lead to a misleading conclusion.

only exception within this 26 year span in which the sector lost its leading significance and degraded to the least contributor to GDP growth are the years of huge political calamities 1991 & 2001 and the great economic meltdown of 2008. This by itself is another textbook example that shows the susceptibility of an export led or export dominated growth to external shocks.

However, GDP components' contribution to economic growth has a completely different performance when our unit of analysis is reduced from the average autocracy to individual countries. At country level, consumption has an overwhelming dominance against the export sector. For 63 autocracies out of 96 countries which had an autocratic stay of more than 25% of the sample, consumption on average contributes the largest to their GDP growth than any other component of GDP. Given that the majority of autocracies are from low income countries where consumption has a very large share in GDP, having a relatively larger effect on the contribution to growth figures is mathematically expected. Though consumption has a relatively higher share in their local economy, aggregate figures discussed earlier mostly display the nature of economies of export led countries. These export led countries are mainly composed of natural resource rich high income countries that have an average per capita income threefold greater than consumption led economies. These discrepancies between country level and aggregate level figures, however, call for precaution in interpretation of results and selection of the appropriate method to study autocracies.

In addition to differences at country and aggregate levels, economic figures in autocracies exhibit very large internal and external heterogeneities. The summary of GDP components' contribution to growth in the panel data of autocratic countries between 1972 and 2008 shown in Table 3.6 clearly reveals the presence of significant deviations in the importance of each sector across countries.

Table 3. 6: Summary of components contribution to growth

Variable	Average contribution to growth	Std. Dev.	Min	Max
Consumption	2.43	6.43	-56.34	59.57
Government expenditure	0.50	3.27	-85.36	68.63
Investment	1.14	6.28	-40.97	60.86
Export	1.65	7.79	-106.11	89.30
Import	1.73	8.35	-125.61	80.94
GDPg	3.91	7.56	-66.12	82.81

Note: the values are computed from pooled data of contribution to growth of all autocracies (N=108)

The higher standard deviations seen actually imply, as repeatedly noted in the literature, juxtaposing all autocracies in a single category fails to provide an accurate description of autocracies. This calls for the need to study autocracies in relatively small homogeneous groups. The large difference in the performance of each sector within a country on the other hand substantiates the need to take into consideration the time periods in the analysis.¹⁰

3.5 SECTORAL DECOMPOSITION OF GROWTH

Another way of studying the nature of an economy is disaggregating the whole economy into different sectors: agriculture, industry and service. According to the United Nations Statistical Commission categorization, agriculture constitutes hunting, forestry and finishing while industrial sector encompasses manufacturing and mining activities. The tertiary sector represents a wide range of services including trade, financial intermediation, construction, education, health and others (Department of Economic and Social Affairs, 2008).¹¹

¹⁰ Later sections of this chapter use descriptive analysis tools to study autocracies in different politically homogenous sub-groups (regimes).

¹¹Full list of activities in each sector is presented in the Appendix 3.

3.5.1 Sector Shares in the Economy and their Growth Rates

Autocracy has an economic structure significantly inclined to the service sector than the other two sectors. This sector covers more than half of the total production (53.21%) followed by Industry (36.03%). Agriculture has the least share with only 10.54%. In comparison to the world and non-autocracy average shares, however, autocracy is more agrarian; the industry sector has a higher share in production and has a poorly developed service sector.

Table 3. 7: Average percentage shares of sectors in total production (1972-2008)

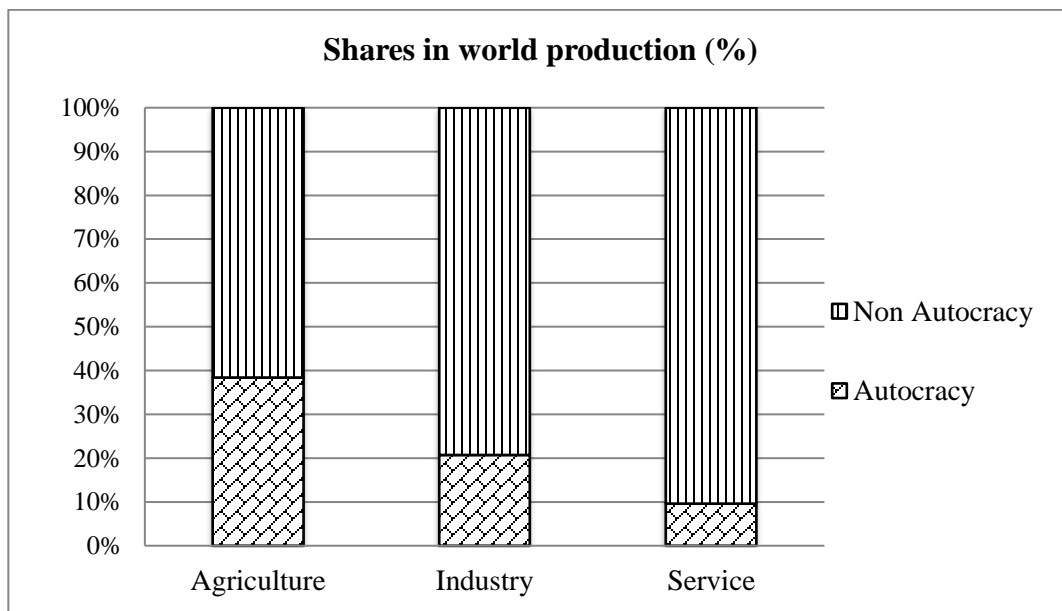
	Agriculture	Industry	Service
Autocracy	10.54	36.03	53.21
Non Autocracy	2.56	21.28	75.98
World	3.67	23.27	72.88

The percentage shares of each sector in the total production presented in Table 3.7 clearly shows the distinct nature of autocracy's economy. The reduction in the role of agriculture and industry in non-autocracies compared to the world averages entails that autocracy is composed of relatively higher primary and secondary sector dependent countries and a less developed tertiary sector. In other words, the world economy without autocracy is less agrarian and industrialist, and more service oriented.

The distinction between autocratic and non-autocratic economies is more obviously revealed when we see the share of each group in the world production as shown in Figure 3.11. While autocracy on average constitutes only 13% of the total world production between 1972 and 2008, sector level decomposition of this contribution gives more information on the importance of each sector in the world economy. Autocracy comprises 38.43%, 20.7% and 9.64% of the total world agriculture, industry and service sector production, respectively. Though non-autocracies have the highest average share of world production in all sectors, close to 40% contribution of autocracy to the world agricultural production signifies the importance of the sector

to autocracies and their importance in the world agricultural production. In sharp contrast, autocracies' overwhelmingly low share in the world tertiary sector compared to non-autocracy tells much about the composition of countries in the autocracy pool. From a policy making perspective, this discussion roughly implies that a worldwide shock in agriculture –either from demand or from supply side– has a higher potential to affect autocracies than non-autocracies.

Figure 3. 11: Autocracy and Non-autocracy economic sectors share in world production



The worldwide trend in the share of each sector in the economy between 1972 and 2008 shows an increase in the importance of the service sector while agriculture and industry demonstrate a diminishing relevance. Except for agriculture, these trends are reversed in autocracy. In 1972, the world has 83 autocratic states with agriculture, industry and service constituting 9.87%, 33.66% and 55.99% of the total economy respectively. At the end of the study year, however, the number of autocratic states drops to 52 countries and the shares of primary, secondary and tertiary sectors change to 8.46%, 38.63% and 53.27% respectively. Industry share increases while agriculture and service sectors decline. One plausible explanation could be that

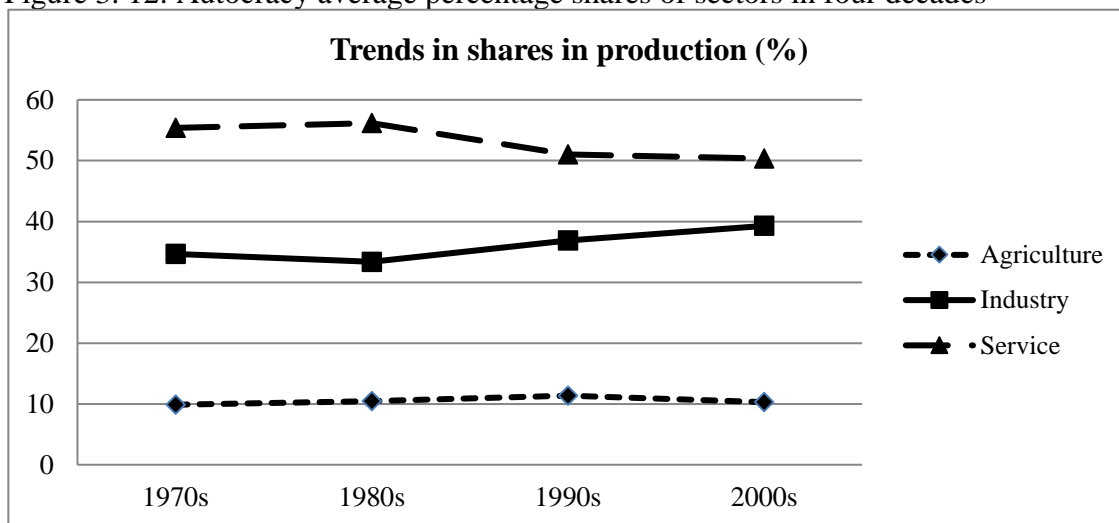
autocracies, like any average country of the world, follow the worldwide trend of a decline in agriculture and transform their economic base into secondary or tertiary sectors. Our data also provide some support to this explanation. In 26 countries that stay under autocracy all across the study period, the agricultural sector shows a decline in its role in total production except for four countries. Of these 22 countries, a majority of them exhibit an increase in the industrial sector while the rest managed to boost their service sector. This is also supported by the strong negative linear correlation (-0.70) between mean values of agriculture and industry shares in the economy for 99 countries with an autocratic stay of more than 25% of the study period.

Although the above explanation could explicate the reduction in the share of agriculture and the rise in the role of the industry sector seen in autocracy, it fails to explain the odd trend of the reduction in the share of the service sector in 2008 from its 1972 level. Closely looking at those countries that are present at the beginning but permanently exited autocracy for democracy could help us explain the unusual reduction seen in the service sector. Most countries that left autocracy permanently are states with a higher income than an average autocracy and have an above average service sector share in the total output. It includes autocracies from Europe and the Americas. Their presence at the beginning of the study year pulls the aggregate figures up and their exit from autocracy in the coming decades pushes the aggregate service sector average figures down from its 1972 level.

Decade-wise study of the share of the three sectors in the total production once again shows the importance of 1990s in the study of autocratic states (see Figure 3.12 below). Major political developments, the biggest of which being the end of the Cold War, brings about major changes in the nature of autocracies. While agriculture largely maintains its previous decade's share, the industry and service sectors display an opposite trend from their performance in the 80s. After the 1990s, the role of the industry sector in autocracy shows an increasing trend and the service sector

experiences a decline. The difference between the two sectors that is as high as 20.80% in 1980s is nearly halved in 2000s to 11.08%.

Figure 3. 12: Autocracy average percentage shares of sectors in four decades



Autocracies are composed of different groups that have peculiar sectoral configurations. Looking at the influences of each group gives more insight into how and why the trends in aggregate autocracy are formed. Three groups of countries are selected for this purpose, and the influence they exert on the aggregate sectoral share of GDP is presented in Table 3.8. The first group is composed of countries that are known to have the oil sector as the major source of income in their economy. As the mining sector is included in our classification under the industrial sector, the presence of these countries are expected to push the share of the sector in autocracy upward. When these countries are excluded, we see a decline in autocracy industrial sector average by nearly 4% points and a proportional increase in the agricultural sector. Their exclusion seems to have less effect on the service sector. Another expectedly industry based economy are newly industrialized countries in East Asia. Unlike the oil based countries, the aggregate shares computed without these countries donot show much difference from autocracy averages. The third group includes autocracies from Europe and the Americas. These countries are characterized by above average income levels and a strong service sector. When sectoral shares are computed without these countries, the share of the service sector diminishes by around 7% points in line

with the expectations. As most of these countries democratized and left autocracy in the last three decades of the 20th century, despite the slow shift to industry and service sector of most autocratic countries, it is not surprising to find that the share of the service sector in autocracy aggregate in 2000s is found to be less than its 1970s or 1980s levels.

Table 3. 8: Influences of groups in sectors' share in Autocracy GDP

Groups	Agriculture	Industry	Service
Autocracy	10.54	36.03	53.20
Non Oil Based¹²	14.08	32.63	52.72
Non East Asian¹³	10.50	36.37	52.94
Non Euro & Americas¹⁴	13.84	39.64	45.65

At country level, autocratic states do not show a sign of similarity in sectoral compositions. A closer study of countries that had an at least 10 years of autocratic stay supports this proposition. The average share of agriculture ranges from 0.36% in Kuwait to 62.85% in Somalia. The same countries also occupy the two extreme points in the average share of the industrial sector in autocracies; with Somalia 5.05% and Kuwait 55.19%. The lowest and highest shares in the service sector are recorded in Cuba (76.21%) and Albania (21.61%). The difference in the range of values in each sector is also reflected in their average deviations from their group mean values. Accordingly, the highest dispersion in the overall (pooled) data is seen in agriculture (16.22% standard deviation) followed by industry (14.32%) and service sectors (12.32%). As seen from Table 3.9, *between standard deviation* shows the existence of large differences among countries in each sector. Similar to the pooled data, the primary sector is characterized by large between country dispersion while the service sector has the lowest standard deviation. This between country dispersion implies that autocracies have a widely different average share of agriculture in the total production and their difference in average values of the service sector is relatively closer to each other. The *within* standard deviation on the other hand suggests that average share of agriculture across time is relatively less volatile than those of other

¹² Oil based countries are Angola, Iran, Iraq, Kazakhstan, Kuwait, Mexico, Nigeria, Russia, Saudi Arabia, UAE and USSR

¹³ East Asians included here are Indonesia, Malaysia, Singapore, South Korea, Taiwan and Thailand

¹⁴ It includes 14 European and 16 autocratic countries from the Caribbean, North and South America.

sectors. All in all, compared to the within dispersion, the difference in the average share of sectors among countries is significantly higher. This heterogeneity among autocracies undermines the possibility of drawing a lesson that could work for all autocracies and calls for the need to study autocracies in ways that entertain these differences.

Table 3. 9: Standard deviations of share of each sector in total value added

Standard Deviations	Agriculture	Industry	Service
Overall (pooled)	16.218	14.317	12.320
Between	14.964	12.514	10.874
Within	5.5685	6.209	6.294

Note: this standard deviations are computed for autocracies with an at least 25% (ten years) of autocratic stay

3.5.2 Sectors Contribution to Economic Growth in Autocracy

In terms of average growth rates of each sector, compared to world and non-autocracy averages, autocracy as a group performs poorly in all sectors within the study period. The difference in the average growth rates is higher in agriculture and service sectors while industry in all the three groups grows at a relatively similar rate (see Table 2.10).

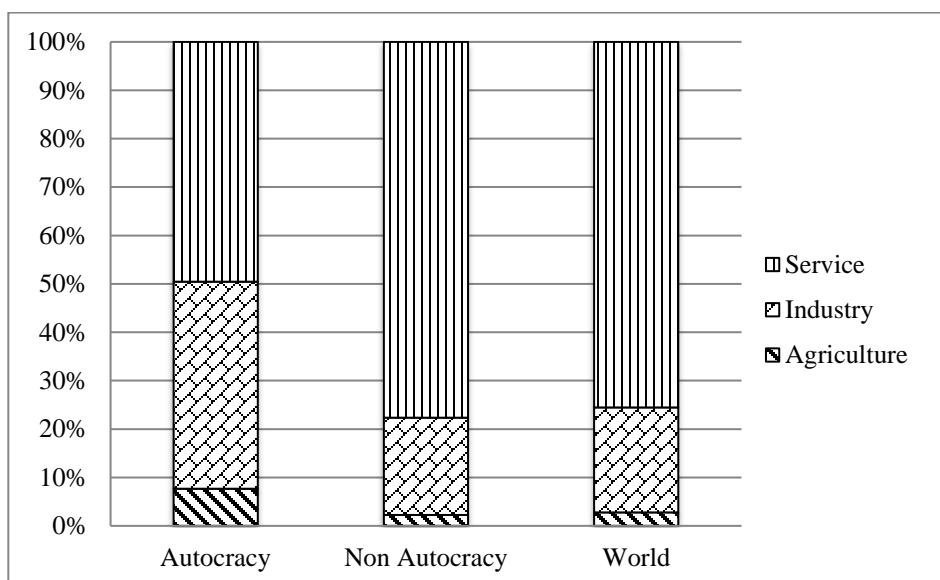
Table 3. 10: Average growth rates of sectors (1972-2008)

	Agriculture	Industry	Service
Autocracy	1.78	2.72	2.37
Non Autocracy	2.83	2.99	3.21
World	2.34	2.86	3.17

The contribution of each sector to the overall growth, on the other hand, shows a comparably larger role of agriculture and industry and a significant difference in the contribution of the service sector between autocracy and non-autocracy. Despite the larger difference in the average share of industry and service sectors in autocracy (17.18%), the higher average growth of the former makes the contribution of the two

sectors relatively equivalent. With 1.02% and 1.19% contributions to growth of industry and service sectors respectively, the two sectors are with nearly equal level of importance for economic growth in autocracies. Non-autocracy and world average growth contributions of each sector presented in Figure 3.13 unequivocally show the overwhelming role of the service sector. Unlike autocracy where there is discrepancy in ranking the importance of sectors in terms of their average share in GDP, growth rates and contributions to growth, world and non-autocracy maintain the same ranking all across the three dimensions.

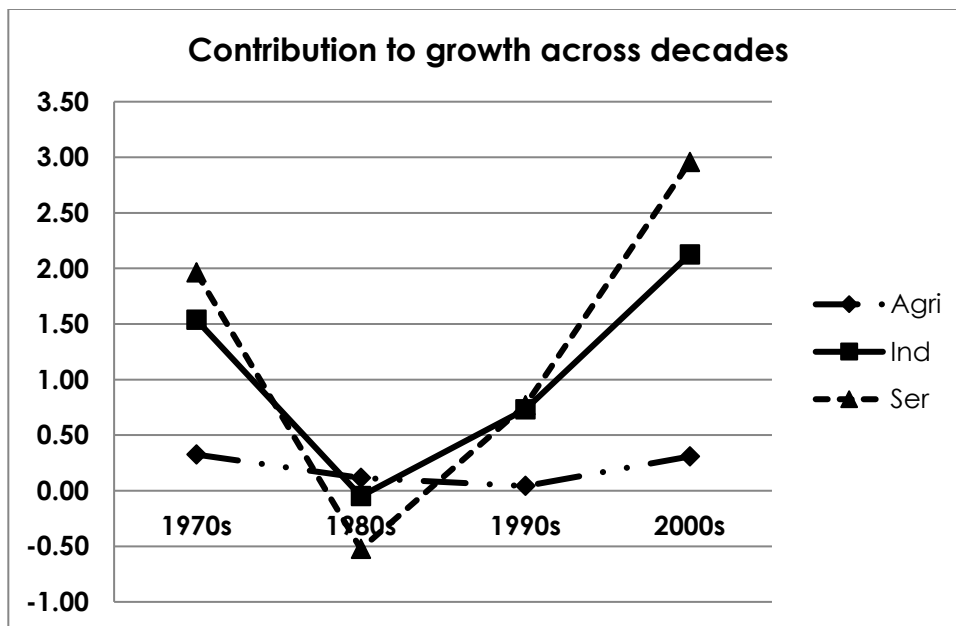
Figure 3. 13: Sectors' average contribution to overall growth (1972-2008)



Within four decades under analysis, the 1980s are characterized by a low average contribution of the industry and service sectors. The contribution to growth of the two sectors decline from its 70s level and reach its lowest of the four decades. A particular exception is the agriculture sector that has seen its lowest decade average contribution to growth in the 1990s (see Figure 3.14). Coupled with tectonic political developments and the global economic slowdown, the decline in economic growth was a worldwide phenomenon that is also reflected in autocracies. In terms of importance of sectors in their contribution to growth across decades, it is only in crises stricken 80s that any other sector than the service dominated growth. The decade showed the relative superior performance of the agriculture sector in

autocracy and witnessed the highest average contribution to growth within the four decades. This could entail that –by virtue of the size and nature of the secondary and especially the tertiary sector– volatility in average growth rates both in autocracy and world emanate from the two sectors and the agricultural sector is too little to influence aggregate growth fluctuations.

Figure 3. 14: Autocracy sectors' contribution to growth in four decades



The importance of the service sector to dominate growth in the aggregate autocracy figures, is also reflected at country level decomposition of growth. The sector is also the major source of growth for most autocracies. Of the total 99 autocratic states that had an autocratic stay of at least 25% of the study period, the service sector was the leading contributor to growth for 77 of them. The industry and agricultural sectors were only principal sources of growth for 12 and 10 remaining states respectively.

The overwhelming prominence of the services sector as the chief source of growth is largely region and income independent. Significant portion of autocracies in all continents have the tertiary sector as their leading contributor in their economic growth. There exists no strong evidence to trace any regional pattern. If any, it is the

fact that all of the 11 autocracies from North and South America have service led growth and neither of the 10 autocratic states from Europe have the agricultural sector as the leading source of growth. In the continents of Africa and Asia, where 78 out of the 99 of autocracies were located, the non-service sector is found to lead growth only in 20 nations (see Table 3.11).

Table 3. 11: Leading growth contributing sectors and their geographic distribution

Leading Sector	Africa	Asia	Europe	North America	South America	Total
Agriculture	6	4				10
Industry	6	4	2			12
Service	32	26	8	6	5	77
Total	44	34	10	6	5	99

The composition of countries in terms of their leading sectors is also largely income independent. Looking at aggregate average figure of mean real per capita income of autocracies alongside their leading sectors, it gives a general impression that income levels can be associated with the importance of the three sectors in the economy. Table 3.12 clearly shows that industry led economies had higher income on average than agriculture and service led economies. When we look at individual countries, however, such generalization that relates sectors with income levels become ambiguous. The excessively high standard deviation figures and ranges shed light on the internal income variations of each group of autocracies. The disparity in income and the difference in composition of countries are highly visible in autocracies with service sector led economies. It includes countries like Ethiopia with an average income as low as 149.97USD and UAE with staggering 52334.73USD. Moreover, out of the 78 autocracies with service led growth, only 20 of them have an average income above the overall average real per capita income of 2890.20 USD and the rest 74.02% of autocracies have below average income levels.

Table 3. 12: Leading growth contributing sectors and average income levels

Leading Sector	Obs.	Mean Real GDP PC	Std. Dev.	Min	Max	Range
Agriculture	10	367.76	112.39	114.97	485.71	370.73
Industry	12	4705.61	4952.52	455.67	16332.43	15876.76
Service	77	2890.20	6973.85	149.43	52334.73	52185.30

Similar to earlier discussions on aggregate demand decomposition of growth, handling autocracies as a single homogenous group fail to generate strong discernible and reliable pattern in the nature and source of growth of their economy. Although the discussion hitherto on sectoral decomposition of growth shed light on the stage, trends and role of the three sectors in determining autocracies economy and their growth, they are far from implying specific nature of economy or source of growth peculiar to autocracy as a political regime in general. This once again reaffirms the conventional claim that autocracies are abundantly heterogeneous and any characterizations of these political entities need to heed these diversities.

3.6 ECONOMIC GROWTH IN DIFFERENT AUTOCRATIC REGIMES

Autocracies constitute states from different spectrum of political gradation. Their political institutions are more diversified and unrelated than democracies. They, for example, occupy at least 16 points in the 21-point POLITY IV index that characterize political regimes mainly based on their patterns of authority. The difference in the level and type of political institutions ultimately produces different types of autocracies and diverse political and economic outcomes. Politically, the differences in autocratic regime types explain variances in probability of post regime-breakdown democratization and level of violence (Geddes et al., 2014), conflict behavior and political survival (Cheibub et al., 2010), democratic consolidation (Svolik, 2008) and regime stability (Hadenius and Teorell 2007). In terms of economic outcomes, some types of autocratic regimes are associated with better investment attractiveness and improved level of allocative efficiency (Gandhi, 2008), higher investment (Wright, 2008) and superior economic performance (Jamali et al., 2007; Wright, 2008).

From a homogenous and residual categorization of autocracies, the literature has evolved to distinguishing autocracies into different of types. Earlier works of Przeworski and Limongi (1993) differentiated between bureaucracy and autocracy types of dictatorship regimes. Wintrobe (2002) distinguished among tinpots, tyrants, totaliterians and timocracts autocracies. Gandhi (2008) on the other hand divided dictatorship in terms of institutionalization into broadened and narrow dictatorships. Recent works and upgraded versions of earlier works like Geddes et al. (2014), Cheibub et al.(2010) and Wahman et al. (2013) came up with data sets that document different types of autocracies starting as early as 1946 to 2010. Cheibub et al. (2010) distinguished among monarchic, military and civilian autocrats while Geddes et al. (2014) further divided civilian autocracy into dominant party and personalist autocracy. Wahman et al. (2013) adopted electoral autocracies regimes type that includes election practicing military and civilian autocracies together with separate monarchic, military and a regimes under residual category that document some autocratic regimes characteristically incompatible in any of the three regime types. The three autocracy datasets are the few exceptions that cover large period of time and provide range of important information on autocracies that could be used to conduct different theoretical and empirical studies on the subject.

3.6.1 Trends in Autocratic Regimes

Making distinction among autocracies continues to be a delicate and an evolving exercise. While identifying monarchic type of autocracies has been less controversial, defining military type of autocracy maintains its disputability. As can be seen from Table 3.13 that summarizes the different types of autocracies in the three datasets, autocracies that are led by monarchs occupy around 10% of the total autocracy across the three prominent datasets used in this research. In the CGV dataset compiled by Chieub et al.(2010), military and civilian types of autocracies constitute 41.03% and 48.07% of the total autocracies respectively. Their minimalist approach that identify military autocracies based on their leaders being from the military or had military background and civilian type of autocracies as a residual category entailed an inflated proportion of the two types of autocracies in their categorization. Geddes et al.(2012)

criticized CGV classification and came up with GWF dataset that introduce dominant party and personalist types of autocracies to the literature. Accordingly, the share of military autocracies dropped to only 12.47% of the total in GWF and personalists and dominant party autocracies respectively constituted 48.66% and 27.89% of the total. These proportions clearly show that nearly half of all autocracies in the study period were led by autocrats who had political parties.

Table 3. 13: Summary of regime occurrences in CGV, GWF AND HTW datasets (1972-2008)

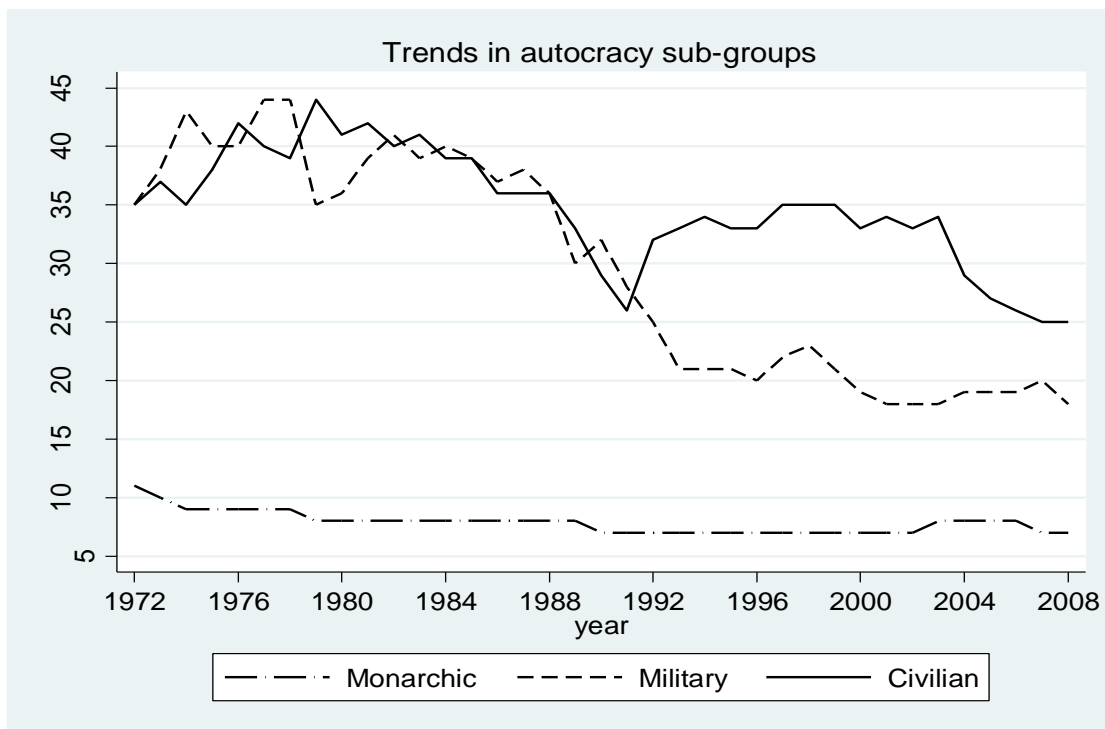
	Monarchic	Military	Civilian	Dominant party	Personalists	Electoral
CGV	291	1,096	1,284			
GWF	294	334		1303	747	
HTW	289	841				1381

The HTW dataset by Wahmana et al. (2013) further explicates the notion of party and election in autocracies and introduced electoral autocracies. These types of autocracies comprise more than half of the total (51.30%) and military autocracies comprise 31.4% of all autocracies within the study period. Electoral autocracies are further divided into no-party, one party and multi-party autocracies where except for only 6 instances of no-party cases, electoral autocracies were nearly equally divided between one party (47.94%) and multi party (51.63%) autocrats. HTW grouped 6.24% of autocracies that did not fall in any of the three main groups in a residual category.

The incidence of autocratic states in the world has been declining across the study period. The trends in autocratic regimes depicted in Figure 3.15 reveals that the major decline in autocracy is seen among military autocrats. The number of military autocratic states reached its peak in 1977 and 1978 and showed a sharp decline with the spread of the third democratic wave and the end of the cold war confrontations. The post cold war period divulged a clear distinction in the number of military and civilian autocrats; making the later the dominant form of autocracy since early 1990s.

This ascendancy of civilian autocrats entails the decline in the role of the military and autocrats from military background from dictating political life in the world raising the probability of being a civilian autocrat in 2000s to 52.95% from 44.1% in the 70s. Autocrats that are ruled by monarchs, nonetheless, appeared to be the most stable form of autocracy that apparently showed negligible exits either to democracy or to other forms of autocracy.

Figure 3. 15 : Trends in autocracy regimes in CGV dataset (1972-2008)



The decline in military autocracy and the stability in the prevalence of monarchic autocracy is a similar phenomenon across the three datasets. In GWF dataset, the biggest decline is recorded in dominant party autocracies; from as high as 48 countries for three consecutive years between 1980 and 1982, they reach their lowest at only 21 countries in 2008. Personalist autocrats display largely stable presence completely different from the overall autocracy trend and other forms of autocracies. This, however, has more to do with the increasing incidence of personalist autocracies that substitute drop outs than the internal stability of such regimes. HTW dataset, on the other hand, shows that autocracies that conduct election are

increasingly becoming dominant to the extent that 60% of autocracies in 2008 were electoral autocracies. In this dataset, the overall fluctuation in autocracies was mainly dominated by military form of autocracy while electoral and monarchic autocracies, with standard deviation of 0.99 and 4.84 respectively, displayed their own peculiar trend more stable than military autocracy that had a standard deviation of 10.31, which is more than double that of electoral autocracy.

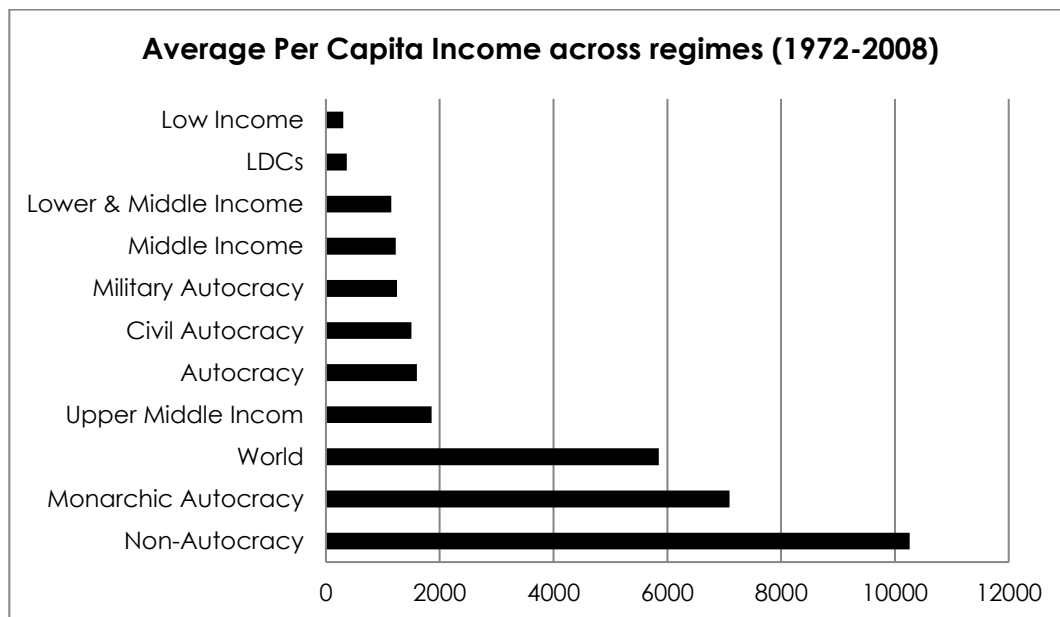
The fluctuation in the incidence of the different types of autocracies happened both with the permanent exit of states from the autocratic pool or due to a shift to other forms of autocracies. As much as there are states that exited autocracy to democracy or permanently cease to exist as states, the switch in regime type within the same autocratic stay was abundantly observed. In the HTW dataset, for instance, 48 countries made a shift from one regime type to another while there were 40 countries in CGV and 31 in GWF datasets that made regime type changes in the study period. There were also some countries that made a switch among three regime types within those four decades like Ethiopia in all datasets, Bangladesh, Chad and Niger in GWF, and a total of 12 countries in HTW dataset. Of the total 26 countries that had autocratic stay for the full study period, only half of them managed to maintain a single type of regime.

3.6.2 Income and Growth in Different Autocratic Regimes

Autocracy as a single group had an average income that surpassed middle income countries and closer to upper middle income ones with an average real per capital income of 1601.09USD. Decomposing the grand average into different autocratic regimes gives clearer information about autocracies and compliments the notion of heterogeneity among them. Autocratic regime types in this study displayed a distinguishable pattern in their average real per capita income. Civilian lead autocracies appear to be the closest to the average with an average income of 1501.20USD. Monarchic regimes, on the contrary, occupy the highest echelon of the income hierarchy. Their average per capita income of 7093.12USD is significantly

greater than the world average (5849.03USD) and is more than seven time higher than autocracies average. As Figure 3.16 depicts, military autocracies occupy the bottom position among the three regime types with an average income of 1247.08USD; their average income is very close to middle income groups (1225.58USD). Despite the differences in the definition of military regimes across the three datasets, military regimes represent the poorest form of autocracies. Their average income in HTW regime classification even dropped as low as 1065.97USD making them below lower and middle income group average (1147.06 USD).

Figure 3. 16: Average per capita income across autocratic regimes (1972-2008)



In alternative classifications of autocratic regimes, the closest to the average autocracy per capita income was reported in electoral autocracies (1494.98 USD). In GWF taxonomy, however, dominant party and military autocracies recorded comparable average income of 1395.88 and 1350.47USD while personalist regimes performed above autocracy average with 1670.38USD.

While military regime represents the poorest regime type all across the three autocracy datasets, monarchic regime unanimously symbolized the wealthiest

autocratic regime type. Monarchic autocracy corresponds to the most affluence of autocracies and at the same time regimes with stability that had exceptionally uninterrupted autocratic stay. The fact that this autocratic regime type is composed of both prosperous and stable autocracies defies the notion of at the center of modernization theory. The expectation that the rise in income level facilitate the establishment of institution that support consolidation of democratic culture in the society or the notion that democracy itself requires some level of economic development are seriously debunked by monarchic autocracies' experience. This could lead to the impression that as some level of development is required to launch democracy in some cases, there could also be a need to have some level of development to prolong autocracy. The affluent monarchs seem to have used their wealth to sustain the loyalty of their subjects and successfully quash dissents whenever they spur.

Among countries with more than 9 years of the study period under autocracy, 65% of them had an average income less than the autocracy average. Expectedly, this share is the highest among regimes led by autocrats from the military or with military background (75%) and the lowest in monarchic autocracies (25%). Civilian autocracies once again lay around the average with 63% of them under the mark. The lowest performing monarchic autocrat was Nepal (216.06 USD) followed by Morocco that had an average per capita income of 1550.08 USD, which was very close to autocracy average (1559.96USD). The average income of the other eight monarchic autocrats (1426.55 USD) was comparably close to the highest average income in civilian autocrat earned by Singapore (15432.31 USD) and it was nearly double that of Libya that recorded the highest per capita income as a military dictatorship (8428.27USD).

3.6.3 Economic Performance and Regime Type

Previous discussion on good and bad performer of autocratic states demonstrated the ample presences of both type of countries that could be used as an example for

conduciveness or otherwise danger of autocracy to economic growth. Making the entry and exit years as reference years, it has been shown that while some countries like China managed to increase their real per capita income by 1453.2%, other autocracies in Africa like Democratic Republic of Congo faced a contraction of their income by 70.5%. Among the two groups of autocracies, a largely discernible geographical trend is also observed. Except for Egypt and Oman, the rest top performing economies were from East and Far East Asia, among which four of the Asian Tigers (Singapore, South Korea, Malaysia and Indonesia) are included. On the other hand, among the worst ten countries that had faced decline in their living standard, six of them were from Africa and three from Middle East.

Economic performance, regime type and regime stability showed an intriguing relationship in the data. In all the three different datasets, a single monarchic autocracy (Oman) has managed to make it into the top ten best performing economies. The CGV autocracy regime typology equally divides the remaining eight top economies between military and civilian autocracies. Laos, which has an autocratic stay of 33 year equivalently divided in to 16 and 17 years of civilian and autocracy, is the only exception to have performed well under both regime types. The HTW classification of autocratic regimes, on the other hand, identify six of the ten top performers as electoral autocrats and the remaining three as military dictatorships. The GWF dataset that emphatically characterize polities based on the nature of the highest decision making body, gives a more distinctive trend in regime type-cum-economic performance relationships. It identifies seven of the ten highest performing countries as dominant party autocracies and two others (Myanmar and South Korea) as military dictatorships while no country led by personalist autocrats made it into the top ten ranking. This finding is perfectly in line with Wright (2008) who found that dominant party and military autocracies that had binding legislations economically perform better than those led by personalist dictators.

Among autocracies that encountered significant deterioration of per capita income in their stay under dictatorship, countries led by monarchs disproportionately appeared in the list. The United Arab Emirates, Kuwait and Saudi Arabia have seen a decline in

their per capita income compared to the level in 1972. This mainly owes to significant outburst in their population size. In terms of count, however, military led autocracies are found to poorly perform in their economy. Half of them in CGV and forty percent in HTW are identified as military autocracies for significant portion of their autocratic stay. The GWF regime classification once again superiorly performs in giving a less ambiguous and consistent picture on the relationship between nature of regimes and economic performance. While there are no personalist autocracies among the top performing countries, 40% of the ten worst performing states are identified as personalist autocracies. Only two countries (Afghanistan and Zimbabwe), from dominant party autocracies appeared in the bottom ten list. The regime type-cum-economic performance relationship discussion generally is in line with Wright (2008) finding that more institutionalized, group based and party disciplined decision making organ positively contribute to the economy than a more personalized autocratic leadership.

Table 3. 14: Distribution of top and bottom ten autocracies across regime types

	CGV			GWF				HTW			
	Mon	Milt	Civil	Mon	Mil	Par	Pers	Mo	Mil	El	Other
Top 10	1	5	5	1	2	7	-	1	3	6	
Bottom 10	3	5	4	3	1	2	4	3	4	3	1

Note: the Table shows distribution of the top and bottom 10 performing autocracies and their regime types. When the horizontal summation of each row under each autocratic classification is greater than ten, it shows the existence of autocracies that made regime change during their autocratic stay.

Another salient finding in the economic performance-regime type connection is related to regime stability. Comparison of the two groups of top and bottom ten autocracies revealed that change in regime type within the same autocratic stay was significantly higher in poor performing dictatorships. At least half of the ten poor performers made regime type shifts according to two of the three autocracy datasets. The number of such regime changes was as low as zero among top ten performing autocracies in GWF classification. While there are some indications that that there

exists a relationship between regime stability and economic performance at the top and bottom of autocracies' economic performance continuum, the question of the direction of causation and the validity of the relationship in the entire data are intriguing questions of investigation for future research.

3.6.4 Trends in Economic Growth across Regime Types

The four decades under study are periods of higher average growth for countries that stayed under monarchic dictatorship for most parts of the study period. The comparatively higher average economic growth under this regime type is unwaveringly seen across all across the three regime classifications. They include countries like Oman and United Arab Emirates with their average economic growth as high as 7.23 and 6.41 respectively. As Table 3.15 shows, countries under dominant party autocracies were the second best performing regime types. Dominant party regimes like China, Rwanda and Singapore, which are the three prominent examples of economies led by benevolent dictators, have an average growth of 9.17%, 8.33% and 7.38% respectively between 1972 and 2008. The civil war rattled Afghanistan (-2.96), the disintegrated Yugoslavia (0.54%) and Robert Mugabe's Zimbabwe (0.65%) are the poorest performing dominant party autocracies. In the HTW classification, electoral autocracies generally performed better than military once. The single-vs-multi party distinction within this regime type is short of giving clear pattern in favoring one over another in terms of growth performance at this stage of the analysis. Among single party autocracies, for every China we had the former Yugoslavia that had an average real GDP growth of 0.54 for its 19years of autocratic stay. On the other hand, for every successful multi party autocracies like Singapore, Azerbaijan (7.42%) and Malaysia (6.4%) we can had Georgia, Kyrgyzstan and Tajikistan that had an average growth of -2.55%, -0.56% and -0.38% respectively.

Table 3. 15: Regime types and average economic growth (1972-2008)

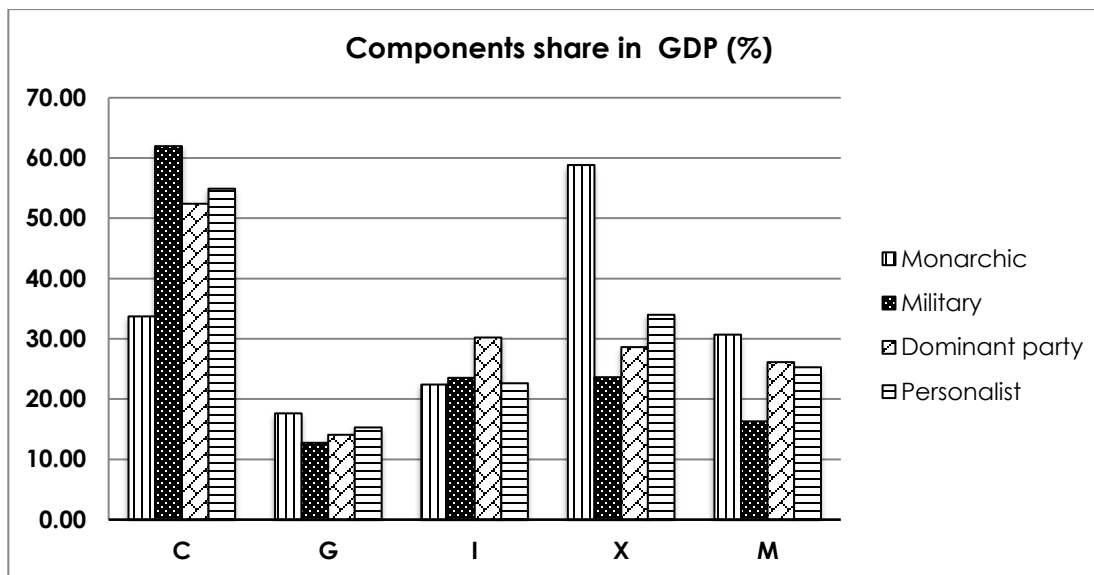
	Monarchic	Military	Civilian	Dominant party	Personalists	Electoral
CGV	4.90	3.76	3.63			
GWF	4.90	3.45		4.16	3.17	
HTW	5.00	3.75				4.07

Note: Average growth rates are computed from the real GDP growth of countries that had autocratic stay of 25% of the study period (at least 10years) under any regime type.

3.7 AGGREGATE DEMAND DECOMPOSITION OF GROWTH IN DIFFERENT AUTOCRATIC REGIMES TYPES

The discussion in the previous chapter demonstrates the distinct structural configuration of autocracies compared to non-autocracies: Average shares of private and public expenditure are lower than the world averages. The average shares of investment, export and import are, on the contrary, visibly higher with a positive net export significantly higher than both world and non-autocracies averages. It is also reiterated that, like their heterogeneity in their political institutions, the nature of autocracies' economies are diverse and there is a need to study them in small politically homogeneous groups to extract more meaningful lessons. The study of the nature of autocracies' economy among different regime types reveals apparent differences in the structure of their economy. Using GWF autocratic regimes classification, Figure 3.17 depicts these distinctions among regime types.

Figure 3. 17: Average shares of components in GDP among different regime types (1972-2008)



Private consumption share in GDP constitutes more than half of autocracies output in all regime types with the exception of monarchic autocrats. They have the lowest share (33.74%), as low as nearly half of military autocrats (61.95%). Their massive export sector (58.83%) and a small share of consumption expenditure in GDP make them regimes with the largest trade surplus and huge accumulated saving funds. Monarchic autocracies' public sector and the import sectors are also comparatively the biggest among all regime types. Dominant party autocracies are the closest to autocracy average values presented in the previous chapter. They have remarkably higher share of investment in GDP (30.22%) compared to other regime types. The relatively greater development of political institutions in this regime could be a reason for creating conducive environments for investment. It is also important to note civil and electoral regimes in other classifications of autocracies, which are by far the closest to dominant party regimes, have a similar superiority in the share of investment in their GDP. Personalist regimes interestingly have an economic structure that closely resembles monarchic regimes than other type of autocracies. They have similar shares of investment in GDP and personalist regimes rank second to monarchic regimes in their share of public expenditure and export sector share in their respective GDPs. It is important to note here that, in their criticism of GWF

classification, Wahmana et al. (2013) also underline the resemblance of personalist and monarchic regimes.

Decade-wise characterization of autocratic regimes' highlights the shifts in the nature of their economy within the four decades under study. The share of consumption in GDP declines for all regime types with the exception of monarchic autocracy, where an increase by 22.19% is seen in 2000s from 19.25% in 1970s. Export, on the contrary, shows a significant drop (from 71.20% in 1970s to 55.31% in 2000s) in monarchic regimes while all other regimes experience remarkable hikes in this sector. Military autocracies distinctly demonstrate a decline in the size of government from the politically and militarily heated cold war decades of 1970s and 1980s towards the 1990s and 2000s. The evaluation of the size of investment reveals a trend only peculiar to dominant party based autocracies. Despite the decrease in the share of investment across all regimes, it increases by 8.11% points in dominant party led autocracies. A specific sector that displays a persistent boost across all regime types is the import sector. It increases by as much as 18.81% points in dominant party autocracies and between 8% to 10% points in other regimes. The climb in both export and import sector in all regime types shows increased openness and involvement in international trade as a common feature of all regime types.¹⁵

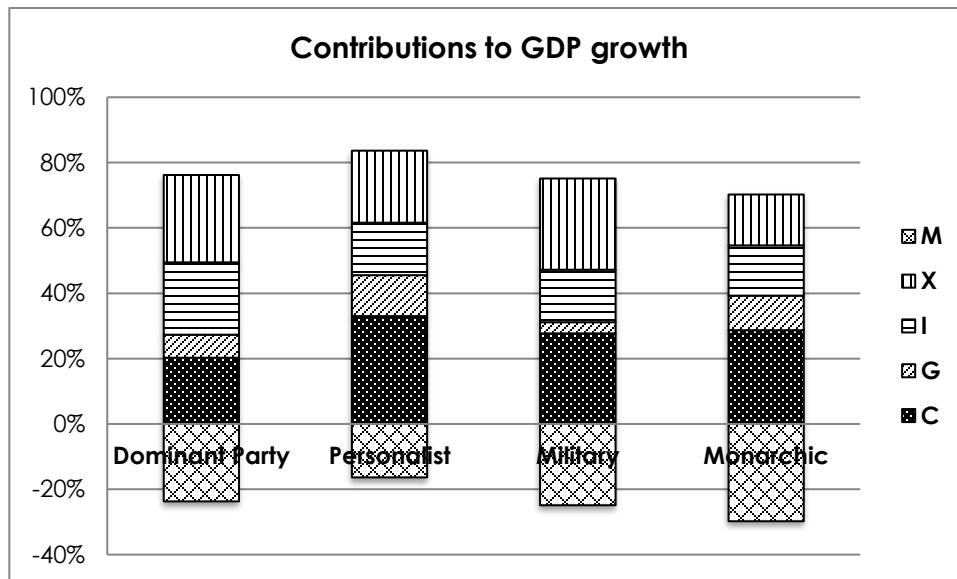
3.7.1 GDP Components' Contribution to Growth in Different Regime Types

Autocracies in general have export, import and investment as prominent sectors that stimulate their economic growth. At regime level, however, there exists disparity in the importance of sectors. In the summary of four autocratic regime types in GWF classification depicted in Table 3.18, the leading source of economic growth in dominant party and military led autocracies is the export sector. In military regimes, consumption is almost equally important as exports. Growth in personalist autocracies is distinguishingly led by private consumption followed by the export

¹⁵ The only partial exception is the monarchic regime that showed a decline in its export share in GDP from staggering 71.20% in the 1970s to 55.31% in 2000s. Yet, the regime continues to rank the first in its combined share of export and import in GDP representing the most open regime of all others.

sector. The remarkably large export sector in monarchic regimes, on the other hand, contributes little to average economic growth due to the low average growth rate of this sector. Import, on the other hand, is the largest sector in terms of its magnitude in monarchic autocracies, thereby contributing negatively to their overall growth. Government expenditure and investment respectively contributes the least to economic growth in all regime types.

Figure 3. 18: Average contributions of components to GDP growth in different regime types (1972-2008)



Military regimes that appear in all of the three classifications display completely different and incomparable differences in their source of growth while there is almost no variation in monarchic autocracies. In CGV regime classification, contributions of private consumption, government expenditure and investment to growth are negligible. In fact, their contribution drops below zero in HWT classification of autocracies. In civilian autocracies, private consumption and investment contribute the highest to economic growth while electoral regimes maintains the overall autocracy trend that shows export and import sectors as the leading sources of economic growth.

The annual changes in the leading source of economic growth among regime types once again underline consumption and export sectors as the prominent sources of

growth for most part of the study period in all regime types. Which one of the two dominates differs among regime types. The summary presented in Table 3.16 shows that private consumption expenditure prevailed as the leading source of growth in personalist and military regimes for 55.56% (20 years) and 44.44% (16 years) of the study period, respectively. These figures are as low as 9 years in monarchic and 12 years in dominant party regimes. On the contrary, these two regimes spend many more years with export and import as the leading contributor to their economic growth. Export and import sectors dominate for 21 years (58.33%) in monarchic and 17 years (47.23%) in dominant party autocracies.

Table 3. 16: Frequency of leading source of growth and regime types (1973-2008)

Leading components	C	G	I	X	M
Dominant Party	12	2	5	15	2
Personalist	20	2	2	9	3
Military	16	3	5	9	3
Monarchic	9	1	5	14	7

Note: The Table shows the number of years a GDP component was the highest contributor to economic growth in a given year.

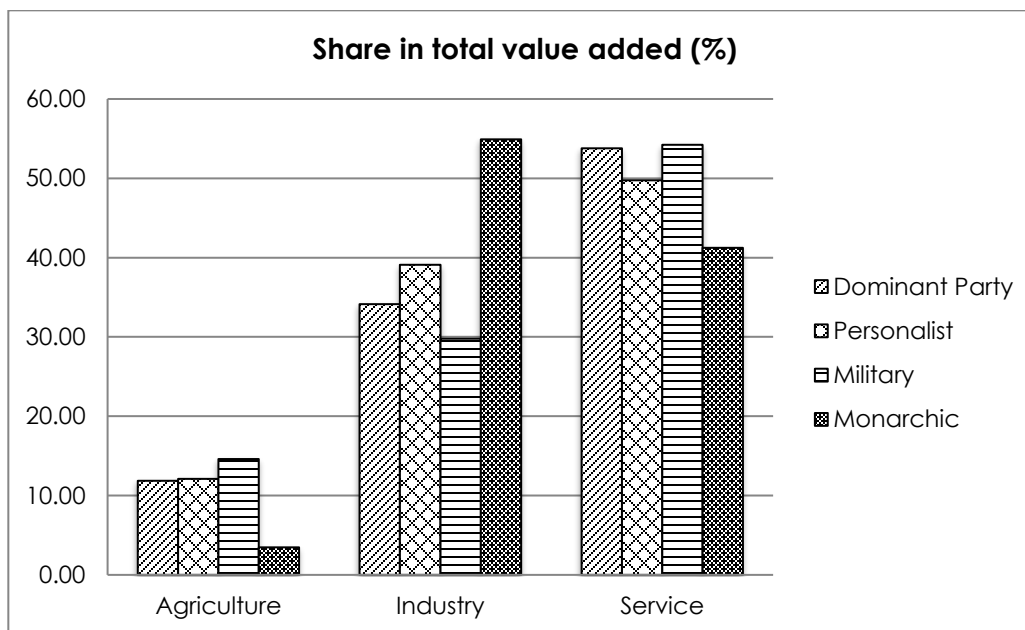
Across four decades studied, some regimes witness a shift in major source of their economic growth. Dominant party regimes, for example, shift from an overly consumption led growth in 1970s to an export led growth in 2000s. In this regime type, in no year throughout 1970s (1973-1979) does export or import serve as the leading contributor to economic growth. In contrast, 2000s witness the exact opposite with consumption not being the leading source of growth for the period 2000-2008 while the export sector leads economic growth. The general shift towards an economy where export and import dominate in 2000s is also observed in military and monarchic regimes. Personalist regimes, however, are the only exception to maintain a consumption dominated growth in the same decade with a total of seven years out of nine in 2000s.

At country level, most states led by autocratic regimes have consumption led growth experiences with the exception of monarchic regimes. Of all autocracies that have an autocratic stay of 25% of the time under any of the regime types, 71.74% of dominant party, 64.71% of personalist and 64.29% of military regimes have consumption as the largest contributor to their economic growth. Export led growth, on the other hand, is more prevalent in countries under monarchic regimes. None of the eight monarchic countries have consumption led growth while export and government expenditure each dominate growth in three of the eight monarchic autocracies. The remaining two countries have investment and import dominated growth patterns.

3.8 SECTORAL DECOMPOSITION OF GROWTH IN DIFFERENT REGIME TYPES

Our previous discussion on sectoral decomposition of growth indicates a relatively higher importance of agriculture and industry sectors in autocracy than non-autocracy. The combined average shares of agriculture and industry in autocracies surpasses the world average by 19.63%. Conversely, the world average share of service sector exceeds the autocracy average by about the same percentage point. The world without autocracy is more service oriented and less industrialist and agrarian.

Figure 3. 19: Average share of sectors in total production across regimes (1972-2008)



Sectoral classification of autocracies' economies across different regime types produces results that could be closely associated to regime types. Monarchic regimes, including most oil rich Middle Eastern nations for example, characteristically have industrial sector shares exceptionally higher than all other regimes (see Figure 3.19 above). They, on the contrary, have the lowest service and agriculture shares compared to other regimes. The share of agriculture in monarchs (3.45%) is even lower than the world average (3.67%). In line with the results from the aggregate demand decomposition, personalist regimes, once again, are highly similar to monarchic autocracies. Personalist regimes constitute another pool of oil and gas rich countries like Gaddafi's Libya, Saddam's Iraq, Nguesso's Congo and Aliyev's Azerbaijan. This is in line with Wright's (2008) finding that personalist autocrats are more likely to happen in oil rich countries. Military and dominant party dictatorships, which normally have relatively well functioning institutional setups in decision making than personalist and monarchic regimes, once again perform fairly similarly to each other. Their economies are more service oriented and less industrial than the other two. The moderately higher share of agriculture in military regimes could be associated with the larger share of low income earning countries in the regime which generally have an above average agrarian economy. In other classifications of autocratic regimes, electoral and civilian regimes are seen dominating the others on

the share of the service sector in their economy while military and monarchic regimes outperform others in agriculture and industrial sectors contribution.

Across the four decades under examination, the shares of the three sectors in the economy show remarkable changes in some regime types. The largest changes are observed in monarchic and military regimes. Monarchic regimes of 1970s are far more industry based and far less service oriented than those of 2000s. The share of industry in the economy in the 2000s drops by 13.08 percentage points from 63.33% and service sector shares increase by 14.26 percentage points from 32.2% levels in the 1970s. These changes can be mainly attributed to the internal shifts in the nature of monarchs' economies from natural resource led industrial sectors to a service oriented economy in the 2000s.

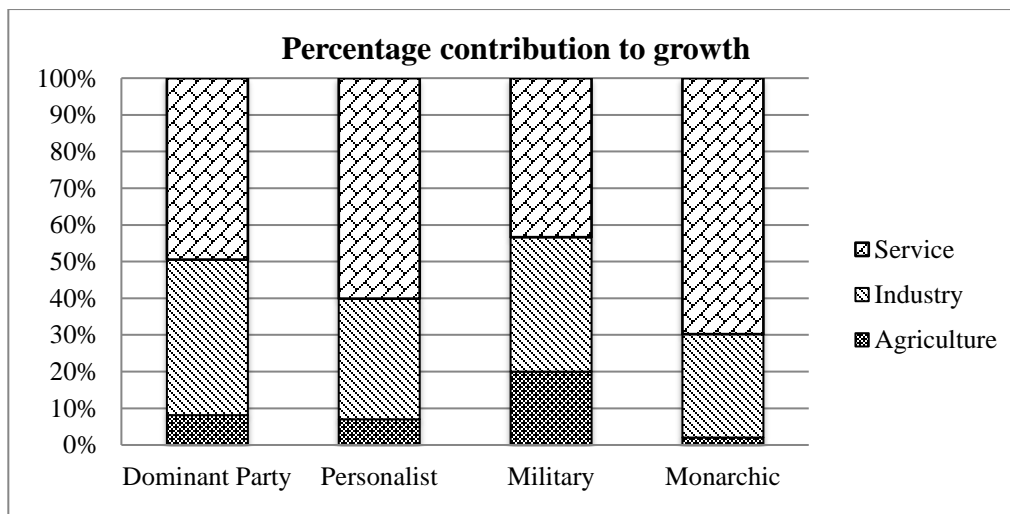
Another regime type witnessing sizable shifts in sectoral composition of GDP is military. From highly service oriented (63.47% share) and below autocracy average industry (26.48%) and agriculture (9.58%) sectors of 1970s, the regime exhibits an increase in agriculture and industry sectors' share in total output by 8.34 and 6.9 percentage points respectively and a reduction in the service sector by 14.83 percentage points. These shifts here could be due to the change in the composition of military regime types in the two decades; from the domination of the highly service sector oriented military regimes of south and north American countries to the more agrarian and less service based economies like Myanmar, Pakistan and Burundi in 2000s. Similar explanation can also be extended to the changes in the shares of sectors in dominant party regime. In this regime type, there is a modest decline (6.75 percentage points) in the service sector and a proportional increase in the share of industry in 2000s. Similar to military regimes, highly service oriented East European countries of the 70s such as Poland, Romania, Yugoslavia and USSR that had raised the regime average in the decade had existed autocracy and were no more under this regime type in 2000s.

In sum, in comparison to the 1970s, 2000s shows a small decline in agriculture in personalist and an increase in military regimes. The share of industry has increased in dominant party and military regimes while it significantly plummeted in monarchic regimes. The service sector has shown a modest decline in dominant party regime, a more than 14 percentage point decline in military regime and a similar hike in monarchic autocracy.

3.8.1 Sectors' Contribution to Growth in Different Regime Types

The contribution of the three sectors in autocracy growth was typically different from non-autocracy and the world at large. Although the largest contributor to growth in autocracy was the service sector, which in fact had contributed less compared to world averages, the role of industry and agriculture as sources of growth in autocracy were larger than world and non-autocracy average levels. The regime level study of the source of growth in autocracies showed that the role of each sector in growth is diverse among the different regime types.

Figure 3. 20: Percentages of contributions of sectors to growth in different regime types (1972-2008)



As Figure 3.20 depicts above, the service sector is the leading contributor to growth in all regime types including monarchic autocrats that had an industry sector dominated economy. Compared to other regime types, dominant party and military regimes have industry and service sectors that contribute to growth more equivalently

than other regime types. Agriculture is found to contribute the least across all regimes with its lowest role in monarchic regime and highest in military autocracy. In other classifications of autocracies, while both the magnitude and prominence of sectors remain the same for monarchic regimes, military regime displays significantly different roles of economic sectors in the economy. In civilian and electoral regimes, however, the share of the three sectors in growth shows remarkable resemblance with dominant party autocracy.

In the four decades included in this study, the average contribution of sectors to growth showed mixed changes across time in different regime types. The 70s and 2000s had close similarity. In these decades the service sector contributed the highest to growth in all regimes with the exception of the agriculture led growth in personalist regime in the 70s. Personalist regime once again was at odd with other regime types in the 90s. When the industrial sector dominated growth in other regime types in the decade, the service led average growth in personalist regime. The 80s was typically a decade that produced mixed results that differ across regimes; service sector dominated growth in dominant party, industry in personalist and agriculture in military and monarchic regimes. A distinguishing feature of all autocratic regimes, however, was the prominence of the service sector in the 2000s. The inconsistency across time and regime type for the first time ends in the 2000s; where average growth in all regime types is chiefly led by the service sector.

The principal role of the service sector as the leading source of growth is also reflected at country level. An overwhelming majority of countries in all regime type possess an economy that on average had service led economic growth. As Table 3.15 presents, 40 (81.63%) dominant party regimes, (12) 85.71% military, 21(61.76%) personalist and 6(75%) of monarchic regimes with an autocratic experience of at least 10 years had on average a service led economy. The highest non-service led countries were seen in personalist regimes with an agriculture led growth in 9(26.47%) and industry led growth in the remaining 4 countries.

Table 3. 17: Frequency of leading source of growths and regime types (1973-2008)

Leading sector	Agri	Ind	Ser	Total
Dominant Party	2	7	40	49
Personalist	9	4	21	34
Military	2	0	12	14
Monarchic	0	2	6	8

3.9. CONCLUDING REMARKS

To sum up, this chapter abundantly shows the distinct nature of autocracies' economy and their respective sources of growth. Autocracy as a group is on average much poorer, more export oriented and overly agrarian and industrialist than non-autocracy and the world at large. When autocracies are divided into politically homogenous groups, regime specific economic characteristics have emerged. Despite the different types of regime classifications, military regime and monarchic regimes occupied the lowest and highest level of average income levels respectively. From aggregate demand components, consumption, export and import sectors were found to have higher effect on economic growth. Sectoral level decomposition of growth revealed that monarchic and personalist regimes largely have resemblance in the role of each sector in economic growth.

Across the different classifications of autocracy, dominant party from GWF, civilian from CGV and electoral autocracy of HWT strikingly showed similarities in the role of the three economic sectors in their economic growth paths. At country level, however, an overwhelming majority of countries have economic growths mainly driven by private consumption and the service sector. Results have also shown changes across decades both at aggregate autocracy and regime levels. The 2000s by far demonstrates sustainable rise in income levels, firm dominance of the export and service sectors and a more uniform growth outlook across regime types.

CHAPTER 4

DECOMPOSING GROWTH IN DEVELOPMENTAL STATES

The world after WWII has seen countries that defeated poverty forever and quickly ascended to the highest echelon of prosperity and affluence. Some rose from the ashes of the devastating war and some started the odyssey as new nation states. These are known in the development literature as ‘late developers’, ‘late industrializers’ or ‘newly industrializing countries (NICs)’. Among these groups of countries that rapidly transformed their economy and the destiny of their citizens, the impressive economic progress of East Asian countries has dominated academic and policy making discussion for the past half a century. Their catching up with the developed world has been so quick that metaphysical lexicon like “East Asian Miracles” is used to describe their experiences. The fact that these countries with remarkably high and sustained growth are geographically located in a specific region with close proximity to each other makes the “miracle” more miraculous. Castells (1992) who studied economic development of South Korea, Taiwan, Honk Kong and Singapore has dubbed their achievement as “one of the most extraordinary experiences in the history of economic growth and structural change” (p. 33). A World Bank policy research report summarized the extraordinary achievement of the eight high performing Asian economies (HPAEs)¹⁶ as follows:

“Since 1960, the HPAEs have grown more than twice as fast as the rest of East Asia, roughly three times as fast as Latin America and South Asia, and five times faster than Sub-Saharan Africa. They also significantly outperformed the industrial economies and the oil-rich Middle East-North Africa region. Between 1960 and 1985, real income per capita increased more than four times in Japan and the Four Tigers and more than doubled in the Southeast Asian NIEs. If growth were randomly distributed, there is roughly one chance in ten thousand that success would have been so regionally concentrated.” (World Bank, 1993:2)

Explaining the growth phenomenon in miracle economies has captured theorists’ and policy makers’ attention. Earlier works attribute miraculous growth to neoclassical

¹⁶The World Bank 1993 report “The East Asian Miracle: Economic Growth and Public Policy” identify Japan; the ‘Four Tigers’ -Hong Kong, the Republic of Korea, Singapore, and Taiwan,China; and the three newly industrializing economies (NIEs) of SoutheastAsia, Indonesia, Malaysia, and Thailand as the eight high-performing Asian economies (HPAEs).

economic policies, mainly to the flourishing of free market, whereas some others from the socialist camp emphasize “the cardinal role of the state as agent of planned growth and transformation” (White and Wade, 1988: 3). Johnson (1982) on the other hand goes beyond what he calls “binary modes of thought” and introduces “plan rational” as a third distinct classification that differentiates the Japanese political economy and many of East Asian countries that have followed Japan’s footsteps. He distinguishes “plan rational” form of organizing the economy from US style “market rational” and Soviet-type “plan ideological” political economies. Öniş (1991) identifies Chalmers Johnson and his proponents as “institutionalists” and summarizes their perspective as one that emphatically argues for the central role of the state in taming market forces and effectively using them for national goals. This explanation is at the core of “developmental state” theory.

This chapter closely studies the composition of the economy as well as uses a Post-Keynesian tool to discern trends in the three sectoral financial balances of selected developmental states East Asian countries. It aims at contributing to the literature on the transferability of the developmental model to other contexts. It tries to identify and demonstrate the diversity of the growth path these states have pursued. Here it is argued that despite the similarity of developmental states on how they organize political life in their respective countries, they have adopted different avenues on what to produce. These multiplicities of development path, therefore, even make emulating their model of growth more sophisticated.

Our study has tried to give a holistic picture of the developmental state model. A strong capable state, autonomous bureaucracy, selected few cooperative business elites, nationalism, authoritarianism, and some initial level of development are found to be common components of the model. Developmental states in our sample are categorized depending of their source of growth, type of sectoral transformation and the type of growth they have pursued within the study period. Decomposition of their growth reveals that consumption and investment are the leading source of growth in

South Korea, Indonesia and China while export and import lead growth in Singapore and Malaysia. With regards to sectoral transformation, two groups of countries emerge: one that quickly transform their leading sector from primary to tertiary sector (China and South Korea) and the other that made gradual transition from primary to secondary sector (Indonesia, Malaysia and Thailand). Finally, the decomposition of their economy into financial balances using twenty year data between 1988 and 2007 suggests an important shift in the type of growth paradigm in the post-Asian Financial Crisis period. Thailand, Indonesia, Malaysia and South Korea that were following debt-led consumption boom before the crisis transformed their economy into export-led mercantilist growth after the crisis. Countries such as Taiwan and China are overwhelmingly adopt an export-led mercantilist growth all across the study period. These differences in types of path to prosperity they adopted, therefore, increase the difficulty of transferability of their model to other contexts.

4.1. CHARACTERIZING DEVELOPMENTAL STATES

Defining developmental states is not without dispute in the literature. Bagchi (2000: 398) defines a developmental state as the one that “puts economic development as the top priority of governmental policy and is able to design effective instruments to promote such a goal” and concludes that “indeed there were developmental states long before economists, political scientists or historians recognized them as such”. It is not however the presence of an interventionist government that uses any effective instrument to advance its goal that makes a state a developmental state; it is the political, social and historical peculiarity of the specific mechanism the state employs that makes it a developmental state. Although there might be other authors who have used the concept before, the capitalist developmental states theory made its debut by Chalmers Johnson 1982 in his highly celebrated book “MITI and the Japanese Miracle: the Growth of Industrial Policy, 1925-1975” (Öniş, 1991; Leftwich 1995). The formulation of the theory, thus, has been highly influenced by the Japanese experience, and it is an instance that exemplifies the circular association of economic ideas and economic practices (Cömert, 2005).

The Japanese economic growth adventure, later emulated by neighboring East Asian countries, identifies the state as the major architect in the transformation process. According to Johnson (1982), the growth miracle has unfolded in Japan when reigning politicians start giving sufficient freedom to the bureaucracy. “Staffed by the best managerial talents” (p.315), the bureaucracy has taken initiatives and used the Ministry of Trade and Industry as key economic planning agency to devise industrial policies that utilize “market-conforming methods of state intervention in the economy” (p.316). To facilitate effective implementation of economic policies, formal and informal channels have been established with selected groups of business elites (zaibatsu). Nationalism has been used to mobilize the people towards “a widely agreed upon sets of overarching goals for the society, such as high-speed growth” (p.22). The devastating experience of WWII, pushing Japan to the brink of extinction, has nurtured the sense of nation building and nationalistic sentiment in the society. This is in line with Cömert’s (2005) observation that “developmental state creation overlaps with a kind of new process of nation state building” (p.134). The Japanese experience entails the existence of elite and autonomous bureaucracy, business elite with strong links to the state, market conforming economic policies and high nationalistic sentiment as defining peculiarities of a developmental state. Japan being the first nation in the list, South Korea, Taiwan, Hong Kong, Singapore, Thailand, Indonesia, Malaysia and China are East Asian countries associated with the use of the developmental state model in their exceptionally fast social and economic transformation.

At the heart of developmental states’ growth and transformation, there lies a strong and capable state that designs appropriate industrial policies. The states “not only have presided over industrial transformation but can be plausibly argued to have played a role in making it happen” (Evans, 1995: 12). Designing industrial policies for areas that have strategic importance and using their administrative capacity to effectively implement the plan are the core components of East Asian developmental states (Öniş, 1991; Evans, 1995). The concept of industrial policy itself, Robert Ozaki argued, “is an indigenous Japanese term not to be found in lexicon of Western

economic terminology” (cited in Johnson, 1982: 26). The role of the state goes beyond enacting industrial policies to the making of a society that perfectly fits into the development plan. For this purpose, the state elites aggressively engaged in “ideological mobilization, pervasive political controls and social engineering” (White and Wade, 1998: 24).

Implementation of industrial policies to take the nation to the consensual national development goal involves two major elite groups in the society: the bureaucracy and the business class. The organization of the bureaucracy in developmental states is believed to resemble Weberian bureaucracy. The fact that positions in public institutions are filled by qualified officials that passed thorough and highly meritocratic recruitment process, it increases dedication and corporate coherence in the system (Evans, 1995). This also gives the bureaucracy autonomy from possible influences from different interest groups in the society. Implicit in this component of a developmental state is the availability of educated and skilled manpower which is also nontrivially related with the level of economic development. This has been very much the case for East Asian developmental states. They have started their journey of late industrialization with comparably high levels of social capital (Cömert, 2005) and dynamic, educated labor forces (Castells, 1992).

The second elite group that works closely with the state is the business elite. The state establishes formal and informal channels to reach out the selected business firms that share a common vision and development goal with the state. The Zaibatsu in Japan (Johnson, 1982), the Chaebol in South Korea (Evans, 1995) and “Princelings” (taizi dang) in China (Gilson and Milhaupt, 2011) are examples of such privately owned big business empires that work hand in glove with the state. It is this combination of autonomy of the bureaucracy and its intimate connection with particular business groups along the same national goal that makes a state developmental. Without autonomy and cooperation—which Peter B. Evans calls embedded autonomy—a state

can never be developmental and an attempt to emulate the developmental model in the absence of the two will be counterproductive (Öniş, 1991; Evans, 1995).

Once the right policy is designed and embedded autonomy is secured, the other daunting task the state undertakes is to galvanize the whole society and excluded social groups towards achieving the national development goals. It is in this instance that nationalism emerges as a soft mechanism for public mobilization. Developmental states of East Asia have effectively boosted nationalism and convinced the society towards a national goal (Johnson, 1982; White and Wade, 1988; Öniş 1991; Bagchi 2000). Historical and geo-political realities have been rightly situated to advance nationalistic sentiments. In most of the cases, the onset of developmental states has coincided with the process of nation state building (Cömert, 2005) and the continued existence of substantial foreign threats (White and Wade, 1988; Öniş 1991; Cömert, 2005). The states have perfectly used these opportunities to set a single overriding objective for the nation to pursue.

“This one overriding objective- economic development- was present among the Japanese people after the war, among the Korean people after Syngman Rhee, among the Chinese exiles and the Taiwanese after Chiang Kai-shek acknowledged that he was not going home again, among the Singaporeans after the Malayan Emergency and their expulsion from Malaysia, among the residences of Hong Kong after they fled communism, and among the Chinese city dwellers after the Cultural Revolution” (Johnson, 1999: 52-53)

Another alternative way developmental states have used to maintain the focus on the national development goal and to avoid distraction in the process by the public or excluded social groups is repression. From the outset, most governments have assumed office using non-democratic ways and have often been quasi-revolutionary regimes (Johnson, 1999). Autocratic practices have been widespread. Organized groups such as labor unions have been excluded from the political process as potential opponents, deliberately weakened or dismantled altogether (Castells, 1992). Although the level of authoritarianism have varied among them, the baseline is that the unusually high level of private and public concentration of power among the few and the lack of equal access to the state are “extremely hard” to justify their practice

in light of pluralistic democracy (Öniş, 1991). With the exception of Japan, which Johnson (1982) characterized as the regime of soft authoritarianism¹⁷, most other developmental states have witnessed brutal autocrats. After reviewing development experiences of South Korea, Taiwan, Hong Kong and Singapore, Castells (1992) notes that, in addition to being repressive dictatorships, “[t]heir project consisted of a two-edge plowshare that they did not hesitate to transform into a sword when required” (p.66).

The developmental state model is deemed to perish in the long run. The very foundations of the model start to shake as development ensues in the state. As business firms grow and their network expands, their dependence on the government gradually decreases. This compromises the cooperation between the state and the business elite, thereby jeopardizing embeddedness and the capacity of the government to guide the market. Cömert (2005) rightly notes that “[o]nce government helped capitalism to emancipate from its fetters, capitalism in the developmental states will see its safeguard as a rival” (p.136). Another component of the model that faces challenge of continuity is the state-people relation. The strength of the nationalist rhetoric used to mobilize the nation towards a development goal starts to fade out as the memory of the historical circumstance that fuels nationalism gets older. Moreover, with the increase in development so does the capacity, awareness and sophistication of the social groups excluded from the political process. This makes them too big to be neglected and too hard to be repressed. Evans (1995) agrees with Marx while analyzing the rise of “militant workers” in South Korea; the state, as bourgeoisie does in Marx analysis, “calls forth its own grave digger” by

¹⁷Verwij and Pelizzo (2009) have also used “soft authoritarianism” to characterize the Lee Kuan Yew autocratic regime in Singapore. Unless autocracy is very narrowly defined as the use of lethal means to sustain power, which obviously is not the case, their description of the techniques used by the Yew regime were way too hard to be soft and cannot in anyway be comparable with the Japanese experience. They listed the practices used by the regime as follows: “*the jailing and bankrupting of opposition leaders; the engineered sacking of critical commentators; the withholding of state funds from opposition wards and the redrawing of their boundaries (as well as other, more creative forms of gerrymandering); the manipulation of election schedules to deprive the opposition of time to campaign; the restriction of political debate to officially registered parties; the placement of ambiguous limits on any form of public discourse; the curtailing of media coverage of opposition parties; and so on.*” P. 19

expanding the economy. There thus seems to be little doubt that developmental states are bound to dissipate in the long run.

The developmental states literature largely overlaps with benevolent autocrat explanations. While developmental state paradigm attributes the impressive growth and transformation of a country to a system and the state at large, the benevolent autocrat explanation of the same phenomenon personalizes the achievement and owes the success to a single autocrat. Those leaders who are the leading architects of developmental states are recognized as benevolent autocrats. Park Chung-Hee of South Korea and Deng Xiaoping China (Gilson and Milhaupt, 2008) and Lee Kuan Yew of Singapore (Shkolnikov, 2001) are important examples in this respect. Lately emerged self-proclaimed developmental state leaders in Africa who have managed to bring considerable economic changes like Meles Zenawi of Ethiopia (Easterly, 2011) and Paul Kagame of Rwanda (Russell, 2012) are also considered as benevolent autocrats.

4.2 AGGREGATE DEMAND DECOMPOSITION OF GROWTH IN DEVELOPMENTAL STATES¹⁸

East Asian developmental states have recorded impressive growth performances for most part of the second half of the 20th century and continued progressing in the new millennia. Table 4.1 shows that these countries have managed to at least quadruple their real income per capita within our nearly four-decade study period, China being the leading country with 15.53 fold increase in per capita income followed by South Korea (9.95), Singapore (5.33) and Thailand (5.05).

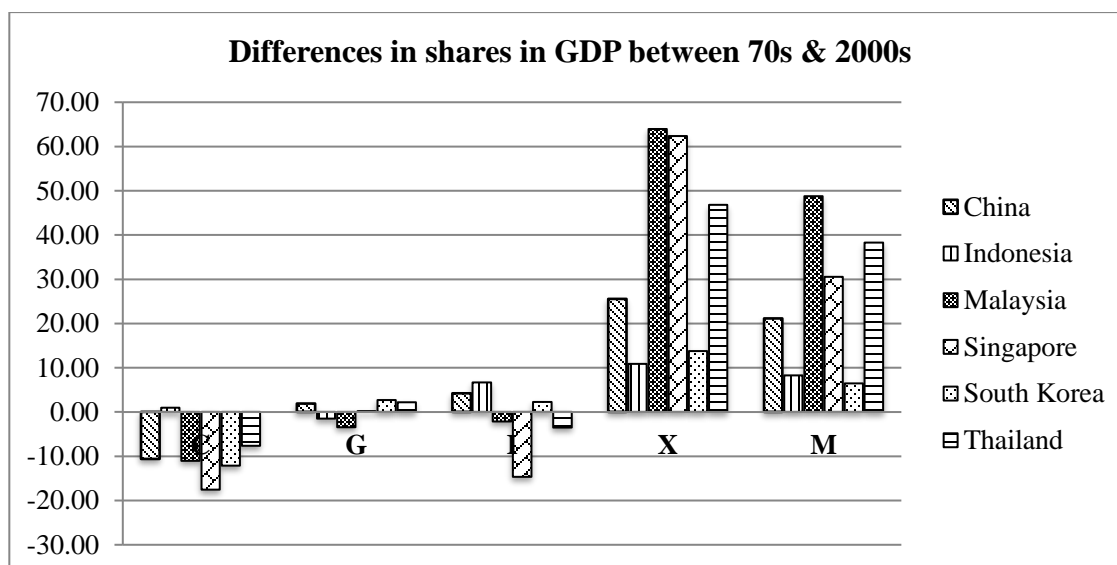
¹⁸ As the whole project is on autocracies, Japan—which has never been identified as an autocracy within the study period (1972 to 2008) – is excluded in most analysis.

Table 4. 1: Factor change in real per capita incomes of developmental states

Year	South Korea	Singapore	Thailand	Indonesia	Malaysia	China
1972	2122.22	5955.38	634.99	388.02	1537.45	156.86
2008	21117.79	31765.37	3207.37	1538.18	6209.42	2436.34
Factor change	9.95	5.33	5.05	3.96	4.04	15.53

This period has also witnessed significant transformations in these economies. Figure 4.1 shows that export and import sector has increased its importance in these economies and consumption share in GDP has declined in almost all states. A remarkable shift in the structure of the economy has been observed in Singapore, Malaysia and Thailand. Export share in GDP has increased by 46.79 percentage points in Thailand and by more than 60 percentage points in Malaysia and Singapore. The dependence of the Singaporean economy on export and import has maintained its steady increase all across four decades. In 1970s, export and import have respectively constituted 146.80% and 155.15% of GDP. In 2000s, the decline in the share of private consumption and investment by 17.53% and 14.62% was transferred to export and import sectors making them to comprise a staggering 209.16% and 155.15% of the GDP respectively. This increasing reliance on export and import sectors obviously makes these countries vulnerable to external shocks. Overall, the share of the public sector and investment has not exhibited a big difference from one decade to another in these countries.

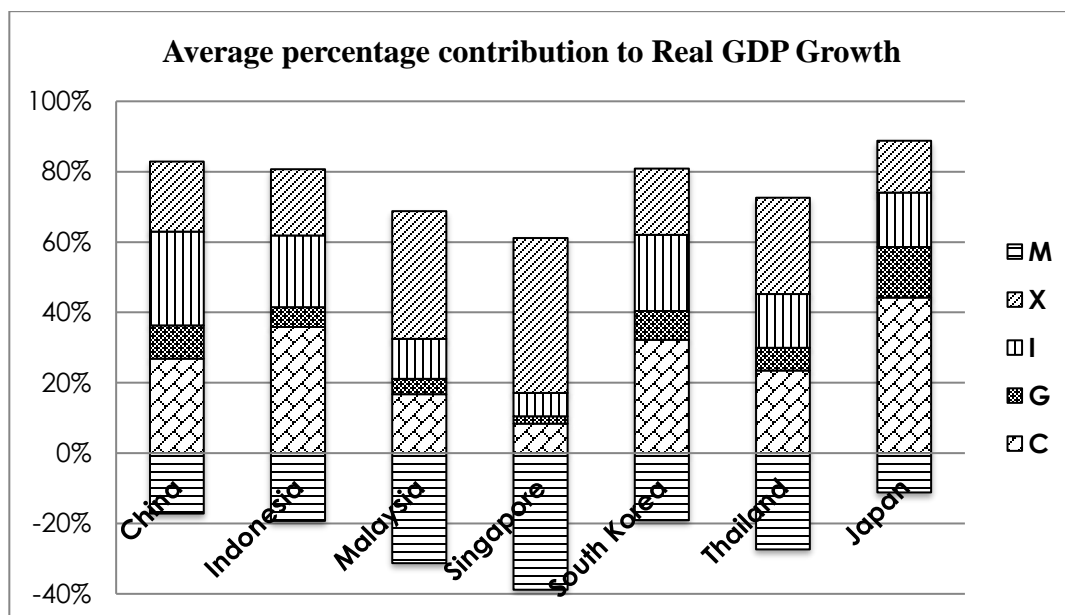
Figure 4. 1: Differences in GDP components share in developmental states between the 70s & 2000s



When we decompose their real GDP growth into its components, the export and import sectors once again emerge as sectors firmly dominated growth in developmental states. Considering the Japanese growth model being an exemplary for most East Asian countries, the contribution of each sector to real GDP growth of developmental states presented in Figure 4.2 evidently shows that these countries basically emulated the “how to produce” part and not the “what to produce” component of the Japanese experience. They have imitated the state structure that manages the production process and not the specific strategic areas or product lines the Japanese pursued. The differences in the composition of the sources of growth of other states with Japan clearly confirm this. While the major source of growth in the Japanese economy has been private consumption and other sectors have almost equally contributed to growth, none of the other states has owned a similar structure with the Japanese economy. Depending on their source of growth, developmental states in the study can be roughly divided into three. The first group comprises of South Korea, Indonesia and China where private consumption and investment has strongly contributed to growth. On the other end, we have Singapore and Malaysia; these two countries are export and import led economies. Thailand, in between these two groups, is located with comparably equal contribution of private consumption,

export and import sectors to growth. As the figure also shows, the closest to the Japanese type of economy are economies in the first group, especially South Korea.

Figure 4. 2: Average percentage contribution of GDP components to growth in developmental states (1972-2008)



Across four decades, the export and import sector on average has continued to dominate growth in the six countries that are developmental or known to have a developmental state legacy. Only in 1970s has consumption on average led growth. Right from 1980s onwards, there has been an explosion of the external sector while other sectors have fairly maintained a roughly constant percentage contribution to growth in all four decades (see Table 4.2). At country level, with the exception of Thailand where the import sector has dominated growth in 2000s, growth in all other states has been led by the export sector on average. This shift to the export sector has also been observed in Japan, which used to have a consumption led growth all across the three decades before the new millennium.

Table 4. 2: GDP components percentage contribution to growth across decades in developmental states

	C	G	I	X	M
1970s	48.35	13.38	38.60	42.44	42.77
1980s	47.51	11.54	36.08	53.15	48.29
1990s	45.90	11.14	29.14	86.52	72.71
2000s	46.35	12.61	33.07	117.48	109.51

4.3 SECTORAL DECOMPOSITION OF GROWTH IN DEVELOPMENTAL STATES

Developmental states have recorded major transformations in the sectoral composition of their economies. However, the sectoral transformation has followed different directions in these economies. Table 4.3 shows the average difference between the share of each sector in the beginning and final decades of the study period, revealing that the share of agriculture exhibited a significant decline in most states. The decline reaches as high as 25.78 percentage points in South Korea, 19.21 in China and 18.49 in Malaysia. Even Singapore, having a very low 2.11% share of agriculture in 1970s, has reduced this level by 2.03 percentage points in 2000s. Additionally, the distribution within the service sector shows that, in comparison to 1970s, the share of finance, real estate, public administration and defense, education and health sectors has increased in 2000s. The largest increase is recorded in South Korea (20.16) followed by China (14.14) percentage points. The shares of sectors related to construction, trade, restaurants and hotels are generally declining. Interestingly, the transformation of the economy from primary to secondary and tertiary sectors created two groups of countries among the developmental states. On one hand, we have China and South Korea, transferring the vast majority of the decline in the primary sector to the tertiary sector. On the other hand, we have Indonesia, Malaysia and Thailand where the majority of the shift is to the secondary sector.

Table 4. 3: Difference in the share of sectors in total value added between 2000s and 70s in developmental states

	Agri.	Ind.	Ser¹⁹	Ser1	Ser2	Ser3	Ser4
China	-19.21	-0.50	19.68	1.62	3.02	0.89	14.14
Indonesia	-15.74	10.25	5.49	2.02	-1.98	1.98	3.49
Malaysia	-18.49	11.74	6.77	-0.92	2.93	1.60	3.16
Singapore	-2.03	1.53	0.53	-2.90	-6.55	1.29	8.65
South Korea	-25.78	6.88	18.89	1.34	-4.86	2.28	20.16
Thailand	-16.70	11.80	4.88	-1.54	-3.99	2.24	8.22
Japan	-3.63	-9.78	13.39	-2.48	-0.25	1.57	14.54

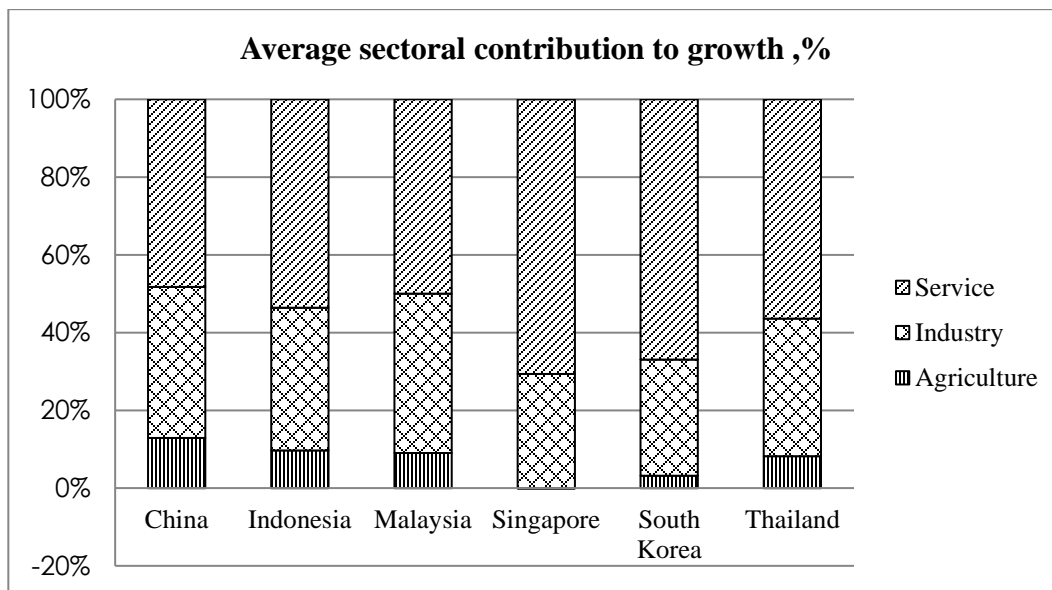
Note: Values are computed by taking the difference between the average share of a sector in last decade (2000s) and the first decade (1970s).

When we look at the sectoral contribution of each sector to growth, expectedly, the leading source of growth in all of the six states is the service sector. Agricultural sector's contribution to growth was below ten percent of the total average growth in most countries and reaches close to zero in Singapore and South Korea. Figure 4.3 shows that the primary and secondary sectors combined contributed nearly half of the total growth in China, Malaysia and Indonesia while the two sectors contributed only 29.31% in Singapore, 33.08% South Korea. The average percentage contribution of the industrial sector to growth was nearly equal in Singapore (29.35%) and South Korea (29.89%). The remaining four states had average contribution of the sector that ranges between 35.38% in Thailand and 40.98% in Malaysia. Depending on the composition of their sources of growth, two groups of countries appear from the data. The first group composes of countries that have a highly service sector led growth and weaker contribution of the other two sectors. Singapore and South Korea are countries with such characteristics. In the second group -although the service sector is still the largest source of growth- both the primary and secondary sectors have strong

¹⁹According to UN statistical commission the service sector is broadly divided into four sectors. These are: construction (ser1), wholesale, retail trade, restaurants and hotels (ser2), transport, storage and communication (ser3) and others (ser4) which included a wide range of sectors financial intermediaries, real estate, public administration and defense, education, health and others. The detail is presented in Appendix 2.

contribution to their overall economic growth. The remaining four states belong to the second group.

Figure 4. 3: Average sectoral contributions to growth in developmental states (1972-2008), percentages



Although all countries underwent sectoral transformation within the study period, comparison between the overall average and the last decade's contribution to growth of the three sectors shows that the agricultural sector's contribution to growth was below the overall all average in all countries. The industrial sector showed below average contribution in Indonesia, Malaysia and Singapore while the service sector contribute less than the overall average level in the 2000s in South Korea and Thailand.

4.4 FINANCIAL BALANCES AND GROWTH IN DEVELOPMENTAL STATES

When the Great Recession hit Europe, the primary target of criticism has been excessive government debt. Hein (2012, 2013) argues that in line with this explanation it is paradoxical for some European countries running budget surpluses, e.g., Spain and Ireland, and others with better debt positions than Germany, e.g., Portugal, to face the brunt of the crisis. This, Hein (2012, 2013) suggests, shows the

presence of other imbalances in the economy and motivates the use of a post Keynesian tool that divides the whole economy into three financial balances to study the core sources of the crisis. Hein (2012) further extends the concept and introduces three different types of growth regimes, which he prefers to call “types of capitalism under financialization.” This section deals with the financial balances of developmental states and different growth regimes they pursued in the study period.

This post Keynesian tool of analysis has been in use as early as 1970s. Professor Wynne Godley and his colleagues have used the concept in their models to study the British economy back then (Zezza, 2009). Models adopting the sectoral financial balance approach are recognized to have made one of the most precise predictions of the inevitability of a crisis such as the Great Recession (Fiebiger, 2013). Elsewhere, the approach has been employed to study EU economies (Hein, 2013), Turkey (Orhangazi and Özgür, 2015), the US (Zezza, 2009; Dos Santos and Silva, 2010; Parenteau, 2004), Greece (Papadimitriou et al., 2013), China (Sashi, 2016) and others. Here, we employ the financial balance approach and its application in identifying different types of growth regimes for developmental states.

The financial balance approach basically divides the economy into three sectors: private, public and external sectors. The first use of the framework is associated with the “New Cambridge” approach (Zezza, 2009). For this reason, it is alternatively known as “New Cambridge” or Sectoral Financial Balance approach (Fiebiger, 2013). The construction of the framework is based on the national income accounting identity. From the accounting identity (4.1), Dos Santos and Silva (2010) derives the financial balance equation as follows:

$$Y = C + I + G + NX \quad (4.1)$$

where Y is GDP, C is consumption, I is investment, G is government spending, and NX is net exports. Assuming that economic agents can be disaggregated into private

(p), government (g) and external (e) sectors, we have consumption and investment by the private sector ($C_p&I_p$) and by the government($C_g&I_g$) .

$$Y \equiv C_p + I_p + I_g + I_g + X - M \quad (4.2)$$

Introducing tax paid by private agents net of transfer (T) and transfer payments by the private sector T_{rpe} and the government T_{rge} to external economic agents, we have

$$Y - T - T_{rpe} \equiv C_p + I_p + C_g + I_g + T_{rge} - T + X - M - T_{rpe} - T_{rge} \quad (4.3)$$

Rearranging this yields

$$Y - T - T_{rpe} - C_p - I_p \equiv (C_g + I_g + T_{rge} - T) + (X - M - T_{rpe} - T_{rge}) \quad (4.4)$$

Equivalently, we have

$$PFB = CAB - GFB$$

where *PFB* denotes private financial balance, *CAB* denotes current account balance, and *GFB* denotes government financial balance. PFB constitutes disposable income net of expenditures by the private sector and GFB is net lending or borrowing by government. As the identity always holds, the interdependence entails that a change in either of the balances results in an equal change in another sector. A surplus in one sector of the economy is always accompanied by a deficit of same magnitude in the remaining sectors (Hein, 2012).

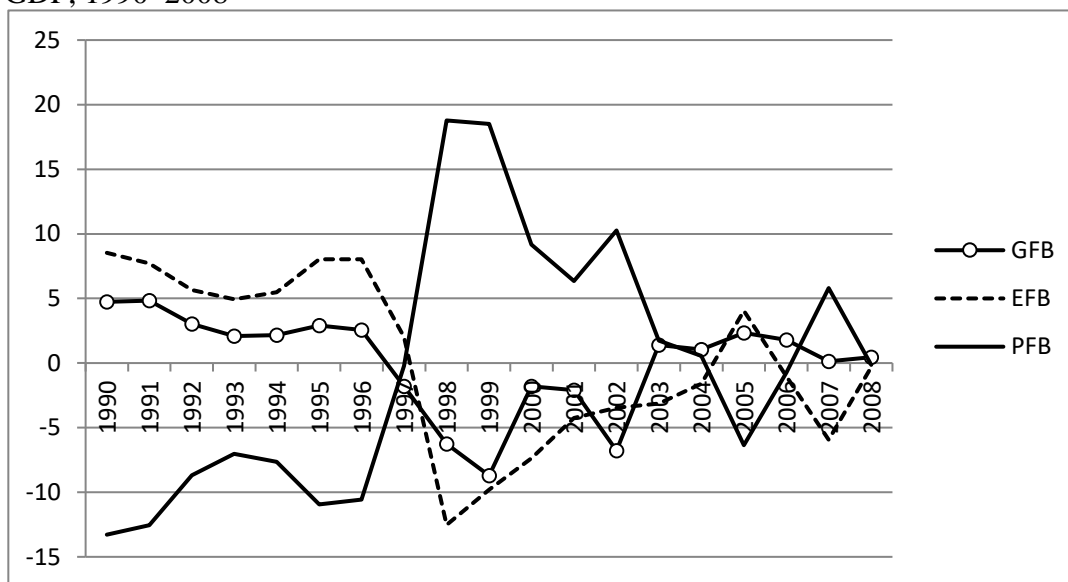
Financial balances are measured as shares of GDP and may assume negative, positive and zero values. In a ceteris paribus condition, “a negative (positive) financial balance means only that the agent/sector is getting less (more) liquid and more (less) fragile” (Dos Santos and Silva, 2010: 10). Moreover, Orhangazi and Özgür (2015: 12) note that “[r]unning a deficit/surplus in a single year, is not a source of instability; however, chronic deficits imply a build-up of liabilities, which can lead to financial fragility for that sector”. Zezza (2009) further links the movements in these balances directly to economic growth and argues that when any of the three sectors have positive balance, it is having net contribution to aggregate demand. Dos Santos and

Silva (2010), however, refute this as a special case as it only holds for the external sector.

Historical data of developmental states' sectoral financial balances display an interesting interplay of the three sectors in the study period. More importantly, the analysis shows the long lasting effect of the Asian financial crisis of 1997 on the status of three sectors and the structural transformation it has enforced on most of them. Nearly all of the countries that were seriously affected by the Asian financial crisis have permanently changed the positions of their sectoral balances. This has occurred in Thailand, Indonesia, Malaysia and South Korea. On the other hand, the effect of the crisis has resulted in insignificant sectoral financial balance realignment in China and Taiwan while it has affected Singapore in a very limited way. As Figure 4.4 and 4.5 shows, in the years leading to the 1997 financial crisis, private sector in Thailand and Indonesia have been spending more than their earnings, consequently forcing the private sector financial balance to run a deficit. The level of the deficit has reached as high as 13.28% of nominal GDP in 1990 in Thailand and 3.73% in 1996 in Indonesia. In addition to this, both countries have had positive external balances (current account deficit)²⁰ all across 1990s before the crisis. Although their governments have been net lenders and have had positive government financial balances, the accumulation of liabilities in the private and external sector has finally brought the financial crisis to their door steps in 1997. A similar scenario happened in South Korea and Malaysia; up until 1997, both countries have had positive government financial balances with deficits in the current account (surplus external financial balance) and negative private financial balances.

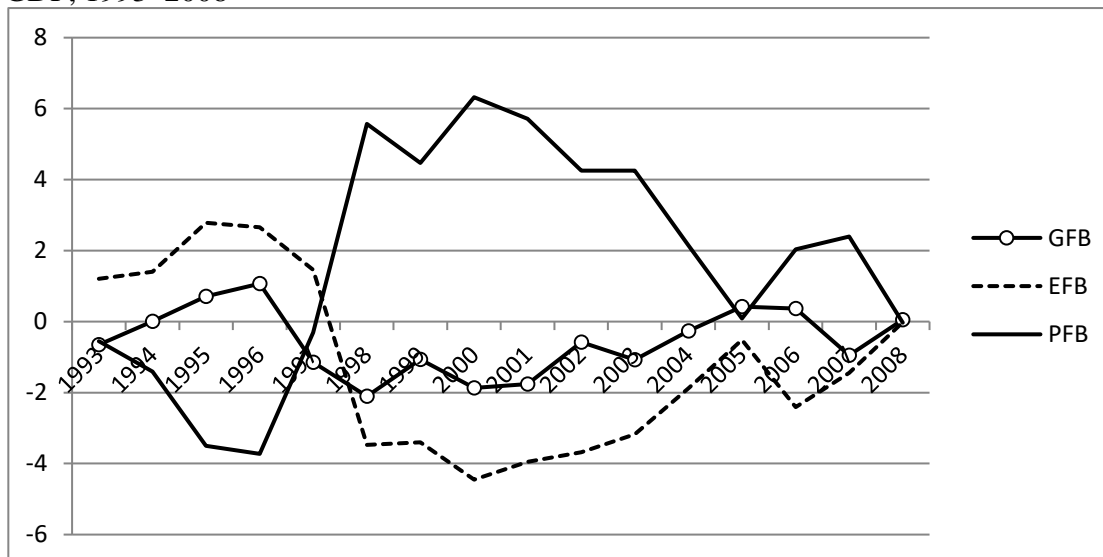
²⁰ Following Hein (2012, 2013) external financial balance (EFB) is inverted CAB so that the identity $PFB+GFB+EFB=0$ holds.

Figure 4. 4: Thailand: Sectoral financial balances as a percentage share of nominal GDP, 1990–2008



Source: Own computation based on World Development Indicator, World Bank Data

Figure 4. 5: Indonesia: Sectoral financial balances as a percentage share of nominal GDP, 1993–2008

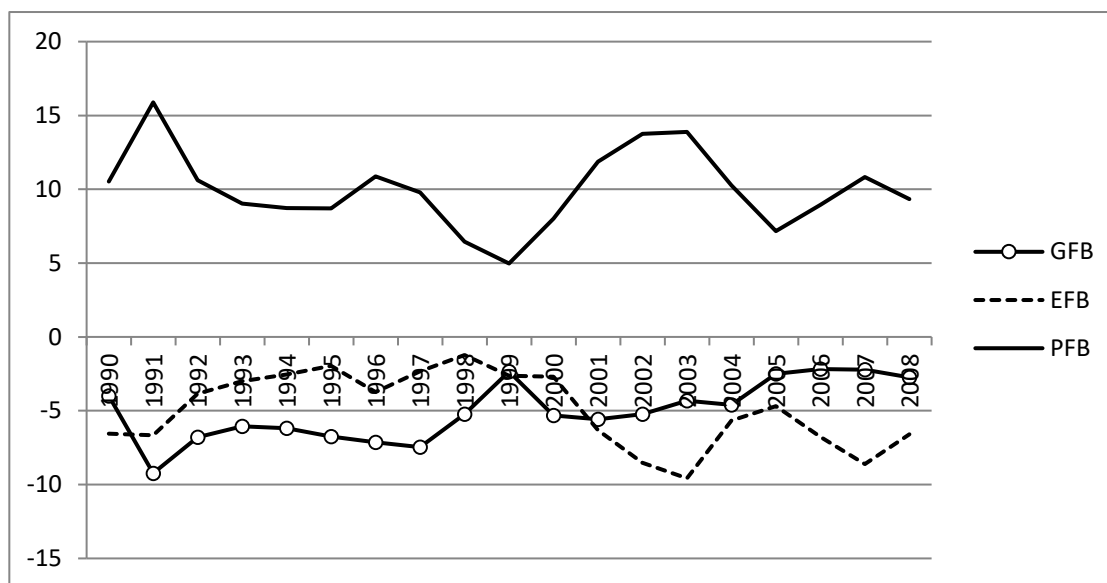


Source: Own computation based on IMF World Economic Outlook 2015

One group of developmental states have not been much affected by the crisis. Taiwan and China and to some extent Singapore are in this category. The financial balance positions of Taiwan and China presented in Figures 3.6 and 3.7. These figures not

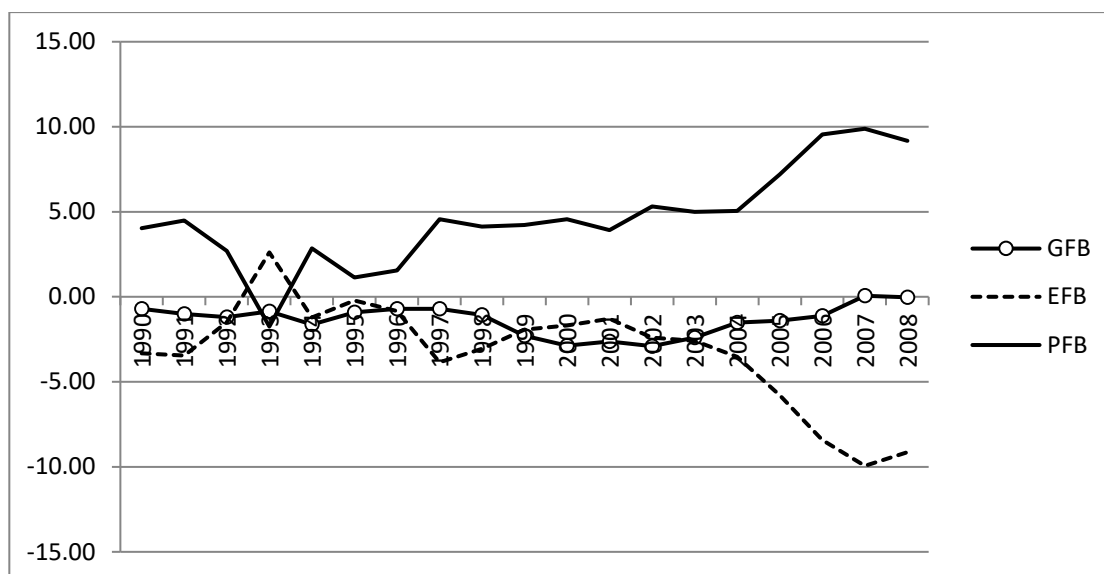
only show the largely unaltered pre- and post-crisis sectoral financial balances; they illustrates why these countries are the ones least affected by the financial crisis. In contrary to Thailand, Indonesia, South Korea and Malaysia, these countries, especially Taiwan and China, have not been accumulating debt in their private and external sectors. Singapore have had a negative private financial balance before the crisis, but the excessive surplus in the government and current account balances has helped Singapore absorb the shocks from the crisis.

Figure 4. 66: Taiwan: Sectoral financial balances as a percentage share of nominal GDP, 1990–2008



Source: Own computation based on World Development Indicator, World Bank Data

Figure 4. 7: China: Sectoral financial balances as a percentage share of nominal GDP, 1990–2008



Source: Own computation based on World Development Indicator, World Bank Data

Using levels of sectoral financial balances and aggregate demand components' contribution to growth figures, Hein (2012) distinguishes between debt-led consumption boom and export-led mercantilist economies and also adds domestic demand led economies as a residual category. Debt-led consumption boom economies are characterized by debt driven high private consumption. These economies typically have strong private consumption contribution to growth and comparably high real GDP growth regimes. Excessive debt financed private consumption consequently produces a negative private financial balance. It is also the case that they have a net export sector that weakly contributes to growth and often run current account deficits. They therefore have external financial sector in surplus. The exact counterpart of debt-led consumption boom growth is an export-led mercantilist economy. As the naming itself implies, these economies have comparably strong external sector with current account surpluses and higher contribution of net exports to growth. The private consumption sector spends less than its earnings, leading the private financial balance run a surplus. This, however, depresses the contribution of private consumption to growth. Hein (2012) uses these

classifications to study selected major world and EU economies and eleven large EU Economies (Hein, 2013).

Applying Hein's (2012, 2013) classification of economies on developmental states leads to interesting differences among states and across time. The most appealing part of the story is the aftermath of the financial crisis in 1997. Right after the crisis, the difference in the type of growth regime they pursue has disappeared, and all states have started following a growth paradigm so that they can be categorized similarly. In the decade prior to the crisis, Thailand, Indonesia, Malaysia and South Korea can be safely categorized under debt-led consumption boom economies. Average values of key macroeconomic variables recorded for a decade before the crisis is presented in Table 4.4. This Table clearly shows that, in these four countries, private financial balances have been negative, external balances have been positive, and consumption has had a strong contribution to growth with a negative net export contribution. Taiwan and China on the other hand have largely been export-led mercantilist countries. Within that decade, Singapore has displayed a unique combination of negative private financial balance and strong current account surplus (large external balance deficit) that qualifies the country to join neither of the two groups. When we go back in time and look at the sectoral financial balances of Singaporean economy in 1970s and early 1980s, we find that, from the beginning of the study period until 1987, the economy has been characteristically following debt-led consumption boom paradigm. Between 1987 and 1997, private financial balance have been continuously alternating between surplus and deficit; it is the averages of this decade presented in Table 4.5 that made the economy to be categorized in neither of Hein's classifications.

Table 4. 4: Averages of key macroeconomic variables before the crisis (1987-1997)

	Thai-land	Indon-esia	Malay-Sia	South Korea	Taiwan ²¹	China	Singa-pore
Private Financial Balance	-8.15	-1.90	-6.70	-2.15	11.11	1.90	-2.12
Government Financial Balance	2.50	0.00	1.10	1.79	-6.50	-0.96	13.78
External Financial Balance	5.65	1.90	5.60	0.36	-4.61	-0.93	-11.66
Private consumption contribution to growth	4.00	4.81	4.05	4.94		3.84	3.12
Net export contribution to growth	-0.79	-0.21	-0.53	-1.13		1.20	1.84
Real GDP growth	8.20	7.55	9.17	8.44		10.01	9.04

Source: own computation from WEO (2015) and World Economic Indicators, World Bank data

Table 4. 5: Averages of key macroeconomic variables after the crisis (1997-2007)

	Thai-land	Indon-esia	Malay-Sia	South Korea	Taiwan	China	Singa-pore
Private Financial Balance	6.41	3.72	15.99	0.84	9.62	5.88	11.62
Government Financial Balance	-1.90	-0.89	-3.67	1.84	-3.95	-1.82	7.48
External Financial Balance	-4.51	-2.84	-12.33	-2.67	-5.67	-4.07	-19.10
Private consumption contribution to growth	2.29	1.88	2.36	1.96		3.61	2.02
Net export contribution to growth	1.25	0.90	2.20	1.07		0.58	3.22
Real GDP growth	3.93	2.81	4.33	4.91		9.95	5.55

Source: own computation from WEO (2015) and World Economic Indicators, World Bank data

The post-crisis decade in developmental states economy has demonstrated a striking difference from the pre-crisis period. As the summary of key macroeconomic variables presented in Table 4.4 noticeably shows, all the seven countries in the study have shifted to an export-led mercantilist economy. The four debt-led consumption boom countries have compellingly transformed their economy into an export-led one. In line with the Hein's expectations, the high growth regimes of a debt-led consumption boom have been lost to a moderate export led real GDP growth. In all

²¹ Data on GDP components of Taiwan was unavailable both in our major source UN Statistics and World Development Index

the four countries, average growth has been halved from its previous level and the contribution of private consumption has been weakened while net export has strongly outperformed previous decade averages. The problem with an export-led mercantilist growth is, however, its vulnerability to external shocks and quick contagion from a crisis in debt-led consumption boom economies. Extracting lessons from the 2007 subprime mortgage collapse in the US, Hein (2013) noted that such economies will be affected on one hand from the decline in export demand and on the other hand from the devaluation of their capital in the financial markets of crisis stricken economies.

4.5. CONCLUDING REMARKS

Despite the fact that developmental states have common characteristics in how they organize production –i.e. in their political approach to growth– the kind of economy the system produced differs among them. The compositions of and dynamics in their aggregate demand, their sectoral composition and their financial balances clearly demonstrate that there is no prototype type of economy that particularly distinguish developmental states from others. Although they closely resemble each other on how they organize production, these states are exceptionally pragmatic on their decision on what to produce. This has resulted in different types of economies. In addition to different reasons mentioned in the literature regarding the difficulty of the transferability or replicability of developmental states model for other contexts, the fact that they have pursued divergent paths to prosperity makes their model of growth to be even more sophisticated to emulate.

CHAPTER 5

AUTOCRATIC REGIMES AND CROSS-COUNTRY GROWTH AND INCOME DIFFERENCES

The political economy literature has come a long way from its common identification of autocracies as a residual category and neglecting their heterogeneity and diversity. These differences among autocratic regime types are used to answer major pending research questions in the field. Different studies try to understand links between autocratic regime types and conflict behavior, political survival and democratization (Chieub et al. 2010). Some others investigate issues pertinent with government quality, regime stability and duration within autocratic regimes (Wahman et al., 2013). As the recognition of the importance of heterogeneities in autocracies only very recent, knowledge expansion in this literature has been limited. In this regard, Wahman et al. (2013: 32) rightly complain that “[t]he field has hitherto been somewhat preoccupied with the issue of ‘regime stability’, but there are many understudied aspects of authoritarian regime types concerning their nature, origin and consequences.”

Among these understudied topics are the consequences of autocratic regime types on economic outcomes. There does not exist many works on this subject, and the repeated citation of a study by Wright (2008) confirms that the literature is narrow in this side. Majority of the studies on political regimes and economic outcomes adopt dichotomous classification of regime types as democracies and non-democracies. The results of these studies consequentially compare a relatively highly homogenous polity (democracies) against an extremely heterogeneous one (autocracies). Bearing in mind the political and economic differences within autocracies discussed all across Chapter 3, such comparisons, therefore, tend to render less contribution to our understanding of the casual relationship between political regimes and economic outcomes. In this respect, Wright (2008: 342) suggests that the “answers to many of the enduring questions in comparative political economy” conceivably depends on

“careful study of distinctions between different types of authoritarian polities.”

Cognizant of this, we try to exploit the distinctions among autocracies in our attempt to figure out the effect of political regime on economic outcomes. This chapter specifically addresses the question of whether autocratic regime types explain differences in economic growth and income levels for a large sample of countries. It approaches the question in such a way that plausible reflections will be made on how each autocratic regime type is compared to democracies and how each autocratic regime’s performance is compared to another regime in the level of income and economic growth.

We look at two different outcome variables that proxy economic performance; these are real GDP per capita level and its growth rate. We use three different autocratic regime type classifications to construct our regime dummies. The multiplicity of estimation techniques, the diversity of datasets and types, and the number of independent variables used in the analysis bring the total number of econometric estimations made in our study to reach close to three hundred.

Few papers conducted to measure the effect of autocratic regime type on economic growth mainly pursue an *institutionalist* approach. The approach has put overriding emphasis on how political institutions are distinct in autocracies and how they affect economic and political outcomes (Wright, 2008). The essence of their argument lies in the conviction that well institutionalized autocratic regimes perform better than those that run a poorly institutionalized state. Implicit in their argument is the presumption that, the more the political institutions in a regime resemble those in democratic polities, the higher the level of income and economic growth will become. This line of argument is therefore an extension of the larger argument suggesting that the superiority of democracies over autocracies in economic performance originates from differences in political institutions between the two regime types. As Acemoglu and Robinson (2012) demonstrate, nations with participatory politics produce inclusive institutions and economically perform better than those that are characterized by extractive institutions. Although institutions in autocracies are

assumed to be more extractive than those in democracies, different regime types in autocracy can also be roughly ranked depending on the extractive-ness of their institutions.

An earlier work that distinguishes dictatorial regimes in terms of their level of institutionalization can be traced back to the work of Przeworski and Limongi (1993). They differentiate between autocracies and bureaucratic dictatorships based on the level of citizens' "property right to fiscal residuum" (Przeworski and Limongi, 1993: 58). In bureaucratic dictatorship, the state has no legal rights against citizens to appropriate fiscal residuum. On the other hand, citizens are deprived of such legal privileges in autocratic regimes. Jamali et al. (2007) further generalize this distinction in terms of the presence of codified and announced laws and empirically show that bureaucracies perform better in their economic growth than autocracies.

Another institutional approach is followed by Gandhi (2008; 2010). She distinguishes between broadly institutionalized autocracies that have political institutions such as multiple political parties and legislatures from narrowly institutionalized autocracies. Econometric estimations of their effects on economic growth reveal that autocracies with broad institutions recorded higher growth compared to narrowly institutionalized autocracies. Relatedly, Wright (2008) focuses on legislature as a political institution to examine its effects on economic outcomes in autocracies. Beyond the mere presence of legislatures, Wright (2008) argues, differences in constraints they impose on the state leadership explain growth rate differences among autocratic regime types. Those with binding legislatures perform economically better than autocracies with nonbinding legislatures. At regime level, he shows that, compared to personalist regimes where institutions are less binding, single party and military regimes with binding legislatures record higher economic growth rates. Another earlier work by Durham (1999), which actually is less rigorous in categorization of regime types, emphasizes the binding-ness of institutions and their effect on economic growth. He argues that, within authoritarian polities, single party regimes that keep their rulers' discretionary powers limited perform economically better than party-less autocratic regimes.

The contribution of Gandhi (2008; 2010) and Wright (2008) on theoretical foundations of the link between political regimes and economic growth helps in constructing hypotheses for our estimations. The first hypothesis that can be drawn from their *institutionalist* analysis is related to the distinction between democracies and autocracies in promoting economic growth. As democracies have broadened institutions and binding legislators to constrain leaders, they economically outperform autocracies. The second hypothesis is associated with the presence and level of these institutions within autocracies. In the CGV classification of autocracies that include monarchic, military and civilian autocracies, it can be hypothesized that regimes that have a more personalist behavior such as monarchic regimes will show poorer economic performance than expectedly more institutionalized civilian and military regimes. Under the GWF classification, dominant party based and military regimes are expected to have higher economic growth rates than personalist and monarchic regimes. Finally, in the HTW classification, electoral regimes have more broadened legislatures and are therefore expected to perform better than monarchic and military regimes.

On the other side of the spectrum, nonetheless, there are contending theoretical perspectives that challenge the argument that the presence of constraints on the sovereign action is conducive to good economic performance. The *state autonomy perspective*, for example, suggests that leaders with fewer and milder constraints on their actions favor growth more than other types of regimes. The miraculous economic success stories of developmental states and benevolent dictators discussed in the previous chapter is best example in this regard. Leaders of these states capitalized on their autonomy to craft state-led development policies that successfully brings growth and prosperity to their citizens²². This perspective brings to attention the possibility of getting results that are contrary to the hypothesis stated above. Yet another hypothesis regarding the relationship between regime types and economic growth can be deduced from what Sirowy and Inkeles (1990) categorize as *skeptical perspectives*. It suggests that economic performance is indifferent to political regimes

²² See White and Wade (1988) and World Bank (1993) on East Asian countries in general; specific state-led industrialization policies in Japan in Johnson (1982); Amsden (1989) on South Korea; Rodrik (1994) on South Korea and Taiwan; and Gilson and Milhaupt (2011) on benevolent autocrats.

and good or bad performance can happen in any form of regime type. The inconclusiveness of the theoretical discussion, thus, makes the attempt to empirically test the type of relationship autocratic regime types and economic performances have ever interesting.

Our study shows that the effect of autocratic regime types on economic performance depends on the type of economic outcome variable, the data type (balanced vs unbalanced), the time frame (short run vs long run), the autocratic regime classification and the model specifications we use in our analysis. Accordingly, the superiority of the *institutionalist* over the *state autonomy* explanation or over *skeptical perspective* or otherwise also depends on these factors. The multiplicity of the models we estimated provides us with more details on when and how autocratic regime types do and when and how they don't explain the differences in economic growth and income levels.

Our results on the effect of autocratic regime on economic growth rate generally suggest that democratic regimes economically grow faster than any type of autocratic regimes. In the balanced data of 70 countries for 37 years from 1972 to 2008, our finding shows that civilian autocracies perform better than military autocracies in CGV classification and monarchs have higher annual growth rates than personalist autocracies in GWF classification. In the unbalanced data with 99 countries, we find that personalists have a lower annual growth rate than military autocratic regimes under GWF regime classification. In the transformed data with five-year moving average growth rate, we once again find that monarchic regime grows faster than personalist regime in the long-run. This data transformation has an effect on the number and strength of statistically significant regime type dummies in CGV and HTW classifications. The result we obtain are significantly affected by the inclusion of time effects into the model than by the introduction of exogenous covariates such as latitude, past colonial ruler, percentage of specific religion followers, resource rent, and South America and East Asian dummies. Once time effects are included, autocratic regime types cease to explain cross-country growth differences.

The second section of this chapter reflects on the question whether autocratic regime

types explain cross-country income level differences. Here we build on the work of Acemolgu et al. (2017) model to address the question. Our study once again reiterated the caution researches has to make on the use of data type, time span, regime classification, estimation method and model specification before reaching conclusion on the interaction between income levels and political regime types. Estimation our dynamic panel model using within, difference and FOD GMM estimators comparably produced more statistically significant regime dummies than system GMM estimators. In the CGV autocratic regime classification, we find that, compared to democracies, being a monarchic autocracy entails smaller short-run and long-run percentage income decline than civilian and military forms of autocracies. In the GWF and HTW classifications, however, the relatively more institutionalized dominant party and electoral autocratic regime types outperforms other autocratic regime types in their category. They use of system GMM reduces the number of significant autocratic regime types, thus, makes the comparison of income level among autocracies more difficult. Nonetheless, it is the inclusion of time effects to our model that significantly affect the power of autocratic regimes' to explain cross-country income differences. Similar to the growth difference, once time effect dummies are included to our models, the capacity of autocratic regime types to explain income differences significantly diminishes. These results strongly suggest that patterns in real income per capita are mainly determined not by heterogeneity within autocracies but by other omitted factors.

5.1 GROWTH RATE DIFFERENCES

5.1.1 Data and Methodology

The Data

The present analysis on the effects of regime types on growth and income difference is conducted in a very conscientious manner. Previous researches on political regimes and economic outcomes have given different answers to the same question. The differences in empirical research emanates from several reasons. Data used, variables selected, statistical methods adopted, sample sizes and other issues are some of the factors causing these discrepancies in conclusions. In our attempt, precautions are

followed to make sure that the findings of this research are as reliable and robust as possible.

First, we carefully organize the type of data used in this research. The autocratic data list mentioned above is used as a starting point to produce balanced and unbalanced datasets of autocracies within the study period from 1972 to 2008. In compiling both datasets, any country that had an autocratic experience within the study period is first identified as a potential candidate. From these countries, those that have data for the entire period are included in the balanced dataset, and those that failed to appear in all regime classifications for some reason in any particular time are included in the unbalanced dataset. Newly independent countries in Africa, newly established nation states in Eastern Europe and countries that ceased to exist any time within the study period like Eastern Germany, USSR, and North and South Yemen are among countries that we exclude. In addition to these, some countries like Somalia have encountered state failure and some other like Afghanistan and Iraq have faced foreign occupation and exited the dataset in the later years of the study.

In the balanced dataset we have got 2672 observations and 71 countries for 37 years from 1972 to 2008.²³ The summary statistics for the growth rate of GDP per capita are presented in Table 5.1. Expectedly, it shows that democratic regimes in all of the three autocracy classifications have higher average growth rates. Besides, military regimes in CGV and HTW and personalist autocracies in GWF classification constitute regime types with the lowest mean GDP per capita growth rates. In terms of growth volatility which we approximate by the standard deviation of the pooled data in Table 5.1, democracies have the least average fluctuation in their growth rates and monarchic regimes across all classifications display the highest volatility.

²³ The sources of data used in this chapter are presented in Appendix E.

Table 5. 1: Summary of GDP per capita growth rates across regime types (balanced dataset)

Regime types	Mean	St. Dev	Max	Min	N
Democracy CGV	3.09	6.93	52.38	-36.64	871
Civilian CGV	2.06	7.64	38.9	-37.36	684
Military CGV	1.35	8.54	48.26	-69.73	824
Monarchic CGV	2.36	11.36	46.35	-44.41	248
Democracy GWF	3.08	6.80	52.38	-36.64	802
Dominant Party GWF	2.77	8.06	48.26	-33.5	811
Personalist GWF	-0.18	7.66	27.31	-37.36	407
Monarchic GWF	2.35	11.34	46.35	-44.41	249
Military GWF	1.60	8.56	30.98	-69.73	358
Democracy HTW	2.95	5.88	28.69	-36.64	729
Electoral HTW	2.41	7.74	52.38	-33.5	982
Military HTW	1.05	9.30	48.26	-69.73	670
Monarchic HTW	2.34	11.41	46.35	-44.41	246

The inclusion of some more countries to the dataset that have continuous data for some period of the study time for different reasons previously outlined increased our total observation point to 3272, the number of countries 99, the average year approximately to 33 and our data unbalanced. The summary of the per capita GDP growth rates shown in Table 5.2 largely display similar property with the balanced dataset. Expectedly, democracies have the highest and less volatile per capital growth rates all across the three regime classifications. Except in GWF, military regimes were found to be the least performers and monarchic autocracies in all classifications have the most volatile per capita growth rates.

Table 5. 2: Summary of GDP per capita in PPP growth rates across regime types (unbalanced dataset)

	Mean	St. Dev	Max	Min	N
Democracy CGV	3.04	6.99	52.38	-36.64	914
Civilian CGV	1.67	9.57	45.03	-67.20	1101
Military CGV	1.58	8.84	48.26	-69.73	991
Monarchic CGV	2.27	13.03	96.10	-44.41	266
Democracy GWF	3.03	6.90	52.38	-36.64	863
Dominant Party GWF	2.44	8.32	48.26	-37.20	1093
Personalist GWF	0.54	10.82	47.00	-67.20	660
Monarchic GWF	2.26	13.01	96.10	-44.41	267
Military GWF	1.40	8.43	30.98	-69.73	389
Democracy HTW	2.92	5.90	28.69	-36.64	767
Electoral HTW	2.13	9.02	52.38	-54.00	1430
Military HTW	1.12	9.92	48.26	-69.73	811
Monarchic HTW	2.25	13.08	96.10	-44.41	264

The Model

Our panel growth model has benefited from the rare work of Wright (2008) who has estimated the interaction between autocratic regime types and per capita income growth in 80 authoritarian countries. We made two important amendments to his model. First, we make democracy our reference category compared to his use of personalist autocratic regime in the study. Making democracy as the reference category helps us learn two important lessons in the political regimes-cum-growth analysis. First, while previous studies compare democracy and autocracies at aggregate level, here we are able to learn how specifically autocratic regime types are compared to democracy in their performance in promoting economic growth. This by itself is an important contribution to the existing political economy literature. Second, the sign and magnitude of coefficient parameters of regime types can also help us identify good and bad performers among autocracies.

Our second amendment is in relation to his selection of data estimation techniques. Wright (2008: 340) pooled the data and estimates the model with “OLS with panel

specific AR (1) correlation and panel corrected standard errors”. His model fails to account for country-fixed effects thereby risking major bias in results. Thus, our model made the two ramifications and tests the hypotheses stated earlier using the following panel model:

$$g_{it} = \beta_1 D_{1,it} + \beta_2 D_{2,it} + \beta_3 D_{3,it} + \beta_4 D_{4,it} + \sum_{j=1}^p \gamma_j x_{it} + \alpha_i + \theta_t + \varepsilon_{it}, \quad (5.1)$$

where g_{it} is the growth rate of GDP per capita in purchasing power parity corrected terms in country i at time t . D_1 to D_4 are binary dummy variables representing autocratic regime types. The democratic regime type is omitted and taken as the reference category. More specifically, for GWF classification, $D_{1,it} = 1$ if regime type is personalist, and 0 otherwise; $D_{2,it} = 1$ if regime type is dominant party autocracy, and 0 otherwise; $D_{3,it} = 1$ if regime type is military, and 0 otherwise; $D_{4,it} = 1$ if regime type is monarchic, and 0 otherwise. For CGV classification $D_{1,it} = 1$ if regime type is civilian, and 0 otherwise; $D_{2,it} = 1$ if regime type is monarchic, and 0 otherwise; $D_{3,it} = 1$ if regime type is military, and 0 otherwise; and $D_{3,it} = 1$ if regime type is monarchic, and 0 otherwise. Finally, for HTW classification, $D_{1,it} = 1$ if regime type is electoral, and 0 otherwise; $D_{2,it} = 1$ if regime type is monarchic, and 0 otherwise, $D_{3,it} = 1$ if regime type is military, and 0 otherwise.

The panel model in (5.1) has a standard interpretation; α_i represents the time invariant country effects, θ_t denotes time effects, and x_{it} s are control variables. The idiosyncratic error term is assumed to be $\varepsilon_{it} \sim N(0, \sigma^2)$.

Regarding the methodology employed to analyze these data, our purpose is to give a comprehensive answer to autocratic regimes-cum-economic outcomes relationship. Therefore, we use different forms of growth of real GDP per capita in purchasing power parity corrected terms as our dependent variable. Here, we implement the analysis on growth rate differences both with annual growth rates and with five-year moving averages to differentiate regime effects on short-term fluctuations from those on the long-run secular component of growth rates.

5.1.2 Results

Estimation results in our balanced panel under CGV classification are presented in Table 5.3. In line with the theoretical expectation, the superiority of democratic regime over autocracies in having higher average GDP per capita growth rates are observed across all estimations. Despite the mixed results in the level of statistical significance of most regime types, estimations produce negative signs for all coefficient parameters of autocratic regime dummies. Under the baseline estimation in column 1, military regime's coefficient is statistically significant and civilian regimes are weakly significant at 10% significance level while the coefficient for monarchic regime was found to be statistically insignificant. It suggests that, compared to democracies, growth is lower in both military and civilian autocracies and, among autocracies, the growth in civilian regime is higher than that of military regimes.

In the remaining columns from 2 to 4, three exogenous variables that are assumed in the literature to explain the fundamental differences in economic growth are included. The first of these three is religion. Religion, beyond being set of belief system, the different rules and values it promotes affects peoples' behavior and the nature of institutions. In line with this, Weber (1930), for example, stressed the role of Protestant ethics in flourishing capitalism in Europe. There are also studies that underline the key role Confucianism in the miraculous economic success of Eastern Asian countries (Castells, 1992). On the other side, Kuran (2004) blames some Islamic religion laws behind the formation of "Middle East institutions" that contributed to the underdevelopment of the region. We therefore added percentages of followers of the four major religions of the world (Christianity, Islam, Buddhism and Hinduism) as control variables in order both to check the robustness of our results and to test the role of religion in explaining cross-country growth rate differences in our data.

Our second exogenous covariate is geography, measured as the latitude of country centroid. The central argument that links geography to economic development is based on the observation that many rich countries are located in temperate areas and

large number of poor countries is concentrated in the tropics. Acemoglu and Robinson (2012) suggested that the major explanations the geography hypothesis is related to the prevalence of deadly diseases, soil productivity, and plant and animal species endowments. It is argued that people at higher latitude encounter less deadly disease, productive soil and more species that can be domesticated and used for increasing agricultural productivity. Accordingly, we also test this hypothesis in our study.

The third exogenous covariate is past colonial legacy. It measures whether being ruled by a specific colonial ruler has an effect on current economic growth rates. In this regard, Acemoglu and Robinson extensively argue in Acemoglu et al. (2001) and in their subsequent works on the relevance of differentiating among the different European colonization policies and its impact on the nature of institutions – consequently on current development – in colonized countries. We have, for example North et al. (2000), that suggest the development superiority of British colonies over other European colonies, and Kohli (1994) who applauds the role of Japanese colonization the impressive growth of South Korea in the 1970s. In this thesis, thus, we study the interaction between the three largest colonial rulers in our data namely British, France and Spain with income growth rates.

The result of the inclusion of the three exogenous covariates is presented from column (2) to (4). Although it has shown a statistically significant positive effect on growth rates, the inclusion of the latitude of country centroid do not create any change in the results obtained in the baseline estimation in column 1. However, when colonial legacy dummies are included in column 3, the monarchic regime in CGV becomes weakly significant at 10% significance level. British and France colonial rules are associated with negative annual economic growth while Spanish rule produce a statistically insignificant coefficient parameter. In the 4th column, when religion covariates are introduced to the model, regime types in CGV classifications more or less reacted the same way as in column 3.

Next, we investigate if results are driven by characteristics that are generally

associated with specific groups of countries. For this purpose, we introduce

- resource rent as a control variable to capture the effect of the rent collected from natural resources in autocracies
- a dummy variable for East Asia, i.e., the region where economies exhibited miraculous growth, and
- a dummy for South America, i.e., a region with large collections of military autocracies.

The results presented in column 5 show that higher resource revenue and being an East Asian economy is associated with higher economic growth rates while South American dummy is found to be insignificant to determine growth in our model.

The inclusion of these controls significantly change previously obtained results. Civilian regime becomes the only statistically significant regime, and military regime completely loses its significance. These controls also absorb strong statistical significance of colonial legacy dummies of models 3 and 4.

Table 5. 3: Effects of CGV autocratic regime types on GDP per capita growth, balanced panel

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Monarchic CGV	-0.701 (1.000)	-0.782 (1.066)	-0.754 (1.022)	-0.847 (1.178)	-1.453 (1.482)	-0.234 (1.027)	-0.514 (1.290)
Military CGV	-1.660** (0.761)	-1.654** (0.753)	-1.442* (0.767)	-1.539* (0.787)	-1.687* (0.866)	-0.840 (0.791)	-0.831 (0.854)
Civilian CGV	-1.067* (0.575)	-1.096* (0.571)	-0.828 (0.603)	-0.869 (0.623)	-1.71*** (0.549)	-0.124 (0.660)	-0.708 (0.602)
Latitude		0.0270** (0.0105)	0.0114 (0.0167)	0.00529 (0.0151)	0.0272 (0.0194)		0.0267 (0.0177)
UK colony			-1.625* (0.886)	-1.899** (0.796)	-0.308 (1.051)		-0.548 (0.970)
French colony			-2.22*** (0.774)	-2.69*** (0.712)	-1.142 (0.889)		-1.427* (0.864)
Spanish colony			-0.825 (0.971)	-0.116 (1.023)	0.517 (1.049)		0.540 (0.990)
Christian %				-2.059 (1.513)	0.485 (1.871)		-0.189 (1.626)
Islam %				-0.493 (1.305)	0.894 (1.404)		0.345 (1.218)
Buddhism %				1.249 (1.554)	2.044 (1.653)		1.219 (1.354)
Hinduism %				-2.720 (1.969)	1.093 (2.219)		-0.271 (1.785)
Resource rent					0.119*** (0.0452)		0.0794* (0.0423)
East Asia					3.291*** (0.767)		3.05*** (0.670)
South America					1.317 (0.820)		1.414* (0.781)
Constant	3.072*** (0.431)	2.660*** (0.484)	3.732*** (0.843)	4.947*** (1.292)	1.018 (1.852)	3.278*** (1.075)	2.367 (1.989)
Observations	2,627	2,590	2,590	2,590	2,401	2,627	2,401
R-squared	0.05	0.13	0.276	0.366	0.373	0.041	0.470
Countries	71	70	70	70	69	71	69

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The Hausman test statistics is 0.22 (p-value=0.9747) therefore selects random effect model as the preferred modeling. The results are presented in seven columns. In column 1 the baseline model is estimated without any control variable and without time effect variables. Control variables are introduced to the model in the remaining columns except in column 6. In column 2, the latitude of country centroid (Latitude), in column 3 dummies for the three large colonial rulers (British colony=1 if a country was British colony, 0 otherwise; French colony=1 if a country was French colony, 0 otherwise and Spanish=1 if a country is Spanish colony, 0 otherwise) and in column 3, the percentage of followers of the four largest religions Christianity (Christian %), Islam (Islam %), Buddhism (Buddhism %) and Hinduism (Hinduism %) are included as control variables. The 5th column further added the percentage share of rent collected from natural resource (Resource rent), East Asian dummy (East Asia=1 if a country is from East Asian, 0 otherwise) and South American dummy (South American=1 if a country is from South America, 0 otherwise). The 6th and 7th columns present the results of models in 1st and 5th with time effects respectively.

The last two columns display results of the baseline model in column 1 and the full model in column 5 with time effects, respectively. The inclusion of time effects clearly affects our results. These time effects absorb autocratic regime types' explanatory power on growth rates. None of the autocratic regime types statistically significantly affect economic growth, regardless of the presence of control variables. The only strongly significant variable in column 7 is the East Asian dummy while resource rent and South American dummy are weakly significant at 10% significance level.

The results from GWF classification presented in Table 3A in Appendix 3 tells a different story about monarchic and military regimes. The coefficient for monarchic regime in GWF is statistically strongly significant and that of personalist regimes is weakly significant at 10% significance level. In comparison to democratic regimes, it suggests that personalist regimes annually grow at rate 0.453% [-0.857-(-1.310)] lower than that of monarchic regimes.

In column 2 with religion controls, the results of the baseline regression reappear in a more statistically significant manner. Only monarchic and personalist regimes were found to be statistically significant to explain economic growth differences and once again monarchic regime was found to perform better than personalist autocratic regimes. The fact that geography and colonial legacy variables are time invariant made them to drop out in the fixed model estimation employed for GWF classification.

Column 3 presents the model with resource rent as an additional control variable. Higher revenue from resource rent is still positively associated with a positive economic growth. Its inclusion interestingly makes personalist autocracy dummy insignificant. When time effects are introduced in column 4 and 5, as was the case in CGV classification, all autocratic regime types cease to explain economic growth differences.

Our final estimation of the effect of autocratic regime types on economic growth is done using the HTW regime classification. The model in column 1 Table 3B in Appendix 3 shows that regression on HTW classification give results closer to the CGV classification in that military regime was found to significantly explain growth differences. Electoral and Monarchic regimes, however, are found to be statistically insignificant. The same trend that a statistically strongly significant military regime and insignificant electoral and monarchic regime types is observed all across the different models with control variables from column 2 to column 5 is observed all across the while the coefficients for monarchic and electoral regimes were statistically insignificant. In a complete similarity with CGV and GWF classification, the inclusion of time effects in the baseline model and the full control model once again drive out any statistically significant causal relationship between autocratic regime types in HTW classification and annual real per capita income growth rates.

The above estimations and discussions showed us the short run interaction between annual GDP per capita growth rates and autocratic regime types. Since annual growth rates are prone to large fluctuations especially in autocracies, modeling of economic growth using annual growth rates may not give us sufficient information on the persistent relationship between the two. For this purpose, in a departure from the usual practice in the literature, we computed the five-years moving averages of the growth rates of GDP per capita using equation 5.2 in order to flatten the short-term fluctuations in the annual data and to try to map the long-term relationship between growth and autocratic regime types.

$$\hat{g}_{it} = \frac{\sum_{t=1}^5 g_{it}}{5} \quad 5.2$$

When growth rates are smoothened using equation 5.2, some interesting changes have occurred to the growth-regime type relationships in comparison to the untransformed models discussed previously. While there was a decline in the number and level of statistically significant coefficients in CGV and HTW regime classifications, GWF classification has emerged stronger in explaining long-term per capita income growth differences among regimes.

Table 5. 4: Effects of CGV autocratic regime types on long run GDP per capita growth, balanced panel

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Monarchic CGV	-1.088 (0.906)	-1.119 (0.969)	-1.168 (0.964)	-1.221 (1.114)	-1.251 (1.162)	-0.952 (0.922)	-0.719 (1.041)
Military CGV	-1.577* (0.924)	-1.600* (0.921)	-1.512 (0.930)	-1.557 (0.954)	-1.594 (1.041)	-1.032 (0.990)	-1.031 (1.106)
Civilian CGV	-0.794 (0.632)	-0.778 (0.633)	-0.677 (0.653)	-0.719 (0.669)	-1.49** (0.607)	-0.134 (0.759)	-0.822 (0.719)
Latitude		0.0228** (0.0113)	0.00653 (0.0171)	0.00138 (0.0160)	0.0147 (0.0208)		0.0199 (0.0188)
UK colony			-1.509* (0.860)	-1.73** (0.772)	-0.327 (0.932)		-0.622 (0.854)
French colony			-2.07*** (0.777)	-2.44*** (0.719)	-0.917 (0.897)		-1.226 (0.899)
Spanish colony			-0.981 (0.970)	-0.245 (1.004)	0.116 (0.984)		0.290 (0.920)
Christian %				-2.248 (1.917)	0.422 (2.345)		-1.276 (2.570)
Islam %				-0.901 (1.676)	0.682 (1.818)		-0.695 (2.051)
Buddhism %				1.049 (2.103)	1.687 (2.014)		0.140 (2.081)
Hinduism %				-1.429 (3.288)	1.737 (3.329)		-0.700 (3.200)
Resource rent					0.0510 (0.0479)		0.0155 (0.0531)
East Asia					3.53*** (0.885)		3.043*** (0.888)
South America					0.997 (0.777)		1.202 (0.736)
Constant	2.806*** (0.466)	2.44*** (0.516)	3.583*** (0.874)	4.94*** (1.738)	1.503 (2.484)	6.06*** (0.779)	6.305** (2.934)
Observations	2,415	2,381	2,381	2,381	2,228	2,415	2,228
R-squared	0.05	0.107	0.229	0.315	0.3895	0.041	0.4822
Countries	71	70	70	70	69	71	69

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The Hausman test statistics is 0.45 (p-value=0.930) therefore selects random effect model as the preferred modeling. The results are presented in seven columns. In column 1 the baseline model is estimated without any control variable and without time effect variables. Control variables are introduced to the model in the remaining columns except in column 6. In column 2, the latitude of country centroid (Latitude), in column 3 dummies for the three large colonial rulers (British colony=1 if a country was British colony, 0 otherwise; French colony=1 if a country was French colony, 0 otherwise and Spanish=1 if a country is Spanish colony, 0 otherwise) and in column 3, the percentage of followers of the four largest religions Christianity (Christian %), Islam (Islam %), Buddhism (Buddhism %) and Hinduism (Hinduism %) are included as control variables. The 5th column further added the percentage share of rent collected from natural resource (Resource rent), East Asian dummy (East Asia=1 if a country is from East Asian, 0 otherwise) and South American dummy (South American=1 if a country is from South America, 0 otherwise). The 6th and 7th columns present the results of models in 1st and 5th with time effects respectively.

In CGV classification presented in Table 5.4 above, compared to the untransformed

model, the weakly significant coefficients of civilian regime type completely lost its significance and military regimes has become weakly significant. It is only in the model with full set of controls in column 5 that we find a statistically significant civilian regime. In comparison to democracies, being under the rule of a civilian regime is associated with a 1.49 percent decline in long-run economic growth. Nonetheless, the inclusion of time effects once again erases any sign of CGV autocratic regime types affecting long-run economic growth in our dataset. Among the control variables, the level of latitude, UK and French colonial rule found to affect long run growth at different stages of the estimation. Irrespective of the inclusion of time effects, the East Asian dummy continues to positively affect long term growth. In a departure from the untransformed model, the level of rent collected from resource cease to affect long-term growth in our dataset.

In HTW classification, except the slight reduction in the level of statistical significance of military regime from 1% to 5% significance level, the results in Table 3C in Appendix 3 are closely comparable with the untransformed model. Here too, we have insignificant electoral and monarchic regime types all across the different model specifications while the control variable acts more or less similar to the results in CGV classification.

The only exception among the regime classifications is the GWF classification. It generates additional statistically significant regime types than its untransformed model. As can be seen from Table 3D in Appendix 3, personalist and monarchic regime types have produced a stronger parameter estimates in the transformed model. It shows that, compared to democracies, being a monarchic and personalist autocracy costs countries a 1.274% and 1.362% decline in long-run growth respectively. The inclusion of religion as control variable in column 2 left the results in column 1 unaffected. Once time effects are included in the model, while personalist regime type completely ceases to explain long-run growth monarchic regime types become weakly significant at 10% significance level.

In an attempt to strengthen and secure the robustness of a conclusion drawn from the analysis, the effect of regime types on annual and long-term GDP per capita growth rates is re-estimated using a larger data size. The re-estimation of our model using unbalanced panel data is presented from Table 3E to Table 3J in Appendix 3. The analyses produce few changes to our earlier results in the balanced panel. In the CGV classification, for example, the coefficient estimates of civilian regime have emerged strongly statistically significant and maintained it all across the inclusion of control variables and time effects. Military and monarchic regimes, on the contrary, do not show much difference from their balanced panel counterparts. In the long run, it is only civilian regime type that produced a statistically significant estimate. It implies that income in the long run grow by at least 1.307 lesser rate in civilian autocracies than democracies.

In HTW classification, regime type coefficients are comparable similar with balanced panel results. Military autocracy continues to be the only regime type with a statistically significant coefficient at least in some model specifications. A considerable change, however, is with regime types in GWF classification. With the shift in the best fitting model from fixed effect to random effect model, changes have occurred in the parameter estimates of regime types in GWF. In sharp contrast to the balanced panel data results, coefficients of personalist regime become strongly significant at 1% and that of military regimes produced a weakly significant parameter estimate. The statistically significant monarchic regime coefficient in the balanced data has now completely lost its significance in the unbalanced dataset.

The most noticeable change that comes with the change in the type and size of the data is seen on control variables. Religion that used to be less important in explaining growth in the balanced data has now produced a consistently statistically significant parameter estimate for some religion followers. The proportion of Buddhism followers is found to be positively and statistically significant across the three classifications and in most specifications in our analysis. Another remarkable change occurred in the role of previous colonial rulers in explaining annual and long growth in the dataset. In contrasting departure from the balanced data, UK and French

colonial legacies ceased to affect growth in our data. This perhaps has much to do with the inclusion of newly established states in our analysis that has no colonial legacy whatsoever to be associated with. The other control variables representing resource rent, South American dummy and East Asian dummies has also become more strongly significant than that of the case in the balanced dataset.

The inclusion of the year fixed effects here too seriously affects the ability of regime type to explain annual and long-run growth differences. Except for civilian regime types in both annual and long-run estimations in CGV classification and personalist autocracy in GWF in the annual regression, none of the regime types produced a statistically significant coefficient all across the three regime type classifications. In other words, similar to the balanced dataset, autocratic regime types under unbalanced panel data too, cease to explain both annual and long-term economic growth differences in the data once year fixed effects are included in our model. This potentially implies the presence of other common factors beyond regime types that affect the fluctuation in economic growth in our dataset.

5.1.3 Discussion

The analysis of the effects of autocratic regime types on growth rates has substantiated the importance of measuring the relationship using different data types, time frames, regime classifications and model specifications. With the change in our data size from balanced to unbalanced data, for example, we have seen changes in statistical significance for some regime dummies in CGV and GWF classifications. The change from short-run to long-run growth rates has also affected the role of regime type in explaining growth differences in the CGV classification. The effect of these changes, moreover, varies across different classifications. While regime types under HTW classification largely maintain their signs and significance, regime types in CGV show a larger degree of sensitivity to these changes.

A common result in all regime classifications is the distinction between autocratic and democratic regime types. Regime types with significant growth effects confirm

that democracies economically perform better than autocracies. Our study further gives some details on how this relationship is played within a given autocracy classification. Monarchic regimes are found to be the closest to democracies in their economic performance than personalist in GWF classification, and military regimes performed better than civilians in CGV under unbalanced data. The lack of more than one statistically significant regime types in the final model specification with full control variables and time effects, however, make these comparisons among autocracies conditional and non-binding. The same problem also delimits the possibility of evaluating institutionalist vs state autonomy hypothesis within autocracies.

These estimations lead to a stark conclusion: Existing autocratic regime classifications do not explain economic growth differences in a robust manner. The inclusion of time effects strongly affects the significance of regime dummies. The presences of time effects absorb the effects of few statistically significant regime type variables. This signals the fact that economic growth in autocracies is explained by some common factor or by factors that affect growth patterns in many autocratic countries. Our results are in contrary to a rare work on the subject by Wright (2008), who used an earlier version of GWF classification. He finds that among autocracies, compared to personalist regimes, single party and monarchs have higher income growth rates. This finding, however, has major methodological differences with our approach. For one it has avoided democratic regimes and used personalist as reference category, for another it has pooled the data and failed to take in to consideration country-specific effect in the analysis.

5.2 INCOME DIFFERENCES

5.2.1 Data and Methodology

The Data

In our study of the effect of autocratic regime types on real GDP per capita levels, we once again use both balanced and unbalanced datasets under all three regime classifications. The summary statistics in Table 5.5 show that, in contrast with growth

rate averages, pooled averages of income figures make monarchic autocracies represent the richest of all regime types in both balanced and unbalanced datasets. Democracies on average are the second prosperous regimes in all three classifications. On the other hand, militarist autocracies once again emerge as the poorest in CGV and HTW classifications while they only surpass personalist autocracies in GWF. A similar trend is present in the unbalanced panel. 645 additional observations from 28 new countries in this dataset do not change income level rankings in neither of the regime classifications (see Table 3K in Appendix 3).

Table 5. 5: Summary statistics for GDP per capita in PPP across regime types (balanced dataset)

Regime types	Mean	St. Dev	Max	Min	N
Democracy CGV	7,840	7,331	38,696	507.92	871
Civilian CGV	5,641	5,867	42,341	337.26	684
Military CGV	3,231	4,985	63,690	408.02	824
Monarchic CGV	28,418	48,587	227,761	600.32	248
Democracy GWF	8,167	7,259	38,696	552.25	802
Dominant Party GWF	5,906	7,115	63,690	482.33	811
Personalist GWF	1,871	1,735	13,619	337.26	407
Monarchic GWF	28,304	48,523	227,761	571.82	249
Military GWF	3,486	2,715	12,987	408.02	358
Democracy HTW	8,871	7,685	38,696	552.25	729
Electoral HTW	5,047	6,318	63,690	482.33	982
Military HTW	2,879	2,603	12,987	337.26	670
Monarchic HTW	28,638	48,723	227,761	600.32	246

Model

We closely follow the recent work by Acemoglu et al. (2017) in formulating the main estimating equation. This paper identifies several problems in the existing literature regarding the modeling of income and its dynamics. It proposes dynamic panel data models as appropriate. In this research, we adopt the model designed for dichotomous regime type classifications and harmonize it with our regime types which have three or more classifications. Furthermore, four variants of dynamic panel data estimation techniques are employed in order to safeguard the robustness of results (see below).

Additionally, robustness of our results is further investigated using Roodman's (2009b) guidelines for dynamic panel data models.

Our baseline dynamic model for per capita GDP is as follows:

$$y_{it} = \beta_1 D_{1,it} + \beta_2 D_{2,it} + \beta_3 D_{3,it} + \beta_4 D_{4,it} + \sum_{j=1}^p \delta_j y_{it-j} + \alpha_i + \theta_t + \varepsilon_{it} \quad 5.3$$

where y_{it} is log of GDP per capita in country i at year t . The dummies $D_{1,it}$ to $D_{4,it}$ and the country and year fixed effects α_i and θ_t are as described under equation (4.1). In order to introduce the dynamics in GDP per capita, p numbers of lags of the dependent covariate y_{it} are included in the right hand side of the model.

As in Acemoglu et al. (2017), the model in (5.3) is estimated under the standard sequential exogeneity assumption:

$$E(\varepsilon_{it} | y_{it-1}, \dots, y_{it_0}, D_{1,it}, \dots, D_{1,it_0}, D_{2,it}, \dots, D_{2,it_0}, D_{3,it}, \dots, D_{3,it_0}, D_{4,it}, \dots, D_{4,it_0}, \alpha_i, \theta_t) = 0$$

given $y_{it-1}, \dots, y_{it_0}, D_{1,it}, \dots, D_{1,it_0}, D_{2,it}, \dots, D_{2,it_0}, D_{3,it}, \dots, D_{3,it_0}, D_{4,it}, \dots, D_{4,it_0}, \alpha_i$ and θ_t and for all i and $t \geq t_0$.

This assumption implies that regime types and past GDP per capita levels are orthogonal to current and future shocks to GDP. The analysis also assumes that there is no serial correlation in error term ε_{it} . In order for this last assumption to hold, sufficient numbers of lags of the dependent variable need to be included in the model.

Following Acemoglu et al. (2017), we start our estimation of the model using the standard within estimator, followed by Arellano-Bond's difference GMM estimator in the second stage of our analysis. In addition to serving as further proof to the robustness of results in the first estimation, the use of difference GMM is motivated by the intention to avoid the possibility of "Nickell's bias" associated with the use of within estimator for a dynamic model²⁴. Nickell (1981) demonstrates that employing OLS estimator for a dynamic model with fixed effects produces inconsistent and biased parameter estimates. Moreover, the persistence in GDP dynamics necessitates

²⁴ Since we have moderately high T , for example 37 in the balanced data in our study, the $1/T$ order of bias in the within estimator is small.

the need to model them using dynamic models. Such models, therefore, are more suitably estimated using GMM estimators.²⁵

In a departure from Acemoglu et al. (2014; 2017), we further employ forward orthogonal deviation (FOD) transformation and system GMM estimation techniques that correct some of the drawbacks in difference GMM estimator. The forward orthogonal deviation (FOD) transformation and difference GMM differ in how the variables are differenced in order to drop time invariant components in the model. While difference GMM transforms a model by differencing $t - 1$ from t , the forward orthogonal deviation estimator proposed by Arellano and Bover (1995) transforms the data by subtracting the average of all future values from current observations. This method is especially helpful to retain more data points in unbalanced data with gaps (Roodman, 2009b).

The System GMM, on the other hand, distinguishes from the difference GMM in the type of internally generated instrumental variables it uses. As a version of an instrumental variable estimation technique, the difference GMM uses lagged levels as an instrument to differenced variables. By using differenced instruments for level lagged variables, the system GMM estimator effectively augments difference GMM estimator and produces a more appropriate result especially for series that have higher level of persistence (Roodman, 2009b).

All the three GMM estimators we employ use instrumental variables generated from within the model itself. The use of instrumental variable techniques is mainly to control for possible endogeneity of explanatory variables, and they provide instruments that are otherwise difficult to find for our regime dummies. While the level or differenced instruments of regime dummies help us capture the effect of the persistence of political institutions, instruments for our lagged dependent variable captures the effects of persistence of the economic structure in the model.

²⁵ The use of GMM models requires small T and large N. Since we have larger N (77 in balanced and 99 in unbalanced) compared to our T, we followed Acemoglu et al. (2017) and used GMM for estimation.

In our study of the relationship between regime types and income level, we therefore employ the within, the difference GMM, the system GMM and the FOD estimators. The estimations are made using both balanced and unbalanced data. Similar to what we have done in our previous estimation of GDP per capita growth, we first drop the year fixed effects in our primary estimation of equation (4.3) in order to disentangle the role it plays in the robustness of results of our dynamic model.

5.2.2 Results

We start with CGV classification of regime types using our balanced dataset of 71 countries across 37 years covered in our study. In the balanced panel data without year fixed effects shown in Table 5.6, the within estimator both at the baseline and with controls produce significant coefficients for all regime types. In the CGV regime types classification, all autocratic regime parameter estimates have negative signs implying that all autocratic regimes economically perform weaker than democratic regimes. Among autocratic regime types, monarchic regimes perform better than military and civilian regimes. A transition to autocratic regime from democracy or failing to make transition to democracy, annually levies a cost of 1.44% decline in income in monarchic, 1.95% in military and 2.11% in civilian regimes. Following Acemoglu et al. (2014; 2017), iterating this annual percentage value using the formula given in (4.4), these costs rise, respectively, to 26.25%, 35.52% and 38.49% after twenty years and to 37.59%, 50.87% and 55.11% in the long run.

$$\frac{\widehat{\beta}_n}{1 - \sum_{j=1}^p \widehat{\delta}_j} \quad (5.4)$$

Where “ $\widehat{}$ ” denotes parameter estimates and n takes values from 1 to 3 in CGV and HTW, and 1 to 4 in GWF regime classification.

Table 5. 6: The effect of CGV autocratic regime types on GDP per capita, balanced panel without year fixed effect

	Within			Difference GMM			FOD GMM			
	1	2	3	1	2	3	1	2	3	
Monarchic	Short-run effect %	-1.440*** (0.192)	-1.526*** (0.338)	-1.644*** (0.539)	1.654 (2.838)	0.415 (2.809)	1.660 (2.601)	1.654 (2.838)	0.208 (2.018)	-1.447 (1.253)
	Effect after 20 yrs %	-26.25*** (1.177)	-27.06*** (4.819)	-28.61*** (8.064)	29.77 (51.23)	7.414 (50.30)	28.91 (45.37)	29.77 (51.23)	3.762 (36.51)	-25.90 (21.02)
	Long-run effect %	-37.59*** (6.480)	-37.29*** (8.377)	-30.36*** (7.863)	43.45 (75.50)	10.60 (72.29)	31.05 (49.71)	43.45 (75.50)	5.456 (53.06)	-28.26 (20.85)
Military	Short-run effect %	-1.948** (0.848)	-1.972** (0.901)	-2.979*** (1.068)	-2.755** (1.222)	-2.973** (1.412)	-3.266** (1.485)	-2.755** (1.222)	-3.035** (1.345)	-3.109** (1.419)
	Effect after 20 yrs %	-35.52** (14.27)	-34.98** (14.60)	-51.85*** (14.70)	-49.61*** (19.05)	-53.13** (21.32)	-56.87*** (20.02)	-49.61*** (19.05)	-54.85*** (20.58)	-55.68*** (19.73)
	Long-run effect %	-50.87*** (14.80)	-48.20*** (14.79)	-55.02*** (12.04)	-72.40*** (18.63)	-75.97*** (20.08)	-61.07*** (15.11)	-72.40*** (18.63)	-79.55*** (19.96)	-60.75*** (15.26)
Civilian	Short-run effect %	-2.111*** (0.732)	-1.884** (0.761)	-1.992** (0.867)	-3.038*** (1.068)	-2.935** (1.239)	-2.349** (1.163)	-3.038*** (1.068)	-3.116*** (1.131)	-2.329** (1.051)
	Effect after 20 yrs %	-38.49*** (12.33)	-33.43*** (12.63)	-34.67** (14.15)	-54.69*** (16.48)	-52.45*** (19.29)	-40.90** (18.27)	-54.69*** (16.48)	-56.32*** (17.48)	-41.71** (16.86)
	Long-run effect %	-55.11*** (16.11)	-46.06*** (15.54)	-36.78** (14.73)	-79.82*** (21.22)	-75.00*** (23.50)	-43.92** (18.33)	-79.82*** (21.22)	-81.69*** (22.58)	-45.51*** (17.35)
GDP persistence	0.962*** (0.0100)	0.959*** (0.0106)	0.946*** (0.0162)	0.962*** (0.0123)	0.961*** (0.0134)	0.947*** (0.0182)	0.962*** (0.0123)	0.962*** (0.0130)	0.949*** (0.0182)	

Continued

AR(1)				0.000	0.000	0.000	0.000	0.000	0.000
AR(2)				0.614	0.431	0.248	0.614	0.41	0.784
Hansen p				1.000	1.000	1.000	1.000	1.000	1.000
Lags in Instrument				Full	Full	Full	Full	Full	Full
No of instruments				1644	1645	1557	1644	1645	1557
R-squared	0.945	0.946	0.941						
Observations	2,343	2,343	2,019	2,272	2,201	1,879	2,272	2,201	1,879
Countries	71	71	70	71	71	70	71	71	70

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (4). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4A in Appendix 4.

Regime types continue to produce statistically significant parameters with the inclusion of control covariates to the baseline model. A noticeable change is in the ranking of autocracies. When religion and resource rent controls are included, civilian regimes start outperforming military regimes. In column (3), for example, compared to democracies, militarist autocracy entails 2.9% decline in annual income and 55.02% in the long-run income whereas civilian autocracies are associated with declines of 1.99% and 36.78% in income in short-run and long-run, respectively. In all specifications using the within estimator, monarchic regimes continue to perform better than military and civilian regimes if judged by the parameter magnitude.

The statistically significant relationship between monarchic regimes and income level dissipates once estimations are conducted using GMM estimators. Military and civilian regime types, however, continue to show a statistically significant difference with democracies in both difference and FOD GMM estimators. For the balanced panel, estimation from FOD transformation presented gives comparably similar results with the difference GMM in the baseline regression in column (1). In these two estimators, the magnitude of the difference increases for both regime types compared to the within estimator. Being military and civilian autocracies are associated with a long term decline of income, relative to democracy, by at least 60.75% and 43.92%, respectively.

Our third GMM estimator is the system GMM. The use of this estimator is motivated by two reasons. The first is associated with the autoregressive structure of our dependent variable. Tests for all estimations in Table 5.6 convincingly show a high degree of persistence of GDP per capita levels. This makes the use of system GMM more appropriate than difference GMM. In contrast to difference GMM, that uses level lagged values as instruments, system GMM uses differences of lagged values for the same purpose. These instruments in system GMM capture future changes better than instruments used in difference GMM (Blundell and Bond, 1998). The second motivation to use system GMM is related with the freedom it gives in using time-invariant control variables in our analysis. Despite being a fixed effect model, system GMM accommodates and does not drop out time-invariant covariates (Levine

et al., 2000).

Table 5. 7: The effect of CGV autocratic regime types on GDP per capita, balanced panel without year fixed effect (system GMM)

		System GMM				
		1	2	3	4	5
Monarchic	Short-run effect %	-0.726 (0.669)	-0.870 (0.632)	-0.556 (0.625)	-0.507 (0.637)	0.282 (0.553)
	Effect after 20 yrs %	-22.14 (19.89)	-26.50 (18.87)	-16.51 (18.38)	-14.45 (18.02)	8.921 (17.47)
	Long-run effect %	-712.6 (1,801)	-2,089 (13,656)	-241.5 (394.7)	-118.8 (169.9)	41.64 (82.23)
Military	Short-run effect %	-1.383** (0.571)	-1.641*** (0.626)	-1.678*** (0.634)	-1.665*** (0.631)	-1.815*** (0.680)
	Effect after 20 yrs %	-42.16** (17.67)	-50.02** (19.62)	-49.80** (19.39)	-47.43** (18.81)	-57.02** (22.46)
	Long-run effect %	-1,357 (3,115)	-3,943 (24,946)	-728.5 (732.0)	-390.1** (194.6)	-257.6*** (89.83)
Civilian	Short-run effect %	-0.868** (0.420)	-1.165*** (0.414)	-1.180*** (0.432)	-0.897** (0.438)	-0.550 (0.408)
	Effect after 20 yrs %	-26.46** (12.69)	-35.50*** (12.65)	-35.01*** (12.95)	-25.56** (12.63)	-17.28 (12.80)
	Long-run effect %	-851.7 (2,058)	-2,799 (18,058)	-512.2 (587.3)	-210.2 (141.1)	-78.05 (69.53)
GDP persistence		0.999*** (0.00264)	1.000*** (0.00274)	0.998*** (0.00284)	0.996*** (0.00284)	0.993*** (0.00366)
AR(1)		0.000	0.000	0.000	0.000	0.000
AR(2)		0.348	0.507	0.416	0.384	0.234
Hansen p		1.000	1.000	1.000	1.000	1.000
Lags in Instrument		Full	Full	Full	Full	Full
No of instruments		1716	1717	1708	1711	1622
Observations		2,343	2,272	2,240	2,240	1,919
Countries		71	71	70	70	69

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table Y in Appendix 4.

When the model is re-estimated using the system GMM estimator (see Table 5.7 above), military and civilian regimes continue to explain growth differences in a statistically significant manner. A rather remarkable departure from previous estimation is seen in the magnitudes of the two regime types coefficients; here,

civilian autocracies perform better than military autocracies. In the baseline estimation, while not being a democracy reduces income by 1.38% in the short run and by 42.16% after twenty years in military regimes, it depresses income by 0.87% annually and by 26.46% after two decades in civilian regimes. With the exception of civilian regime under the full battery of controls in column (5), these results are robust to the inclusion of control covariates. The long run effects, however, are found to be statistically insignificant for most model specifications and for both regime types.

The above exercises show how sensitive results are to the changes in estimator types, and there is a need to take precautions while drawing conclusions. Results for the CGV classification are further scrutinized for robustness to changes in data type and inclusion of more observations. As unbalanced panel estimations show in Table 3L in Appendix 3, the results are largely closer to our balanced panel estimations. All autocracy coefficients are statistically significant for the within estimator (column 1), and only military and civilian autocracies produce parameter estimates showing statistical significance. In the system GMM estimator presented in Table 3M in Appendix 3, however, only military regimes are found to have statistically significant effects in the short run and in twenty-year span. Here, the failure to make a shift to democracy imposes at least 1.30% annual decline and a total of 38.86% after twenty years when regimes are led by the military or someone with military background.

As a final step in our robustness checks, we introduce year fixed effects to our models. Recall that the inclusion of year fixed effects to the growth model has seriously affected the outcomes. The results presented from Table 3N to 3Q in Appendix 3, once again, clearly show that regime types in CGV classification cease to explain differences in income levels once year fixed effects are included in the estimation. A rare exception is the monarchic autocracy in both balanced and unbalanced data under the within and FOD GMM estimator. The introduction of year fixed effects has visible effects on determining the capacity of CGV autocratic regimes to explain income differences in the dataset.

Our next autocratic regime type classification is the GWF. Once again, we try to

figure out the effect of autocratic regime type in GWF classification on GDP per capita levels using balanced and unbalanced data for the different versions of dynamic models. The results from the estimations on the baseline model and with control covariates included are shown in Table 3R in Appendix 3. The within estimator on the baseline model on GWF classification shows that, irrespective of regime types and compared to democracies, being an autocracy is associated with low level of income. Within autocratic regime types, military regimes are found to be the poorest performers, and it is associated with an annual decline of 2.83% in income compared to democracies. This difference in income rise to 50.58% after twenty years and to 71.72% in the long run. Monarchic autocracies, on the other hand, are the best performers among autocratic regime types. In comparison to democracies, their annual income declines every year by 1.25% and the difference reaches as high as 31.60% in the long run. Similarly, being a dominant party based and personalist autocracy creates a 41.73% and 40.40% decline in income in the long run, respectively.

The inclusion of religion as a control variable in column (2) for the within estimation does not create much change in our results. When resource rent is included in column (3), however, dominant party regime ceases to have significance and the magnitude of parameters increases in other regime types.

When the same model is estimated using difference GMM, two of the four parameter estimates for the within estimation lose their statistical significance. The baseline estimator under difference GMM column (1) shows that income is depressed annually by 2.21% in dominant party autocracies and by 3.11% in military autocracies, relative to democracy. In the long run, this annual difference accumulates to create 56.38% and 79.44% declines in dominant party and military autocracies, respectively. The inclusion of religion covariates to the difference GMM estimator still does not affect the statistical significance of results from the baseline estimation. The resource rent, once again, makes dominant party regime dummy statistically insignificant. When religion and resource rent controls are included, statistically significant regime types are largely similar to the difference GMM estimates.

The re-estimation of the model with system GMM (see Table 3S in Appendix 3) continues to reaffirm that democracies in general perform better than any autocratic regime type in being conducive to a rise in income levels. Nonetheless, in comparison to previous GMM estimators, these estimators produce different results in the magnitude and statistical significance of autocratic regime types in our dataset. In sharp contrast to difference and FOD GMM estimators, personalist autocracies have become statistically significant together with military autocracies all across the five models. In all the models, military autocracies are found to perform better than personalist autocracies. In the baseline model in column 1, for example, compared to democracies, being personalist and military autocracy annually reduces income level by 2.52% and 1.44%, respectively.

In Table 3T and 3U in Appendix 3, we re-estimate the model with an unbalanced panel with additional countries and observations. These changes lead to slight changes in estimates for dominant party and personalist autocracies. Dominant party autocracy becomes less significant in the within estimator whereas personalist autocracies emerge statistically more significant than they do in the balanced dataset. Nevertheless, in all our estimations including system GMM, the further expansion of our dataset do not create major changes either in the relationship between autocracies and democracies or the intra-autocratic regime types performance. A rather major distinction with a change in the data type is associated with the role of control covariates in the analysis. The model with full control variables in FOD and system GMM estimators in column (3) and (5) respectively shows that, in sharp contrast to their balanced data counterpart, only military regime produces a statistically significant parameter estimate.

The final check for robustness of results of both balanced and unbalanced datasets and across the four estimators is done by including year fixed effects to our models. Here again, year fixed effects display a significant role in absorbing the effects of autocratic regimes on income. After the inclusion of the year fixed effects in our balanced panel data, the only statistically significant coefficient is that of personalist

regime under the system GMM estimator (see Table 3V and 3W in Appendix 3). Income in personalist autocracies is lower than democracies by 2.05% annually and the amount reaches as high as 58.21% after 20 years. These results are robust to the inclusion of religion and geography control covariates, and statistical significance would be lost only with the inclusion of dummies of past colonial legacies into the model. In the unbalanced data with time effect (see Table 3X and 3Y in Appendix 3), monarchic regime emerges as a regime with the only statistically significant difference with democracies under the within estimator. The regime exhibits an annual decline in income by 0.92% and a 16.74% decline in the long run, relative to democracy. However, these statistically significant relationships are lost across all the three versions of GMM estimators used in our analysis.

In our third and final stage, we use the HTW classification of autocratic regimes. The results of the estimations shown in Table 3Z in Appendix 3 for balanced panel without year fixed effects demonstrate an interesting shift in the explanatory power of regime types. When the within estimator is employed, military and monarchic regimes produce statistically significant effects while electoral regime type is found to have a minor effect on income levels. In contrary to the within estimator, in the difference and FOD GMMs, electoral and military autocracies are statistically significant. Despite the fact that electoral regimes are closest to democracies in their institutional settings, the difference and FOD GMM estimators suggest that being an electoral autocracy costs 1.40% in annual income and up to 35.85% in the long run. Within autocratic regimes, nonetheless, electoral regimes perform better than military regimes and monarchic regimes. Electoral autocracies display a performance twice higher than that of military regimes. This result is robust to the inclusion of religion covariate but becomes insignificant when resource rent control is included in the analysis. In the system GMM in Table 3AA in Appendix 3, similar to the GWF and CGV regime classifications discussed earlier, the parameter estimates of military regime maintain its statistical significance.

When unbalanced panel are used (see Table 3AB in Appendix 3), the within estimator shows that electoral regimes are superior to all other regimes and military

regimes perform better than monarchic regimes. In the long run, not being a democracy results in a 28%, 47.04% and 78.8% decline in income in electoral, military and monarchic regimes respectively. With a slight decline in the magnitude of estimates, the results still hold under the inclusion of control covariates. Similar to the balanced panel, parameter estimates of electoral and military regimes are statistically significant in difference and FOD GMMs. On the other hand, military regimes, once again, are the only regime types to have a statistically significant coefficient under the system GMM estimator (see Table 3AC in Appendix 3).

When year fixed effects are introduced, most regime types cease to be a major factor in explaining income levels. As tables from 3AD to 3AGD in Appendix 3 show, only monarchic regimes under within estimator and military regimes in system GMM estimator produce statistically significant parameter estimates. The introduction of year fixed effects to the model once again absorbs the role of regime types in affecting GDP per capita in HTW regime classification.

4.3.3 Roodman's Robustness Checks

The conclusiveness of results we obtain above using GMM estimators need to be checked for robustness to the reduction of instrument count. Roodman (2009a) shows, if not constrained, difference and system GMM estimators are prone to instrument proliferation and this is more prevalent when the time period in the study increases. This proliferation of instruments seriously compromises the power of the over identification test, and it also affects the values of parameter estimates. Thus, Roodman (2009a: 140) strongly recommends the importance “for researchers to test GMM results for robustness to reductions in the instrument set.” Moreover, he also shows that Windmeijer-corrected two-step GMM estimator is the preferable specification for efficiency (Roodman, 2009b). When we look at the modeling approach pursued by Acemoglu et al. (2017), we notice that the GMM estimator used is one-step and no modifications are employed to limit instrument proliferation.

Each GMM estimator in the results discussed above produces more than one thousand instruments. This hugely disproportional number of instruments compared

to 71 countries in the balanced and 99 countries in the unbalanced dataset produced a perfect Hansen J test statistic with 1.000 p-values. This, Roodman (2009b) argues, is a typical problem of low power, and robustness of the results has to be checked with a reduction in number of instruments in the model. Next, we follow Roodman's (2009s) guidelines and re-estimate the model in 4.3.

We start with two step Windmeijer-corrected difference and FOD GMM estimator with time effects for CGV regime classifications and present the results in Table 5.8. In contrast to one-step difference GMM discussed previously, our preferred two-step estimator includes fewer lag of the dependent variable. Although there are changes on the sign and magnitudes of coefficient estimates, our preferred model once again shows that, in all the three regime classifications, autocratic regimes do not explain income differences both in balanced and unbalanced data. In these estimations, the shift to two-step estimator and the reduction of instrument count to the ideal level of fewer than the number of countries in our study significantly decreases the problematically low power Hansen J statistic p-value. Both limiting and collapsing the lags used as instruments are employed to this end. For most of our specifications, we manage to bring the p-value for Hansen J over-identification within the 0.1 and 0.25 range Roodman (2009b) recommends. These results are obtained after multiple attempts to bring Hansen J statistic within the recommended range while maintaining the instrument count below 71 and, AR (1) and AR (2) p-values within the acceptable ranges. These adjustments, however, seriously affect the results obtained in the full instrument estimation we previously acquire.

Table 5. 8: The effect of CGV autocratic regime type on GDP per capita, balanced panel with year fixed effect (two- step GMM)

	Difference GMM			FOD GMM		
	1	2	3	1	2	3
Log GDP 1st lag	0.704*** (0.162)	0.977*** (0.140)	0.986*** (0.167)	1.357*** (0.164)	1.086*** (0.135)	1.020*** (0.121)
Log GDP 2nd lag	-0.0794 (0.0567)	-0.165** (0.0688)	-0.169*** (0.0648)	-0.253*** (0.0931)	-0.152** (0.0664)	-0.117* (0.0648)
Log GDP 3rd lag	0.0889** (0.0349)	0.0816* (0.0447)	0.0605 (0.0477)			
Short-run effect %	-17.42 (30.68)	-19.68* (11.64)	-6.169 (12.03)	-16.84 (14.62)	-9.341*** (2.349)	-4.608 (4.340)
Effect after 20 years %	-60.63 (113.8)	-164.7 (149.0)	-47.20 (83.89)	-1,758 (3,143)	-114.1 (81.26)	-43.01 (35.54)
Long-run effect %	-60.84 (114.3)	-183.9 (202.5)	-50.45 (90.01)	162.7 (161.2)	-142.1 (167.4)	-47.56 (40.59)
Short-run effect %	-0.176 (2.406)	-0.641 (1.837)	-1.156 (3.096)	-2.772 (2.025)	-0.134 (1.972)	-0.276 (2.028)
Effect after 20 years %	-0.614 (8.444)	-5.367 (18.09)	-8.848 (27.52)	-289.5 (553.6)	-1.633 (24.97)	-2.579 (19.77)
Long-run effect %	-0.616 (8.474)	-5.994 (21.40)	-9.456 (30.43)	26.79* (15.02)	-2.035 (31.86)	-2.851 (22.16)
Short-run effect %	-1.554 (4.505)	0.490 (3.323)	-3.566 (7.164)	0.105 (2.234)	-0.0178 (3.415)	0.0580 (3.507)
Effect after 20 years %	-5.408 (15.15)	4.099 (27.68)	-27.28 (60.93)	10.93 (233.4)	-0.217 (41.82)	0.541 (32.57)
Long-run effect %	-5.426 (15.19)	4.579 (31.01)	-29.16 (67.09)	-1.012 (21.63)	-0.271 (52.23)	0.598 (35.96)
GDP persistence	0.714*** (0.107)	0.893*** (0.0972)	0.878*** (0.109)	1.103*** (0.0796)	0.934*** (0.0790)	0.903*** (0.0660)

Continued

AR1 test p-value	0.022	0.001	0.002	0.000	0.000	0.000
AR2 test p-value	0.926	0.643	0.607	0.626	0.369	0.435
Hansen p	0.218	0.236	0.114	0.162	0.194	0.280
No of lags in Instr.	9	5	4	9	3	3
No of instruments	69	65	64	70	54	56
Observations	2,343	2,343	2,159	2,414	2,414	2,229
Countries	71	71	70	71	71	70

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under the CGV autocratic classifications using two-step difference and FOD GMMs. Regimes' coefficients are multiplied by 100. Both limiting and collapsing instruments are employed to contain instrument proliferation. For each estimator, column (1) presents results without any control variable. Religion and resource rent are included as control covariate in column (2) and column (3) respectively. The p-values of test of serial correlation in the residual and over identification test results are reported under AR2 and Hansen p test respectively. The full regression output behind this table is reported in Table 4Y Appendix D9.

As the Table 5.9 shows, parameter estimates exhibit major changes in the magnitude and statistical significance. The only statistically significant regime type is now monarchic regime under FOD GMM with religion control in the short-run. It shows that, in comparison to democracies, monarchic autocracy annually reduces income by 9.34%. These considerable changes in magnitude, statistical significance and sometimes in signs of the relationship between regime types and income levels pose a serious concern on the robustness of results obtained using GMM estimators. The same inconsistency in results is also observed in the unbalanced data under CGV classification (see Table 3AH in Appendix 3).

The lack of robustness is also seen in the GWF and HTW classifications. In GWF, the statistically significant military regime type in the unbalanced data under FOD GMM (see Table 3X in Appendix 3) becomes insignificant when instrument count is reduced (see Table 3AJ in Appendix 3). On the contrary, the same regime type has become significant in the short-run under the balanced dataset (see Table 3AJ in Appendix 3). In HTW classification, monarchic regime type that is significant both in the balanced and unbalanced data cease to be significant when Roodman's guidelines are strictly abided (see Table 3AK and 3AL in Appendix 3). The effect of restricting instrument count is even more pronounced in the use of system GMM estimator. Although, Hansen p-values can be comfortably placed between the acceptable ranges, these changes reduce the persistence in GDP series and imply non-stationarity. This loss of stationarity makes the use of system GMM in the restricted model unnecessary and inappropriate. The results we obtain after employing Roodman's (2009a) suggestion for GMM estimators, therefore, compromise the reliability of results from difference, FOD and system GMM estimators.

5.2.4 Discussion

The results of the effect of regime types on income levels can be presented within the perspective to Acemoglu et al. (2017) findings. Using exactly the same modeling procedure, our study further disaggregated the statistically significant and robust results they find into specific regime types. Under the within and difference GMM estimators, the negative sign in all regime parameters entails that the poor

performance of autocracies compared to democracies also hold across all autocratic regime types. When we look at the statistically significant regime types found in our results, it implies that these relationships are mainly guided by some regime types and they vary across different specifications of the model. The strength of these relationships fades away when year fixed effects are introduced and system GMM estimators are employed in the analysis. In other words, the power of autocratic regime types to explain cross-country income differences, as in the case of growth rates, largely depends on the methodology we adopt and, more importantly, the presence of time fixed effects in the model.

The change in the dependent variable from growth rates to levels results in changes in the ranking of the performance of autocratic regime types. The fact that we have got more statistically significant regime types in most estimations under within estimator provides us the chance to compare economic performance among autocracies. In CGV classification, both in the balanced and unbalanced within estimator, monarchic regime types, which by definition are the least expected to own broader and binding institutions than civilian and military regimes, are the closest in economic performance to democracies than other regime types. This adds another major restrictiveness of *institutionalist* explanation of cross-country economic performance differences. On the other hand, the *institutionalist* hypothesis is supported in GWF and HTW classifications. For instance, in the balanced data with full control variables under within estimation in GWF classification, we find that economic performance is higher in dominant party autocracies followed by military, personalist, and monarchic regimes. In HTW classification, too, expectedly the most institutionalized regime type –electoral autocracy– outperforms military and monarchic regimes respectively in most cases. These standings in both classifications largely hold in most specifications with statistically significant coefficient estimates.

The ability of the *institutionalist* explanation to shed light on economic performance differences, among other things, depends on the type of dependent variable and regime classification used in the analysis. Given the results we obtain in the previous section, the results we obtain in this section suggest that the *institutionalist*

explanation of differences in economic performance works better when economic performance is measured as growth rates than at levels. What is common, nonetheless, is the role of time effects, regardless of the dependent variable or the autocracy classification. Once they are included, regime types cease to explain cross-country income differences in both balanced and unbalanced datasets.

These results, once again, reaffirm the need to take precautions in the estimation methodology we adopt and the conclusion we draw from our data. This perhaps extends to the political economy literature in general on the search for a causal relationship between economic outcomes and political factors. The fact that we fail to find significant and robust effects of autocratic regime type on income levels even in a carefully executed estimation consolidates the results we acquire earlier that regime types per se do not explain income and growth differences in our dataset. The patterns in real income per capita are therefore determined not by heterogeneity within autocracies but by other omitted factors.

5.3 EXPLAINING THE UNEXPLAINED

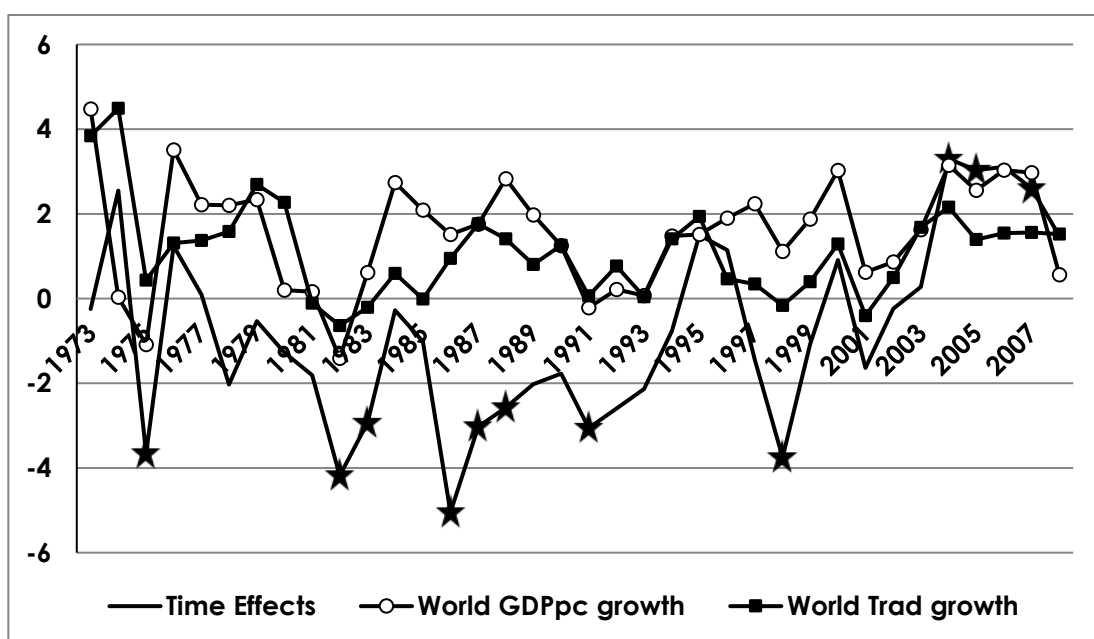
Our preferred specifications are the ones with year fixed effects; the inclusion of which absorbs autocratic regime types' role in explaining growth and income differences. Cheibub et al. (2010) and Wright (2008) ask whether a "careful study of distinctions between different types of authoritarian polities" would deliver answers to "enduring questions in comparative political economy" (Wright, 2008: 342), curiously waiting to see which one of the autocratic regime classification better "serve to address important research questions" (Cheibub et al., 2010: 67). Three possible explanations can be given to the results we obtain in this chapter.

First, if we assume that there are no considerable subjectivity and arbitrariness in autocratic regime classifications we use in our study, then, our research findings suggest that autocratic regime types fail to explain growth and income differences when year fixed effects are included in the model. In other words, the causes of differences in growth rates and income levels in authoritarian regimes are fixed time factors that affect all regime types at a given year and not autocratic regime types per

se.

Figure 4.1 depicts estimated year fixed effects along with world income growth and world trade growth patterns. The year fixed coefficients produce statistically significant dummies in 1975, 1982-83, 1986-88, 1991, 1998, 2004-05 and 2007, and a weakly significant dummies for the year 1974, 1992 and 2006. Most of these years are associated with period major economic and political events in the world.

Figure 5. 1: Year fixed effects and the growth of world income and world trade



Note: stars (*) represent years with statistically significant time effects. Growth rates of world merchandise export are divided by 10 to facilitate graph comprehension. Time effects are from estimation of growth model in 4.1 under CGV classification.

Figure 4.1 clearly shows that the fluctuations in the world economy and trade are reflected in year fixed effects. World income growth and year fixed effects have a Spearman's correlation of 0.537 with p-value of 0.0007, implying a positive and moderate correlation between the two. A closer look at the statistically significant year dummies further strengthens the notion that some common factor explain growth rate differences across autocracies. Within the study period, the years in which world average per capita income contracted (1975, 1982 and 1991) are reflected in autocracies by producing a statistically significant time effect dummies. We also

observe some boom years for the world economy where year fixed effects are positive and significant; these are the years from 2004 to 2007 that eventually ended up with the Global Financial Crisis.

The correlation between time effects and world income growth rates entails the presence of linkage and common factors that affect both series. The literature on economic crises identifies trade and financial links as major economic crisis transmission mechanisms (Desai, 2003). With the development of the global financial sector, the number of different financial linkages that transmit crises from one place to another increases. Financial markets in developing countries, however, lack strong connections with developed markets thereby reducing contagion via the financial channel (Abdel-Latif, 2009). There is also limitation on data availability to effectively study the role of financial links (Glick and Rose, 1999). More importantly, Masson (1998) and Glick and Rose (1999) find that trade linkages has higher explanatory power of crisis transmission than financial channels. Bernanke (2009) also suggest that this channel was critical in transmitting the effects of the recent economic crisis to Asian economies.

In line with this, picturing the growth rates of world merchandise exports alongside year fixed effects produces an interesting relationship between the two. They have a moderate and positive Spearman's correlation of 0.548 with a p-value of 0.0005, and the statistically significant year fixed effects match major changes in international trade. These years coincide with global trade contraction of 1982-83 and 1998, the largest decline of the past four decades in 1975 (by 40.56%), and the recovery in global trade between 1986-1988 and after 2004.

It should also be noted that some economic and political shocks that were largely confined to autocracies produce statistically significant year fixed effects. The Latin American debt crisis in 1982, the second half of the 1980s (1986 to 1988) where numerous exits from autocracy were witnessed in Eastern Europe and South Americas, and the height of the Asian financial crisis in 1998 are found to be

statistically significant to explain the pattern of economic growth for the countries in the dataset.

The second alternative explanation is based on questioning the validity of regime classifications. Cheibub et al. (2010) caution that the arbitrariness involved in determining cutting points in distinguishing regimes types between democracy and autocracy may have a potential to return misleading results either way. It may give seemingly significant results when there is no such relationship or it may produce the opposite. The fact that the dichotomous democracy-autocracy categorization is further sliced into different autocratic regime types increases the potential risk associated with arbitrariness and aggravates the possibility of producing misleading results. Some evidence to this can be found in Acemoglu et al. (2014). They associate the inconsistency in some of their results in different estimations with the possibility of high measurement errors in democracy indices. They deem these indices to have missed “important *de facto* elements of democracy” in their classifications (Acemoglu et al., 2014: 35). The wide variation of results we obtain across different estimations could thus potentially suggest possible measurement errors in these autocratic regime type classifications.

The third explanation is related with the internal heterogeneity within regime types themselves. The theoretical mapping of relationships between regime types and economic growth runs mainly through the level and quality of institutionalization in a polity. When we look at regime classifications, however, the different levels of institutionalization within specific regime categories exist. If we look at monarchic regimes, which perhaps consists one of the most politically homogenous polities, for example, we have on one hand Saudi Arabia with the most restrictive institutions for free market and on the other hand countries such as United Arab Emirates and Qatar with institutions that facilitated the establishment of free markets. Similar contrasts can also be established within other regimes.

5.4 CONCLUDING REMARKS

This chapter attempts to give a comprehensive answer to one of the pending political economy questions. Using static and dynamic panel data models, this chapter studies whether different autocracies create causal effects on economic growth and income levels. The main result is that, while some specifications given a particular classification indicate that a certain regime type has a significant effect on growth rate or income level, such effects are sensitive to the addition of time effects. Put differently, different autocratic regime types have statistically significant economic effects only if estimations did ignore time effects,

The multiplicity of estimation techniques applied, the different data and autocratic regime type classifications employed, and the diversity of economic outcome variables used imply that this “negative” result is robust. Results obtained in this chapter clarify when and how the heterogeneity among autocracies creates a meaningful effect and when and how it does not. Results also show when and where the institutional explanation overpower the state autonomy paradigm, when and where the opposite happens, and, perhaps most importantly, when and where both fail to have a story to tell.

Bearing in mind the second and third explanations that question the validity of the autocratic classification themselves, we can conclude that the three prominent autocratic regime classifications used in our research do not reliably explain income level and growth rate differences in autocracies. This indicates the need for refining the existing classifications and developing new ways of classifying autocracies in order to discern their effects on economic growth and income. It is thus important to reiterate Prezeworski and Limongi’s (1993: 66) conclusion: “[c]learly, the impact of political regimes on growth is [still] wide open for reflection and research.”

CHAPTER 6

CONCLUSION

After centuries old experiences in democracy and the different waves of democratization in recent decades, a sizable portion of the world population still lives in authoritarian regimes. Although autocracy is in a permanent decline since the late 1970s, more than one third of the world population resides in regimes governed by autocrats. Autocracies' characteristic nature on how they organize social, political and economic life –especially in distinction with democracies– continues to be an unsettled intellectual front line in the political economy literature. The voluminous comparative studies in the area overridingly fail to acknowledge the multidimensional heterogeneity among autocracies and consider them as homogenous residual categories. This failure to recognize and control for heterogeneity seriously jeopardizes the depth and significance of the studies in our understanding of autocracies and their effects on social, political and economic outcomes. The study of autocracies' effect on economic growth and income differences is not an exception in this regard.

Authoritarian regimes are generally associated with low level of income and less developed economic structure. Our study also confirms these associations. Within the study period from 1972 to 2008, while a citizen in autocratic regime earns an average income of 1,601.09 USD, which actually is above middle income group average, the same citizen in non-autocracies and the world at large earns 6 and 3.6 times more average income in the same period. Structurally, too, our aggregate demand decomposition of growth among these groups demonstrates that the export, import and investment sectors are the leading contributors to growth in autocracies whereas the private consumption alone contributes close to 60% to average real GDP growth in the world and non-autocracies. Sectoral decompositions of growth, however, identify the service sector as the largest sector both in size and contribution to growth in autocracies and non-autocracies. Nonetheless, the primary and secondary sectors

are way more important in the former than the latter. The agricultural and industrial sectors combined accounts for 46.57% of the total production in autocracies compared to only 23.84% and 26.94% in non-autocracies and the world averages respectively. Our study clearly shows that the world without authoritarian regimes is on average more prosperous and less agrarian, less industrialist and less exported oriented.

Given the presence of large disparities in the political institutions in autocracies, such dichotomous classification of political regimes is less illuminating and perhaps misleading. Autocracies are politically more diverse than democracies. They, for example, take up at least 16 points in the 21-point POLITY IV index that ranks states mainly based on their patterns of authority. The distinction of autocratic regimes as civilian, monarch and military under CGV classification in Cheibub et al. (2010), into dominant party, personalist, monarch and military under GWF classification in Geddes et al. (2014) and into electoral, monarch and military under HTW in Wahmana et al. (2013) are leading examples of datasets that demonstrate the heterogeneity within authoritarian regimes. Further, decomposing growth in different autocratic regimes provides additional insight to our understanding of autocratic regimes.

Across the three autocratic regime classifications, military represent the poorest and monarchies the richest regime types in the study period. In terms of real GDP growth, electoral and dominant party autocracies display the second highest average growth next to monarchic regimes under their respective classifications. When this growth is decomposed into aggregate demand components, in GWF classification for example, export sector led growth dominates in military and dominant party regimes while private consumption and import outperform other aggregate demand components in personalist and monarchic autocracies respectively. In the sectoral decomposition of growth, the service sector is the leading contributor to growth in all regime types including monarchic autocrats where the industry sector has the highest share in

GDP. Agriculture contribute the least across all regimes with its lowest role in monarchic regime and highest in military autocracy. Although the study of autocracies in a relatively more politically homogenous regime level illuminates our knowledge of autocratic economies and their growth, the differences in some regime types are still too large that it is difficult to distinctively associate specific type of economic structure and performance to a specific regime type.

As a complementary contribution to the literature, our study further narrowed the scope and decomposed economic growth in selected Eastern Asian countries that pursued the *developmental state*. The decomposition has showed that, despite their similarity on how they organize the political life in their society, they pursue divergent paths to prosperity. Under a post-Keynesian tool developed by Hein (2012), for instance, we show that until the Asian Financial Crisis in 1997, Thailand, Indonesia, Malaysia and South Korea pursue a debt-led consumption growth while Taiwan and China follow an export-led mercantilist growth regime. There are also differences in their pattern of sectoral transformation and the role of specific aggregate demand components in their development trajectory. The fact that these success stories pursued divergent paths to prosperity makes their model of growth to be even more sophisticated to emulate.

The fifth chapter of the thesis addresses a fundamental issue in comparative political economy literatures. It deals with the effect of autocratic regime types on economic performance. It shows that the effect of autocratic regimes on economic outcomes depends our choice of outcome variable (growth rate or level), the type of data (balanced or unbalanced), the time span (long-run or short-run) and the kind of estimation techniques employed (within or GMM estimators). More importantly, however, in spite of our choice of outcome variables, data type, time span or estimation techniques, controlling for time effects absorbs the explanatory powers of most autocratic regime types in discerning the difference in economic growth and income in the dataset. These layers of estimations are separately conducted across

three different autocratic classifications (CGV, GWF and HTW); yet, the central lesson of the analysis largely remains the same. Our results suggest that the differences in economic growth and income levels in the dataset are mainly explained by other factors that commonly affect political regimes than mere regime types. It is also possible that the arbitrariness involved in classification of regime types affect results. Additionally, it is also plausible that the way regime types are categorized in these regime classifications fail to take into account the internal institutional heterogeneity within a regime type. When these differences are related to institutions that are known to promote economic growth, then the possibility that a specific regime displays a uniform effect on economic outcome diminishes. Our analysis also provides some support for both of these possibilities.

The exploitation of distinctions among autocracies and the use of multiple regime types to study the relationships between political regime types and economic outcomes is one of future research areas previous studies identified. Our study investigated whether the answer to some pending political economy issues lies in the distinction of regime types Wright (2008) wondered a decade ago. It sheds light on Acemoglu et al. (2017: 28) call for exploring “complex interactions between political regimes and economic outcomes, incorporating among other things nonlinear dynamics, multiple regime types and richer heterogeneous effects” as important future areas of inquiry. Our research, therefore, is a continuation in the knowledge production in political economy literature and serves as a step to further researches on the interactions between political regimes and economic outcomes.

Future inquires into the complex relationship between political regime and economic outcomes should focus, among others, on four major areas. Firstly, given how important are time effects in explain growth and income differences in our results, further studies that explore specific latent dynamic factors that drive growth and income in autocracies would be imperative. Along this line, Dynamic Factor Models could be used to understand if there are hidden dynamic factors that evolve in a

particular way and affect growth patterns in number of countries simultaneously. Secondly, our study only investigated the effect of autocratic regime types on economic growth and income levels as two major economic outcome variables. The findings, thus, do not rule out the possibility of any robust relationships between autocratic regime types and other economic outcomes such as saving, investment etc. Thirdly, the study of autocratic regimes in small homogenous groups in terms of their income level, economic growth, economic structure etc could also be another area of future research that potentially contributes in identification of factors that determine the interaction between autocratic regime types and economic outcomes. Fourthly, another potential future major research avenue is related with regime type classifications. There is a need to reduce subjectivity and arbitrariness in classification of regimes. The use of methods such as principal component analysis and clustering analysis to come up with a more objective classification of regime types could be pursued to this end. These approaches potentially reduce the internal institutional heterogeneities within regime types and could produce a more consistent result in the interaction between autocratic regimes types and economic growth. While distinguishing among authoritarian regimes is important to deepen our knowledge of their interaction with socio-political outcomes, their specific effect on economic outcome continues to be wide open for reflection and research.

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APPENDIX 1: AUTOCRATIC COUNTRIES LIST (1972-2008)

Countries	Autocratic stay	CGV			GWF				HTW		
		Military	Monarchi	Civilian	Dominant Party	Personalis	Military	Monarchi	Monarchi	Military	Electoral
Afghanistan	26		x	x	x	x		x	x		
Albania	19	x		x	x					x	
Algeria	37	x		x	x		x		x		
Angola	33			x	x				x	x	
Argentina	7	x					x		x		
Azerbaijan	16			x			x			x	
Bangladesh	13	x		x	x	x	x		x	x	
Belarus	16			x	x					x	
Benin	18	x					x		x	x	
Bolivia	8	x					x		x		
Brazil	13	x					x		x		
Bulgaria	18			x	x					x	
Burkina Faso	35	x					x	x	x	x	
Burundi	28	x		x	x		x		x	x	
Cambodia	37	x		x	x	x				x	
Cameroon	37			x	x					x	
Central African Republic	26	x		x			x	x	x		
Chad	34	x		x	x	x	x		x	x	
Chile	15	x					x		x		
China	37			x	x					x	
Congo (Brazzaville)	31	x			x	x			x		
Congo (Kinshasa)	37	x		x			x		x		
Cote d'Ivoire	37	x		x	x	x			x	x	
Cuba	37	x		x	x					x	
Czechoslovakia	17			x	x					x	
East Germany	18			x	x					x	
Ecuador	7	x					x	x	x		
Egypt	37	x			x					x	
El Salvador	12	x		x	x		x		x	x	
Eritrea	15			x	x				x		
Ethiopia	37	x	x	x	x		x	x	x	x	
Gabon	37			x	x					x	
Gambia	16	x					x		x	x	
Georgia	12			x			x			x	
Ghana	17	x					x	x	x	x	

Continued

Greece	2	x				x			x	
Guatemala	4	x							x	x
Guinea	37	x	x	x	x				x	x
Guinea Bissau	26	x	x	x	x				x	x
Haiti	27	x	x			x	x		x	x
Honduras	9	x					x		x	
Hungary	18		x	x						x
Indonesia	27	x		x					x	x
Iran	37		x	x	x		x	x		x
Iraq	32	x		x	x	x			x	
Jordan	37		x				x		x	
Kazakhstan	17		x			x				x
Kenya	26		x	x						x
Kuwait	37		x				x	x		
Kyrgyzstan	13		x			x				x
Laos	33	x	x	x						x
Lesotho	21	x	x	x			x		x	
Liberia	25	x	x	x	x				x	x
Libya	37	x				x			x	
Madagascar	20	x		x	x	x			x	x
Malawi	22		x			x			x	x
Malaysia	35		x	x						x
Mali	20	x				x			x	
Mauritania	35	x	x			x	x		x	x
Mexico	28		x	x						x
Mongolia	18		x	x						x
Morocco	37		x					x	x	
Mozambique	31		x	x					x	x
Myanmar	36		x				x		x	
Nepal	22		x					x	x	
Nicaragua	12	x	x	x	x				x	x
Niger	23	x	x			x	x		x	x
Nigeria	22	x					x		x	
North Korea	37	x	x	x						x
North Vietnam	4			x						x
North Yemen	17	x	x			x	x		x	x
Oman	37		x					x	x	
Pakistan	19	x					x		x	
Panama	17	x					x		x	
Paraguay	17	x		x						x
Peru	15	x	x			x	x		x	x
Philippines	13		x			x				x

Continued

Poland	17	x	x	x				x
Portugal	3	x	x		x			x x
Romania	18		x	x				x
Russia	15		x		x			x
Rwanda	37	x	x	x		x		x x
Saudi Arabia	37		x			x	x	
Senegal	28		x	x				x
Serbia	8		x	x				x
Sierra Leone	24	x	x	x		x		x x
Singapore	37		x	x				x
Somalia	20	x	x		x			x
South Africa	22		x	x				x
South Korea	15	x				x		x
South Vietnam	3					x		x
South Yemen	17		x	x				x
Spain	5	x	x		x			x
Sri Lanka	8		x	x				x
Sudan	33	x			x			x
Swaziland	37		x			x	x	
Syria	37	x		x				x
Taiwan	21	x	x	x				x x
Tajikistan	17		x		x			x
Tanzania	37	x	x	x				x
Thailand	8	x	x			x		x
Togo	36	x	x		x			x
Tunisia	37	x	x	x				x
Turkey	2	x				x		x
Turkmenistan	17		x	x				x
USSR	19		x	x				
Uganda	31	x	x		x			x
UAE	37		x			x	x	
Uruguay	11	x				x		x x
Uzbekistan	17		x	x				x
Vietnam	33	x	x	x				x
Yemen	19	x			x			x
Yugoslavia	19		x	x				x
Zambia	31		x	x				x
Zimbabwe	28		x	x				x

APPENDIX 2: LIST OF ECONOMIC ACTIVITIES IN EACH SECTOR

-
- A -Agriculture, hunting and forestry
 - 01 - Agriculture, hunting and related service activities
 - 02 - Forestry, logging and related service activities
 - B -Fishing
 - 05 - Fishing, aquaculture and service activities incidental to fishing
 - C -Mining and quarrying
 - 10 - Mining of coal and lignite; extraction of peat
 - 11 - Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction, excluding surveying
 - 12 - Mining of uranium and thorium ores
 - 13 - Mining of metal ores
 - 14 - Other mining and quarrying
 - D - Manufacturing
 - 15 - Manufacture of food products and beverages
 - 16 - Manufacture of tobacco products
 - 17 - Manufacture of textiles
 - 18 - Manufacture of wearing apparel; dressing and dyeing of fur
 - 19 - Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear
 - 20 - Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
 - 21 - Manufacture of paper and paper products
 - 22 - Publishing, printing and reproduction of recorded media
 - 23 - Manufacture of coke, refined petroleum products and nuclear fuel
 - 24 - Manufacture of chemicals and chemical products
 - 25 - Manufacture of rubber and plastics products
 - 26 - Manufacture of other non-metallic mineral products
 - 27 - Manufacture of basic metals
 - 28 - Manufacture of fabricated metal products, except machinery and Equipment
 - 29 - Manufacture of machinery and equipment n.e.c.
 - 30 - Manufacture of office, accounting and computing machinery
 - 31 - Manufacture of electrical machinery and apparatus n.e.c.
 - 32 - Manufacture of radio, television and communication equipment and apparatus
 - 33 - Manufacture of medical, precision and optical instruments, watches and clocks
 - 34 - Manufacture of motor vehicles, trailers and semi-trailers
 - 35 - Manufacture of other transport equipment
 - 36 - Manufacture of furniture; manufacturing n.e.c.
 - 37 - Recycling
 - E -Electricity, gas and water supply
 - 40 - Electricity, gas, steam and hot water supply
 - 41 - Collection, purification and distribution of water
 - F -Construction
 - 45 - Construction
 - G -Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods
 - 50 - Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel
 - 51 - Wholesale trade and commission trade, except of motor vehicles and motorcycles
 - 52 - Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods
-

Continued

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- H -Hotels and restaurants
 - 55 - Hotels and restaurants
 - I-Transport, storage and communications
 - 60 - Land transport; transport via pipelines
 - 61 - Water transport
 - 62 - Air transport
 - 63 - Supporting and auxiliary transport activities; activities of travel Agencies
 - 64 - Post and telecommunications
 - J – Financial Intermediation
 - 65 - Financial intermediation, except insurance and pension funding
 - 66 - Insurance and pension funding, except compulsory social security
 - 67 - Activities auxiliary to financial intermediation
 - K -Real estate, renting and business activities
 - 70 - Real estate activities
 - 71 - Renting of machinery and equipment without operator and of personal and household goods
 - 72 - Computer and related activities
 - 73 - Research and development
 - 74 - Other business activities
 - L -Public administration and defence; compulsory social security
 - 75 - Public administration and defence; compulsory social security
 - M -Education
 - 80 - Education
 - N -Health and social work
 - 85 - Health and social work
 - O -Other community, social and personal service activities
 - 90 - Sewage and refuse disposal, sanitation and similar activities
 - 91 - Activities of membership organizations n.e.c.
 - 92 - Recreational, cultural and sporting activities
 - 93 - Other service activities
 - P-Activities of private households as employers and undifferentiated production activities of private households
 - 95-Activities of private households as employers of domestic staff
 - 96-Undifferentiated goods-producing activities of private households for own use
 - 97-Undifferentiated service-producing activities of private households for own use
 - Q-Extraterritorial organizations and bodies
 - 99-Extraterritorial organizations and bodies

APPENDIX 3: GROWTH AND INCOME REGRESSION RESULTS

Table 3A: Effects of GWF autocratic regime types on GDP per capita growth, balanced panel

	(1)	(2)	(3)	(4)	(5)
Dom.Party GWF	-0.720 (0.797)	-0.293 (0.763)	-0.961 (0.948)	1.529 (0.951)	1.084 (1.026)
Personalist GWF	-1.310* (0.692)	-1.428** (0.702)	-1.171 (0.809)	-0.146 (0.819)	-0.226 (0.924)
Monarchic GWF	-0.857*** (0.201)	-0.875*** (0.319)	-1.211*** (0.123)	-0.101 (0.522)	-0.361 (0.416)
Military GWF	-1.881 (1.234)	-1.794 (1.251)	-1.845 (1.347)	-0.195 (1.238)	-0.313 (1.322)
Christian %		-3.804 (5.946)	-1.402 (6.782)		-5.321 (6.278)
Islam %		6.634 (4.311)	8.370* (4.738)		5.183 (5.081)
Buddhism %		8.593* (4.532)	11.63** (5.155)		3.454 (6.669)
Hinduism %		22.59*** (5.454)	25.21*** (5.891)		11.14 (7.696)
Resource rent			0.232*** (0.0749)		0.181** (0.0829)
Constant	2.970*** (0.405)	1.457 (4.131)	-2.122 (5.078)	2.218** (1.104)	1.935 (4.857)
Observations	2,627	2,590	2,401	2,627	2,401
R-squared	0.005	0.009	0.030	0.079	0.096
Countries	71	70	69	71	69

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The Hausman test statistics is 11.37 (p-value 0.0277) therefore selects fixed effect model as the preferred modeling. The results are presented in five columns. In column 1 the baseline model is estimated without any control variable and without time effect variables. Control variables are introduced to the model in the remaining columns except in column 4. In column 2, the percentage of followers of the four largest religions Christianity (Christian %), Islam (Islam %t), Buddhism (Buddhism %) and Hinduism (Hinduism %) are included; and in column 3, the percentage share of rent collected from natural resource (Resource rent) is included. The 4th and 5th columns present the results of models in 1st and 3rd with time effects respectively.

Table 3B: Effects of HTW autocratic regime types on GDP per capita growth, balanced panel

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Electoral HTW	-0.292 (0.671)	-0.406 (0.665)	-0.134 (0.671)	-0.224 (0.660)	-0.561 (0.779)	0.562 (0.768)	0.249 (0.811)
Monarchic HTW	-0.528 (1.008)	-0.648 (1.077)	-0.527 (1.022)	-0.662 (1.171)	-1.235 (1.563)	0.151 (1.041)	-0.0763 (1.338)
Military HTW	-1.79*** (0.608)	-1.77*** (0.595)	-1.51** (0.606)	-1.64*** (0.602)	-1.87*** (0.627)	-0.760 (0.657)	-0.852 (0.651)
Latitude		0.028*** (0.0106)	0.0141 (0.0165)	0.00777 (0.0146)	0.0330* (0.0176)		0.0305* (0.0163)
UK colony			-1.629* (0.863)	-1.90** (0.759)	-0.405 (0.980)		-0.621 (0.891)
French colony			-2.32*** (0.745)	-2.74*** (0.695)	-1.210 (0.831)		-1.442* (0.809)
Spanish colony			-0.586 (0.968)	0.0669 (0.999)	0.699 (1.042)		0.586 (0.992)
Christian %				-1.674 (1.429)	1.109 (1.771)		0.342 (1.510)
Islam %				-0.190 (1.278)	1.466 (1.418)		0.711 (1.243)
Buddhism %				1.839 (1.542)	2.639* (1.531)		1.552 (1.246)
Hinduism %				-2.217 (1.839)	1.917 (2.143)		0.0334 (1.703)
Resource rent					0.115** (0.0445)		0.0729* (0.0419)
East Asia					3.388*** (0.845)		3.188*** (0.686)
South America					1.449* (0.827)		1.598** (0.803)
Constant	2.821*** (0.378)	2.435*** (0.435)	3.428*** (0.789)	4.357*** (1.157)	0.166 (1.589)	2.87*** (1.045)	1.554 (1.701)
Observations	2,627	2,590	2,590	2,590	2,401	2,627	2,401
R-squared	0.053	0.13	0.29	0.378		0.02	
Countries	71	70	70	70	69	71	69

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The Hausman test statistics is 1.24 (p -value=0.7429) therefore selects random effect model as the preferred modeling. The results are presented in seven columns. In column 1 the baseline model is estimated without any control variable and without time effect variables. Control variables are introduced to the model in the remaining columns except in column 6. In column 2, the latitude of country centroid (Latitude), in column 3 dummies for the three large colonial rulers (British colony=1 if a country was British colony, 0 otherwise; French colony=1 if a country was French colony, 0 otherwise and Spanish=1 if a country is was Spaniard colony, 0 otherwise) and in column 3, the percentage of followers of the four largest religions Christianity (Christian %), Islam (Islam %), Buddhism (Buddhism %) and Hinduism (Hinduism %) are included as control variables. The 5th column further added the percentage share of rent collected from natural resource (Resource rent), East Asian dummy (East Asia=1 if a country is from East Asian, 0 otherwise) and South American dummy (South American=1 if a country is from South America, 0 otherwise). The 6th and 7th columns present the results of models in 1st and 5th with time effects respectively.

Table 3C: Effects of HTW autocratic regime types on long run GDP per capita growth, balanced panel

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Electoral HTW	0.139 (0.681)	0.0808 (0.678)	0.200 (0.677)	0.155 (0.663)	-0.0434 (0.785)	0.733 (0.794)	0.568 (0.897)
Monarchic HTW	-0.683 (0.899)	-0.746 (0.965)	-0.722 (0.945)	-0.732 (1.048)	-0.697 (1.222)	-0.137 (0.839)	0.267 (1.045)
Military HTW	-1.473** (0.726)	-1.47** (0.715)	-1.354* (0.708)	-1.41** (0.705)	-1.472** (0.686)	-0.724 (0.745)	-0.670 (0.719)
Latitude		0.0240** (0.0115)	0.00944 (0.0167)	0.00486 (0.0152)	0.0229 (0.0171)		0.0278* (0.0151)
UK colony			-1.542* (0.831)	-1.75** (0.739)	-0.397 (0.861)		-0.670 (0.779)
French colony			-2.238*** (0.744)	-2.52*** (0.704)	-0.952 (0.834)		-1.231 (0.854)
Spanish colony			-0.687 (0.935)	-0.0539 (0.976)	0.266 (0.965)		0.399 (0.916)
Christian %				-1.662 (1.845)	1.438 (2.199)		-0.485 (2.459)
Islam %				-0.571 (1.729)	1.401 (1.886)		-0.345 (2.173)
Buddhism %				1.839 (2.121)	2.591 (1.885)		0.755 (1.990)
Hinduism %				-1.116 (3.139)	2.550 (3.135)		-0.602 (3.147)
Resource rent					0.0482 (0.0469)		0.0120 (0.0525)
East Asia					3.717*** (0.925)		3.209*** (0.897)
South America					1.263 (0.788)		1.547** (0.787)
Constant	2.398*** (0.337)	2.045*** (0.388)	3.127*** (0.760)	4.044*** (1.544)	0.106 (2.009)	5.70*** (0.597)	5.203** (2.406)
Observations	2,415	2,381	2,381	2,381	2,228	2,415	2,228
R-squared	0.051	0.1	0.246	0.327	0.416	0.028	0.495
Countries	71	70	70	70	69	71	69

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The Hausman test statistics is 2.59 (p -value=0.460) therefore selects random effect model as the preferred modeling. The results are presented in seven columns. In column 1 the baseline model is estimated without any control variable and without time effect variables. Control variables are introduced to the model in the remaining columns except in column 6. In column 2, the latitude of country centroid (Latitude), in column 3 dummies for the three large colonial rulers (British colony=1 if a country was British colony, 0 otherwise; French colony=1 if a country was French colony, 0 otherwise and Spanish=1 if a country is was Spaniard colony, 0 otherwise) and in column 3, the percentage of followers of the four largest religions Christianity (Christian %), Islam (Islam %), Buddhism (Buddhism %) and Hinduism (Hinduism %) are included as control variables. The 5th column further added the percentage share of rent collected from natural resource (Resource rent), East Asian dummy (East Asia=1 if a country is from East Asian, 0 otherwise) and South American dummy (South American=1 if a country is from South America, 0 otherwise). The 6th and 7th columns present the results of models in 1st and 5th with time effects respectively.

Table 3D: Effects of GWF autocratic regime types on long run GDP per capita growth, balanced panel

	(1)	(2)	(3)	(4)	(5)
Dom.Party GWF	-0.00208 (0.710)	0.266 (0.687)	-0.268 (0.797)	1.317 (0.899)	0.877 (0.923)
Personalist GWF	-1.362** (0.568)	-1.492** (0.630)	-1.346* (0.685)	-0.562 (0.656)	-0.599 (0.776)
Monarchic GWF	-1.274*** (0)	-1.392*** (0.104)	-1.485*** (0.119)	-0.614* (0.364)	-0.693* (0.369)
Military GWF	-1.995 (1.393)	-1.950 (1.401)	-2.047 (1.463)	-0.997 (1.433)	-1.127 (1.469)
Christian %		-6.888 (8.285)	-5.596 (8.912)		-4.545 (7.821)
Islam %		5.962 (8.381)	6.672 (8.088)		-4.084 (8.016)
Buddhism %		9.311** (4.545)	10.43*** (3.668)		4.257 (5.804)
Hinduism %		22.56** (11.03)	24.56** (10.79)		1.976 (10.99)
Resource rent			0.0748 (0.0677)		0.0153 (0.0743)
Constant	2.619*** (0.380)	2.722 (4.415)	1.293 (4.890)	2.700*** (0.667)	4.511 (4.885)
Observations	2,415	2,381	2,228	2,415	2,228
R-squared	0.014	0.020	0.026	0.309	0.316
Countries	71	70	69	71	69

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The Hausman test statistics is 10.39 (p-value 0.0344) therefore selects fixed effect model as the preferred modeling. The results are presented in five columns. In column 1 the baseline model is estimated without any control variable and without time effect variables. Control variables are introduced to the model in the remaining columns except in column 4. In column 2, the percentage of followers of the four largest religions Christianity (Christian %), Islam (Islam %t), Buddhism (Buddhism %) and Hinduism (Hinduism %) are included; and in column 3, the percentage share of rent collected from natural resource (Resource rent) is included. The 4th and 5th columns present the results of models in 1st and 3rd with time effects respectively.

Table 3E: Effects of CGV autocratic regime types on GDP per capita growth, unbalanced panel

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Monarchic CGV	-0.801 (0.930)	-0.885 (0.976)	-0.835 (0.973)	-0.854 (1.104)	-2.177 (1.569)	-0.296 (0.971)	-1.101 (1.323)
Military CGV	-1.429** (0.712)	-1.404** (0.714)	-1.318* (0.749)	-1.290* (0.771)	-1.552* (0.823)	-0.609 (0.724)	-0.812 (0.782)
Civilian CGV	-1.49*** (0.568)	-1.53*** (0.574)	-1.46** (0.616)	-1.42** (0.639)	-2.39*** (0.621)	-0.71 (0.621)	-1.66*** (0.629)
Latitude		0.0226** (0.0102)	0.0215 (0.0142)	0.0150 (0.0132)	0.0296* (0.0173)		0.0240 (0.0152)
UK colony			-0.200 (0.814)	-0.559 (0.764)	0.716 (0.935)		0.387 (0.829)
French colony			-0.610 (0.664)	-1.038 (0.639)	-0.0757 (0.752)		-0.417 (0.677)
Spanish colony			0.0921 (0.779)	0.388 (0.865)	0.612 (1.021)		0.531 (0.916)
Christian %				0.233 (1.917)	2.211 (2.115)		1.042 (1.720)
Islam %				1.161 (1.745)	1.873 (1.721)		0.871 (1.426)
Buddhism %				3.953** (2.004)	4.385** (1.941)		2.742* (1.507)
Hinduism %				-0.285 (2.216)	3.938 (2.539)		1.637 (1.978)
Resource rent					0.165*** (0.0394)		0.115*** (0.0334)
East Asia					3.627*** (0.871)		3.314*** (0.689)
South America					1.750** (0.827)		1.618** (0.747)
Constant	3.045*** (0.431)	2.696*** (0.481)	2.819*** (0.722)	2.265 (1.625)	-1.285 (1.964)	2.891*** (1.030)	0.790 (1.932)
Observations	3,272	3,218	3,218	3,185	2,939	3,272	2,939
R-squared	0.026	0.064	0.07	0.131		0.032	
Countries	99	97	97	96	95	99	95

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The Hausman test statistics is 0.05 (p -value=0.997) therefore selects random effect model as the preferred modeling. The results are presented in seven columns. In column 1 the baseline model is estimated without any control variable and without time effect variables. Control variables are introduced to the model in the remaining columns except in column 6. In column 2, the latitude of country centroid (Latitude), in column 3 dummies for the three large colonial rulers (British colony=1 if a country was British colony, 0 otherwise; French colony=1 if a country was French colony, 0 otherwise and Spanish=1 if a country is was Spaniard colony, 0 otherwise) and in column 3, the percentage of followers of the four largest religions Christianity (Christian %), Islam (Islam %), Buddhism (Buddhism %) and Hinduism (Hinduism %) are included as control variables. The 5th column further added the percentage share of rent collected from natural resource (Resource rent), East Asian dummy (East Asia=1 if a country is from East Asian, 0 otherwise) and South American dummy (South American=1 if a country is from South America, 0 otherwise). The 6th and 7th columns present the results of models in 1st and 5th with time effects respectively.

Table 3F: Effects of GWF autocratic regime types on GDP per capita growth, unbalanced panel

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dom.Party GWF	-0.639 (0.566)	-0.630 (0.555)	-0.505 (0.581)	-0.448 (0.593)	-1.323** (0.613)	0.746 (0.631)	-0.164 (0.624)
Personalist GWF	-2.03*** (0.651)	-2.24*** (0.647)	-2.06*** (0.699)	-1.91*** (0.724)	-2.28*** (0.703)	-1.232* (0.698)	-1.640** (0.767)
Monarchic GWF	-0.734 (0.918)	-0.864 (0.974)	-0.733 (0.978)	-0.777 (1.089)	-2.019 (1.572)	0.176 (0.970)	-0.657 (1.312)
Military GWF	-1.798* (0.998)	-1.728* (0.987)	-1.726* (0.995)	-1.809* (0.978)	-1.959* (1.092)	-0.293 (0.957)	-0.744 (0.979)
Latitude		0.0256*** (0.00981)	0.0282** (0.0134)	0.0208* (0.0124)	0.0354** (0.0156)		0.0307** (0.0133)
UK colony			-0.0313 (0.818)	-0.407 (0.761)	0.723 (0.883)		0.385 (0.770)
French colony			-0.377 (0.626)	-0.777 (0.614)	0.126 (0.702)		-0.161 (0.620)
Spanish colony			0.590 (0.795)	0.874 (0.840)	1.051 (1.005)		0.861 (0.876)
Christian %				0.592 (1.867)	2.298 (2.069)		0.962 (1.606)
Islam %				1.537 (1.684)	2.106 (1.706)		0.904 (1.370)
Buddhism %				4.410** (2.000)	4.549** (1.872)		2.760** (1.379)
Hinduism %				0.124 (2.129)	4.066 (2.514)		1.503 (1.899)
Resource rent					0.161*** (0.0393)		0.105*** (0.0331)
East Asia					3.429*** (0.890)		2.910*** (0.692)
South America					1.863** (0.834)		1.846*** (0.713)
Constant	2.946*** (0.415)	2.592*** (0.452)	2.464*** (0.676)	1.598 (1.600)	-1.672 (1.865)	2.208** (1.051)	0.210 (1.823)
Observations	3,272	3,218	3,218	3,185	2,939	3,272	2,939
R-squared	0.076	0.118	0.121	0.166		0.081	
Countries	99	97	97	96	95	99	95

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The Hausman test statistics is 3.00 (p -value=0.5587) therefore selects random effect model as the preferred modeling. The results are presented in seven columns. In column 1 the baseline model is estimated without any control variable and without time effect variables. Control variables are introduced to the model in the remaining columns except in column 6. In column 2, the latitude of country centroid (Latitude), in column 3 dummies for the three large colonial rulers (British colony=1 if a country was British colony, 0 otherwise; French colony=1 if a country was French colony, 0 otherwise and Spanish=1 if a country is was Spaniard colony, 0 otherwise) and in column 3, the percentage of followers of the four largest religions Christianity (Christian %), Islam (Islam %), Buddhism (Buddhism %) and Hinduism (Hinduism %) are included as control variables. The 5th column further added the percentage share of rent collected from natural resource (Resource rent), East Asian dummy (East Asia=1 if a country is from East Asian, 0 otherwise) and South American dummy (South American=1 if a country is from South America, 0 otherwise). The 6th and 7th columns present the results of models in 1st and 5th with time effects respectively.

Table 3G: Effects of HTW autocratic regime types on GDP per capita growth, unbalanced panel

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Electoral HTW	-0.541 (0.576)	-0.689 (0.580)	-0.540 (0.606)	-0.538 (0.601)	-1.124 (0.703)	0.226 (0.639)	-0.494 (0.704)
Monarchic HTW	-0.561 (0.933)	-0.720 (0.983)	-0.578 (0.976)	-0.698 (1.116)	-1.999 (1.641)	0.171 (0.982)	-0.713 (1.394)
Military HTW	-1.66*** (0.539)	-1.664** (0.535)	-1.54*** (0.540)	-1.53*** (0.547)	-1.85*** (0.579)	-0.57 (0.600)	-0.93 (0.614)
Latitude		0.0231** (0.0105)	0.0237* (0.0139)	0.0160 (0.0130)	0.0329** (0.0156)		0.0263* (0.0137)
UK colony			-0.213 (0.802)	-0.604 (0.745)	0.635 (0.891)		0.278 (0.787)
French colony			-0.657 (0.632)	-1.045* (0.622)	-0.0183 (0.706)		-0.384 (0.642)
Spanish colony			0.439 (0.789)	0.638 (0.865)	0.897 (1.028)		0.715 (0.918)
Christian %				0.776 (1.864)	2.926 (2.017)		1.538 (1.594)
Islam %				1.703 (1.744)	2.636 (1.717)		1.396 (1.416)
Buddhism %				4.625** (1.996)	5.109*** (1.846)		3.184** (1.371)
Hinduism %				0.678 (2.080)	5.280** (2.418)		2.374 (1.859)
Resource rent					0.161*** (0.0398)		0.107*** (0.0338)
East Asia					3.669*** (0.945)		3.336*** (0.745)
South America					1.889** (0.841)		1.797** (0.758)
Constant	2.720*** (0.370)	2.442*** (0.406)	2.450*** (0.669)	1.490 (1.498)	-2.281 (1.720)	2.388** (0.995)	-0.0527 (1.661)
Observations	3,272	3,218	3,218	3,185	2,939	3,272	2,939
R-squared	0.029	0.064	0.072	0.127		0.012	
Countries	99	97	97	96	95	99	95

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The Hausman test statistics is 1.96 (p -value=0.585) therefore selects random effect model as the preferred modeling. The results are presented in seven columns. In column 1 the baseline model is estimated without any control variable and without time effect variables. Control variables are introduced to the model in the remaining columns except in column 6. In column 2, the latitude of country centroid (Latitude), in column 3 dummies for the three large colonial rulers (British colony=1 if a country was British colony, 0 otherwise; French colony=1 if a country was French colony, 0 otherwise and Spanish=1 if a country is was Spaniard colony, 0 otherwise) and in column 3, the percentage of followers of the four largest religions Christianity (Christian %), Islam (Islam %), Buddhism (Buddhism %) and Hinduism (Hinduism %) are included as control variables. The 5th column further added the percentage share of rent collected from natural resource (Resource rent), East Asian dummy (East Asia=1 if a country is from East Asian, 0 otherwise) and South American dummy (South American=1 if a country is from South America, 0 otherwise). The 6th and 7th columns present the results of models in 1st and 5th with time effects respectively.

Table 3H: Effects of CGV autocratic regime types on long run GDP per capita growth, unbalanced panel

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Monarchic CGV	-1.001 (0.837)	-1.045 (0.871)	-1.077 (0.886)	-1.710 (1.155)	-2.319* (1.331)	-0.795 (0.920)	-1.689 (1.170)
Military CGV	-1.292 (0.863)	-1.296 (0.865)	-1.267 (0.887)	-1.255 (0.913)	-1.397 (0.985)	-0.774 (0.858)	-1.036 (0.964)
Civilian CGV	-1.319** (0.626)	-1.326** (0.629)	-1.307** (0.655)	-1.161* (0.676)	-1.98*** (0.666)	-0.797 (0.668)	-1.552** (0.696)
Latitude		0.0192* (0.0109)	0.0203 (0.0146)	0.00298 (0.0166)	0.0150 (0.0195)		0.0104 (0.0180)
UK colony			0.141 (0.855)	-0.521 (0.821)	0.665 (0.883)		0.481 (0.826)
French colony			-0.442 (0.653)	-1.016 (0.706)	-0.111 (0.729)		-0.205 (0.695)
Spanish colony			0.125 (0.790)	0.580 (0.988)	0.570 (1.137)		0.364 (1.064)
Christian %				1.123 (2.805)	3.075 (2.752)		2.165 (2.613)
Islam %				3.472 (2.518)	4.076* (2.292)		3.048 (2.178)
Buddhism %				5.316** (2.667)	5.313** (2.350)		3.570 (2.185)
Hinduism %				3.663 (4.150)	6.656* (3.689)		3.864 (2.789)
Resource rent					0.116*** (0.0391)		0.0690* (0.0361)
East Asia					3.855*** (0.986)		3.748*** (0.875)
South America					1.549* (0.802)		1.469* (0.752)
Constant	2.780*** (0.491)	2.466*** (0.537)	2.484*** (0.759)	0.886 (2.286)	-2.225 (2.480)	6.648*** (0.789)	2.706 (2.552)
Observations	3,002	2,954	2,954	2,925	2,722	3,002	2,722
R-squared	0.02	0.05	0.058	0.075		0.013	
Countries	99	97	97	96	95	99	95

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The Hausman test statistics is 0.31 (p -value=0.967) therefore selects random effect model as the preferred modeling. The results are presented in seven columns. In column 1 the baseline model is estimated without any control variable and without time effect variables. Control variables are introduced to the model in the remaining columns except in column 6. In column 2, the latitude of country centroid (Latitude), in column 3 dummies for the three large colonial rulers (British colony=1 if a country was British colony, 0 otherwise; French colony=1 if a country was French colony, 0 otherwise and Spanish=1 if a country is was Spaniard colony, 0 otherwise) and in column 3, the percentage of followers of the four largest religions Christianity (Christian %), Islam (Islam %), Buddhism (Buddhism %) and Hinduism (Hinduism %) are included as control variables. The 5th column further added the percentage share of rent collected from natural resource (Resource rent), East Asian dummy (East Asia=1 if a country is from East Asian, 0 otherwise) and South American dummy (South American=1 if a country is from South America, 0 otherwise). The 6th and 7th columns present the results of models in 1st and 5th with time effects respectively.

Table 3I: Effects of GWF autocratic regime types on long run GDP per capita growth, unbalanced panel

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dom.Party GWF	0.000656 (0.590)	-0.0424 (0.590)	0.0231 (0.604)	0.169 (0.631)	-0.497 (0.679)	1.010 (0.666)	0.280 (0.711)
Personalist GWF	-1.91*** (0.550)	-1.96*** (0.557)	-1.881** (0.563)	-1.79*** (0.585)	-1.84*** (0.590)	-1.169* (0.598)	-1.136* (0.635)
Monarchic GWF	-0.694 (0.809)	-0.777 (0.853)	-0.736 (0.875)	-1.364 (1.138)	-1.884 (1.332)	0.0270 (0.867)	-0.749 (1.136)
Military GWF	-1.880 (1.186)	-1.854 (1.181)	-1.859 (1.188)	-1.845 (1.192)	-1.933 (1.264)	-0.801 (1.139)	-1.150 (1.187)
Latitude		0.0224** (0.0106)	0.0288** (0.0139)	0.0112 (0.0154)	0.0242 (0.0171)		0.0209 (0.0154)
UK colony			0.373 (0.874)	-0.303 (0.835)	0.769 (0.842)		0.577 (0.783)
French colony			-0.192 (0.583)	-0.705 (0.670)	0.109 (0.687)		-0.00120 (0.648)
Spanish colony			0.811 (0.804)	1.189 (0.977)	1.111 (1.121)		0.886 (1.020)
Christian %				1.690 (2.716)	3.333 (2.689)		2.326 (2.478)
Islam %				3.968 (2.457)	4.351* (2.272)		3.052 (2.109)
Buddhism %				6.157** (2.642)	5.961*** (2.299)		4.166** (2.054)
Hinduism %				3.965 (3.987)	6.675* (3.605)		3.538 (2.594)
Resource rent					0.111*** (0.0380)		0.0604* (0.0343)
East Asia					3.519*** (1.000)		3.305*** (0.875)
South America					1.824** (0.819)		1.858** (0.753)
Constant	2.554*** (0.442)	2.219*** (0.480)	1.923*** (0.677)	-0.137 (2.217)	-2.993 (2.352)	6.299*** (0.721)	1.988 (2.277)
Observations	3,002	2,954	2,954	2,925	2,722	3,002	2,722
R-squared	0.058	0.086	0.1	0.105		0.045	
Countries	99	97	97	96	95	99	95

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The Hausman test statistics is 2.22 (p -value=0.696) therefore selects random effect model as the preferred modeling. The results are presented in seven columns. In column 1 the baseline model is estimated without any control variable and without time effect variables. Control variables are introduced to the model in the remaining columns except in column 6. In column 2, the latitude of country centroid (Latitude), in column 3 dummies for the three large colonial rulers (British colony=1 if a country was British colony, 0 otherwise; French colony=1 if a country was French colony, 0 otherwise and Spanish=1 if a country is was Spaniard colony, 0 otherwise) and in column 3, the percentage of followers of the four largest religions Christianity (Christian %), Islam (Islam %t), Buddhism (Buddhism %) and Hinduism (Hinduism %) are included as control variables. The 5th column further added the percentage share of rent collected from natural resource (Resource rent), East Asian dummy (East Asia=1 if a country is from East Asian, 0 otherwise) and South American dummy (South American=1 if a country is from South America, 0 otherwise). The 6th and 7th columns present the results of models in 1st and 5th with time effects respectively.

Table 3J: Effects of HTW autocratic regime types on long run GDP per capita growth, unbalanced panel

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Electoral HTW	-0.120 (0.574)	-0.166 (0.576)	-0.103 (0.584)	-0.0660 (0.580)	-0.453 (0.689)	0.591 (0.638)	0.253 (0.750)
Monarchic HTW	-0.538 (0.834)	-0.610 (0.873)	-0.567 (0.885)	-1.200 (1.112)	-1.768 (1.376)	0.163 (0.852)	-0.544 (1.207)
Military HTW	-1.301** (0.634)	-1.293** (0.631)	-1.237* (0.634)	-1.211* (0.640)	-1.362** (0.642)	-0.409 (0.629)	-0.628 (0.631)
Latitude		0.0192* (0.0114)	0.0226 (0.0145)	0.00513 (0.0163)	0.0195 (0.0174)		0.0156 (0.0160)
UK colony			0.122 (0.841)	-0.548 (0.799)	0.620 (0.836)		0.416 (0.779)
French colony			-0.525 (0.623)	-1.044 (0.690)	-0.0892 (0.691)		-0.207 (0.665)
Spanish colony			0.577 (0.772)	0.864 (0.978)	0.838 (1.128)		0.656 (1.055)
Christian %				1.763 (2.700)	3.929 (2.618)		2.889 (2.525)
Islam %				3.908 (2.487)	4.782** (2.280)		3.489 (2.215)
Buddhism %				6.114** (2.630)	6.210*** (2.206)		4.309** (2.049)
Hinduism %				4.180 (3.918)	7.557** (3.425)		4.224 (2.653)
Resource rent					0.111*** (0.0393)		0.0613 (0.0375)
East Asia					3.898*** (1.029)		3.764*** (0.918)
South America					1.799** (0.818)		1.847** (0.763)
Constant	2.258*** (0.348)	1.974*** (0.374)	1.883*** (0.643)	-0.140 (2.088)	-3.549* (2.112)	6.053*** (0.619)	1.457 (2.147)
Observations	3,002	2,954	2,954	2,925	2,722	3,002	2,722
R-squared	0.012	0.044	0.058	0.075		0.001	
Countries	99	97	97	96	95	99	95

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The Hausman test statistics is 3.69 (p -value=0.2975) therefore selects random effect model as the preferred modeling. The results are presented in seven columns. In column 1 the baseline model is estimated without any control variable and without time effect variables. Control variables are introduced to the model in the remaining columns except in column 6. In column 2, the latitude of country centroid (Latitude), in column 3 dummies for the three large colonial rulers (British colony=1 if a country was British colony, 0 otherwise; French colony=1 if a country was French colony, 0 otherwise and Spanish=1 if a country is was Spaniard colony, 0 otherwise) and in column 3, the percentage of followers of the four largest religions Christianity (Christian %), Islam (Islam %), Buddhism (Buddhism %) and Hinduism (Hinduism %) are included as control variables. The 5th column further added the percentage share of rent collected from natural resource (Resource rent), East Asian dummy (East Asia=1 if a country is from East Asian, 0 otherwise) and South American dummy (South American=1 if a country is from South America, 0 otherwise). The 6th and 7th columns present the results of models in 1st and 5th with time effects respectively.

Table 3K: Summary statistics for GDP per capita in PPP across regime types in the unbalanced dataset

Regime types	Mean	St. Dev	Max	Min	N
Democracy CGV	7,625.36	7,227.78	38,696.4	507.92	914
Civilian CGV	4,811.55	5,176.17	42,340.9	337.26	1101
Military CGV	2,950.72	4,602.79	63,690.2	408.02	991
Monarchic CGV	29,493.61	47,216.12	22,7761.0	600.32	266
Democracy GWF	7,823.56	7,152.44	38,696.4	552.25	863
Dominant Party GWF	5,011.58	6,399.79	63,690.2	422.51	1093
Personalist GWF	2,547.54	2,755.88	19,951.9	337.26	660
Monarchic GWF	29,382.98	47,161.90	22,7761.0	571.82	267
Military GWF	3,291.86	2,688.69	12,987.1	408.02	389
Democracy HTW	8,606.28	7,591.18	38,696.4	552.25	767
Electoral HTW	4,457.01	5,612.82	63,690.2	422.51	1430
Military HTW	2,736.65	2,473.85	12,987.1	337.26	811
Monarchic HTW	29,706.76	47,331.28	22,7761.0	600.32	264

Table 3L: The effect of CGV autocratic regime types on GDP per capita, unbalanced panel without year fixed effect

		Within			Difference GMM			FOD GMM		
		1	2	3	1	2	3	1	2	3
Monarchic	Short-run effect %	-1.479*** (0.213)	-1.808*** (0.336)	-1.841*** (0.321)	0.135 (1.560)	-2.157 (2.228)	-1.414 (1.627)	-0.0618 (1.372)	-0.876 (1.617)	-1.832 (1.127)
	Effect after 20 yrs %	-26.33*** (1.208)	-30.69*** (4.147)	-32.14*** (4.630)	2.216 (25.63)	-33.80 (35.10)	-23.21 (27.01)	-1.066 (23.68)	-14.56 (27.15)	-33.00 (20.66)
	Long-run effect %	-37.34*** (5.368)	-41.33*** (8.239)	-33.91*** (8.188)	2.971 (34.43)	-45.30 (47.34)	-25.57 (30.62)	-1.540 (34.19)	-20.51 (39.08)	-37.79 (26.74)
Military	Short-run effect %	-1.714** (0.821)	-1.652* (0.875)	-2.401** (1.002)	-2.959** (1.220)	-3.192** (1.446)	-2.806* (1.441)	-2.693** (1.220)	-3.093** (1.352)	-2.730** (1.389)
	Effect after 20 yrs %	-30.51** (13.60)	-28.05** (13.93)	-41.93*** (14.89)	-48.59*** (17.87)	-50.03** (20.32)	-46.05** (20.20)	-46.48** (18.89)	-51.39** (19.96)	-49.16** (20.79)
	Long-run effect %	-43.27*** (15.32)	-37.77** (15.41)	-44.23*** (12.48)	-65.16*** (19.57)	-67.05*** (21.64)	-50.73*** (16.67)	-67.15*** (21.58)	-72.39*** (21.89)	-56.31*** (17.19)
Civilian	Short-run effect %	-2.283*** (0.712)	-1.948*** (0.752)	-2.278*** (0.838)	-3.733*** (1.072)	-3.561*** (1.218)	-2.295** (1.036)	-3.315*** (1.059)	-3.282*** (1.122)	-2.142** (1.002)
	Effect after 20 yrs %	-40.64*** (11.18)	-33.07*** (11.62)	-39.77*** (13.87)	-61.32*** (15.26)	-55.82*** (17.24)	-37.65** (16.17)	-57.22*** (15.72)	-54.53*** (16.57)	-38.57** (16.23)
	Long-run effect %	-57.63*** (14.63)	-44.54*** (14.00)	-41.96*** (15.01)	-82.22*** (20.88)	-74.81*** (21.86)	-41.48** (17.81)	-82.66*** (22.05)	-76.80*** (21.85)	-44.18** (17.21)
GDP persistence		0.960*** (0.00989)	0.956*** (0.0103)	0.946*** (0.0153)	0.955*** (0.0127)	0.952*** (0.0132)	0.945*** (0.0184)	0.960*** (0.0128)	0.957*** (0.0132)	0.952*** (0.0180)

Continued

AR(1)			0.000	0.000	0.000	0.000	0.000	0.000	0.000
AR(2)				0.423	0.66	0.578	0.434	0.688	0.581
Hansen p			1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lags in Instrument			Full	Full	Full	Full	Full	Full	Full
No of instruments				1885	1875	1795	1885	1875	1795
R-squared	0.935	0.934	0.9312						
Observations	2,876	2,847	2,408	2,777	2,651	2,213	2,777	2,651	2,214
Countries	99	98	97	99	98	96	99	98	96

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (4). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4C in Appendix 4.

Table 3M: The effect of CGV autocratic regime types on GDP per capita, unbalanced panel without year fixed effect (system GMM)

		System GMM				
		1	2	3	4	5
Monarchic	Short-run effect %	-1.558*	-2.209**	-1.307	-0.757	0.810
		(0.921)	(1.040)	(1.050)	(1.045)	(1.059)
	Effect after 20 yrs %	-46.71*	-65.93**	-37.18	-20.72	25.29
		(27.36)	(31.30)	(30.10)	(28.74)	(32.91)
	Long-run effect %	-1,416	-14,836	-346.9	-117.8	89.94
		(3,586)	(292,230)	(454.9)	(188.4)	(110.7)
Military	Short-run effect %	-1.296**	-1.775***	-1.807***	-1.625**	-1.304*
		(0.615)	(0.686)	(0.696)	(0.685)	(0.673)
	Effect after 20 yrs %	-38.86**	-53.00**	-51.40**	-44.45**	-39.99*
		(18.37)	(20.72)	(19.96)	(18.97)	(21.01)
	Long-run effect %	-1,178	-11,925	-479.5	-252.8**	-145.8**
		(2,466)	(230,921)	(324.0)	(100.8)	(60.02)
Civilian	Short-run effect %	-0.468	-0.680	-0.816	-0.543	0.214
		(0.545)	(0.534)	(0.530)	(0.533)	(0.625)
	Effect after 20 yrs %	-14.02	-20.30	-23.20	-14.85	6.558
		(16.11)	(15.61)	(14.78)	(14.38)	(19.32)
	Long-run effect %	-424.9	-4,568	-216.4	-84.47	23.91
		(907.5)	(88,165)	(186.6)	(76.46)	(72.82)
	GDP persistence	0.999***	1.000***	0.996***	0.994***	0.991***
		(0.00265)	(0.00292)	(0.00325)	(0.00324)	(0.00398)
	AR(1)	0.000	0.000	0.000	0.000	0.000
	AR(2)	0.468	0.89	0.798	0.77	0.67
	Hansen p	1.000	1.000	1.000	1.000	1.000
	Lags in Instrument	Full	Full	Full	Full	Full
	No of instruments	1972	1959	1951	1954	1870
	Observations	2,876	2,830	2,830	2,705	2,270
	Countries	99	97	97	96	94

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4D in Appendix 4

Table 3N: The effect of CGV autocratic regime types on GDP per capita, balanced panel with year fixed effects

		Within			Difference GMM			FOD GMM		
		1	2	3	1	2	3	1	2	3
Monarchic	Short-run effect %	-2.025*** (0.420)	-1.221** (0.481)	-1.076** (0.536)	0.675 (4.025)	2.018 (3.745)	2.439 (3.543)	0.675 (4.025)	-1.832*** (0.706)	-1.169* (0.622)
	Effect after 20 yrs %	-30.60*** (5.469)	-17.21*** (6.529)	-14.00** (6.062)	9.441 (56.49)	26.64 (50.05)	29.53 (44.16)	9.441 (56.49)	-24.67*** (8.924)	-14.67** (7.015)
	Long-run effect %	-38.56*** (6.995)	-20.49*** (7.801)	-13.84** (5.396)	11.50 (69.09)	31.08 (59.18)	29.14 (44.06)	11.50 (69.09)	-28.97*** (10.35)	-14.55** (6.630)
Military	Short-run effect %	-0.566 (1.009)	-0.436 (0.995)	-1.195 (1.132)	-1.140 (1.398)	-1.028 (1.374)	-1.561 (1.477)	-1.140 (1.398)	-0.855 (1.256)	-1.273 (1.392)
	Effect after 20 yrs %	-8.560 (15.21)	-6.144 (13.98)	-15.55 (13.83)	-15.95 (19.20)	-13.57 (17.67)	-18.90 (16.43)	-15.95 (19.20)	-11.50 (16.51)	-15.98 (16.23)
	Long-run effect %	-10.79 (18.48)	-7.315 (16.26)	-15.36 (12.93)	-19.44 (22.04)	-15.83 (19.61)	-18.64 (15.29)	-19.44 (22.04)	-13.51 (18.51)	-15.85 (15.24)
Civilian	Short-run effect %	-0.544 (0.951)	-0.467 (0.992)	-0.706 (1.141)	-1.271 (1.294)	-1.326 (1.344)	-1.061 (1.380)	-1.271 (1.294)	-1.022 (1.121)	-0.913 (1.204)
	Effect after 20 yrs %	-8.218 (14.48)	-6.579 (14.17)	-9.582 (15.70)	-17.79 (18.01)	-17.51 (17.82)	-12.85 (16.83)	-17.79 (18.01)	-13.76 (15.11)	-11.46 (15.08)
	Long-run effect %	-10.36 (18.12)	-7.834 (16.87)	-9.623 (15.65)	-21.68 (21.23)	-20.43 (20.43)	-12.68 (16.46)	-21.68 (21.23)	-16.17 (17.38)	-11.37 (14.74)
	GDP persistence	0.947*** (0.00937)	0.940*** (0.0103)	0.927*** (0.0146)	0.941*** (0.0106)	0.935*** (0.0112)	0.916*** (0.0162)	0.941*** (0.0106)	0.937*** (0.0114)	0.920*** (0.0155)

Continued

AR(1)				0.000	0.000	0.000	0.000	0.000	0.000
AR(2)				0.614	0.431	0.996	0.614	0.410	0.921
Hansen p				1.000	1.000	1.000	1.000	1.000	1.000
Lags in Instrument				Full	Full	Full	Full	Full	Full
No of instruments				1667	1683	1602	1667	1683	1602
R-squared	0.949	0.950	0.9455						
Observations	2,343	2,343	2,019	2,272	2,272	1,949	2,272	2,272	1,949
Countries	71	71	70	71	71	70	71	71	70

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (4). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4E in Appendix 4

Table 30: The effect of CGV autocratic regime types on GDP per capita, balanced panel with year fixed effect (system GMM)

		System GMM				
		1	2	3	4	5
Monarchic	Short-run effect %	-0.466 (0.696)	-0.364 (0.665)	0.0299 (0.684)	0.229 (0.684)	0.903 (0.559)
	Effect after 20 yrs %	-13.70 (20.21)	-10.76 (19.53)	0.857 (19.61)	6.235 (18.66)	26.88 (16.73)
	Long-run effect %	-426.6 (1,110)	-966.5 (7,176)	12.65 (288.2)	48.65 (143.2)	135.1 (105.0)
Military	Short-run effect %	-0.939 (0.574)	-0.980 (0.630)	-0.924 (0.648)	-0.782 (0.641)	-0.913 (0.701)
	Effect after 20 yrs %	-27.65 (17.07)	-28.95 (18.87)	-26.48 (18.89)	-21.28 (17.88)	-27.16 (21.36)
	Long-run effect %	-861.0 (1,815)	-2,601 (17,955)	-390.9 (410.3)	-166.0 (126.8)	-136.5* (79.28)
Civilian	Short-run effect %	-0.386 (0.464)	-0.583 (0.472)	-0.539 (0.504)	-0.0800 (0.522)	0.0117 (0.444)
	Effect after 20 yrs %	-11.36 (13.60)	-17.23 (13.91)	-15.45 (14.52)	-2.177 (14.24)	0.349 (13.21)
	Long-run effect %	-353.6 (863.8)	-1,548 (11,019)	-228.1 (330.8)	-16.99 (111.2)	1.753 (66.41)
GDP persistence	0.999*** (0.00265)	1.000*** (0.00272)	0.998*** (0.00285)	0.995*** (0.00295)	0.993*** (0.00370)	
AR(1)	0.000	0.000	0.000	0.000	0.000	
AR(2)	0.348	0.507	0.416	0.384	0.252	
Hansen p	1.000	1.000	1.000	1.000	1.000	
Lags in Instrument	Full	Full	Full	Full	Full	
No of instruments	1738	1738	1729	1732	1643	
Observations	2,343	2,272	2,240	2,240	1,919	
Countries	71	71	70	70	69	

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4F in Appendix 4

Table 3P: The effect of CGV autocratic regime types on GDP per capita, unbalanced panel with year fixed effects

	Within			Difference GMM			FOD GMM			
	1	2	3	1	2	3	1	2	3	
Monarchic	Short-run effect %	-2.268*** (0.438)	-1.857*** (0.468)	-21.55*** (6.715)	-1.440 (2.593)	3.695 (14.08)	-10.13 (30.35)	-1.427 (2.517)	-2.905*** (0.920)	-24.07*** (9.063)
	Effect after 20 yrs %	-33.25*** (4.860)	-25.84*** (5.716)	-21.31*** (7.003)	-17.66 (31.44)	16.00 (61.17)	-9.966 (29.77)	-18.52 (32.28)	-37.20*** (10.26)	-24.02** (9.445)
	Long-run effect %	-41.26*** (6.455)	-30.68*** (7.272)	-1.567*** (0.531)	-19.98 (35.24)	16.13 (61.67)	-0.844 (2.559)	-21.83 (37.69)	-43.12*** (12.05)	-1.832** (0.769)
Military	Short-run effect %	-0.314 (0.957)	-0.238 (0.953)	-10.98 (13.84)	-1.233 (1.316)	-1.078 (1.312)	-18.84 (15.76)	-0.968 (1.337)	-0.645 (1.256)	-13.43 (16.24)
	Effect after 20 yrs %	-4.601 (14.01)	-3.318 (13.25)	-10.85 (13.14)	-15.13 (16.07)	-12.93 (15.56)	-18.54 (14.68)	-12.56 (17.27)	-8.263 (15.94)	-13.40 (15.41)
	Long-run effect %	-5.709 (17.11)	-3.940 (15.56)	-0.798 (1.042)	-17.11 (17.60)	-14.42 (16.82)	-1.570 (1.403)	-14.80 (19.71)	-9.578 (18.02)	-1.022 (1.300)
Civilian	Short-run effect %	-0.758 (0.883)	-0.673 (0.908)	-12.72 (14.24)	-1.878 (1.211)	-1.756 (1.210)	-14.77 (14.58)	-1.499 (1.193)	-1.016 (1.087)	-12.13 (13.66)
	Effect after 20 yrs %	-11.11 (12.99)	-9.366 (12.72)	-12.62 (13.97)	-23.04 (14.90)	-21.06 (14.38)	-14.54 (14.23)	-19.45 (15.46)	-13.01 (13.85)	-12.10 (13.34)
	Long-run effect %	-13.78 (15.95)	-11.12 (15.05)	-0.910 (1.006)	-26.06 (16.48)	-23.50 (15.64)	-1.231 (1.206)	-22.93 (17.72)	-15.08 (15.65)	-0.923 (1.054)
GDP persistence	0.945*** (0.0101)	0.939*** (0.0109)	0.928*** (0.0142)	0.928*** (0.0140)	0.925*** (0.0139)	0.915*** (0.0175)	0.935*** (0.00253)	0.933*** (0.00280)	0.924*** (0.0166)	

Continued

AR(1)			0	0.000	0.000	0	0.000	0.000	0
AR(2)				0.53	0.619	0.979	0.504	0.657	0.921
Hansen p			1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lags in Instrument			Full	4	4	Full	4	4	Full
No of instruments				1913	1922	1849	1913	1922	1849
R-squared	0.939	0.939	0.9354						
Observations	2,876	2,847	2,408	2,777	2,749	2,310	2,777	2,749	2,311
Countries	99	98	97	99	98	96	99	98	96

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (4). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4G in Appendix 4

Table 3Q: The effect of CGV autocratic regime types on GDP per capita, unbalanced panel with year fixed effect (system GMM)

		System GMM				
		1	2	3	4	5
Monarchic	Short-run effect %	-1.065 (0.897)	-1.312 (1.029)	-0.367 (1.031)	0.376 (1.021)	35.92 (26.64)
	Effect after 20 yrs %	-30.24 (25.39)	-37.18 (29.44)	-9.903 (27.94)	9.688 (26.17)	159.3 (122.2)
	Long-run effect %	-674.6 (1,282)	-2,175 (10,539)	-87.80 (275.5)	51.76 (133.1)	1.211 (0.914)
Military	Short-run effect %	-0.705 (0.618)	-0.939 (0.700)	-0.903 (0.725)	-0.568 (0.714)	-13.35 (20.89)
	Effect after 20 yrs %	-20.01 (17.60)	-26.61 (20.07)	-24.38 (19.80)	-14.61 (18.56)	-59.21 (79.14)
	Long-run effect %	-446.4 (564.1)	-1,557 (6,577)	-216.2 (166.1)	-78.07 (86.33)	-0.450 (0.694)
Civilian	Short-run effect %	-0.0671 (0.510)	-0.220 (0.529)	-0.306 (0.534)	0.124 (0.520)	1.144 (16.70)
	Effect after 20 yrs %	-1.906 (14.47)	-6.222 (15.01)	-8.264 (14.45)	3.187 (13.38)	5.074 (74.48)
	Long-run effect %	-42.51 (305.5)	-364.1 (1,613)	-73.27 (125.1)	17.03 (74.06)	0.0386 (0.563)
	GDP persistence	0.998*** (0.00316)	0.999*** (0.00320)	0.996*** (0.0139)	0.993*** (0.0138)	0.992*** (0.00329)
	AR(1)	0.000	0.000	0.000	0.000	0
	AR(2)	0.648	0.855	0.935	0.992	0.71
	Hansen p	1.000	1.000	1.000	1.000	1
	Lags in Instrument	4	4	4	4	Full
	No of instruments	2001	1987	1978	1981	1896
	R-squared					
	Observations	2,876	2,830	2,830	2,705	2,270
	Countries	99	97	97	96	94

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4H in Appendix 4

Table 3R: The effect of GWF autocratic regime types on GDP per capita, balanced panel without year fixed effect

		Within			Difference GMM			FOD GMM		
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Dominant party	Short-run effect %	-1.645** (0.751)	-1.463** (0.713)	-1.659 (1.083)	-2.210** (1.046)	-1.736* (1.023)	-1.816 (1.196)	-2.210** (1.046)	-2.046** (1.040)	-1.752 (1.121)
	Effect after 20 yrs %	-29.58** (13.00)	-25.47** (11.98)	-27.52 (18.21)	-39.43** (16.44)	-30.23* (16.10)	-29.51 (18.96)	-39.43** (16.44)	-36.43** (16.39)	-29.68 (18.44)
	Long-run effect %	-41.73** (17.53)	-34.43** (15.18)	-28.44 (18.89)	-56.38*** (20.99)	-41.54** (19.70)	-30.22 (19.35)	-56.38*** (20.99)	-51.36** (20.67)	-31.22 (19.13)
Personalist	Short-run effect %	-1.592** (0.669)	-1.629** (0.693)	-2.307** (1.042)	-1.213 (0.939)	-1.601 (1.137)	-1.763* (1.031)	-1.213 (0.939)	-1.767 (1.098)	-1.624* (0.975)
	Effect after 20 yrs %	-28.64** (11.30)	-28.36** (11.12)	-38.27** (15.09)	-21.65 (15.49)	-27.88 (17.37)	-28.65** (13.74)	-21.65 (15.49)	-31.46* (17.12)	-27.52** (13.79)
	Long-run effect %	-40.40** (16.44)	-38.33*** (14.72)	-39.55** (15.83)	-30.96 (21.77)	-38.31* (21.62)	-29.33** (13.20)	-30.96 (21.77)	-44.36** (22.28)	-28.95** (13.65)
Monarchic	Short-run effect %	-1.245*** (0.278)	-1.602*** (0.419)	-2.130*** (0.722)	-0.0710 (1.486)	-1.497 (2.071)	-1.120 (1.627)	-0.0710 (1.486)	-2.024 (1.662)	-3.110* (1.700)
	Effect after 20 yrs %	-22.40*** (3.185)	-27.90*** (5.312)	-35.33*** (8.115)	-1.267 (26.48)	-26.06 (34.66)	-18.20 (25.07)	-1.267 (26.48)	-36.02 (27.87)	-52.70** (26.04)
	Long-run effect %	-31.60*** (2.356)	-37.71*** (5.736)	-36.51*** (5.754)	-1.812 (37.77)	-35.81 (45.39)	-18.64 (23.95)	-1.812 (37.77)	-50.79 (35.68)	-55.43** (26.23)
Military	Short-run effect %	-2.827** (1.183)	-2.852** (1.253)	-3.732*** (1.405)	-3.113** (1.439)	-3.321** (1.585)	-3.918** (1.585)	-3.113** (1.439)	-3.332** (1.569)	-3.828** (1.552)
	Effect after 20 yrs %	-50.84*** (18.74)	-49.64*** (18.97)	-61.91*** (16.52)	-55.55*** (20.33)	-57.82*** (21.17)	-63.68*** (16.80)	-55.55*** (20.33)	-59.32*** (21.63)	64.87*** (17.76)
	Long-run effect %	-71.72*** (19.44)	-67.11*** (19.12)	-63.98*** (12.85)	-79.44*** (19.55)	-79.45*** (19.33)	-65.20*** (12.66)	-79.44*** (19.55)	-83.64*** (20.04)	-68.23*** (13.41)
	GDP persistence	0.961*** (0.0103)	0.958*** (0.0109)	0.942*** (0.0171)	0.961*** (0.0147)	0.958*** (0.0160)	0.940*** (0.0197)	0.961*** (0.0147)	0.960*** (0.0154)	0.944*** (0.0192)

Continued

AR(1)				0.000	0.000	0.000	0.000	0.000	0.000
AR(2)				0.803	0.229	0.709	0.803	0.346	0.96
Hansen p				1.000	1.000	1.000	1.000	1.000	1.000
Lags in Instrument				Full	Full	Full	Full	Full	Full
No of instruments				1714	1711	1656	1714	1711	1633
R-squared	0.945	0.946	0.9412						
Observations	2,343	2,343	2,019	2,272	2,201	1,949	2,272	2,201	1,879
Countries	71	71	70	71	71	70	71	71	70

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (4). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4I in Appendix 4

Table 3S: The effect of GWF autocratic regime types on GDP per capita, balanced panel without year fixed effect (system GMM)

		System GMM				
		(1)	(2)	(3)	(4)	(5)
Dominant party	Short-run effect %	-0.532 (0.444)	-0.764* (0.441)	-0.850* (0.451)	-0.823* (0.453)	-0.734 (0.511)
	Effect after 20 yrs %	-15.70 (13.16)	-22.33* (12.93)	-24.30* (12.98)	-22.90* (12.85)	-22.82 (16.39)
	Long-run effect %	-204.8 (183.8)	-300.9 (276.4)	-202.6* (123.1)	-151.9* (82.77)	-108.3 (74.20)
Personalist	Short-run effect %	-2.520*** (0.589)	-2.903*** (0.689)	-2.878*** (0.705)	-2.453*** (0.755)	-2.121*** (0.735)
	Effect after 20 yrs %	-74.35*** (16.37)	-84.85*** (18.90)	-82.25*** (19.12)	-68.27*** (20.59)	-65.51*** (22.72)
	Long-run effect %	-970.1 (823.7)	-1,143 (1,076)	-685.9* (389.5)	-452.7** (222.3)	-301.7** (145.5)
Monarchic	Short-run effect %	-0.661 (0.641)	-0.672 (0.576)	-0.409 (0.576)	-0.340 (0.590)	0.331 (0.538)
	Effect after 20 yrs %	-19.49 (18.38)	-19.64 (16.23)	-11.69 (16.16)	-9.448 (16.24)	10.22 (16.85)
	Long-run effect %	-254.3 (293.9)	-264.6 (337.0)	-97.52 (148.7)	-62.66 (115.3)	47.09 (70.99)
Military	Short-run effect %	-1.442* (0.870)	-1.875** (0.908)	-1.942** (0.912)	-2.009** (0.927)	-2.120** (0.994)
	Effect after 20 yrs %	-42.53* (25.74)	-54.82** (26.60)	-55.50** (26.11)	-55.91** (25.81)	-65.48** (30.70)
	Long-run effect %	-554.9 (393.2)	-738.6 (579.7)	-462.8** (204.9)	-370.7*** (131.2)	-301.6*** (100.9)
GDP persistence		0.997*** (0.00253)	0.997*** (0.00268)	0.996*** (0.00274)	0.995*** (0.00271)	0.993*** (0.00323)
AR(1)		0.000	0.000	0.000	0.000	0.000
AR(2)		0.711	0.381	0.297	0.285	0.314
Hansen p		1.000	1.000	1.000	1.000	1.000
Lags in Instrument		Full	Full	Full	Full	Full
No of instruments		1786	1783	1772	1775	1699
Observations		2,343	2,272	2,240	2,240	1,919
Countries		71	71	70	70	69

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4J in Appendix 4

Table 3T: The effect of GWF autocratic regime types on GDP per capita, unbalanced panel without year fixed effect

		Within			Difference GMM			FOD GMM		
		1	2	3	1	2	3	1	2	3
Dominant party	Short-run effect %	-1.403*	-1.080	-1.254	-2.562**	-2.303**	-2.489**	-2.455**	-2.291**	-1.662
		(0.729)	(0.722)	(1.060)	(1.046)	(1.115)	(1.267)	(1.035)	(1.074)	(1.123)
	Effect after 20 yrs %	-24.67**	-17.99	-21.10	-41.73***	-35.36**	-39.54**	-41.74***	-37.23**	-28.10
	(12.54)	(11.85)	(17.65)	(14.59)	(15.06)	(19.52)	(15.07)	(15.52)	(18.10)	
	Long-run effect %	-34.62**	-23.88	-21.83	-54.32***	-45.34***	-42.06**	-57.91***	-50.39***	-30.62
		(16.86)	(14.83)	(17.67)	(17.80)	(17.35)	(20.98)	(19.58)	(19.24)	(18.62)
Personalist	Short-run effect %	-1.983***	-1.983***	-2.501***	-1.699*	-1.992**	-1.791*	-1.644*	-2.072**	-1.456*
		(0.712)	(0.723)	(0.954)	(0.892)	(1.012)	(0.929)	(0.896)	(0.995)	(0.857)
	Effect after 20 yrs %	-34.87***	-33.04***	-42.06***	-27.68**	-30.60**	-28.46**	-27.94**	-33.67**	-24.61*
	(11.14)	(10.66)	(14.87)	(13.32)	(13.91)	(12.98)	(13.90)	(14.26)	(12.81)	
	Long-run effect %	-48.94***	-43.85***	-43.51**	-36.03**	-39.23**	-30.27**	-38.76*	-45.57**	-26.82*
		(16.27)	(14.17)	(16.94)	(17.89)	(17.86)	(13.60)	(19.91)	(19.47)	(13.75)
Monarchic	Short-run effect %	-1.314***	-1.691***	-2.024***	-0.663	-2.497	-1.339	-0.537	-1.025	-3.482
		(0.289)	(0.427)	(0.518)	(1.931)	(2.312)	(1.830)	(1.785)	(2.010)	(2.231)
	Effect after 20 yrs %	-23.11***	-28.17***	-34.04***	-10.80	-38.34	-21.27	-9.124	-16.66	-58.87
	(2.959)	(5.142)	(5.037)	(31.65)	(36.07)	(28.10)	(30.56)	(32.63)	(35.89)	
	Long-run effect %	-32.44***	-37.40***	-35.22***	-14.06	-49.15	-22.63	-12.66	-22.54	-64.15
		(2.108)	(6.031)	(4.059)	(41.21)	(47.16)	(28.69)	(42.57)	(43.70)	(40.28)
Military	Short-run effect %	-2.974***	-2.955**	-3.346***	-3.633***	-3.952**	-3.908**	-3.476**	-3.770**	-3.550**
		(1.113)	(1.156)	(1.282)	(1.378)	(1.540)	(1.560)	(1.379)	(1.506)	(1.499)
	Effect after 20 yrs %	-52.30***	-49.24***	-56.26***	-59.17***	-60.70***	-62.09***	-59.09***	-61.27***	-60.02***
		(16.98)	(16.80)	(16.39)	(17.14)	(18.14)	(17.63)	(18.14)	(19.04)	(18.51)
	Long-run effect %	-73.41***	-65.36***	-58.22***	-77.03***	-77.82***	-66.04***	-81.98***	-82.92***	-65.40***
		(18.24)	(17.55)	(12.93)	(17.57)	(17.61)	(13.32)	(19.59)	(19.43)	(14.07)
	GDP persistence	0.959***	0.955***	0.943***	0.953***	0.949***	0.941***	0.958***	0.955***	0.946***
		(0.0102)	(0.0106)	(0.0159)	(0.0153)	(0.0159)	(0.0188)	(0.0153)	(0.0156)	(0.0185)

Continued

AR(1)				0.000	0.000	0.000	0.000	0.000	0.000
AR(2)				0.369	0.791	0.793	0.4	0.679	0.832
Hansen p				1.000	1.000	1.000	1.000	1.000	1.000
Lags in Instrument				Full	Full	Full	Full	Full	Full
No of instruments				2018	2001	1927	2018	2001	1892
R-squared	0.935	0.934	0.9315						
Observations	2,876	2,847	2,408	2,777	2,651	2,310	2,777	2,651	2,214
Countries	99	98	97	99	98	96	99	98	96

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (4). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4K in Appendix 4

Table 3U: The effect of GWF autocratic regime types on GDP per capita, balanced panel without year fixed effect (system GMM)

		System GMM				
		1	2	3	4	5
Dominant party	Short-run effect %	-0.363 (0.457)	-0.712 (0.478)	-0.828* (0.484)	-0.738 (0.490)	-0.542 (0.476)
	Effect after 20 yrs %	-10.80 (13.58)	-21.10 (14.20)	-23.24* (13.71)	-19.99 (13.41)	-16.59 (14.85)
	Long-run effect %	-307.1 (599.1)	-1,153 (4,970)	-186.2 (131.9)	-110.9 (70.60)	-58.10 (50.81)
Personalist	Short-run effect %	-1.359* (0.742)	-1.570** (0.785)	-1.846** (0.764)	-1.537** (0.767)	-1.080 (0.853)
	Effect after 20 yrs %	-40.37** (20.58)	-46.52** (21.58)	-51.77*** (19.69)	-41.61** (19.44)	-32.79 (24.68)
	Long-run effect %	-1,148 (2,329)	-2,542 (11,042)	-414.9 (263.1)	-230.9* (128.7)	-130.6 (95.45)
Monarchic	Short-run effect %	-1.658* (0.999)	-2.042** (0.984)	-1.270 (0.979)	-0.940 (0.958)	1.296 (1.115)
	Effect after 20 yrs %	-49.27* (29.44)	-60.50** (29.03)	-35.62 (27.44)	-25.45 (25.95)	39.34 (33.11)
	Long-run effect %	-1,401 (3,467)	-3,306 (15,540)	-285.5 (336.6)	-141.2 (180.1)	156.8 (105.5)
Military	Short-run effect %	-1.487 (0.912)	-1.902** (0.901)	-2.085** (0.908)	-2.235** (0.905)	-2.091** (0.935)
	Effect after 20 yrs %	-44.19* (26.73)	-56.35** (26.26)	-58.48** (24.96)	-60.52** (23.87)	-63.49** (27.79)
	Long-run effect %	-1,257 (2,313)	-3,079 (13,014)	-468.7** (223.7)	-335.8*** (102.1)	-252.9*** (88.87)
	GDP persistence	0.999*** (0.00267)	0.999*** (0.00282)	0.996*** (0.00306)	0.993*** (0.00307)	0.992*** (0.00396)
	AR(1)	0.000	0.000	0.000	0.000	0.000
	AR(2)	0.416	0.967	0.917	0.881	0.73
	Hansen p	1.000	1.000	1.000	1.000	1.000
	Lags in Instrument	Full	Full	Full	Full	Full
	No of instruments	2104	2086	2074	2077	1958
	Observations	2,876	2,749	2,705	2,705	2,270
	Countries	99	98	96	96	94

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4L in Appendix 4

Table 3V: The effect of GWF autocratic regime types on GDP per capita, balanced panel with year fixed effect

		Within			Difference GMM			FOD GMM		
		1	2	3	1	2	3	1	2	3
Dominant party	Short-run effect %	0.852 (0.914)	1.118 (0.888)	1.425 (1.083)	0.737 (1.159)	2.073 (2.719)	1.033 (1.051)	0.737 (1.159)	1.166 (1.022)	1.507 (1.022)
	Effect after 20 yrs %	12.85 (13.73)	15.65 (12.18)	17.80 (13.42)	10.81 (17.36)	11.97 (16.30)	12.39 (12.88)	10.81 (17.36)	16.59 (15.12)	19.30 (13.81)
	Long-run effect %	16.30 (17.92)	18.68 (14.94)	17.51 (13.54)	13.65 (22.99)	12.35 (16.92)	12.20 (13.00)	13.65 (22.99)	20.22 (19.97)	19.30 (14.54)
Personalist	Short-run effect %	-0.358 (0.865)	-0.297 (0.883)	-0.853 (1.113)	0.541 (1.075)	0.642 (1.167)	-0.536 (1.195)	0.541 (1.075)	0.322 (1.100)	-0.425 (1.087)
	Effect after 20 yrs %	-5.405 (13.02)	-4.149 (12.35)	-10.65 (13.58)	7.936 (16.18)	8.882 (16.67)	-6.427 (13.95)	7.936 (16.18)	4.586 (15.88)	-5.438 (13.59)
	Long-run effect %	-6.854 (16.45)	-4.953 (14.72)	-10.48 (13.28)	10.02 (21.02)	10.65 (20.59)	-6.330 (13.61)	10.02 (21.02)	5.590 (19.65)	-5.440 (13.47)
Monarchic	Short-run effect %	-0.687 (0.447)	-0.569 (0.495)	-0.948 (0.740)	1.113 (3.168)	1.418 (2.963)	1.014 (2.627)	1.113 (3.168)	-0.879 (0.770)	-1.085 (0.769)
	Effect after 20 yrs %	-10.37 (6.440)	-7.961 (6.700)	-12.31 (8.391)	16.33 (47.04)	19.60 (41.94)	12.16 (32.40)	16.33 (47.04)	-12.50 (10.27)	-13.90* (8.305)
	Long-run effect %	-13.15* (7.587)	-9.503 (7.732)	-12.29 (7.666)	20.61 (60.49)	23.49 (51.58)	11.98 (32.33)	20.61 (60.49)	-15.23 (11.77)	-13.90* (7.460)
Military	Short-run effect %	-1.067 (1.305)	-0.974 (1.290)	-1.956 (1.437)	-1.030 (1.570)	-0.856 (1.549)	-1.992 (1.493)	-1.030 (1.570)	-0.946 (1.449)	-1.933 (1.423)
	Effect after 20 yrs %	-16.10 (19.52)	-13.64 (17.89)	-25.41 (16.89)	-15.12 (22.33)	-11.84 (20.78)	-23.89 (15.80)	-15.12 (22.33)	-13.45 (19.89)	-24.75 (16.01)
	Long-run effect %	-20.42 (23.53)	-16.28 (20.62)	-25.36 (15.57)	-19.09 (26.45)	-14.19 (23.80)	-23.53 (14.61)	-19.09 (26.45)	-16.40 (22.91)	-24.76* (14.77)
	GDP persistence	0.948*** (0.00971)	0.940*** (0.0108)	0.923*** (0.0157)	0.946*** (0.0130)	0.940*** (0.0140)	0.915*** (0.0173)	0.946*** (0.0130)	0.942*** (0.0143)	0.922*** (0.0172)

Continued

AR(1)				0.000	0.000	0.000	0.000	0.000	0.000
AR(2)				0.608	0.421	0.845	0.608	0.414	0.929
Hansen p				1.000	1.000	1.000	1.000	1.000	1.000
Lags in Instrument				Full	Full	Full	Full	Full	Full
No of instruments				1727	1743	1672	1727	1743	1672
R-squared	0.949	0.950	0.9458						
Observations	2,343	2,343	2,019	2,272	2,272	1,949	2,272	2,272	1,949
Countries	71	71	70	71	71	70	71	71	70

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (4). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4M in Appendix 4

Table 3W: The effect of GWF autocratic regime types on GDP per capita, balanced panel without year fixed effect (system GMM)

		System GMM				
		1	2	3	4	5
Dominant party	Short-run effect %	0.307 (0.436)	0.207 (0.443)	0.191 (0.462)	0.311 (0.472)	0.370 (0.480)
	Effect after 20 yrs %	8.701 (12.36)	5.836 (12.55)	5.248 (12.74)	8.269 (12.51)	10.80 (13.89)
	Long-run effect %	117.4 (231.7)	82.30 (219.3)	45.48 (121.7)	55.06 (93.72)	51.87 (77.37)
Personalist	Short-run effect %	-2.051*** (0.626)	-2.299*** (0.733)	-2.192*** (0.763)	-1.649** (0.821)	-1.332* (0.760)
	Effect after 20 yrs %	-58.21*** (17.00)	-64.89*** (19.70)	-60.35*** (20.34)	-43.91** (21.74)	-38.89* (22.15)
	Long-run effect %	-785.5 (672.6)	-915.0 (870.2)	-523.1* (317.9)	-292.4 (180.4)	-186.8 (117.2)
Monarchic	Short-run effect %	-0.171 (0.680)	0.0625 (0.634)	0.386 (0.646)	0.557 (0.632)	1.280** (0.546)
	Effect after 20 yrs %	-4.856 (19.18)	1.765 (17.94)	10.64 (18.05)	14.82 (17.16)	37.37** (16.61)
	Long-run effect %	-65.53 (252.5)	24.89 (254.8)	92.23 (163.2)	98.72 (115.6)	179.5* (98.76)
Military	Short-run effect %	-0.506 (0.878)	-0.739 (0.919)	-0.754 (0.924)	-0.774 (0.936)	-0.805 (0.977)
	Effect after 20 yrs %	-14.37 (24.97)	-20.85 (25.99)	-20.77 (25.50)	-20.61 (25.01)	-23.50 (28.53)
	Long-run effect %	-193.9 (271.4)	-294.1 (310.5)	-180.0 (177.6)	-137.2 (138.7)	-112.8 (112.9)
	GDP persistence	0.997*** (0.00254)	0.997*** (0.00266)	0.996*** (0.00272)	0.994*** (0.00270)	0.993*** (0.00315)
	AR(1)	0.000	0.000	0.000	0.000	0.000
	AR(2)	0.409	0.588	0.489	0.459	0.314
	Hansen p	1.000	1.000	1.000	1.000	1.000
	Lags in Instrument	Full	Full	Full	Full	Full
	No of instruments	1798	1794	1783	1786	1709
	Observations	2,343	2,272	2,240	2,240	1,919
	Countries	71	71	70	70	69

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4N in Appendix 4

Table 3X: The effect of GWF autocratic regime types on GDP per capita, unbalanced panel with year fixed effect

		Within			Difference GMM			FOD GMM		
		1	2	3	1	2	3	1	2	3
Dominant party	Short-run effect %	0.994 (0.923)	1.202 (0.903)	1.410 (1.058)	0.285 (1.133)	2.934 (4.052)	0.142 (1.133)	0.256 (1.113)	0.721 (1.040)	13.32 (15.35)
	Effect after 20 yrs %	14.51 (13.23)	16.58 (12.08)	18.82 (14.06)	3.809 (15.26)	10.73 (14.93)	1.747 (13.91)	3.532 (15.45)	9.849 (14.49)	0.966 (1.040)
	Long-run effect %	18.10 (16.89)	19.75 (14.77)	18.58 (14.50)	4.480 (18.17)	10.74 (14.95)	1.721 (13.74)	4.291 (19.00)	11.80 (18.06)	13.15 (14.52)
Personalist	Short-run effect %	-0.632 (0.815)	-0.633 (0.819)	-1.204 (1.039)	0.184 (1.021)	0.300 (1.062)	-0.650 (1.127)	0.200 (1.014)	0.224 (1.054)	-0.600 (13.79)
	Effect after 20 yrs %	-9.226 (11.79)	-8.735 (11.23)	-16.06 (13.78)	2.465 (13.73)	3.849 (13.75)	-7.969 (13.60)	2.760 (14.08)	3.063 (14.52)	-8.171 (13.72)
	Long-run effect %	-11.51 (14.65)	-10.40 (13.37)	-15.86 (13.68)	2.900 (16.24)	4.405 (15.87)	-7.850 (13.27)	3.353 (17.23)	3.669 (17.54)	-8.278 (1.025)
Monarchic	Short-run effect %	-0.919** (0.412)	-0.904* (0.472)	-1.009* (0.567)	-0.495 (2.543)	-0.748 (2.134)	-0.393 (2.221)	-0.224 (2.605)	-1.536** (0.735)	-1.624** (0.779)
	Effect after 20 yrs %	-13.42** (5.796)	-12.47** (6.302)	-13.67** (6.606)	-6.615 (33.99)	-9.600 (27.38)	-4.816 (26.96)	-3.088 (35.93)	-20.99** (9.322)	-22.11** (9.485)
	Long-run effect %	-16.74** (6.932)	-14.85** (7.339)	-13.53** (5.964)	-7.781 (39.83)	-10.99 (31.15)	-4.744 (26.44)	-3.751 (43.58)	-25.15** (10.69)	-22.40** (9.272)
Military	Short-run effect %	-1.337 (1.208)	-1.285 (1.199)	-1.718 (1.297)	-1.711 (1.454)	-1.632 (1.429)	-2.231 (1.444)	-1.641 (1.462)	-1.502 (1.360)	-27.02* (15.05)
	Effect after 20 yrs %	-19.52 (17.41)	-17.73 (16.34)	-23.27 (16.19)	-22.89 (18.37)	-20.93 (17.29)	-27.36* (15.86)	-22.63 (19.17)	-20.53 (17.64)	-1.959 (1.345)
	Long-run effect %	-24.36 (20.70)	-21.11 (18.74)	-23.04 (14.86)	-26.92 (20.13)	-23.96 (18.59)	-26.95* (14.57)	-27.50 (21.68)	-24.59 (19.71)	-26.67 (16.35)
GDP persistence		0.945*** (0.0104)	0.939*** (0.0113)	0.925*** (0.0149)	0.936*** (0.0150)	0.932*** (0.0152)	0.917*** (0.0168)	0.940*** (0.0152)	0.939*** (0.0152)	0.927*** (0.0168)

Continued

AR(1)				0.000	0.000	0.000	0.000	0.000	0.000
AR(2)				0.451	0.576	0.755	0.475	0.629	0.722
Hansen p				1.000	1.000	1.000	1.000	1.000	1.000
Lags in Instrument				Full	Full	Full	Full	Full	Full
No of instruments				2042	2052	1949	2042	2052	1949
R-squared	0.939	0.939	0.9357						
Observations	2,876	2,847	2,408	2,777	2,749	2,310	2,777	2,749	2,311
Countries	99	98	97	99	98	96	99	98	96

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (4). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 40 in Appendix 4

Table 3Y: The effect of GWF autocratic regime types on GDP per capita, unbalanced panel with year fixed effect (system GMM)

		System GMM				
		1	2	3	4	5
Dominant party	Short-run effect %	0.551 (0.504)	0.367 (0.553)	0.222 (0.548)	0.436 (0.531)	45.24 (64.61)
	Effect after 20 yrs %	15.43 (13.92)	10.32 (15.39)	5.924 (14.50)	11.20 (13.42)	0.376 (0.489)
	Long-run effect %	304.8 (564.3)	459.1 (1,780)	50.66 (133.9)	67.07 (92.13)	10.92 (13.94)
Personalist	Short-run effect %	-0.966 (0.642)	-0.936 (0.738)	-1.159 (0.730)	-0.777 (0.736)	-71.89 (81.97)
	Effect after 20 yrs %	-27.07 (17.38)	-26.30 (20.22)	-30.90 (18.93)	-19.96 (18.58)	-0.597 (0.719)
	Long-run effect %	-534.7 (682.4)	-1,170 (3,595)	-264.3 (200.7)	-119.5 (112.9)	-17.36 (20.66)
Monarchic	Short-run effect %	-0.946 (0.927)	-1.082 (0.977)	-0.240 (0.927)	0.0949 (0.895)	257.0** (105.2)
	Effect after 20 yrs %	-26.50 (25.87)	-30.38 (27.48)	-6.400 (24.74)	2.438 (22.98)	2.134** (0.859)
	Long-run effect %	-523.5 (949.7)	-1,351 (4,847)	-54.73 (225.2)	14.60 (135.2)	62.07*** (24.09)
Military	Short-run effect %	-0.423 (0.904)	-0.602 (0.926)	-0.785 (0.924)	-0.904 (0.905)	-109.8 (88.76)
	Effect after 20 yrs %	-11.86 (25.30)	-16.92 (26.04)	-20.94 (24.68)	-23.22 (23.28)	-0.912 (0.916)
	Long-run effect %	-234.2 (385.3)	-752.5 (1,980)	-179.1 (171.1)	-139.0 (111.8)	-26.52 (26.73)
	GDP persistence	0.998*** (0.00249)	0.999*** (0.00261)	0.996*** (0.00286)	0.993*** (0.00288)	0.992*** (0.00333)
	AR(1)	0.000	0.000	0.000	0.000	0.000
	AR(2)	0.574	0.761	0.854	0.909	0.741
	Hansen p	1.000	1.000	1.000	1.000	1.000
	Lags in Instrument	Full	Full	Full	Full	Full
	No of instruments	2131	2111	2099	2102	1981
	Observations	2,876	2,749	2,705	2,705	2,270
	Countries	99	98	96	96	94

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4P in Appendix4.

Table 3Z: The effect of HTW autocratic regime types on GDP per capita, balanced panel without year fixed effects

		Within			Difference GMM			FOD GMM		
		1	2	3	1	2	3	1	2	3
Electoral	Short-run effect %	-1.022*	-0.960	-1.074*	-1.402**	-1.383**	-0.988	-1.402**	-1.355**	-0.963
		(0.600)	(0.585)	(0.603)	(0.664)	(0.670)	(0.682)	(0.664)	(0.646)	(0.669)
	Effect after 20 yrs %	-18.52*	-16.79*	-18.05*	-25.00**	-23.51**	-15.86	-25.00**	-23.57**	-16.77
	(10.70)	(10.17)	(10.43)	(11.76)	(11.39)	(11.10)	(11.76)	(11.14)	(11.89)	
	Long-run effect %	-26.26	-22.72	-18.60	-35.85*	-31.43*	-15.97	-35.85*	-32.46*	-17.73
		(17.23)	(15.30)	(12.11)	(21.36)	(18.47)	(12.13)	(21.36)	(18.89)	(14.04)
Military	Short-run effect %	-2.739***	-2.774***	-3.800***	-3.116***	-3.450***	-3.423**	-3.116***	-3.331***	-3.523***
		(0.871)	(0.915)	(1.125)	(1.113)	(1.312)	(1.375)	(1.113)	(1.246)	(1.325)
	Effect after 20 yrs %	-49.62***	-48.51***	-63.85***	-55.57***	-58.67***	-54.95***	-55.57***	-57.94***	-61.33***
	(14.18)	(14.15)	(14.57)	(16.50)	(17.54)	(16.38)	(16.50)	(17.47)	(16.78)	
	Long-run effect %	-70.35***	-65.65***	-65.79***	-79.66***	-78.43***	-55.33***	-79.66***	-79.80***	-64.81***
		(15.09)	(14.21)	(12.59)	(16.84)	(16.26)	(12.35)	(16.84)	(16.20)	(13.81)
Monarchic	Short-run effect %	-3.035***	-3.202***	-3.418***	0.724	-0.247	0.454	0.724	-1.785	-2.804
		(0.554)	(0.608)	(0.780)	(4.303)	(4.172)	(3.770)	(4.303)	(2.453)	(1.764)
	Effect after 20 yrs %	-54.99***	-56.00***	-57.43***	12.92	-4.203	7.288	12.92	-31.04	-48.81*
	(8.302)	(8.714)	(10.26)	(76.81)	(70.88)	(60.73)	(76.81)	(42.43)	(28.55)	
	Long-run effect %	-77.96***	-75.77***	-59.17***	18.52	-5.618	7.338	18.52	-42.76	-51.58*
		(20.24)	(17.55)	(13.11)	(110.4)	(94.55)	(61.47)	(110.4)	(58.00)	(29.31)
	GDP persistence	0.961***	0.958***	0.942***	0.961***	0.956***	0.938***	0.961***	0.958***	0.946***
		(0.00987)	(0.0104)	(0.0166)	(0.0130)	(0.0148)	(0.0196)	(0.0130)	(0.0139)	(0.0195)

Continued

AR(1)				0.000	0.000	0.000	0.000	0.000	0.000
AR(2)				0.883	0.269	0.385	0.883	0.392	0.986
Hansen p				1.000	1.000	1.000	1.000	1.000	1.000
Lags in Instrument				Full	Full	Full	Full	Full	Full
No of instruments				1673	1673	1610	1673	1673	1610
R-squared	0.945	0.946	0.9412						
Observations	2,343	2,343	2,019	2,272	2,201	1,879	2,272	2,201	1,879
Countries	71	71	70	71	71	70	71	71	70

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under HTW. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (4). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4Q in Appendix 4

Table 3AA: The effect of HTW autocratic regime types on GDP per capita, balanced panel without year fixed effect (system GMM)

		System GMM				
		1	2	3	4	5
Electoral	Short-run effect %	-0.544 (0.424)	-0.770* (0.436)	-0.848* (0.448)	-0.669 (0.471)	-0.400 (0.467)
	Effect after 20 yrs %	-16.50 (12.36)	-23.22* (12.42)	-24.83** (12.47)	-18.77 (12.75)	-12.37 (14.27)
	Long-run effect %	-390.8 (719.0)	-642.4 (1,479)	-265.6 (271.5)	-129.7 (116.2)	-54.70 (73.18)
Military	Short-run effect %	-1.680*** (0.591)	-2.041*** (0.591)	-2.118*** (0.589)	-2.118*** (0.596)	-2.286*** (0.622)
	Effect after 20 yrs %	-50.95*** (17.63)	-61.53*** (17.55)	-62.05*** (17.13)	-59.45*** (16.91)	-70.35*** (19.37)
	Long-run effect %	-1,207 (1,968)	-1,702 (3,508)	-663.7 (467.9)	-410.6** (175.3)	-303.2*** (107.9)
Monarchic	Short-run effect %	-0.683 (0.707)	-0.840 (0.686)	-0.552 (0.702)	-0.489 (0.726)	0.252 (0.680)
	Effect after 20 yrs %	-20.71 (20.80)	-25.31 (19.95)	-16.17 (20.19)	-13.73 (20.09)	7.760 (21.11)
	Long-run effect %	-490.5 (959.3)	-700.3 (1,679)	-173.0 (278.4)	-94.84 (158.9)	33.45 (83.88)
	GDP persistence	0.999*** (0.00259)	0.999*** (0.00269)	0.997*** (0.00273)	0.995*** (0.00275)	0.992*** (0.00329)
	AR(1)	0.000	0.000	0.000	0.000	0.000
	AR(2)	0.717	0.366	0.284	0.279	0.281
	Hansen p	1.000	1.000	1.000	1.000	1.000
	Lags in Instrument	Full	Full	Full	Full	Full
	No of instruments	1745	1745	1735	1738	1680
	Observations	2,343	2,272	2,240	2,240	1,919
	Countries	71	71	70	70	69

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4R in Appendix 4.

Table 3AB: The effect of HTW autocratic regime types on GDP per capita, unbalanced panel without year fixed effects

		Within			Difference GMM			FOD GMM		
		1	2	3	1	2	3	1	2	3
Electoral	Short-run effect %	-1.123** (0.561)	-1.040* (0.541)	-1.180** (0.559)	-1.560** (0.678)	-1.461** (0.686)	-1.083 (0.738)	-1.380** (0.671)	-1.338** (0.652)	-0.777 (0.681)
	Effect after 20 yrs %	-19.91** (9.687)	-17.46* (8.934)	-20.04** (9.725)	-25.55** (11.18)	-21.14** (10.28)	-15.86 (10.93)	-23.84** (11.36)	-21.74** (10.58)	-13.39 (11.75)
	Long-run effect %	-28.00* (15.36)	-23.17* (13.01)	-20.56* (11.39)	-33.53* (17.91)	-25.82* (14.42)	-16.10 (11.72)	-34.42* (19.81)	-29.77* (16.89)	-14.58 (13.63)
Military	Short-run effect %	-2.655*** (0.807)	-2.564*** (0.846)	-3.407*** (1.011)	-3.116*** (1.101)	-3.303*** (1.271)	-2.545* (1.547)	-3.033*** (1.089)	-3.143*** (1.206)	-2.790** (1.320)
	Effect after 20 yrs %	-47.04*** (12.59)	-43.04*** (12.66)	-57.88*** (13.86)	-51.04*** (15.47)	-47.77*** (16.72)	-37.27* (20.04)	-52.41*** (16.14)	-51.09*** (17.06)	-48.06** (19.01)
	Long-run effect %	-66.17*** (14.25)	-57.10*** (13.55)	-59.39*** (12.11)	-66.99*** (18.59)	-58.35*** (18.64)	-37.83** (16.99)	-75.67*** (20.27)	-69.96*** (18.75)	-52.34*** (15.91)
Monarchic	Short-run effect %	-3.161*** (0.552)	-3.497*** (0.606)	-3.689*** (0.677)	-3.086 (2.107)	-5.747** (2.692)	-1.316 (2.956)	-3.212* (1.943)	-4.501** (1.861)	-4.684* (2.500)
	Effect after 20 yrs %	-56.02*** (7.571)	-58.69*** (7.896)	-62.67*** (9.192)	-50.54 (36.29)	-83.13** (42.10)	-19.26 (43.30)	-55.52 (34.44)	-73.15** (33.44)	-80.69* (41.56)
	Long-run effect %	-78.80*** (17.77)	-77.86*** (15.66)	-64.31*** (14.61)	-66.33 (51.92)	-101.5* (57.17)	-19.55 (43.85)	-80.15 (55.87)	-100.2* (54.70)	-87.87* (49.12)
GDP persistence		0.960*** (0.00982)	0.955*** (0.0102)	0.943*** (0.0156)	0.953*** (0.0152)	0.943*** (0.0160)	0.933*** (0.0194)	0.960*** (0.0140)	0.955*** (0.0142)	0.947*** (0.0189)

Continued

AR(1)			0.000	0.000	0.000	0.000	0.000	0.000	0.000
AR(2)				0.380	0.839	0.671	0.405	0.658	0.588
Hansen p			1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lags in Instrument			Full	Full	Full	Full	Full	Full	Full
No of instruments				1870	1867	1809	1870	1867	1809
R-squared	0.935	0.934	0.9314						
Observations	2,876	2,847	2,408	2,777	2,651	2,213	2,777	2,651	2,214
Countries	99	98	97	99	98	96	99	98	96

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under HTW. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (4). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4S in Appendix 4

Table 3AC: The effect of HTW autocratic regime types on GDP per capita, unbalanced panel without year fixed effect (system GMM)

		System GMM				
		1	2	3	4	5
Electoral	Short-run effect %	-0.530 (0.476)	-0.719 (0.513)	-0.978* (0.500)	-0.712 (0.527)	-0.0329 (0.531)
	Effect after 20 yrs %	-15.44 (13.44)	-20.87 (14.27)	-26.98** (13.03)	-18.95 (13.49)	-1.012 (16.36)
	Long-run effect %	-167.3 (188.5)	-347.2 (515.5)	-173.5 (127.5)	-90.71 (74.82)	-4.037 (65.55)
Military	Short-run effect %	-2.041*** (0.623)	-2.579*** (0.596)	-2.694*** (0.599)	-2.537*** (0.606)	-2.353*** (0.657)
	Effect after 20 yrs %	-59.50*** (17.58)	-74.85*** (16.90)	-74.32*** (16.04)	-67.49*** (15.57)	-71.23*** (18.59)
	Long-run effect %	-644.5 (427.6)	-1,245 (1,447)	-478.1** (211.5)	-323.0*** (104.6)	-285.2** (114.6)
Monarchic	Short-run effect %	-0.675 (0.903)	-2.067* (1.170)	-1.311 (1.110)	-0.969 (1.138)	0.321 (1.064)
	Effect after 20 yrs %	-19.69 (26.05)	-59.99* (33.73)	-36.17 (30.53)	-25.77 (30.23)	9.719 (32.29)
	Long-run effect %	-213.3 (370.9)	-998.2 (1,553)	-232.7 (268.5)	-123.4 (172.1)	38.91 (118.5)
GDP persistence	0.997*** (0.00275)	0.998*** (0.00271)	0.994*** (0.00313)	0.992*** (0.00328)	0.992*** (0.00387)	
AR(1)	0.000	0.000	0.000	0.000	0.000	
AR(2)	0.400	0.922	0.969	0.942	0.73	
Hansen p	1.000	1.000	1.000	1.000	1.000	
Lags in Instrument	Full	Full	Full	Full	Full	
No of instruments	1962	1956	1949	1952	1889	
Observations	2,876	2,749	2,705	2,705	2,270	
Countries	99	98	96	96	94	

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4T in Appendix

Table 3AD: The effect of HTW autocratic regime types on GDP per capita, balanced panel with year fixed effects

		Within			Difference GMM			FOD GMM		
		1	2	3	1	2	3	1	2	3
Electoral	Short-run effect %	0.0975 (0.634)	0.231 (0.657)	0.0926 (0.671)	0.239 (0.705)	2.606* (1.428)	0.0224 (0.718)	0.239 (0.705)	0.238 (0.685)	0.172 (0.690)
	Effect after 20 yrs %	1.468 (9.555)	3.242 (9.202)	1.179 (8.529)	3.300 (9.724)	13.55 (8.343)	0.265 (8.501)	3.300 (9.724)	3.197 (9.165)	2.160 (8.656)
	Long-run effect %	1.852 (12.00)	3.862 (10.88)	1.160 (8.372)	4.005 (11.68)	13.75 (8.604)	0.259 (8.304)	4.005 (11.68)	3.755 (10.67)	2.143 (8.549)
Military	Short-run effect %	-1.223 (1.017)	-1.154 (1.000)	-2.008* (1.192)	-0.813 (1.195)	-0.833 (1.214)	-1.673 (1.373)	-0.813 (1.195)	-1.092 (1.171)	-1.646 (1.270)
	Effect after 20 yrs %	-18.42 (15.26)	-16.18 (14.00)	-25.58* (14.01)	-11.23 (16.21)	-10.93 (15.45)	-19.81 (14.77)	-11.23 (16.21)	-14.64 (15.08)	-20.71 (14.56)
	Long-run effect %	-23.24 (18.30)	-19.28 (16.12)	-25.18* (12.91)	-13.63 (18.80)	-12.73 (17.20)	-19.36 (13.60)	-13.63 (18.80)	-17.20 (16.63)	-20.55 (13.44)
Monarchic	Short-run effect %	-1.876*** (0.684)	-1.693** (0.724)	-1.634** (0.765)	2.641 (5.824)	2.756 (5.123)	2.545 (4.511)	2.641 (5.824)	-1.918*** (0.743)	-1.732** (0.830)
	Effect after 20 yrs %	-28.26*** (10.04)	-23.74** (10.10)	-21.69** (9.197)	36.45 (80.91)	36.13 (68.04)	30.14 (54.70)	36.45 (80.91)	-25.72*** (9.794)	-21.79** (9.794)
	Long-run effect %	-35.64*** (13.60)	-28.28** (12.64)	-21.67** (8.817)	44.25 (99.16)	42.09 (80.32)	29.46 (54.01)	44.25 (99.16)	-30.20** (12.18)	-21.62** (9.612)
GDP persistence		0.947*** (0.00956)	0.940*** (0.0106)	0.925*** (0.0152)	0.940*** (0.0120)	0.810*** (0.0516)	0.914*** (0.0175)	0.999*** (0.00258)	0.999*** (0.00264)	0.920*** (0.0163)

Continued

AR(1)				0.000	0.000	0.000	0.000	0.000	0.000
AR(2)				0.637	0.444	0.897	0.637	0.425	0.985
Hansen p				1.000	1.000	1.000	1.000	1.000	1.000
Lags in Instrument				4	4	Full	4	4	Full
No of instruments				1691	1707	1648	1691	1707	1648
R-squared	0.949	0.950	0.9457						
Observations	2,343	2,343	2,019	2,272	2,272	1,949	2,272	2,272	1,949
Countries	71	71	70	71	71	70	71	71	70

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under HTW. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (4). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4U in Appendix 4

Table 3AE: The effect of HTW autocratic regime types on GDP per capita, balanced panel with year fixed effect (system GMM)

		System GMM				
		1	2	3	4	5
Electoral	Short-run effect %	-0.0845 (0.439)	-0.214 (0.457)	-0.244 (0.477)	0.0372 (0.507)	0.251 (0.471)
	Effect after 20 yrs %	-2.477 (12.81)	-6.256 (13.19)	-6.900 (13.34)	1.001 (13.67)	7.348 (13.90)
	Long-run effect %	-67.65 (363.4)	-225.5 (821.8)	-81.07 (184.9)	7.083 (96.11)	35.35 (63.77)
Military	Short-run effect %	-1.150* (0.607)	-1.263** (0.630)	-1.295** (0.630)	-1.196* (0.629)	-1.267** (0.621)
	Effect after 20 yrs %	-33.70* (17.49)	-36.96** (18.07)	-36.70** (17.61)	-32.18* (16.92)	-37.05** (18.15)
	Long-run effect %	-920.5 (1,683)	-1,332 (3,454)	-431.2 (358.9)	-227.7* (138.2)	-178.2* (91.09)
Monarchic	Short-run effect %	-0.376 (0.744)	-0.247 (0.731)	0.0941 (0.756)	0.276 (0.764)	1.098* (0.614)
	Effect after 20 yrs %	-11.03 (21.52)	-7.242 (21.19)	2.667 (21.47)	7.413 (20.70)	32.10* (18.57)
	Long-run effect %	-301.2 (792.5)	-261.1 (1,097)	31.34 (247.7)	52.46 (139.5)	154.4* (83.90)
	GDP persistence	0.997*** (0.00270)	0.995*** (0.00276)	0.940*** (0.0120)	0.937*** (0.0132)	0.993*** (0.00324)
	AR(1)	0.000	0.000	0.000	0.000	0.000
	AR(2)	0.385	0.556	0.458	0.436	0.293
	Hansen p	1.000	1.000	1.000	1.000	1.000
	Lags in Instrument	4	4	4	4	Full
	No of instruments	1762	1761	1751	1754	1696
	Observations	2,343	2,272	2,240	2,240	1,919
	Countries	71	71	70	70	69

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4V in Appendix 4.

Table 3AF: The effect of HTW autocratic regime types on GDP per capita, unbalanced panel with year fixed effects

		Within			Difference GMM			FOD GMM		
		1	2	3	1	2	3	1	2	3
Electoral	Short-run effect %	-0.0198 (0.590)	0.0275 (0.587)	-0.177 (0.600)	0.0870 (0.698)	1.373 (2.001)	-0.354 (0.683)	0.411 (0.690)	0.443 (0.657)	0.111 (0.671)
	Effect after 20 yrs %	-0.291 (8.654)	0.382 (8.149)	-2.397 (8.188)	1.003 (8.034)	5.898 (8.762)	-3.864 (7.569)	5.188 (8.669)	5.400 (7.999)	1.440 (8.655)
	Long-run effect %	-0.362 (10.77)	0.454 (9.676)	-2.357 (8.103)	1.096 (8.764)	5.938 (8.828)	-3.704 (7.286)	6.057 (10.04)	6.126 (9.038)	1.432 (8.586)
Military	Short-run effect %	-1.076 (0.910)	-1.026 (0.905)	-1.838* (1.063)	-0.563 (1.178)	-0.540 (1.161)	-1.087 (1.396)	-0.331 (1.139)	-0.398 (1.143)	-1.169 (1.226)
	Effect after 20 yrs %	-15.79 (13.30)	-14.26 (12.55)	-24.93* (13.66)	-6.494 (13.62)	-5.977 (12.86)	-11.88 (14.69)	-4.174 (14.40)	-4.859 (13.89)	-15.11 (15.07)
	Long-run effect %	-19.65 (15.99)	-16.95 (14.54)	-24.52* (12.64)	-7.096 (14.72)	-6.405 (13.63)	-11.39 (13.66)	-4.873 (16.64)	-5.512 (15.53)	-15.02 (14.16)
Monarchic	Short-run effect %	-2.136*** (0.671)	-2.263*** (0.695)	-2.003*** (0.739)	-0.494 (4.010)	-1.988 (2.919)	0.133 (3.614)	-1.033 (3.136)	-3.098*** (0.965)	-2.203** (0.873)
	Effect after 20 yrs %	-31.34*** (9.377)	-31.44*** (9.353)	-27.63*** (9.472)	-5.696 (46.33)	-22.02 (32.63)	1.449 (39.53)	-13.04 (39.57)	-37.79*** (11.21)	-28.48*** (10.90)
	Long-run effect %	-38.99*** (12.67)	-37.37*** (12.07)	-27.25*** (9.516)	-6.224 (50.63)	-23.60 (34.97)	1.389 (37.91)	-15.23 (46.12)	-42.87*** (13.67)	-28.32** (11.30)
GDP persistence		0.945*** (0.0103)	0.939*** (0.0111)	0.927*** (0.0147)	0.921*** (0.0160)	0.916*** (0.0159)	0.905*** (0.0169)	0.932*** (0.0154)	0.928*** (0.0157)	0.922*** (0.0168)

Continued

AR(1)			0.000	0.000	0.000	0.000	0.000	0.000	0.000
AR(2)				0.562	0.678	0.869	0.543	0.699	0.997
Hansen p			1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lags in Instrument			Full	Full	Full	Full	Full	Full	Full
No of instruments				1899	1911	1859	1899	1911	1859
R-squared	0.939	0.939	0.9355						
Observations	2,876	2,847	2408	2,777	2,749	2,310	2,777	2,749	2,311
Countries	99	98	97	99	98	96	99	98	96

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under HTW. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (4). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4W in Appendix 4

Table 3AG: The effect of HTW autocratic regime types on GDP per capita, unbalanced panel with year fixed effect (system GMM)

		System GMM				
		1	2	3	4	5
Electoral	Short-run effect %	-0.0989 (0.497)	-0.131 (0.552)	-0.332 (0.527)	0.0312 (0.540)	0.223 (0.485)
	Effect after 20 yrs %	-2.751 (13.77)	-3.645 (15.34)	-8.826 (13.86)	0.796 (13.78)	6.457 (14.09)
	Long-run effect %	-30.33 (149.1)	-73.44 (329.5)	-65.64 (111.6)	4.172 (72.19)	27.23 (58.92)
Military	Short-run effect %	-1.344** (0.646)	-1.452** (0.649)	-1.540** (0.638)	-1.249** (0.622)	-1.549** (0.613)
	Effect after 20 yrs %	-37.38** (17.60)	-40.48** (18.00)	-40.93** (16.90)	-31.82** (15.76)	-44.88** (18.03)
	Long-run effect %	-412.1 (266.4)	-815.6 (1,055)	-304.4* (169.7)	-166.9** (84.21)	-189.3** (78.14)
Monarchic	Short-run effect %	-0.109 (0.928)	-0.849 (1.218)	-0.243 (1.137)	0.313 (1.166)	1.529* (0.878)
	Effect after 20 yrs %	-3.032 (25.79)	-23.67 (33.95)	-6.447 (30.21)	7.984 (29.69)	44.29* (25.49)
	Long-run effect %	-33.43 (292.1)	-476.9 (1,089)	-47.95 (236.6)	41.87 (148.6)	186.8** (90.56)
	GDP persistence	0.997*** (0.00273)	0.998*** (0.00260)	0.995*** (0.00296)	0.993*** (0.00313)	0.992*** (0.00331)
	AR(1)	0.000	0.000	0.000	0.000	0.000
	AR(2)	0.611	0.733	0.818	0.878	0.786
	Hansen p	1.000	1.000	1.000	1.000	1.000
	Lags in Instrument	Full	Full	Full	Full	Full
	No of instruments	1992	1984	1976	1979	1915
	R-squared					
	Observations	2,876	2,749	2,705	2,705	2,270
	Countries	99	98	96	96	96

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). GDP persistence tests whether the sum of coefficients of dependent variable lags is less than 1. The test of serial correlation in the residual is reported under AR2 test. The full regression output behind this table is reported in Table 4X in Appendix 4.

Table 3AH: The effect of CGV autocratic regime type on GDP per capita, unbalanced panel with year fixed effect (two-step GMM)

		Difference GMM			FOD GMM		
		1	2	3	1	2	3
	Log GDP 1st lag	0.563*** (0.126)	0.790*** (0.134)	0.675*** (0.163)	0.669*** (0.152)	1.097*** (0.128)	1.008*** (0.119)
	Log GDP 2nd lag					-0.146** (0.0584)	
	Short-run effect %	-14.48 (32.08)	-39.15 (27.24)	-25.32 (18.94)	3.973 (30.24)	-3.987 (17.16)	0.121 (10.59)
Monarchic	Effect after 20 yrs %	-33.14 (77.91)	-180.9 (176.8)	-77.99 (68.08)	11.98 (91.32)	-56.24 (224.7)	2.619 (229.4)
	Long-run effect %	-33.14 (77.91)	-182.4 (182.0)	-78.03 (68.18)	11.99 (91.35)	-80.65 (306.3)	-15.26 (1,291)
	Short-run effect %	0.735 (3.030)	1.928 (2.525)	5.942* (3.325)	2.907 (3.196)	0.285 (1.719)	-2.340 (2.676)
Military	Effect after 20 yrs %	1.683 (6.946)	8.910 (11.57)	18.30 (11.56)	8.768 (8.333)	4.025 (23.25)	-50.52 (98.57)
	Long-run effect %	1.683 (6.946)	8.981 (11.72)	18.31 (11.59)	8.771 (8.334)	5.772 (32.49)	294.3 (4,256)
	Short-run effect %	-1.572 (6.143)	0.539 (5.187)	12.67 (10.97)	1.867 (5.521)	-1.214 (3.384)	-3.595 (4.878)
Civilian	Effect after 20 yrs %	-3.599 (14.18)	2.489 (23.92)	39.02 (27.78)	5.631 (15.87)	-17.12 (55.13)	-77.59 (136.2)
	Long-run effect %	-3.599 (14.18)	2.509 (24.11)	39.04 (27.79)	5.632 (15.87)	-24.55 (93.45)	452.0 (6,795)
	GDP persistence	0.563*** (0.126)	0.785*** (0.143)	0.675*** (0.163)	0.669*** (0.152)	0.951*** (0.0789)	1.008*** (0.119)

Continued

AR(1)	0.011	0.001	0.001	0.007	0	0
AR(2)	0.165	0.114	0.151	0.101	0.445	0.121
Hansen p	0.224	0.176	0.186	0.164	0.154	0.166
Lags in Instrument	63	59	56	55	66	60
No of instruments	7	5	4	5	6	5
Observations	3,074	3,043	2,800	3,074	2,945	2,801
Countries	99	98	97	99	98	97

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under the CGV autocratic classifications using two-step difference and FOD GMMs. Regimes' coefficients are multiplied by 100. Both limiting and collapsing instruments are employed to contain instrument proliferation. For each estimator, column (1) presents results without any control variable. Religion and resource rent are included as control covariate in column (2) and column (3) respectively. The p-values of test of serial correlation in the residual and over identification test results are reported under AR2 and Hansen p test respectively. The full regression output behind this table is reported in Table 4Z in Appendix 4

Table 3AI: The effect of GWF autocratic regime type on GDP per capita, balanced panel with year fixed effect (two-step GMM)

		Difference GMM			FOD GMM		
		1	2	3	1	2	3
	Log GDP 1st lag	0.976*** (0.137)	0.945*** (0.121)	1.069*** (0.173)	1.168*** (0.160)	1.077*** (0.160)	1.147*** (0.144)
	Log GDP 2nd lag	-0.110* (0.0564)	-0.109* (0.0572)	-0.147* (0.0814)	-0.183** (0.0872)	-0.144* (0.0750)	-0.178** (0.0751)
	Short-run effect %	2.169 (3.432)	-1.754 (3.382)	-1.734 (4.432)	0.932 (1.580)	1.358 (1.711)	0.698 (2.332)
Dominant party	Effect after 20 yrs %	15.60 (31.27)	-10.54 (19.27)	-19.06 (39.65)	19.09 (40.42)	16.38 (24.94)	12.04 (39.97)
	Long-run effect %	16.19 (33.72)	-10.71 (19.56)	-22.31 (44.03)	61.51 (361.1)	20.36 (39.01)	22.43 (86.79)
	Short-run effect %	7.488 (6.652)	10.24* (6.220)	3.979 (7.820)	2.920 (5.517)	5.283 (5.550)	0.578 (5.343)
Personalist	Effect after 20 yrs %	53.86* (30.92)	61.51*** (22.59)	43.74 (50.49)	59.85 (66.98)	63.70* (35.88)	9.975 (85.22)
	Long-run effect %	55.88* (32.77)	62.49*** (23.39)	51.20 (44.28)	192.8 (695.4)	79.21 (62.70)	18.58 (134.9)
	Short-run effect %	-2.799 (1.960)	-2.302 (1.490)	-16.93 (14.34)	-2.041 (1.530)	-1.666 (1.663)	1.659 (5.863)
Monarchic	Effect after 20 yrs %	-20.13 (13.54)	-13.83 (10.47)	-186.1 (192.6)	-41.83 (40.64)	-20.09 (29.65)	28.62 (118.8)
	Long-run effect %	-20.89 (15.22)	-14.05 (10.96)	-217.9 (301.8)	-134.7 (675.7)	-24.98 (48.66)	53.32 (294.8)
	Short-run effect %	-2.048 (14.54)	-18.04 (13.15)	-2.423 (1.858)	-12.86*** (4.273)	-9.307* (5.191)	-2.608 (1.717)
Military	Effect after 20 yrs %	-14.73 (110.4)	-108.4 (78.39)	-26.63 (34.74)	-263.5 (241.7)	-112.2 (68.68)	-45.00 (50.79)
	Long-run effect %	-15.28 (115.6)	-110.1 (81.23)	-31.18 (53.42)	-848.8 (4,389)	-139.5 (155.6)	-83.84 (222.0)

Continued

GDP persistence	0.866*** (0.107)	0.836*** (0.0914)	0.922*** (0.110)	0.985*** (0.0792)	0.933*** (0.0958)	0.969*** (0.0776)
AR1 test p-value	0.000	0.000	0.001	0.001	0.001	0
AR2 test p-value	0.138	0.209	0.514	0.462	0.307	0.581
Hansen p	0.713	0.773	0.558	0.334	0.308	0.514
No of lags in Instr.	6	2	5	3	2	3
No of instruments	64	67	69	49	57	59
Observations	2,414	2,414	2,229	2,414	2,414	2,229
Countries	71	71	70	71	71	70

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under the GWF autocratic classifications using two-step difference and FOD GMMs. Regimes' coefficients are multiplied by 100. Both limiting and collapsing instruments are employed to contain instrument proliferation. For each estimator, column (1) presents results without any control variable. Religion and resource rent are included as control covariate in column (2) and column (3) respectively. The p-values of test of serial correlation in the residual and over identification test results are reported under AR2 and Hansen p test respectively. The full regression output behind this table is reported in Table 4AA in Appendix 4.

Table 3AJ: The effect of GWF autocratic regime type on GDP per capita, balanced panel with year fixed effect (two-step GMM)

		Difference GMM			FOD GMM		
		1	2	3	1	2	3
	Log GDP 1st lag	0.625*** (0.157)	0.817*** (0.270)	0.624*** (0.199)	0.946*** (0.244)	1.085*** (0.100)	1.226*** (0.370)
	Log GDP 2nd lag				-0.0842 (0.100)	-0.151*** (0.0548)	-0.216 (0.185)
Dominant party	Short-run effect %	-3.141 (7.249)	-0.460 (8.919)	4.375 (9.128)	1.542 (2.902)	0.833 (2.768)	-2.539 (5.261)
	Effect after 20 yrs %	-8.378 (18.06)	-2.475 (45.55)	11.62 (24.59)	10.77 (21.80)	10.19 (34.88)	-71.51 (282.9)
	Long-run effect %	-8.378 (18.06)	-2.519 (46.16)	11.62 (24.59)	11.18 (23.27)	12.71 (44.98)	264.7 (5,022)
Personalist	Short-run effect %	2.891 (8.007)	-3.797 (11.01)	4.141 (6.231)	2.106 (4.274)	0.0380 (3.199)	-0.230 (7.338)
	Effect after 20 yrs %	7.709 (20.21)	-20.42 (82.48)	11.00 (15.41)	14.70 (27.96)	0.465 (39.16)	-6.491 (221.2)
	Long-run effect %	7.710 (20.21)	-20.79 (86.17)	11.00 (15.41)	15.26 (29.37)	0.580 (48.94)	24.02 (404.2)
Monarchic	Short-run effect %	-2.633 (16.06)	-37.59 (47.83)	-30.36 (18.99)	-14.02 (12.76)	-5.433 (11.04)	1.199 (11.16)
	Effect after 20 yrs %	-7.021 (43.40)	-202.2 (181.1)	-80.66 (69.73)	-97.92 (80.68)	-66.41 (122.0)	33.77 (389.0)
	Long-run effect %	-7.021 (43.41)	-205.8 (195.9)	-80.67 (69.76)	-101.7 (91.09)	-82.90 (147.1)	-125.0 (1,612)
Military	Short-run effect %	0.00328 (2.580)	1.066 (3.180)	1.154 (2.399)	-1.284 (1.554)	-1.016 (1.629)	-3.117 (2.113)
	Effect after 20 yrs %	0.00874 (6.879)	5.733 (20.12)	3.066 (6.552)	-8.966 (16.68)	-12.41 (18.34)	-87.79 (240.2)
	Long-run effect %	0.00874 (6.880)	5.836 (20.88)	3.067 (6.553)	-9.307 (18.35)	-15.50 (22.86)	324.9 (6,419)

Continued

GDP persistence	0.625*** (0.157)	0.817*** (0.270)	0.624*** (0.199)	0.862*** (0.149)	0.934*** (0.0543)	1.010*** (0.191)
AR(1)	0.012	0.03	0.013	0.021	0	0.043
AR(2)	0.128	0.352	0.469	0.265	0.529	0.771
Hansen p	0.26	0.436	0.173	0.111	0.178	0.188
Lags in Instrument	3	2	3	5	6	4
No of instruments	50	49	55	59	72	64
Observations	3,074	3,043	2,800	2,975	2,945	2,703
Countries	99	98	97	99	98	97

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under the GWF autocratic classifications using two-step difference and FOD GMMs. Regimes' coefficients are multiplied by 100. Both limiting and collapsing instruments are employed to contain instrument proliferation. For each estimator, column (1) presents results without any control variable. Religion and resource rent are included as control covariate in column (2) and column (3) respectively. The p-values of test of serial correlation in the residual and over identification test results are reported under AR2 and Hansen p test respectively. The full regression output behind this table is reported in Table 4AB in Appendix 4

Table 3AK: The effect of HTW autocratic regime type on GDP per capita, balanced panel with year fixed effect (two-step GMM)

		Difference GMM			FOD GMM		
		1	2	3	1	2	3
	Log GDP 1st lag	0.650*** (0.147)	0.909*** (0.193)	0.758*** (0.205)	1.498*** (0.222)	1.072*** (0.148)	1.100*** (0.181)
	Log GDP 2nd lag	-0.0525 (0.0543)	-0.150** (0.0666)	-0.102 (0.0683)	-0.314*** (0.120)	-0.122 (0.0771)	-0.152 (0.0934)
	Log GDP 3rd lag	0.0868** (0.0356)	0.0837** (0.0409)	0.101** (0.0440)			
Electoral	Short-run effect %	0.801 (2.220)	0.0792 (1.545)	0.0722 (1.947)	-1.305 (2.098)	-0.406 (1.162)	-0.758 (1.128)
	Effect after 20 years %	2.528 (6.934)	0.487 (9.469)	0.293 (7.895)	-536.9 (1,485)	-5.611 (17.83)	-10.48 (19.43)
	Long-run effect %	2.533 (6.948)	0.506 (9.829)	0.296 (7.960)	7.078 (11.68)	-8.121 (29.80)	-14.59 (36.41)
Military	Short-run effect %	0.697 (3.137)	-0.808 (2.606)	1.785 (3.804)	-5.611* (3.180)	-0.855 (2.098)	-2.356 (2.386)
	Effect after 20 years %	2.200 (9.901)	-4.972 (19.00)	7.253 (12.89)	-2,308 (5,697)	-11.81 (35.70)	-32.57 (59.70)
	Long-run effect %	2.204 (0.0543)	-5.164 (0.0666)	7.313 (12.91)	30.43** (0.120)	-17.09 (0.0771)	-45.32 (121.7)
Monarchic	Short-run effect %	-29.93 (34.47)	-12.51 (12.30)	-8.186 (13.79)	-5.373 (8.324)	-1.783 (3.261)	-0.272 (4.549)
	Effect after 20 years %	-94.45 (115.0)	-76.97 (97.00)	-33.25 (52.23)	-2,210 (6,551)	-24.63 (39.31)	-3.756 (60.29)
	Long-run effect %	-94.65 (115.4)	-79.94 (107.0)	-33.53 (52.65)	29.14 (41.97)	-35.65 (61.16)	-5.226 (80.57)
	GDP persistence	0.684*** (0.100)	0.844*** (0.145)	0.756*** (0.140)	1.184*** (0.115)	0.950*** (0.0787)	0.948*** (0.0939)

Continued

AR1 test p-value	0.027	0.006	0.014	0.001	0.002	0.003
AR2 test p-value	0.869	0.698	0.451	0.707	0.201	0.569
Hansen p	0.369	0.122	0.202	0.14	0.181	0.536
No of lags in Instr.	9	5	5	9	7	5
No of instruments	69	65	68	65	70	64
Observations	2,343	2,343	2,159	2,414	2,414	2,229
Countries	71	71	71	71	71	71

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under the HTW autocratic classifications using two-step difference and FOD GMMs. Regimes' coefficients are multiplied by 100. Both limiting and collapsing instruments are employed to contain instrument proliferation. For each estimator, column (1) presents results without any control variable. Religion and resource rent are included as control covariate in column (2) and column (3) respectively. The p-values of test of serial correlation in the residual and over identification test results are reported under AR2 and Hansen p test respectively. The full regression output behind this table is reported in Table 4AC in Appendix 4

Table 3AL: The effect of HTW autocratic regime type on GDP per capita, unbalanced panel with year fixed effect (two-step GMM)

		Difference GMM			FOD GMM		
		1	2	3	1	2	3
Electoral	Log GDP 1st lag	0.708*** (0.148)	0.806*** (0.134)	0.551*** (0.147)	0.582*** (0.174)	0.761*** (0.211)	0.798*** (0.194)
	Short-run effect %	-0.451 (2.727)	-1.789 (2.563)	1.144 (4.883)	1.408 (2.845)	0.173 (2.237)	0.754 (3.678)
	Effect after 20 yrs %	-1.541 (9.728)	-9.086 (15.81)	2.549 (10.30)	3.369 (6.179)	0.722 (9.235)	3.691 (17.93)
	Long-run effect %	-1.543 (9.741)	-9.208 (16.29)	2.550 (10.30)	3.369 (6.179)	0.725 (9.272)	3.732 (18.15)
Military	Short-run effect %	2.485 (3.248)	1.063 (3.002)	4.058 (5.336)	3.966 (3.626)	0.288 (3.237)	0.883 (3.831)
	Effect after 20 yrs %	8.487 (9.053)	5.395 (13.70)	9.042 (10.45)	9.491 (6.730)	1.198 (12.78)	4.323 (18.37)
	Long-run effect %	8.496 (9.052)	5.468 (13.81)	9.042 (10.45)	9.491 (6.730)	1.203 (12.81)	4.371 (18.57)
Monarchic	Short-run effect %	-24.24 (59.56)	-33.59 (24.77)	-18.31 (22.17)	4.713 (21.53)	-12.08 (13.67)	-10.83 (16.05)
	Effect after 20 yrs %	-82.80 (230.6)	-170.6 (178.1)	-40.80 (49.40)	11.28 (50.82)	-50.33 (48.04)	-53.04 (56.53)
	Long-run effect %	-82.88 (231.1)	-172.9 (186.1)	-40.80 (49.40)	11.28 (50.82)	-50.54 (48.53)	-53.62 (56.88)
	GDP persistence	0.708*** (0.148)	0.806*** (0.134)	0.551*** (0.147)	0.582*** (0.174)	0.761*** (0.211)	0.798*** (0.194)

Continued

AR(1)	0.003	0.001	0.007	0.041	0.014	0.002
AR(2)	0.069	0.129	0.53	0.245	0.166	0.338
Hansen p	0.239	0.112	0.215	0.228	0.156	0.116
Lags in Instrument	4	4	7	5	4	4
No of instruments	51	55	68	55	55	56
Observations	3,074	3,043	2,800	3,074	3,043	2,801
Countries	99	98	97	99	98	97

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under the HTW autocratic classifications using two-step difference and FOD GMMs. Regimes' coefficients are multiplied by 100. Both limiting and collapsing instruments are employed to contain instrument proliferation. For each estimator, column (1) presents results without any control variable. Religion and resource rent are included as control covariate in column (2) and column (3) respectively. The p-values of test of serial correlation in the residual and over identification test results are reported under AR2 and Hansen p test respectively. The full regression output behind this table is reported in Table 4AD in Appendix 4

APPENDIX 4: FULL REGRESSION RESULTS OF EFFECT OF REGIME TYPES ON INCOME LEVELS

Table 4A: The effect of CGV autocratic regime types on GDP per capita, balanced panel without year fixed effect (full regression)

	<i>Within</i>			<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>4</i>	<i>1</i>	<i>2</i>	<i>5</i>
log GDP 1st lag	1.194*** (0.0365)	1.197*** (0.0363)	1.171*** (0.0365)	1.187*** (0.0367)	1.199*** (0.0371)	1.162*** (0.0372)	1.187*** (0.0367)	1.201*** (0.0374)	1.164*** (0.0369)
log GDP 2nd lag	-0.213*** (0.0582)	-0.219*** (0.0584)	-0.174*** (0.0509)	-0.210*** (0.0575)	-0.227*** (0.0575)	-0.169*** (0.0526)	-0.210*** (0.0575)	-0.228*** (0.0577)	-0.167*** (0.0528)
log GDP 3rd lag	0.0664* (0.0389)	0.0673* (0.0383)	0.0274 (0.0478)	0.0667* (0.0386)	0.0657* (0.0397)	0.0286 (0.0475)	0.0667* (0.0386)	0.0649 (0.0402)	0.0265 (0.0479)
log GDP 4th lag	-0.0863*** (0.0324)	-0.0856** (0.0330)	-0.0319 (0.0357)	-0.0812** (0.0318)	-0.0768** (0.0314)	-0.0205 (0.0397)	-0.0812** (0.0318)	-0.0762** (0.0315)	-0.0203 (0.0397)
log GDP 5th lag			0.0531 (0.0333)			0.0469 (0.0348)			0.0458 (0.0350)
log GDP 6th lag			-0.0995*** (0.0356)			-0.101*** (0.0374)			-0.0998*** (0.0371)
Monarchic cvg	-1.440*** (0.192)	-1.526*** (0.338)	-1.644*** (0.539)	1.654 (2.838)	0.415 (2.809)	1.660 (2.601)	1.654 (2.838)	0.208 (2.018)	-1.447 (1.253)
Military cvg	-1.948** (0.848)	-1.972** (0.901)	-2.979*** (1.068)	-2.755** (1.222)	-2.973** (1.412)	-3.266** (1.485)	-2.755** (1.222)	-3.035** (1.345)	-3.109** (1.419)
Civilian cvg	-2.111*** (0.732)	-1.884** (0.761)	-1.992** (0.867)	-3.038*** (1.068)	-2.935** (1.239)	-2.349** (1.163)	-3.038*** (1.068)	-3.116*** (1.131)	-2.329** (1.051)
Christianity% 1st Lag		2.162 (10.37)	11.42 (9.139)		9.712 (11.14)	12.15 (9.941)		11.74 (12.21)	17.10 (11.63)
Christianity% 2nd Lag		-19.08 (12.81)	-26.00** (12.72)		-25.65** (12.27)	-25.59** (12.80)		-27.97* (14.54)	-31.95** (16.28)
Christianity% 3rd Lag		5.948 (12.54)	-5.645 (11.81)		5.765 (12.40)	-5.207 (14.34)		5.766 (12.41)	-5.544 (14.51)
Islam% 1st Lag		18.86	-19.92		-17.30	-20.62		-21.42	-21.91

		(12.28)	(27.84)		(25.59)	(28.53)		(26.27)	(29.30)
Islam% 2nd Lag		-33.18**	-2.769		11.64	-5.241		10.55	0.389
		(16.61)	(40.68)		(33.29)	(40.03)		(33.55)	(42.30)
Islam% 3rd Lag		7.342	21.49		7.183	23.25		7.176	23.14
		(12.49)	(19.90)		(12.33)	(19.61)		(12.34)	(19.64)
Buddhism% 1st Lag		-39.95***	-39.22***		-52.46***	-48.65***		-58.85***	-45.58***
		(12.60)	(11.14)		(14.98)	(11.33)		(17.30)	(12.00)
Buddhism% 2nd Lag		52.87***	50.50***		61.94***	48.86***		70.77***	55.70***
		(15.98)	(10.65)		(18.91)	(9.331)		(19.11)	(11.69)
Buddhism% 3rd Lag		-23.86**	-6.767		-24.28**	-3.088		-24.28**	-3.857
		(11.74)	(7.863)		(11.62)	(7.513)		(11.63)	(7.192)
Hinduism % 1st Lag		-19.43	-76.16**		-63.72**	-81.28**		-70.74**	-81.28**
		(16.17)	(36.63)		(31.68)	(35.97)		(31.62)	(38.00)
Hinduism % 2nd Lag		14.68	66.49*		71.20**	61.26		70.13**	72.63*
		(11.79)	(39.24)		(31.14)	(39.12)		(30.84)	(42.34)
Hinduism % 3rd Lag		5.684	32.19		5.533	33.49		5.550	32.26
		(12.81)	(21.63)		(12.73)	(22.42)		(12.80)	(22.38)
Resource Rent 1st Lag			0.0884			0.0934			0.130
			(0.121)			(0.130)			(0.124)
Resource Rent 2nd Lag			-0.132*			-0.105			-0.134*
			(0.0727)			(0.0732)			(0.0761)
Resource Rent 3rd Lag			-0.203***			-0.240***			-0.227***
			(0.0637)			(0.0663)			(0.0690)
Constant	34.05***	36.61***							
	(8.478)	(11.53)							
R-squared	0.945	0.946	0.941						
Observations	2,343	2,343	2,019	2,272	2,201	1,879	2,272	2,201	1,879
Countries	71	71	70	71	71	70	71	71	69

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (3). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4B: The effect of CGV autocratic regime types on GDP per capita, balanced panel without year fixed effect (system GMM) (full regression)

	<i>System GMM</i>				
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
log GDP 1st lag	1.254*** (0.0366)	1.261*** (0.0369)	1.258*** (0.0368)	1.252*** (0.0370)	1.219*** (0.0350)
log GDP 2nd lag	-0.226*** (0.0616)	-0.236*** (0.0598)	-0.235*** (0.0598)	-0.234*** (0.0595)	-0.180*** (0.0533)
log GDP 3rd lag	0.0710* (0.0418)	0.0647 (0.0424)	0.0653 (0.0424)	0.0650 (0.0420)	0.0271 (0.0494)
log GDP 4th lag	-0.101*** (0.0268)	-0.0904*** (0.0269)	-0.0908*** (0.0271)	-0.0871*** (0.0267)	-0.0190 (0.0401)
log GDP 5th lag					0.0424 (0.0346)
log GDP 6th lag					-0.0956*** (0.0300)
Monarchic cgv	-0.726 (0.669)	-0.870 (0.632)	-0.556 (0.625)	-0.507 (0.637)	0.282 (0.553)
Military cgv	-1.383** (0.571)	-1.641*** (0.626)	-1.678*** (0.634)	-1.665*** (0.631)	-1.828** (0.719)
Civilian cgv	-0.868** (0.420)	-1.165*** (0.414)	-1.180*** (0.432)	-0.897** (0.438)	-0.518 (0.406)
Christianity% 1st Lag		9.792 (12.19)	10.84 (12.33)	10.34 (12.24)	19.23* (11.58)
Christianity% 2nd Lag		-29.01** (11.97)	-29.35** (11.93)	-28.15** (12.01)	-29.37** (14.70)
Christianity% 3rd Lag		6.591 (12.50)	7.317 (12.52)	7.412 (12.46)	-3.833 (15.00)
Islam% 1st Lag		-27.58 (27.02)	-27.34 (27.06)	-25.36 (26.56)	-25.05 (30.38)
Islam% 2nd Lag		7.161 (33.44)	7.157 (33.49)	6.972 (33.15)	-4.312 (41.59)
Islam% 3rd Lag		8.231 (12.80)	8.555 (12.75)	8.694 (12.69)	24.35 (20.49)
Buddhism% 1st Lag		-59.32*** (15.52)	-79.82*** (21.38)	-82.01*** (21.89)	-70.09*** (17.16)
Buddhism% 2nd Lag		69.00*** (19.52)	86.87*** (24.10)	84.84*** (23.92)	65.14*** (15.57)
Buddhism% 3rd Lag		-24.27* (13.25)	-33.17** (15.55)	-33.06** (15.45)	-11.20 (15.13)
Hinduism % 1st Lag		-86.29*** (31.88)	-86.23*** (30.74)	-82.49*** (29.38)	-87.99*** (32.55)
Hinduism % 2nd Lag		71.68** (32.22)	71.44** (31.87)	70.37** (31.35)	68.73* (40.86)
Hinduism % 3rd Lag		5.639 (12.83)	7.047 (13.10)	7.102 (13.05)	34.16 (23.64)
Latitude			0.0164* (0.00853)	0.00742 (0.0107)	0.0111 (0.0107)
British colony				-1.231** (0.546)	-0.607 (0.526)
French colony				-1.933*** (0.517)	-1.243** (0.534)

Spanish colony				0.147 (0.723)	-0.388 (0.645)
Resource Rent 1st Lag					0.0982 (0.119)
Resource Rent 2nd Lag					-0.0999 (0.0793)
Resource Rent 3rd Lag					-0.226*** (0.0728)
Eastern Asian					1.821*** (0.510)
South American					1.052* (0.587)
Constant	2.726 (2.297)	3.396 (2.643)	4.374 (2.689)	7.375*** (2.647)	6.458** (3.241)
Observations	2,343	2,272	2,240	2,240	1,919
Countries	71	71	70	70	69

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4C: The effect of CGV autocratic regime types on GDP per capita, unbalanced panel without year fixed effect (full regression)

	<i>Within</i>			<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
log GDP 1st lag	1.165*** (0.0331)	1.162*** (0.0332)	1.155*** (0.0314)	1.147*** (0.0343)	1.145*** (0.0363)	1.136*** (0.0322)	1.151*** (0.0342)	1.155*** (0.0356)	1.148*** (0.0318)
log GDP 2nd lag	-0.171*** (0.0445)	-0.174*** (0.0446)	-0.136*** (0.0480)	-0.165*** (0.0433)	-0.183*** (0.0434)	-0.135*** (0.0491)	-0.166*** (0.0436)	-0.187*** (0.0435)	-0.135*** (0.0497)
log GDP 3rd lag	0.0558 (0.0366)	0.0569 (0.0365)	0.00134 (0.0440)	0.0579 (0.0360)	0.0636* (0.0366)	0.00604 (0.0430)	0.0571 (0.0360)	0.0657* (0.0368)	0.00484 (0.0441)
log GDP 4th lag	-0.0896*** (0.0270)	-0.0885*** (0.0274)	-0.0303 (0.0347)	-0.0860*** (0.0267)	-0.0732** (0.0289)	-0.0159 (0.0390)	-0.0817*** (0.0272)	-0.0762*** (0.0282)	-0.0201 (0.0391)
log GDP 5th lag			0.0588* (0.0341)			0.0414 (0.0328)			0.0453 (0.0336)
log GDP 6th lag			-0.103*** (0.0333)			-0.0878** (0.0386)			-0.0912** (0.0371)
Monarchic cgv	-1.479*** (0.213)	-1.808*** (0.336)	-1.841*** (0.321)	0.135 (1.560)	-2.157 (2.228)	-1.414 (1.627)	-0.0618 (1.372)	-0.876 (1.617)	-1.832 (1.127)
Military cgv	-1.714** (0.821)	-1.652* (0.875)	-2.401** (1.002)	-2.959** (1.220)	-3.192** (1.446)	-2.806* (1.441)	-2.693** (1.220)	-3.093** (1.352)	-2.730** (1.389)
Civilian cgv	-2.283*** (0.712)	-1.948** (0.752)	-2.278*** (0.838)	-3.733*** (1.072)	-3.561*** (1.218)	-2.295** (1.036)	-3.315*** (1.059)	-3.282*** (1.122)	-2.142** (1.002)
Christianity% 1st Lag		-1.816 (8.026)	-6.533 (9.570)		-7.984 (10.03)	-5.986 (11.28)		-15.11* (9.140)	-6.070 (11.01)
Christianity% 2nd Lag		-5.914 (10.19)	-4.899 (10.58)		0.766 (9.054)	-2.429 (9.957)		5.120 (9.659)	-4.229 (10.33)
Christianity% 3rd Lag		2.947 (8.784)	2.313 (9.389)		2.616 (8.597)	-1.173 (9.089)		2.720 (8.627)	-1.074 (9.159)
Islam% 1st Lag		13.10 (10.02)	-4.394 (14.86)		2.719 (12.60)	-6.715 (14.99)		-7.809 (12.59)	-6.759 (15.19)
Islam% 2nd Lag		-13.90 (11.57)	1.159 (14.89)		1.989 (11.51)	-6.773 (14.91)		7.756 (12.78)	-8.957 (15.25)

Islam% 3rd Lag	3.114 (8.649)	6.485 (9.898)	2.605 (8.433)	14.31 (9.684)	2.770 (8.481)	13.47 (9.633)
Buddhism% 1st Lag	-25.68* (13.98)	-23.51** (11.30)	-34.64** (17.22)	-29.83** (12.95)	-39.41** (18.81)	-29.96* (15.98)
Buddhism% 2nd Lag	37.56** (18.07)	31.50** (14.68)	41.99** (19.78)	29.92** (13.78)	50.60** (21.86)	35.30** (18.01)
Buddhism% 3rd Lag	-18.39* (10.24)	-5.274 (6.965)	-19.01* (10.04)	-2.961 (5.933)	-19.35* (10.16)	-3.597 (5.747)
Hinduism % 1st Lag	-12.93 (22.79)	-51.61** (25.55)	-26.17 (24.57)	-46.73 (29.15)	-42.95** (20.60)	-51.36* (28.23)
Hinduism % 2nd Lag	20.58 (17.45)	57.19*** (21.03)	61.21*** (17.24)	50.09** (19.64)	56.06*** (17.34)	45.92** (21.88)
Hinduism % 3rd Lag	9.892 (11.26)	31.18** (14.92)	8.836 (10.96)	25.59** (12.90)	8.837 (11.03)	24.63* (13.06)
Resource Rent 1st Lag		0.0868 (0.0934)		0.0991 (0.100)		0.114 (0.0986)
Resource Rent 2nd Lag		-0.162* (0.0828)		-0.137 (0.0857)		-0.161* (0.0914)
Resource Rent 3rd Lag		-0.0688 (0.0946)		-0.0955 (0.103)		-0.0830 (0.104)
Constant	34.90*** (8.322)	35.97*** (10.90)	43.36*** (15.03)			
R-squared	0.935	0.934	0.931			
Observations	2,876	2,847	2,408	2,777	2,651	2,213
Countries	99	98	97	99	98	96

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (3). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4D: The effect of CGV autocratic regime types on GDP per capita, unbalanced panel without year fixed effect (system GMM) (full regression)

	<i>System GMM</i>				
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
log GDP 1st lag	1.232*** (0.0325)	1.225*** (0.0326)	1.222*** (0.0324)	1.226*** (0.0343)	1.220*** (0.0329)
log GDP 2nd lag	-0.188*** (0.0462)	-0.185*** (0.0464)	-0.184*** (0.0462)	-0.199*** (0.0459)	-0.155*** (0.0517)
log GDP 3rd lag	0.0517 (0.0385)	0.0532 (0.0384)	0.0534 (0.0382)	0.0564 (0.0392)	-0.00521 (0.0465)
log GDP 4th lag	-0.0969*** (0.0223)	-0.0969*** (0.0226)	-0.0975*** (0.0227)	-0.0902*** (0.0243)	-0.0220 (0.0415)
log GDP 5th lag					0.0341 (0.0338)
log GDP 6th lag					-0.0810*** (0.0312)
Monarchic cgv	-1.558* (0.921)	-1.357 (0.897)	-0.802 (0.872)	-0.757 (1.045)	0.810 (1.059)
Military cgv	-1.296** (0.615)	-1.493** (0.621)	-1.207* (0.620)	-1.625** (0.685)	-1.333* (0.681)
Civilian cgv	-0.468 (0.545)	-0.685 (0.529)	-0.363 (0.528)	-0.543 (0.533)	-0.0614 (0.601)
Latitude		0.0291*** (0.00957)	0.0307*** (0.0117)	0.0276** (0.0118)	-1.983 (9.009)
British colony			-0.622 (0.560)	-0.859 (0.544)	-2.857 (11.59)
French colony			-1.120** (0.479)	-1.527*** (0.462)	2.084 (9.693)
Spanish colony			0.477 (0.603)	0.750 (0.670)	13.02 (11.85)
Eastern Asian				-9.436 (8.575)	-18.03 (12.06)
South American				-0.387 (10.15)	8.541 (7.617)
Christianity% 1st Lag				5.190 (9.156)	2.067 (15.46)
Christianity% 2nd Lag				3.457 (6.899)	-13.46 (17.40)
Christianity% 3rd Lag				-7.655 (10.24)	6.977 (10.47)
Islam% 1st Lag				(12.31)	-34.89 (24.01)
Islam% 2nd Lag				5.134 (8.882)	28.00 (24.93)
Islam% 3rd Lag				4.866 (6.747)	-10.42 (10.82)
Buddhism% 1st Lag				-50.29* (25.70)	-51.14** (22.51)
Buddhism% 2nd Lag				51.04* (30.29)	44.85* (23.84)
Buddhism% 3rd Lag				-25.49* (18.11)	18.11

				(14.84)	(14.40)
Hinduism % 1st Lag				-56.92***	0.114
				(17.32)	(0.0909)
Hinduism % 2nd Lag				53.00***	-0.141
				(17.09)	(0.0954)
Hinduism % 3rd Lag				12.41	-0.0695
				(12.04)	(0.101)
Resource Rent 1st Lag					0.0413***
					(0.0137)
Resource Rent 2nd Lag					0.0149
					(0.606)
Resource Rent 3rd Lag					-1.082**
					(0.489)
Constant	2.798	4.826**	6.577***	7.662***	7.264**
	(2.331)	(2.422)	(2.440)	(2.929)	(3.064)
Observations	2,876	2,830	2,830	2,705	2,270
Countries	99	97	97	96	94

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). Only up to 3rd lags of control variables are reported to keep the table manageable..

Table 4E: The effect of CGV autocratic regime types on GDP per capita, balanced panel with year fixed effect (full regression)

	<i>Within</i>			<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
log GDP 1st lag	1.153*** (0.0362)	1.150*** (0.0349)	1.128*** (0.0347)	1.137*** (0.0356)	1.135*** (0.0338)	1.114*** (0.0337)	1.137*** (0.0356)	1.140*** (0.0345)	1.121*** (0.0340)
log GDP 2nd lag	-0.190*** (0.0574)	-0.195*** (0.0569)	-0.157*** (0.0519)	-0.187*** (0.0555)	-0.191*** (0.0546)	-0.152*** (0.0499)	-0.187*** (0.0555)	-0.192*** (0.0552)	-0.155*** (0.0503)
log GDP 3rd lag	0.0593 (0.0383)	0.0607 (0.0375)	0.0168 (0.0474)	0.0588 (0.0372)	0.0601* (0.0363)	0.0175 (0.0461)	0.0588 (0.0372)	0.0606* (0.0365)	0.0170 (0.0464)
log GDP 4th lag	-0.0747** (0.0331)	-0.0759** (0.0334)	-0.0298 (0.0347)	-0.0682** (0.0330)	-0.0699** (0.0330)	-0.0276 (0.0335)	-0.0682** (0.0330)	-0.0714** (0.0332)	-0.0293 (0.0336)
log GDP 5th lag			0.0709* (0.0357)			0.0703** (0.0347)			0.0703** (0.0348)
log GDP 6th lag			-0.107*** (0.0338)			-0.105*** (0.0341)			-0.104*** (0.0337)
Monarchic cgv	-2.025*** (0.420)	-1.221** (0.481)	-1.076** (0.536)	0.675 (4.025)	2.018 (3.745)	2.439 (3.543)	0.675 (4.025)	-1.832*** (0.706)	-1.169* (0.622)
Military cgv	-0.566 (1.009)	-0.436 (0.995)	-1.195 (1.132)	-1.140 (1.398)	-1.028 (1.374)	-1.561 (1.477)	-1.140 (1.398)	-0.855 (1.256)	-1.273 (1.392)
Civilian cgv	-0.544 (0.951)	-0.467 (0.992)	-0.635 (1.143)	-1.271 (1.294)	-1.326 (1.344)	-1.061 (1.380)	-1.271 (1.294)	-1.022 (1.121)	-0.913 (1.204)
Christianity% 1st Lag		6.849 (9.000)	11.17 (10.42)		7.582 (9.917)	16.17 (10.85)		8.922 (9.389)	14.02 (9.930)
Christianity% 2nd Lag		-13.38 (12.35)	-17.07 (15.19)		-13.81 (12.05)	-16.78 (14.70)		-13.25 (12.06)	-16.88 (14.71)
Christianity% 3rd Lag		7.792 (11.18)	-2.539 (12.65)		7.618 (10.87)	-4.436 (12.80)		7.633 (10.89)	-2.644 (12.47)
Islam% 1st Lag		8.319 (13.09)	-21.65 (28.92)		3.079 (14.02)	-26.03 (30.00)		-26.48* (15.04)	-20.57 (29.18)
Islam% 2nd Lag		-26.60* (15.40)	-6.314 (39.46)		-26.87* (15.01)	-8.272 (38.09)		9.748 (38.29)	-6.547 (38.29)

Islam% 3rd Lag	9.939 (11.03)	24.18 (18.80)	9.687 (10.68)	24.53 (18.45)	(10.72)	24.76 (18.24)
Buddhism% 1st Lag	-37.25*** (12.90)	-32.52*** (10.90)	-43.38*** (11.60)	-45.15*** (12.29)	-36.82*** (12.95)	-36.92*** (11.03)
Buddhism% 2nd Lag	47.58** (18.21)	38.97*** (11.32)	47.33*** (17.85)	39.27*** (11.23)	47.45*** (17.82)	38.57*** (11.04)
Buddhism% 3rd Lag	-22.87** (10.59)	-5.681 (7.893)	-22.69** (10.29)	-5.029 (7.747)	-22.65** (10.32)	-5.591 (7.720)
Hinduism % 1st Lag	-38.15** (15.52)	-80.75** (35.67)	-44.64*** (16.71)	-91.38** (36.56)	-32.78* (16.78)	-80.00** (36.14)
Hinduism % 2nd Lag	12.36 (11.74)	46.21 (40.46)	8.673 (11.88)	39.09 (39.10)	12.73 (11.23)	45.62 (39.04)
Hinduism % 3rd Lag	6.327 (11.47)	31.35 (21.89)	6.377 (11.11)	32.48 (21.72)	6.081 (11.14)	32.05 (21.35)
Resource Rent 1st Lag		0.0192 (0.127)		0.00328 (0.129)		0.0156 (0.130)
Resource Rent 2nd Lag		-0.121 (0.0779)		-0.108 (0.0751)		-0.120 (0.0756)
Resource Rent 3rd Lag		-0.170*** (0.0622)		-0.177*** (0.0555)		-0.171*** (0.0566)
Constant	48.30*** (8.112)	66.86*** (12.06)	76.99*** (15.51)			
R-squared	0.949	0.950				
Observations	2,343	2,343	2,019	2,272	2,272	1,949
Countries	71	71	70	71	71	70

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (3). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4F: The effect of CGV autocratic regime types on GDP per capita, balanced panel without year fixed effect (system GMM) (full regression)

	<i>System GMM</i>				
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
log GDP 1st lag	1.238*** (0.0376)	1.240*** (0.0378)	1.236*** (0.0377)	1.227*** (0.0378)	1.201*** (0.0346)
log GDP 2nd lag	-0.212*** (0.0623)	-0.210*** (0.0600)	-0.209*** (0.0599)	-0.207*** (0.0594)	-0.169*** (0.0537)
log GDP 3rd lag	0.0646 (0.0422)	0.0539 (0.0430)	0.0545 (0.0428)	0.0546 (0.0422)	0.0243 (0.0500)
log GDP 4th lag	-0.0926*** (0.0279)	-0.0845*** (0.0281)	-0.0839*** (0.0284)	-0.0789*** (0.0277)	-0.0250 (0.0389)
log GDP 5th lag					0.0586* (0.0352)
log GDP 6th lag					-0.0969*** (0.0297)
Monarchic cgv	-0.466 (0.696)	-0.364 (0.665)	0.0299 (0.684)	0.229 (0.684)	0.903 (0.559)
Military cgv	-0.939 (0.574)	-0.980 (0.630)	-0.924 (0.648)	-0.782 (0.641)	-0.913 (0.701)
Civilian cgv	-0.386 (0.464)	-0.583 (0.472)	-0.539 (0.504)	-0.0800 (0.522)	0.0117 (0.444)
Christianity% 1st Lag		16.02 (13.98)	17.84 (14.20)	17.95 (14.19)	18.18 (12.81)
Christianity% 2nd Lag		-28.26** (14.01)	-28.68** (13.90)	-27.35* (13.98)	-19.84 (16.83)
Christianity% 3rd Lag		7.789 (11.27)	8.420 (11.29)	8.533 (11.23)	1.138 (15.46)
Islam% 1st Lag		-21.69 (26.36)	-22.65 (26.57)	-20.27 (26.07)	-21.92 (31.38)
Islam% 2nd Lag		6.963 (32.00)	8.448 (32.12)	8.739 (31.76)	-7.147 (41.11)
Islam% 3rd Lag		10.49 (11.50)	10.89 (11.44)	11.06 (11.37)	27.59 (20.67)
Buddhism% 1st Lag		-49.83*** (13.69)	-65.22*** (19.15)	-68.94*** (19.99)	-62.77*** (17.13)
Buddhism% 2nd Lag		61.66*** (20.22)	76.80*** (25.18)	74.69*** (24.94)	56.62*** (15.18)
Buddhism% 3rd Lag		-23.92* (12.21)	-32.68** (13.80)	-32.44** (13.70)	-9.750 (13.79)
Hinduism % 1st Lag		-80.56** (31.77)	-81.34*** (31.19)	-77.53*** (29.80)	-77.89** (33.49)
Hinduism % 2nd Lag		64.96* (33.24)	65.72** (33.32)	64.78** (32.86)	48.72 (42.93)
Hinduism % 3rd Lag		7.195 (11.85)	8.635 (12.24)	8.638 (12.17)	32.80 (24.70)
Latitude			0.0213** (0.00975)	0.0147 (0.0117)	0.0191* (0.0104)
British colony				-1.314** (0.610)	-0.499 (0.549)
French colony				-2.181*** (0.573)	-1.337** (0.573)
Spanish colony				0.570 (0.773)	0.0505 (0.660)

Resource Rent 1st Lag					0.0338 (0.128)
Resource Rent 2nd Lag					-0.0923 (0.0867)
Resource Rent 3rd Lag					-0.177** (0.0748)
Eastern Asian					1.867*** (0.470)
South American					1.409** (0.577)
Constant	1.365 (2.168)	1.859 (2.552)	7.724*** (2.582)	0 (0)	2.874 (3.422)
Observations	2,343	2,272	2,240	2,240	1,919
Countries	71	71	70	70	69

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4G: The effect of CGV autocratic regime types on GDP per capita, unbalanced panel with year fixed effect (full regression)

	<i>Within</i>			<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
log GDP 1st lag	1.127*** (0.0331)	1.124*** (0.0328)	1.122*** (0.0310)	1.098*** (0.0362)	1.098*** (0.0359)	1.096*** (0.0319)	1.101*** (0.0359)	1.105*** (0.0356)	1.111*** (0.0315)
log GDP 2nd lag	-0.153*** (0.0433)	-0.156*** (0.0431)	-0.120** (0.0478)	-0.146*** (0.0421)	-0.149*** (0.0418)	-0.116** (0.0460)	-0.147*** (0.0417)	-0.151*** (0.0418)	-0.118** (0.0466)
log GDP 3rd lag	0.0491 (0.0362)	0.0510 (0.0361)	-0.0113 (0.0437)	0.0519 (0.0351)	0.0521 (0.0348)	-0.00445 (0.0424)	0.0502 (0.0352)	0.0520 (0.0351)	-0.00893 (0.0428)
log GDP 4th lag	-0.0778*** (0.0277)	-0.0802*** (0.0279)	-0.0236 (0.0344)	-0.0756*** (0.0277)	-0.0763*** (0.0280)	-0.0232 (0.0349)	-0.0699** (0.0284)	-0.0731** (0.0286)	-0.0242 (0.0341)
log GDP 5th lag			0.0673* (0.0347)			0.0652** (0.0332)			0.0673** (0.0337)
log GDP 6th lag			-0.107** (0.0328)			-0.103*** (0.0329)			-0.103*** (0.0327)
Monarchic cg	-2.268*** (0.438)	-1.857*** (0.468)	-1.567*** (0.531)	-1.440 (2.593)	-1.365 (2.417)	-0.844 (2.559)	-1.427 (2.517)	-2.905*** (0.920)	-1.832** (0.769)
Military cg	-0.314 (0.957)	-0.238 (0.953)	-0.798 (1.042)	-1.233 (1.316)	-1.078 (1.312)	-1.570 (1.403)	-0.968 (1.337)	-0.645 (1.256)	-1.022 (1.300)
Civilian cg	-0.758 (0.883)	-0.673 (0.908)	-0.989 (1.056)	-1.878 (1.211)	-1.756 (1.210)	-1.231 (1.206)	-1.499 (1.193)	-1.016 (1.087)	-0.923 (1.054)
Christianity% 1st Lag		-0.348 (7.591)	-6.756 (8.916)		-0.471 (9.092)	-6.019 (9.240)		0.493 (9.188)	-4.647 (9.498)
Christianity% 2nd Lag		-3.655 (9.574)	-1.987 (9.692)		-3.516 (9.246)	-1.616 (9.277)		-3.894 (9.305)	-1.805 (9.438)
Christianity% 3rd Lag		2.469 (8.227)	3.313 (9.030)		2.226 (7.969)	3.106 (8.716)		2.288 (7.985)	3.639 (8.824)
Islam% 1st Lag		9.172 (10.37)	-4.188 (15.76)		7.376 (12.07)	-3.291 (16.24)		11.79 (11.75)	-1.034 (16.20)
Islam% 2nd Lag		-12.13 (10.83)	-1.210 (14.93)		-11.92 (10.48)	-0.313 (14.58)		-12.37 (10.51)	-0.512 (14.59)

Islam% 3rd Lag	3.265 (7.947)	6.600 (9.023)	2.904 (7.674)	6.877 (8.721)	2.992 (7.697)	7.153 (8.776)
Buddhism% 1st Lag	-23.80* (13.49)	-16.26 (10.96)	-27.05** (13.03)	-25.63** (11.75)	-21.19 (14.83)	-18.16 (11.39)
Buddhism% 2nd Lag	34.39* (19.52)	22.88 (14.78)	34.08* (19.01)	23.36* (14.10)	34.26* (19.10)	22.61 (14.45)
Buddhism% 3rd Lag	-22.28** (9.178)	-10.18 (6.967)	-21.88** (8.813)	-10.21 (6.763)	-21.99** (8.978)	-10.11 (6.824)
Hinduism % 1st Lag	-28.69 (17.74)	-50.99** (24.36)	-18.64 (25.54)	-38.17 (29.12)	-15.32 (22.46)	-46.34* (24.35)
Hinduism % 2nd Lag	18.81 (15.06)	41.66* (21.92)	17.36 (14.16)	39.06* (20.66)	19.53 (13.89)	41.76** (21.11)
Hinduism % 3rd Lag	3.560 (8.988)	19.54 (12.19)	3.328 (8.728)	20.79 (13.07)	3.464 (8.790)	21.05* (12.36)
Resource Rent 1st Lag		0.0347 (0.102)		0.0193 (0.110)		0.0283 (0.106)
Resource Rent 2nd Lag		-0.148 (0.0932)		-0.148* (0.0896)		-0.149* (0.0888)
Resource Rent 3rd Lag		-0.0493 (0.0982)		-0.0551 (0.0962)		-0.0498 (0.0969)
Constant	49.77*** (8.934)	62.19*** (12.53)	69.40*** (15.08)			
R-squared	0.939	0.939	0.935			
Observations	2,876	2,847	2,408	2,777	2,749	2,310
Countries	99	98	97	99	98	96

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (3). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4H: The effect of CGV autocratic regime types on GDP per capita, unbalanced panel with year fixed effect (system GMM) (full regression)

	<i>System GMM</i>				
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
log GDP 1st lag	1.212*** (0.0328)	1.206*** (0.0330)	1.201*** (0.0327)	1.199*** (0.0344)	1.202*** (0.0330)
log GDP 2nd lag	-0.175*** (0.0460)	-0.173*** (0.0461)	-0.171*** (0.0459)	-0.175*** (0.0452)	-0.143*** (0.0512)
log GDP 3rd lag	0.0461 (0.0386)	0.0476 (0.0385)	0.0483 (0.0382)	0.0489 (0.0398)	-0.00984 (0.0472)
log GDP 4th lag	-0.0852*** (0.0238)	-0.0849*** (0.0239)	-0.0855*** (0.0241)	-0.0796*** (0.0255)	-0.0207 (0.0399)
log GDP 5th lag					0.0449 (0.0340)
log GDP 6th lag					-0.0806** (0.0322)
Monarchic CGV	-1.065 (0.897)	-0.879 (0.879)	-0.0605 (0.898)	0.376 (1.021)	1.211 (0.914)
Military CGV	-0.705 (0.618)	-0.881 (0.631)	-0.407 (0.639)	-0.568 (0.714)	-0.450 (0.694)
Civilian CGV	-0.0671 (0.510)	-0.284 (0.509)	0.242 (0.508)	0.124 (0.520)	0.0386 (0.563)
Latitude		0.0284*** (0.00981)	0.0320*** (0.0116)	0.0335*** (0.0121)	-1.049 (8.547)
British colony			-0.768 (0.577)	-0.926* (0.556)	0.297 (10.45)
French colony			-1.324** (0.519)	-1.733*** (0.497)	2.920 (9.267)
Spanish colony			0.808 (0.621)	1.191* (0.705)	4.944 (11.08)
Eastern Asian					-18.52 (11.27)
South American					11.47 (7.463)
Christianity% 1st Lag				-4.296 (8.609)	10.41 (16.06)
Christianity% 2nd Lag				-0.578 (9.737)	-16.61 (17.44)
Christianity% 3rd Lag				4.219 (8.554)	5.534 (10.14)
Islam% 1st Lag				-1.676 (10.21)	-24.97 (23.20)
Islam% 2nd Lag				-4.424 (11.88)	19.70 (25.40)
Islam% 3rd Lag				4.797 (8.182)	-16.89* (9.680)
Buddhism% 1st Lag				-37.62* (21.19)	-35.52* (20.18)
Buddhism% 2nd Lag				42.20 (29.09)	26.54 (24.66)
Buddhism% 3rd Lag				-30.03** (12.72)	8.651 (12.88)
Hinduism % 1st Lag				-49.92*** (15.63)	0.0714 (0.0978)

Hinduism % 2nd Lag				44.23**	-0.137
				(18.39)	(0.105)
Hinduism % 3rd Lag				7.256	-0.0283
				(9.724)	(0.102)
Resource Rent 1st Lag					0.0415***
					(0.0119)
Resource Rent 2nd Lag					0.110
					(0.579)
Resource Rent 3rd Lag					-1.132**
					(0.473)
Constant	0	3.249	-4.870	0	5.794*
	(0)	(2.600)	(3.090)	(0)	(3.220)
Observations	2,876	2,830	2,830	2,705	2,270
Countries	99	97	97	96	94

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under CGV using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4I: The effect of GWF autocratic regime types on GDP per capita, balanced panel without year fixed effect (full regression)

	<i>Within</i>		(9)	<i>Difference GMM</i>		(10)	<i>FOD GMM</i>	
	<i>1</i>	<i>2</i>	<i>y</i>	<i>1</i>	<i>2</i>	<i>y</i>	<i>1</i>	<i>2</i>
log GDP 1st lag	1.152*** (0.0355)	1.148*** (0.0345)	1.124*** (0.0349)	1.144*** (0.0335)	1.142*** (0.0326)	1.118*** (0.0335)	1.144*** (0.0335)	1.146*** (0.0331)
log GDP 2nd lag	-0.190*** (0.0572)	-0.194*** (0.0568)	-0.156*** (0.0521)	-0.188*** (0.0559)	-0.192*** (0.0552)	-0.155*** (0.0504)	-0.188*** (0.0559)	-0.193*** (0.0556)
log GDP 3rd lag	0.0576 (0.0383)	0.0588 (0.0375)	0.0134 (0.0472)	0.0577 (0.0375)	0.0589 (0.0367)	0.0134 (0.0463)	0.0577 (0.0375)	0.0588 (0.0369)
Dom.Party GWF	0.852 (0.914)	1.118 (0.888)	1.425 (1.083)	0.737 (1.159)	0.930 (1.082)	1.033 (1.051)	0.737 (1.159)	1.166 (1.022)
Personalist GWF	-0.358 (0.865)	-0.297 (0.883)	-0.853 (1.113)	0.541 (1.075)	0.642 (1.167)	-0.536 (1.195)	0.541 (1.075)	0.322 (1.100)
Monarchic GWF	-1.067 (1.305)	-0.974 (1.290)	-1.810 (1.367)	-1.030 (1.570)	-0.856 (1.549)	-1.992 (1.493)	-1.030 (1.570)	-0.946 (1.449)
Military GWF	-0.687 (0.447)	-0.569 (0.495)	-1.098 (0.723)	1.113 (3.168)	1.418 (2.963)	1.014 (2.627)	1.113 (3.168)	-0.879 (0.770)
Christianity% 1st Lag		6.615 (8.920)	11.05 (10.40)		6.266 (9.824)	12.25 (10.22)		8.718 (9.255)
Christianity% 2nd Lag		-13.70 (12.45)	-17.31 (15.23)		-13.68 (12.23)	-17.05 (14.78)		-13.76 (12.24)
Christianity% 3rd Lag		8.014 (11.12)	-2.755 (13.07)		7.484 (10.85)	-5.611 (13.44)		7.971 (10.90)
Islam% 1st Lag		10.41 (13.47)	-19.48 (28.56)		3.065 (12.51)	-19.67 (26.49)		9.248 (12.43)
Islam% 2nd Lag		-26.76* (15.29)	-7.025 (39.18)		-26.68* (14.99)	-7.657 (38.19)		-26.78* (15.02)
Islam% 3rd Lag		9.999 (10.92)	25.09 (18.55)		9.548 (10.67)	24.95 (17.90)		9.912 (10.69)
Buddhism% 1st Lag		-35.58*** (12.38)	-30.28*** (10.40)		-37.48*** (11.05)	-38.38*** (9.893)		-33.50*** (12.63)

Buddhism% 2nd Lag	47.40**	37.90***		47.03***	35.23***	47.36***
	(18.30)	(11.13)		(18.04)	(11.01)	(17.97)
Buddhism% 3rd Lag	-22.82**	-4.992		-22.71**	-3.861	-22.80**
	(10.56)	(7.932)		(10.33)	(7.506)	(10.37)
Hinduism % 1st Lag	-36.47**	-80.09**		-44.16***	-80.68**	-37.14**
	(15.67)	(35.13)		(17.11)	(33.83)	(16.66)
Hinduism % 2nd Lag	11.22	43.98		11.36	41.80	11.24
	(12.43)	(40.53)		(12.15)	(39.32)	(12.20)
Hinduism % 3rd Lag	7.150	34.20		5.020	32.07	7.397
	(11.68)	(21.64)		(11.81)	(21.31)	(11.48)
Resource Rent 1st Lag		0.0138			-0.00484	
		(0.127)			(0.128)	
Resource Rent 2nd Lag		-0.119			-0.107	
		(0.0765)			(0.0730)	
Resource Rent 3rd Lag		-0.174***			-0.181***	
		(0.0614)			(0.0556)	
Constant	47.78***	67.08***	80.67***			
	(8.344)	(12.72)	(16.53)			
R-squared	0.949	0.950		70		
Observations	2,343	2,343	2,019	2,272	2,272	1,949
Countries	71	71	70	71	71	70
						71

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (3). Only up to 3rd lags of control variables are reported to keep the table manageable

Table 4J: The effect of GWF autocratic regime types on GDP per capita, balanced panel without year fixed effect (system GMM) (full regression)

	<i>System GMM</i>				(12)
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>y</i>
log GDP 1st lag	1.249*** (0.0372)	1.255*** (0.0375)	1.252*** (0.0375)	1.248*** (0.0376)	1.217*** (0.0365)
log GDP 2nd lag	-0.224*** (0.0613)	-0.234*** (0.0595)	-0.233*** (0.0595)	-0.233*** (0.0593)	-0.182*** (0.0532)
log GDP 3rd lag	0.0697* (0.0417)	0.0645 (0.0422)	0.0652 (0.0422)	0.0649 (0.0419)	0.0282 (0.0494)
log GDP 4th lag	-0.0973*** (0.0271)	-0.0876*** (0.0272)	-0.0881*** (0.0274)	-0.0853*** (0.0270)	-0.0211 (0.0401)
log GDP 5th lag					0.0433 (0.0346)
log GDP 6th lag					-0.0926*** (0.0296)
Dom.Party GWF	-0.532 (0.444)	-0.764* (0.441)	-0.850* (0.451)	-0.823* (0.453)	-0.734 (0.511)
Personalist GWF	-2.520*** (0.589)	-2.903*** (0.689)	-2.878*** (0.705)	-2.453*** (0.755)	-2.105*** (0.729)
Monarchic GWF	-1.442* (0.870)	-1.875** (0.908)	-1.942** (0.912)	-2.009** (0.927)	-2.133** (1.007)
Military GWF	-0.661 (0.641)	-0.672 (0.576)	-0.409 (0.576)	-0.340 (0.590)	0.314 (0.507)
Christianity% 1st Lag		6.280 (9.660)	7.444 (9.915)	7.786 (9.715)	13.22 (9.964)
Christianity% 2nd Lag		-26.51** (11.10)	-26.70** (11.09)	-25.66** (11.01)	-25.62* (13.69)
Christianity% 3rd Lag		7.469 (12.45)	8.121 (12.49)	8.042 (12.46)	-1.615 (15.17)
Islam% 1st Lag		-31.29 (27.80)	-30.44 (27.65)	-28.15 (27.43)	-25.61 (30.02)
Islam% 2nd Lag		10.21 (33.38)	9.958 (33.29)	9.507 (33.17)	-3.653 (41.11)
Islam% 3rd Lag		9.257 (12.74)	9.496 (12.74)	9.396 (12.69)	25.74 (20.58)
Buddhism% 1st Lag		-51.91*** (14.23)	-67.95*** (21.18)	-73.20*** (21.88)	-60.66*** (20.35)
Buddhism% 2nd Lag		63.52*** (19.10)	77.85*** (26.17)	78.22*** (25.88)	58.32*** (18.35)
Buddhism% 3rd Lag		-25.86** (12.99)	-35.59** (14.16)	-34.98** (14.21)	-12.49 (14.48)
Hinduism % 1st Lag		-84.16** (33.49)	-83.84*** (32.33)	-80.93*** (31.15)	-85.15*** (32.83)
Hinduism % 2nd Lag		71.25** (33.04)	71.09** (32.54)	70.08** (32.18)	66.83* (40.23)
Hinduism % 3rd Lag		6.362 (13.05)	7.447 (13.23)	7.316 (13.19)	34.78 (23.72)
Resource Rent 1st Lag					0.0843 (0.128)
Resource Rent 2nd Lag					-0.0871 (0.0750)
Resource Rent 3rd Lag					-0.228*** (0.0722)

Latitude		0.0153*	0.0108	0.0143	
		(0.00814)	(0.0104)	(0.0111)	
British colony			-0.948**	-0.226	
			(0.483)	(0.437)	
French colony			-1.480***	-0.838*	
			(0.534)	(0.506)	
Spanish colony			0.466	-0.00389	
			(0.699)	(0.632)	
Eastern Asian				1.669***	
				(0.512)	
South American				0.929	
				(0.599)	
Constant	4.136*	5.326**	6.162**	8.271***	6.617**
	(2.241)	(2.641)	(2.663)	(2.538)	(2.869)
Observations	2,343	2,272	2,240	2,240	1,919
Countries	71	71	70	70	69

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4K: The effect of GWF autocratic regime types on GDP per capita, unbalanced panel without year fixed effect (full regression)

	<i>Within</i>			<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>y</i>	<i>1</i>	<i>2</i>	<i>y</i>	<i>1</i>	<i>2</i>	<i>y</i>
log GDP 1st lag	1.162*** (0.0330)	1.159*** (0.0333)	1.151*** (0.0320)	1.152*** (0.0337)	1.147*** (0.0343)	1.136*** (0.0307)	1.153*** (0.0334)	1.156*** (0.0347)	1.145*** (0.0316)
log GDP 2nd lag	-0.169*** (0.0446)	-0.173*** (0.0446)	-0.135*** (0.0483)	-0.166*** (0.0438)	-0.182*** (0.0436)	-0.132*** (0.0470)	-0.167*** (0.0438)	-0.188*** (0.0435)	-0.137*** (0.0499)
log GDP 3rd lag	0.0556 (0.0364)	0.0564 (0.0362)	0.00114 (0.0438)	0.0561 (0.0359)	0.0628* (0.0370)	0.00606 (0.0427)	0.0565 (0.0360)	0.0659* (0.0366)	0.00435 (0.0438)
Dom.Party GWF	-1.403* (0.729)	-1.080 (0.722)	-1.254 (1.060)	-2.562** (1.046)	-2.303** (1.115)	-2.459** (1.200)	-2.455** (1.035)	-2.291** (1.074)	-1.662 (1.123)
Personalist GWF	-1.983*** (0.712)	-1.983*** (0.723)	-2.501** (0.954)	-1.699* (0.892)	-1.992** (1.012)	-2.022** (0.950)	-1.644* (0.896)	-2.072** (0.995)	-1.456* (0.857)
Monarchic GWF	-2.974*** (1.113)	-2.955** (1.156)	-3.346** (1.282)	-3.633*** (1.378)	-3.952** (1.540)	-3.927*** (1.437)	-3.476** (1.379)	-3.770** (1.506)	-3.550** (1.499)
Military GWF	-1.314*** (0.289)	-1.691*** (0.427)	-2.024*** (0.518)	-0.663 (1.931)	-2.497 (2.312)	-1.572 (1.842)	-0.537 (1.785)	-1.025 (2.010)	-3.482 (2.231)
Christianity% 1st Lag		-1.645 (7.925)	-6.340 (9.456)		-11.02 (8.549)	-6.219 (9.443)		-14.49* (8.358)	-10.11 (10.49)
Christianity% 2nd Lag		-6.159 (10.17)	-5.384 (10.57)		1.170 (9.214)	-5.001 (10.28)		4.710 (9.360)	-0.791 (9.985)
Christianity% 3rd Lag		3.772 (8.749)	3.517 (9.381)		3.905 (8.602)	2.901 (9.426)		3.801 (8.614)	0.197 (9.112)
Islam% 1st Lag		13.87 (9.866)	-2.942 (14.26)		3.059 (10.51)	-0.310 (13.10)		-2.795 (10.17)	-8.852 (13.74)
Islam% 2nd Lag		-14.11 (11.40)	0.0760 (14.53)		1.220 (11.46)	-0.00327 (14.13)		3.866 (11.17)	-6.952 (14.28)
Islam% 3rd Lag		3.819 (8.602)	7.894 (9.914)		3.874 (8.418)	8.085 (9.799)		3.816 (8.460)	15.37 (9.580)
Buddhism% 1st Lag		-25.71* (14.00)	-23.01** (11.17)		-32.55** (15.77)	-30.99** (12.32)		-32.04** (15.28)	-22.61* (12.11)

Buddhism% 2nd Lag	37.16**	30.29**		38.86**	30.13**		42.93**	28.08*
	(18.13)	(14.66)		(19.55)	(14.23)		(19.39)	(14.76)
Buddhism% 3rd Lag	-18.13*	-4.856		-18.60*	-4.438		-19.03*	-3.062
	(10.26)	(6.963)		(10.14)	(6.876)		(10.21)	(5.826)
Hinduism % 1st Lag	-12.11	-50.16**		-32.25	-41.89		-41.65**	-52.10*
	(22.54)	(25.08)		(20.04)	(25.68)		(17.29)	(27.68)
Hinduism % 2nd Lag	19.30	53.46**		56.43***	51.16**		55.35***	42.63*
	(17.61)	(22.17)		(17.19)	(21.61)		(16.27)	(22.49)
Hinduism % 3rd Lag	12.22	35.93**		12.39	37.41**		10.67	31.38**
	(12.21)	(15.96)		(13.07)	(16.68)		(11.90)	(13.13)
Resource Rent 1st Lag		0.0833			0.0626			0.0867
		(0.0928)			(0.0986)			(0.101)
Resource Rent 2nd Lag		-0.159*			-0.155**			-0.138
		(0.0831)			(0.0782)			(0.0870)
Resource Rent 3rd Lag		-0.0708			-0.0782			-0.0891
		(0.0945)			(0.0924)			(0.102)
Constant	35.56***	36.87***	45.69***					
	(8.484)	(10.99)	(15.45)					
R-squared	0.935	0.934	0.932					
Observations	2,876	2,847	2,408	2,777	2,651	2,310	2,777	2,651
Countries	99	98	97	99	98	96	99	98

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (3). Only up to 3rd lags of control variables are reported to keep the table manageable

Table 4L: The effect of GWF autocratic regime types on GDP per capita, unbalanced panel without year fixed effect (system GMM) (full regression)

	<i>System GMM</i>				(12)
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>y</i>
log GDP 1st lag	1.230*** (0.0335)	1.236*** (0.0353)	1.229*** (0.0356)	1.224*** (0.0352)	1.221*** (0.0341)
log GDP 2nd lag	-0.188*** (0.0464)	-0.201*** (0.0457)	-0.199*** (0.0458)	-0.198*** (0.0457)	-0.157*** (0.0518)
log GDP 3rd lag	0.0502 (0.0383)	0.0528 (0.0398)	0.0545 (0.0397)	0.0558 (0.0393)	-0.00406 (0.0463)
log GDP 4th lag	-0.0938*** (0.0225)	-0.0883*** (0.0238)	-0.0887*** (0.0239)	-0.0881*** (0.0238)	-0.0269 (0.0413)
log GDP 5th lag					0.0330 (0.0339)
log GDP 6th lag					-0.0749** (0.0314)
Dom.Party GWF	-0.363 (0.457)	-0.712 (0.478)	-0.828* (0.484)	-0.738 (0.490)	-0.542 (0.476)
Personalist GWF	-1.359* (0.742)	-1.570** (0.785)	-1.846** (0.764)	-1.537** (0.767)	-1.337 (0.815)
Monarchic GWF	-1.487 (0.912)	-1.902** (0.901)	-2.085** (0.908)	-2.235** (0.905)	-2.255** (0.942)
Military GWF	-1.658* (0.999)	-2.042** (0.984)	-1.270 (0.979)	-0.940 (0.958)	1.350 (1.170)
Christianity% 1st Lag		-11.35 (7.576)	-9.334 (7.885)	-9.287 (7.898)	-5.876 (7.872)
Christianity% 2nd Lag		1.157 (10.06)	0.642 (10.27)	1.051 (10.16)	0.210 (11.10)
Christianity% 3rd Lag		4.641 (8.918)	5.494 (9.063)	5.356 (9.038)	4.020 (9.552)
Islam% 1st Lag		-9.773 (9.108)	-8.335 (9.346)	-7.690 (9.311)	1.704 (14.38)
Islam% 2nd Lag		-1.145 (11.89)	-1.656 (12.04)	-1.317 (11.97)	-12.25 (16.79)
Islam% 3rd Lag		4.824 (8.891)	5.508 (9.004)	5.356 (8.982)	6.947 (10.26)
Buddhism% 1st Lag		-38.62*** (13.68)	-42.01* (22.82)	-43.90* (23.45)	-32.64 (24.74)
Buddhism% 2nd Lag		46.04** (20.01)	46.57 (30.43)	45.44 (30.00)	23.31 (25.80)
Buddhism% 3rd Lag		-20.64* (12.13)	-27.02* (14.60)	-26.94* (14.62)	-10.30 (10.23)
Hinduism % 1st Lag		-59.11*** (16.63)	-53.31*** (17.11)	-51.49*** (16.47)	-51.34** (21.97)
Hinduism % 2nd Lag		53.75*** (17.13)	49.94*** (17.00)	49.52*** (16.87)	44.71* (23.46)
Hinduism % 3rd Lag		12.06 (11.85)	12.29 (11.77)	11.92 (11.67)	15.77 (13.37)
Resource Rent 1st Lag					0.103 (0.0960)
Resource Rent 2nd					-0.133

Lag					(0.0947)
Resource Rent 3rd Lag					-0.0718 (0.100)
Latitude	0.0321*** (0.0108)		0.0324*** (0.0122)		0.0473*** (0.0153)
British colony			-0.658 (0.528)		0.302 (0.564)
French colony			-1.455*** (0.492)		-0.958* (0.555)
Spanish colony			1.010 (0.708)		0.423 (0.709)
Eastern Asian					1.489*** (0.542)
South American					1.925** (0.894)
Constant	2.907 (2.358)	2.724 (2.669)	5.066* (2.722)	7.731*** (2.752)	7.768** (3.127)
Observations	2,876	2,749	2,705	2,705	2,270
Countries	99	98	96	96	94

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4M: The effect of GWF autocratic regime types on GDP per capita, balanced panel with year fixed effect (full regression)

	<i>Within</i>			<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	(9) <i>y</i>	<i>1</i>	<i>2</i>	<i>y</i>	<i>1</i>	<i>2</i>	(11) <i>y</i>
log GDP 1st lag	1.124*** (0.0327)	1.121*** (0.0328)	1.118*** (0.0312)	1.113*** (0.0339)	1.111*** (0.0337)	1.103*** (0.0302)	1.113*** (0.0335)	1.116*** (0.0333)	1.115*** (0.0303)
log GDP 2nd lag	-0.152*** (0.0432)	-0.155*** (0.0430)	-0.119** (0.0478)	-0.149*** (0.0425)	-0.152*** (0.0423)	-0.117** (0.0461)	-0.150*** (0.0421)	-0.154*** (0.0421)	-0.119** (0.0467)
log GDP 3rd lag	0.0478 (0.0360)	0.0495 (0.0358)	-0.0136 (0.0436)	0.0486 (0.0354)	0.0495 (0.0351)	-0.00820 (0.0424)	0.0487 (0.0354)	0.0503 (0.0353)	-0.0111 (0.0426)
Dom.Party GWF	0.994 (0.923)	1.202 (0.903)	1.410 (1.058)	0.285 (1.133)	0.343 (1.111)	0.142 (1.133)	0.256 (1.113)	0.721 (1.040)	0.966 (1.040)
Personalist GWF	-0.632 (0.815)	-0.633 (0.819)	-1.204 (1.039)	0.184 (1.021)	0.300 (1.062)	-0.650 (1.127)	0.200 (1.014)	0.224 (1.054)	-0.600 (1.025)
Monarchic GWF	-1.337 (1.208)	-1.285 (1.199)	-1.594 (1.264)	-1.711 (1.454)	-1.632 (1.429)	-2.231 (1.444)	-1.641 (1.462)	-1.502 (1.360)	-1.959 (1.345)
Military GWF	-0.919** (0.412)	-0.904* (0.472)	-1.099* (0.565)	-0.495 (2.543)	-0.748 (2.134)	-0.393 (2.221)	-0.224 (2.605)	-1.536** (0.735)	-1.624** (0.779)
Christianity% 1st Lag		-0.192 (7.469)	-6.993 (8.683)		-1.348 (7.275)	-8.134 (8.068)		1.429 (7.367)	-5.931 (8.498)
Christianity% 2nd Lag		-4.094 (9.595)	-2.497 (9.724)		-4.200 (9.434)	-2.130 (9.393)		-4.515 (9.511)	-2.263 (9.517)
Christianity% 3rd Lag		2.787 (8.185)	3.784 (9.073)		2.671 (8.025)	3.337 (8.898)		2.778 (8.027)	3.919 (8.859)
Islam% 1st Lag		10.26 (10.20)	-2.632 (15.09)		10.02 (9.791)	-2.850 (14.01)		13.33 (9.862)	0.143 (14.29)
Islam% 2nd Lag		-12.44 (10.68)	-2.346 (14.67)		-12.59 (10.49)	-2.057 (14.22)		-13.02 (10.54)	-2.312 (14.33)
Islam% 3rd Lag		3.444 (7.891)	7.398 (9.033)		3.323 (7.721)	7.315 (8.664)		3.367 (7.718)	7.561 (8.813)

Buddhism% 1st Lag	-22.53*	-14.78	-25.61**	-26.23**	-20.12	-16.53
	(12.91)	(10.46)	(11.99)	(11.00)	(12.77)	(10.50)
Buddhism% 2nd Lag	34.21*	21.76	34.04*	22.62	34.11*	21.82
	(19.55)	(14.79)	(19.23)	(14.18)	(19.22)	(14.49)
Buddhism% 3rd Lag	-22.26**	-9.768	-21.88**	-9.973	-22.18**	-10.09
	(9.141)	(6.975)	(8.961)	(6.616)	(9.007)	(6.871)
Hinduism % 1st Lag	-27.82	-49.78**	-20.73	-46.06**	-18.50	-42.95*
	(17.38)	(23.73)	(19.96)	(23.28)	(19.25)	(23.51)
Hinduism % 2nd Lag	17.41	38.21	17.03	36.62	17.02	37.75*
	(15.53)	(23.08)	(15.20)	(22.29)	(15.14)	(22.58)
Hinduism % 3rd Lag	4.808	22.61*	4.767	22.21*	5.415	23.64*
	(9.412)	(12.50)	(9.933)	(12.59)	(9.537)	(12.72)
Resource Rent 1st Lag		0.0311		0.0117		0.0246
		(0.101)		(0.108)		(0.104)
Resource Rent 2nd Lag		-0.148		-0.140		-0.147*
		(0.0933)		(0.0872)		(0.0864)
Resource Rent 3rd Lag		-0.0506		-0.0586		-0.0499
		(0.0981)		(0.0953)		(0.0958)
Constant	49.41***	61.86***	70.70***			
	(9.109)	(12.85)	(15.52)			
R-squared	0.939	0.939	0.936			
Observations	2,876	2,847	2,408	2,777	2,749	2,310
Countries	99	98	97	99	98	96

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (3). Only up to 3rd lags of control variables are reported to keep the table manageable

Table 4N: The effect of GWF autocratic regime types on GDP per capita, balanced panel with year fixed effect (system GMM) (full regression)

	<i>System GMM</i>				(12)
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>y</i>
log GDP 1st lag	1.232*** (0.0378)	1.232*** (0.0379)	1.229*** (0.0379)	1.222*** (0.0379)	1.199*** (0.0357)
log GDP 2nd lag	-0.209*** (0.0615)	-0.208*** (0.0593)	-0.207*** (0.0592)	-0.206*** (0.0589)	-0.169*** (0.0532)
log GDP 3rd lag	0.0629 (0.0421)	0.0535 (0.0428)	0.0541 (0.0427)	0.0540 (0.0422)	0.0244 (0.0502)
log GDP 4th lag	-0.0879*** (0.0281)	-0.0803*** (0.0284)	-0.0800*** (0.0286)	-0.0761*** (0.0279)	-0.0261 (0.0388)
log GDP 5th lag					0.0599* (0.0353)
log GDP 6th lag					-0.0952*** (0.0291)
Dom.Party GWF	0.307 (0.436)	0.207 (0.443)	0.191 (0.462)	0.311 (0.472)	0.370 (0.480)
Personalist GWF	-2.051*** (0.626)	-2.299*** (0.733)	-2.192*** (0.763)	-1.649** (0.821)	-1.332* (0.760)
Monarchic GWF	-0.506 (0.878)	-0.739 (0.919)	-0.754 (0.924)	-0.774 (0.936)	-0.805 (0.977)
Military GWF	-0.171 (0.680)	0.0625 (0.634)	0.386 (0.646)	0.557 (0.632)	1.280** (0.546)
Christianity% 1st Lag		11.65 (11.67)	13.27 (11.99)	13.88 (11.92)	14.56 (11.87)
Christianity% 2nd Lag		-24.92* (12.99)	-24.95* (12.91)	-23.66* (12.86)	-17.93 (16.14)
Christianity% 3rd Lag		8.434 (11.18)	8.927 (11.22)	8.853 (11.19)	1.747 (15.87)
Islam% 1st Lag		-24.56 (26.44)	-23.99 (26.29)	-21.35 (26.15)	-22.69 (29.88)
Islam% 2nd Lag		9.477 (31.48)	9.845 (31.34)	9.660 (31.22)	-6.108 (40.30)
Islam% 3rd Lag		11.28 (11.37)	11.49 (11.35)	11.38 (11.29)	27.39 (20.76)
Buddhism% 1st Lag		-42.40*** (12.47)	-54.17*** (19.54)	-60.33*** (20.45)	-53.04*** (20.04)
Buddhism% 2nd Lag		55.85*** (19.74)	68.01** (27.12)	68.32** (26.77)	50.60*** (17.31)
Buddhism% 3rd Lag		-25.39** (12.12)	-34.57*** (12.88)	-33.89*** (12.89)	-11.87 (13.29)
Hinduism % 1st Lag		-76.91** (32.58)	-76.63** (31.72)	-73.63** (30.54)	-76.88** (33.12)
Hinduism % 2nd Lag		63.73* (33.31)	63.75* (32.97)	62.85* (32.64)	49.44 (41.67)
Hinduism % 3rd Lag		6.687 (12.07)	7.725 (12.34)	7.482 (12.26)	31.03 (25.06)
Resource Rent 1st Lag					0.0260 (0.137)
Resource Rent 2nd					-0.0850

Lag					(0.0823)
Resource Rent 3rd Lag					-0.179** (0.0748)
Latitude	0.0196** (0.00937)		0.0164 (0.0117)		0.0225** (0.0114)
British colony			-1.052* (0.547)		-0.214 (0.467)
French colony			-1.637*** (0.566)		-0.934* (0.545)
Spanish colony			0.770 (0.776)		0.230 (0.669)
Eastern Asian					1.591*** (0.460)
South American					1.504** (0.626)
Constant	2.351 (2.137)	3.479 (2.565)	2.133 (3.181)	8.286*** (2.568)	3.164 (2.966)
Observations	2,343	2,272	2,240	2,240	1,919
Countries	71	71	70	70	69

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 40: The effect of GWF autocratic regime types on GDP per capita, unbalanced panel with year fixed effect (full regression)

	<i>Within</i>			<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
log GDP 1st lag	1.124*** (0.0327)	1.121*** (0.0328)	1.118*** (0.0312)	1.113*** (0.0339)	1.111*** (0.0337)	1.103*** (0.0302)	1.113*** (0.0335)	1.116*** (0.0333)	1.115*** (0.0303)
log GDP 2nd lag	-0.152*** (0.0432)	-0.155*** (0.0430)	-0.119** (0.0478)	-0.149*** (0.0425)	-0.152*** (0.0423)	-0.117** (0.0461)	-0.150*** (0.0421)	-0.154*** (0.0421)	-0.119** (0.0467)
log GDP 3rd lag	0.0478 (0.0360)	0.0495 (0.0358)	-0.0136 (0.0436)	0.0486 (0.0354)	0.0495 (0.0351)	-0.00820 (0.0424)	0.0487 (0.0354)	0.0503 (0.0353)	-0.0111 (0.0426)
Dom.Party GWF	0.994 (0.923)	1.202 (0.903)	1.410 (1.058)	0.285 (1.133)	0.343 (1.111)	0.142 (1.133)	0.256 (1.113)	0.721 (1.040)	0.966 (1.040)
Personalist GWF	-0.632 (0.815)	-0.633 (0.819)	-1.204 (1.039)	0.184 (1.021)	0.300 (1.062)	-0.650 (1.127)	0.200 (1.014)	0.224 (1.054)	-0.600 (1.025)
Monarchic GWF	-1.337 (1.208)	-1.285 (1.199)	-1.594 (1.264)	-1.711 (1.454)	-1.632 (1.429)	-2.231 (1.444)	-1.641 (1.462)	-1.502 (1.360)	-1.959 (1.345)
Military GWF	-0.919** (0.412)	-0.904* (0.472)	-1.099* (0.565)	-0.495 (2.543)	-0.748 (2.134)	-0.393 (2.221)	-0.224 (2.605)	-1.536** (0.735)	-1.624** (0.779)
Christianity% 1st Lag		-0.192 (7.469)	-6.993 (8.683)		-1.348 (7.275)	-8.134 (8.068)		1.429 (7.367)	-5.931 (8.498)
Christianity% 2nd Lag		-4.094 (9.595)	-2.497 (9.724)		-4.200 (9.434)	-2.130 (9.393)		-4.515 (9.511)	-2.263 (9.517)
Christianity% 3rd Lag		2.787 (8.185)	3.784 (9.073)		2.671 (8.025)	3.337 (8.898)		2.778 (8.027)	3.919 (8.859)
Islam% 1st Lag		10.26 (10.20)	-2.632 (15.09)		10.02 (9.791)	-2.850 (14.01)		13.33 (9.862)	0.143 (14.29)
Islam% 2nd Lag		-12.44 (10.68)	-2.346 (14.67)		-12.59 (10.49)	-2.057 (14.22)		-13.02 (10.54)	-2.312 (14.33)
Islam% 3rd Lag		3.444 (7.891)	7.398 (9.033)		3.323 (7.721)	7.315 (8.664)		3.367 (7.718)	7.561 (8.813)
Buddhism% 1st Lag		-22.53* (12.91)	-14.78 (10.46)		-25.61** (11.99)	-26.23** (11.00)		-20.12 (12.77)	-16.53 (10.50)

Buddhism% 2nd Lag	34.21*	21.76		34.04*	22.62		34.11*	21.82
	(19.55)	(14.79)		(19.23)	(14.18)		(19.22)	(14.49)
Buddhism% 3rd Lag	-22.26**	-9.768		-21.88**	-9.973		-22.18**	-10.09
	(9.141)	(6.975)		(8.961)	(6.616)		(9.007)	(6.871)
Hinduism % 1st Lag	-27.82	-49.78**		-20.73	-46.06**		-18.50	-42.95*
	(17.38)	(23.73)		(19.96)	(23.28)		(19.25)	(23.51)
Hinduism % 2nd Lag	17.41	38.21		17.03	36.62		17.02	37.75*
	(15.53)	(23.08)		(15.20)	(22.29)		(15.14)	(22.58)
Hinduism % 3rd Lag	4.808	22.61*		4.767	22.21*		5.415	23.64*
	(9.412)	(12.50)		(9.933)	(12.59)		(9.537)	(12.72)
Resource Rent 1st Lag		0.0311			0.0117			0.0246
		(0.101)			(0.108)			(0.104)
Resource Rent 2nd Lag		-0.148			-0.140			-0.147*
		(0.0933)			(0.0872)			(0.0864)
Resource Rent 3rd Lag		-0.0506			-0.0586			-0.0499
		(0.0981)			(0.0953)			(0.0958)
Constant	49.41***	61.86***	70.70***					
	(9.109)	(12.85)	(15.52)					
R-squared	0.939	0.939	0.936					
Observations	2,876	2,847	2,408	2,777	2,749	2,310	2,777	2,749
Countries	99	98	97	99	98	96	99	98
								96

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (3). Only up to 3rd lags of control variables are reported to keep the table manageable

Table 4P: The effect of GWF autocratic regime types on GDP per capita, unbalanced panel with year fixed effect (system GMM) (full regression)

	<i>System GMM</i>				(12)
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>y</i>
log GDP 1st lag	1.209*** (0.0335)	1.210*** (0.0353)	1.203*** (0.0356)	1.196*** (0.0352)	1.201*** (0.0339)
log GDP 2nd lag	-0.173*** (0.0459)	-0.178*** (0.0450)	-0.176*** (0.0450)	-0.175*** (0.0448)	-0.144*** (0.0511)
log GDP 3rd lag	0.0445 (0.0385)	0.0446 (0.0405)	0.0459 (0.0403)	0.0477 (0.0399)	-0.00934 (0.0471)
log GDP 4th lag	-0.0818*** (0.0243)	-0.0776*** (0.0257)	-0.0770*** (0.0257)	-0.0755*** (0.0255)	-0.0244 (0.0397)
log GDP 5th lag					0.0435 (0.0338)
log GDP 6th lag					-0.0754** (0.0326)
Dom.Party GWF	0.551 (0.504)	0.367 (0.553)	0.222 (0.548)	0.436 (0.531)	0.376 (0.489)
Personalist GWF	-0.966 (0.642)	-0.936 (0.738)	-1.159 (0.730)	-0.777 (0.736)	-0.597 (0.719)
Monarchic GWF	-0.423 (0.904)	-0.602 (0.926)	-0.785 (0.924)	-0.904 (0.905)	-0.912 (0.916)
Military GWF	-0.946 (0.927)	-1.082 (0.977)	-0.240 (0.927)	0.0949 (0.895)	2.134** (0.859)
Christianity% 1st Lag		-7.173 (7.355)	-5.915 (7.725)	-5.857 (7.832)	-3.729 (7.488)
Christianity% 2nd Lag		1.259 (9.592)	1.151 (9.713)	1.749 (9.551)	2.346 (10.02)
Christianity% 3rd Lag		3.716 (8.406)	4.613 (8.527)	4.472 (8.505)	3.831 (9.352)
Islam% 1st Lag		-5.280 (9.124)	-4.609 (9.391)	-3.850 (9.443)	8.069 (15.10)
Islam% 2nd Lag		-2.277 (11.58)	-2.355 (11.68)	-1.812 (11.57)	-14.52 (16.72)
Islam% 3rd Lag		4.627 (8.224)	5.363 (8.320)	5.175 (8.299)	5.646 (9.985)
Buddhism% 1st Lag		-28.62** (11.56)	-28.93 (19.72)	-31.76 (20.39)	-21.24 (24.07)
Buddhism% 2nd Lag		39.41* (20.15)	38.28 (30.13)	37.32 (29.68)	15.69 (26.08)
Buddhism% 3rd Lag		-24.93** (11.02)	-31.17** (12.58)	-31.01** (12.58)	-18.26* (9.389)
Hinduism % 1st Lag		-50.42*** (15.60)	-46.37*** (16.49)	-44.47*** (15.76)	-37.44* (21.01)
Hinduism % 2nd Lag		46.00*** (17.69)	42.74** (18.06)	42.45** (18.00)	28.07 (24.06)
Hinduism % 3rd Lag		5.135 (9.310)	5.590 (9.486)	5.106 (9.449)	5.335 (13.02)
Resource Rent 1st Lag					0.0618 (0.103)
Resource Rent 2nd Lag					-0.133 (0.104)
Resource Rent 3rd Lag					-0.0310 (0.102)

Latitude			0.0343***	0.0353***	0.0480***
			(0.0110)	(0.0121)	(0.0134)
British colony				-0.748	0.275
				(0.536)	(0.529)
French colony				-1.512***	-0.982*
				(0.484)	(0.516)
Spanish colony				1.341*	0.713
				(0.726)	(0.687)
Eastern Asian					1.401***
					(0.487)
South American					2.227***
					(0.808)
Constant	-109.8***	-18.80***	8.061**	10.03***	21.41***
	(2.964)	(2.939)	(4.039)	(3.065)	(2.727)
Observations	2,876	2,749	2,705	2,705	2,270
Countries	99	98	96	96	94

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under GWF using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4Q: The effect of HTW autocratic regime types on GDP per capita, balanced panel without year fixed effect (full regression)

	<i>Within</i>			<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
log GDP 1st lag	1.193*** (0.0365)	1.195*** (0.0364)	1.167*** (0.0365)	1.186*** (0.0362)	1.195*** (0.0369)	1.157*** (0.0370)	1.186*** (0.0362)	1.196*** (0.0369)	1.162*** (0.0362)
log GDP 2nd lag	-0.212*** (0.0582)	-0.218*** (0.0585)	-0.171*** (0.0511)	-0.209*** (0.0573)	-0.226*** (0.0577)	-0.168*** (0.0532)	-0.209*** (0.0573)	-0.226*** (0.0577)	-0.167*** (0.0528)
log GDP 3rd lag	0.0667* (0.0387)	0.0679* (0.0379)	0.0279 (0.0471)	0.0669* (0.0382)	0.0665* (0.0389)	0.0294 (0.0466)	0.0669* (0.0382)	0.0666* (0.0391)	0.0289 (0.0470)
log GDP 4th lag	-0.0871*** (0.0326)	-0.0867** (0.0332)	-0.0318 (0.0358)	-0.0825** (0.0328)	-0.0796** (0.0328)	-0.0214 (0.0397)	-0.0825** (0.0328)	-0.0786** (0.0330)	-0.0215 (0.0396)
log GDP 5th lag			0.0514 (0.0329)			0.0448 (0.0346)			0.0433 (0.0345)
log GDP 6th lag			-0.101*** (0.0358)			-0.104*** (0.0381)			-0.100*** (0.0374)
Electoral HTW	-1.022* (0.600)	-0.960 (0.585)	-1.074* (0.603)	-1.402** (0.664)	-1.383** (0.670)	-0.988 (0.682)	-1.402** (0.664)	-1.355** (0.646)	-0.963 (0.669)
Military HTW	-2.739*** (0.871)	-2.774*** (0.915)	-3.800*** (1.125)	-3.116*** (1.113)	-3.450*** (1.312)	-3.423** (1.375)	-3.116*** (1.113)	-3.331*** (1.246)	-3.523*** (1.325)
Monarchic HTW	-3.035*** (0.554)	-3.202*** (0.608)	-3.418*** (0.780)	0.724 (4.303)	-0.247 (4.172)	0.454 (3.770)	0.724 (4.303)	-1.785 (2.453)	-2.804 (1.764)
Christianity% 1st Lag		2.124 (10.33)	11.88 (9.159)		4.768 (10.43)	9.741 (9.282)		2.867 (10.33)	6.931 (9.693)
Christianity% 2nd Lag		-19.24 (12.85)	-26.08** (12.72)		-24.04** (12.17)	-25.40** (12.81)		-19.62 (13.78)	-22.01 (14.96)
Christianity% 3rd Lag		6.082 (12.67)	-5.048 (11.96)		6.158 (12.51)	-4.923 (14.52)		6.201 (12.51)	-5.047 (14.65)
Islam% 1st Lag		19.13 (12.68)	-18.49 (27.76)		-15.11 (22.43)	-14.84 (25.38)		-13.12 (25.66)	-14.80 (27.06)
Islam% 2nd Lag		-33.60** (16.56)	-4.181 (40.79)		7.539 (33.86)	-7.001 (40.38)		3.827 (33.24)	-6.216 (40.55)

Islam% 3rd Lag	7.414 (12.58)	21.08 (19.77)	7.511 (12.41)	24.18 (19.56)	7.556 (12.39)	24.52 (19.56)
Buddhism% 1st Lag	-38.94*** (12.56)	-37.86*** (11.12)	-40.39*** (13.68)	-36.90*** (9.426)	-37.44*** (11.24)	-35.93*** (10.25)
Buddhism% 2nd Lag	52.51*** (15.82)	49.55*** (10.00)	59.81*** (18.20)	48.24*** (8.992)	52.61*** (14.84)	47.21*** (8.970)
Buddhism% 3rd Lag	-24.05** (11.72)	-7.147 (7.845)	-24.40** (11.52)	-5.173 (7.456)	-24.46** (11.56)	-4.327 (7.387)
Hinduism % 1st Lag	-19.34 (16.29)	-74.73** (36.24)	-63.48** (30.23)	-73.30** (34.87)	-58.24* (32.02)	-68.47* (36.38)
Hinduism % 2nd Lag	15.40 (11.51)	65.42* (38.95)	65.09** (31.82)	59.16 (39.22)	60.91** (30.77)	60.50 (40.30)
Hinduism % 3rd Lag	6.413 (12.79)	32.96 (21.12)	6.490 (12.54)	34.87 (22.25)	6.473 (12.58)	34.60 (21.97)
Resource Rent 1st Lag		0.0913 (0.119)		0.100 (0.127)		0.115 (0.126)
Resource Rent 2nd Lag		-0.130* (0.0722)		-0.0960 (0.0724)		-0.120* (0.0725)
Resource Rent 3rd Lag		-0.202*** (0.0632)		-0.239*** (0.0659)		-0.228*** (0.0666)
Constant	34.63*** (8.212)	37.72*** (11.03)	48.55*** (16.47)			
R-squared	0.945	0.946	0.941			
Observations	2,343	2,343	2,019	2,272	2,201	1,879
Countries	71	71	70	71	71	70

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under HTW. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (3). Only up to 3rd lags of control variables are reported to keep the table manageable

Table 4R: The effect of HTW autocratic regime types on GDP per capita, balanced panel without year fixed effect (system GMM) (full regression)

	<i>System GMM</i>				
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
log GDP 1st lag	1.253*** (0.0368)	1.260*** (0.0372)	1.256*** (0.0372)	1.249*** (0.0374)	1.215*** (0.0359)
log GDP 2nd lag	-0.225*** (0.0615)	-0.236*** (0.0599)	-0.235*** (0.0599)	-0.233*** (0.0596)	-0.179*** (0.0530)
log GDP 3rd lag	0.0710* (0.0417)	0.0665 (0.0419)	0.0671 (0.0418)	0.0670 (0.0413)	0.0291 (0.0490)
log GDP 4th lag	-0.101*** (0.0269)	-0.0918*** (0.0272)	-0.0919*** (0.0273)	-0.0879*** (0.0268)	-0.0210 (0.0400)
log GDP 5th lag					0.0412 (0.0341)
log GDP 6th lag					-0.0923*** (0.0296)
Electoral HTW	-0.544 (0.424)	-0.770* (0.436)	-0.848* (0.448)	-0.669 (0.471)	-0.400 (0.467)
Military HTW	-1.680*** (0.591)	-2.041*** (0.591)	-2.118*** (0.589)	-2.118*** (0.596)	-2.298*** (0.636)
Monarchic HTW	-0.683 (0.707)	-0.840 (0.686)	-0.552 (0.702)	-0.489 (0.726)	0.214 (0.625)
Christianity% 1st Lag		3.733 (10.17)	4.847 (10.51)	3.755 (10.13)	14.86 (10.05)
Christianity% 2nd Lag		-23.92** (11.47)	-24.04** (11.46)	-22.32* (11.45)	-26.54* (13.95)
Christianity% 3rd Lag		7.435 (12.30)	8.209 (12.30)	8.332 (12.21)	-2.990 (15.02)
Islam% 1st Lag		-21.39 (27.58)	-20.19 (27.54)	-18.37 (27.37)	-21.97 (29.98)
Islam% 2nd Lag		0.711 (33.15)	0.00565 (33.18)	-0.119 (33.03)	-7.743 (40.96)
Islam% 3rd Lag		8.336 (12.70)	8.681 (12.66)	8.795 (12.55)	24.13 (20.73)
Buddhism% 1st Lag		-44.34*** (11.04)	-53.16*** (19.37)	-56.24*** (20.22)	-58.00*** (20.04)
Buddhism% 2nd Lag		60.50*** (17.21)	70.81*** (24.13)	69.09*** (24.04)	56.18*** (17.31)
Buddhism% 3rd Lag		-28.16** (13.56)	-39.83*** (13.68)	-39.46*** (13.67)	-14.70 (14.38)
Hinduism % 1st Lag		-73.73** (32.98)	-72.16** (32.19)	-68.61** (30.90)	-78.19** (33.71)
Hinduism % 2nd Lag		60.80* (31.70)	59.37* (31.44)	58.17* (31.01)	60.81 (40.56)
Hinduism % 3rd Lag		5.101 (12.75)	6.491 (13.06)	6.400 (13.05)	33.26 (23.92)
Resource Rent 1st Lag					0.0897 (0.126)
Resource Rent 2nd Lag					-0.0916 (0.0768)
Resource Rent 3rd Lag					-0.224*** (0.0726)
Latitude			0.0186** (0.00882)	0.00951 (0.0106)	0.0145 (0.0110)

British colony				-1.214**	-0.522
				(0.493)	(0.441)
French colony				-2.000***	-1.232***
				(0.495)	(0.476)
Spanish colony				0.204	-0.364
				(0.674)	(0.588)
Eastern Asian					2.185***
					(0.471)
South American					0.979
					(0.627)
Constant	3.001	3.388	4.404*	7.547***	6.111**
	(2.244)	(2.451)	(2.431)	(2.469)	(2.778)
Observations	2,343	2,272	2,240	2,240	1,919
Countries	71	71	70	70	69

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under HTW using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4S: The effect of HTW autocratic regime types on GDP per capita, unbalanced panel without year fixed effect (full regression)

	<i>Within</i>			<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
log GDP 1st lag	1.164*** (0.0331)	1.161*** (0.0333)	1.153*** (0.0313)	1.151*** (0.0321)	1.141*** (0.0347)	1.128*** (0.0321)	1.151*** (0.0339)	1.153*** (0.0340)	1.144*** (0.0314)
log GDP 2nd lag	-0.170*** (0.0446)	-0.173*** (0.0446)	-0.134*** (0.0480)	-0.166*** (0.0431)	-0.182*** (0.0433)	-0.134*** (0.0493)	-0.167*** (0.0436)	-0.188*** (0.0433)	-0.136*** (0.0495)
log GDP 3rd lag	0.0558 (0.0364)	0.0570 (0.0363)	0.00104 (0.0435)	0.0579 (0.0359)	0.0624* (0.0362)	0.00707 (0.0419)	0.0581 (0.0357)	0.0679* (0.0361)	0.0103 (0.0426)
log GDP 4th lag	-0.0905*** (0.0271)	-0.0896*** (0.0275)	-0.0296 (0.0347)	-0.0896*** (0.0296)	-0.0788** (0.0325)	-0.0146 (0.0389)	-0.0826*** (0.0283)	-0.0782*** (0.0299)	-0.0211 (0.0387)
log GDP 5th lag			0.0588* (0.0340)			0.0390 (0.0332)			0.0410 (0.0338)
log GDP 6th lag			-0.106*** (0.0333)			-0.0928** (0.0408)			-0.0921** (0.0382)
Electoral HTW	-1.123** (0.561)	-1.040* (0.541)	-1.180** (0.559)	-1.560** (0.678)	-1.461** (0.686)	-1.083 (0.738)	-1.380** (0.671)	-1.338** (0.652)	-0.777 (0.681)
Military HTW	-2.655*** (0.807)	-2.564*** (0.846)	-3.407*** (1.011)	-3.116*** (1.101)	-3.303*** (1.271)	-2.545* (1.547)	-3.033*** (1.089)	-3.143*** (1.206)	-2.790** (1.320)
Monarchic HTW	-3.161*** (0.552)	-3.497*** (0.606)	-3.689*** (0.677)	-3.086 (2.107)	-5.747** (2.692)	-1.316 (2.956)	-3.212* (1.943)	-4.501** (1.861)	-4.684* (2.500)
Christianity% 1st Lag		-1.718 (7.979)	-5.978 (9.486)		-10.37 (9.730)	-9.133 (10.56)		-12.25 (9.599)	-11.84 (10.19)
Christianity% 2nd Lag		-6.329 (10.26)	-5.523 (10.66)		-0.458 (9.100)	-3.318 (10.01)		2.517 (9.991)	0.741 (9.670)
Christianity% 3rd Lag		3.004 (8.824)	2.414 (9.404)		2.982 (8.657)	-0.879 (9.086)		3.041 (8.667)	-0.742 (9.122)
Islam% 1st Lag		13.29 (9.957)	-3.507 (14.52)		4.718 (11.93)	-7.758 (13.37)		-1.076 (12.26)	-11.54 (13.64)
Islam% 2nd Lag		-14.33 (11.56)	-0.0948 (14.82)		0.422 (11.78)	-8.178 (14.91)		2.480 (12.46)	-4.742 (14.49)

Islam% 3rd Lag	3.149	6.535		3.047	14.67		3.105	14.16
	(8.682)	(9.867)		(8.474)	(9.880)		(8.501)	(9.541)
Buddhism% 1st Lag	-25.18*	-22.63**		-22.84	-21.14		-21.28	-17.87
	(13.93)	(11.15)		(15.81)	(13.87)		(14.32)	(14.37)
Buddhism% 2nd Lag	36.72**	29.83**		38.68**	28.61**		34.23*	24.42
	(18.27)	(14.92)		(19.45)	(13.94)		(18.46)	(15.98)
Buddhism% 3rd Lag	-18.48*	-5.506		-18.91*	-5.619		-19.49*	-3.993
	(10.24)	(6.961)		(9.945)	(6.328)		(10.15)	(5.857)
Hinduism % 1st Lag	-12.94	-50.75**		-24.22	-47.95		-34.89	-56.77*
	(22.61)	(25.09)		(27.70)	(30.76)		(22.59)	(30.44)
Hinduism % 2nd Lag	21.39	56.18***		62.03***	46.78**		52.15***	51.29**
	(16.79)	(20.44)		(18.96)	(19.55)		(18.27)	(23.92)
Hinduism % 3rd Lag	10.65	32.65**		10.22	26.53**		9.678	26.14**
	(11.28)	(14.86)		(10.99)	(12.93)		(10.94)	(12.71)
Resource Rent 1st Lag		0.0861			0.0929			0.0891
		(0.0923)			(0.0997)			(0.0986)
Resource Rent 2nd Lag		-0.162*			-0.128			-0.141*
		(0.0829)			(0.0831)			(0.0827)
Resource Rent 3rd Lag		-0.0669			-0.0956			-0.0881
		(0.0941)			(0.0951)			(0.0977)
Constant	35.30***	36.79***	45.62***					
	(8.114)	(10.40)	(14.90)					
R-squared	0.935	0.934	0.931					
Observations	2,876	2,847	2,408	2,777	2,651	2,213	2,777	2,651
Countries	99	98	97	99	98	96	99	98

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under HTW. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (3). Only up to 3rd lags of control variables are reported to keep the table manageable

Table 4T: The effect of HTW autocratic regime types on GDP per capita, unbalanced panel without year fixed effect (system GMM) (full regression)

	<i>System GMM</i>				
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
log GDP 1st lag	1.229*** (0.0324)	1.233*** (0.0344)	1.227*** (0.0348)	1.221*** (0.0345)	1.214*** (0.0329)
log GDP 2nd lag	-0.187*** (0.0462)	-0.200*** (0.0458)	-0.199*** (0.0460)	-0.197*** (0.0457)	-0.151*** (0.0514)
log GDP 3rd lag	0.0518 (0.0383)	0.0544 (0.0396)	0.0555 (0.0395)	0.0563 (0.0392)	-0.00194 (0.0456)
log GDP 4th lag	-0.0968*** (0.0221)	-0.0892*** (0.0241)	-0.0893*** (0.0242)	-0.0882*** (0.0239)	-0.0225 (0.0414)
log GDP 5th lag					0.0293 (0.0330)
log GDP 6th lag					-0.0752** (0.0311)
Electoral HTW	-0.530 (0.476)	-0.719 (0.513)	-0.978* (0.500)	-0.712 (0.527)	-0.0329 (0.531)
Military HTW	-2.041*** (0.623)	-2.579*** (0.596)	-2.694*** (0.599)	-2.537*** (0.606)	-2.464*** (0.588)
Monarchic HTW	-0.675 (0.903)	-2.067* (1.170)	-1.311 (1.110)	-0.969 (1.138)	-0.441 (1.251)
Christianity% 1st Lag		-9.450 (9.188)	-6.422 (9.725)	-7.403 (9.555)	-3.814 (9.410)
Christianity% 2nd Lag		-0.0693 (10.27)	-1.525 (10.68)	-0.619 (10.48)	-1.529 (11.54)
Christianity% 3rd Lag		3.646 (9.041)	4.279 (9.206)	4.367 (9.161)	2.023 (9.585)
Islam% 1st Lag		-6.366 (11.16)	-3.881 (11.38)	-4.271 (11.17)	1.863 (14.67)
Islam% 2nd Lag		-3.520 (12.45)	-5.026 (12.69)	-4.024 (12.58)	-13.81 (16.66)
Islam% 3rd Lag		3.601 (8.945)	4.048 (9.030)	4.109 (8.988)	6.900 (10.31)
Buddhism% 1st Lag		-34.82** (13.61)	-33.82* (19.88)	-35.60* (20.33)	-33.01 (21.88)
Buddhism% 2nd Lag		44.06** (19.42)	41.81 (28.76)	41.12 (28.02)	24.64 (23.82)
Buddhism% 3rd Lag		-21.59* (12.29)	-29.15** (14.81)	-28.97* (14.84)	-10.75 (10.85)
Hinduism % 1st Lag		-42.55* (22.43)	-41.46* (21.35)	-40.26* (20.83)	-49.38** (22.54)
Hinduism % 2nd Lag		44.93** (17.53)	42.48** (17.47)	42.86** (17.55)	44.62* (22.77)
Hinduism % 3rd Lag		7.213 (11.27)	9.471 (11.63)	9.218 (11.66)	18.41 (13.70)
Resource Rent 1st Lag					0.104 (0.1000)
Resource Rent 2nd Lag					-0.134 (0.0952)
Resource Rent 3rd Lag					-0.0693 (0.0974)
Latitude			0.0325*** (0.0113)	0.0295** (0.0123)	0.0382*** (0.0137)

British colony				-0.858*	-0.0696
				(0.520)	(0.489)
French colony				-1.668***	-1.237***
				(0.468)	(0.413)
Spanish colony				0.649	-0.154
				(0.662)	(0.636)
Eastern Asian					1.710***
					(0.524)
South American					1.765**
					(0.835)
Constant	4.580*	3.570	5.712**	8.439***	6.186**
	(2.361)	(2.375)	(2.562)	(2.776)	(2.626)
Observations	2,876	2,749	2,705	2,705	2,270
Countries	99	98	96	96	94

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under HTW using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4U: The effect of HTW autocratic regime types on GDP per capita, balanced panel with year fixed effect (full regression)

	<i>Within</i>			<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
log GDP 1st lag	1.151*** (0.0358)	1.148*** (0.0346)	1.124*** (0.0347)	1.133*** (0.0351)	1.133*** (0.0342)	1.113*** (0.0343)	1.133*** (0.0351)	1.137*** (0.0343)	1.119*** (0.0341)
log GDP 2nd lag	-0.190*** (0.0577)	-0.194*** (0.0573)	-0.155*** (0.0523)	-0.184*** (0.0558)	-0.189*** (0.0553)	-0.152*** (0.0506)	-0.184*** (0.0558)	-0.191*** (0.0558)	-0.154*** (0.0508)
log GDP 3rd lag	0.0598 (0.0381)	0.0614 (0.0373)	0.0177 (0.0469)	0.0594 (0.0368)	0.0612* (0.0359)	0.0178 (0.0457)	0.0594 (0.0368)	0.0619* (0.0363)	0.0186 (0.0459)
log GDP 4th lag	-0.0744** (0.0327)	-0.0754** (0.0330)	-0.0303 (0.0345)	-0.0675** (0.0334)	-0.0703** (0.0337)	-0.0275 (0.0333)	-0.0675** (0.0334)	-0.0719** (0.0333)	-0.0294 (0.0335)
log GDP 5th lag			0.0697* (0.0350)			0.0686** (0.0344)			0.0692** (0.0342)
log GDP 6th lag			-0.107*** (0.0331)			-0.106*** (0.0339)			-0.104*** (0.0334)
Electoral HTW	0.0975 (0.634)	0.231 (0.657)	0.0926 (0.671)	0.239 (0.705)	0.274 (0.705)	0.0224 (0.718)	0.239 (0.705)	0.238 (0.685)	0.172 (0.690)
Military HTW	-1.223 (1.017)	-1.154 (1.000)	-2.008* (1.192)	-0.813 (1.195)	-0.833 (1.214)	-1.673 (1.373)	-0.813 (1.195)	-1.092 (1.171)	-1.646 (1.270)
Monarchic HTW	-1.876*** (0.684)	-1.693** (0.724)	-1.711** (0.754)	2.641 (5.824)	2.756 (5.123)	2.545 (4.511)	2.641 (5.824)	-1.918*** (0.743)	-1.732** (0.830)
Christianity% 1st Lag		6.926 (9.118)	11.67 (10.57)		6.526 (9.534)	14.51 (10.65)		8.523 (9.082)	13.72 (10.36)
Christianity% 2nd Lag		-13.09 (12.39)	-16.66 (15.12)		-13.92 (12.10)	-16.67 (14.69)		-13.16 (12.11)	-16.64 (14.71)
Christianity% 3rd Lag		7.376 (11.14)	-2.781 (12.52)		7.306 (10.87)	-5.485 (12.63)		7.250 (10.88)	-2.864 (12.40)
Islam% 1st Lag		7.735 (13.53)	-21.29 (28.86)		2.668 (11.22)	-22.75 (27.64)		5.290 (11.45)	-20.85 (27.38)
Islam% 2nd Lag		-26.37* (15.29)	-6.594 (39.19)		-26.68* (14.85)	-9.058 (38.15)		-26.30* (14.92)	-6.718 (38.08)

Islam% 3rd Lag	9.523	23.14	9.413	25.42	9.380	23.82
	(10.98)	(18.70)	(10.67)	(18.11)	(10.70)	(18.21)
Buddhism% 1st Lag	-36.42***	-31.31***	-33.03***	-36.14***	-28.00**	-30.79***
	(12.68)	(10.78)	(10.85)	(11.15)	(12.36)	(10.49)
Buddhism% 2nd Lag	47.60**	38.52***	47.10***	37.94***	47.28***	38.51***
	(18.25)	(10.97)	(17.88)	(10.75)	(17.83)	(10.89)
Buddhism% 3rd Lag	-22.74**	-5.564	-22.43**	-5.024	-22.55**	-5.601
	(10.63)	(7.942)	(10.28)	(7.724)	(10.33)	(7.806)
Hinduism % 1st Lag	-38.94**	-80.55**	-45.30***	-84.20**	-40.32**	-80.24**
	(15.67)	(35.44)	(15.31)	(35.34)	(16.06)	(35.43)
Hinduism % 2nd Lag	13.26	46.16	8.516	37.73	13.28	46.07
	(11.30)	(39.83)	(11.35)	(39.13)	(10.90)	(38.52)
Hinduism % 3rd Lag	5.897	30.32	5.735	33.20	5.741	30.93
	(11.57)	(21.96)	(11.23)	(21.28)	(11.24)	(21.40)
Resource Rent 1st Lag		0.0205		0.00745		0.0294
		(0.125)		(0.125)		(0.124)
Resource Rent 2nd Lag		-0.121		-0.105		-0.117
		(0.0769)		(0.0735)		(0.0742)
Resource Rent 3rd Lag		-0.171***		-0.178***		-0.166***
		(0.0627)		(0.0563)		(0.0585)
Constant	48.38***	67.04***	78.53***			
	(8.227)	(12.42)	(15.71)			
R-squared	0.949	0.950	0.946			
Observations	2,343	2,343	2,019	2,272	2,272	1,949
Countries	71	71	70	71	71	70

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under HTW. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (3). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4V: The effect of HTW autocratic regime types on GDP per capita, balanced panel without year fixed effect (system GMM) (full regression)

	<i>System GMM</i>				
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
log GDP 1st lag	1.237*** (0.0377)	1.238*** (0.0381)	1.234*** (0.0381)	1.224*** (0.0381)	1.198*** (0.0355)
log GDP 2nd lag	-0.211*** (0.0623)	-0.209*** (0.0602)	-0.208*** (0.0601)	-0.206*** (0.0597)	-0.168*** (0.0537)
log GDP 3rd lag	0.0649 (0.0421)	0.0555 (0.0425)	0.0561 (0.0423)	0.0564 (0.0417)	0.0257 (0.0499)
log GDP 4th lag	-0.0925*** (0.0278)	-0.0852*** (0.0282)	-0.0844*** (0.0284)	-0.0790*** (0.0276)	-0.0268 (0.0387)
log GDP 5th lag					0.0582* (0.0348)
log GDP 6th lag					-0.0944*** (0.0290)
Electoral HTW	-0.0845 (0.439)	-0.214 (0.457)	-0.244 (0.477)	0.0372 (0.507)	0.251 (0.471)
Military HTW	-1.150* (0.607)	-1.263** (0.630)	-1.295** (0.630)	-1.196* (0.629)	-1.267** (0.621)
Monarchic HTW	-0.376 (0.744)	-0.247 (0.731)	0.0941 (0.756)	0.276 (0.764)	1.098* (0.614)
Christianity% 1st Lag		8.285 (11.95)	10.06 (12.36)	9.205 (12.29)	15.48 (11.89)
Christianity% 2nd Lag		-21.78* (12.95)	-21.92* (12.85)	-19.82 (12.91)	-17.76 (16.36)
Christianity% 3rd Lag		8.706 (11.13)	9.314 (11.18)	9.475 (11.06)	1.063 (15.54)
Islam% 1st Lag		-16.58 (26.64)	-15.57 (26.51)	-13.46 (26.32)	-19.55 (30.52)
Islam% 2nd Lag		1.193 (31.57)	1.025 (31.53)	1.390 (31.36)	-9.069 (40.32)
Islam% 3rd Lag		10.56 (11.43)	10.89 (11.41)	11.02 (11.26)	26.65 (20.73)
Buddhism% 1st Lag		-33.68*** (10.58)	-38.43** (19.42)	-42.61** (20.40)	-49.18** (19.91)
Buddhism% 2nd Lag		52.05*** (18.23)	60.21** (26.01)	58.38** (25.86)	48.03*** (17.01)
Buddhism% 3rd Lag		-27.70** (12.62)	-38.70*** (12.37)	-38.17*** (12.37)	-12.62 (13.62)
Hinduism % 1st Lag		-69.22** (32.08)	-67.27** (31.46)	-63.72** (30.05)	-72.18** (33.29)
Hinduism % 2nd Lag		54.60* (32.30)	53.11* (32.10)	52.08* (31.66)	44.61 (42.01)
Hinduism % 3rd Lag		6.487 (11.93)	7.755 (12.41)	7.536 (12.41)	31.40 (24.94)
Resource Rent 1st Lag					0.0268 (0.136)
Resource Rent 2nd Lag					-0.0859 (0.0842)
Resource Rent 3rd Lag					-0.176** (0.0753)
Latitude			0.0221** (0.00981)	0.0142 (0.0117)	0.0209* (0.0111)

British colony				-1.318**	-0.485
				(0.545)	(0.451)
French colony				-2.217***	-1.308**
				(0.537)	(0.520)
Spanish colony				0.520	-0.0332
				(0.751)	(0.618)
Eastern Asian					2.192***
					(0.432)
South American					1.439**
					(0.639)
Constant	16.45***	4.144	1.028	-16.16	7.967***
	(4.212)	(2.781)	(2.603)	(17.60)	(2.942)
Observations	2,343	2,272	2,240	2,240	1,919
Countries	71	71	70	70	69

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under HTW using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4W: The effect of HTW autocratic regime types on GDP per capita, unbalanced panel with year fixed effect (full regression)

	<i>Within</i>			<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
log GDP 1st lag	1.126*** (0.0327)	1.123*** (0.0326)	1.120*** (0.0310)	1.095*** (0.0349)	1.095*** (0.0351)	1.088*** (0.0321)	1.095*** (0.0366)	1.097*** (0.0368)	1.105*** (0.0317)
log GDP 2nd lag	-0.152*** (0.0435)	-0.155*** (0.0434)	-0.119** (0.0480)	-0.146*** (0.0420)	-0.150*** (0.0419)	-0.113** (0.0463)	-0.145*** (0.0417)	-0.150*** (0.0419)	-0.119** (0.0467)
log GDP 3rd lag	0.0492 (0.0361)	0.0511 (0.0360)	-0.0113 (0.0435)	0.0520 (0.0350)	0.0533 (0.0346)	-0.00330 (0.0418)	0.0515 (0.0349)	0.0536 (0.0347)	-0.00232 (0.0413)
log GDP 4th lag	-0.0775*** (0.0275)	-0.0799*** (0.0277)	-0.0234 (0.0344)	-0.0794*** (0.0295)	-0.0824*** (0.0298)	-0.0234 (0.0351)	-0.0687** (0.0291)	-0.0730** (0.0292)	-0.0220 (0.0338)
log GDP 5th lag			0.0670* (0.0345)			0.0669** (0.0334)			0.0646* (0.0339)
log GDP 6th lag			-0.108*** (0.0325)			-0.110*** (0.0337)			-0.104*** (0.0332)
Electoral HTW	-0.0198 (0.590)	0.0275 (0.587)	-0.177 (0.600)	0.0870 (0.698)	0.0679 (0.656)	-0.354 (0.683)	0.411 (0.690)	0.443 (0.657)	0.111 (0.671)
Military HTW	-1.076 (0.910)	-1.026 (0.905)	-1.838* (1.063)	-0.563 (1.178)	-0.540 (1.161)	-1.087 (1.396)	-0.331 (1.139)	-0.398 (1.143)	-1.169 (1.226)
Monarchic HTW	-2.136*** (0.671)	-2.263*** (0.695)	-2.254*** (0.798)	-0.494 (4.010)	-1.988 (2.919)	0.133 (3.614)	-1.033 (3.136)	-3.098*** (0.965)	-2.203** (0.873)
Christianity% 1st Lag		-0.359 (7.566)	-6.392 (8.840)		-3.153 (7.724)	-8.110 (8.480)		-0.742 (8.581)	-6.896 (8.569)
Christianity% 2nd Lag		-3.643 (9.548)	-2.075 (9.650)		-3.786 (9.284)	-2.266 (9.305)		-4.089 (9.280)	-1.492 (9.244)
Christianity% 3rd Lag		2.313 (8.201)	3.094 (8.962)		2.184 (8.015)	2.868 (8.796)		2.201 (7.970)	3.409 (8.777)
Islam% 1st Lag		8.989 (10.36)	-3.796 (15.60)		6.312 (10.63)	-6.098 (15.12)		9.992 (11.60)	-6.877 (15.28)
Islam% 2nd Lag		-12.02 (10.73)	-1.679 (14.87)		-11.98 (10.41)	-0.360 (13.71)		-12.45 (10.40)	0.674 (13.81)

Islam% 3rd Lag	3.076	6.358	2.974	7.597	2.893	6.321
	(7.915)	(8.947)	(7.708)	(8.670)	(7.661)	(8.636)
Buddhism% 1st Lag	-23.18*	-15.31	-15.54	-14.64	-12.09	-9.263
	(13.33)	(10.82)	(12.91)	(12.07)	(13.32)	(12.36)
Buddhism% 2nd Lag	34.41*	22.25	33.96*	20.63	34.01*	23.55
	(19.49)	(14.73)	(18.97)	(14.27)	(18.92)	(14.32)
Buddhism% 3rd Lag	-22.16**	-10.04	-21.65**	-9.217	-21.91**	-10.55
	(9.213)	(7.020)	(8.850)	(6.691)	(8.959)	(6.915)
Hinduism % 1st Lag	-29.00	-50.42**	-11.40	-42.84	-14.28	-44.88
	(17.56)	(24.04)	(30.79)	(29.70)	(27.22)	(27.73)
Hinduism % 2nd Lag	19.75	41.31*	18.41	36.89*	20.47	43.38**
	(14.52)	(21.53)	(13.47)	(20.70)	(13.28)	(20.12)
Hinduism % 3rd Lag	3.619	19.80	3.362	22.63*	3.558	18.40
	(9.087)	(12.32)	(8.850)	(13.01)	(9.003)	(12.67)
Resource Rent 1st Lag		0.0342		0.0172		0.0336
		(0.101)		(0.107)		(0.102)
Resource Rent 2nd Lag		-0.151		-0.137		-0.132*
		(0.0932)		(0.0848)		(0.0788)
Resource Rent 3rd Lag		-0.0492		-0.0609		-0.0514
		(0.0979)		(0.0874)		(0.0904)
Constant	49.54***	61.94***	70.32***			
	(9.000)	(12.68)	(15.23)			
R-squared	0.939	0.939	0.936			
Observations	2,876	2,847	2,408	2,777	2,749	2,311
Countries	99	98	97	99	98	96

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under HTW. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (3) for each estimation where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2) and Resource rent in column (3). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4X: The effect of HTW autocratic regime types on GDP per capita, unbalanced panel with year fixed effect (system GMM) (full regression)

	<i>System GMM</i>				
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
log GDP 1st lag	1.210*** (0.0330)	1.210*** (0.0348)	1.203*** (0.0351)	1.196*** (0.0347)	1.198*** (0.0336)
log GDP 2nd lag	-0.175*** (0.0462)	-0.177*** (0.0454)	-0.176*** (0.0454)	-0.174*** (0.0452)	-0.142*** (0.0511)
log GDP 3rd lag	0.0468 (0.0385)	0.0458 (0.0404)	0.0469 (0.0402)	0.0486 (0.0398)	-0.00976 (0.0465)
log GDP 4th lag	-0.0858*** (0.0237)	-0.0798*** (0.0255)	-0.0791*** (0.0256)	-0.0774*** (0.0252)	-0.0197 (0.0399)
log GDP 5th lag					0.0382 (0.0332)
log GDP 6th lag					-0.0735** (0.0319)
Electoral HTW	-0.0990 (0.497)	-0.131 (0.552)	-0.332 (0.527)	0.0312 (0.540)	0.223 (0.485)
Military HTW	-1.344** (0.646)	-1.452** (0.649)	-1.540** (0.638)	-1.249** (0.622)	-1.549** (0.613)
Monarchic HTW	-0.109 (0.928)	-0.849 (1.218)	-0.243 (1.137)	0.313 (1.166)	1.529* (0.878)
Christianity% 1st Lag		-6.181 (8.675)	-3.848 (9.412)	-4.736 (9.321)	-3.691 (8.639)
Christianity% 2nd Lag		0.531 (9.867)	-0.577 (10.24)	0.515 (9.967)	2.151 (10.42)
Christianity% 3rd Lag		3.195 (8.442)	3.874 (8.586)	3.870 (8.546)	3.099 (9.199)
Islam% 1st Lag		-3.192 (10.59)	-1.282 (11.05)	-1.403 (10.85)	7.271 (14.82)
Islam% 2nd Lag		-3.993 (11.91)	-5.245 (12.16)	-4.078 (11.98)	-14.85 (16.55)
Islam% 3rd Lag		3.873 (8.213)	4.377 (8.299)	4.293 (8.256)	6.183 (9.871)
Buddhism% 1st Lag		-21.72* (12.59)	-21.53 (18.20)	-23.50 (18.69)	-23.62 (22.01)
Buddhism% 2nd Lag		36.01* (19.56)	34.34 (28.58)	33.39 (27.81)	18.44 (24.40)
Buddhism% 3rd Lag		-26.40** (11.17)	-33.06** (12.85)	-32.99** (12.87)	-17.54* (9.926)
Hinduism % 1st Lag		-42.82** (18.83)	-39.42** (18.60)	-37.70** (17.97)	-38.49* (20.65)
Hinduism % 2nd Lag		41.18** (17.99)	37.19** (18.10)	37.18** (18.21)	27.78 (24.48)
Hinduism % 3rd Lag		2.702 (9.400)	4.430 (9.810)	3.794 (9.878)	9.214 (12.49)
Resource Rent 1st Lag					0.0594

					(0.106)
Resource Rent 2nd Lag					-0.132
					(0.105)
Resource Rent 3rd Lag					-0.0295
					(0.101)
Latitude		0.0338***	0.0323***	0.0415***	
		(0.0112)	(0.0122)	(0.0125)	
British colony			-0.944*	0.0351	
			(0.524)	(0.478)	
French colony			-1.774***	-1.159**	
			(0.484)	(0.453)	
Spanish colony			1.036	0.269	
			(0.695)	(0.629)	
Eastern Asian				1.796***	
				(0.530)	
South American				2.070***	
				(0.787)	
Constant	20.14***	-24.45***	0.242	8.272***	0
	(2.741)	(2.819)	(2.672)	(2.818)	(0)
Observations	2,876	2,749	2,705	2,705	2,270
Countries	99	98	96	96	94

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under HTW using system GMM estimator. Regimes coefficients are multiplied by 100 and up to 4th lags are included in the estimation except in column (5) where up to 6th lags are used to elevate AR2 test to an acceptable level. The GMM estimates are one-step. Under each estimator, column (1) presents results without any control variable. Religion is included in column (2), Latitude in column (3), colonial legacy dummies in column (4) and resource rent, Eastern Asian and South American dummies altogether in column (5). Only up to 3rd lags of control variables are reported to keep the table manageable.

Table 4Y: The effect of CGV autocratic regime type on GDP per capita, balanced panel with year fixed effect (two-step GMM) (full regression)

	<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
log GDP 1st lag	0.704*** (0.162)	0.977*** (0.140)	0.986*** (0.167)	1.357*** (0.164)	1.086*** (0.135)	1.020*** (0.121)
log GDP 2nd lag	-0.0794 (0.0567)	-0.165** (0.0688)	-0.169*** (0.0648)	-0.253*** (0.0931)	-0.152** (0.0664)	-0.117* (0.0648)
log GDP 3rd lag	0.0889** (0.0349)	0.0816* (0.0447)	0.0605 (0.0477)			
Monarchic CGV	-17.42 (30.68)	-19.68* (11.64)	-6.169 (12.03)	-16.84 (14.62)	-9.341*** (2.349)	-4.608 (4.340)
Military CGV	-0.176 (2.406)	-0.641 (1.837)	-1.156 (3.096)	-2.772 (2.025)	-0.134 (1.972)	-0.276 (2.028)
Civilian CGV	-1.554 (4.505)	0.490 (3.323)	-3.566 (7.164)	0.105 (2.234)	-0.0178 (3.415)	0.0580 (3.507)
Christianity% 1st Lag		-8.165 (46.46)	26.97 (45.81)		-3.402 (20.04)	-9.050 (22.76)
Christianity% 2nd Lag		-7.424 (12.50)	-13.18 (13.22)		-12.79 (15.23)	-18.34 (14.10)
Christianity% 3rd Lag		9.080 (12.54)	8.018 (12.59)			
Islam% 1st Lag		36.06 (58.76)	37.21 (50.65)		6.644 (45.95)	35.71 (48.13)
Islam% 2nd Lag		-19.49 (13.85)	-27.14* (15.02)		-22.90* (12.82)	-25.43** (12.14)
Islam% 3rd Lag		8.202 (11.64)	9.033 (11.73)			
Buddhism% 1st Lag		-55.79 (88.37)	-133.6 (138.9)		-29.58 (66.82)	-32.31 (52.12)
Buddhism% 2nd Lag		24.36 (15.43)	26.26*** (9.878)		18.46 (22.39)	17.28 (20.97)
Buddhism% 3rd Lag		-14.11 (9.496)	-6.907 (7.875)			
Hinduism % 1st Lag		-36.46 (226.5)	159.8 (184.1)		-34.09 (97.91)	18.43 (113.1)
Hinduism % 2nd Lag		25.94 (18.19)	13.15 (24.69)		4.178 (21.28)	-4.146 (21.03)
Hinduism % 3rd Lag		0.431 (13.37)	1.135 (15.64)			

Continued

Resource Rent 1st Lag			-0.298			-0.0794
			(0.433)			(0.198)
Resource Rent 2nd Lag			-0.132			-0.187
			(0.110)			(0.127)
Resource Rent 3rd Lag			-0.191			
			(0.129)			
Observations	2,343	2,343	2,159	2,414	2,414	2,229
Countries	71	71	70	71	71	70

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under the CGV autocratic classifications using two-step difference and FOD GMMs. Regimes' coefficients are multiplied by 100. Both limiting and collapsing instruments are employed to contain instrument proliferation. For each estimator, column (1) presents results without any control variable. Religion and resource rent are included as control covariate in column (2) and column (3) respectively.

Table 4Y: The effect of CGV autocratic regime type on GDP per capita, unbalanced panel with year fixed effect (two–step GMM) (full regression)

	<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
log GDP 1st lag	0.563*** (0.126)	0.785*** (0.143)	0.675*** (0.163)	0.669*** (0.152)	1.097*** (0.128)	1.008*** (0.119)
log GDP 2nd lag					-0.146** (0.0584)	
Monarchic CGV	-14.48 (32.08)	-39.15 (27.24)	-25.32 (18.94)	3.973 (30.24)	-3.987 (17.16)	0.121 (10.59)
Military CGV	0.735 (3.030)	1.928 (2.525)	5.942* (3.325)	2.907 (3.196)	0.285 (1.719)	-2.340 (2.676)
Civilian CGV	-1.572 (6.143)	0.539 (5.187)	12.67 (10.97)	1.867 (5.521)	-1.214 (3.384)	-3.595 (4.878)
Christianity% 1st Lag		-10.77 (55.33)	-89.28 (58.36)		22.43 (24.63)	64.50 (44.56)
Christianity% 2nd Lag					4.353 (15.87)	
Islam% 1st Lag		-77.66* (41.58)	19.63 (78.67)		-38.83 (24.53)	-100.4 (64.60)
Islam% 2nd Lag					-26.31* (14.12)	
Buddhism% 1st Lag		46.67 (113.3)	201.9 (186.1)		-55.71 (60.45)	-60.83 (45.03)
Buddhism% 2nd Lag					24.00 (23.34)	
Hinduism % 1st Lag		-484.5 (446.7)	-101.0 (323.4)		-76.29 (56.68)	-149.8 (127.9)
Hinduism % 2nd Lag					11.05 (26.93)	
Resource Rent 1st Lag			0.554** (0.235)			-0.461 (0.329)
Observations	3,074	3,043	2,800	3,074	2,945	2,801
Countries	99	98	97	99	98	97

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under the CGV autocratic classifications using two–step difference and FOD GMMs. Regimes' coefficients are multiplied by 100. Both limiting and collapsing instruments are employed to contain instrument proliferation. For each estimator, column (1) presents results without any control variable. Religion and resource rent are included as control covariate in column (2) and column (3) respectively.

Table 4Y: The effect of GWF autocratic regime type on GDP per capita, balanced panel with year fixed effect (two–step GMM) (full regression)

	<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
log GDP 1st lag	0.976*** (0.137)	0.945*** (0.121)	1.069*** (0.173)	1.168*** (0.160)	1.077*** (0.160)	1.147*** (0.144)
log GDP 2nd lag	-0.110* (0.0564)	-0.109* (0.0572)	-0.147* (0.0814)	-0.183** (0.0872)	-0.144* (0.0750)	-0.178** (0.0751)
Dom.Party GWF	2.169 (3.432)	-1.754 (3.382)	-1.734 (4.432)	0.932 (1.580)	1.358 (1.711)	0.698 (2.332)
Personalist GWF	7.488 (6.652)	10.24* (6.220)	3.979 (7.820)	2.920 (5.517)	5.283 (5.550)	0.578 (5.343)
Monarchic GWF	-2.799 (1.960)	-2.302 (1.490)	-2.423 (1.858)	-2.041 (1.530)	-1.666 (1.663)	-2.608 (1.717)
Military GWF	-2.048 (14.54)	-18.04 (13.15)	-16.93 (14.34)	-12.86*** (4.273)	-9.307* (5.191)	1.659 (5.863)
Christianity% 1st Lag		22.78 (81.48)	-6.156 (37.15)		-12.35 (27.07)	-15.15 (32.94)
Christianity% 2nd Lag		-14.58 (9.013)	-7.405 (11.21)		-11.03 (13.98)	-7.533 (14.37)
Islam% 1st Lag		-49.94 (101.4)	8.035 (50.13)		29.47 (92.13)	52.06 (57.58)
Islam% 2nd Lag		-23.68** (10.76)	-20.35* (11.27)		-17.93 (12.27)	-13.11 (14.16)
Buddhism% 1st Lag		-56.68 (72.46)	-75.75 (60.44)		-39.06 (58.61)	-58.57 (39.47)
Buddhism% 2nd Lag		40.64** (17.42)	28.40*** (9.314)		35.81 (22.63)	31.21 (19.11)
Hinduism % 1st Lag		-219.9 (223.9)	-88.96 (87.56)		-10.82 (168.5)	44.29 (130.3)
Hinduism % 2nd Lag		-1.138 (11.03)	14.80 (16.47)		7.246 (26.71)	16.06 (20.62)
Resource Rent 1st Lag			-0.0814 (0.270)			-0.301 (0.235)
Resource Rent 2nd Lag			-0.118 (0.0916)			-0.259* (0.133)
Observations	2,414	2,414	2,229	2,414	2,414	2,229
Countries	71	71	70	71	71	70

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under the GWF autocratic classifications using two–step difference and FOD GMMs. Regimes' coefficients are multiplied by 100. Both limiting and collapsing instruments are employed to contain instrument proliferation. For each estimator, column (1) presents results without any control variable. Religion and resource rent are included as control covariate in column (2) and column (3) respectively.

Table 4Y: The effect of GWF autocratic regime type on GDP per capita, unbalanced panel with year fixed effect (two–step GMM) (full regression)

	<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
log GDP 1st lag	0.625*** (0.157)	0.817*** (0.270)	0.624*** (0.199)	0.946*** (0.244)	1.085*** (0.100)	1.226*** (0.370)
log GDP 2nd lag				–0.0842 (0.100)	–0.151*** (0.0548)	–0.216 (0.185)
Dom.Party GWF	–3.141 (7.249)	–0.460 (8.919)	4.375 (9.128)	1.542 (2.902)	0.833 (2.768)	–2.539 (5.261)
Personalist GWF	2.891 (8.007)	–3.797 (11.01)	4.141 (6.231)	2.106 (4.274)	0.0380 (3.199)	–0.230 (7.338)
Monarchic GWF	0.00328 (2.580)	1.066 (3.180)	1.154 (2.399)	–1.284 (1.554)	–1.016 (1.629)	–3.117 (2.113)
Military GWF	–2.633 (16.06)	–37.59 (47.83)	–30.36 (18.99)	–14.02 (12.76)	–5.433 (11.04)	1.199 (11.16)
Christianity% 1st Lag		7.348 (95.81)	–92.85 (85.18)		20.12 (22.27)	48.31* (27.99)
Christianity% 2nd Lag					–3.528 (16.33)	12.14 (11.48)
Islam% 1st Lag		–66.93 (147.9)	–28.05 (135.4)		–33.01 (26.39)	–62.45 (39.24)
Islam% 2nd Lag					–25.10* (13.01)	–20.69 (20.82)
Buddhism% 1st Lag		–51.15 (233.0)	236.0 (200.8)		–44.47 (45.77)	–100.7* (60.35)
Buddhism% 2nd Lag					27.24 (29.55)	15.37 (21.63)
Hinduism % 1st Lag		–331.9 (885.8)	–215.4 (474.3)		–81.05 (57.38)	–106.4 (129.7)
Hinduism % 2nd Lag					7.042 (24.18)	29.13 (38.46)
Resource Rent 1st Lag			0.528** (0.246)			–0.277 (0.323)
Resource Rent 2nd Lag						–0.234* (0.132)
Observations	3,074	3,043	2,800	2,975	2,945	2,703
Countries	99	98	97	99	98	97

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under the GWF autocratic classifications using two–step difference and FOD GMMs. Regimes' coefficients are multiplied by 100. Both limiting and collapsing instruments are employed to contain instrument proliferation. For each estimator, column (1) presents results without any control variable. Religion and resource rent are included as control covariate in column (2) and column (3) respectively.

Table 4Y: The effect of HTW autocratic regime type on GDP per capita, balanced panel with year fixed effect (two-step GMM) (full regression)

	<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
log GDP 1st lag	0.650*** (0.147)	0.909*** (0.193)	0.758*** (0.205)	1.498*** (0.222)	1.072*** (0.148)	1.100*** (0.181)
log GDP 2nd lag	-0.0525 (0.0543)	-0.150** (0.0666)	-0.102 (0.0683)	-0.314*** (0.120)	-0.122 (0.0771)	-0.152 (0.0934)
log GDP 3rd lag	0.0868** (0.0356)	0.0837** (0.0409)	0.101** (0.0440)			
Electoral HTW	0.801 (2.220)	0.0792 (1.545)	0.0722 (1.947)	-1.305 (2.098)	-0.406 (1.162)	-0.758 (1.128)
Military HTW	0.697 (3.137)	-0.808 (2.606)	1.785 (3.804)	-5.611* (3.180)	-0.855 (2.098)	-2.356 (2.386)
Monarchic HTW	-29.93 (34.47)	-12.51 (12.30)	-8.186 (13.79)	-5.373 (8.324)	-1.783 (3.261)	-0.272 (4.549)
Christianity% 1st Lag		8.717 (42.91)	21.92 (47.91)		5.674 (21.88)	-5.371 (18.21)
Christianity% 2nd Lag		-14.15 (13.74)	-11.29 (13.87)		-14.54 (13.82)	-12.74 (18.59)
Christianity% 3rd Lag		10.25 (12.38)	1.521 (11.19)			
Islam% 1st Lag		16.11 (62.48)	22.98 (58.80)		27.15 (31.72)	37.69* (21.50)
Islam% 2nd Lag		-27.12* (14.01)	-23.33* (13.71)		-24.45* (13.27)	-22.88 (16.04)
Islam% 3rd Lag		10.98 (11.74)	3.323 (11.01)			
Buddhism% 1st Lag		-41.79 (106.2)	-52.31 (165.5)		-44.37 (65.23)	-60.61 (70.48)
Buddhism% 2nd Lag		20.02 (20.04)	17.20* (9.535)		31.17 (27.66)	20.59 (27.02)
Buddhism% 3rd Lag		-6.753 (11.31)	2.080 (9.544)			
Hinduism % 1st Lag		89.03 (240.2)	209.5 (404.8)		30.97 (68.65)	7.794 (67.65)
Hinduism % 2nd Lag		18.60 (18.34)	21.96 (18.97)		2.135 (24.72)	2.566 (27.03)
Hinduism % 3rd Lag		2.415 (14.99)	-3.935 (15.49)			

Continued

Resource Rent 1st Lag			0.254			-0.221
			(0.503)			(0.328)
Resource Rent 2nd Lag			-0.0453			-0.245
			(0.0935)			(0.164)
Resource Rent 3rd Lag			-0.112			
			(0.126)			
Observations	2,343	2,343	2,159	2,414	2,414	2,229
Countries	71	71	70	71	71	70

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under the HTW autocratic classifications using two-step difference and FOD GMMs. Regimes' coefficients are multiplied by 100. Both limiting and collapsing instruments are employed to contain instrument proliferation. For each estimator, column (1) presents results without any control variable. Religion and resource rent are included as control covariate in column (2) and column (3) respectively.

Table 4Y: The effect of HTW autocratic regime type on GDP per capita, unbalanced panel with year fixed effect (two–step GMM) (full regression)

	<i>Difference GMM</i>			<i>FOD GMM</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
log GDP 1st lag	0.571*** (0.139)	0.796*** (0.159)	0.551*** (0.147)	0.582*** (0.174)	0.761*** (0.211)	0.798*** (0.194)
Electoral HTW	0.755 (3.182)	-1.716 (2.583)	1.144 (4.883)	1.408 (2.845)	0.173 (2.237)	0.754 (3.678)
Military HTW	4.113 (3.898)	0.952 (2.911)	4.058 (5.336)	3.966 (3.626)	0.288 (3.237)	0.883 (3.831)
Monarchic HTW	-7.377 (46.65)	-36.78 (24.58)	-18.31 (22.17)	4.713 (21.53)	-12.08 (13.67)	-10.83 (16.05)
Christianity% 1st Lag		-5.912 (62.17)	-59.59 (68.97)		-14.90 (61.41)	-7.635 (60.12)
Islam% 1st Lag		-68.55 (41.93)	-46.96 (52.34)		-76.61 (76.57)	-61.69 (85.05)
Buddhism% 1st Lag		46.69 (129.1)	229.0 (160.4)		74.12 (118.4)	59.52 (105.0)
Hinduism % 1st Lag		-459.5 (354.9)	72.76 (648.3)		-160.4 (190.2)	-101.9 (232.8)
Resource Rent 1st Lag			0.413 (0.294)			0.191 (0.534)
Observations	3,074	3,043	2,800	3,074	3,043	2,801
Countries	99	98	97	99	98	97

Note: Robust standard errors in parentheses.. *** indicates $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. The table presents estimates of the effect of regime types on income level under the HTW autocratic classifications using two–step difference and FOD GMMs. Regimes' coefficients are multiplied by 100. Both limiting and collapsing instruments are employed to contain instrument proliferation. For each estimator, column (1) presents results without any control variable. Religion and resource rent are included as control covariate in column (2) and column (3) respectively.

APPENDIX 5: SOURCES OF DATA

Variables	Source of data
Growth rate of GDP per capita in PPP	Computed from Penn World Tables, version 9.0 " Expenditure–side real GDP at chained PPPs (in mil. 2011US\$)" by Feenstra et al. (2015)
Latitude	Latitude of country centroid by Gallup et al. (1998)
Religion	The percentage of a ceratin religion follower in a country taken from Zeev and Errol (2013). The raw data provides data every 5 years. By using the same level of percentage of year t for t ₁ to t ₄ the data is made annual.
Colonial legacy	Primary Colonial Ruler data by Paul (2014)
Resource rent	Total natural resources rents (% of GDP) data in World Development Indicators by World Bank (2017)
World Real GDP per capita growth rate	Computed from "GDP per capita (constant 2010 US\$)" data in World Development Indicators by World Bank (2017)
Region classification	United Nations, 2014, "Country Classification", Annex in " World Economic Situation and Prospects", UN, New York
World trade growth	Computed from WTO data on World Merchandise Trade (Export): http://stat.wto.org/StatisticalProgram/WsdbExport.aspx

APPENDIX 6. ORIGINALITY REPORT



HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
Ph.D. DISSERTATION ORIGINALITY REPORT

HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
ECONOMICS DEPARTMENT

Date: 29/06/2018Thesis Title: ECONOMIC GROWTH IN AUTOCRACIES

According to the originality report obtained by myself/my thesis advisor by using the Turnitin plagiarism detection software and by applying the filtering options checked below on 29/06/2018 for the total of 170 pages including the a) Title Page, b) Introduction, c) Main Chapters, and d) Conclusion sections of my thesis entitled as above, the similarity index of my thesis is 6 %.

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1. Approval and Declaration sections excluded
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I declare that I have carefully read Hacettepe University Graduate School of Social Sciences Guidelines for Obtaining and Using Thesis Originality Reports; that according to the maximum similarity index values specified in the Guidelines, my thesis does not include any form of plagiarism; that in any future detection of possible infringement of the regulations I accept all legal responsibility; and that all the information I have provided is correct to the best of my knowledge.

I respectfully submit this for approval.





29-06-2018
Date and Signature

Name Surname: ABDUREZACK HUSSEIN AHMEDStudent No: N11248580Department: ECONOMICSProgram: ECONOMICS (ENGLISH)Status: Ph.D. Combined MA/ Ph.D.**ADVISOR APPROVAL**

APPROVED.

Asst. Prof. Dr. M. Ayhan Attar 
(Title, Name Surname, Signature)

APPENDIX 7: ETHIC COMMISSION FORM

	<p>HACETTEPE UNIVERSITY GRADUATE SCHOOL OF SOCIAL SCIENCES ETHICS COMMISSION FORM FOR THESIS</p>										
<p>HACETTEPE UNIVERSITY GRADUATE SCHOOL OF SOCIAL SCIENCES <u>ECONOMICS</u> DEPARTMENT</p>											
Date: <u>29/06/2018</u>											
Thesis Title: <u>ECONOMIC GROWTH IN AUTOCRACIES</u>											
My thesis work related to the title above: <ol style="list-style-type: none"> 1. Does not perform experimentation on animals or people. 2. Does not necessitate the use of biological material (blood, urine, biological fluids and samples, etc.). 3. Does not involve any interference of the body's integrity. 4. Is not based on observational and descriptive research (survey, interview, measures/scales, data scanning, system-model development). 											
I declare, I have carefully read Hacettepe University's Ethics Regulations and the Commission's Guidelines, and in order to proceed with my thesis according to these regulations I do not have to get permission from the Ethics Board/Commission for anything; in any infringement of the regulations I accept all legal responsibility and I declare that all the information I have provided is true.											
I respectfully submit this for approval.											
 <u>29-06-2018</u> Date and Signature											
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Name Surname:</td> <td><u>ABDUREZACK HUSSEIN AHMED</u></td> </tr> <tr> <td>Student No:</td> <td><u>N11248580</u></td> </tr> <tr> <td>Department:</td> <td><u>ECONOMICS</u></td> </tr> <tr> <td>Program:</td> <td><u>ECONOMICS (English)</u></td> </tr> <tr> <td>Status:</td> <td> <input type="checkbox"/> MA <input checked="" type="checkbox"/> Ph.D. <input type="checkbox"/> Combined MA/ Ph.D. </td> </tr> </table>		Name Surname:	<u>ABDUREZACK HUSSEIN AHMED</u>	Student No:	<u>N11248580</u>	Department:	<u>ECONOMICS</u>	Program:	<u>ECONOMICS (English)</u>	Status:	<input type="checkbox"/> MA <input checked="" type="checkbox"/> Ph.D. <input type="checkbox"/> Combined MA/ Ph.D.
Name Surname:	<u>ABDUREZACK HUSSEIN AHMED</u>										
Student No:	<u>N11248580</u>										
Department:	<u>ECONOMICS</u>										
Program:	<u>ECONOMICS (English)</u>										
Status:	<input type="checkbox"/> MA <input checked="" type="checkbox"/> Ph.D. <input type="checkbox"/> Combined MA/ Ph.D.										
<p><u>ADVISER COMMENTS AND APPROVAL</u></p> <p><u>Appropriate.</u></p> <p style="text-align: center;"><u>Dr. Öğr. üy. M. Ayhan Attar</u> </p> <p style="text-align: center;">(Title, Name Surname, Signature)</p>											