

IS THERE A RELATIONSHIP BETWEEN FOREIGN DIRECT INVESTMENT, HUMAN CAPITAL, TRADE OPENNESS AND ECONOMIC GROWTH OF PAKISTANI ECONOMY?

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(Presented at the 5th International. Multidisciplinary Conference, 29-31 Oct., at, ICBS, Lahore)

ABSTRACT :Despite profuse literature on foreign direct investment, human capital and trade openness linkage with economic growth of developed economies, little profound literature is available in case of Pakistan. This paper specifically examines relationship of economic growth with foreign direct investment, human capital and trade openness for Pakistan over the time span 1980-2013. Applications of Johansen Co-integration test indicate the existence of long run relationship between the variables. In addition, VECM also confirms the long run relationship between variables. Also, diagnostic tests show normality and no auto correlation in the model. The CUSUMsq test signifies the specification of the model. The policy makers in Pakistan should employ policies to encourage FDI projects promoting domestic exports. Moreover, an increase in educational, health can result in efficient domestic human capital. The focus must also be on producing finished products in order to promote exports of Pakistan. Steps towards R&D activities should be encouraged to stimulate indigenous technological capability of Pakistan. This would upsurge the local production capability, capacity, promote exports, and improve terms of trade of Pakistan.

Keywords: Economic Growth, Foreign Direct Investment, Human Capital, Trade Openness

INTRODUCTION

The integration of modern world into a global village is the very result of globalization. Globalization has facilitated international trade by ensuring the free movement of factors of production (FOPs), goods and services, culture, innovations and ideas along with tight integration of financial markets. It has made possible for the developed economies to get gains from outsourcing the economic activities in which developing economies are having comparative advantage.

The present growth observed by developed economies is mainly due to the gains achieved from cheap raw material and labor available in developing countries. Traditionally, this outsourcing was being done in component production and assembling, but now marketing and sales along with research and development (R&D), are also subject of outsourcing. So, free trade is beneficial for all trading partners to achieve the objective of welfare. This means more material availability of goods and services, income distribution, externalities and composition of output at vast level. All this happens through the FDI flows, which may be horizontal or vertical. First flows from developed to developed countries, while the later flows from developed to developing countries.

In case of developing economies FDI inflows are always vertical. Hence, developing economies tend to adopt liberal trade policies to encourage trade and attract huge capital inflows from developed economies to promote growth. In recent decades, developing

economies have observed a remarkable increase in FDI inflows. The influx of FDI in the Asian developing economies was 406770 million U.S \$ in 2012. For which Pakistan accounts for a major share.

The role of FDI has been of vital importance in the growth of developed economies, but it is debatable to some extent in case of developing economies. The economic structure of developing economies differs from the developed ones which perhaps is the cause unlike performance of FDI in these economies. The spillovers of globalization are pacing up the developing countries' struggle to 'catch up' the technological level being attained by the leading economies. However, to get the full advantage of technological diffusion from home country, it requires a sufficient level of human capital development in the host country. This requirement of human capital in the host country limits the absorptive capability which hinders the process of diffusion of technology [1] and [2].

The efficient use of FDI is critical for developing economies because it is an important source of finance for them. The past experience shows that developing nations had been unable to take full advantage from FDI inflows due to various deficiencies. In endogenous growth theory, [3,4] and [5] has exposed the positive role of FDI in economic growth. The positive impacts of FDI on the productivity of an economy were further highlighted by [6,7] also advocated the positive contributions of FDI in economic growth for Taiwan and Portugal. It was similar to the findings of [8,9,10, 11,12] who verified the positive impact of FDI in the

economic growth. However, contrary to these inquiries, [13,14] found a negative relationship between foreign capital inflows and economic growth.

OBJECTIVES

The purpose of this study is to empirically probe the role of FDI in economic growth of a developing economy: Pakistan. To attain this purpose, the research examines the long run relationship of FDI with economic growth while treating human capital, trade openness as control variables. The model identifies the key factors required to enhance the contribution of FDI towards the growth.

LITERATURE REVIEW

The effect of FDI on the growth of the host country has been debated comprehensively in the literature. The existing theoretical studies resulted in efforts by nations to attract more FDI from the widespread believe that FDI has various positive effects: transfer of technology, employee training, backward and forward spillovers, labor mobility, productivity gains, technical assistance and access of local firms to international markets for exports. Multinational Corporations, (MNCs) are technologically advanced because they mostly are the cause of R&D expenditures in the world [15]. Empirical studies of [16,17,18,19,20,21,22,23] supports the argument that FDI exerts a positive impact in the host countries.

The transfer of advance technology into host nation would increase the demand of productive labor help a country by enhancing labor generation activities. MNCs train managers and workers to increase their productivity in order to get long run benefits from their services. The utilization of domestic human capital increases the trend of attainment of education in the host nation. This would generate new jobs which might be seen as a short run impact. It is suggested that this increase in the demand of domestic human capital plays a pivotal role in the host country's policy to support innovation, education and provision of infrastructural facilities.

It seems a paired effect between FDI and human capital resulting in economic growth as [24,25] and [15] have shown a robust relationship between FDI, human capital and economic growth. Past experience provides an ample explanation that FDI promotes exports of the host country. MNCs help the local firms to get access in global markets. The domestic firms operate efficiently by adopting new technologies and try to be competitive. This helps local firms to get access in foreign markets and highlights the value of economic freedom to attract FDI. Apergis, et al., (2008) confirmed the cause and effect mechanism for exports, FDI and economic growth.

The role of FDI is critical to economic growth of developing economies because it is a vital source of private capital formation in these economies. The influx of FDI remains a prized opportunity for smooth working in developing economies. FDI promotes economic growth as it helps to overcome the capital shortage in the host nation. [27] signified the positive contribution of FDI in the economic growth. Similarly, [28] underline the positive role of FDI in the growth of developing economies. The developing economies workout on formulation of strategies to attract more FDI in order to maintain their pace on the path of economic growth. FDI have played a pivotal role in the pace of developing economies approaching towards growth as it apprehends the physical capital and marketing networks which set the path for future success of these economies [29]. [30,31,32], [15] also drawn-out the argument of positive contribution of FDI in the economic growth of developing economies.

However, many others have found a vague relationship between FDI and growth. It is more likely that a foreign firm would enjoy lower costs in the host country than the domestic firms because of their advance technological framework. MNCs would owe advance managerial skills with cheap domestic labor and inputs resulting in a fierce competition in the domestic markets. [10] concluded that there is a weak evidence of technological transfers, improved management and economic growth through FDI in the host country. Later, [9] confirmed that economic growth in independent of FDI. Moreover, many authors have concluded undesirable impacts of FDI such as foreign dominance, asset bubbles and enormous foreign labor inflows. It has been argued that adoption of new technology requires efficient labor understanding new technology which is at deficient level in developing nations. So, the foreign firms do not favor domestic human capital. Rather, they bring foreign labor into host nation and domestic labor remains unemployed. [15] on this issue found that an FDI inflow only has a marginal impact on the economic growth of host nation. As developed economies have efficient human capital, so they gain more from globalization.

In the nut shell, the role of FDI on the economic growth of a host nation remains a debatable issue due to different circumstances being faced by various developing nations. The existing literature targets a particular aspect required for the success of FDI in developing economies. This research will capture the impact of various factors on the economic growth besides FDI. This research would be a valuable addition to the existing body of knowledge about the role of FDI in Pakistan's economic growth.

DATA AND METHODOLOGICAL ISSUES

Model to be estimated is as follows:

$$\ln(\text{gdp}_t) = \beta_0 + \beta_1 \times \ln(\text{fdi}_t) + \beta_2 \times \ln(\text{hc}_t) + \beta_3 \times \ln(\text{to}_t) + \mu_t$$

β_0 is intercept while other β s represent slope parameters of the model.

$\ln(\text{gdp}_t)$: natural log of gross domestic product.

$\ln(\text{fdi}_t)$: natural log of foreign direct investment.

$\ln(\text{hc}_t)$: natural log of human capital.

$\ln(\text{to}_t)$: natural log of trade openness.

Technological gap is measured as:

$$TO_{i,t} = \frac{X_{i,t} - I_{i,t}}{GDP_{i,t}}$$

Data spans over the time period 1980-2013 for Pakistan. Data sources are World Development Indicators (WDI) and various issues of Economic Survey of Pakistan.

Firstly, all the variables of our model came stationary at first difference, I(1). This outcome supports the argument that macroeconomic variables tends to become stationary at 1st difference [33].

Table 1: Unit Root Tests

	$\Delta \ln \text{gdp}$	$\Delta \ln \text{fdi}$	$\Delta \ln \text{hc}$	$\Delta \ln \text{to}$
ADF	-2.27 ^a	-4.71 ^a	-4.07 ^a	-6.38 ^a
PP	-3.75 ^a	-4.71 ^a	-4.06 ^a	-6.37 ^a

Note: ^a shows significance at 1%

Source: Authors' estimates

After investigating the unit roots of the variables, Johansen Cointegration test is applied to capture the long run relationship between the variables. The trace test is used for joint hypothesis and Max Eigen test for hypothesis of individual Eigen values. According to these tests, if the statistic value is greater than critical value with probability lesser than 5% than there exist a cointegration between the variables or vice versa. The result of cointegration test is presented in Table 2. The trace statistic results state that 2 cointegration vectors exist between our variables. While Max individual Eigen values also show 2 cointegrating vectors between the variables. Both Trace Stat and Max Eigen value show an existence of long run equilibrium relationship between $\ln(\text{gdp})$.

Table 2: Johansen Cointegration Results.

Hypotheses		Test Statistics	
H₀:	H₁:	Trace	Max Eigen
$r = 0$	$r = 1$	71.88 ^a	32.07 ^a
$r \leq 1$	$r > 2$	39.80 ^a	29.82 ^a
$r \leq 2$	$r > 3$	9.98	9.81
$r \leq 3$	$r > 4$	0.16	0.16

Source: Authors' estimates.

Note: ^a indicates significance at 1%.

Similarly, VECM results also show a long run relationship between FDI, human capital and trade openness. The results show that all explanatory variables have an insignificant impact on growth in SR.

The Table 4 shows residual diagnostic tests of normality and auto correlation. For normality test, the

Table 3: Vector Error Correction Model (VECM)

	$\Delta \ln \text{gdp}$	$\Delta \ln \text{fdi}$	$\Delta \ln \text{hc}$	$\Delta \ln \text{to}$	ECT(-1)
$\ln \text{gdp}$	-	0.01	-1.32	0.04	
$\ln \text{fdi}$	3.12	-	8.38	2.42 ^a	-1.100 ^a
$\ln \text{hc}$	-0.01	0.001	-	0.014	-0.004 ^b
$\ln \text{to}$	0.76	0.05	12.35 ^c	-	-0.010

Note: ECT (-1) represents error correction term. ^a, ^b & ^c is significance at 1%, 5% & 10%.

Source: Authors' estimates.

value of Jarque Bera is 0.84 showing normality of residuals. Similarly, for auto Correlation, LM test shows a p-value of 0.86 showing that there is no problem of auto correlation in our model.

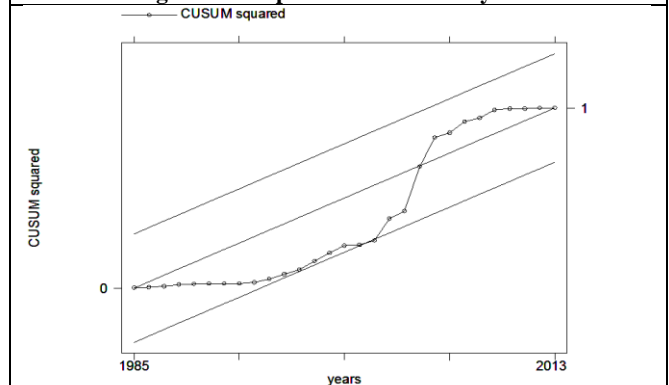
Table 4: Diagnostic Tests

Test	p-val	Conclusion
Lagrange-multiplier	0.86	No autocorrelation
Jarque-Bera	0.84	Normality of residuals

Source: Authors' estimates

For the specification of the model, stability test such as recursive estimation CUSUMsq test is applied and shown Figure 1.

Figure 1: Graph of Model Stability Test



Source: Authors' plotting

Figure 1 shows that CUSUMsq do not exceed the critical boundaries at 5% level of significance. This means the model does not suffer with any serious issue of structural instability [36].

CLOSING REMARKS

Using Johansen cointegration, this research has developed empirical evidence about the impact of FDI, human capital and trade openness on economic growth of Pakistan over the time period 1980-2013. The VECM results also complement the long run relationship between the variables. Although, the results show an insignificant impact of explanatory variables on economic growth of Pakistan. Moreover, residual diagnostic tests show no problem of normality, auto correlation. Lastly, the stability test using CUSUMsq provides evidence of correct specification of model. The policy makers should focus FDI projects stimulating domestic exports. More resources should be allocated for education and health expenditures on domestic population because it would result in efficient

domestic human capital. Moreover, steps towards R&D activities should be encouraged to stimulate indigenous technological capability of Pakistan. This can increase the local production capability, capacity; promote exports and term of trade of Pakistan.

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