

Re-assessing political, social and economic determinants of economic growth: An analysis from selected Asian developing economies

Saima Sarwar^{*a}, Noor ul Haq^b

^aAssistant Professor, Government College University, Pakistan

^bB. Sc Student, Government College University, Pakistan

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ABSTRACT

This study aimed to reassess the impact of different political, social and economic determinants of the economic growth in selected Asian developing economies. The variables which are being used in this regard are gross domestic product, government spending, democracy, economic freedom, foreign direct investment, primary education, labour participation and life expectancy at birth. According to the estimated results from fixed effect model, it has been found that political factors are affecting more to the economic performance of these nations as compared to the other dimensions i.e. social and economic determinants. Both sizes of bureaucracy and democracy are positively related with economic growth supporting 'Webrian theory' of bureaucracy. Moreover, when discussing each variable, findings shed light on this fact that in these nations except corruption, FDI, Trade openness, economic freedom, life expectancy, primary education and employment rate are positively related with GDP.

1. Introduction

Economic growth takes place in economies due to improvement in the form of skills, training, knowledge, and research etc. When the actions of different people are organized in a meaningful way, it will lead towards growth of a country. These human actions can be in the form of consumption and production activity. As for the production, process capital is required in the form of investment along with the economic freedom. The foreign direct investment plays a crucial role in economic growth of a country but to get foreign direct investment, economic freedom is essentially required in the form of trade liberalization. Trade liberalization means trade openness and this trade openness along with economic growth are the major interconnected matter among various under developed or emerging economies of the world particularly in Asian developing nations. The openness of trade causes bringing of new technology along with advance method of production, which in turn increase human capital development among various economies.

* Corresponding author. E-mail address: saimasarwar@gcu.edu.pk

Human capital development is achieved through labour participation, primary education, training etc which in turn lead towards the growth of an economy. It is the human capital, which shapes the natural or raw form resources into the goods and services. Therefore, without human capital development it is impossible to make progress and earlier research also proves this that human capital has positive and strong effect on growth. Education is the only solution of those problems because education promotes research and development which in turn helpful for the solution by obtaining different skills in these various fields.

Education helps people in obtaining new methods of production, techniques, develops new ideas and brings change in political, economic and social structures of their country. The developed countries put great emphasis on education rather than others because of its important role in economic development of a country. Therefore, there is a need for developing countries as well as to focus on this sector particularly. Asian economies have great potential both in the form of natural resources and labour, unfortunately due to less spending of research and education they are unable to extract maximum benefits from their natural endowments. On the other hand, many of these nations are suffering from the governance issues in their political systems. Due to absence of rule of law, people find the ways to make the use of powers generating rent seeking activities. Therefore, keeping in view all these facts, this study aims to observe which factors are responsible for lesser economic progress of these nations beyond the fact that these had been Asian Tigers even in past.

2. Objectives and hypotheses

The following are the objectives of the study:

- To examine the relationship between political factors i.e. democracy & size of bureaucracy, and gross domestic product.
- To examine the relationship between economic factors i.e. economic freedom, foreign direct investment, trade openness, and gross domestic product.
- To examine the relationship between social factors i.e. corruption, life expectancy at birth, primary education, labour participation, and gross domestic product.

Meanwhile, the following are the study hypotheses:

Hypothesis: 1

H₁: There is a positive relationship between social development variables and real gross domestic product.

Hypothesis: 2

H₂: There is a positive relationship between economic development variables and real gross domestic product.

Hypothesis: 3

H₃: There is a positive relationship between political factors and real gross domestic product.

3. Literature Review

This section covers a brief literature review of past studies.

Radu (2015) attempted to find the political determinants of economic growth for Central and Eastern Europe (CEE) countries using the dataset ranging from 1960-2010. The findings of the study showed that political factors do not contribute directly to the economic growth but political processes actually affect the economic factors which ultimately influences growth patterns of the economies.

Assiotis and Sylwester (2014) aimed to relate process of democratization with economic growth both in short run and long run framework. Using cross country data from 1960-2010 the authors found that effects of democracy vary from region to region and nation to nation. In addition, it can be concluded that democracy increased growth rates of Sub-Saharan African nations both in short run and long run but lowered of European countries. Hence, it seems that democracy proves a better tool of development only for poor and less stable nations.

Aisen and Viega (2013) tried to find the relationship between political instability and economic growth using a dataset of 169 countries for time span 1960-2004 and found that political instability hinders the economic performance of nations. Moreover the authors also concluded that economic freedom contributes positively to the growth process while impact of democracy was observed quite small in case of selected panel of nations.

Khan and Khan (2011) examined in their study that the foreign direct investment plays a vital and positive role in enhancing the growth of an economy. The objective of the study was to examine a relationship among foreign direct investment and total output. The results suggest that the effects of the foreign direct investment on economic growth diverge drastically across the other sectors. The largely conspicuous result acquired is that foreign direct investment causes growth in the primary as well as service sectors, whereas growth causes foreign direct investment in the manufacturing sector. Finally, by investigating the sectoral effects of foreign direct investment on local economy, the study gives significant and vital information to the policy makers in order to formulating more investment policies in Pakistan.

Oladoyin and Dauda (2010) explained in their study that education plays a central role in the whole development of the countries. It can not only reduce the level of poverty, social justice and fairness, but also facilitate to supply the necessary human capital which is the essential situation for the sustainable economic growth. The results of the study demonstrate that there is long-run relationship among economic growth and investment in education. All other variables formation of gross fixed capital, labour force and educational capital emerges with the positive signs are all significant in the economy of Nigeria. The study concludes that intensive endeavours should be made by the policy makers in order to improve the educational investment, which will further lead to accelerate the economic growth in the country.

Shahbaz et al. (2008) examined the relationship between GDP per capital and foreign direct investment, financial development, inflation, imports and exports, trade openness and remittances for the economy of Pakistan. The results of the study demonstrated that financial sector development appears to encourage economic activity and thus raises economic growth in the long run as well as in short run. Remittances are optimistically correlated with economic growth in the Pakistan. Trade openness discourages economic growth, whereas financial openness stimulates it. Local investment deeds creates employment prospects, as the results contributes to enhance economic growth. At last inflation and economic growth are negatively correlated with each other.

Akram et al. (2008) examined in their study that human capital plays a vital role in order to achieve the sustainable development in the country. The results of the study indicate that GDP per capita is positively affected by the health indicators in the long run period of time whereas indicators of health cause the per capita GDP. Though in short run the indicators of health is not succeeding to put significant effect on GDP per capita. The study concluded that effect of health is the long run experience and in the short run there is no vital relationship subsists among economic growth and the variables of health. The study also suggests that if we want a high degree of per capita income, we can attain it by rising and enhancing the stock of human capital, particularly if the current stocks are at the lower end.

Zang (2006) observed that encouraging more and more foreign direct investment leads countries on the way to prosperity. The objective of the study is to test empirically the broad spread belief about the

valuable growth effects of the rise in the foreign direct investment in China. For that purpose data is collected on annual basis from 1992-2004 to apply a growth model in order to calculate up to the level the outstanding foreign direct investment inflows influence income growth of China. The results of the study shows that foreign direct investment appears to endorse the growth of the income, and that positive effect of growth further rise over the time and to be powerful in the coastal areas that the inland districts. Hence, the marginal product of foreign capital appears to be greater than the local capital.

Ghani and Musleh-UdDin(2005) explained that the objective of their paper is to examine the function of public investment in the process of the growth of the economy with special reference to the Pakistan economy. The results of the study shows that growth is massively determined by the investment of private sector and that no powerful deduction can be strained from the public investment and public consumption on economic growth.

Bengoa and Sanchez-Robles (2003) explained that the objective of their study is to examine the relationship between foreign direct investment, economic freedom and economic growth. The data used is collected on annual basis from 1971-1999 of 18 different Latin American countries using the panel data analysis. The results of the study show that economic freedom in the host nation is a constructive determinant of the inflows of foreign direct investment. The results also advocate that foreign direct investment is optimistically correlated with the growth of the economy in the host nations. The host nation needs sufficient economic stability, human capital and liberalized market in order to get gains from the long-term capital flows. The study concludes that economic freedom improves the growth of the economy in least developed countries directly as well as indirectly by raising the foreign direct investment. Hence, the rise in the economic freedom should therefore be a vital precedence of the policy makers.

Carlsson and Lundström (2002) justified in their study that mostly the relationship between growth of GDP and economic freedom is positive. The objective of the study is to check the relationship among GDP growth and economic freedom. The data is taken on annual basis of 74 countries from 1975-1995 from World Development Indicators. For checking the exogeneity of the economic freedom index, the study uses the Hausman test. The study also adopts the sensitivity analysis in order to check the multicollinearity between the variables. The result of the study shows economic freedom does strongly matters for economic growth. This does not mean that rise in the economic freedom, described in common provisions is better for economic growth, while few categories in the index are not significant and few significant variables have inverse effects.

Benhabib and Spiegel (1994) described that the accumulation of human capital is considered to be a very vital factor in developed economies. The objective of the study is to determine the relationship among per capita growth rates and human capital. The data is taken on annual basis from 1965-1985 of 42 countries by using the cross-countries major approximations of human capital stocks and physical capital stocks. The results point out that human capital comes in insignificantly in describing per capita growth rates. The alternative model is also adopted in which the rate of growth of whole productivity factor totally depends on country's level of human capital stock. Hence, the study concludes that human capital plays a positive role in the economy.

4. Methodology

The study is based on a pooled data set, comprising 25 countries. These nations have been divided into three panels on the basis of income levels i.e. high income nations, middle income nations and low income nations. Dynamic fixed effect model has been applied because lagged values of dependent variable have also been used as an explanatory variable. However, the question that can be raised is why fixed effect model has been used and not OLS or other techniques. Then, the main reason for applying this is that if technique of OLS would have been employed then there was a probability that estimates

could tend to be biased and inconsistent usually violating the classical assumptions of BLUE estimates. One of the important problems associated with this technique is related to degrees of freedom i.e. number of parameters will be more as compared to the sample size in the present study. By combining time series of cross-section observations, panel data give more informative data, more variability, less collinearity among variables more degree of freedoms and more efficiency (Gujrati,2009). Time effect models also address the problem of endogeneity of regressors which occurred usually due to the correlation of right hand side variables with error terms in other periods. Thus, the following regression line will be estimated:

$$Y = f(X_1, \dots, X_n)$$

Where Y is showing GDP per capita measuring economic development and X's are the proxy for economic and institutional variables. 'e' is error term. Panel fixed Effect model has been used for the selected dataset.

The functional form of the model is:

$$Y = f(\text{Economic factors, Political factors, Social factors})$$

The panel model uses both time series and cross section data. The fixed effects incorporating time and individual country effects is:

$$Y_{it} = \alpha_0 + \alpha_1 + \gamma_t + \beta X_{it} + \varepsilon_{it}$$

This model has overall constant term ' α_0 ' as well as a group effect for each country ' α_1 ' and time effect for each period (t). Following are the three models that are used for the estimation of results. Model 1 consist of economic variables, model 2 is consist of political variables, while model 3 is showing the effect of social variables on GDP.

$$GDPP_{it} = \alpha_0 + \alpha_1 + \gamma_t + \beta_1 EF_{it} + \beta_2 FDI_{it} + \beta_3 TOPEN_{it} + \varepsilon_{it} \quad (\text{Model 1})$$

$$GDPP_{it} = \alpha_0 + \alpha_1 + \gamma_t + \beta_1 BUR_{it} + \beta_2 D01_{it} + \varepsilon_{it} \quad (\text{Model 2})$$

$$GDPP_{it} = \alpha_0 + \alpha_1 + \gamma_t + \beta_1 COR_{it} + \beta_2 LIFE_{it} + \beta_3 EDU_{it} + \beta_4 EMP_{it} + \varepsilon_{it} \quad (\text{Model 3})$$

5. Variables and data sources

The study employs the data of 25 Asian developing countries for the time period of 1996-2010. It includes various sets of variables for three models. These are Gross Domestic Product, Government Expenditure, Primary Education, Democracy, Corruption, Economic Freedom, Labour Participation, Foreign Direct Investment And Life Expectancy at Birth. The detailed definition of the variables is given below.

5.1 Size of Bureaucracy

This variable is exogenously determined by taking ratio of government expenditure with respect to GDP. Gross national expenditure (formerly domestic absorption) is the sum of household final consumption expenditure (formerly private consumption), general government final consumption expenditure (formerly general government consumption), and gross capital formation (formerly gross domestic investment). Data are in constant local currency. The source of data is World Development Indicator (WDI) CD.

5.2 Economic freedom

The heritage foundation and wall street journal created this index of economic freedom which is a series consisting of 10 economic measurements. The factors which have been included in this index to measure economic freedom on a nation are:

1. Business Freedom
2. Trade Freedom
3. Monetary Freedom
4. Freedom from Government
5. Fiscal Freedom
6. Property Rights
7. Investment Freedom
8. Financial Freedom
9. Freedom from Corruption
10. Labor Corruption

The scale of index is from 0 (no freedom) to 100 (maximum freedom). The highest form of economic freedom provides an absolute right of ownership, fully realized freedom of movement for labor, capital and goods and an absolute absence of coercion or constraint of economic liberty beyond the extent necessary for citizens to protect and maintain liberty itself.

5.3 Trade openness

There are acute measurement issues related to the trade openness index. In this study we are using trade liberalization and trade openness interchangeably.[†] Since it seems to be very difficult to have reliable data on trade policies across different nations, therefore many studies including Dollar and Kraay (2004) have simply used trade volumes as a measure of trade. Kandeiro and Wadhawan (2003) have discussed many problems associated with the measurement of trade openness index[‡]. There are different ways to measure trade liberalization.

1. Trade intensity measures i.e. volume of trade over GDP
2. Trade policy measures: analyzing different trade policies for liberalizing trade i.e. removal of tariff on imports or exports and indirect measures such as black market premium etc. [§]
3. Measurement through Average Tariff rates.
4. Measurement through proxy variable, i.e., (0) for not free trade and (1) free trade.^{**}
5. Total share of imports as percentage of GDP.

However, the method through which we are going to calculate trade openness is the first one i.e. Trade intensity measure. That is a widely used measure for trade openness (for example, see Tavares and Larrain (1999), Toretz (2002), Knack and Azfar (2002), Bandyopadhyay and Roy (2007) and Wei (2000)). It takes into account the total volume of trade which helps us to see that how much trade has been expanded after the result of such policies. This can be defined as:

$$\text{Trade liberalization} = \text{imports} + \text{exports}/\text{GDP}$$

The data regarding these variables have been obtained from World Development Indicators (WDI) CD.

[†] Tonia Kandeiro and Margarate Chitiga in their work on “Trade openness and FDI in Africa” have also used these two terms interchangeably.

[‡] See for more detail Tonia Kandeiro and Margarate Chitiga “Trade openness and FDI in Africa”.

[§] Christa Brunnenschweiler has tried to show basic problems in measuring trade openness while studying trade and growth relationship empirically. The author has focused mainly on two measures i.e. trade intensity measure and trade policy measures. But due to non-availability of data on quantitative barriers, the study analyzed that trade intensity measure seem most robust across various studies.

^{**} See, A trade openness measure used by Sachs & Warner in 1995.

5.4 Corruption

The data on corruption used in this study have been constructed by Transparency International, in terms of the degree to which corruption is perceived to exist among public officials and politicians. It is a composite index, a poll of polls, drawing on corruption related data from expert and business surveys carried out by a variety of independent and reputable institutions. Transparency International commissions the CPI from Johann Graf Lambsdorff, a University professor based in Passau, Germany. The index score range is in between 0 (totally corrupt) and 10 (clean). The main advantage of this index is that it permits for cross country analysis and it fulfills the requirement of the definition used in this study for corruption (the misuse of public office for private gain).

5.5 Foreign direct investment

Foreign direct investment could be defined as the physical investment of one company of any country into the factory, building or any other asset of other country. It plays a growing and extraordinary role in the business of the world, because it provides a firm with new marketing channels and new markets, improvement in existing technology, cheaper ways of production, financing and new skills. The source of the dataset is World Bank (2010).

5.6 Labour force participation rate

Labour force participation could be defined as the ratio of a working age person (15+ years) that is economically active whether it is employed or unemployed but is looking for a job. It can also be said that it is the combination of the civilian workforce, which includes the employed and unemployed workers of the economy. It is also collected from World Development Indicators.

5.7 Life expectancy at birth

It is defined as the expected number of years that a new born baby would live that is predicted at the time of its birth and data have been extracted from World Development Indicators.

5.8 Democracy

The data for this variable has been extracted from Freedom House. It includes two categories to show that either a country is free or not free. These are political rights and civil liberty status in a nation. It ranges from 1(highest degree of freedom) to 7 (lowest degree of freedom).

5.9 Level of education

In this study we are measuring education level by taking into account primary enrollment rates in a nation. Hence, in this study analysis, Primary education is the total number of pupils enrolled at primary level in public and private schools. The same definition has also been used in another study by Chaudhry (2005). Data on this variable have been taken from World Development Indicator (WDI).

6. Results and interpretations

As different models for estimation are available but study applies the fixed effect model for cross-sectional analysis because this model is best for estimation purpose.

Table 1. Estimation results of model 1

Variance	Estimated Coefficient	Standard error	t-statistic	p-value
EF	0.390	0.338	1.153	0.0249
FDI	0.648	0.355	1.824	0.0690
TOPEN	0.286	0.615	4.657	0.0000
Adjusted R-Squared	0.971		Durbin-Watson	2.2522
White Test for Heteroscedasticity Prob = 0.4513				

From the results of Table 1, it can be seen that variables are having significant impact on dependent variable. All variables are affecting positively to the dependent variable of Model. However, the impact of foreign direct investment is more as compared to other two variables. Diagnostics of the model are confirming that it is a best fit as there is no issue of autocorrelation and heterogeneity in post-estimations of the model. Similarly, the second model is estimated using bureaucracy and democracy as the independent variables in relation with gross domestic product. Table 2 exhibits the results showing the impact of these variables to Asian developing economies.

Table 2. Estimation results of model 2

Variance	Estimated Coefficient	Standard error	t-statistic	p-value
BUR	1.096	0.028	38.031	0.0000
D	0.690	0.243	2.846	0.0047
Model Diagnostics				
Adjusted R-Squared	0.989		Durbin-Watson	1.987
White Test for Heteroscedasticity Prob = 0.7410				

From the estimates given in the above table, it is clear that both of these variables are positively affecting economic growth in Asian nations. Size of bureaucracy is positively related which is confirming that in these nations which Weberian view related to rational bureaucracies is valid and their bureaucracies are acting as 'Helping Hand' for the better economic performance. On the other side Democracy has also shown positive effect on GDP with the interpretation that 1 percent change in the strength of democracy will lead to increase economic growth on average 69 percent approximately. Again the diagnostics of the model are proving that model is accurate in its estimation. Lastly, the estimation is done in Model 3 which is attempting to find the important social determinants of growth in these economies.

Table 3. Estimation results of model 3

Variance	Estimated Coefficient	Standard error	t-statistic	p-value
COR	-0.409	0.112	-0.365	0.0714
LIFE	0.538	0.563	0.956	0.0339
EDU	0.275	1.411	1.950	0.0520
EMP	0.170	0.271	0.628	0.0530
Model Diagnostics				
Adjusted R-Squared	0.965		Durbin-Watson	2.154
White Test for Heteroscedasticity Prob = 0.9713				

Results show that except corruption, all other three variables are having positive effect on the economic growth of these nations. However, the impact is stronger in case of life expectancy on economic growth as compared to education and employment. This shows that lower population can help these nations to improve their economic status as the life expectancy is very low in these nations. The

results show that 1 percent change in this ratio will lead to increase GDP on average 54 percent approximately. On the other hand, the coefficient of Primary Education is showing that 1 percent change in this variable will lead to increase of GDP on average 27 percent approximately. However, the estimate of employment variable is showing very low impact on the economic health of these economies i.e. 1 percent change in this factor is leading to increase GDP about 17 percent approximately. The post-estimations of the model are confirming the validity of the estimates.

7. Analysis of the models on the basis diagnostics

7.1 Adjusted R-Square

Three different estimated equations for gross domestic product seem to be acceptable because the value of adjusted R^2 is very high. Explanatory power of Model in case of the first equation where economic variables effects on GDP is 0.97, in case of second equation where human development effect on GDP is 0.98, in case of third equation where social variables effects GDP is 0.96. This all means that all independent variables are able to explain the variation in three different gross domestic product equations by 97.81 percent, 98.90 percent, 96.56 percent respectively. This shows that political factors are more responsible to impact economic growth in these nations as compared to other indicators.

7.2 Durban Watson Statistics and F-Statistic

The rule of thumb for Durbin Watson statistics is that the value of D.W should be in the range of 1.5 to 2.5. If D.W value exists in this range then this means that there is no problem of autocorrelation in the estimated equation. The value of D.W for the three estimated models is 2.2, 1.9, and 2.1 respectively. As these values exist within the range so there is no problem of autocorrelation. Meanwhile, all the three models F-statistic is statistically significant at 1% level.

7.4 Heterogeneity Test

For checking the heteroscedasticity in models, white test has been used and in all cases the value of the probability is insignificant showing constancy of variances in model estimation.

Table 2. Results summary

	Model 1		Model 2		Model 3	
	Coefficient sign	Significance level in %	Coefficient sign	Significance level in %	Coefficient sign	Significance level in %
C	+	**	-	*	+	***
EF	+	**				
FDI	+	***				
TOPEN	+	*				
BUR			+	*		
D1			+	*		
COR					-	***
LIFE					+	**
EDU					+	***
EMP					+	**

Note: EU, FDI, TOPEN, BUR, D1, COR, LIFE, EDU and EMP are independent variables.

***, **, *, shows 10%, 5%, 1% level of significance respectively.

8. Conclusion

This study aimed to observe the effect of different economic, social, political and human development indicators on the economic growth of selected Asian nations. The variables which are being used for this purpose were gross domestic product as dependent variable, government spending, democracy, economic freedom, foreign direct investment, primary education, labour participation and life expectancy at birth. According to the results of fixed effect model in case of Model 1, all variables are affecting positively to the economic growth, however, the impact of FDI is stronger. Model 2 indicates that both the size of bureaucracy and democracy are positively effecting gross domestic product supporting the Webrian view about bureaucracy that large share of bureaucrats can increase economic activity. Hence, Asian nations are confirming the role of bureaucracy as a 'helping hand' instead of 'grabbing hand' (Frye & Shleifer, 1997). After examining the results of Model 3 which is composed of social indicators, it has been observed that except corruption, all other social factors are contributing positively to the economic progress of these nations. However, in the end on the basis of R-square of all the Models, it is clear that political factors are more responsible in the contribution towards GDP as compared to other variables

9. Policy recommendations

On the basis of results following recommendations can be made for policy makers:

- There is a need to take some serious steps to increase the economic freedom among population. There should be efficient tax system in the economy. Efficient and cheaper law courts should be in practice. It should get rid of high corruption.
- One of the recommendations is to decrease corruption in these nations and for which one of the ways is to privatize public sector. This is because, having observed the sector which is privatized is working efficiently and benefitted after being out of control from government control. Reforms in civil bureaucracy should be taken. And it is need to construct a constitutional system where nobody is above the law.
- From the estimation it is observed that foreign direct investment plays important role in economic growth. Hence, it is required to provide secure environment in order to increase FDI. Another step is to improve the infrastructure because it will provide cheaper ways of production. Taxes for the foreign firms should be decreased to increase FDI. Moreover, new entrants in the business should be given either concessions or subsidies for encouraging them to invest both their skills and capital with confidence.

Employment is showing very little role in economic growth process. This is mainly due to less skilled and less trained labour in these nations. Therefore, it is recommended that these nations should increase their spending on research and education so that economies of scale could be achieved in the production process.

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