The Impact of Foreign Direct Investment on Economic Growth Through the Channel of Economic Freedom: The Case of Asian Economies

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Introduction

- One of the basic and major questions regarding economic growth is that why some economies experience higher level of economic growth while other progress slowly?

- What factors are responsible for these different levels of economic growth?
- Such questions are common in economics and have made the economists to think again.

- These questions are being asked so continuously after the emergence of domestic growth theories in 1990s till today

- since last two decades, emphasis has been on the crucial role that economic freedom plays as an important determinant of growth

- New growth theory says that FDI can positively affect not only per capita production but also its growth rate.

- Foreign direct investment (FDI) is one of the major sources of technology transfer to developing economies have economic freedom and contribute to growth

- In 2017, US with (US$311bln) stood top FDI receiver, followed by China 144, Hong Kong, Netherlands, Ireland, Australia, Brazil, Singapore, France and India as 10th . Pakistan received US$2.77bln

- Generally, in developing countries there is lack economic freedom, human capital and physical infrastructure, so less FDI is attracted by them.

- Similarly, these countries lack liberalized and open market (Trade liberalization) and economic as well as social stability (Income and its change, Inequality, Insecurity, Governance etc.)

- key elements of economic freedom; freedom of personal choices, freedom of voluntary exchange, freedom of competition and freedom of person and protection of property

Elements of Economic Freedom (EF)

Economic Freedom of World (EFW) has been rating economic freedom (EF) for more than 100 countries since 1996, initial reports covering 1975, 1980, 1985, 1990 and 1995 have been published

There are several dimensions linking policies and institutions that govern economies. [Gwartney and Lawson, 2003, 2004, 2008] define these dimensions and central elements of economic freedom:

- **Government size: government size comprises of government expenses, government taxes and government enterprises**
- **Protection of Property and personal rights along with strong legal structure**
- **Freedom regarding Sound money: smooth and strong monetary and inflationary policies of the government**
- **Freedom of International trade and related policies**
- **Freedom of business sector regulation, labor market and credit market (financial freedom)**
- **Freedom to the Government and by the Government to all segments (individuals, importers, exporters, business sector etc)**

- Indices have been developed for each and every element and then mean is taken as EF overall

- There are some indices regarding economic freedom (EF) developed by (Scully and Slottje 1991) as a systematic measure which became a foundation for further research in this area.

- For last two decades, Wall Street Journal/The Heritage Foundation has also been publishing annual reports on economic freedom indices (O'Driscoll et al., 2001)

Objective and Significance of the Study

- To empirically explore the direct and indirect link between foreign direct investment (FDI) and economic growth channelizing through economic freedom (EF), for Asian economies.

Cont..

- Asian countries are developing ones and economic freedom in these economies has been a hot issue to address

- Asia is the largest continent area-wise as well as having the most populous countries comprising more than 60% of world population which provide cheap labor and large markets along with a huge amount of natural resources endowed to this continent

- These are reasons that investment in form of FDI flow to these countries from all over the world

- Studies are there, addressing the link between FDI and Growth, or EF and Growth but, **FDI has not been channelized for Growth and EF has not been used as the channel so far and it is the Significance of current study**

Literature Review

- The relation between economic freedom and growth has been explored empirically and some indicators have been examined and positive correlation between overall index of economic freedom and economic growth has been suggested by [Barro, 1991; Slottje, 1991; Barro, 1994; Scully and Torstensson 1994]

- Economic freedom can also ease the FDI flows to host economy leading reduction in in-efficiencies and un-certainties in the economy as explored by (Voyer and Beamish, 2004)
- Some studies like; [Dhakal et. el., 2007; Pearson et. al., 2012], found growth conditional to different factors of EF i.e. trade liberalization, property rights protection, along with political stability and capital formation

- Bengoa and Sanchez-Robles (2003) and Tiwari (2011) found a positive relation between FDI and growth and between EF and growth concluding that more skilled and trained labor force along with higher capital stocks are necessary to gain more benefits from FDI
- And with a high fiscal freedom, freedom in domestic financial system, there will be a positive impact on economic growth

DATA and Methodology

- Panel Data obtained on all variables for year 1976-2015, for 23 Asian Economies, due to unavailability of data for remaining countries is limitation of the study
- Data on EF was obtained from “The Heritage Foundation”

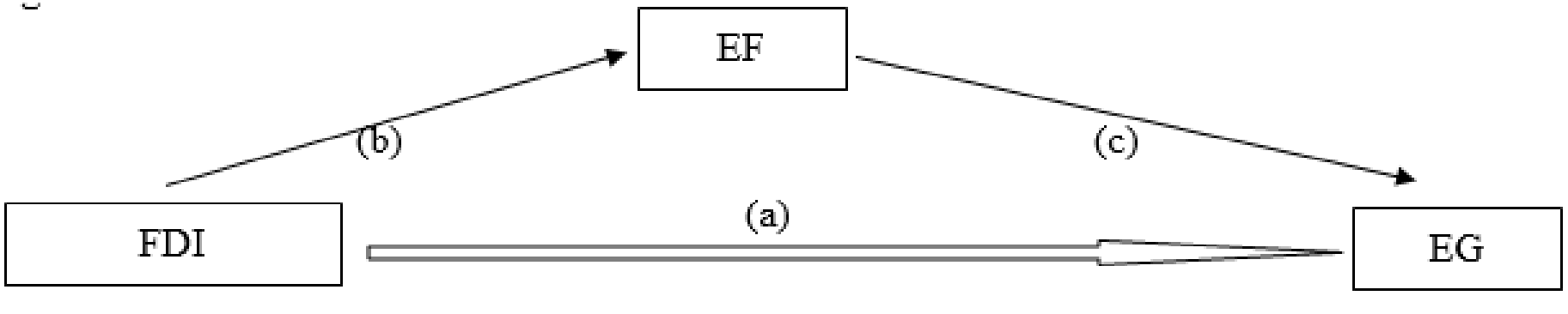
- Growth as real per capita GDP, FDI as net inflows to each country in current US$, Financial sector development as credit provided by the commercial banks to private sector as %GDP, Infrastructure development as electricity use per capita, were obtained from WDI, WB.

Schematic and Econometric Model

- To investigate relation between FDI and EF through a mediator i.e. EF, a method which is relatively new one suggested by [Muller et al., 2005; Preacher et al., 2007] known as moderated mediation.

- This methodology identifies those variables which intervene between main dependent variable i.e. EG and explanatory variable FDI

Schematic Model Cont..



- Direct as well as indirect impact of FDI on EG, in the model, (a) represents the direct link between FDI and EG while, (b) + (c) represents the indirect impact of FDI on EG, where, in the first stage FDI affects EF shown by (b) and in the second stage EF affects EG shown by (c)

Econometric Model

- Latif, Bhatti and Rehman, (2017) also used this method while estimating mediating effect.

- Econometric model consisting upon two simultaneous equation systems where explained variable of one equation used as explanatory variable in second equation

Econometric Model

$$EF_{it} = \alpha_1 + \alpha_2 FDI_{it} + \alpha_3 'X + u_{1it} \text{ ---------- (1)}$$

$$EG_{it} = \beta_1 + \beta_2 FDI_{it} + \beta_3 EF_{it} + \beta_4 (FDI*EF)_{it} + \beta_5 'Y + u_{2it} \text{ ---------- (2)}$$

αi in equation 1. and βi in equation 2. are the coefficients in each equation in Model, 'X and 'Y are the vectors of control variables in each equation, (FDI*EF) is the interaction term to capture the composite effect, while u_1 and u_2 are the error terms in the equations respectively

Indirect Effect for the Mediating Variable is computed as follows:

$$\frac{\partial EG}{\partial FDI} = \frac{\partial EG}{\partial EF} X \frac{\partial EF}{\partial FDI} \text{ ---------- (3)}$$

$$\frac{\partial EG}{\partial FDI} = \alpha_2 (\beta_3 + \beta_4 FDI) \text{ ---------- (4)}$$

From eq1,2 eq 3 calculated, partial indirect effect of FDI on EG could be seen.

RHS of eq3 that, at first stage, FDI affecting EF and then EF affecting EG.

While calculating Eq 4, eq 1 is partially differentiated first for FDI and getting (α_2), secondly, eq 2 is differentiated for EF and getting ($\beta_3 + \beta_4 FDI$).

Finally, to get equation 4, α_2 and ($\beta_3 + \beta_4 FDI$) are multiplied showing indirect effect of FDI on EG i.e. $\alpha_2(\beta_3 + \beta_4 FDI)$. Signs of coefficients of the indirect effect depends on signs and magnitudes of α_2, β_3, and

β

Estimation Technique (Seemingly Unrelated Regression)

- To empirically estimate the direct as well as indirect relation between FDI and EG through the channel of EF using Moderated Mediation Methodology, an estimation technique named Seemingly Unrelated Regression (SUR) proposed and developed by (Zellner, 1962) has been employed.

- It is the generalized form of linear regression model comprised of two or more regression equations where each equation having its own dependent variable.

- In a system of equations each equation can estimated separately which is a linear one in itself.

- However, this study has used this model for a panel data analysis as in literature this technique has been used where one or more variables are kept as mediator to channelize the indirect link between them.

- This study has used SUR method for an unbalanced panel data, suggested by (Biorn, 2004).

Estimation Results (Baseline Model)

Variable	Model	
	EF	EG
FDI	0.015** (0.010)	0.032*** (0.000)
EF		3.153*** (0.000)
FDI*EF		-0.006 (0.135)
No. of Observations	729	729
NO. Of Countries	23	23

Channel	Levels of FDI	Indirect Effects	95% Confidence Interval	
Economic Freedom	Low level of FDI (25^{th} percentile)	0.0475*** (0.000)	0.0113	0.0839
	Average level of FDI (50^{th} percentile)	0.0474*** (0.000)	0.0113	0.0837
	High level of FDI (75^{th} percentile)	0.0474*** (0.000)	0.0114	0.0835

Note: P-value is given in the parentheses with coefficient. *, ** and * shows respective significance at 1%, 5% and 10% levels. Low level means 25^{th} percentile, average level is 50^{th} percentile and high level shows 75^{th} percentile of FDI respectively.**

Estimation Results (Final Model)

Variable	Model	
	EF	EG
FDI	0.022*** (0.000)	0.063*** (0.000)
EF		1.940*** (0.000)
FDI*EF		-0.099*** (0.000)
INFR		0.466*** (0.000)
FINDEP		0.065*** (0.000)
No. of Observations	717	717
No. of Countries	23	23

Channels	Levels of FDI	Indirect Effects	95% Confidence Interval	
Economic Freedom	Low level of FDI (25^{th} percentile)	0.0252*** (0.000)	0.0157	0.0348
	Average level of FDI (50^{th} percentile)	0.0234*** (0.000)	0.0146	0.0322
	High level of FDI (75^{th} percentile)	0.0218*** (0.000)	0.0137	0.0299

Note: P-value is given in the parentheses with coefficient. *, ** and * shows respective significance at 1%, 5% and 10% levels. Low level means 25^{th} percentile, average level is 50^{th} percentile and high level shows 75^{th} percentile of FDI respectively.**

Conclusion and Policy Implications

- From results, it is concluded that FDI affects EG positively both directly as well as indirectly.
- On one side domestic EF is quite necessary for EG, it is also helpful to attract FDI.
- Directly, FDI affects domestic growth positively and if there exists EF in the economy, it can be more attractive for foreign investment.
- Similarly, domestic financial sector as well as level of infrastructure quality are also needed for attaining high growth.
- As policy implication, countries should focus on economic freedom and policies be reviewed and steps be taken in this regard.
- Countries should also take steps to improve infrastructure quality as well as to develop financial sector.
- With these policies, the ultimate goal of economic growth can be achieved.

THANKS FOR LISTENING