THE RELATIONSHIPS BETWEEN DOMESTIC INVESTMENT, COUNTRY RISK, GOVERNANCE, AND ECONOMIC DEVELOPMENT: A COMPARISON OF KAZAKHSTAN VERSUS POLAND

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ABSTRACT

Domestic investment is one of the key drivers for economic growth and development. But domestic investment does not happen automatically. It requires a positive governance and economic environment. The primary aim of this paper was to test the impact and relationship between domestic investment and some of the determinants of domestic investment, including country risk, governance indicators, and economic development. Kazakhstan and Poland were selected as the study regions in this comparative analysis. A quantitative econometric modelling methodology was utilised to determine the relationships between the selected variables by estimating an ARDL model. In the analysis, long-run relationships and short-run causality relationships were estimated. The study and literature review results confirm that domestic investment is crucial in achieving accelerated economic growth and development. In policy development, all effects should be made to ensure an enabling environment to attract investment. Domestic investment leads to increased production and more competitive productivity. Good governance, including quality institutions and policy, is also required for increased investment.

Keywords: country risk; domestic investment; economic development; good governance; Kazakhstan; Poland

DOI: http://dx.doi.org/10.15549/jeecar.v9i6.1196

INTRODUCTION

Domestic investment, also known as Gross Fixed Capital Formation (GFCF), is a critical determinant for economic growth and development (Emeka, Idenyi & Nweze, 2017; Soegoto, Suryatno, & Meyer, (2022). It is critical in expanding the production capacity of the supply side of the economy, leading to improved productivity and exports (Harris, 2011). Solow introduced the economic growth theory, which explains the relationship between savings, capital accumulation, investment and economic growth (Menshikov, Kalabashkina & Zverev, 2015). Domestic investment and GFCF are used interchangeably in this paper. "*Gross fixed capital formation consists of resident producers' investments, deducting disposals, in fixed assets during a given period. It also includes certain additions to the value of non-produced assets realised by producers or institutional units. Fixed assets are tangible or intangible assets produced as outputs from production processes*

that are used repeatedly, or continuously, for more than one year" (IGI Global, 2022).

Domestic investment is affected by many factors. Specifically, the economic growth and development; level of governance which could include the quality of policy and implementation; the effectiveness of governance, political stability, and the level of corruption; and country risk factors as measured by PRS International and other global agencies. The research problem relates to the factors that influence domestic investment and how the level of investment could be increased for accelerated economic development. The research paper's primary goal was to investigate the significance of some of the most important indicators or predictors of domestic investment, including country risk, governance factors, and economic development. The research is important as the improved understanding of domestic investment and its factors could be the key for countries with low levels of investment to improve the situation.

Kazakhstan and Poland were selected as case studies in this comparative study. These two countries were selected as both have communism in their recent history. But they have achieved significantly different growth paths over the last three decades. The outcomes of this study could assist in developing best practice policy guidelines for investment. Poland has achieved economic success and has been the fasted growing western country over the last 20 years, while Kazakhstan has lagged in economic and political stability. Table 1 summarises some key development and governance indicators, comparing the two selected countries. Poland is ranked 16th in the world regarding the size of its economy, while Kazakhstan is ranked 29th. The Polish economy is approximately three times the size of Kazakhstan. Kazakhstan is competing well regarding domestic investment. In 2021 the domestic investment where more than half of that of Poland.

Both countries are doing well with government finances under control regarding government spending and debt. Of the two countries, Poland has the highest ranking in terms of the WEF competitiveness index, with a ranking of 37th, while Kazakhstan is ranked 54th. Poland also ranks much higher in the Innovation Index than Kazakhstan, with 40th and 79th, respectively. Lastly, the Investment Index indicates the attractiveness of a country for investment. Again, Poland is doing well, ranked 29th, while Kazakhstan is struggling with a ranking of only 123rd in the world. Poland has a much higher range in global indexes compared to Kazakstan. In summary, in 2021, Poland's economy was 3.1 times the size of Kazakhstan's. While in terms of domestic investment, the level in Poland was 1.9 times that of Kazakhstan.

Table 1: Comparative governance and economic indicators (2021)

Indicator	Kazakhstan	Poland
GDP at constant prices (US$ billions)	214 (29)	674 (16)
Domestic Investment (US% billions)	54.3	104.3
Government spending as % of GDP	12.7 (122)	19.2 (70)
Government debt as % of GDP	25.9 (97)	53.8 (65)
Competitiveness (WEF)	62.9 (54)	68.9 (37)
Innovation Index	28.6 (79)	39.9 (40)
Investment Index	50 (123)	80 (29)

Source: World Bank, (2022b); The Global Economy.com (2022)

Note: ( ) Indicates global ranking in brackets where applicable

The research paper contributes to the body of knowledge on domestic investment by formulating an econometric model with a bouquet of predicting variables not previously combined in such analysis and contributing to the limited research available for Kazakhstan and Poland on investment.

LITERATURE REVIEW

Gross fixed capital formation (GFCF), also known as domestic investment, is an essential driver of economic development (OECD, 2022). GFCF is *"the acquisition of produced assets, including producing such assets by producers for their use, minus disposals. The relevant assets*

relate to assets intended for use in producing other goods and services for more than a year" (OECD, For example, the World Bank (2022b), lists the following items as part of GFCF: land improvements, including fencing and drainage; production plants, equipment and machinery; and infrastructure construction, including roads, railways, electrical substations, etc. as well as soft infrastructures. According to the South Africa Reserve Bank (SARB) (2022), GFCF is an important driver of economic growth and is a main component of the calculation of the national account. GFCF includes investment by private companies, general government and public corporations, and state-owned enterprises. The types of investments are listed as machinery and equipment for increased production; transport equipment; construction works, residential and non-residential buildings, and other fixed assets. The primary aim of the research is to determine the impact of economic and governance variables on domestic investment. All of the other economic and governance variables included in this study as independent variables are defined in Table 2.

Domestic investment plays a central role as an important engine of growth, as included in a number of economic growth theories (Keller & Yeaple, 2009). Some of these economic growth theories include the Keynesian aggregate demand growth theory supported by the Harrod-Domar model, the Solow neo-classical growth theory and theories focusing on endogenous growth (Reig, 2013). The accelerator theory of investment proposes that investment will increase if the demand in the economy increases and the level of governance is improved. Also, lower country risks lead to higher investment levels (Kanu & Nwaimo, 2015).

In terms of empirical studies, a range of previous studies testing the relationships between domestic investment, country risk, governance and economic development are analysed. Studies which included most or similar variables as included in this study are listed first. Akobeng, (2017) analysed the relationships between domestic investment, government institutions and poverty in 41 Sub-Saharan African countries from 1981 to 2010. The main findings were that GFCF does assist in the reduction of poverty and supports economic growth and development, and good quality governance and institutions attract more investment. High levels of country risk harm investment. Kesar, Bandi, Jena, and Yadav investigated the dynamics between governance, domestic investment, and economic growth in the BRICS countries from 2002 to 2019. The findings demonstrate that different types of governance, such as quality policy, corruption control and effective governance, and domestic investment, positively impact economic growth. This study recommends a move to institutional quality, good management, and corruption control.

The literature analysing a domestic investment, economic growth and development, and governance will be discussed next. Gibescu (2010) analysed the relationship between economic growth and domestic investment in five Eastern-European countries, including Poland, from 2003 to 2009. The results indicate that economic growth and domestic investment have a significant positive relationship. Hasli, Ibrahim and Ho (2019) assessed the role and impact of political stability, economic growth and country risk factors on domestic investment in developing countries using a panel regression analysis. The results indicate that political stability and GDP growth positively impact domestic investment. The study recommended that facilitating and attracting domestic investment depends significantly on good governance and political stability with a clear economic development policy. Narayanan, Choong, and Lau (2020) studied the importance of good governance in facilitating the investment and economic development nexus for ASEAN countries from 2002-2015. The study found that good governance through quality institutions does attract an environment to absorption capacity for both FDI and domestic investment. The implication of this study is the confirmation that good governance attracts investment, leading to economic development.

Kelly, Nguéda and Ketu examined the effects of corruption on investment in 53 African countries over the 2000 to 2019 period. The study used an econometric panel model with the control of corruption as the predicting variable. The results revealed that there is a positive relationship between high levels of corruption control and domestic investment. Low levels of corruption and good governance could lead to higher levels of investment. Other variables such as GDP per capita, political stability, and regulatory quality

were found to influence investment in Africa significantly. Sabry (2015) investigated the institutional factors (including good governance) that could support infrastructure development, leading to increased private investment. The author found proof that good governance and quality institutions positively affect investment growth. Wale (2015) explored the determinants of private investment in Ethiopia from 1980 to 2014. The findings indicate that GDP growth, and interest rate, have a significant effect on private investment. Public investment in essential infrastructure, which is part of domestic investment and quality institutions are important to attract private investment. Also important are well-formulated and consistent policies with regulations on investment and macroeconomics, as well as political stability (Zhunussova & Dulambayeva, 2019).

Meyer and Sanusi (2019) investigated the relationships between employment, economic growth and domestic investment in South Africa from 1995 to 2016. The findings from the study show a long-run relationship between the three selected variables. The causality direction was from economic growth to domestic investment and not vice versa. It was also found that domestic investment contributes to job creation in the long-run. It was recommended in the study that investment-enhancing policies, including positive monetary policy such as low-interest rates, as well as a favourable economic environment, should be ensured to allow accelerated growth and job creation initiatives to be successful. Other policy implementation initiatives to promote economic growth should be facilitated, such as infrastructure projects and the diversification of the economy, via domestic investment.

Trpeski and Cvetanoska, (2019) assessed the role of domestic investment and productivity in South-Eastern Europe from 2000 to 2017. The primary goal of economic development is an expansion of capital stock in the economy to achieve increased productivity. Investment facilitates development leading to increased productivity. The results show that domestic investment increases mostly explain economic development and productivity growth. Shuaib and Ndidi (2015) tested the impact of domestic investment on the economic development of Nigeria from 1960 to 2013. A significant relationship was estimated between economic development and domestic investment in Nigeria. The results also confirmed that the national income growth rate would be directly related to the saving ratio and/or capital formation.

Lach (2010), in the Polish environment, assessed the relationship between economic growth and domestic investment from 2000 to 2009. The results indicate both long and short-run relationships between domestic investment and GDP, but the impact of investment could be at a more acceptable level in the long run. The primary recommendation is that the Polish government should facilitate an increase in domestic investment by the private sector via positive investment and growth policies. Kurbanov (2020) assessed the relationships between FDI and domestic investment on the economic growth of Uzbekistan from 2010 to 2019. The cointegration estimations confirm a long-run relationship among the three selected variables. More results from the econometric estimations show a significant bi-directional relationship between GDP and domestic investment. In Uzbekistan, domestic investment has a more significant impact on growth than FDI.

Talimova, Sh, Zambinova and Moldakhmetov (2019) analysed investment factors affecting economic growth and reindustrialisation in Kazakhstan. The research aimed to assess the trends in domestic and foreign investment in the economic sectors of Kazakhstan. In Kazakhstan, investment is mainly growing in the mining sector. The increased domestic investment was achieved due to strong economic growth, a well-implemented investment policy, and an enabling environment for domestic and foreign investment. The country should, however, promote investment in other key sectors, such as the manufacturing and service sectors, through focused policy.

In this section, domestic investment and country risk studies are assessed. Lautier and Moreau (2012) investigated the relationships between domestic investment, FDI and country risk in 68 developing countries from 1984 to 2004. They found that the level of country risk, as measured by the PRS group (also used in this study as a proxy for country risk), significantly impacts domestic and FDI. Similar results were estimated by Meyer (2021) in an assessment of the Visegrad countries. Meyer and Mothibi

(2021) investigated the impact of risk rating agencies' decisions on economic growth and domestic investment in South Africa from 1994 to 2020. Results indicated that significant long-run relationships exist between economic growth, the risk rating index as developed by the authors, and domestic investment. Also, a bi-directional causality exists between domestic investment and the risk rating index and between economic growth and the risk rating index. It is recommended in this study that resources should be directed towards capital-forming development projects to accelerate economic growth, and this will also lead to an improved sovereign risk rating. These findings are supported by Krüger and Meyer (2021). Săvoiu and Ţaicu (2014) assessed investment models as affected by country risk for some Central and Eastern European economies, including Poland, from 1996 to 2013. The findings from the study confirm the importance of domestic and foreign investment for economic growth, and the level of country risk determines the level of investment.

Lastly, studies focusing on domestic investment and governance are discussed. Hanousek, Shamsher, Svejnar and Tresl (2021) assessed the relationships between the level of corruption, policy uncertainty, and domestic investment in 13 European countries from 2001 to 2013. The results indicate that increasing levels of corruption and policy uncertainty do have a negative effect on investment. Muzurura (2016) analysed investment and country risk in Zimbabwe using annual time series data from 1980 to 2011. Results indicate that a number of factors hinder investment in Zimbabwe, including weak and low levels of domestic investment, poor governance, political instability, and inconsistent government policies. The study recommended that the country needs to overhaul its macroeconomic policies in order to create an enabling domestic investment climate.

From the literature mentioned above analysis, the following top ten best practice principles are listed for application in especially developing regions: (1) As part of aggregate demand and expenditure, domestic investment is seen as a critical driver, *"engine for growth*", for economic growth and development. Growth usually leads to investments but the direction of causality is not the same for different regions and over different periods, the direction could change and even be bi-directional; (2) Domestic investment is specifically important from the supply side for increased production and productivety; (3) high levels of perceived country risks as listed in global measurements such as PRS country risk index and global risk rating agencies, do cause a reduction of domestic and foreign investment; (4) good governance by means of quality government institutions adds to the atraction of increased investment; (5) quality public policy which are practical and creating an enabling environment, using monetary policy and investment incentives for example, does attarct investment; (6) high levels of political stability does attract investment; (7) low levels of corruprion with visible programmes to minumise corruption, does lead to higher levels of investment; (8) public investment in developmental infrastructure attract private investment; (9) domestic investment does not only lead to growth and development, but also leads to the creation of employment opportunities; (10) Domestic investment, in most cases has a higher impact on the economy compared to FDI.

METHODOLOGY

The methodological foundation of the study is grounded in a functionalist theoretical paradigm using quantitative methods. To achieve the objectives of the study, an econometric model was developed to test the relationships between domestic investment levels, country risk, governance, and economic development. The study is comparative, and Kazakhstan is compared to Poland. These two countries were selected as both have communism in their recent history, but they have achieved significantly different growth paths over the last two and a half decades. The outcomes of this study could assist in developing best practice policy guidelines. Annual data were used from 1995 to 2021, with the dependent variable being a domestic investment. The independent variables are listed in Table 2. The variables were all converted into natural logarithms for simplification of reporting of results.

Table 2. Variables included in the study

Name of variable	Abbreviation for variable	Detail description and source of data
Domestic investment per capita also known as GFCF per capita	GFCFC	"includes land improvements; plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings". For this study, the total GFCF was divided by the total population. (World Bank, 2022a)
Country Risk Index	CR	The composite risk rating consists of political, financial, and economic risks for a country. The index is between 0 to 100, with a higher value meaning lower levels of risk. A risk index of above 80 means very low risk, and below 60 means high risk. The (PRS Group International Country Risk Guide, 2022)
Good Governance Index	GG	"Indicates the quality of service delivery, civil service performance, policy formulation and implementation". This is an index between -2.5 to +2.5. (World Bank, 2022a)
Political Stability Index	POLSTAB	"Including the absence of violence and terrorism, and measures the likelihood of political instability". This is an index between -2.5 to +2.5. (World Bank, 2022a).
Quality of Policy and Regulations Index	QOPR	"The ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development". This is an index between -2.5 to +2.5. (World Bank, 2022a).
Corruption Control	CORCON	"captures the level and extent to which public power is exercised for private gain, including petty and grand forms of corruption, as well as "state capture" of the state by elites and private interests". This is an index between -2.5 to +2.5. (World Bank, 2022a).
GDP per capita	GDPC	"GDP per capita is the gross domestic product divided by the total population". (World Bank, 2022b).

The methodology is a step-by-step process starting with a descriptive data analysis followed by a correlation analysis. The econometric model to assess the data selected was the Autoregressive Distributed Lag (ARDL) model by Pesaran and Shin (1996) as amended by Pesaran, Shin and Smith (2001). The model was used to test the relationship among the variables included, listed below in equation (1). The selection of the ARDL model was based on the fact that this model could be used even if a limited number of time series observations are available and if a mix or single level of stationarity exists amongst the variables. Equation (1) indicates the variables included in the model for estimation:

$$\Delta LGFCFC = f(\Delta LCR + \Delta LGG + \Delta LPOLSTAB + \Delta LQOPR + \Delta LCORCON + \Delta LGDPC)\ldots\ldots \quad (1)$$

In the estimation of the econometric model, the following steps were taken. The process started with the unit root tests for stationarity. The unit root test provides decision-making information for model selection. The second step was to select the maximum number of lags used by the study (Brooks, 2014). Step three was the estimation of the Bounds-test to determine if long-run relationships exist between the variables in equation (1) and the short-run relationships. Step 4 was the Granger causality test estimation. Lastly, a number of stability and diagnostic tests were performed, i.e., normality, serial correlation, and heteroscedasticity.

RESULTS AND DISCUSSION

Firstly, a descriptive data analysis is completed for each of the variables, as listed in Tables 3 and 4 and Figures 1 and 2, for both countries, using the abbreviations listed in Table 2. Firstly, GFCFC for Kazakhstan had a mean value of $1676 billion over the selected period of 1995 to 2021, compared to Poland, which had a slightly higher value of $1849 billion. Kazakhstan has an upward trend in the graph for GFCFC over time, peaking in 2018 with a negative turn from 2020 to 2021 due to COVID-19. The Polish trend is similar to that of Kazakhstan, with a positive trend and peaking in 2018 but with a more rapid recovery in 2021 than in Kazakhstan. GFCFC is interestingly nearly the same, with Poland having 9.4% more domestic investment on average over the study period. Secondly, CR for Kazakhstan had a mean index value of 69.9 from 1995 to 2021, compared to Poland, which had a slightly higher mean index value of 76.2. Kazakhstan has a volatile moving graph for CR, ranging between a minimum index value of just above 60.5 in 2016 to a maximum value of 76.5 in 2006.

The current trend is, however, positive. The Polish CR risk index ranges between a minimum of 71.5 in 2009 and a maximum of 82.0 in 1998. The Polish trend has been stable but positive since 2009. Poland currently has a slightly better RC index of 78.0 compared to Kazakhstan at 72.0, but both countries are doing well in this index. Thirdly, Kazakhstan's Good Governance Index (GGOV) has a mean value of -0.51 out of a maximum value of +2.5. The highest value for the index was achieved in 2019 at +0.14, while the lowest was achieved in 2002 at -1.07. The Kazakhstan index has a clear positive upward trend. The Polish GG trends indicate a mean index value of +0.56, with a maximum value achieved in 2013 of +0.77 and a minimum value of +0.29 achieved in 2021. After peaking in 2013, the Polish GG index has seen a negative downward trend to date but still has a slightly higher GG index of +0.29 versus +0.1 in Kazakhstan.

Fourthly, the political stability (POLSTAB) index is assessed. For Kazakhstan, the mean index value was recorded at +0.11, while the highest value was achieved in 2009 with an index of +0.78. The graph in Figure 1 indicates a downward trend from 2009 to 2021. In Poland, the mean of the index was +0.69, with a maximum value achieved in 2011. The graph also has a downward trend since 2011. Currently, Poland has a significantly higher level of political stability than Kazakhstan at +0.51 versus -0.25, respectively.

Fifthly, the Quality of Policy and Regulations Index (QOPR) is assessed. Kazakhstan has achieved a mean index value of -0.27, while the highest index value of +0.17 was listed in 2016. The trends also indicate a positive upward trend from 2002 to 2016 but have since 2016 shown a declining trend. Poland had a mean index value of +0.83 over the study period, with a maximum index value of +1.06 in 2014. Since 2014, the index is showing a negative trend. Poland has a significantly higher level of QOPR than Kazakhstan at +0.84 versus +0.09, respectively. Kazakhstan's corruption control (CORCON) index has a mean value of -0.91 and a maximum value of -0.24, which was achieved in 2021. The graph indicates a positive upward trend since 1995 to the current index value. Poland had a mean index value of +0.57, with a maximum value of +0.79 in 2016. Currently, Poland has a significantly higher level of CORCON than Kazakhstan at +0.57 versus -0.24, respectively.

Lastly, Kazakhstan's GDP per capita (GDPC) has a mean value of $7889 and a maximum value of $11402, which was achieved in 2019. The graph indicates a positive upward trend since 1995 to the current index value of $11265. Poland had a mean value of $10 161, with a maximum value of $15 549 in 2021. Poland has a significantly higher level of GDPC than Kazakhstan at $15 550 versus $11 265, respectively.

The Jargue-Bera values indicate that all variables are normally distributed, as their values are above 0.05. In addition, the Kurtosis value of all variables is below 3, indicating the data set has a limited tendency for outliers. Overall, the Polish investment, governance and economic environment are superior to Kazakhstan for all seven variables included in the study. Using the mean value for seven variables as the baseline, Kazakhstan has the following index values related to Poland:

- GFCFC: 0.91
- CR: 0.92
- GOV: 0.49
- POLSTAB: 0.16
- QOPR: 0.48
- CORCON: 0.41

- GDPC: 0.78
- Overall average index for Kazakhstan with Poland as a baseline: 0.59

Table 3: Descriptive statistics (Kazakhstan)

	Domestic investment per capita (GFCRC)	Country Risk (CR)	Good Governance Index (GGOV)	Political Stability Index (POLSTAB)	Quality of Policy and Regulations index (QOPR)	Corruption control Index (CORCON)	GDP per capita (US$) (GDPC)
Mean	1676.46	69.86	-0.51	0.11	-0.27	-0.91	7889.50
Median	1982.19	70.50	-0.52	0.09	-0.29	-0.99	8487.55
Maximum	2942.13	76.50	0.14	0.78	0.17	-0.24	11402.76
Minimum	497.73	60.50	-1.07	-0.41	-0.69	-1.15	3700.75
Std. Dev.	859.44	3.88	0.37	0.31	0.24	0.27	2763.39
Kurtosis	1.53	2.44	1.83	2.74	2.55	2.92	1.58
Jarque-Bera	2.52	1.09	2.22	0.57	0.77	11.49	2.69
Observations	27	27	27	27	27	27	27

Table 4: Descriptive statistics (Poland)

	Domestic investment per capita (GFCRC)	Country Risk (CR)	Good Governance Index (GGOV)	Political Stability Index (POLSTAB)	Quality of Policy and Regulations index (QOPR)	Corruption control Index (CORCON)	GDP per capita (US$) (GDPC)
Mean	1849.19	76.16	0.56	0.69	0.83	0.57	10161.39
Median	2037.37	76.00	0.58	0.73	0.82	0.65	10156.58
Maximum	2797.11	82.00	0.77	1.07	1.06	0.79	15549.67
Minimum	771.52	71.50	0.29	0.15	0.62	0.11	5638.15
Std. Dev.	607.26	2.43	0.13	0.24	0.14	0.19	3005.66
Kurtosis	1.69	2.83	2.35	2.22	1.71	2.74	1.84
Jarque-Bera	1.97	0.22	1.04	1.10	2.08	3.41	1.71
Observations	27	27	27	27	27	27	27

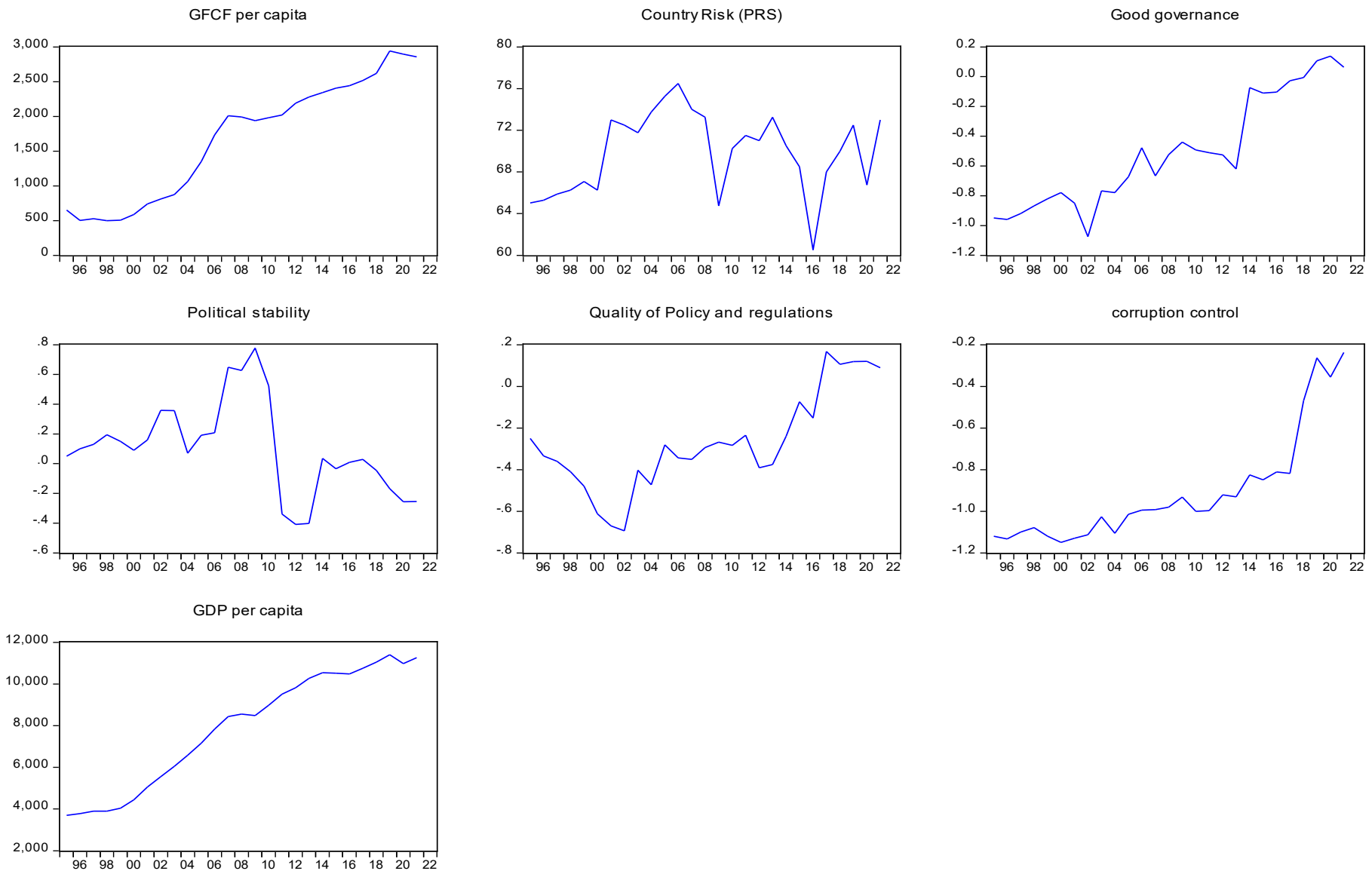

Figure 1: Trends analysis (Kazakhstan)

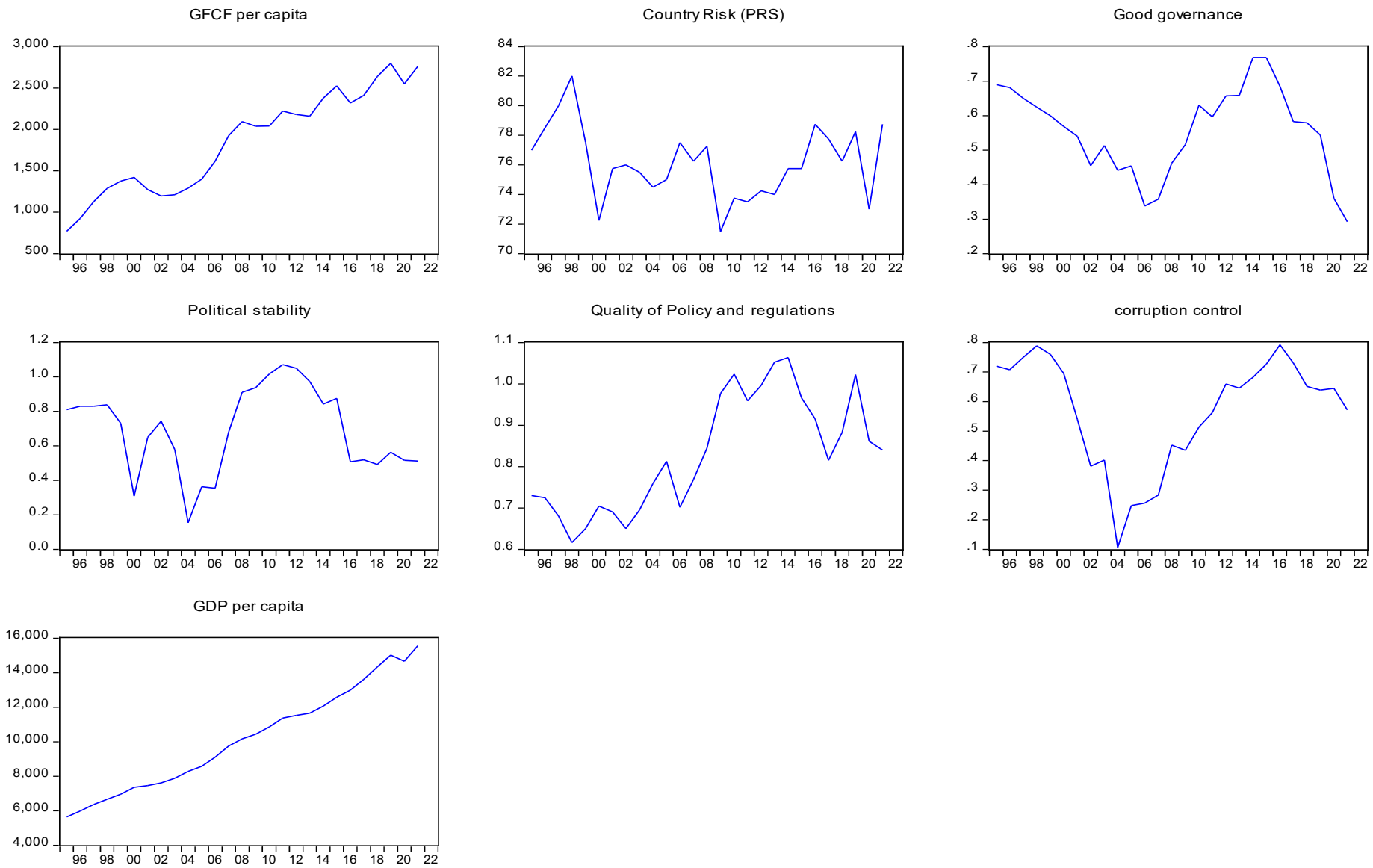

Figure 2: Trends analysis (Poland)

Table 5 is a summary of the Kazakhstan correlation analysis. The correlation analysis focuses mainly on the dependent variable, GFCFC, and the relationships with the independent variables. All six independent variables have a positive and significant relationship with GFCFC, except for the Country Risk Index. GDPC has the most substantial relationship, followed by GG. Many independent variables also have a positive and significant relationship. For example, most of the World Bank Governance indicators have such relationships. GDPC has positive and significant relationships with all the other variables. GFCFC and GDPC have the strongest relationship of all of the variables.

Table 5: Correlation analysis: Kazakhstan

	GFCFC	CR	GG	POLSTAB	QOPR	CORCON	GDPC
GFCFC	1.0000						

CR	0.1649	1.0000					
	(0.4110)	-----					
GG	0.9187	0.0194	1.0000				
	(0.0001*)	(0.9231)	-----				
POLSTAB	0.3328	0.0089	0.3581	1.0000			
	(0.0898**)	(0.9645)	(0.0666**)	-----			
QOPR	0.7828	0.1309	0.8684	0.3448	1.0000		
	(0.0002*)	(0.5151)	(0.0003*)	(0.0782**)	-----		
CORCON	0.8141	0.0671	0.8763	0.4265	0.8340	1.0000	
	(0.0002*)	(0.7394)	(0.0001*)	(0.0265*)	(0.0002*)	-----	
GDPC	0.9874	0.2099	0.8976	0.3502	0.7285	0.7643	1.0000
	(0.0001*)	(0.2933)	(0.0002*)	(0.0733**)	(0.0004*)	(0.0004*)	-----

Notes: ( ) the p-value. * indicates significance at 5%, ** indicates significance at 10%.

Table 6 is a summary of the Poland correlation analysis. The correlation analysis focuses mainly on the dependent variable, GFCFC, and the relationships with the independent variables. Only two of six independent variables have a positive and significant relationship with GFCFC, namely QOPR and GDPC. GDPC also has the strongest relationship, the same as with the Kazakstan results.

Table 6: Correlation analysis: Poland

	GFCFC	CR	GG	POLSTAB	QOPR	CORCON	GDPC
GFCFC	1.0000						

CR	0.1493	1.0000					
	(0.4572)	-----					
GG	0.0592	0.0898	1.0000				
	(0.7692)	(0.6560)	-----				
POLSTAB	0.0673	0.0529	0.5145	1.0000			
	(0.7387)	(0.7932)	**(0.0060*)**	-----			
QOPR	0.7577	0.4155	0.3067	0.3831	1.0000		
	(0.0003*)	**(0.0311*)**	**(0.0496*)**	**(0.0485*)**	-----		
CORCON	0.1845	0.3373	0.6748	0.3679	0.1270	1.0000	
	(0.3567)	**(0.0853**)**	**(0.0001*)**	**(0.0590**)**	(0.5276)	-----	
GDPC	0.9741	0.1383	0.1323	0.0525	0.7153	0.1407	1.0000
	(0.0001*)	(0.4915)	(0.5105)	(0.7947)	**(0.0004*)**	(0.4837)	-----

Notes: ( ) the p-value. * indicates significance at 5%, ** indicates significance at 10%.

Some of the independent variables also have a positive and significant relationship. For example, most of the World Bank Governance indicators have such relationships. As was the case with Kazakstan, GFCFC and GDPC have the strongest relationship of all variables.

The detailed model estimation results are listed and compared to previous empirical results. The unit root tests were completed using the Augmented Dickey-Fuller (ADF) test. Test results are presented in Table 7 (Kazakhstan), and Table 8 (Poland), and the final results indicate that for both countries, a mixture of stationarity was found (both levels and I(1)). An ARDL model was subsequently selected as the method is recommended when there is a mixture of variables or a single level of stationarity.

Table 7. Unit root tests (Kazakhstan)

Variables	Stationarity		Result
	ADF levels I (0)	ADF 1st difference I (1)	
LGFCFC	0.1853	0.0043*	I (1)
LCR	0.0443*	0.0005*	Mixed
LGG	0.4499	0.0058*	I (1)
LPOLSTAB	0.0738	0.0050*	I (1)
LQOPR	0.4768	0.0006*	I (1)
LCORCON	0.9669	0.0001*	I (1)
LGDPC	0.1807	0.0405*	I (1)

Note: *denotes the rejection of the null hypothesis of unit root at the 5% level of significance.

Table 8. Unit root tests (Poland)

Variables	Stationarity		Result
	ADF levels I (0)	ADF 1st difference I (1)	
LGFCFC	0.5731	0.0001*	I (1)
LCR	0.0218*	0.0002*	Mixed
LGG	0.0259*	0.0091*	Mixed
LPOLSTAB	0.0880	0.0003*	I (1)
LQOPR	0.5641	0.0012*	I (1)
LCORCON	0.2826	0.0002*	I (1)
LGDPC	0.1034	0.0012*	I (1)

Note: *denotes the rejection of the null hypothesis of unit root at the 5% level of significance

In the next step, the lag length selection process was completed. This process is important before the final ARDL regression is estimated to avoid spurious acceptance or rejection of the hypothesis of results as estimated. An important component of the econometric model is estimating the lag length for the models. All selection criteria to determine the lag length criteria were assessed, including the Akaike information criterion, the Hannan-Quinn information criterion, and the Schwarz information criterion. All three selection criteria indicated a lag of one (1). According to the Akaike information criterion, the preferred model for Kazakhstan is 1,1,0,0,1,0,1 and for Poland is 1,1,1,0,1,0,1.

The next step in the process was assessing the long-run relationships using the Bounds test. This test is used to test for a cointegration regression analysis using the estimated F-statistic, which is compared with the significance level's lower and upper bound values. In the case of Kazakhstan, the F-statistic was 8.703, with an upper bound value of 5.0 per cent significance at 3.28. For Poland, the F-statistic was 6.785, with an upper bound value of 5.0 per cent significance at 4.19. In conclusion, a long-run relationship exists between the variables selected in the model for both countries. Equation (2)(Kazakhstan) and (3)(Poland) present the long-run relationship:

Kazakhstan: LGFCFC = + 10.875 + 1.0688*LCR + 0.1438*LGG + 0.1510*LPOLSTAB + 0.1818*LQOPR + 0.1991*LCORCON + 1.5417*LGDPC ……(2)

Poland: LGFCFC = + 18.501 + 2.2552*LCR + 0.5707*LGG + 0.2510*LPOLSTAB + 1.7571*LQOPR + 0.1710*LCORCON + 1.3321*LGDPC ……(3)

The results are interesting from a policy development, governance and risk management point of view. From equation (2) the long-run regression for Kazakhstan, LGDPC has the highest long-run impact on the dependent variable, LGDPC. The prediction, estimated in the model, is that a 1% increase in LGDPC could lead to an increase of 1.54% in LGFCFC. The Country Risk Index (LCR) also significantly impacts LGFCFC with a coefficient of 1.07. The four governance predictors have lower levels of impact on the dependent variable. From equation (3), the regression analysis for Poland, a different result is evident. Again a significant long-run relationship exists between the variables with coefficients much higher in the Polish regression. LCR, LQOPR and GDPC have coefficients above 1.0, with LCR presenting a coefficient of 2.26, followed by LQOPR.

The two countries' short-run empirical results are indicated in Tables 9 and 10. As expected, the independent variables' impact on the dependent variable is less than in the long run. All independent variables have a positive short-run relationship with the dependent variable (LGFCFC), but not all variables have a significant short-run impact. In the case of Kazakhstan, only LCR, POLSTAB and LGDPC have significant impacts on LGFCFC, with LGDPC having the highest coefficient of 1.69, followed by LCR with 0.65. For Poland in Table 10 specifically, LCR and LGDPC had the highest significant impact on the dependent variable with similar high coefficients of 1.097 and 2.604, respectively. In the Polish case, the LQOPR also significantly impacted LGFCFC. Lastly, the long-run cointegration relationships for both countries are confirmed via the error correction models, which are both negative and significant.

Table 9: Short-run relationship and error-correction results (Kazakhstan)

Variable (D(LGFCFC is the dependent variable)	Coefficient	Std. Error	P-value
D(LCR)	0.6532	0.2579	**0.0230***
D(LGG)	0.0267	0.0456	0.5667
D(LPOLSTAB)	0.0311	0.0149	**0.0448***
D(LQOPR)	0.0499	0.0349	0.1735
D(LCORCON)	0.0121	0.0329	0.7167
D(LGDPC)	1.6861	0.4956	**0.0039***
CointEq(-1)*	-0.6111	0.0604	**0.0003***

Note: *rejection of null hypothesis at 5% level of significance; **rejection of null hypothesis at 10% level of significance.

Table 10: Short-run relationship and error-correction results (Poland)

Variable (D(LGFCFC is the dependent variable)	Coefficient	Std. Error	P-value
D(LCR)	1.0971	0.1040	**0.0034***
D(LGG)	0.1682	0.1142	0.1423
D(LPOLSTAB)	0.1510	0.0334	0.8413
D(LQOPR)	0.3624	0.1537	**0.0334***
D(LCORCON)	0.1920	0.0318	0.5545
D(LGDPC)	2.6040	0.4868	**0.0001***
CointEq(-1)*	-0.271466	0.030084	**0.0004***

Note: *rejection of null hypothesis at 5% level of significance; **rejection of null hypothesis at 10% level of significance.

Tables 11 and 12 summarise the results of the causal relationships between all the variables using a Granger causality method for the two countries included in this comparison. In this analysis, the focus was again on the dependent variable, but the method allows an assessment where all variables in the model are either dependent or independent. The results indicated in Table 11 for Kazakhstan shows strong causality involving the main dependent variable, namely GFCFC. All of the original independent variables, except for the POLSTAB and CORCON, cause changes in the dependent variable. In other words, Country Risk, Good governance, Quality of Policy and Regulations and GDPC cause changes in GFCFC.

Table 11: Granger Causality Test results (Kazakhstan)

Null hypothesis	Chi-sq	p-value
LCR does not granger cause LGFCFC	5.2073	0.0321*
LGFCFC does not granger cause LCR	0.0643	0.8020
LGG does not granger cause LGFCFC	7.4441	0.0120*
LGFCFC does not granger cause LGG	0.1639	0.6893
LPOLSTAB does not granger cause LGFCFC	0.2345	0.6327
LGFCFC does not granger cause LPOLSTAB	1.1506	0.2946
LQOPR does not granger cause LGFCFC	8.2297	0.0087*
LGFCFC does not granger cause LQOPR	0.2984	0.5901
LGDPC does not granger cause LGFCFC	14.5987	0.0009*
LGFCFC does not granger cause LGDPC	7.5309	0.0116*
LQOPR does not granger cause LGG	0.6161	0.4405
LGG does not granger cause LQOPR	4.7129	0.0405*
LGDPC does not granger cause LGG	8.6027	0.0075*
LGG does not granger cause LGDPC	2.0554	0.1651

Note: *rejection of null hypothesis at 5% significance level and ** rejection at 10% level.

Table 12: Granger Causality Test results (Poland)

Null hypothesis	Chi-sq	p-value
LCR does not granger cause LGFCFC	0.9577	0.6046
LGFCFC does not granger cause LCR	4.2883	0.2541
LGG does not granger cause LGFCFC	2.3421	0.3335
LGFCFC does not granger cause LGG	1.7509	0.4137
LPOLSTAB does not granger cause LGFCFC	0.4809	0.8126
LGFCFC does not granger cause LPOLSTAB	0.9208	0.6174
LQOPR does not granger cause LGFCFC	10.3400	0.0098*
LGFCFC does not granger cause LQOPR	0.7294	0.6924
LCORCON does not granger cause LGFCFC	17.0139	0.0567**
LGFCFC does not granger cause LCORCON	0.8827	0.6312
LGDPC does not granger cause LGFCFC	0.6567	0.7248
LGFCFC does not granger cause LGDPC	2.8743	0.2838
LPOLSTAB does not granger cause LCR	11.8132	0.0804**
LCR does not granger cause LPOLSTAB	6.8541	0.0635**
LQOPR does not granger cause LCR	32.5444	0.0301*
LCR does not granger cause LQOPR	0.8765	0.6335
LGDPC does not granger cause LCR	13.0779	0.0729**
LCR does not granger cause LGDPC	1.0636	0.5702
LCORCON does not granger cause LQOPR	2.1631	0.3543
LQOPR does not granger cause LCORCON	13.0853	0.0729**

Note: *rejection of null hypothesis at 5% significance level and ** rejection at 10% level.

Other interesting findings were that Good governance does cause changes in the level of Quality of Policy and Regulations, and GDPC causes improvements in Good Governance. As indicated in Table 12, the results for Poland differ significantly from that of Kazakhstan. Only CORCON and Quality of Policy and Regulations cause changes in the dependent variable, namely GFCFC. The Quality of Policy and Regulations also causes changes in CR and CORCON, while GDPC does also cause changes in CR.

In the last step of the process, diagnostic and stability tests were performed. The Breusch-Godfrey LM Test was performed to test for serial correlation, the Breusch-Pagan-Godfrey test for heteroscedasticity, and the normal distribution test for the Jarque-Bera Test. The results indicated that the residuals were not auto-correlated for the series as used, while the series was normally distributed and homoscedastic. Lastly, the stability of the model was tested via the CUSUM test, and the results indicated a stable model. These results confirm that the findings, as estimated, are trustworthy.

CONCLUSION

Domestic investment is one of the main contributors to economic growth and development. The in-depth study of investment is important to understand the impact and the determinants that affect it. Several previous studies were reviewed, and there does seem to be a consensus regarding the importance of domestic investment and its relationships with governance aspects, country risk, and economic development. The study's objective was to test the impact of a range of variables on domestic investment using a quantitative econometric model and then compare the two selected countries, Kazakhstan and Poland. The results indicate a long-run relationship for both countries between the dependent variable, domestic investment, and the independent variables, which included country risk, governance indicators, and economic development. In the long run, only GDP per capita (GDPC) has a coefficient above one for Kazakhstan. In contrast, for Poland, three variables have a coefficient of more than one, namely country risk (CR), quality of policy and regulations (QOPR) and GDP per capita (GDPC). In the short-run, for both countries, country risk (CR) and GDP per capita (GDPC) have the most significant impacts on the dependent variable, but overall, as expected, the impact is less if compared to the long run.

Regarding the Granger causality, there are substantial differences in the results between the two countries. For Kazakhstan, all the independent variables cause changes in a domestic investment except for political stability (POLSTAB), and a bi-directional causality was estimated. For Poland, on the other hand, only quality of policy and regulations (QOPR) and corruption control (CORCON) Granger caused domestic investment.

This study contributes to the body of knowledge of domestic investment using depth analysis for both Kazakhstan and Poland using a quantitative multi-discipline econometric model. The results from the study could assist with a deeper understanding of the long, short and causal relationships between domestic investment and governance and economic variables. The research will continue on the various aspects of investment. Future research could include variables such as trade openness, globalisation and competitiveness indexes as comparative studies using different methodologies and models such as panel data analysis. In terms of comparative studies, it planned to analyse the Visegrad and Baltic groups of countries and compare them. In conclusion, the study's results and literature reviews confirm that domestic investment is crucial in achieving accelerated economic growth and development. In terms of policy development, all effects should be made to ensure an enabling environment to attract investment. Domestic investment leads to increased production and more competitive productivity. Good quality governance, including quality institutions and policy, is required.

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