Determinants of Economic Growth: A Study with Reference to Emerging Economies

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Abstract

Economic growth (EG) is the key determinant that shows how the country is progressing towards development and how much is the commitment in achieving the improved lifestyles of the country. The emerging economies are paying close attention to the importance of determinants of Economic Growth (EG). Factors like trade openness, inflation, external debts, stock market capitalization and governance indicators are the key factors that affect Economic Growth(EG). Gross domestic product is considered as dependent variable and mentioned factors are the independent variables (Determinants of economic growth). Here the impact of independent variables will be found on Economic growth. The data has been taken from World Bank data bank from 2000 to 2016 .The results are also tested by applying simple OLS regression model. The simple OLS model is applied to check the findings by ignoring the panel factors in the data

Keywords: Economic Growth (EG), Gross Domestic Product(GDP), Determinants of Economic Growth.

Introduction:

Emerging economies are low-income, rapid-growth countries using economic liberalization as their primary engine of growth. They fall into two groups: developing countries in Asia, Latin America, Africa, and the Middle East and transition economies in the former Soviet Union and China. Out of these emerging economies we have chosen Brazil,Russia,China,India and Pakistan in our study on the basis of parameters like GDP growth, technological development,economic activity, wages productivity etc. These emerging economies are blessed with the active younger population who are more interested in capitalizing opportunities as compared to developed economies. These economies are also more interested in developing their infrastructures and are believed to become more industrialized in the future. So they look for more investments which could provide opportunities for economic growth. These factors lead the emerging economies to attract more investments in the form of FDI and FPI in the economy.

Determinants of Economic Growth: The GDP is the key indicator of **economic** growth and development in any economy. The GDP is affected by many indicators. The increasing GDP rate is a symbol of economic growth for an economy.

Trade Openness:

Trade openness is measured as trade as the percentage of GDP(*Cantah, Brafu-Insaidoo, Wiafe, & Adams, 2018*) in their study.The total trade includes both exports and imports. It is the measure of trade liberalization which is inclining in this era of globalization (*Kim, Lin, & Suen, 2010*). The positive trends of trade openness show the favorable growth of economic ties and the flow of FPI and FDI. There has been an issue in measuring trade openness in the literature but the above described formula (trade / GDP) has been used repeatedly.

The trade openness provides more inflow of FDI which increases the living standards of an economy which in turn scaffolds the economic growth. Contrary to this, the trade restrictions isolate an economy from improvements, research and developments. In literature there are different findings; the findings of positive impact of trade openness on economic growth and unexplained impact of trade openness on economic growth have been encouraging the upcoming researchers to come up with clear findings.

External Debt

The literature has numerous studies based on time-series and cross sectional findings stating different findings. The positive impact of external debt on economic growth has also been studied, and at the same time studies find negative impact of external debt on economic growth and inconclusive findings are also available.

Inflation

The difference in theoretical bases and empirical findings has been reported in literature. There are two dimensions of inflation, one is demand pull inflation on the other hand the cost push inflation(*Vasylieva, Lyeonov, Lyulyov, &Kyrychenko, 2018*).Demand pull inflation happens when the demand side increases the prices in the economy. Also when the government purchases are increased, the economy witnesses the demand pull inflation. On the other hand, when the cost of production rise, the cost push inflation happens(*Lim &Sek, 2015*). The controversial results have been the main cause of finding the impact of inflation.

Stock Market Capitalization

The stock market capitalization is the key determinant of GDP as the expansion in securities exchange capitalization demonstrates the improvement and development in economy and the diminishing in financial exchange capitalization demonstrates the reduction in economy.

Governance

Ronto, Syrmali, and Vavouras (2015) argue that governance requires political reforms to tackle corruption by applying the accountability and sound frameworks of improvements. The role of governance is an integral part of research because the researchers look for deeper determinants of governance for an economy(*Ronto, Syrmali, &Vavouras, 2015).*

Bekhet and Al-Smadi (2015) found the determinants of economic growth, they argue that stock market capitalization is the strong determinant of economic growth *(Bekhet& Al-Smadi, 2015).*

Jimborean and Kelber (2017) contend that outside obligation, showcase size and high expansion are the obstacles to FDI and FPI and lead to moderate monetary development. The rising economies need FDI and FPI for financial development and yet, they need outer obligation to fund the asset use framework in their nations. At a point when the nation has higher expansion and outer obligation then the nation needs to confront a great deal of difficulties. The duties of fund cost on outer obligation and abnormal state of costs make numerous monetary issues like high costs, political insecurity, joblessness and least spotlight on fares in the nation(*Jimborean&Kelber, 2017*).

The governance indicators are based on six key aspects. These six dimensions of governance are discussed in detail (remove the highlighted term) with their ability to measure as follows:

1. Voice and Accountability
2. Political Stability and Absence of Violence/Terrorism
3. Government Effectiveness
4. Regulatory Quality
5. Rule of Law
6. Control of Corruption

Methodology

The results are tested by applying simple OLS regression model .

The data has been taken from World Bank data bank from 2000 to 2016. The reason to select the data range from 2000 is that the governance indicators are not available before 2000.

$$gdp\_growth_{it} = \beta_0 + \beta_1 trade\_op_{it} + \beta_2 external\_deb_{it} + \beta_3 infl_{it} + \beta_4 mcr_{it} + \beta_5 va_{it} + \beta_6 ps_{it} + \beta_7 geff_{it} + \beta_8 regqua_{it} + \beta_9 rol_{it} + \beta_{10} coc_{it} + \mu_{it}$$

In the above equation the gdp_growth represents the economic growth as dependent variable on the other hand trade_op, external_deb, infl, mcr, va, ps, geff, regqua, rol, coc are independent variables. The "I" is representing the countries and "t" represents the time factor. Finally the β0 is the constant and β1-β10 are the coefficients in the model and μ is the error term.

Table 1 shows the summary statistics of the variables including gdpgrowth as dependent variable which measures the economic growth and trade_op, external_deb, infl, mcr are the independent variables which are the symbols of trade openness, external debt, inflation and stock market capitalization respectively. Finally, the independent variables like va, ps, geff, regqua, rol and coc are the governance indicators which represents voice and accountability, political stability, government effectiveness, regulatory quality, rule of law and control of corruption respectively.

There are 85 observations in the sample size comprising of China, Brazil, Russia, India and Pakistan. The gdp_growth has the mean value of 5.458556 with the standard deviation of 3.750841. The minimum gdp in these countries is -7.820885 and the maximum gdp in these countries is 14.23139. The economic growth has been measured by annual gdp growth (Liu, Burridge, & Sinclair, 2002) in this thesis whereas the trade_op has been measured by Total trade as a percentage of GDP(Cantah, Brafu-Insaidoo, Wiafe, & Adams, 2018).The mean value of trade_op is 34.91793 with standard deviation of 11.92206. The data based on trade_op has a long range from 17.19666 to 63.96638.

The external_deb has the mean value of 25 with the standard deviation of 11 and it has large variations similar to trade_op. The minimum value of external debt is 8.2 percent of the total GDP whereas the maximum value is 57.97 percent of the total GDP.

Table 1 -Summary Statistics of the Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
gdp_growth	85	5.458556	3.750841	-7.820885	14.23139
trade_op	85	34.91793	11.92206	17.19666	63.96638

external_deb	85	25.33823	11.0486	8.216633	57.9767
infl	85	7.072555	4.627425	-.7319755	21.47701
mcr	85	46.91943	26.7973	6.781106	151.4514
va	85	-.4810588	.8176229	-1.7	.57
ps	85	-.9815294	.7638959	-2.81	.33
geff	85	-.2177647	.2935634	-.82	.41
regqua	85	-.3081176	.2706583	-.91	.36
rol	85	-.4709412	.3798547	-1.1	.33
coc	85	-.5604706	.3639332	-1.13	.17

Table 2 shows the results of normality tests on the variables, the trade_op, external_deb, geff and regqua are normal as per these results and therefore there is no problem in running the simple OLS regression model.

Table 2 - Skewness and Kurtosis Tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
gdp_growth	85	0.0122	0.0433	9.00	0.0111
trade_op	85	0.1136	0.2358	4.04	0.1324
external_deb	85	0.0110	0.7927	6.15	0.0461
infl	85	0.0005	0.0567	12.85	0.0016
mcr	85	0.0000	0.0055	19.54	0.0001
va	85	0.9305	0.0000	.	0.0000
ps	85	0.0058	0.6972	7.08	0.0290
geff	85	0.1585	0.2703	3.31	0.1911
regqua	85	0.1442	0.6415	2.42	0.2977
rol	85	0.3066	0.0000	17.32	0.0002
coc	85	0.6502	0.0001	13.40	0.0012

Table 3 shows the results of normality test based on Shapiro-Wilk. It shows that the dgp_growth, external_debt, infl, mcr, va,ps,rol and coc are normally distributed and the OLS model can be tested on the data.

Table 3 Shapiro-Wilk test for normality

Variable	Obs	W	V	z	Prob>z
gdp_growth	85	0.97082	2.105	1.637	0.05083
trade_op	85	0.95819	3.017	2.428	0.00760
external_deb	85	0.94537	3.941	3.015	0.00128
infl	85	0.93732	4.522	3.318	0.00045
mcr	85	0.91016	6.482	4.109	0.00002
va	85	0.85656	10.349	5.138	0.00000
ps	85	0.93497	4.692	3.399	0.00034
geff	85	0.96033	2.862	2.312	0.01039
regqua	85	0.97858	1.545	0.957	0.16930
rol	85	0.94724	3.807	2.939	0.00165
coc	85	0.94824	3.734	2.897	0.00189

Table 4 shows the results of Shapiro-Francia results for normality. There are 85 observations in the data and therefore the normality is not an issue for the model.

Table 4 Shapiro-Francia W' test for normal data

Variable	Obs	W'	V'	z	Prob>z
gdp_growth	85	0.96632	2.683	1.930	0.02679
trade_op	85	0.96419	2.852	2.050	0.02020

external_deb |	85	0.94827	4.120	2.769	0.00281
infl |	85	0.93779	4.955	3.130	0.00087
mcr |	85	0.90735	7.380	3.909	0.00005
va |	85	0.86508	10.746	4.644	0.00001
ps |	85	0.93946	4.822	3.077	0.00105
geff |	85	0.96488	2.798	2.012	0.02211
regqua |	85	0.97940	1.641	0.969	0.16630
rol |	85	0.95181	3.838	2.631	0.00426
coc |	85	0.95625	3.485	2.442	0.00731

Table 5 shows the results of simple OLS regression model and the F-Statistics shows the overall fitness of the model and the p-value of F-Statistics is significant at 1 percent level of significance. So the findings of this model are reliable. The R-squared value is 0.6579 which shows that the model is explaining 65.79 percent variations and that is highly acceptable.

$$gdp\_growth_{it} = \beta_0 + \beta_1 trade\_op_{it} + \beta_2 external\_deb_{it} + \beta_3 infl_{it} + \beta_4 mcr_{it} + \beta_5 va_{it} + \beta_6 ps_{it} + \beta_7 geff_{it} + \beta_8 regqua_{it} + \beta_9 rol_{it} + \beta_{10} coc_{it} + \mu_{it}$$

The constant in simple OLS regression is significant at 10 percent (*) the p-value is 0.073, the coefficient of trade_op is 0.29 which is significant at 1 percent (***) the p-value of the coefficient of trade_op is 0.000. This value shows that if the trade_op changes by 1 unit then the gdp_growth of these emerging economies will change by 0.29. So the trade_op is a positive and highly significant determinant of gdp_growth in these emerging economies.

The coefficient of external_deb has negative sign which shows that the external_deb is a negative determinant of gdp_growth in these emerging economies but the value of the coefficient is not significant at even 10 percent level of significance as the p-value of the coefficient of external_deb is 0.960 which is highly insignificant. So the researcher cannot say anything about the significance of the external_deb on gdp_growth.

$$gdp\_growth_{it} = -2.86_{*} + 0.29_{***}trade\_op_{it} - 0.0019_{0}external\_deb_{it} - 0.379_{***}infl_{it} + 0.032_{**}mcr_{it} + 1.50_{*}va_{it} - 2.16_{***}ps_{it} - 0.010_{0}geff_{it} - 1.57_{0}regqua_{it} - 3.29_{0}rol_{it} + 7.38_{***}coc_{it} + \mu_{it}$$

The inflation has been an important determinant of gdp_growth. Here the result based on OLS says that inflation is a significant negative determinant of gdp_growth. The coefficient of inflis -0.379 which has shown the negative direction of the magnitude. The result is highly significant at 1 percent level of significance. The p-value of the coefficient of infl is 0.000 which is shown by *** in the above equation. The gdp_growth will increase by 0.379 if the inflation is decreased by 1 unit.

The coefficient of mcr is positive and significant at 5 percent. The coefficient of mcr is 0.032 and that shows that stock market capitalization is a positive determinant of gdp_growth in these economies. The gdp_growth will be changed by 0.032 if the stock market capitalization changes by 1 unit.

The va is a positive determinant of gdp_growth and the coefficient is significant at 10 percent. It means if the voice and accountability in these emerging economies get improved the gdp_growth will get improved. The political stability is negative determinant which is against the theory on the other hand government effectiveness, regulatory quality and rule of law are insignificant determinants of gdp_growth in these economies which are against the theory. Finally, control of corruption is positive significant determinant of gdp_growth.

Table 5 Results of OLS Regression Model

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      Source |       SS       df       MS              Number of obs =      85
-------------+------------------------------           F( 10,    74) =   14.23
       Model |  777.436697    10  77.7436697           Prob> F      =  0.0000
    Residual |  404.343461    74  5.46410083           R-squared     =  0.6579
-------------+------------------------------           Adj R-squared =  0.6116
       Total |  1181.78016    84  14.0688114           Root MSE      =  2.3375

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gdp_growth |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
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trade_op |   .2937258   .0363014     8.09   0.000     .2213936     .366058
external_deb|  -.0019793   .0394647    -0.05   0.960    -.0806144    .0766558
infl|  -.3792815   .1007913    -3.76   0.000    -.5801127   -.1784504
mcr |   .0321687   .0138633     2.32   0.023     .0045455     .059792
va |    1.508417    .880113     1.71   0.091    -.2452461    3.262081
ps|    -2.162386   .7124418    -3.04   0.003    -3.581957   -.7428148
geff|   -.0104164   2.303589    -0.00   0.996    -4.600419    4.579586
regqua|  -1.573041   1.992797    -0.79   0.432    -5.543775    2.397693
rol|     -3.296958   2.059189    -1.60   0.114    -7.399982    .8060647
coc |   7.389775   1.874187     3.94   0.000     3.655375    11.12417
cons |  -2.869117   1.578223    -1.82   0.073    -6.013795    .2755607
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Determinants	Measurement	Expected Direction	Final Results
Trade openness	Total trade as a percentage of GDP	Positive	0.293*** (significantly accepted)
External debt	External debt as a percentage of GDP	Negative	-0.0019 (insignificantly accepted)
Inflation	Annual inflation rate	Negative	-0.379*** (significantly accepted)
Stock market capitalization	Stock market capitalization as a percentage of GDP	Positive	0.032** (significantly accepted)
World governance indicators	Voice and accountability	Positive	1.508* (significantly accepted)
	Political stability and absence of violence/terrorism	Positive	-2.16*** (significantly rejected)
	Government effectiveness	Positive	-0.01 (insignificantly rejected)
	Regulatory quality	Positive	-1.57 (insignificantly

			rejected)
	Rule of law	Positive	-3.29 (insignificantly rejected)
	Control of corruption	Positive	7.38*** (significantly accepted)

Conclusion:

The emerging economies are paying close attention to the importance of determinants of Economic Growth (EG). Factors like trade openness, inflation, external debts, and stock market capitalization and governance indicators are the key factors that affect EG.

EG is a key factor in estimating financial and industrial EG and advancement. It is a momentary interest in a nation. The successful and developed nations don't possibly pay better returns when contrasted with developing economies. Rising nations are youthful countries, and they can grow and create over the long haul; likewise, they can pay more on transient speculations. The financial states of rising economies are improving step by step since they have been growing more businesses for better and fast EG, and the nation is delivering more than developed and successful nations. On the off chance that we contrast rising economies and developed economies, at that point, we can undoubtedly see that the likely improvement of growing economies is superior to that of developed and successful economies.

The theories recommend that market size and exchange transparency are the positive determinants of EG. The more considerable market size of the host will allow more growth and EG in the country. The more prominent market size suggests that the host can extend its money related turn of events and progression. Brazil, China, Russia, India, and Pakistan are the emerging economies. They are ordinarily talented with more prominent market size, yet this will be the test for these countries to pick up by their inert limit and improve the EG level. The revelations show a negative relationship, which shows that the market size of these countries isn't quite related to EG. It is completely against the hypotheses and the standard limits of these countries.

Similarly, trade responsiveness is conflictingly related to EG, which again clashes with the theories. The speculations suggest that trade straightforwardness emphatically influences EG. These countries are demonstrating the negative impacts of trade openness on EG. It unquestionably shows that the mentioned countries have not focused on the noteworthiness of trade straightforwardness.

The weight of outer commitment is another huge issue that doesn't allow these countries to flourish. These nations need to foresee the repayment of the section of the commitment, and this has been making them set aside a noteworthy aspect of their monetary arrangement in paying interest portions.

Concerning the organization structure, political quality, government sufficiency, the standard of law, and control of degradation are the positive determinants of EG. These disclosures are according to the theories, and it communicates the hugeness of these organization markers for EG

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