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### Dynamic Institutions Quality and Sustainable Development: Evidence from Developing Countries

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#### ABSTRACT

*This article empirically examines the direct and indirect impact of dynamic institutions' quality on sustainable development. Dynamic institution's quality is considered in the following forms; political and ethnic institutions, market legitimizing and regulating institutions and democratic institutions. For the empirical model, we use annual data set of 47 developing countries across the period 2000-2015. To address the issue of endogeneity, the Dynamic Panel System Generalized Method is employed. Our findings suggest that ethnic conflicts have a negative significant impact on sustainable development while democracy shows an insignificant impact on sustainable development. Market regulatory institutions are found to have a positive significant impact on sustainable development. In addition to this, the multiplicative impact of dynamic institutions through either economic growth efficiency or FDI channels indicates a positive impact on sustainable development except for the rule of laws. Finally, we suggest that dynamic institutions' quality is necessary to enhance economic activities and attract foreign investment to ensure sustainable economic development in a specific set of developing countries. The policymakers should also focus on structural improvements regarding the rule of law enforcement for achieving sustainable economic development goals in selected developing countries.*

#### Keywords

Dynamic Institutions, Ethnic conflicts, Sustainable development, System-GMM

#### JEL Classification

Q01, D02

## **1. Introduction**

In recent decades, the development view has changed from simple development to sustainable development (SD). SD signifies "advancement that addresses the present age's issues without trading off the capacity of future ages to address their particular issues" (Brundtland, 1987). It stimulates the adaptive capacity by way of proper allocations of resources (Stafford-Smith, 2017). Existing policies of the United Nations (UN) mainly focus on SD and its implications for sustained factors productivity and natural resource conservation. Accordingly, most of the empirical literature in development economics relates institutions with SD. As we move towards institutional dimensions, market institutions are in centre-stage in better implementing SD agenda and are now widely admitted dimensions towards SD (Micic 2009, Mitchell, Wooliscroft, et al. 2010). Increasing the share of political as well as the market institutional role is an important policy agenda for developing economies. Market regulatory institutions are not well organized in most developing countries, to reduce consumption and increase resource efficiency. For global awareness regarding SD, the main target of most developing nations is to achieve an appropriate balance policy having the following objectives: 1) to achieve SD agenda through efficiency market institutional role and, 2) to implement SD by political-institutional role. Different components influence the elements of SD, including monetary, social and institutional variables ((Polasky, Kling et al. 2019).

The new institutional schools of thought signify institutional factors in advancement to the concept of SD (Veeman and Politylo 2003). Institutions are characterized as the "requirements that individuals force on themselves" (North 1991). A better institutional system generates a higher level of taxes that builds the financial capacity of the system and promotes SD (Gambetta, Azadian, et al. 2019). The existing literature focused to explain the political-institutional role and mixed findings have been reported. A few studies demonstrate a positive connection between institutions and sustainable development (Berman, Quinn et al. 2012, Abreu, Cunha et al. 2015, Rosati and Faria 2019). Studies show that governance, rule of law, transparency and democratic quality positively influence sustainable development. However, other studies have found that the majority of institutions play a negative role in sustainable development (Opschoor and van der Straaten 1993). An issue of market institutional quality that has not received much attention in the economics literature is how market and political institutions matter for SD in developing countries? Do improved market and political-institutional arrangements help in attaining SD in developing countries? The major focus of this study is to answer these questions specific to developing countries. Given the above-mentioned background,

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the objectives of this study are to examine the impact of democratic institutions, market regulations and ethnic conflicts on sustainable Development of selected developing countries.

The paper is organized as: Section 2 discusses the existing literature relevant to dynamic institutions and sustainable development; Section 3 explains econometric model and methodology; Section 4 discusses the empirical results and the Summary and conclusion are given in section 5.

## **2. Literature Review**

Institutions are important to determine sustainable development. Literature on SD shows that market institutions are helpful in the protection of property rights, facilitate sustainable development policies to enable total factor productivity and are used as instruments in achieving a higher level of SD. Administrative quality is a major outcome for institutions which comprises several factors relevant to institutions' policies that govern any country. Moreover, Administrative quality is designed to influence the incentive structure important for sustainable policies. Therefore, it may influence SD and efficiency which contributes to the production and consumption aspect of the economy. Following Baker (2012) administrative quality encompasses five dimensions: the size of the government (government spending, taxes, and government enterprises); property rights and legal structure; effective monetary and fiscal policies; and trade policies and regulation of business (including labour and credit markets). In the case of SD, a major portion of investments is required for effective policy and the public as well as political acceptance is mandatory from regulatory bodies. The efficient level of market and political institutions prevent market failure and sustain economic development to mitigate natural resource distortions. Dietz, Neumayer, *et al.* (2007) investigated the impact of institutional quality and regular assets on adjusted genuine savings (Proxy for sustainable development). The data set included from 1984 up to 2001 for gulf countries. The outcomes demonstrated that the corruption index has a positive role for Adjusted Genuine Saving but its effect on natural resources is negative. Carbonnier and Wagner (2011) identified the positive impact of institutional quality on sustainable development. They utilized a data set of 108 developing countries over 24 years, starting from 1984 up to 2007. The study found a positive relationship between institutional quality and development. The study included political, power and effective checks, corruption, armed violence and conflict negative impact on sustainable development. Corruption is found to have a negative effect in rich resources countries. Stoeber (2012) examined the effect of institutional quality on sustainable development using adjusted net savings (ANS) as a

proxy of sustainable development. For, institutional quality indicators, he used the voice of accountability, the effectiveness of government, corruption control, law and order, and political stability as proxy variables for a panel of 138 countries for the period 1970- 2006. The general outcomes feature that institutional quality positively affects sustainability.

Barbier (2010) examined the long-run effect of corruption on sustainable development by applying the board information of African and Asian nations for the period 1970-2003. The findings supported that corruption negatively affects the sustainable development agenda in Africa, which implies that corruption control is effective for sustainable development for Africa. They utilized the adjusted net saving for sustainable development. A comprehensive association has been found in the Asian data set, but a different level of association for corruption and sustainable development relative to Africa.

Abou-Ali and Abdelfattah (2013) examined sustainable development and intensity of natural resources for a panel of 62 countries using world development indicator data for the period 1990-2007 and found supporting evidence of Environmental Kuznets and resource Curse Hypothesis. The overall results argued that countries are not achieving sustainable development goals and the effect is negative on environmental quality. They used investment rates, inflation, and education and institution quality. The overall results indicated that countries having a well-developed rule of law is essential for institutional quality. The results showed fewer roles of institutions for environmental quality. Carbonnier and Wagner (2015), indicated that institutions have a weak effect on 104 developing countries' sustainability. They evaluated the negative role of institutions for sustainability. The study argued that excessive resource utilization negatively affects sustainability. The institutions are failed in developing countries, which have a negative influence on violence.

The above-cited literature shows that there is limited relevant literature on the impact of democratic, ethnic and market institutional dimensions on sustainable development. The thirst of this study is to empirically examine whether democratic institutions, ethnic conflicts, and market-based institutions matter for sustainable development in developing countries or not.

### **3. Model, Data and Estimation Method**

Adjusted net savings is output (ANS) which is produced after considering inputs such as physical capital, investment, and institutional quality. Our model analyses the

role of political and market institutions along with ethnic conflict impact on SD. Using sustainable development as the dependent variable, the model is specified as:

$$ANS_{it} = \alpha_0 + \alpha_1 DI_{it} + \alpha_2 Z_{it} + \alpha_3 NC_{it} + \varepsilon_{it} \quad (3.1)$$

The above equation, shows Adjusted Net Saving used as proxy of sustainable development using adjusted net savings as a percentage of GNI(Stoever,2012). On the right-hand side of the equation, the  $DI_{it}$  indicates a set of dynamic institutions as an independent variable, which consists of: (1) control over corruption(cc); (2) law and order(LO); (3) democracy by POLITY II;(4) Index of regulations (REG); and (5) polity relevant ethnic group share in a country (EPR).  $Z_{it}$  shows a set of explanatory variables that include (GDP per Capita, FDI as a percentage of GDP) and used in various studies(Barbier, Aidt 2010, Abou-Ali and Abdelfattah 2013, Venard 2013, Carbonnier and Wagner 2015).

The study employed a panel of 47 countries because of the availability of data on the adjusted net savings data from the World Development Indicators (WDI). Adjusted net savings are equivalent to net national savings which include education expenditure, subtracted net forest depletion, mineral depletion, and carbon dioxide and particular emission damages are excluded from this variable. Data on institutional variables are taken from the International Country Risk Guide (ICRG) published by “The International Political Risk Services Group” (or PRS). The related data set is commonly used for apprehending the stable quality of an economy in economic literature. For democracy, it calculates the governmental positivity from the general public. It is assumed that if there is low public positivity then the democratic government can perform its task more freely but will achieve less and face trouble if there is a more violent environment in the case of a non-democratic system in an economy. The assigned range started from 0, a representation of a very high level of risk and 10, allocation of a very low level of risk. Democracy data is taken from the Integrated Network for Societal Conflict Research (INSCR).

The market controlling institutions turn into a remarkable shield for declining the transaction costs which upgrades productivity that is more prominent and prompts sustainable economic outcomes. The essential reason is that efficient market institutions decrease transaction cost (Anderson and Swimmer 1997). Ethnic disagreement is a clash in which people or groups/ parties try to identify themselves and others, including those from outside the group, in ethnic expressions and using ethnic operations.

### **Estimation Methodology**

Omitted variables biases are the main cause of the endogeneity issue. Therefore, this study utilizes the dynamic system GMM model (GMM-SYS) method for estimation. The controlled exogenous independent variables are not completely fulfilled as assumed and can be sorted out through proper utilization of instruments (Islam 1995). For appropriate sorting out of time changing effects and endogeneity problem, the Generalized Method of Moments (GMM) is the most appropriate method (Caselli, Esquivel, et al. 1996, Bond, Hoeffler, et al. 2001). Arellano and Bond (1991) devised a method based on two steps for an efficient way of integrating the instruments with the GMM method. The zero restrictions are supposed regarding moments' conditions in the model (Arellano and Bover 1995, Blundell and Bond 1998). In the second step, the variance-covariance matrix in an antithetical form can be presented where  $D_H$  and GMM estimators are written as:

$$\hat{\epsilon}_{GMM} = (X' Z^* D_H Z^{(*)} X)^{-1} X' Z^* D_H Z^{(*)} y \dots \dots \quad (3.3.10)$$

The GMM estimators deliberated from the two steps Arellano and Bond (1991) which presents most analytical instruments for endogenous variables  $x_{(i,t)}$  i.

## Empirical Results

The results are given in Table 4.1, which are based on a panel of 47 developing countries, showing the impact of dynamic institutions on sustainable economic development. Different diagnostic tests have been used to ensure the suitability of the model specifications. After using AR1 and AR2 tests, results show consistency regarding the validity requirements of the instruments in SYS-GMM methodology. The estimated results show that EPR is significant at the 10% level of significance. It indicates that a 10 percent increase in the EPR decreases sustainable economic development by 0.9 percentage points in developing countries. Ethnic conflict is a key challenge for developing economies. It negatively affects economic development through channels of income and health inequalities.

GDP per capita is positively related to sustainable economic development. The GDP per capita coefficient is statistically significant and positive at a 1 per cent level in different model specifications (see tables 4.1). It suggests that for developing countries economic evolution is a preliminary condition for economic sustainability. The same kind of results has been mentioned in earlier studies (Dietz, Neumayer, et al. 2007).

The estimated result shows that FDI inflows as a percentage of GDP are insignificant in developing countries for Sustainable development. It indicates that FDI has no role in economic sustainability. The results of our study contrast with previous

studies which indicates that FDI inflows positively impacts sustainability (Costantini and Monni 2008, Othman, Jafari et al. 2014). Multinational corporations (MNCs) usually invest only with short-term profitability objectives and have no worries regarding economic sustainability in developing countries (Abdul-Gafaru 2009).

Law and order show a negative impact on sustainable economic development of developing countries. The estimated coefficient is -0.74 which is negative and statistically significant at 1 per cent level. The ineffectiveness of law and order on sustainable economic development is due to weak infrastructure systems in developing countries (Romano 2009).

As expected, the impact of control over corruption on sustainable development is positive and the findings indicate that a more efficient institutional framework can only be promoted through controlling corruption. An efficient institutional structure promotes productive economic activities through the effective utilization of economic resources that promote sustainable development in the entire economy. The index of the regulation (REG), reflecting market regulating institutions has a positive and significant effect on sustainable economic development. The study of Kaldaru and Parts (2005) supported this argument for sustainable economic development in developing countries. The results indicate a negative impact of democracy on SD. The reason is that democracy is not supportive of minimizing income distribution among people by way of health improvement and its lower capacity of economic sustainability programs in developing countries (De Soysa, Bailey, et al. 2012).

Also, we identify the indirect effects of dynamic institutions on sustainable development through GDP and, the FDI channel as mentioned in Table 4.1 (columns 2 to7). The coefficients of GDP and dynamic institutions have a combined positive impact on sustainable development in developing countries. This confirms the hypothesis that dynamic institutions significantly improve sustainable development through economic growth in developing countries.

Further, our empirical results are quite interesting regarding the multiplicative term between multiple institutions and foreign direct investment in developing countries. Multilevel institutions can improve sustainable development through the attraction of FDI inflows.

#### **4. Summary and Conclusions**

The increasing importance of dynamic institutions and their association with sustainable development has remained a growing concern among policymakers and government officials from developing countries. A better way of dealing with

sustainable development agenda is implementation issues and United Nations have been actively engaged in advocating the institutional importance across countries. However, the majority of sustainable development activities in developing countries are still dependent on political factors. Hence, sustainable development can only be achieved by focusing on market controlling institutions and ethnic conflict removal. Based on the results of our study, market institutions and ethnic conflict promote sustainability in developing countries. Given the importance of dynamic institutions, most developing countries around the globe, have started to prioritize dynamic institutional quality for sustainable economic development. Above and beyond the direct importance of dynamic institutions, we have also evaluated the indirect importance of dynamic institutions via economic growth and FDI channel. After utilizing panel data set of 47 developing countries, the dynamic modelling approach i.e system GMM approach is used for estimation of cross-sectional variation. We further analyze dynamic institutions through direct and indirect channels on sustainable development at an aggregate level in developing countries. The analysis suggests that dynamic institutions matter for sustainable economic development in developing countries. Therefore, a significant role of dynamic institutions will strengthen sustainable economic development. Consequently, both political and market institutional quality lead to sustainable economic development in developing countries. The major implications of our study are as follows; ethnic conflicts normally deter sustainable economic development agenda in developing countries. Democracy seems to be an ineffective and insignificant role in economic sustainability in developing countries. There are many structural flaws in the democratic election process, which make it ineffective for sustainable development agenda achievement in developing countries. In addition to this, the multiplicative impact of dynamic institutions through either economic growth efficiency channels or FDI is unsatisfactory from the rule of laws' sustainability point of view. The current finding of this study is also favor of prevailing literature that dynamic institutions is an important and significant factor in sustainable economic development and prosperity in developing countries (Baker and Mehmood 2015, Avelino and Wittmayer 2016). Having a more effective institutional structure provide more freedom and allows individuals to think in more innovative ways and ensure efficient participation in sustainable economic development. Accordingly, we argue that ethnic conflict roles should be discouraged for sustainable economic development formulation in developing countries. Countries with more conflicts give the least priority to sustainable economic development. Based on the result of the study, we can suggest



that, as dynamic institutional quality improve, governments and individual members in developing countries become capable of adopting sustainable economic development-friendly policies. To choose an alternative strategy, policymakers and regulators in developing countries should analyze ethnic conflict at the national level, in judging the impacts and risks of conflicts. Thus, dynamic institutional management including ethnic conflicts is a key issue in the implementation of sustainable economic development in developing countries. The present study used a panel of homogenous countries and future studies can use the heterogeneity of dynamic institutions using both developed and developing countries.

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#### **Appendix -A**

**Table 1: List of Countries**

<b>No.</b>	<b>Countries</b>	<b>No.</b>	<b>Countries</b>
<b>1</b>	Albania	<b>26</b>	Angola
<b>2</b>	Argentina	<b>27</b>	Cameroon
<b>3</b>	Bolivia	<b>28</b>	China

4	Botswana	29	Cuba
5	Brazil	30	Egypt
6	Bulgaria	31	Gabon
7	Chile	32	Ghana
8	Colombia	33	Guyana
9	Costa Rica	34	Indonesia
10	India	35	Iran
11	Jamaica	36	Jordan
12	Namibia	37	Malaysia
13	Mexico	38	Morocco
14	Magnolia	39	Pakistan
15	Panama	40	Senegal
16	Paraguay	41	Sudan
17	Peru	42	Syria
18	Philippines	43	Tunisia
19	Romania	44	Zambia
20	South Africa	45	El Salvador
21	Sri Lanka	46	Ecuador
22	Thailand	47	Honduras
23	Turkey		
24	Uruguay		
25	Algeria		

**Table 2: Data Definitions and Sources**

<b>Variable</b>	<b>Definition</b>	<b>Source</b>
<b>Adjusted net savings Per Capita</b>	The adjusted net savings per capita are derived from the division of adjusted net savings over the total population.	Worldwide Governance Indicators (WGI)
<b>Control of Corruption</b>	By aggregating several data sources, this index measures perceptions of the extent to which public power is exercised for private gain. Higher values represent better (perceived) control of corruption. The published index ranges from -2.5 to +2.5; it has been rescaled here from 0 (for very poor control) to 10 (very high control).	Worldwide Governance Indicators (WGI)
<b>Law and Order</b>	This variable is used to indicate the strength as well as neutrality of legal system in economy and further more adherence of public law. The data range is between 0 (which indicate a very high level of risk) up to 6 (which indicate a very low level of risk).	

<b>Democracy (POLITYII)</b>	It measures the government responsiveness from the general public. The allocated range started from 0, an indication of a very high level of risk and 10, a sign of very low level of risk.
<b>Market Regulatory Institutions</b>	The market regulating institutions turn into a notable hotspot for declining the transaction costs which improves productivity that is more prominent and prompts sustainable economic outcomes.
<b>Political Relevant Ethnic Group</b>	The ethnic conflict is a clash in whichever level where the people or groups/ parties involved try to identify themselves and others, including those from outside the group, in ethnic terms and using ethnic process.
<b>GDP Per Capita</b>	GDP per capita based on purchasing power parity (PPP). GDP is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over the GDP as the U.S. dollar has in the United States.
<b>Foreign Direct Investment</b>	FDI net inflows are the values of inward investment made by non-resident investors in the reporting economy .inwards enterprises covers between resident in reporting economy, includes all liabilities and assets transfer to local residents and their direct investors.

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**Table 4.1** The impact of Institutions on Sustainable Development in Developing Economies: Dependent Variable (Adjusted Net Savings as a percentage of GNI)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	ANS	ANS	ANS	ANS	ANS	ANS	ANS	ANS	ANS
EPR	-0.0889*	-0.0459	-0.0436	-0.0234	-0.0455	0.0353	-0.0774**	-0.165***	-0.203***
LGDP1	0.0426***					-0.0329***	0.00872***	0.0591***	0.124***
FDI	-0.000491	-0.000967	-0.00554***	0.00125	-0.00260				
LO	-0.740***		-0.441***	-0.0421	-0.488***		-0.178*	-0.0343	-0.0654
CC	0.0094***	0.0142***		0.0139***	0.0143***	0.0107***		0.00728***	0.00578***
REG	0.0856***	0.0727***	0.0958***		0.0860***	0.105***	0.0681***		-0.0642***
POLITYII	-0.0357***	0.00331	-0.0157***	0.0213***		-0.00395	0.0164***	0.00880	
LO_LGDP1		-0.0437***							
CC_LGDP1			0.00164***						
REG_LGDP1				0.0046***					
POLITYII_LGDP1					-0.000396				
LO_FDI						-0.0455***			
CC_FDI							0.000341***		
REG_FDI								0.000860***	
POLITYII_FDI									0.000989***
OBSERVATIONS	676	676	676	682	676	676	676	682	682
NUMBEROF COUNTRY1	47	47	47	47	47	47	47	47	47
AR(1)	0.07	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
AR(2)	0.30	0.87	0.84	0.63	0.81	0.66	0.32	0.40	0.25

Note: Data period range from 2000-2015. Robust standard errors are in parentheses. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1% level.