Impact of FDI and Trade Openness
on Economic Growth:
A Comparative Study of Pakistan and Malaysia

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Abstract. *This paper examines the role of trade openness and foreign direct investment in relation to economic growth for Pakistan and Malaysia for the period 1980-2010. Johansen co-integration test is used to estimate the nature of relationship and Granger causality test is used to determine the direction of causality in the model.*

Keywords: trade openness; foreign direct investment; economic growth; co-integration; Granger causality.

1. Introduction

Free trade has been referred as the "engine of economic growth" which is used to accelerate the development process by many economically advanced nations during the early twentieth centuries. Fast expanding trade activities act as a stimulus to growing local demands that led to establishment of large-scale industries and increased the level of exports. In many Asian countries, export growth increased up to 10% per year. Exports have tended to grow fastest in countries with more liberal trade polices, and these countries have experienced the faster growth of GDP.

In emerging and developing nations, the trade policies have been the most debated issues for the last three decades. Even though the trade openness is generally considered as a major factor for economic growth. Blomstorm et al. (1994), in their study, indicate that the neo-classical view FDI is dependable and consistent resource for capital formation in the underdeveloped countries that can augment economic growth. Acemoglu and Zilibotti (1997) indicate that underdeveloped countries can speed up development process by liberalizing their financial markets that in the long run increase the economic development. McLean and Shrestha (2002) account that the FDI play a more important role in economic growth of underdeveloped nations than the developed countries. Ahmed and Emmanuel (2000) study long run dynamics between economic growth and trade liberalization for five South East Asian countries. The results confirm the long-run relationship and bidirectional causality between the variables.

Barlow (2006) indicates that the level of trade liberalization has positive impact on growth rate for the countries nearest to the European Union, particularly in the early part of the transition. Panagariya (2004) found mixed results between countries, while there are countries like Botswana, Malta, Singapore, and Hong Kong enjoying good growth in their economic performance due to trade openness. At the same time, there are countries like Kuwait, Liberia, and UAE with negative growth. Ynikkaya (2003) indicates that trade openness and per capita income growth are significantly related with each other and thus the trade openness can increase the economic growth.

Bornschier and Chase–Dunn (1985) assert that foreign investment has a tendency to form a monopoly, which may results in waste of resources and their under utilization. Edwards (1998) states that in poor countries the growth does not depend exclusively on degree of openness, and the skill, knowledge, and cost of production also play a very important role.

Thus, it is not surprising that different measures acquire dissimilar status of openness for different countries

This study aims to determine the impact of FDI and trade openness on economic growth in Pakistan and Malaysia for the period 1980-2010.

2. Data and methodology

The variables in this study include "GDP Growth Rate, real exchange rate, trade openness, and FDI Inflow". The data is collected form IFS CR ROM.

2.1. Model specification

We specify an empirical growth model that introduces trade openness, foreign direct investment and their impact on economic growth.

$LnY = \alpha + \beta_1 Ln(TOP) + + \beta_2 Ln(FDI) + \beta_3 Ln(EXR) + \mu i$

Abbreviations:

Ln = Natural logarithm;

Y = GDP growth rate;

TOP = Trade openness (trade to GDP ratio);

FDI = Foreign direct investment;

EXR = Real exchange rate;

μi = Error term.

The unit root test is used to solve the problem of stationerity and to determine the order of integration between the variables. Johnson co-integration test and the error correction model are applied to test the long run and short run dynamics of the model.

3. Calculation and results

"ADF" test has been used to test the order of integration and to solve the problem of non-stationerity of variables. The ADF is conducted at level and at first difference. The results given in Table 1 indicate that all the variables are found non-stationery at level. However, at first difference all the series become stationery, which indicates that all the variables are integrated of order one I(1).

Table 1

ADF unit root test

Variables	Level	1st Difference	Result
Pakistan			
LNY	-3.467657	-6.961929	I(1)
LNTOP	-3.266110	-5.323710	I(1)
LNFDI	-2.405349	-4.259954	I(1)
LNREX	-0.969799	-4.651089	I(1)
Malaysia			
LNY	-2.935979	-6.208146	I(1)
LNTOP	-0.893149	-3.583695	I(1)
LNFDI	-2.014157	-4.978357	I(1)
LNREX	-2.939630	-3.651606	I(1)

Note: the data is stationery at 5% significance level.

Because the variables are found to be integrated of same order, the Johansen co-integration test has been used to determine the log run equilibrium between variables. The optimal lag length is determined by using "VAR" method and The "FPE, AIC AND SC" criterion indicates the optimal lag length as "2". The Table 2 shows the result of Johansen co-integration test. Both the trace test and maximum Eigen value given in Table 2 indicate co-integrating equations in both Pakistan and Malaysia, at 5% level of significance. This indicates that there is long run equilibrium in the model.

Table 2

Johansen multivariate co-integration test

Pakistan				
Trace statistics				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical value	Prob.**
None *	0.857031	91.71025	55.24578	0.0000
At most 1 *	0.639674	39.19178	35.01090	0.0169
At most 2	0.327854	11.63167	18.39771	0.3372
At most 3	0.032967	0.905118	3.841466	0.3414
Trace test indicates 2 cointegrating eqn.(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Max-eigenvalues

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical value	Prob.**
None *	0.857031	52.51846	30.81507	0.0000
At most 1 *	0.639674	27.56011	24.25202	0.0176
At most 2	0.327854	10.72656	17.14769	0.3337
At most 3	0.032967	0.905118	3.841466	0.3414
Max-eigenvalue test indicates two cointegrating eqn.(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Malaysia				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.790046	82.09058	55.24578	0.0000
At most 1 *	0.614009	39.94713	35.01090	0.0137
At most 2	0.397446	14.24474	18.39771	0.1731
At most 3	0.020785	0.567121	3.841466	0.4514
Trace test indicates 2 cointegrating eqn.(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Max-eigenvalues

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical value	Prob.**
None *	0.790046	42.14345	30.81507	0.0014
At most 1 *	0.614009	25.70239	24.25202	0.0320
At most 2	0.397446	13.67762	17.14769	0.1493
At most 3	0.020785	0.567121	3.841466	0.4514
Max-eigenvalue test indicates 2 cointegrating eqn.(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Table 3 presents the results of the Granger causality test for Pakistan and Malaysia. The results indicate that Pakistan has unidirectional relationship between trade openness and economic growth. And direction of causality runs from trade openness to GDP. It means trade openness Granger cause economic growth in Pakistan while FDI and exchange rate have no significant impact on economic growth in Pakistan. For Malaysia the results indicates different results, unidirectional causality exist between trade openness, exchange rate and economic growth where the direction of causality runs from trade to GDP and exchange rate to GDP. The result also indicates reverse causality between FDI and GDP growth in Malaysia.

Table 3

Granger causality test

Null Hypothesis:	F-Statistic	Probability
Pakistan		
LNTOP does not Granger Cause LNGDP	1.89941	0.16066
LNGDP does not Granger Cause LNTOP	0.52624	0.66906
LNFDI does not Granger Cause LNGDP	0.91944	0.44853
LNGDP does not Granger Cause LNFDI	0.35359	0.78700
LNEXR does not Granger Cause LNGDP	0.65228	0.59038
LNGDP does not Granger Cause LNEXR	0.51842	0.67418
Malaysia		
LNFDI does not Granger Cause LNGDP	0.14615	0.93100
LNGDP does not Granger Cause LNFDI	2.49053	0.08820
LNEXR does not Granger Cause LNGDP	2.89325	0.05940
LNGDP does not Granger Cause LNEXR	0.26540	0.84955
LNTOP does not Granger Cause LNGDP	1.54560	0.65651
LNGDP does not Granger Cause LNTOP	0.83503	0.48968

4. Conclusion

This paper examines the causality between FDI, trade openness and economic growth for Pakistan and Malaysia for the period 1980-2010. Result shows that in the long run trade openness positively effects the economic growth in both Pakistan and Malaysia. Indeed, the results oppose the "neoclassical" growth models, where trade openness has no impact on the long-run growth rate of an economy. The impact of degree of trade openness on economic growth proves to be important and significant in the long run period. The result of Granger casualty shows that all the variables except FDI are found to be significantly stimulating growth in Malaysia, where real effective exchange rate and trade openness cause GDP growth but FDI seems to have an opposite casual relationship with GDP where GDP cause FDI in Malaysia. In case of Pakistan, granger causality indicates that trade openness stimulates economic growth in Pakistan but no other variables have any significant casual impact on GDP growth. Trade openness facilitate economic growth by the exploitation of economics of scale, reduce the obligatory constraint to allow increases in the import of capital and intermediate goods enhancing efficiency through increased competition, and promoting the diffusion of knowledge through learning by doing. The results of this study support the argument that trade openness will continue to be viewed as a key determinant of economic growth.

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