| Research Article |

Do Political Competitions Stimulate the Pace of Economic Growth? Exploring the Role of Political Institutions

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Abstract

The study empirically investigates the effects of political competition on the pace of economic growth while accounting for the moderating role of political institutions. For this analysis, data from 66 developing countries for the period 1995–2018 is used. Given the nature of the data, the empirical analysis was carried out through a two-step system-GMM estimation method. The analysis provides two major findings. First, the rate of economic growth accelerates as political competition grows. Second, the findings shed light on the significance of political institutions in the relationship between political competition and economic growth. The conditional effect of political competition and political systems may be a hindrance to better economic performance due to factors such as political fragmentation, weak institutional structure, and heightened corruption levels in the chosen political system. However, political competition in a stable political environment is a potent driver for better economic performance in developing countries. To be more specific, if a country maintains political stability, the pace of economic growth accelerates in response to political competition.

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1. Introduction

The traditional growth models put emphasis on a number of determinants that account for differences

in the pace and sustainability of economic growth among countries. For instance, in order to explain economic growth differences across countries, the neo-classical growth model (Solow & Swan, 1956) argued for the accumulation of physical capital and technical change. Similarly, endogenous growth models (i.e., Romer, 1987, 1990; Lucas, 1988; Grossman & Helpman, 1991; and Aghion & Howitt, 1992) argue that growth differences across countries are mainly attributed to the reasonable allocation of resources to research and development (R&D) and human capital allocation.

However, having explained the significance of institutions in the economic growth process (North, 1990; Acemoglu & Robinson, 2013), it was stated that all determinants claims in traditional growth models are proximal causes of economic growth. North, 1990; Acemoglu *et al*., 2001; Acemoglu *et al*., 2005; Acemoglu & Robinson, 2013 challenged both exogenous and endogenous growth models, stating that institutional differences are the primary explanation for comparative growth.

According to North (1990), formal institutions comprise legal, economic, and political rules, and informal institutions encompass social, behavioral rules, and conventions.[1] In the context of North's (1990) categorization of institutions into formal and informal, Acemoglu and Robinson (2013) argue that a country's political and economic institutional structure is the most important factor determining its economic growth. This requisition seeks an answer to the question, *"In what way do political institutions affect the pace of economic growth?"*

Studies on the subject (e.g., Hall & Jones (1999); Acemoglu *et al.* (2001); Acemoglu *et al*. (2005); Basley (2007) explain the role of political institutions in the economic growth process and identify different mechanisms through which political institutions affect the pace of economic growth. Political power, according to Acemoglu *et al*. (2005) and Acemoglu & Robinson (2006, impacts the selection of institutions and consequently economic growth in a society.

In general, institutional economists agree that political institutions, like economic institutions, shape long-run economic growth. However, they point out the possibility of disagreement among different groups about what

[1] Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. Consequently, they structure incentives in human exchange, whether political, social, or economic (North, 1990, p.3).

to choose among underlying political institutions that may lead to inappropriate policy options. Political competition among different groups leads to disagreement that shapes institutional setup (Stigler, 1972; Padovano & Ricciuti, 2009; Basley *et al*., 2010; Alfano & Baraldi, 2016; Man, 2016; Chaudhry & Mazhar, 2018). Political competition, as indicated by Alfano and Baraldi (2016), is the degree of democracy that reveals how many political parties are competing for political power. Political competition is characterized by the existence of various parties or candidates with various policy platforms, ideologies, or leadership philosophies, providing voters with the chance to make decisions depending on their preferences and values (Kriesi *et al*., 2012).

There are three primary transmission mechanisms by which political competition influences the institutional effectiveness and economic performance of a country. The first channel revolves around a "*political turnover*" pointed out by Persson and Tabellini (2002). According to this channel, political competition determines the current behavior of the incumbent due to the threat of being replaced. Thus, higher accountability from incumbents directly results from increasing political competition in the political system. Additionally, a few studies (Benhabib & Przeworski, 2006; Calabrese, 2020) show that increased political turnover fosters greater ties between the various competing groups running for government. These studies supported the claim that elected political leaders construct insulating arrangements that reduce office chaos while also decreasing their effectiveness since they are aware that they will not be in office forever.[2] Moreover, Sawyer and Sprinkle (2020) argue that political competition reduces the rent-seeking behavior of politicians. According to Persson and Tabellini (2002), voters choose incumbents based on their past economic success; as a result, incumbents are encouraged to improve their economic performance by reducing their rent-seeking conduct.

The second channel of political competition highlights *decentralized political power* (Rodden & Ackerman, 1997; Drazen, 2000). This channel suggests that as the number of candidates with political clout rises, so does the system's competency level. In the context of the "*governance market*," political decentralization transfers resources from inept establishments to capable establishments that implement policies that promote market efficiency and minimize corruption (Rodden & Ackerman, 1997; Friedman & Taylor, 2011; Persson & Tabellini, 1994, 2001; Weingast, 1993, 1995). In order to obtain electoral support, redistributive politics—the

[2] Based on political turnover, the so-called “political replacement effect” represents political competition cost (Leonida *et al.*, 2013, 2015). In fact, in the public decision-making process, any growth-enhancing decision or policy could be economically productive.

third channel—takes into account the divisions among political parties and their leaders (Dixit & Londregan, 1995; Skilling & Zeckhauser, 2002). However, the long-term execution of effective election tactics is hampered by the competition between political parties and the use of economic regulation to win support in the near term.

There is considerable disagreement in the literature on the empirical grounds of the relationship between political competition and economic performance. On the positive side, a number of studies indicate that political competition between political parties in a democratic system leads to better economic performance (e.g., North, 1990; Barro, 1996; Knack & Keefer, 1995; Gerring *et al.,* 2005). A low level of political competition is linked to slower economic growth because it fosters the creation of anti-growth policies (such as higher taxes and fewer capital spending policies) (Besley *et al*., 2010).[3] Conversely, some hold the opposite view. Wagner (1977), for instance, contends that political competition breeds conflict of interest among rivals, which breeds economic manipulation for political gain. Alesina and Stella (2010) further note that while political competition guarantees accountability, it exposes the policy-making process to short-term agendas.

This requisition seeks an answer to the question, *"Can economic performance be positively impacted by political competition?"* However, consideration of the political institutions' structures is necessary to answer this question. Many empirical insights (Mauro, 1995; Knack & Kafeer, 1995; Acemoglu *et al*., 2005, among others) supported the claim that a country's economic transformation is predicted to occur when a relatively big portion of its population holds political power (a democratic regime). According to Rodrik (2000) and Acemoglu *et al*. (2005), democracy is often considered a "*meta-institution*" that shapes and strengthens other institutions.[4] Democratic regimes tend to promote political stability, policy consistency, and accountability, which can create a conducive environment for economic growth (Acemoglu & Robinson, 2001). Furthermore, Acemoglu & Robinson (2006) argue that political competition will improve economic performance if political leaders in a country with a high degree of human capital encounter intense political competition in a democratic political system. This entails investigating the impact of political competition on economic performance conditional to political institutions. In this regard, the study aims to test the hypothesis empirically that *"economic growth is positively impacted by political competition, subject to the political institutions that a nation maintains."* The hypothesis is empirically tested in the case of 66 developing

[3] On the positive side of political influence, Barro (1996) argues that political freedom has weak positive effect on economic growth; however, the relationship between the two is nonlinear.

[4] Political competition is a basic aspect of democratic regimes. However, political competition of varied kinds and degrees may exist in all systems, even those that might not be entirely democratic. To summarize, democratic regimes require political competition, but these terms are not purely interchangeable.

countries for the period 1995-2018. Given the nature of the data, the empirical analysis was carried out through a two-step system-GMM estimation method.

The study's remaining sections are arranged as follows: Section 2 incorporates a review of the literature; Section 3 discusses methodology, which includes a formulation of the empirical models, the definition and construction of variables, and estimation techniques. Section 4 discusses empirical findings and their interpretation. Finally, Section 5 offers some concluding remarks.

2. Literature Review

Building on the theoretical underpinnings established earlier in the introduction section, we now critically review existing empirical literature to examine the complicated link between political competition and economic performance.

2.1. Empirical Literature

In the political competition concept, Besley *et al.* (2010) made an essential contribution. The authors examined a relationship among political competition, policymaking, and economic performance by applying a reduced form model and considering panel data from the 48 United States from 1950 to 2001. The Democrats' vote share in states at time t is represented by the symbol dst in the authors' definition of political competition specifically for a "*two-party system*." The dominance of one party in state-wide elections indicates a lack of political competition; the party-neutral metric is $Kst = -|dst - 0.5|$. Stronger political competition is indicated by higher values, or those that are closer to zero.

Besley *et al*. (2010) discovered that absence of political competition leads to anti-growth policies by promoting high taxes, low capital expenditures, and curtailed chance of utilizing right-to-work legislation. Furthermore, they discovered a substantial link between low political competition and poor economic development. Political competition varies in intensity between societies and communities across the globe. The authors exercise caution, stating that generalizations of their findings are limited to the United States. The model predicts that in this two-party system, more political competition enhances economic policy (lower taxes, pro-growth policies). Compared to intermediate levels, increases in political competition have less of an impact on policy extremely low and extremely high levels. Political monopolies (no political competition) are associated with low levels, while parties returning to rent-seeking strategies are associated with high levels. Swing voters favor pro-growth policies, which are adopted by both parties at intermediate levels. Remarkably, Acemoglu and Robinson (2006) found the exact reverse of this non-linear effect of political competition.

Alfano and Baraldi (2016) evaluated the extent of political competition amongst political parties as an

indicator of democracy and its influence on economic development. The "normalized Herfindahl index of vote concentration" is used to gauge competition. Tirole (1988) defines the "*Herfindahl-Harriman Index (HHI)*"as an indicator of "market concentration" and an adjusted version of the market concentration index that includes degrees of political competition.[5] The Herfindahl index can be explained as, $HHI = 1 - \sum_{i=1}^{n} party_i^2$; where the term,$\text{party}_\text{i}^2$ indicates the vote allocation of the party indicated by "i" and $1 - \sum_{i=1}^{n} party_i^2$, shows the share of the entire political parties. Moreover, this index lies between 0 and 1, where lower values represent more political competition.[6] Alfano and Baraldi (2016) applied cross-country panel data from 83 countries from 1979 to 2011 and estimated the nonlinear growth model using the system GMM estimator approach. The authors found an inverted U-shaped link between political competition and economic development. They also conducted a thorough comparison between other political competitiveness metrics and the short- and long-run assessments and discovered the same link. While discussing the ideal amount of political competition, the authors concluded that an intermediate level of political competition is preferable for economic development. Likewise, Pinto and Timmons (2005) explored the effects of political competition on efficiency and factor mobilization in about 90 nations, concentrating on levels instead of growth rates. They measured political competition using a democracy index from the "Politics Project database." Acemoglu and Robinson (2006) examined the link between technical development and political conflict. Parente and Prescott (2000), who focus on the protection of incumbent enterprises and entrenched interests, establish a theoretical and empirical connection between political and economic competition.

Further, Chaudhry and Mazhar (2018) assessed the impact of political competition on Pakistan's economic performance. The authors examined election data from 1970 to 2001 and employed policy government expenditures at the nationwide level, as well as development, current, indirect taxes, health expenditures, and electrical capacity at the sub-national level. The study's primary contribution is the multi-party index of political competitiveness (MIPC). The research discovered a link between low economic performance and a lack of political competition.

However, in contrast, some studies suggest an undesirable link between political competition and economic performance. A large number of political parties, i.e., greater political competition, create government instability, which is considered harmful to economic growth (Alesina *et al.*, 1996; Campose and Nugent,

[5] Skilling and Zeckhauser (2002) applied the HHI index as a political concentration index. Moreover, Afzal (2014) also applied it to assess the absence of political competition.

[6] The problem with this metric of political competition fails to account for seat allocation in political competition (Man, 2014).

2002). Building upon these foundations, Lizzeri and Persico (2005) reported that greater or intense political competition creates a more significant inefficiency in the electoral competition's outcome.

Similarly, Man (2016) considered the relationship amongst political competition and its parts (executive and legislative) and economic development using data from 187 countries from 1975 to 2007 using the fixed effects model. The research examined many indices of political competitiveness. This study enhances to the prevailing literature by finding a U-shaped association between political competition and economic progress. It appears appropriate to adopt a global perspective on the link between political competition and economic growth. Mulligan and Tsui (2006) stated that political competition occurs all around the world, not only in democratic countries that hold free and fair elections regularly. Political competition is considered a peaceful battle for political power and influence (see Marshall and Jaggers, 2009); yet, it may also be considered leaders battling for the allegiance of their followers (Pinto and Timmons, 2005).

So, among existing empirical research on political competition and economic growth, some studies show a significant positive relationship between the two, while others discover a negative association. The majority of available research, however, focuses on developed nations' stable democracies. Thus, considering the political competition situation in emerging nations with rather unstable democracies and weak institutions, this would be an important addition to the literature.

3. Methodology

The methodology section contains four subsections. Section 3.1 specifies the empirical models, while section 3.2 explains the definition and construction of the variables under consideration. Section 3.3 presents data and data sources. Lastly, subsection 3.4 presents an estimation technique.

3.1 Empirical Models

This section presents the empirical specifications to empirically assess the effects of political competition on the pace of economic growth while accounting for the moderating role of political institutions. To achieve the research objectives, the empirical analysis is carried out by estimating three different empirical specifications. The empirical analysis in this study builds upon Feng (1997), Glaeser *et al*. (2004), Padovano and Ricciuiti (2009), Aisen and Veiga (2013), and Alfano and Baraldi (2016). The following equation 1 is the base model, which analyzes the impact of political competition on the pace of economic growth.

$$y_{it} = \beta_0 + \beta_1 pc_{it} + \beta_2 pi_{it} + \sum_{j=1}^{n} \gamma_j X_{it} + \varepsilon_{it} \qquad (1)$$

Where, y_{it} is the growth rate of real GDP per capita in country i at period t. pc_{it} denotes political competition, which is our variable of interest. X_{it} is the vector of control variables that includes trade openness (top_{it}), inflation (inf_{it}), physical capital (phy_{it}), and human capital (hc_{it}). ε_{it}, indicates the error term that captures all omitted factors in the model.

To examine the effect of political competition conditional on political institutions, we incorporate an interactive term in our baseline model (eq. 1). Following (Aisen & Veiga, 2013; Alesina *et al*., 1996; Barro, 1991) two aspects of political institutions have been captured, namely system and stability. Equations 2 and 3 state the effects of political competition on economic growth conditional on the system and stability of political institutions.

$$y_{it} = \beta_0 + \beta_1 pc_{it} + \beta_2 sys_{it} + \beta_3 (pc_{it} * sys_{it}) + \beta_4 regm_{it} + \sum_{j=1}^{n} \gamma_j X_{it} + \varepsilon_{it} \quad (2)$$

$$y_{it} = \beta_0 + \beta_1 pc_{it} + \beta_2 stab_{it} + \beta_3 (pc_{it} * stab_{it}) + \beta_4 regm_{it} + \sum_{j=1}^{n} \gamma_j X_{it} + \varepsilon_{it} \quad (3)$$

Where sys_{it} denotes political system, and $(pc_{it} * sys_{it})$ is the interaction term of political competition and political system.[7] Similarly, in equation 3, $stab_{it}$ is the stability of institutions, and $(pc_{it} * stab_{it})$ is the interaction term of political competition and institutional stability that captures the effect of political competition on economic growth conditional to the stability of institutions. We also incorporate the democratic regime variable($regm_{it}$); which captures a country's political state, that either democracy or autocracy.

3.2 Definition and Construction of Variables under Consideration

The dependent variable is economic growth(y_{it}), which is measured by the growth of real GDP per capita.[8] The data is taken from the World Development Indicators (WDI) of the World Bank. Among independent variables, political competition (pc_{it}) is our main interest variable, which is the composite index that is based on the determinants of the competitiveness and regulation of political participation. To assess the role of political institutions, we consider their type (political system) sys_{it} and stability($stab_{it}$). In terms of system, different political systems (e.g., presidential, parliamentary and assembly-elected presidential system) may

[7] In a democratic regime, the constitutional arrangements of institutions, whether they are presidential, parliamentary, or semi-presidential, also matter for better economic performance.

[8]Many theoretical and empirical studies considered income growth per capita as a dependent variable (i.e., Romer (1990); Barro (1991); Young (1991); Benhabib & Spiegel (1994); Grossman & Helpman (1994); Levin (2005); Easterly (2005); Ang, 2010; Haq *et al.*, 2016).

have different responses to economic growth and its process.[9] The presidential system is a single executive system in which the president is chosen directly by an electoral college. On the other hand, the parliamentary system is a political system in which a parliamentary legislature elects the chief executive.

As these systems have different institutional arrangements, their effect on economic growth may differ. The political system is treated as "2" if a parliamentarian system exists; otherwise, "0" for a presidential system and "1" for an assembly-elected president. Similarly, political stability is the capacity of a government or political system to maintain continuity and avoid significant shocks or conflicts that would endanger its legitimacy and its ability to function. Keep an eye on Mainwaring and Shugart, 1997; Pereira and Teles, 2013 'DURABLE' is used as a proxy for political stability, which is taken from the Polity IV dataset that captures the lifespan of a polity.

Another important variable is political regime($regm_{it}$), which captures a country's political state, either democracy or autocracy. The data on democracy and autocracy are taken from the Polity IV data set. The variable is treated as a dummy; it takes 1 if a country's political regime is democratic; otherwise, it takes 0. Keeping in view the standard growth models, we used a set of control variables, including physical capital($phyc_{it}$), which is measured as gross fixed capital formation as a percent of GDP, and human capital (hc_{it}) that an index based on average years of schooling and returns to education.[10] Correspondingly, the consumer price index is used to measure inflation(inf_{it}), and trade openness (top_{it}) is measured through the trade to GDP ratio.[11]

3.3 Data and Data Sources

The empirical analysis is carried out on a panel of 66 developing countries from 1995 to 2018.[12] The data for variables is taken from various data sources. For instance, the data on the political system is taken from the

[9] We also examine a third system called the semi presidential system, which falls between the two polarized types (Gerring *et al*., 2009; Skach, 2009).

[10] Source: Penn World Table (Feenstra *et al*., 2015) version 10.01 database.

[11] Source: WDI, World Bank.

[12] In order to avoid the potential heterogeneity, the sample is divided into two namely lower middle and upper middle countries.

DPI (2020) of the World Bank.[13] Similarly, the data on political regimes, political competition, and political stability are taken from Polity IV datasets.[14] The data on trade, physical capital, and inflation is taken from the World Development Indicators (WDI) of the World Bank. Whereas, the data on human capital is taken from the Penn World Table (10.01).

3.4 Estimation Technique

Given the nature of the data set (cross-sectional panel) and empirical models (dynamic), the empirical analyses were conducted through the Generalized Method of Moments (GMM) developed by Arellano and Bond (1991). In addition, as time period ($T = 23 < N = 66$) and to cope with the issues of endogeneity and heterogeneity across cross-sections, the two-step system-GMM method proposed by Arellano and Bover (1995) and Blundell and Bond (1998) has been used. Unlike difference GMM that handles the endogeneity of an empirical model with lagged levels of variables is an instrument Alonso-Borrego and Arellano (1999); and Bond *et al*. (2001). Whereas the system GMM combines both level and difference equations into one system, therefore using both lagged values of levels and first difference values of the variables of the model as an instrument to address the endogeneity issue. Following Arellano and Bover (1995), the consistency of the GMM estimator was checked using two tests, namely the "Sargan test" and the "Serial Correlation test."

4. Empirical Findings

This section presents the estimated results of our empirical models, illustrated in equations 1 to 3. Table 1 shows the estimated results of the empirical models in the case of the overall sample. As discussed earlier, the dependent variable is economic growth, which measures the growth of real GDP per capita. All specifications have the same set of standard control variables; however, variables of interest vary across specifications that arrange for sensitivity analysis. The variable of interest is political competition (pc_{it}), which holds a positive sign and is statistically significant in four out of five specifications. The estimated result reveals that the economic growth of the sample countries increases with an increase in political competition. Evidence in the literature indicates that political competition boosts economic performance through several channels. One channel, for example, focuses on a political turnover procedure, as indicated by Persson and Tabellini (2002). According to Persson and Tabellini (2002), political competition shapes the behavior of incumbents due to the

[13] The DPI of the World Bank is accumulated by Beck *et al*. (2001) and it is available now in updated version. For more information on the political variables incorporated in this study, see, https://publications.iadb.org/en/database-political-institutions-2020-dpi2020.

[14] Polity IV dataset (Marshal *et al*., 2019) is constructed by Center for Systematic Peace. https://www.systemicpeace.org/polityproject.html

threat of being replaced, and so increasing political competition in the political system leads to greater accountability for incumbents. Similarly, Persson and Tabellini (2002) and Sawyer and Sprinkle (2020) came up with the same argument that political competition reduces the rent-seeking behavior of politicians. The explanation for this could be that voters choose incumbents based on their previous economic performance; thus, the described motivation pushes incumbents to limit rent-seeking behavior and work on increasing economic performance.

The second channel of political competition highlights decentralized political power (Rodden & Ackerman, 1997; Drazen, 2000). level of the system's competence enhances with the increase in the number of competitors, which in turn transmits from incompetent establishments to competent establishments with pro-market-based policies and limited corruption (Rodden & Ackerman, 1997; Friedman & Taylor, 2011; Persson & Tabellini, 1994, 2001; Weingast, 1993, 1995). Some other studies, such as Dixit and Londregan, 1995; Skilling and Zeckhauser, 2002, explain the impact of political competition on a country's economic performance through its response to institutional development. Acemoglu, 2005 argues that political competition is a process through which different political parties compete for power through the electoral process, which in turn supports growth-enhancing measures.

As stated in the introduction, the research focuses on the role of institutions in the relationship between political competitiveness and economic growth. In this context, it is hypothesized that "*political competition is more favorable for economic growth when political institutions are there."* To test the hypothesis empirically, two measures of political institutions have been used, namely political system (i.e., presidential, parliamentarian and assembly elected presidential system) and political stability, and two interaction terms have been used as explanatory variables. In model 2 (column 3) interaction term ($pc_{it} * sys_{it}$) of political institutions and political competition has been included as an explanatory variable. In model 2, the political system (sys_{it}) enters the model positively and statistically significant. The result may be justified as the parliamentary systems frequently entail coalition governments and consent-building among various parties, which decrease the possibility of abrupt policy reversals and disruptions (Aisen & Veiga, 2013). Moreover, the parliamentary forms of government tend to offer greater freedom to adjust to altering economic circumstances. When the executive and legislative parts of government are intertwined, changes to policies and reforms can be made more easily. This versatility may make it easier to respond quickly to economic issues and may improve growth prospects (Feld & Matsusaka, 2003). The interaction term ($pc_{it} * sys_{it}$) holds a negative sign that is statistically significant, which signifies the role of political institutions (political systems) in the relationship between political competition and economic growth. The negative sign of the

interaction term should be justified by the political fragmentation of the parliamentarian form of government. Due to weak institutional structure in most of the developing countries with strict political competition, the parliamentarian form of government leads to political fragmentation, which raises public spending and corruption and poses obvious consequences for economic performance.[15]

In model 3 (column 4), the political system is replaced with political stability ($stab_{it}$), and to capture the role of political institutions in the relationship between political stability and economic growth, an interaction term ($pc_{it} * stab_{it}$) is used as an explanatory variable. Political stability enters the model negatively, which is statistically significant; however, the interaction term holds a positive sign and is statistically significant. The result reveals that political competition proves more beneficial for economic growth if a country has stable political institutions. Stability and competition lead to leaders prioritizing transparent and accountable governance; this in turn improves economic performance by reducing corruption and ensuring efficient resource allocation (Besley and Burgess, 2002).[16] Rodrik (2007) argued that long-term economic growth goals and short-term stability goals can both be taken into account in better-balanced decision-making when political competition and stability coexist. Therefore, stability, if not accompanied by political competition, can negatively impact economic performance, but the effect of political competition that is conditional on political stability often leads to improved economic performance, innovation, accountability, and balanced decision-making.

In models 4 and 5 (columns 5, and 6), we add another variable of the political institution (political regime) ($regm_{it}$) that holds a positive sign and is statistically significant. The result reveals that a country shows good economic growth when the political regime is democratic. The result is in line with the findings of Scully (1988), Grier and Tullock (1989), Feng (1997), and Acemoglu and Robinson (2013) that came with the findings that democratic government in developing countries leads to sustainable economic growth.

Table 1. GMM Estimated Results (Overall Sample)

Variables	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
$y_{it} - 1$	-0.253***	-0.179**	-0.429**	-0.172***	-0.597***
	(0.006)	(0.011)	(0.093)	(0.017)	(0.105)
$phyc_{it}$	0.013***	0.026***	0.072***	0.030***	0.036***
	(0.012)	(0.002)	(0.021)	(0.062)	(0.043)
hc_{it}	0.833***	0.928**	0.186**	0.702**	0.624***

[15] The results of marginal effects presented in Table 4 endorse this result.

[16] This result is in line with the empirical finding of Shabbir *et al*. (2016). The Justification for this result is that politically stable democracies are more likely to adopt and sustain economically sound policies that promote growth (Keefer, 2007).

	(0.030)	(0.045)	(0.365)	(0.042)	(0.043)
inf_{it}	0.022***	0.034***	0.025**	0.028***	0.017**
	(0.019)	(0.064)	(0.020)	(0.045)	(0.012)
top_{it}	0.007***	0.002*	0.003***	0.002*	0.006***
	(0.006)	(0.002)	(0.004)	(0.005)	(0.003)
pc_{it}	0.121***	0.107**	0.153	0.065***	0.145***
	(0.006)	(0.010)	(0.118)	(0.008)	(0.186)
sys_{it}	--------	0.700*	--------	0.824*	--------
		(0.111)		(0.087)	
$stab_{it}$	--------	--------	-0.034***	--------	-0.007**
			(0.012)		(0.022)
$regm_{it}$	--------	--------	--------	0.314*	2.690**
				(0.063)	(0.830)
$(pc_{it} * sys_{it})$	--------	-0.100**	--------	-0.118**	--------
		(0.020)		(0.021)	
$(pc_{it} * stab_{it})$	--------	--------	0.008***	--------	0.012***
			(0.004)		(0.002)
const.	3.493***	3.407***	3.325***	3.554***	3.456***
	(0.081)	(0.121)	(1.650)	(0.107)	(0.109)
no of obs.	1,517	1,517	1,516	1,515	1,517
no of count.	66	66	66	66	66
no of inst.	42	43	45	38	42
AR(2)	1.03	0.86	0.73	1.07	1.04
p. val.	0.303	0.392	0.253	0.284	0.320
Hansen test	44.42	38.95	31.75	37.62	38.62
p. val.	0.370	0.272	0.231	0.278	0.251

Note: Standard errors in parentheses,***, **, * show the level of significance at 1 %, 5%, and 10%, respectively.

The control variables physical capital ($phyc_{it}$), human capital(hc_{it}), inflation(inf_{it}), and trade openness (top_{it}) are common to all specifications. Estimated results show that all these variables signify their effects in determining the economic growth of the sample countries. Physical capital ($phyc_{it}$), for instance, enters all specifications with a positive sign and is statistically significant, which reveals that economic growth increases with the accumulation of physical capital. Similarly, human capital (hc_{it}) has a positive sign and is statistically significant in all specifications. The results are in line with the standard growth models of Solow and Swan (1956), which argue for the accumulation of physical capital, and the endogenous growth models of Romer (1986) and Lucas (1988), which stress the accumulation of human capital in order to maintain steady economic growth in the long run. Similarly, inflation (inf_{it}) and trade openness (top_{it}) have a positive effect on

economic growth in the sample countries (Rondeau and Roudaut, 2014; Umaro and Zubair, 2012; Carrasco and Tovar-García, 2021).

The empirical models are dynamic as the lagged dependent variable $(y_{it} - 1)$ has been introduced as an explanatory variable. The coefficient of $(y_{it} - 1)$ is negative and highly significant across all of the specifications, which indicates that current growth performance of the sample countries is strongly influenced by its previous growth performance.

According to the World Bank's income classification, the sample countries are divided into two income groups: low- and middle-income countries and upper-middle-income countries.[17] The basic motivation is to see whether the effect of political competition on economic growth changes with differences in country income level. In this association, the above-mentioned empirical models are estimated in the case of two income groups. Table 2 presents GMM estimated results for Low- and Middle-Income Countries. The estimated results of political competition (pc_{it}), political system (sys_{it}), political stability $(stab_{it})$ and its interaction terms holds same results as of overall sample. Moreover, the coefficient of $(y_{it} - 1)$ is negative and highly significant across all of the specifications, which indicates that the current growth performance of the sample countries is strongly influenced by its previous growth performance.

Table 2. GMM Estimated Results (Low- and Middle-Income Countries)

Variables	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
$y_{it} - 1$	-0.390***	-0.450***	-0.331***	-0.455***	-0.221***
	(0.006)	(0.005)	(0.442)	(0.005)	(0.031)
$phyc_{it}$	0.042***	0.047***	0.205***	0.049***	0.023***
	(0.006)	(0.015)	(0.061)	(0.005)	(0.024)
hc_{it}	0.292***	0.736***	0.507***	0.335***	0.213***
	(0.131)	(0.092)	(0.342)	(0.102)	(0.030)
inf_{it}	0.016***	0.012***	0.049***	0.024***	0.018***
	(0.047)	(0.026)	(0.014)	(0.015)	(0.032)
top_{it}	0.025**	0.012**	0.016**	0.023*	0.017**
	(0.002)	(0.001)	(0.005)	(0.001)	(0.001)
pc_{it}	0.135**	0.073***	0.339***	0.119***	0.117***
	(0.014)	(0.018)	(0.030	(0.023)	(0.022)
sys_{it}	---------	0.359***	---------	0.517***	---------
		(0.076)		(0.132)	
$stab_{it}$	--------	--------	-0.093***	--------	-0.014***
			(0.025)		(0.003)

[17] Based on the low data availability in low-income countries, we have merged low- and low-middle-income countries.

$regm_{it}$	--------	--------	--------	0.440***	0.314***
				(0.097)	(0.052)
$(pc_{it} * sys_{it})$	--------	-0.052***	--------	-0.065***	----------
		(0.011)		(0.014)	
$(pc_{it} * stab_{it})$	--------	--------	0.016**	--------	0.002***
			(0.005)		(0.004)
const.	6.786***	7.162***	3.973***	6.961***	4.922***
	(0.287)	(0.271)	(0.347)	(0.255)	(0.137)
no of obs.	919	919	919	919	919
no of count.	40	40	40	40	40
no of inst.	23	26	29	22	24
AR(2)	-1.07	-1.08	-0.97	-1.26	-2.06
p. val.	0.246	0.279	0.331	0.209	0.278
Hansen test	9.72	19.60	20.16	24.91	23.89
p. val.	0.178	0.283	0.286	0.205	0.236

Note: Standard errors in parentheses, ***, **, * show the level of significance at 1 %, 5%, and 10% respectively.

Similarly, the following Table 3 presents the estimated results of the upper-middle-income countries. Like the previous cases, the estimated results of political competition(pc_{it}), political system(sys_{it}), political stability ($stab_{it}$) and its interaction terms holds same results as of overall sample, and lower-middle-income countries. The results of the "second-order serial correlation test statistics (AR2)" for the upper middle- income countries demonstrate that the null hypothesis—that '*there is no serial correlation'* in either of these models—cannot be rejected (with p-values of 0.126, 0.248, 0.157, 0.227, and 0.234, respectively).

Table 3. GMM Estimated Results (Upper Middle-Income Countries)

Variables	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
$y_{it} - 1$	-0.594***	-0.669***	-0.515***	-0.647***	-0.793***
	(0.022)	(0.018)	(0.226)	(0.019)	(0.258)
$phyc_{it}$	0.024***	0.015***	0.013**	0.034*	0.051**
	(0.001)	(0.002)	(0.004)	(0.002)	(0.011)
hc_{it}	0.525***	0.247***	0.632	0.209***	0.248**
	(0.039)	(0.036)	(0.069)	(0.037)	(0.118)
inf_{it}	0.012***	0.014**	0.025***	0.012***	0.022***
	(0.013)	(0.008)	(0.072)	(0.018)	(0.007)
top_{it}	0.001***	0.003***	0.014*	0.003***	0.025*
	(0.043)	(0.021)	(0.050)	(0.021)	(0.014)
pc_{it}	0.013***	0.035***	0.285***	0.065***	0.202***
	(0.004)	(0.008)	(0.054)	(0.014)	(0.039)

sys_{it}		0.480***		0.449***	---------
		(0.090)		(0.011)	
$stab_{it}$	--------	--------	-0.034***		-0.483**
			(0.009)		(0.015)
$regm_{it}$	--------	--------	--------	0.290***	2.907***
				(0.098)	(0.021)
$(pc_{it} * sys_{it})$	--------	-0.084***	--------	-0.079***	----------
		(0.019)		(0.022)	
$(pc_{it} * stab_{it})$	--------	--------	0.011***		0.005***
			(0.004)		(0.002)
const.	2.392***	2.131***	2.945***	2.482***	2.325**
	(0.144)	(0.153)	(0.328)	(0.191)	(0.246)
no of obs.	598	598	598	598	598
no of count.	26	26	26	26	26
no of inst.	15	16	14	12	10
AR(2)	1.53	-0.19	-0.31	0.04	1.691
p. val.	0.126	0.248	0.157	0.227	0.234
Hansen test	17.88	20.08	13.58	20.39	4.08
p. val.	0.264	0.217	0.256	0.258	0.254

Note: Standard errors in parentheses, ***, **, * show the level of significance at 1 %, 5%, and 10% respectively.

According to the "Hansen test for over-identification", the null hypothesis about overall instrument exogeneity is likewise not rejected (p-values for the models are 0.264, 0.217, 0.236, 0.256, and 0.254, respectively). Additionally, it is acceptable that the number of instruments is less than the number of cross-sectional units.

To clarify the results of the estimated models, we estimate the marginal effects of political competition on economic growth across various political systems (where 0 denotes a presidential system, 1 is an assembly-elected presidential system, and 2 is a parliamentary system). We take partial derivatives of equation (2) to assess the marginal effect of political competition on economic growth across various political systems. [18]The results of the conditional analysis model presented in Table 4 indicate that political competition, along with the different political systems, decreases economic growth in aggregate and disaggregates sample of developing countries. In the aggregate model of developing countries, political competition in the parliamentary system has a significant marginal effect on economic growth, with a one-unit increase in political competition causing a 0.171-unit decrease in economic growth.

Table 4. Marginal Effect of Political Competition on Economic Growth across Political Systems

[18] Conditional analysis is conducted on model 5, where we consider all variables jointly.

Variable	All Countries	Low Middle-Income Countries	Upper Middle-Income Countries
0	-0.065*** (0.012)	-0.119*** (0.013)	-0.065*** (0.011)
1	-0.053*** (0.015)	-0.054*** (0.004)	-0.014*** (0.097)
2	-0.171*** (0.002)	-0.011*** (0.005)	-0.093*** (0.012)

Note: $\frac{\partial y_{it}}{\partial pc_{it}} = \hat{\alpha} + \hat{\beta} \times sys_{it}$, evaluated at various percentiles of the political system. Where, ***, **, * show the level of significance at 1 %, 5%, and 10% respectively; standard errors are in parenthesis.

This indicates that heightened political competition in parliamentary systems has a more substantial negative impact on economic growth than other political systems. Our findings highlight that increased competition in the parliamentary system disproportionately impedes economic growth compared to other political systems. This might be because of decision-making complexity, bottlenecks in the execution of policies, and increased political risk in the parliamentarian system. So, our results suggest the political systems variable plays a moderator role in the relationship between political competition and economic growth.

Table 5. Marginal Effect of Political Competition on Economic Growth with Political Stability

Percentiles of Stability	All Countries	Low Middle-Income Countries	Upper Middle-Income Countries
25th (low)	0.191* (0.012)	0.109** (0.034)	0.225* (0.056)
50th (Medium)	0.272*** (0.010)	0.095* (0.059)	0.257** (0.055)
75th (High)	0.394*** (0.130)	0.074* (0.203)	0.309** (0.017)

Note: $\frac{\partial y_{it}}{\partial pc_{it}} = \hat{\alpha} + \hat{\beta} \times stab_{it}$, evaluated at various percentiles of the political system. Where, ***, **, * show the level of significance at 1 %, 5%, and 10% respectively; standard errors are in parenthesis.

We estimated conditional analysis (as shown in Table 5) to assess the conditional influence of political competition on economic growth at different percentiles (25th, 50th, and 75th) of the political stability variable. The marginal effects of political competition on economic growth vary depending on the level of political stability. In the aggregate model, at low levels, a one-unit increase in political competition is associated with an increase of 0.191 units in economic growth. At medium levels, a one-unit increase in political competition is associated with an increase of 0.272 units in economic growth. At high levels, a one-

unit increase in political competition is associated with a more substantial increase of 0.394 units in economic growth. The magnitude of the coefficient rises with increasing percentile levels of political stability in overall and upper-middle-income countries, and the study suggests that increased political competition is associated with higher economic growth in more stable political environments. Similarly, in low- and low-middle-income countries, political stability also plays a moderator role. However, the marginal effect of political competition on political stability decreases at higher percentiles of political stability (0.109, 0.095, and 0.074, respectively). The marginal effects (low and low-middle-income countries) show that while political competition initially boosts economic growth, this benefit becomes less pronounced as levels of political stability rise. Political competition's initial positive effects may be limited by institutional challenges in low and low middle income countries.

5. Conclusion

The study looks at the relationship between political competition and the pace of economic growth while accounting for the moderating role of political institutions. The analysis was carried out in the case of 66 developing countries over the period 1995-2018. In order to mitigate the possibility of potential heterogeneity inside the sample, the sample is divided into two income groups: low-middle, and upper-middle-income countries. We used the two-step system-GMM estimation approach to estimate the empirical models. The research results indicate that an increase in political competition leads to a faster pace of economic growth. This is demonstrated by the fact that political competition enters with a statistically significant positive sign in every specification and every set of sample countries. Besides, the empirical findings shed light on the significance of political institutions in the relationship between political competition and the pace of economic growth.

Regarding the moderating role of political institutions, the results of the study show that political competition that is conditional on political systems lowers economic growth. In a democratic regime, parliamentary accountability is thought to be essential to economic growth. A weak system of checks and balances, fierce political competition, policy deadlock, and a lack of accountability are the main sources of poor economic performance. By exploring the relationships between political stability, competitiveness, and economic growth, this study adds to the expanding subject of political economy by going beyond standard measurements. The conditional effect of political competition and political stability is crucial in developing policies that are robust in stable environments and adaptable to changing political landscapes. More precisely, the evidence points toward the fact that political competition accelerates economic growth in a country that

maintains political stability.

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Appendix

Appendix A: Descriptive Statistics

Table 1 A: Descriptive Statistics of Variables under Observation

Variable	Obs.	Mean	Std. Dev.	Min	Max
y_{it}	1584	3376.527	2958.341	281.9702	14222.549
$regm_{it}$	1584	2.892	5.668	-9	10
pc_{it}	1583	6.56	2.585	1	10
inf_{it}	1584	6.949	7.618	-16.86	61.135
top_{it}	1584	69.815	34.736	0.021	220.407
$phyc_{it}$	1584	22.019	7.63	-2.424	53.613
hc_{it}	1584	2.158	0.582	1.03	3.501

Appendix B: Correlation Matrix

Table 1 B: Correlation Matrix of Variables under Consideration

Variables	y_{it}	$regm_{it}$	pc_{it}	inf_{it}	top_{it}	$phyc_{it}$	hc_{it}
y_{it}	1.000						
$regm_{it}$	0.180	1.000					
pc_{it}	0.164	0.826	1.000				
inf_{it}	-0.026	-0.018	-0.038	1.000			
top_{it}	0.136	-0.059	-0.021	0.074	1.000		
$phyc_{it}$	0.159	-0.011	-0.030	0.049	0.283	1.000	
hc_{it}	0.594	0.076	0.034	-0.029	0.292	0.206	1.000

Appendix C: List of Sample Countries

Table 1 C. Low-Income Countries and Low Middle-Income Countries

Burkina Faso	Uganda	India	Nicaragua
Burundi	Algeria	Indonesia	Nigeria
Cent. Africa Rep.	Angola	Iran, Islamic Rep.	Pakistan
Gambia	Bangladesh	Kenya	Senegal
Madagascar	Benin	Lebanon	Sri Lanka
Mali	Bolivia	Lesotho	Tajikistan
Niger	Cameroon	Mauritania	Tunisia
Rwanda	Egypt, Arab Rep.	Mongolia	Ukraine
Sierra Leone	Haiti	Morocco	Vietnam
Togo	Honduras	Nepal	Zimbabwe

Table 2 C: Upper-Middle-Income Countries

Albania	Dominican Republic	Kazakhstan
Argentina	Ecuador	Malaysia
Armenia	Equatorial Guinea	Mauritius
Belarus	Fiji	Mexico
Brazil	Guatemala	Paraguay
Bulgaria	Iraq	Peru
Colombia	Jamaica	Russian Federation
Costa Rica	Turkmenistan	Suriname
Turkey		