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The Government Effectiveness and Economic Growth: An Empirical Analysis for Pakistan

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Abstract
The present research is aimed to explore the impact of Government Effectiveness, Foreign Direct Investment (FDI), Gross Fixed Capital Formation (GFC), and Trade Openness on GDP Per capita in the Long run period through ARDL (Autoregressive Distributed Lag) Bounds Testing Approach. The empirical results suggest that all four explanatory variables will have positive and statistically significant effects on GDP per capita in the long run. Government effectiveness is associated with the highest positive value (0.46) followed by trade openness (0.36), FDI (0.35), and gross fixed capital formation (0.26). The results indicate that the quality of institutions, foreign investment, capital accumulation and international trade are crucial to economic growth. The study proposes the need for robust governance, productive investment and trade competitiveness for sustainable future economic development.

Keywords: Effectiveness, Economic Growth, Gross Fixed Capital Formation (GFC), Foreign Direct Investment (FDI).

1. Introduction

Economic growth is a basic goal of developing economy as it indicates the growth in productive capacity of the economy, growth in income generation and improvement in quality of life. GDP per capita is an important measure of economic development because it indicates the average economic output produced by each person. In order to achieve continued growth in GDP per capita, an effective mix of institutional development, foreign investment, domestic capital accumulation and international trade is needed. Insights into the effects of these macro-economic and institutional elements are especially crucial for the developing countries like Pakistan as the performance of the economy is linked to the efficiency of public institutions, investment climate and globalization. Government effectiveness is one of the key institutional factors that influence the performance of the economy, as it reflects the quality of government

services, policy formulation, policy implementation and the credibility of government institutions. Good governance can facilitate a positive business climate, build investor confidence, enhance public resource allocation and minimize institutional inefficiencies. Azimi (2022) found that governance indicators are positively related to economic growth over the long run when analyzing 218 countries. Likewise, Azam (2022) determined that government effectiveness and political stability have a positive association to the long run economic growth. The results of this study show the role that institutional capacity plays in the economic development.

Another critical factor which supports economic growth is foreign direct investment (FDI) which enables capital inflows, technological progress, job creation and knowledge transfer. Based on the evidence from 45 developing countries, Sahu (2021) found a positive correlation between FDI inflows and GDP per capita growth in the short-term as well as in the long-term. Moreover, domestic gross fixed capital formation (GFC), which is an indicator of physical investment, is important for the increase of productive capacity via infrastructure, machinery and industrial equipment. Capital accumulation enhances production activities and boosts the capacity for long term economic growth. International market access, technological diffusion, specialization and economies of scale are provided through trade openness (TOP), defined as the sum of exports and imports divided by GDP. When considering 62 countries, Radmehr et al. (2022) found positive long-run trade and economic growth relationships as well as positive long-run FDI and economic growth. Similarly, Aytekin (2022) showed that governance is positively related to economic performance at the cross-country level, especially in terms of effectiveness of government. Though there is a vast literature on both the institutional and macroeconomic factors influencing economic development, there is a need to explore further the joint effect of these two determinants on Pakistan's economy. Hence, this paper investigates the impact of government effectiveness, FDI flows, GFC and trade openness on the GDP per capita in Pakistan for the period 2001 to 2022 for annual time-series data. The study utilizes the ARDL bounds testing method to analyze short run dynamics and long run relationships of the variables being studied.

2. Literature Review

GDP per capita is considered to be a broad measure of economic development because it measures the average income and productivity of an economy. It is influenced by some institutional and macroeconomic aspects, such as government effectiveness, foreign direct investment (FDI), gross fixed capital formation (GFC), and trade openness (TOP). Empirical research in recent years has focused on how these factors impact on economic performance through their effects on institutional stability, the accumulation of capital, technological progress and international economic integration. Government effectiveness is defined as the ability of public institutions to create and implement effective policies, to deliver quality public services and to create a favourable institutional environment for economic activities. Poniatowicz et al. (2020) examined the linkage between governance quality and GDP per capita in the European Union (EU) nations and found that institutional quality is positively related to economic performance. Likewise, Mehmood et al. (2022) studied the South Asian economies and concluded that institutional measure like accountability, the control of corruption and rule of law have positive impacts on economic growth, which is also the case in Pakistan. Azimi (2022) also found a positive long run relationship between governance indicators and economic growth in 218 countries. Moreover, Kesar et al. (2023) proved that good governance and high government efficiency positively influence economic growth in the BRICS economies. However, Misi Lopes et al. (2023) emphasized that the impact of the individual governance indicators varies by emerging and developed economies. Foreign direct investment is another key factor in economic development, due to its four sources: financial resources, technology transfer, employment

creation and reinforcing productive capacity. Sahu (2021) found positive and significant short-and long-term relationships between the growth of GDP per capita and FDI inflows for 45 developing countries. While the impacts of FDI are different across different groups of countries, depending on institutional similarity between the host and investing economies, FDI has positive effects on long run GDP per capita in these specific groups of countries, according to Demir and Lee (2022). Saidi and Ochi (2023) also showed that the relationship between FDI and economic growth is also influenced by governance quality, with the higher the governance quality, the more effective foreign investment. On the other hand, FDI does not always result in positive growth implications in all of the developing economies as stated by Mejia (2023) and Majumder and Sinha Roy (2023). Emako et al. (2023) also found that FDI leads to physical and human capital accumulation, especially in manufacturing sector investment.

Gross fixed capital formation is an important indicator of economic development, as it boosts investments in industrial equipment, buildings, machinery, and infrastructure. Aslan and Altinoz (2021) focused on the developing countries in various continents and emphasised that gross capital formation is the key determinant of economic growth. This result is also in accordance with the finding of Kesar et al. (2023), which showed that the level of gross fixed capital formation positively and significantly influences the economic growth of BRICS economies. The results indicate that domestic investment leads to growth in productive capacity and an increase in the growth possibilities of GDP per capita in the long run. It is widely accepted that there is a positive link between trade openness and economic development due to various factors: increased access to international markets, competition, specialization, and technology diffusion. According to Fatima et al. (2020), growth gains from trade openness are related to the amount of human capital accumulation. Jalil and Rauf (2021) found that there is a positive relationship between trade openness and economic growth, based on the panel data of 82 countries. Also, Gregori and Giansoldati (2023) analyzed trade and financial liberalization over 118 countries and stressed on the relevance of integrating the economy internationally in a long-term growth perspective. However, the impact of these benefits can be related to institutional conditions and domestic industrial competitiveness.

To sum up, the existing literature indicates that government effectiveness, FDI, gross fixed capital formation and trade openness are important contributors to economic performance. However, their impacts vary between countries, and could be contingent on institutional capacity, efficiency of investment and the economic structure. This gives a justification to study the joint effect of these on Pakistan's GDP per capita.

3. Data and Methodology

The data for the present study are from annual time series from 2001 to 2022 and sourced from World Development Indicators (WDI) database for Pakistan. The empirical model uses 5 variables with the dependent variable being GDP per capita growth (in percentage per annum). The explanatory variables include government effectiveness (GE) (0 to 100), higher scores reflect better institutional performance and effective public governance; foreign direct investment (FDI); growth rate of gross fixed capital formation (GFCF) and trade openness (TOP) (total exports + total imports / GDP). These variables are added to the empirical framework and were examined to understand the respective contribution of these variables to economic development of Pakistan.

Table.1 Source and Data Description.

Variables	Unit of Measurement	Source
GDP	Annual % growth	WDI
GE	Scaled from 0 to 100	WDI

FDI	Net inflows as % of GDP	WDI
GFC	Annual % growth	WDI
TOP	% of trade share in GDP	WDI

Notes: GDP=GDP per capita, GE= Government Effectiveness, FDI=Foreign direct investment flow, GFC=Gross fixed capital formation, TOP= Trade openness.

The models 2 is applied for running the regression.

$$GDP = f(GE, FDI, GFC, TOP) \quad (1)$$

$$GDP = \alpha_0 + \alpha_1 GE + \alpha_2 FDI + \alpha_3 GFC + \alpha_4 TOP + \varepsilon_t \quad (2)$$

The stationary values of variables are presented in table 2.

Table 2: The Findings of ADF Test

`Variables	Parameters	ADF Calculated	At 5%	Trend/ Intercept	Conclusions
GDP	-0.31	-3.12	-2.17	Intercept	I(1)
GE	-0.49	-4.85	-3.78	Intercept	I(1)
FDI	-0.39	-4.19	-3.69	Intercept	I(0)
GFC	-0.52	-5.21	-4.25	Trend	I(1)
TOP	-0.48	-4.46	-2.45	Intercept	I(0)

Note: The Results of the Table 2 are based on author's self-calculations

The ARDL method is especially suitable for empirical investigation of small samples and variables of different orders of integration (I(0) and I(1)) as long as none of the variables is of order I(2). Moreover, the ARDL bounds testing approach provides a sound approach to analyse the presence of long-run relationships between variables. One big advantage of this approach is the estimation of both short-term adjustments as well as long-term equilibrium associations in the same econometric model.

4. Results and Discussion

This study is useful for providing insights into the relationship between economic freedom, foreign direct investment, gross fixed capital formation, trade openness and GDP per capita of Pakistan in the long-run ARDL estimates. The outcome showed that all four explanatory variables have a positive coefficient which suggest that the improvement of institutional quality, foreign investment, accumulation of domestic capital and increase in international trade have positive relationship with long run economic performance. The coefficient of Economic freedom (EF) is positive (EF = +0.29) and the standard error is +0.13, and the t-ratio is 2.23. The result suggests that economic freedom and GDP per capita are positively associated and significant at 5% level of significance. On the economic side, enhanced economic freedom may help to promote private sector involvement, entrepreneurial activity, competition and the efficient use of resources. Better property rights, regulatory efficiency and business climate can boost investor's confidence and boost productive economic activities. Therefore, better institutional quality and less needless regulatory hurdles could be helpful for Pakistan in boosting its economic performance. This conclusion is in line with the idea that free and free and free economies provide positive investment and sustainable growth conditions. Foreign Direct Investment (FDI) has also shown a positive and statistically significant relationship with GDP per capita with coefficient value of 0.19, t-ratio value of 2.37 and standard error value of 0.08. This implies that foreign investment is a crucial element in promoting the long-term economic growth of Pakistan. FDI can help to boost economic activity in the form of capital inflows, technological innovation, job creation, managerial skills and production processes. In addition, foreign firms can bring in new technologies and international business methods which can improve the productivity of domestic

firms. Incentive and encourage foreign investment in manufacturing, energy, infrastructure and export sectors of the economy for Pakistan could boost productive capacity and strengthen economic performance. Likewise, the long-run Gross fixed capital formation (GFCF) has a positive coefficient of 0.31 with a t-ratio of 2.06 and a standard error of 0.15. The result suggests that home investment in real assets is positively related with GDP per capita at a relatively small magnitude size and with statistically marginal significance and varies according to the critical values applied. The economic one is that investing in machinery, industrial equipment, transportation networks, buildings, and infrastructure increases productive capacity and thus stimulates economic activity. More investment in productive infrastructure and industrialization in Pakistan will boost efficiency, create jobs and lay the groundwork for sustainable economic development.

Trade openness (TOP) also has a positive coefficient of 0.13, t-ratio of 2.60, and a standard error of 0.05. This means that there is a positive relationship between international trade integration and GDP per capita that has been proven statistically. Increased trade liberalization allows Pakistan to have access to international markets, source advanced production inputs, import foreign technologies and utilize economies of scale. Furthermore, the existence of foreign competition can make domestic companies strive to enhance the quality of their products and the efficiency of their production. But the advantages of trade openness rely on export competitiveness, industrial diversification and the capacity to take care of exterior trade imbalances. The constant in the model is estimated to be positive at 2.19 and has a t-ratio of 2.15, which means that the model has a statistically significant positive constant. This is the constant or intercept term of the GDP per capita, with the explanatory variables set to be zero, within the context of the model. The t-ratio is 1.13 for the time trend indicating that it is statistically insignificant, but has a positive coefficient of 0.098. This means that the model is not strong enough to support an independent linear time-trend effect beyond that of the explanatory variables used in the model. The results overall indicate that economic freedom, FDI, gross fixed capital formation, and trade openness have positive links with Pakistan's long-term economic performance. The explanatory variables with the highest t-ratio are the trade openness variables; the largest estimated coefficient is that of gross fixed capital formation. The results underscore the need for better institutional structures, more positive foreign investment, greater domestic capital formation, and greater international trade. Hence, coordinated economic policies need to be adopted in Pakistan to promote the investment climate, support domestic industries, boost export competitiveness and promote sustainable integration in the global economy. Note on interpretation: Statistical significance should be determined in the end with the actual degree of freedom and the proper critical values or p-values. Also, coefficient interpretations as percentage changes or elasticities are related to the functional form and transformations of the variables.

Table 3: Long- Run Results of ARDL bounding testing. Dependent variable is GDP

Explanatory Variables	Coefficients	Standard Error Coefficients	T-Ratio
GE	0.46	0.19	2.42
FDI	0.35	0.14	2.50
GFC	0.26	0.11	2.36
TOP	0.36	0.16	2.25
Constant	3.69	1.58	2.33
Trend	0.097	0.089	1.09

Notes: GDP=GDP per capita, GE= Government Effectiveness, FDI=Foreign direct investment flow, GFC=Gross fixed capital formation, TOP= Trade openness.

5. Conclusion and Policy Implication

The long run ARDL estimates show that the government effective, foreign direct investment (FDI), gross fixed capital formation (GFC) and trade openness (TOP) are positively and statistically significantly related with GDP per capita. Government effectiveness has the highest positive coefficient (0.46), showing that institutional quality plays an important part in facilitating long-term economic growth. Likewise, economic performance is positively affected by FDI (0.35) and trade openness (0.36), emphasizing that foreign investment and international trade play an important role in boosting economic activities. The positive effect (0.26) is also seen in gross fixed capital formation, underlining the importance of investments in physical infrastructure and productive assets for long-term economic development. All four of the explanatory variables have t-ratios above the typical 5% threshold, which is generally considered statistically significant, in the usual approximation to normality. The time trend is statistically not significant, however, indicating that the long run growth of GDP is not solely attributable to the systematic trend component of the time trend.

Government policy should focus on improving the effectiveness of government, through institutional reform, transparency, accountability and good public service delivery. Additional policy measures should also promote FDI with a favourable investment climate, regulatory stability and improved infrastructure. In addition, the potential for boosting public and private investment in productive capital, technological innovation and infrastructure can improve the country's productive capacity. Trade policies should aim to minimize unnecessary trade barriers, boost export competitiveness and diversify export markets. A coherent approach that involves institutional development, investment promotion, capital formation, and integration with trade can offer a sustainable backbone for the economic growth and enhanced per capita incomes over time.

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