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INSTITUTIONAL QUALITY AND MACROECONOMIC POLICIES IMPACT ON DOMESTIC PRIVATE INVESTMENT EVIDENCE FROM HIGH, MIDDLE AND LOW-INCOME COUNTRIES

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Abstract

The study examined the impact of institutional quality (proxy by an index of six governance indicators and property rights index) and macroeconomic policies on domestic private investment (DPI) proxy by gross fixed capital formation, utilizing annual panel datasets spanning from 2005 to 2021 across sixty countries of the globe with varying income levels. The study adopts Principal Component Analysis (PCA) to develop an index for quality of governance and dynamic GMM approach for the analysis. The study findings revealed that quality of governance's impact on DPI is evident in high and middle-income economies (0.40089 and -0.00216), and property rights have a significant impact (-0.00767) solely in the low-income group at a 1% significance level. Macroeconomic variables highlight GDP's influence (0.01962) in the high-income groups, trade openness (5.07281 and 0.12511) in high and low-income countries at 1% and 5% significance levels, and exchange rate affects (-0.03487, and 0.01694) in the middle, and low-income economies, respectively. For the crowding effect, FDI positively crowd-in DPI (0.30389) in middle-income economies at 1% significance levels, whereas the crowding-out effect is evident in high-income countries (-0.18799) at 5% level of significance. In conclusion, enhancing governance quality, implementing sound monetary and fiscal policies, reducing trade barriers, promoting free trade, and facilitating technology transfer to local investors are vital steps to stimulate private sector participation in economic growth and mitigate the crowding-out effects of FDI on DPI.

Keywords: *Domestic Private Investment, Institutional Quality, Macroeconomic Policies,*

INTRODUCTION

The fundamentalrole of institutions and macroeconomic policies in stimulating domestic private investment (DPI) and the general economic activities has attracted significant consideration from scholars in current literature. The predominant argument postulates that good governance and well-established institutions alleviate macroeconomic uncertainties among individual economies and globally at large (North, 1989). This brought about conflicting argument to the classical economic hypothesis that calls for laisser-faire. North identified the significant role of transaction costs in hindering rational economic choice (decision), emphasizing that institutional intervention is essential to minimize such mitigating factor and curtail transaction costs for the societal benefit in general. This view is further underpin by Lin (1989) which proclaims that institutions fundamentally moderate economic structures by fostering increased investment, thereby reducing uncertainty caused by transaction costs and internalizing externalities for communal gain. Fayissa and Nsiah (2010) also posit that improved governance narrows the income per capita gap between richer and poorer economies,

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advocating that bolstering institutional quality enhances per capita income.
Seetanah, Matadeen, Fauzel, and Kheshansing (2018) and Ouedraogo and Kouaman (2014), believed that institutions and macroeconomic policies facilitate foreign capital inflow, potentially elevating domestic capital and savings, and aiding in debt management. This positive cycle can potentially elevate per capita income across high, middle, and low-income economies (Kolstad & Wiig, 2009).The past decade has witnessed significant growth in domestic investment in the continent. Domestic investment in Africa increased from $100 billion in 2000 to approximately $353 billion in 2010, accompanied by an increase in the share of domestic investment in GDP weighted term from 17 per cent to 21 per cent during the same period. Recent indices also reveal an increased in SSA countries' debt-to-GDP ratio from 35.1 per cent in 2014 to 59.5 per cent in 2019, surging further to 63.5 per cent in 2020 due to subdued domestic investment potential. This marks a 4.5 per cent increase above the projected 2020 figures, reflecting a decline in private consumption, investment, and a significant reduction in total FDI inflows (World Bank, 2020).

Considering the existing literature on the impact of institutional quality and macroeconomic policies on DPI, numerous empirical studies have endeavored to model the determinants of DPI. While some findings point to a negative correlation (Daniel & Diago, 2017; Ouededraogo & Kouaman, 2014; Hartag, Van-Stel & Storey, 2010) others highlight a positive relationship (Iheonu, 2019; Albalate, Bel, & Geddes, 2019; Cieslik & Goczet, 2018). In this context, the present study contributes to this body of investigation as the inconclusiveness of the finding remained further attractive to conduct related study. Similarly, the previous panel data analyses have primarily focused on regional-based,and limited observations and/or time frames (Iheonu, 2019; Ellahi, Kiani, Malik, Raza, &Gul, 2018; & Agyei, 2017). To address this gap, the present study adopts a comprehensive approach, by ascertaining the impact of institutional quality and macroeconomic policies while considering high, middle, and low-income countries to gain empirical evidence. Following the said broad objectives, the following specific objectives will be put forward to guide the conduct of the study:

1. To examine the impact of institutional quality on DPI in high, middle, and low-income economies.
2. To examine the impact of macroeconomic policies on DPI in the said three classified economies.
3. To examine whether FDI inflows crowd-out DPI in the midst of institutional quality and macroeconomic policies in each of the three classified economies.

To ascertain the said objectives, the following null hypothesis will be tested:

1. HO_1: Institutional quality has no significant impact on DPI in high, middle, and low-income economies.
2. HO_2: Macroeconomic policies do not significantly impact DPI in each three said classified economies.
3. HO_3: FDI inflow does not significantly crowd-out DPI in the midst of institutional and macroeconomic policies in each of the three classified economies.

To achieve the said objective, we structure the paper into five sections including this

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introduction as section one. The empirical literature review were identify in section two, and section three present the methodological approach of the study. Similarly, section four discuss and present the result of the study while section five conclude the study.

LITERATURE REVIEW

2.1 Theoretical Framework

Scholars have theorized on the link between institutional quality and macroeconomic policies on domestic private investment. However, their theories advance a lot of empirical arguments.In his postulation, North (1989), attempt to harmonize the roles of the state and property rights, contends that a profound connection exists between institutional factors and economic performance. This linkage operates through the intrinsic, pivotal effects of institutions, stimulating economic growth by encouraging increased investment, diminishing uncertainty due to transaction costs, internalizing externalities, and generating benefits for all stakeholders. The institution is believed to have played a crucial role in shaping the rules and guidelines governing these practices (Colesbourne, 2012). While acknowledging the central role of state institutions, Harvey (2005) and Brett (2002) highlight that the state must ensure the integrity of the currency, establish military and police forces, and establish a robust legal framework to safeguard property rights. The state's intervention, if necessary, is meant to address market failures in areas critical to societal welfare. The theoretical framework of this study will be a fusion of the North institutional theory. The selection of this theory is justified by its ability to intricately interconnect both institutional and macroeconomic policies.

2.2 Empirical Review

The significant numbers of empirical study are acknowledged in relation to the aforementioned theories. To start with the institutional empirical studies, Iheonu (2019) explored the influence of quality of governance on DPI across 16 developing African countries using annual data for the period of 2002 to 2015. The findings of static model inform of fixed and random effects unveiled a notable pattern indicating that, all governance indicators revealed a positive and significant impact on DPI, except the efficiency of governance. The finding draw the impactful nature of governance influence over DPI, both ascertaining the result using individual governance index may incorporates the problem of information redundancy. Hence, principal components analysis needs to apply to have a single index for all the six indicators. In a similar finding, Chuku et al., (2017) extended the exploration of institutional quality's influence within 22 African countries using a set of data for the period spanning 1980 to 2011. The finding of dynamic GMM approach demonstrated that, cost of capital,inflation, and governance exhibited positive and impact with DPI in the panel of African countries. Although, the data coverage is enough but recent governance index need to incorporate in which this study address.

In another similar submission, Ellahi et al., (2018) through a panel of four Asian countries with a data ranges the period of 1995 to 2018, investigate how institutions influenced trade openness, real output, economic freedom, inflation, and financial sector development revealed a positive significant influence.Even though, Ellahis' study need to go beyond Asian countries and explore more heterogeneous panel to have insightful finding from high, middle, and/or low-income economies. Moreover, Asongu et al., (2021) delved into the role of property rights components, specifically political, economic, and institutional governance, in shaping private investment in 53 African countries while handling annual panel data for the period of 1996 to 2010. Their findings of GMM model strongly indicated that the quality of institutions as a whole

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significantly impacted the growth rate of private investment across the region. But, the four years observations across the study countries remained inadequate for the dynamic estimate in which the present study developed to address such gap.

Conversely, Otuo et al., (2017) redirected their attention to the role of country-level institutional structure in enhancing investor confidence across a selection of African countries using panel data over the period of 2009 to 2013. The finding of ECM underlined the positive and significant association between the rule of law, voice accountability, property rights, political stability, and investor confidence. In their submission, Ndungu and Muriu (2017) embarked on an investigation of the nexus between private investment decisions and governance within four selected East African countries with datasets covering the periods of 1996 to 2015. The study's results highlighted significant associations. Attributes such as government effectiveness, regulatory quality, control of corruption, and the rule of law were found to be positively and significantly linked with private investment. In another comprehensive empirical study, Cieslik and Goczet (2018) established a critical link between institutional control over corruption, private investment, and overall economic growth for a sample of 146 countries with data ranges the period of 1994 to 2014. Their findings highlighted the substantial and affirmative contribution of institutional corruption control to heightened private investment ratios, as well as increased per capita GDP. Richer countries boasting robust anti-corruption laws and policies were found to attract higher levels of investment from international and domestic capital markets compared to emerging economies.

However, on macroeconomic policies, Adu-Gyamfi, Nketiah, Obuobi, and Adjei (2020) examined the impact of trade openness, inflation rate, and economic growth on private investment in selected West African States using data for the period of 2009 to 2016. The study employed the system GMM and found negative significant effects of inflation, GDP, trade openness, and exchange rate on private investment, while the exchange rate exhibited a positive significant correlation.In another complementary exploration, Combey (2016) delved into the primary determinants of private investment within the WAEMU zone. Employing the dynamic GMM technique with annual data ranges the period of 1995 to 2014, the study's estimations highlighted significant and positive effects. Specifically, the coefficient of political stability and GDP elasticity emerged as influential factors, fostering private investment attraction within the region. In a similar study, Keino, Kiprop, Kalio, and Kibet (2018) concentrated on the impact of regional integration on the growth rate of private investment within the East African Community (EAC) with datasets covering the periods of 1980 to 2014. The Pedroni cointegration and RE models revealed that regional integration, represented by trade openness, had a positive and significant effect on the growth rate of private domestic investment in EAC member countries.

Similarly,on the part of the crowding effect of FDI on DPI, Okwu, Oseni, and Obiakor (2020) handled annual panel data for the period of 1998 to 2017 to investigate the impact of FDI on private investment and economic growth using annual panel datafor 30 developed economies. The study utilized pooled OLS for estimation and found a significant positive correlation between FDI, DPI, and economic growth.Subsequently, Budang and Abd-Hakim (2019) investigated the crowding effect of FDI on DPI in Asian countries using static panel models inform of pooled OLS, Fixed, and Random effects and datasets for the period of 2010 to 2017.

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The finding showed that FDI had a crowding-out impact on DPI in some countries, indicating that the impact of FDI on domestic investment varies depending on economic conditions.

DATA AND METHODOLOGY

3.1 Data

The study handles annual panel data for the period of 2005 to 2021 across 60 countries of high, middle and low-income categories, that is to say, 20 economies for each disaggregated income group. The sample period were purposively chosen in order to gain insight for the countries with availability of data set and then follows with stratified techniques to further action to refine the selection of the countries according to their income category. The periods however were considered appropriate following the consideration of significant reforms agenda that prioritize private sector lead growth, and the recommendation of Baltagi, (2005) and Baum (2006) that require small time dimension and large cross section units for the dynamic model estimate. The data for quality of governance and property rights that represent institutional quality were sourced from WGIs (2021) and OECD (2021) data bank while for the macroeconomic policy indicators are obtained from WDIs (2021).

3.2 Methodology

Following the outcomes of the empirical studies reviewed in the previous section, the study adopt and modify the following neoclassical functional econometric model as it was handled Diallo, et al.,(2021); Asongu et al.,(2021); Albalate, et al.,(2019); and Seetanah, et al.,(2018). Nevertheless, the model for the study indicates that domestic private investment (*dpinv*) is a function (*f*) of institutional and macroeconomic variables and this can be expressed as:

$$ldpinv = \beta_0 + \beta_1 govin + \beta_2 pr_{it} + \beta_3 lngdp_{it} + \beta_4 ltop_{it} + \beta_5 lnexr_{it} + \beta_6 lfdi_{it} + \mu_{it} \quad \ldots\ldots Eqn. 1$$

Where:

$\beta_0$is the constant parameter; β_s represent the coefficient of the independent variables; *i* and *t* are the country and time subscripts across the sample; *ldpinv* is the logarithm of private domestic investment; *govin* is the quality of governance index generated using PCA; *pr* represent the index of property rights; *lgdp* signified the logarithm of real gross domestic product; *ltop* is the logarithm of trade openness; *lexr* stands for the logarithm of the exchange rate; *lfdi* is the logarithm of foreign direct investment; and μ_{it} = represent the error term.

To address the potential effect of high degree of correlation among governance indicators, and the problem of information redundancy, the research employs Principal Component Analysis (PCA) based on the informed criteria as laid-out by Jolliffe (2002) and Kaiser (1974), and outlined in Asongu, *et al.* (2021). Following the PCA estimate, the study applies Arellano and Bond's (1991) Generalized Method of Movement (GMM) and its properties as an extension to system GMM. The econometric model for this approach is specified in equation 2.

$$ldpinv_{it} = \alpha_i + \beta_1 ldpinv_{it-1} + \beta_2 govin_{it} + \beta_3 pr_{it} + \beta_4 lngdp_{it} + \beta_5 ltop_{it} + \beta_6 nlexr_{it} + \beta_7 lfdi_{it} \ldots\ldots Eqn. 2.$$

Where $ldpinv_{it}$ represent a domestic private investment of country *i* at time *t* and the β's are the

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coefficient of the parameters to be estimated and explained the behavior of domestic private investment. $ldpinv_{it-1}$ is the lagged value of the dependent variable while α_i is the country-specific effect, which is assumed to be independent and constant across the countries under study and μ_{it} is the error term of the parameters and equally assumed to remain independent of *i t.*

To solve the problem of endogeneity and country-specific heterogeneity effects that are common with estimation of a panel data model that is endogenous, the study adopt the two step dynamic GMM estimator developed by Arellano and Bond's (1991). The approach is considered appropriate estimation approach because it is a consistent and asymptotically efficient estimator for panels with large number of cross sections (N) and small number of time periods (T). Finally, for the post estimation statistics, the study used the Sargan test of over-identifying restriction and Arellano-Bond serial order autocorrelation. According to Blundell, Bond, and Windmeijer, (2000), the standard test for testing the validity of the moment conditions used in the GMM estimation procedure is the Sargan test of over-identifying restrictions.The Arellano–Bond test is applied to the residuals in differences. Because Δv_{it} is mathematically related to Δv_{it-1} via the shared v_{it-1} term, negative first-order serial correlation is expected in differences and evidence of it is uninformative. Thus to check for first-order serial correlation in levels, we look for second-order AR(2) serial correlation in differences, on the idea that this will detect a correlation between the v_{it-1} in Δv_{it} and the v_{it-2} in Δv_{it-2}.

RESULT AND DISCUSSIONS

4.1. Principal Component Analysis Results: High, Middle and Low-Income Countries

Likewise, PCA was also conducted for the disaggregated panel of high, middle, and low-income as shown in Table 1. The Table indicates that, for the high, middle, and low-income categories, the first principal component (PC column) for high, middle, and low-income categories capture a significant portion of the variance across the variables- control of corruption (CC), government effectiveness (GE), political stability and absence of violence/terrorism (PS), regulatory quality (RQ), rule of law (RL), and voice and accountability (VA), with corresponding proportion values of 0.623, 0.625, and 0.729 respectively. Notably, the Eigen values for these income groups within the same principal component are 3.735, 3.751, and 4.379, respectively. This outcome underscores the substantial contribution of these indicators to the first principal component for each income classification.

Following this, the subsequent principal components for the high-income group contribute as follows: 0.143, 0.123, 0.062, 0.035, and 0.014, with corresponding Eigen values of 0.856, 0.740, 0.374, 0.211, and 0.085. Similarly, the middle-income group exhibits proportional values consistent with those mentioned earlier: 0.143, 0.106, 0.067, 0.046, and 0.013, accompanied by Eigen values of 0.857, 0.635, 0.404, 0.276, and 0.078. Lastly, for the low-income group, the proportion and Eigen values are 0.138, 0.058, 0.034, 0.026, and 0.014, and 0.829, 0.349, 0.203, 0.155, and 0.085, respectively.

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Table 1 Results of PCA: High, Middle and Low-Income Countries

PC	CC	GE	PS	RQ	RL	VA	PR	CMP	EV
High-Income Countries									
First	0.458	0.460	0.253	0.423	0.488	0.313	0.623	0.623	3.735
Second	0.104	-0.108	0.913	-0.079	-0.198	-0.314	0.143	0.765	0.856
Third	0.019	-0.128	0.202	-0.474	-0.129	0.838	0.123	0.889	0.740
Fourth	-0.561	-0.428	0.187	0.616	0.124	0.270	0.062	0.951	0.374
Five	-0.638	0.744	0.138	-0.095	-0.108	0.025	0.035	0.986	0.211
Sixth	0.242	0.156	-0.091	0.444	-0.824	0.167	0.014	1.000	0.085
Middle-Income Countries									
First	0.456	0.423	0.277	0.429	0.479	0.349	0.625	0.625	3.751
Second	0.069	-0.194	0.862	-0.436	-0.092	0.122	0.143	0.768	0.857
Third	-0.067	-0.365	-0.233	-0.039	-0.096	0.893	0.106	0.874	0.635
Fourth	-0.617	0.550	0.227	0.248	-0.402	0.206	0.067	0.941	0.404
Five	-0.375	-0.569	0.262	0.619	0.254	-0.138	0.046	0.987	0.276
Sixth	0.512	-0.152	0.071	0.424	-0.725	-0.065	0.013	1.000	0.078
Low-Income Countries									
First	0.422	0.404	0.301	0.396	0.460	0.447	0.729	0.729	4.379
Second	0.161	-0.433	0.791	-0.399	0.022	0.038	0.138	0.868	0.829
Third	-0.644	-0.005	0.444	0.604	-0.102	-0.119	0.058	0.926	0.349
Fourth	-0.049	0.782	0.279	-0.359	-0.121	-0.406	0.034	0.960	0.203
Five	0.573	0.047	0.047	0.422	-0.129	-0.671	0.026	0.986	0.156
Sixth	0.224	0.082	0.082	0.117	-0.864	0.410	0.014	1.000	0.085

Sourced: Author's computation using Eviews version 10
Note, that PC: Principle component. CC: Control of corruption. GE: Government effectiveness. PS: Political stability. RQ: Regulatory quality. VA: Voice and accountability PR: Proportion. CMP: Cumulative Proportion. EV: Eigen Value

It is worth noting that, in line with the recommendations of Jolliffe (2002) and Kaiser (1974), principal components with Eigen values less than one are typically excluded from the estimation procedure, as outlined in the approach discussed in earlier section. As such, by this principle, the mean values of the first principal component across the three groups, as detailed in Table 1 will be retained for the subsequent analysis.

4.2 Result of Two-Steps GMM Model: High, Middle and Low-income Countries

The result of the system GMM for the panel of high, middle and low-income income countries is presented in Table 2. The results revealed a significant negative coefficient (-0.06269) for the lagged-dependent variablein high-come countries and positive significant with respect to middle (0.20991) and low-income (0.93044) countries at the 1% level respectively. This finding also underlines the recommended dynamic nature of the lagged-dependent variable as suggested by Judson and Owen (1999). Furthermore, the coefficient of quality of governance reflects a significant positive coefficient (0.40089)at 1% impact on domestic private investment in high-income countries (in line with Agyei, 2017;Yildirim&Gokalp, 2016; and Adama, 2016 findings among others) and negative impact (-0.00216) with the said investment at 1% in middle-income countries, and the submission is in consensus with the statistical outcome of Tharanga, (2018), and Ojeka,*et al*., (2019). But, such statistical impact is not accounted for in the low-income

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countries as given by negative insignificant coefficient (-0.00254).

Comparatively, the coefficient of property rights revealed negative significant parameter of -0.00767 with domestic investment in low-income economies (in line with that of Javed, 2015; Ouedraogo & Kouaman, 2014; Otuo, *et al.*2017; and Quan&Rishi, 2016) with similar negative impact but insignificant in high-income countries while positive insignificant in middle-income countries is accounted for. The economic implication is that the institutional quality inform of quality of governance promote strong environment for domestic private sector investment that is guided by absent of corruption, political stability and efficiency in the rule system with safeguarded voice and accountability in the high income countries and otherwise in middle, and low-income categories. But, the index of property rights index justifies institutional weakness in providing enabling law for the said investment in both income panels.

On the part of macroeconomic policy variables, the result from the high income economies revealed that both nominal GDP and trade openness exerted positive impact on DPI, with coefficient values of 0.0196 and 5.0728, respectively. These coefficient values were found to be statistically significant at 1% level. This implies that a percentage increase in nominal GDP and trade openness is associated with0.0196% and 5.0728% increases in DPI respectively in the said classified economy.Conversely, the coefficient of FDI inflow in high-income countries was observed to be -0.1879 at a significant level of 5%. In practical terms, for every percentage point increase in foreign direct investment (FDI) is associated with -0,1879% decrease in DPI.

Comparatively, the empirical test from the middle-income economies suggest, nominal exchange rate coefficient to be negatively, with -0.0349 parameter value, and significant at 1% level. This implies that a percentage change in the nominal exchange rate is associated with a substantial decline of -0.0349 in DPI of the countries mentioned in the said income group. Conversely, the estimated coefficient of the FDI inflow on domestic investment indicating a tendency to further acceleration increase in DPI in the middle-income panel. The results indicate the coefficient FDI inflow to stand at 0.3039. This implies that for each percentage change in FDI inflow is associated with 0.3039%increase in DPI. This positive relationship is statistically significant at the 1% level.

Lastly, in the context of low-income nations, trade openness demonstrates a notably positive influence with a coefficient of 0.1251, significant at the 5% level. This implies DPI is expected to increase by 0.1251 for each percentage point rise in trade openness, assuming other factors remain constant. Similarly, the results highlight a positive impact of the nominal exchange rate on DPI within the low-income group, with a coefficient value of 0.0169, significant at the 1% level. This implies, a 1% point increase in the nominal exchange rate is associated with a corresponding increase of 0.0169%in DPI.The diagnostic tests of serial order and the Sargan test of over-identifying restriction for the three classified economies reject the null hypotheses of serial autocorrelation as suggested by the Arellano-Bond AR(2) while Sargan test reject the over-identifying restriction of the instrument. Furthermore, the significance of the Wald test outcome, with a probability value at the 1%significant level across the three panels, provides additional support for the model's validity.

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Table 2: Result of Dynamic Panel GMM Model: High, Middle and Low-income Countries

Dependent Variable: lag of Domestic Private Investment (ldpinv)

	High-Income (Panel 1)		Middle-Income (Panel 2)		Low-Income (Panel 3)	
Series	**Difference GMM**	**System GMM**	**Difference GMM**	**System GMM**	**Difference GMM**	**System GMM**
ldpinv(-1)	0.95566*** (0.02969)	-0.06269*** (0.01083)	0.16805* (0.09861)	0.20991*** (0.05126)	0.55164*** (0.100090)	0.93044*** (0.14754)
Govin	-2E-05	0.40089*** (0.08917)	-0.00305** (0.00133)	-0.00216*** (0.00079)	2.26437 (1.73155)	-0.00254 (0.04416)
Pr	0.04177* (0.02345)	-0.41527 (0.52161)	0.09319 (0.21691)	0.14850 (0.16928)	-0.11593 (0.08817)	-0.00767*** (0.00223)
Lgdp	0.00095** (0.00044)	0.01962*** (0.00391)	-0.20387 (0.17023)	-0.34492 (0.40229)	-0.94228 (0.65308)	0.02665 (0.01804)
Ltop	0.00899 (0.011794)	5.07281*** (0.65840)	0.35874 (0.50897)	-0.43598 (1.28368)	3.16322*** (1.00363)	0.12511** (0.05946)
Lexr	0.00007 (0.00004)	0.00055 (0.00047)	-0.03844** (0.01535)	-0.03487*** (0.00816)	0.01575 (0.01534)	0.01694*** (0.00621)
Lfdi	-0.00103 (0.00241)	-0.18799** (0.08472)	0.36852*** (0.12746)	0.30389*** (0.11282)	-0.12269 (0.19785)	0.00971 (0.00831)
Diagnostic Tests						
Obsv.	340	340	340	340	340	340
Sample	20	20	20	20	20	20
Sargan Test	202.333[0.0001]	13.5988[0.4027]	19.1602[0.1589]	14.0136[0.4487]	25.6487(0.0287)	15.5661[0.4115]
AR(2) Test	0.47887[0.6320]	0.52159[0.6020]	0.74321[0.4574]	0.43436[0.6640]	0.457577(0.6473)	0.704482[0.4811]
Wald Test	108603[0.0000]	4045.04[0.0000]	24.9888[0.0008]	79.8882[0.0000]	55.8865(0.0000)	10976.2[0.0000]

Source: Author's computation using gretl 2023a extracted from appendix II

Note that, ***, **, and * indicate significance at 1%, 5%, and 10% while figures in () and [ ] are the t-ratios and p-values

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4.3 Hypothesis Testing

Going by the presentation and discussion of results for this study, the following null hypothesis testing is acknowledged as:

HO_1: Institutional quality has no significant impact on DPI in high, middle, and low-income economies.

Decision Rule: We accept the null hypothesis (HO_1) and reject the alternative hypothesis (HA_1) if the probability value (P-Value) of the estimated coefficients of institutional quality variables control in our model is not statistically significant.

Decision: The estimated coefficient and probability of quality of governance in the high; middle, and low-income countries are 0.40089 (0.0000); -0.00216 (0.0066); and -0.00254 (0.9541). While property rights index for the said income groups are -0.41527 (0.4259); 0.14850 (0.3803); and -0.00767 (0.0006).

Based on the decision rule, therefore, we accept HA_1 and reject the HO_1 in respect to quality of governance in the high and middle-income groups while accepting HO_1 and reject HA_1 in the low-income group. For the index of property rights, we only accept HA_1 and reject HO_1 in the low-income categories and otherwise for the other subpanels.

HO_2: Macroeconomic policies do not significantly impact DPI in each of the three said classified economies.

Decision Rule: Decision Rule: We accept the null hypothesis and reject the alternative hypothesis (HA_2) if the probability value (P-Value) estimated coefficients of macroeconomic policy variables control in our model are not statistically significant.

The estimated coefficients and probability values GDP; trade openness; and nominal exchange for the said income group are: high-income countries; 0.01962(0.0001), 5.07281(0.0001), and 0.0005(0.2394); middle-income countries, -0.34492(0.3912), -0.43598(0.7341), and -0.03487(0.0001); and low-income countries 0.02665(0.1395), 0.12511(0.0354), and 0.01694(0.00621).

Decision: The decision to consider here based on the estimates is that, for the high-income countries, the study rejects HO_1 and accepts the HA_1 with regard to GDP, and trade openness while otherwise with regard to exchange rate. Again, for the middle-income panel, we accept HO_1 and reject HA_1 inrespect of GDP, and trade openness and otherwise with regard to exchange rate. Finally, we accept HO_1 and reject HA_1 with regard to GDP and trade openness and otherwise for exchange rate in the low-income panel.

HO_3: FDI inflow does not significantly crowd-out DPI in the midst of institutional and macroeconomic policies in each of the three classified economies.

Decision Rule: Decision Rule: We accept the null hypothesis and reject the alternative (HA_3) hypothesis if the probability value (P-Value) for the estimated coefficient of FDI inflow control in our model is not statistically significant.

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Decision: The estimated coefficient and probability values of FDI inflow for the high, middle and low-income countries are -0.18799(0.0265), 0.30389(0.0066) and 0.00971(0.2425). The decision to uphold here is that, we accept HA_1 and reject the HO_1 in respect middle-income countries while accepting HO_1 and reject HA_1 in the high and low-income countries.

4.4 Discussion and Policy Implication

High-income Countries: The result of the system GMM for the panel of high income countries is presented in Table 2 panel 1. The results reveal a significant negative coefficient for the lagged-dependent variable (DPI) at the 1% level. This finding also underlines the recommended dynamic nature of the lagged-dependent variable as suggested by Judson and Owen (1999). Furthermore, the coefficient of quality of governance reflects a significant positive impact at 1% level with DPI. Although, the coefficient of property rights in this income category revealed negative but statistically insignificant. This suggest that the institutional quality promote strong environment for private sector investment that is guided by absent of corruption, political stability and efficiency in the rule system with safeguarded voice and accountability freedom in the high income countries. The finding is in line with the conclusions of Agyei (2017) who observed a similar positive relationship within SSA nations, Yildirim and Gokalp (2016) who conducted their study across 38 developing economies, and Adama (2016) who analyzed data from 1995 to 2014 for WEAMU countries. Thefinding however, contrast with the findings of studies such as Tharanga (2018), Ojeka, *et al.*, (2019), and Ouedraogo and Kouaman (2014), which identified a negative connection between governance quality and DPI.

Similarly, GDP demonstrates a significant positive impact on DPI within the high-income panel. This result aligns with the findings of Ahmed (2021), and Adama (2016) who also observed a favorable relationship. However, this outcome contradicts the conclusions drawn by Adu-Gyamfi, *et al.*, (2020) who submit a negative impact of GDP on DPI. The outlook of the finding revealed the notion of private sector lead growth, as there exist is precise positive significant effect between the economic growth and private investment. This existence of significant impact revealed that the macroeconomic related policy measures inform of monetary and fiscal measures support the private sectors with relevant atmosphere for investment. Additionally, the results highlight a significant positive impact of trade openness at the 1% level on DPI within high-income panel. This finding is in agreement with Uzum *et al.*,(2021) and Keino et al., (2018). The economic implication here is that, trade barriers enforce to curtailed free economic activities between countries in this panel group are remove and therefore, free exports and imports of economies activities are relatively encourages. But the evidence of restriction in exchange rate to contribute to the growth rate of private investment were discourage. This revealed by the statistical inference of positive but insignificant effect of exchange on DPI in the panel. Finally, the coefficient of FDI exhibits a strong and significant negative association at the 1% level. This indicates the presence of a crowding-out effect in high-income nations. The economic justification of this finding here is that, the monetary and fiscal policy measures within the high-income countries demonstrates insensitive measures to accommodate both the foreign inflow of capital and domestic investment to operate simultaneously in an environment. The finding again, is consistent with the Budang and Abd-hakin (2019) study. The finding however contradict that of Diallo,*et al.*, (2021), and Okwu, *et al.*, (2020) among others, which point to a crowding-in effect.

Middle-Income Countries: The discussion extends to the system GMM results presented in Table 2 panel 2 is the outcomes that underscore the positive and significant coefficient of the

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lagged-dependent variable of middle-income economies. This indicates the genuine dynamic nature of the said dependent variable as recommended by Judson and Owen (1999) simulation. Notably, the coefficient associated with governance quality is found to be significantly negative at 1% level. This finding contradicts the conclusions drawn by Iheonu (2019), Cieslik and Goczet (2018), Ndugu and Mariu (2017), and other studies that suggest a positive correlation. Conversely, it aligns with the findings of Ojeka *et al.*, (2021), Tharanga (2018), Ouedraogo and Kouaman (2014), and Zouhaier and Kefi (2012).The related economic implication emphasize by this finding is that of the presence of weak quality of governance that could not safeguard domestic investment potential. This is featured by week or absent of corruption preventive measures and related rule base system that can provide conducive atmosphere for domestic investment potential on the part of governance indicators. In addition to such policy implication, the revealed negative influence of quality of governance however acknowledged that uncertainty diminishes the performance of DPI in the middle-income panel. This means that, the high the level uncertainty associated to quality of governance, the lower the rate of expansion in private investment as suggested by North's institutional and investment theory as earlier reviewed.

Moreover, the coefficient of property rights index also justify further the weakness of institutional setting in providing enabling law for the said investment to undertake their activities. This is revealed by the positive insignificant coefficient of the index. This indicates the reversibility effect of institutions quality upon domestic investment. To put it in another term, in totality, the institutional quality remained in attractive in promoting the rate of domestic private capital in the said income category.On the other hand, exchange rate in middle-income countries exhibits a strong negative impact with DPI. This outcome supports the conclusions of Abu-lila (2021), and Adu-Gyamfi, *et al.*, (2020). However, the findings is contrary to that of Iheonu (2019), Cieslik and Goczet (2018), Ndugu and Muriu (2017).The insinuation of the finding emphasize that, the attributes of monetary policy measure turn the exchange rate to be sensitively associated with the decrease in the growth rate of domestic private investment. This indicates the potential effect of favorable exchange rate that allows investors to transfer their capital abroad (capital flight) for investment purpose. The variables of GDP and trade openness from the macroeconomic policy indicators revealed to discourage the growth rate of DPI as well, even though the negative coefficients are statistically insignificant. Going by the inference, the submission here demonstrate the existence of predominance of public contribution in the GDP that does not encourage private sector investment while trade barriers in cross border economic activities reduce domestic investment performance. Meanwhile, the finding from the model demonstrate a crowding-in impact of FDI inflow within the income group. This means that, the economic environment in the middle-income panel is associated with related policy and critical atmosphere that can accommodates both the foreign and domestic investment to contribute simultaneously. This finding aligns with research conducted by Diallo,*et al.*, (2021), and Okwu,*et al.*, (2020) while the result is in contrast to the conclusion drawn by Budang and Abd-Hakin (2019) who acknowledged a crowd-in effect of FDI on DPI.

Low-income Economies: Table 2 panel 3, presents the outcomes of the system GMM model for low-income countries, revealing the genuine dynamic nature of domestic investment with statistically significant positive coefficients that adhere to the recommended lagged value of the dependent variable proposed by Judson and Owen (1999) based on Monte-Carlo simulation. Notably, the results show a robust negative correlation between the dependent variable and the property rights index from institutional quality. This finding underscores the property rights index's detrimental impact on private-sector investment. Meaning that the concern institutions

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in low-income countries does not encourage the law that guarantee for the safety of investment related properties and as such property rights index fails to stimulate the private sector's potential for investment decisions in this income group. This conclusion aligns with the findings of Javed (2015) and Ouedraogo and Kouaman (2014) while diverging from the conclusions of Otuo,*et al.*, (2017) and Quan and Rishi (2016), among other studies. Similarly, the outcome of quality of governance also revealed the element week capacity of the institutional quality in totality in the low-income panel. This is evidence by the similar negative coefficient revealed by the index of quality of governance even though statistically not significant.

In line with the outcomes of the system GMM model, as presented in the aforementioned Table, trade openness is also found to have a significant positive impact with domestic investment at the 5%. This result is in line with the finding of Uzum,*et al.*, (2021), Keino,*et al.*, (2018), Kaplan and Yaprakli (2014), and Ucan (2014). By implication, the outcome signal that the trade barriers in the low-income countries are largely ignored and therefore, the variation between the exports and imports among such countries are recommendable as it sensibly promotes domestic investment. Similarly, the exchange rate is found to have a positive and significant impact with domestic investment. The result remain insightful, as the implication of this finding inform that, the unfavorable of exchange rate increase domestic private investment potentials as capital out-flow remains relatively insufficient for investment abroad. This means that, the high the level of unfavorable domestic exchange rate the greater the level of DPI and the lower the movement of local capital for investment purpose abroad (capital flight). The rationale for this process is that, such movement capital became relatively insensitive to investment abroad, and therefore, investors prefer to invest domestically than taking their capital abroad. This finding supports the conclusions of Iheonu (2019), Cieslik and Goczet (2018), and Ndugu and Muriu (2017) while contrasting the results of Abu-lila (2021), and Adu-Gyamfi, *et al.*, (2020), among other studies that reported a negative impact. Lastly, there is limited evidence to firmly support either the crowding-in and/or crowding-out effects in low-income nations across any dimension. The study's results do not provide a clear significant indication of the specific crowding effect in this income category as the coefficient revealed positive but insignificant.

CONCLUSION AND RECOMMENDATION

The study comparatively delves into the impact of institutional quality and macroeconomic policies on DPI dynamics. Using annual panel datasets spanning from 2005 to 2021 from sixty countries with varying income, encompasses high, middle, and low-income economies. Arellano-Bond's (1991) dynamic panel GMM approach, were used to analyze the data set. The following is a summary of the study's major findings:

Quality of Governance (*govin*): The index of quality of governance showed significant positive coefficient in the high-income countries, while it showed a negative impact with DPI in middle-income countries. However, a negative association was only found in low-income panel with insignificant association. Property Right (*pr*): In low-income panel showed a negative significant impact. Nominal GDP (*lgdp*): In high-income panels, the variable has a significant positive impact on DPI, but such significant impact was found not in middle- and low-income countries. Trade Openness *(ltop*): In high- and low-income nations, has a significant positive impact on DPI accordingly, while the results of middle-income panel revealed no such significant impact. Nominal Exchange Rate (*lexr*): In low-income nations, revealed a significant positive impact on DPI. However, the variable has a negative significant impact in middle-income panel while no evidence of such significant impact has been revealed in high-income countries. Finally, the crowding effect of FDI on DPI in middle-income countries while

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crowding-out effect of FDI on DPI in high-income panel has been revealed.

Finally, the study recommends that enhancing governance quality (especially in low-income countries) and property rights measures (in both the three income panels) need to be strengthen. This can be achieved through improving appropriate laws and judicial independence in the dealing with corruption practices, rule of law, advocate voice and accountability, transparency and safe guide property rights law's in the governing system. Furthermore, implementing sound monetary and fiscal policies that reducing trade barriers and promote free trade, while accord with technology transfer to local investors are vital steps to stimulate DPI and mitigate the crowding-out effects of FDI on DPI.

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