Authoritarian Regimes and Economic Development: An Empirical Reflection

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Since the recent emphasis on institutions for overall economic development of the countries, the research in this strand has expanded enormously. In this study, we want to see the impact of political institutions on economic development in pure cross-country setting. We take the Human Development Index (HDI) as a measure of economic development and use two alternative measures of dictatorship. We find that dictatorship is adversely affecting economic development in our sample of 92 countries. For instance, transition from extreme dictatorship to ideal democracy would increase HDI by 17 percent. Moreover, our results are robust to alternative specifications and the problems of endogeneity and reverse causation as is shown by the results of 2 Stages Least Squares (2SLS).

JEL Classification: P16, H11, H41, H42
Keywords: Economic Development, Human Development Index, Dictatorship

1. INTRODUCTION

The implications of political orientations have long been debated in the profession of economics almost throughout the second-half of the 20th century. In particular, the implications of democracy for economic freedom, and overall economic development have been the focus of literature, since the industrial revolution. In the capitalistic structure, democratic institutions are the political aspect of the broad set of institutions associated with capitalism. It is presumed proximately that economic freedom encourages Schumpeterian creative destruction which, in turn, results in higher productivity, and, thus, overall economic development [Acemoglu and Robinson (2012)]. Alternatively, in order to have sustained economic development in a society, economic freedom needs to be ensured which is only possible in democratic structure. In contrast, dictatorship is usually associated with expropriation. The fear of expropriation makes the innovators, investors and the new entrants shy in investing in research and development and in long term investments respectively. Besides, the anti-militarism claims that democracies allocate fewer resources on military spending; and, instead, devote more resources to the provision of public goods which translates in higher economic development. In comparison, dictators allocate more resources to military and other types of patronage-related activities. In this paper, we make an endeavour to reinvestigate the repercussions of authoritarian regimes for economic development in the cross-country setting.

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Broadly, an authoritarian regime is defined as a system in which the concentration of power lies within few hands. In its worst form, there is a single individual-centred dictatorship. The dominant coalition in this form of the government usually does not grant significant powers to its populous or their representatives. Instead, it usually delegates power to special interest groups such as unions, churches, legislature, and political parties as long as such organisations did not hold the regimes accountable. However, the strategies that dictators need to apply in order lengthen their rule may vary across different regimes. For instance, the use of force, self-regulated constitutional process, patronage, propaganda, control of information etc. are the most obvious strategies from history [Magalhaes (1995)]. Although most of these strategies are socially undesirable; but they have often been successful as is shown by the persistence of dictatorships. According to Deacon (2009), 68 percent of the world's countries are governed by nondemocratic regimes during the last half of the 20th century, and over one-third remained nondemocratic as of 2000. Similarly, with regard to the persistence of military rule, Mulligan, *et al.* (2004) claim that three-fourth of the countries in the world have experienced direct military rule since 1945. Thus, the persistence of dictatorship has been a never-ending reality on the space.

The politically dominant coalition in authoritarian regimes also has a privileged position in the economic sphere as the political system is often used to regulate competition in order to create or distribute rents [North, *et al.* (2009)]. Given the absolute power with the dictator and his close associates, we conjecture that dictatorships to be negatively associated with Schumpeterian creative destruction, and, thus, economic development. This conjecture may be justified by a variety of factors. First, in order to safeguard their tenure and to remain in power for a longer period of time, dictators allocate fewer resources to the provision of social service, in general and education, in particular.[1] Second, the fear of expropriation discourages the investors, new entrants and innovators in making investments. Third, dictators may create regional differences, or group differences. For instance, authoritarian governments may have an incentive to invest less in the process of human development specifically in the impoverished regions. This is because human advancement is likely to create highly mobilised rural politics which has been usually a threat to the dictatorial regimes.[2] Rest of the paper is organised in four sections. Section 2 provides some glimpse of related literature in order to clarify the issue discussed in the paper. In Section 3, we provide the theoretical background, the details of data, the construction of variables and the econometric methodology. Section 4 provides the empirical findings of our analysis while Section 5 concludes the paper.

2. REVIEW OF LITERATURE

The existing literature proclaims that dictatorship has adverse implications for political, economic and social aspects of life. In terms of politics, it hampers the institutionalisation and stabilisation of democratic norms in societies [Ikpe (2000)]. Also, it boosts patronage political culture and encourages the development of clientalistic networks [Wintrobe (2000)]. Similarly, in terms of economic development, dictatorship and its associated absolutist

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[1]For instance, education empowers the young and improves the ranks of the middle class. According to Lipset (1959), educated individuals serve as agents of liberalisation and they might possibly replace dictator.

[2]Van de Walle (2001) finds that most contemporary African elites are only interested in the needs and interests of small fraction of population as compared to general population.

economic institutions discourage Schumpeterian creative destruction [North (1990); Wintrobe (2000); Acemoglu, *et al.* (2010); Acemoglu and Robinson (2012)]. As is stated earlier, the fear of predation by dictators discourages investments in research and development and new entry. Thus, the theoretical conjecture is that dictatorship is inversely related to economic progress of the societies.

In terms of social aspect, authoritarian regimes are associated with lower provision of social services. For instance, according to the United Nations Development Programmes (UNDP) (1994), the world poorest countries spend less on peoples' welfare such as education and health and use their scarce foreign exchange reserves to purchase weapons and spend more on military.[3] Likewise, Lake and Baum (2001) notes that the levels and quality of public services declines when dictatorship is imposed. For instance, when Nigeria came under military rule in 1983, the primary school enrolment fell from 81 percent to 72 percent and childhood disease immunisation rates has been fallen by more than one-half. In Argentina, the rural population's access to safe drinking water increases after civilian rule that established in 1973, but then fall short markedly after the military coup in 1976. During 1970 in Greece's infant mortality rate drop by one-fourth as the country made the transition to democracy. Qualitative evidence suggests that that the quality of public services declines when dictatorship is imposed and improves when dictatorship is replaced [Deacon and Saha (2005)]. For instance, according to Deacon (2009), countries that either lack a legislature or have only a rubber stamp body enrol only 20 percent of their school age populations in secondary school; countries with effective legislatures enrol 81 percent. Thus, there is substantial qualitative evidence across the globe as far as the adverse consequences of authoritarian regimes are concerned.

In general, the world has experienced two types of dictatorships. In the first case, the military rules directly where it decides about the patronage to itself, and the provision of non-excludable public goods to citizens. In the other type, the dictatorship is rather civilian while the military serves as an agent of the elite in that structure. In such arrangements, the civilian dictators determine the size of patronage to the military, the provision of private benefits to the special interest groups, and the provision of non-excludable and non-rival public goods to the citizens. In both of these forms, the military provides the coercive force needed to maintain the regime security. For instance, the military may monitor the activities of competing groups; or even it may conduct violence on the competing groups. In return, the military receives rents via a share of government expenditure [Hewitt (1992); Sandler and Harley (1995); Goldsmith (2003)]. Alternatively, since dictators need lesser support relative to the representative democrats from the public; therefore, they provide lesser public goods compared to their democratic counterparts. In this study, we conjecture that the provision of social services and hence the economic development should be poor in authoritarian regimes.

3. THEORETICAL FRAMEWORK, THE CONSTRUCTION OF VARIABLES AND DATA

In this section, we provide the theoretical background for our analysis. In addition, we provide the details of the construction of variables and their sources of data. Finally, we provide a glimpse of the data by providing and discussing the summary statistics.

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[3]For instance, in 1992, world military expenditure is approximately equivalent to the income of almost half the world's population.

3.1. Theoretical Framework

The most commonly used measure for economic performance is the growth rate of the Gross Domestic Product (GDP); however, the growth rate in GDP is neglecting several other aspects of human development. In particular, the growth rate of GDP does not show us the distributive aspect of growth or the trickle-down effect as is known in the literature. Therefore, we prefer Human Development Index (HDI) as our measure of economic development; and, accordingly, we use it as our dependent variable. As far as the list of explanatory variables is concerned; the existing literature has identified a variety of factors that can cause cross-country disparities in economic development. In this study, our focus is on the impact of authoritarian regimes while controlling for a bunch of other established variables. We control for variables like social infrastructure, industrialisation, population density, remittances, ethnic heterogeneity etc. There are a variety of theoretical justifications for the inclusion of these controls. For instance, industrialisation raises the incomes of individuals through the creation of jobs opportunities, thereby having positive implications for economic development. Alternatively, as industrialisation improves the return to human capital; so it promotes innovation, labour skills, and technical education [Hawash (2007)].[4]

Likewise, with regard to the social infrastructure, Chin and Chou (2004) find that the countries which invest more on social infrastructure have been able to achieve higher levels of economic development. This is because social infrastructure generates positive externalities. Education and health are social goods. For instance, education as a social infrastructure enhances the growth process through the provision of skilled labour force, entrepreneurs, and professionals. Accordingly, there is an increased emphasis on spending on educations. For instance, UNESCO recommends that at least 15 percent of the national expenditure should be allocated to education. Likewise, public health is a major determinant of labour productivity and efficiency which, in turn, has beneficial implications for the overall economic performance. As far as the relationship between remittances and economic development is concerned; it has been verified by a number of studies. For instance, Iqbal and Sattar (2005) conclude that remittances are one of the important factors that significantly contribute to economic development in Pakistan.[5] In the same way, Adam (2006) finds that remittances generally reduce poverty and can redistribute income.[6] The justification is that remittances inflow can enhance capital accumulation in recipient countries [Adam (2006); Andenutsi (2010)]. Besides, remittances may result in improvements in the credit worthiness of countries [Fayisaa and Nsiah (2010)].

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[4]According to UNDP (2005), overall the industrialisation has a strong, significant and positive impact on human development in Kenya. The report focuses on the relationship of industrialisation with different indicators of human development like income, education, employment, agricultural productivity, skill formation and entrepreneurship. At the same time, the study also mention some challenges that limit the process of industrialisation such as rapid urbanisation, uneven development and limited skills over specialisation, poor worker health, environmental degradation and over-crowded services. The study projects that if industry flourish, it would be supportive for human development via tackling poverty, improving opportunities to work, providing clean and healthy environment, creating job security and ensuring quality of infrastructure such as training and education, addressing gender disparity, and creating information and awareness.

[5]They do empirical exercise for Pakistan for the period, ranging from 1972 to 2003.

[6]Also Andenutsi (2010) empirically investigates the long run impact of remittances on human development in lower income countries. Using a panel of eighteen Sub-Saharan countries, for the period from 1987 to 2007, he finds that remittances have a significant positive impact on the human development in Sub Saharan countries. Fayisaa and Nsiah (2010) find similar results for 37 African countries.

To some, ethnic heterogeneity also has implications for economic development. For instance, ethnic heterogeneity may cause rigidity; and, thereby, may slow down the pace of economic development. Alternatively, ethnical homogenous societies presumably face less risk of violent conflicts. Relatedly, Filmer and Pritchett (1999) explore that ethnical homogenous societies like Sweden and Japan have been able to get impressive levels of human development.[7] Likewise, the distributive justice prevails in societies where there are common language and common culture as these characteristics are usually associated with equal opportunities for all. Furthermore, the scale of societies like population or the structure of societies like population density, rural-urban decomposition etc. might have implications for development. For instance, Molina and Purser (2010) find that demographic transition, urbanisation, and declining fertility rate improve life expectancy and literacy rate.[8] Also, the famous "Dutch Disease" presumes that countries having abundance of natural resources end up with higher levels of rent-seeking and lower levels of economic development [Auty (1990); Sach and Warner (1997, 2001)]. Likewise, to some, foreign aid is a curse like natural resources as it worsens the institutions of countries; and thereby may have negative implications for economic development [Knack (2001); Brautigam and Knack (2004); Djankov, *et al.* (2008)]. The inclusion of all these controls has two advantages. First, by incorporating these, we would be able to eliminate the econometric problem of omitted variables. Second, it would provide us an opportunity to check the sensitivity of our variable of interest, i.e. authoritarian regimes. Thus given this historical background, we conjecture that:

$$HDI = f\,(DIC,\ SI,\ IND,\ PD,\ OP,\ REM,\ UB,\ SXP,\ AID,\ SAF,\ EH).$$

HDI denotes human development index. Similarly, the authoritarian regimes are denoted by *DIC*, stands for dictatorship. Likewise, *SI*, *IND*, *OP* show social infrastructure, industrialisation, and openness, respectively. Ethnic heterogeneity is denoted by *EH* while urbanisation is denoted by *UB*. Similarly, *REM*, *PD*, *SXP*, and *PD* represent remittances, population density, share of natural resources, and population density, respectively. Finally, in order to control for if our results are not driven by particular countries, we control for Sub-Saharan Africa (*SAF*).

3.2. Description of Variables and the Sources of Data

Economic development is multi-dimensional which incorporate factors like health, education, working environment, market condition, and domestic and global policies besides economic growth. Since economic growth is narrow in its sense; therefore, we use HDI as our dependent variable which is an aggregate measure of development covering three dimensions health, education, and income.[9] The data on HDI is taken from the Human Development Reports (HDR) published by the UNDP.

[7]For instance, the study shows that these countries are free from racial, ethnic and linguistic divisions. Accordingly, coherence and brotherhood in such homogenous societies fasten the pace of development.

[8]While using data from 1970 to 2005, they find that human development trend are robust with the longer term trend of demographic and population change.

[9]It is the geometric mean of three indexes, i.e. the Life Expectancy Index, the Education Index and the Income Index. These component indexes are based on life expectancy at birth, mean years of schooling, expected years of schooling, and gross national income per capita. For the detailed definition, see Table A3 in the Appendix.

The first measure for dictatorship is taken from the project of Polity IV. The Polity IV data base of Marshall and Jagger (2000) rates countries on the basis of political competition, the openness and competitiveness of executive recruitment, and the extent of legislative and judicial constraints on the chief executive. Using the database, we construct the indexes that by subtracting the score on autocracy from the score of democracy in order to measure a nation's polity score. It is adjusted in such a way that it ranges from 1(extreme dictatorship) to 0 (ideal democracy), averaged from 1964 to 2009, depending upon the availability. In order to check the sensitivity, we also use another measure of dictatorship which is based Golder (2005). Golder (2005) measures regime type in a country for a typical year by introducing a dummy variable where democracy takes a value 0 while dictatorship takes a value of 1. This variable is averaged from 1960 to 2000 and constructed in such a way that ranges from 0 (ideal democracy) to 1(extreme dictatorship).

In addition to dictatorship, some control variables like social infrastructure, ethnic heterogeneity, industrialisation, population density, and remittances represent all the other factors that could probably affect the process of economic development. In order to measure for capital accumulation, we use a measure of the industrialisation of a country. In the existing literature, a variety of proxies has been used in order to see the impact of industrialisation on economic development. Here, in this study, we use the average industry value added as a percentage of GDP. It is a net output of manufacturing sector after adding and deducting intermediate product. Likewise, we use social infrastructure in order to see the impact of human capital accumulation. For this purpose, we use the average of education expenditure along with health expenditure as percentage of GDP as a proxy of social infrastructure. In order to measure for the scale of an economy, we take three different variables. First is the population density which is defined as mid-year population divided by land area in square kilometres. The data is taken from 1960 onwards from World Development Indicator and is averaged over the available periods for all countries. Second, we also use openness which is measured as the sum of imports and exports of goods and services as percentage of GDP which is taken from the World Development Indicators, and is averaged from 1960 to 2013. Finally, we also use the area which comprises the total area in square kilometres and is taken from the World Development Indicators.

Remittances have been one of the important sources of financing different activities in developing countries. Therefore, to see its impact, we use the average of personal remittances as percentage of GDP as one of the control variables. It comprises all current cash transfer or in kind received by resident households to or from non-resident households. Again the data is taken from the World Development Indicators from 1960 to 2013. Recently, there has been an increased emphasis on the development of cities for sustainable development. In order to measure for this factor, we use urbanisation in the list of our control variables. It is taken as the average value of urban population as percentage of total population from 1960 to 2013, taken from the World Development Indicators. In order to control for heterogeneity across the nations, we use ethnic heterogeneity. This measure of Ethno-Linguistic Fractionalisation is based on Easterly and Levine (1997) which is the likelihood that the two randomly selected individuals from a particular country not belonging to the same ethno-linguistic group.

For instance, the greater probability entails more ethno-linguistically diverse society. In order to see the impact of Dutch Disease and the Curse of Aid, we use the share of natural resources and foreign aid. The share of natural resources is measured as the percent share of natural resources exports (including agricultural and raw material exports, fuel exports, food exports, and ores and metal exports) in GDP, averaged from1960 to 2000. Likewise, to see for the curse of aid, we use the total aid received by a country which represents Official Development Assistance (ODA) and the other official aid received in constant US dollars, taken as average from 1960 to 2013. In order to see that our results are driven by a set of particular countries, we also use the dummy for Sub-Saharan African (SAF) countries which takes a value of 1 if the country belong to Sub-Saharan African countries, 0 otherwise.

3.3. Data and Summary Statistics

The analysis is based on cross-section data and comprises mainly on annual averages. However, the data is highly variable specific, depending upon the availability of data. There are three justifications for the use of pure cross-section data. First, the panel is not balanced, i.e. the data is not available for many variables for a very long period for all countries. Second, the variable of our interest, i.e. the institutional variable is highly persistent. For instance, democracy in advanced countries or monarchy in Arab countries, and military rule in other countries are highly persistent over the last fifty years. Thirdly, the potential endogeneity caused by time series analysis in case of some variables restrict us to only the cross-section analysis.

Table 1 provides the summary statistics of variables in the analysis. Given the values of the dictatorship 1 and dictatorship 2, almost 40 percent of the countries in our analysis have experience dictatorship since 1960. Likewise, the continent wise distribution shows that the European and Neo-European countries have experienced almost ideal democracy over the entire course of history. In contrast, Asia and Sub-Saharan Africa have experienced relative higher instances of dictatorships. The average value of Human Development Index (HDI) for our sample of the world is 0.65. Again, European and Neo-European countries are dominating in terms of human development while Sub-Saharan countries are suffering with an average of 0.45 for HDI and 0.30 for inequality adjusted HDI.

Likewise, in terms of social infrastructure and urbanisation, the European and Neo-European countries are performing better than the rest of the world. Alternatively, the European and Neo-European countries are relatively more urbanised and well-equipped with social infrastructure relative to Asian and Sub-Saharan Africa. Since 1960, Asia is dominating in terms of the Industrial value added as percentage of GDP as compared to other regions. This may be due to the higher level of industrialisation in the Asian tigers and the recently emerging economies like China, Malesia, India etc.[10] Population density is higher in Europe and Asia as compared to other regions. Asia, Neo-Europe, and Sub-Saharan Africa are relatively higher ethnically diverse societies while Asia and Sub-Saharan Africa are natural resources rich regions in our sample.

[10]The Asian Tigers comprise Taiwan, Hong Kong, Singapore, and South Korea.

Table 1

Summary Statistics of the Variables

Variable	World	Europe	Asia	Sub-Saharan Africa	Neo-Europe	Others
Human development index	0.65	0.84	0.69	0.45	0.89	0.65
	(0.17)	(0.401)	(0.11)	(0.11)	(0.013)	(0.09)
Inequality adjusted HDI	0.65	0.46	0.50	0.30	0.37	0.54
	(0.17)	(0.25)	(0.24)	(0.27)	(0.28)	(0.28)
Dictatorship1	0.45	0.104	0.62	0.61	0	0.43
	(0.27)	(0.178)	(0.35)	(0.18)	(0)	(0.26)
Dictatorship2	0.43	0.157	0.76	0.92	0	0.56
	(0.32)	(0.291)	(0.36)	(0.11)	(0)	(0.37)
Industrial value added as% of GDP	32.2	29.38	41.5	26.8	28.2	33.9
	(12.4)	(4.71)	(15.6)	(13.0)	(4.35)	(10.9)
Social infrastructure	7.71	11.87	5.87	5.75	12.1	7.17
	(3.07)	(2.183)	(2.03)	(1.69)	(1.16)	(1.87)
Population Density	86.1	140.6	155.6	40.0	11.8	54.5
	(120.9)	(116.5)	(195.8)	(38.9)	(12.1)	(70.3)
Openness	54.3	72.0	58.5	43.5	36.1	53.3
	(41.1)	(76.5)	(32.2)	(16.5)	(16.2)	(26.5)
Remittances	1.84	0.93	1.66	1.67	0.40	2.92
	(2.29)	(1.21)	(2.06)	(1.76)	(0.48)	(3.03)
Urbanisation	49.0	68.3	48.0	27.8	80.3	51.1
	(23.1)	(12.4)	(23.4)	(13.2)	(5.03)	(19.4)
Ethno-Linguistic Fractionalisation	0.23	0.16	0.28	0.24	0.56	0.19
	(0.28)	(0.26)	(0.33)	(0.26)	(0.43)	(0.24)
Area (in thousands square Kilometers)	1050.9	229	1225.6	669.25	6955.1	972.1
	(2024.8)	(184.6)	(2283.1)	(537.25)	(4574)	(1620.9)
Natural Resources	16.5	9.74	22.0	15.8	10.2	19.4
	(13.4)	(9.77)	(18.4)	(11.2)	(6.29)	(13.1)
	14.73	3.9	12.51	21.81	0	17.71
Aid Per Capita (in US $)	(19.01)	(11.4)	(27.26)	(10.62)	(0)	(20.53)
Sub Saharan Africa	0.24	0	0	0.92	0	0
	0.43	(0)	(0)	(0.28)	(0)	(0)

Note: Each entry is the Average of the variable with Standard Deviation in the Parenthesis.

4. EMPIRICAL RESULTS AND DISCUSSION

Table 2 summarises the Ordinary Least Squares (OLS) estimation for the Human Development Index (HDI). As is mentioned earlier, we use HDI as an indicator of development instead of GDP growth. Again, HDI is based on the approach of achievements which focuses on outcomes and gives a nicer picture of development. Also, it overcomes the limitation of mean perspective view. In columns I and II of Table 2, we show the estimation of our baseline models for our two measures of dictatorships, i.e. dictatorship1 and dictatorship 2, respectively. These baseline regressions include industrialisation, social infrastructure, population density, and openness as control

Table 2

variables. As is evident that dictatorship1, which is based on nations' polity scores, is adversely affecting HDI in a significant way. For instance, it shows that going from ideal democracy to extreme dictatorship would cause a reduction of 0.17 in the index of HDI. Alternatively, complete transition from extreme dictatorship to ideal democracy would increase human development by 17 percent. Likewise, for our second measure of dictatorship, which is based on dummy for dictatorship, complete transition from extreme dictatorship to ideal democracy would increase human development by 13.5 percent. This result strongly support the claim that dictatorial regimes are less interested in investing in the provision of social services like education, health etc. In other words, democratic regimes take care of the needs of the wide cross-section of society. In both of these specifications, industrialisation, social infrastructure, and population density are significantly contributing to human development while openness has no significant influence on human development. The significance of industrialisation and social infrastructure are consistent with the empirics of traditional growth theory. Population density and openness are both serving as measures of size of the economies. That may be the justification that population density is significant while openness is not. Overall, these baseline explanatory variables explain 70 percent of the variations in HDI which is indicated by the value of R^2.

In order to check the robustness of our baseline results, from column III onwards, we do the sensitivity analysis by checking for additional controls. For instance, in columns III and IV, we add remittances to the list of explanatory variables for our two measures of dictatorship, respectively. In both of the cases, we find not significant effect of remittances on human development; however, this result is unexpectedly contrary to much of the findings with regard to the impact of remittances. The reasons may the high collinearity between remittances and dictatorship or between remittances and population density; however, this statement is not complete. Likewise, in columns V and VI, we add urbanisation to the baseline regressions for both measures of dictatorship; and we find that urbanisation have significant positive effect on human development.

Since there is no significance difference between the results of the two measures of dictatorships; so column VII onwards, we do the sensitivity analysis with only dictatorship1, which is based on polity score. For instance we add ethnolinguistic fragmentation, area of the country, country's natural resources, aid received by the country, and the dummy for Sub-Saharan Africa in columns VII, VIII, IX, X, and XI, respectively. We find that area has beneficial impact on the level of human development which is consistent with the results with regard to the size of the market, i.e. the greater the size of the market, the higher is the level of development. Similarly, our results confirm the prevalence of Dutch Disease with respect to the share of natural resources, i.e. the higher the natural resources in a country, the lower is the level of its development. Also, the dummy for Sub-Saharan Africa is significant which indicates the lower level of development in the Sub-Saharan Africa. Aid and the ethno-linguistic fragmentation have no significant effects on human development. One finding is notable that, in all of the specifications in the sensitivity analysis, the significance of our main variables and the other baseline explanatory variables remains intact.

After getting the initial estimates, it is always necessary to the check that the results are robust to the problems of endogeneity and reverse causation. For instance

it is quite possible that higher development liberalises the political process which, in turn, may replace the dictatorship. Also, it is equally likely that the higher levels of development may enhance the spending on social infrastructure. In order to check the robustness of our results to these problems, we adopt the approach of instrumental variables. In the second case, we avoid the problem by using the average of spending on education and health instead of the outcome variables for social infrastructure. In the first case, we use legal origin and Muslim denomination as instruments for dictatorship. Legal origins are regarded as colonial legacy and most commonly used instrument for the quality of institution [La Porta, *et al*. (1999)]. Whereas, since the spread of Islam, Muslim rulers have attracted that earth belong to God and they rule as a God's deputy or lieutenant on this earth. Thus, Muslim beliefs have an associated legitimacy for the persistence of dictatorships. Second, it is a Muslim belief that religion and politics are not separated entities. This is also evident by the fact that Muslim majority countries are less democratic relative to the non-Muslim majority countries. To the best of our knowledge, we are the first to use Muslim denomination as an instrument for dictatorship. It also has been shown that there is negative correlation between Islamic denomination and democracy. For instance, according to the data of the Polity IV project which ranks the countries from extreme dictatorship (−10) to ideal democracy (10), the average score for non-Muslim majority countries is 5.45 which is closer to ideal democracy. In contrast, the average score for Muslim majority countries is −2.16 which is rather dictatorial. Moreover, none of the Muslim countries has highest score in democracy.

Similarly, according to La Porta, *et al*. (1999), the legal origins of coloniser determine the current legal system and institutions which, in turn, affect economic outcomes like economic development. It has been shown that legal origins shape institutions because different legal traditions, imposed during colonisation, have different implications for the legal system of native population.[11] Thus, we also use the British Common Law as an instrument for dictatorship. These instruments are expected to circumvent the problem of endogeneity, i.e. Muslim denomination and legal origins affect the current political institution; but they don't have direct implication for the outcomes of development. Also, the instrument does not have any role in the current policy choices.

Given the instruments, the results of 2 Stages Least Squares (2SLS) are given in Table 3. Firstly we check whether the alternative measures of dictatorship are endogenous and we find that there exists the problem of endogeneity. Alternatively, our 2SLS results will be consistent. For verifying the validity of instruments, we apply the Sargan Test. The results of Sargan Test indicate that our instruments are valid.[12] The results of 2SLS show that both measures of dictatorship negatively affect economic development in a significant way. Alternatively, if countries make transition from dictatorship to democracy there would be improvement in the level of Human Development index.

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[11]For instance, according to La Porta, *et al*. (1999), the British Common Law is relatively more open as compared to French Civil Law and Socialist Law.

[12]The results show that the P-values > 0.05 which implies that H_0 cannot be rejected; hence our instruments are valid.

Table 3

2SLS Regressions for Human Development Index

Dependent Variable: Human Development Index

Explanatory Variables	I	II	III	IV	V	VI	VII
Constant	0.543***	0 .587***	0.394***	0.435***	4.17***	0 .495***	0. 65***
	(0.037)	(0.038)	(0.037)	(0.0501)	(2.00)	(0.041)	(0.035)
Dictatorship1	-0.193***		-0.178***			-0.241***	-0.283***
	(0.068)		(0 .057)			(0.073)	(0.054)
Dictatorship2		-.278***		-.172***			
		(0.058)		(.055)			
Industrialisation	0.006***	0 .007***	0 .003***	0.003	0.005***	0.009***	0.005***
	(0.001)	(0.0009)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Social infrastructure	0.018***	0 .017***	0.013***	0 .023***	.017***	0.027	0
	(0.0034)	(.0043)	(.003)	0(.0037)	(0.003)	(0.0047)	.0187***
							(0.005)
Population density	0.00006	0.00001	0 .0001**	0.0001	0.0003	-0.00003	-0.00008
	(0.0001)	(0.00009)	(0.00007)	(0.00007)	(0.0002)	(0.0001)	(0.00009)
Openness	0.0003	0.0004	0.00002	0.0001	0.0007***	0.001***	0.0001
	(0.0002)	(0.0002)	(0.0003)	(0.0003)	(0.0002)	(0.0004)	(0.0002)
Urbanisation			0.0045***	0.004***			
			(0.0006)	(0.0007)			
Area					1.52e-08*		
					(9.12e-09)		
Share of Natural Resources						0-.005***	
						(0.002)	
Sub Saharan African							-0.169***
							(.028)
Adjusted-R^2	0.65	0.86	0.66	0.81	0.36	0.63	0.74
Wald-chi2	58.5***	63.4***	318.4***	278.9***	277.2***	60.9***	275.9***
N	92	92	92	92	92	92	92

Note: * Significant at 10 percent; ** Significant at 5 percent; *** Significant at 1 percent. Robust Standard Errors in the Parenthesis. In 2SLS, the R^2 has no statistical meaning and therefore is omitted from the table. For all of our specifications: For the Sargan test statistic P-Value >0.05, which implies the validity of instruments. Similar comparing the OLS coefficients with those of 2SLS: For Hausman t-statistic, P-Value>0.05 for 6 cases, which implies no significance difference between OLS and 2SLS estimates in these cases. We report 2SLS results only for those specification in which some of the coefficients are significant in case of OLS along with baseline regressions.

5. CONCLUSION

This study is motivated by the recent research on the institutional perspective of economic development. The institutional perspective of economic development proclaims that the traditional factors like capital accumulation, including both physical and human, and technological change etc. are only the proximate causes of development while the institutions are the fundamental ones. Given this argument, we want to see the impact of political institutions on economic development in a cross-country setting. The dependent variable in the analysis is Human Development Index (HDI while two different measures of dictatorial regimes have been used. The sample comprises ninety two countries and most of the variables are taken as averages from 1960 to 2013. Besides two measures of dictatorship which are proxies for political institutions, we control for bunch of other factors like industrialisation, social infrastructure, population density, urbanisation, remittances, shares of natural resources wealth, foreign aid, ethno-linguistic fragmentation, and Sub-Saharan Africa. We conjecture that dictatorship to be associated inversely with HDI.

We find that dictatorship hampers economic development in list of the countries used in the analysis. The justification for the results is that dictators spend less on the provision of social services such as education, health, safe drinking water, and public sanitation etc. Thus, we conclude that transition from dictatorship to democracy would improve the level of human development across the globe. Our results are robust to different specifications which we conducted by using different set of controls in different models. Also, our results are robust to the problems of endogeneity and reverse causation.

APPENDIX

Table A1

Results of the Sargan Test for Over-Identifying Restriction Human Development Index

| Specification | Sargan Results | |
	Sargan Chi- Square Values	P -values
I	1.16886	0.2796
II	2.374	0.315
III	0.085	0.77
IV	.254085	0.6142
V	3.675	0.118
VI	1.39	0.124
VII	1.941	0.163

Table A2

Regional Divide of countries.

Regions	No. of Countries	List of Countries
Europe	18	Austria, Belgium, Bulgaria, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, United Kingdom
Asia	18	Bangladesh, Sri Lanka, China, India, Indonesia, Iran, Japan, Kuwait, Malaysia, Oman, Pakistan, Qatar, Saudi Arabia, Vietnam, Syria, Turkey, South Korea, UAE
Sub- Saharan Africa	24	Angola, Botswana, Cameroon, Central African Republic, Chad, Democratic Republic, Ethiopia, Gabon, Ghana, Guinea, Kenya, Madagascar, Mozambique, Niger, Nigeria, Senegal, Sierra Leone, South Africa, Zimbabwe, Togo, Uganda, Tanzania, Burkina Faso, Zambia, Mali
Neo- Europe	4	Australia, Canada, New Zealand, United States of America
Others	28	Algeria, Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Jamaica, Libya, Mexico, Morocco, Nicaragua, Panama, Papua New Guinea, Paraguay, Peru, Sudan, Trinidad and Tobago, Uruguay, Venezuela, Tunisia, Egypt

Table A3

Summary of the Definition and Sources of Variables

Variable	Definition	Source
Human Development Index	It is the geometric mean of three indexes, i.e. the Life Expectancy Index, the Education Index and the Income Index. These component indexes are based on life expectancy at birth, mean years of schooling, expected years of schooling, and gross national income per capita. Life Expectancy Index(LEI)$=\frac{LE-20}{85-20}$ Education Index (EI)$= \frac{MYSI-EYSI}{2}$ Mean Years of Schooling Index (MYSI)$=\frac{MYS}{15}$ Expected Years of Schooling Index (EYSI)$=\frac{EYS}{15}$ Income Index(II)$=\frac{Ln\ (GNIPC)-Ln(100)}{Ln(75,000)-Ln(100)}$ Human Development Index(HDI)$=\sqrt[3]{LEI*EI*II}$	Human Development Report published by UNDP
Dictatorship1	Polity IV project data on Polity=democracy-autocracy. It is constructed such that it ranges from 1(Extreme Dictatorship) to 0(Ideal democracy), averaged from 1964-2009, depending upon availability.	Polity IV, (Marshall and Jaggers, 2000)
Dictatorship2	This indicator is based on regime type by a dummy variable where democracy takes a value 0 while dictatorship takes a value of 1 in a Particular year. It is averaged from 1960 to 2000, so that it becomes an index ranging from 1(Extreme Dictatorship) to 0(Ideal Democracy)	The data on Yearly regime type is taken from Golder (2005)
Industrial value added	Average industry value added as a percentage of GDP. It is a net output of manufacturing sector after adding and deducting intermediate product.	World Development Indicators, World Bank

Continued—

Table A3—(*Continued*)

Social infrastructure	We used average of education expenditure along with health expenditure as % of GDP as a proxy of social infrastructure.	World Development Indicators, World Bank
Population density	Population density is defined as midyear population divided by land area in square kilometre.	World Development Indicators, World Bank
Openness	It is measured as the sum of imports and exports of goods and services as percentage of GDP. It is averaged from 1960 to 2013.	World Development Indicators, World Bank
Remittances	The average of personal remittances as a percentage of GDP. Personal transfers consist of all current cash transfer or in kind received by resident households to or from non-resident households. Data is taken from 1960 to 2013.	World Development Indicators, World Bank
Urbanisation	Average of urban population as percentage of total population from 1960 to 2013.	World Development Indicators, World Bank
Ethno-Linguistic Fractionalisation	It is the likelihood that the two randomly selected individuals from a particular country not belonging to the same ethno-linguistic group. The greater probability implies more ethno-linguistically diverse society.	Easterly and Levine (1997)
Area	Total Area in Square Kilometres. Data is taken from 1960 to onward.	World Development Indicators, World Bank
Share of Natural Resource	It has been measured as the percent share of natural resources exports (including agricultural and raw material exports, fuel exports, food exports, and ores and metals exports) in GDP, averaged from 1960 to 2000.	World Development Indicators, World Bank
Aid Per capita	Total aid Received by a Country. It represents Official Development Assistance (ODA) and other official aid received in constant US dollars.	World Development Indicators, World Bank
Sub Saharan Africa	Dummies are introduced. It takes value 1 if country belong to Sub Saharan Africa continent,0 otherwise.	Taken from (Khan and Shah, 2015)
English Common law	Dummies introduced, It takes a value of 1 if the country's legal origin is based on British common law and 0 otherwise.	La Porta et al. (1999).
Muslim	We have taken percentage of population in a country belonging to Islam in 1999. La Porta et al. calculated these values for 1999.	La Porta et al. (1999).

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