Economic Freedom and Complexity in Low-Middle Income Countries

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Abstract. Differences in income between countries are a phenomenon that still occurs today. The World Bank makes country groupings based on income, and one of the income classes is the lower middle class. This study aims to provide an empirical contribution on matters that may affect a country's income apart from investment and human resources, which are often used. Other variables used are economic freedom and economic complexity. The tool used is panel regression for countries in the lower middle-income class for 2011 to 2022. The result obtained are Business freedom and investment freedom statistically significant influences on GDP per capita.

Keywords: Economic Complexity, Economic Freedom, Lower-middle Income

1 Introduction

Inequality between regions is still a problem and tends to be persistent, with each region growing at a different pace. Certain regions grow faster than others, hence the term rich and poor countries [1]. When it comes to inequality, [2] hypothesis is one of the main references. Kuznet stated that inequality is a phenomenon that occurs due to changes in economic structure. An indicator that is often used to measure inequality is the Gini Index, whose value describes the inequality of income distribution.

Inequality is naturally a phenomenon that cannot be eliminated due to heterogeneous regional characteristics. One evidence of heterogeneous regional characteristics is the difference in economic conditions as measured by income. The World Bank categorises the world's countries into four parts based on income: Low-income, Lower-middle income, Upper-middle income, and High income.

This research will take the lower-middle income region as the focus. This classification is a better condition than low-income, but it has its problems. Regions in the lower-middle income have different economic achievements so some regions succeed in moving to the upper-middle level faster but some are slow or even still in the lower-middle income [3]. The purpose of this study is to determine the role of economic freedom and complexity on the GDP per capita of lower-middle-income countries.

Economic freedom is an important factor in the economy [4] but it would be better to look beyond the economic freedom index to see the role of its constituent indicators [4]–[6]. When the economic freedom index is shown to affect the economy (either GDP or GDP per capita), it is not known exactly which indicators have an effect and what the magnitude of the effect is.

To avoid this, this study will use indicators of business freedom, investment, and trade, which have complete data for the observed years and countries.

Economic complexity is the next variable to be observed. This variable is an index that can be used to analyse the production and export structure of a country. Countries with high production technology and diverse product types will have high index values, and tend to be competitive [7]. High production technology and competitive products are assumed to be more environmentally friendly [8], and affect economic growth [9]. Economic freedom has four main categories: Rule of Law, Government Size, Regulatory Efficiency, and Open Market. The rule of law is composed of indicators of property rights, government integrity, and judicial effectiveness. Government size is composed of indicators of government spending, tax burden, and fiscal health. Regulatory efficiency consists of freedom of business, labor freedom, and monetary freedom. The last category, open market, consists of trade freedom, investment freedom, and financial freedom.

The independent variables used in the study come from regulatory efficiency and open market because it can see the role of government in regulating business, investment, and also trade.

Table 1. Indicators of Economic Freedom

Indicator	Factor	
Business freedom	Starting a business	Procedures (number)
		Time (days)
		Cost (% of income per capita)
		Minimum capital (% of income per capita)
	Obtaining a license	Procedures (number)
		Time (days)
		Cost (% of income per capita)
	Closing a business	Time (years)
		Cost (% of state)
		Recovery rate (cents on dollar)
Investment freedom	Investment restriction	National treatment of foreign investment
		Foreign investment code
		Restrictions on land ownership
		Sectoral investment restrictions
		Expropriation of investment without fair compensation
		Foreign exchange controls
		Capital controls
Trade freedom	The trade-weighted average tariff rate	
	Non-tariff barriers	Quantity restrictions
		Price restrictions
		Regulatory restrictions
		Investment restrictions
		Customs restrictions
		Direct government intervention

Sumber: www.heritage.org

2 Methodology

The research area is 36 lower middle income countries with the following details.

Table 2. Lower-Middle Income Countries

Angola	Bangladesh	Bolivia	Cameroon	D.R.of the Congo	Algeria
Egypt	Ghana	Guinea	Honduras	India	Iran
Jordan	Kenya	Cambodia	Laos	Lebanon	Sri Lanka
Marocco	Myanmar	Mongolia	Mauritania	Nigeria	Nicaragua
Pakistan	Philippines	Papua New Guinea	Senegal	Swaziland	Tajikistan
Ukraine	Uzbekistan	Vietnam	Zambia	Tunisia	Tanzania

The research year is 2011 to 2021 with the dependent variable used is Gross Domestic Product per capita (GDP) and the dependent variables are the freedom of doing business index (KB), investment freedom index (KI), freedom of international trade index (KP), and economic complexity index (KE). Units of measurement and data sources are briefly presented in the following table.

Table 3. Definition of Variables

Variable	Unit	Source
GDP per capita (GDP)	Thousand (US$)	World Bank
Business freedom (KB)	The index is worth 0 to 100. The higher the index value, the more efficient government regulations are at regulating businesses.	The heritage foundation
Investment freedom (KI)	The index is worth 0 to 100. The larger the index value, the freer the flow of investment capital. In other words, the investment restriction is getting smaller.	The heritage foundation
Trade freedom (KP)	Values range from 0 to 100. The higher the score, the lower the tariff and non-tariff trade barriers.	The heritage foundation
Economic complexity (KE)	The index value can be negative or positive. A negative value indicates that the export product is no different from other countries and has many competitors.	Harvard growth lab

The analytical tool used is panel data with the following model.

$$GDP_{it} = \beta_0 + \beta_1 KB_{it} + \beta_2 KI_{it} + \beta_3 KP_{it} + \beta_4 KE_{it} + \varepsilon_{it}$$

The expected result is that business freedom (KB), investment freedom (KI), trade freedom (KP), and economic complexity (EC) can increase GDP per capita in lower middle-income countries.

3 Result

The data used in the study has the following characteristics.

Table 4. Data Characteristics

	GDP	KB	KI	KP	KE
Mean	2519.316	40.50505	42.24747	70.54773	-0.636964
Median	2302.427	40.00000	45.00000	70.70000	-0.672655
Maximum	9026.472	70.00000	70.00000	88.90000	0.958651
Minimum	406.2010	10.00000	5.000000	41.40000	-2.416100
Std. Dev.	1492.303	14.20456	18.55200	8.866059	0.653718
Skewness	1.522713	-0.365103	-0.517031	-0.287131	0.123945
Kurtosis	6.597864	2.591731	2.494971	2.904813	2.444962
Jarque-Bera	366.6176	11.54809	21.85158	5.590808	6.097023
Probability	0.000000	0.003107	0.000018	0.061090	0.047429
Sum	997649.0	16040.00	16730.00	27936.90	-252.2379
Sum Sq. Dev.	8.80E+08	79698.99	135949.7	31049.77	168.8024
Observations	396	396	396	396	396

The economic complexity variable is the only variable that has a negative average value. This happens because of the characteristics of the research area which is a country with low middle income countries. This condition implies that low middle income countries do not have export product advantages because the products are less diversified and have substitutes from other countries.

The data in this study have passed the tests of normality, heteroscedasticity, autocorrelation, and multicollinearity. The best model test has also been carried out with the results of panel data regression using the fixed effect model method. The regression calculation results are as follows.

Table 5. Data Panel Result

Variable	Coefficient	Std.Error	t-Stat	Prob
C	845,0105	273,0764	3,094411	0,0021
KB	25,07708	4,974529	5,041096	0,0000
KI	11,10084	2,605147	4,261118	0,0000
KP	2,342066	2,898918	0,807910	0,4197
KE	-38,22349	70,43413	-0,542684	0,5877
R^2	0,974405			
Dependent Variable : GDP				

Notes: α is 5 per cent.

Testing the panel data model gives the result that the data is better regressed with the fixed effect model. The fixed effect regression results provide information that there are two variables that do not significantly affect GDP per capita for lower middle income countries. The two variables are freedom of international trade and economic complexity. On the other hand, the variables of business freedom and investment freedom are proven to significantly affect GDP per capita.

Economic freedom through business and investment freedom can be a factor that will help increase GDP per capita. Economic freedom will increase the economic activity of a country, which in turn can trigger an increase in the value of GDP per capita [10]. One way is to increase the flow of incoming FDI funds so that it can stimulate economic growth [11], [12]

Economic complexity in this study is observed for lower-middle income countries where the majority of the data is negative. There are only five countries out of 36 that have positive economic complexity index (ECI) values during the study years, or only 55 out of 396 observations. Therefore, the regression results need to be treated with caution even though they do not prove to be significant. An increase in the value of the ECI to a negative value means that the situation worsens because it increases the negative value, which in the context of this study will reduce GDP per capita. To create a high value of GDP per capita, the value of ECI must be made positive by stimulating the production of export goods that are varied and unique so that not many countries can make them [13].

4   Conclusion

Business freedom and investment freedom are statistically significant influences on GDP per capita, but not trade freedom and economic complexity. Overall, all variables can increase GDP per capita but caution is needed in interpreting economic complexity, which is negative in the original data.

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