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Impact of Human Development Index on Economics Growth: Evidence from Asian Countries

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Abstract:- The present to this paper aims at investigating the macroeconomic impact of human development index on freedom index in both global and regional panel analysis concerning eight countries through the periods of 2006-2015.This present study investigates not only the global impact of HDI on Freedom index but also makes regional analysis. The paper finds a positive impact of HDI on Freedom index under fixed-effects model in global case. More specifically, all 9 regions also refer to positive and significant impact of HDI on Freedom. The highest impact is recorded in Asian countries.

Keywords:- *Human Development Index, Trade, External Debt, Remittance, Foreign Direct Investment, Freedom Index*

I. INTRODUCTION

Economic freedom, in its most compact definition, refers to the protection of private property rights and the freedom of voluntary transactions (Lu Lie and Yu Tian.,2022), a government that does not enforce contracts usurps property, from its citizens without due compensation, and puts limits on voluntary transactions, violates the doctrines of economic freedom. In so doing, such a government provides a disincentive for entrepreneurship and productivity, given that individuals are skeptical, about realizing the gains of their productive efforts.

It is the lure of the individual's potential gain from productive activities, and new ideas that makes free enterprise, and thus growth, possible within the growth literature, there have been many efforts to assess the impact of HDI, on Freedom and development. Noting that protection of private property and freedom of choice and exchange, are the key elements of economic freedom; (Mansha, Asma and Kiran, 2022) examine the existing empirical research and conclude that a vast majority, of studies support the positive link between economic freedom and growth.

For example, (Gwartney Lawson and Block., 1996), the creators of the Fraser Institute's measure of economic freedom, note that the countries with the highest economic freedom scores ,have an average annual growth rate ,of per capita real GDP of 2.4%, while those with the lowest economic freedom scores have an average of negative 1.3% for 1980-94. The authors also iterate that countries significantly improving their economic freedom scores noted positive rates of growth.

Given the existing literature illustrating the importance of economic freedom, independently, on growth, the next reasonable question, is how economic growth is compressed by both variables. When economic freedom is included in empirical estimates, the relative impact of each on growth can be deduced. In the next section, we begin this endeavor by describing the variables used in the analysis and the potential outcomes of regressions.

II. WHAT IS ECONOMIC FREEDOM?

Economic freedom, as defined by the Fraser Institute, a think tank that publishes Economic Freedom, of the World since 1996, is composed of personal choice, voluntary exchange, freedom to compete and protection of people and property. Individuals have economic freedom when: (a) their property acquired without the use of force, fraud, or threat is protected from physical invasions ,by others; and (b) they are free to use, exchange, or give their property to another ,as long as their actions do not violate the identical rights of others. In an economically free society, the major function of the government is the safety, of property and the execution, of agreements.

III. ECONOMIC FREEDOM

To measure economic freedom, we utilize the well-cited and established Economic Freedom of the World Index compiled by the Fraser Institute (Sajjad Amin and Chuang Li., 2022). The index measures the level of economic freedom, utilizing 23 different components, on a scale from zero to ten, with ten representing a greater degree of freedom. These components can be grouped in seven broad categories: size of government, economic structure and use of markets, monetary policy and price stability, freedom to use alternative currencies,Legal structure and security of private ownership, freedom to trade withforeigners, and freedom to exchange in capital markets.

According to this index, economic freedom measures "the extent to which rightly acquired property is protected and individuals are free to engage in voluntary transactions" (De Haan and Sturm 1999). Thus, any government interference in transactions decreases the economic liberty score for that country the research intends to validate the

existing literature on the link Between FDI and economic freedom using more current data and large sample size we study this for nine (9) main regions in order to give a comprehensive comparison. The study also goes beyond by including often neglected, fragile and conflict countries which emerge a gap in the current literature because of lack of data and inconsistencies in data calculation and gathering.

FDI of Arab countries have negatively been affected by recent instabilities and conflicts, i.e. Arab Spring, this country as well other neglected countries in Oceania, Asia, Latin America and Sub-Sahara are often marginalized and excluded from studies which emerge a gap in literature. In this study, we attempt to fill this gap by including these fragile-conflict affected states as well as often neglected Post-Soviet. Beside the global analysis of 156 countries through the periods of 1995-2013, the study also gives a sight to the region-based interaction of FDI inflows with economic freedom level of the sample countries. This study is organized as follow, section one deals with the introduction that indicates the general of the topic underground. The section two deals with the theoretical and empirical approaches of the current literature in the third section, our focus is on the methods that are used to conduct the research. The section four provides the empirical findings of our research as well the implications of the results. We finally provide a comprehensive conclusion.

IV. LITERATURE REVIEW

Rapid changes in technologic innovations facilitate access information and easiness of data; provide high speedof data availability. Foreign Direct Investment (FDI) is described as the process through which an individual residing in one country holds an ownership in a company of another country through acquisition, merger, and licensing or building of new facility. FDI is however different from other forms of indirect investment such as portfolio investment (bond, stocks, Treasury bills).

Because it involves more commitment of the investors In addition, according to OECD, FDI is referred as an investment made by a resident entity in one economy with the purpose of holding a long term interest in an institution located in another country. The ownership referred here should at least be 10% of the voting right which shows the power and authority of the investor (OECD). FDI is very crucial for countries because it helps in accumulating capital as source of investment, creates job, increase competition in a country and the biggest of all transfers technology to the host country. FDI is regarded as an engine for growth in the host country and hence has a significant importance.

An extensive empirical literature exists on macroeconomic impact of economic freedom and its components on FDI. For instance, HaidyAmer (2022) examine the macroeconomic effects of economic and political freedom on FDI inflows in 95 host countries in a panel data analysis through the periods of 1995-2000. Their results suggest before benefiting from FDI inflows, countries need to emphasize on a better economic management in terms sound monetary policy, fiscal burden, and banking and finance. Additionally they advocate that less government participation into an economy, strong property rights, low prevalence of informal markets, and less corruption are desirable for more FDI inflows.

Furthermore, MdMasud (2022) studies the role of natural resources (export of oil, gold and others), government policy (human capital in terms of literacy rate, quality of infrastructure, and inflation rate), market size (income per capita), institutions (rate of corruption and rule of law) and political instability (number of coup, assignations and revolutions) on FDI in a panel data analysis of 22 African countries from 1984 to 2000. She employs house man test and finds that the random-effects model generates biased estimators. Preferring the fixed-effects model she exhibits that a unit change in openness of economy alters FDI by 0.20 units when policy variable is proxies with human capital (literacy rate), and by 0.23 units when it is proxies with infrastructure investments (landline phone penetration) of the country.

Here, she specifies that an increase in FDI does not always indicate amplification in economic growth, because she addresses an ambiguous empirical relation of these two in literature as some studies that stipulate augmentations of economic growth with certain conditions such as when the hostcountry has higher quality education Sardar et al. (2022).

Lu et al. (2022) Proponents of the compact city concept promote high-density (e.g., economic density, morphological density) and mixed-use developments (e.g., co-location of residential, commercial and retail uses) as the critical solutions to countervail the negative externalities of urban sprawl and to improve human development.

Carlsen (2020) examined the viable Development Goals (SDG) of United Nations incorporated features of significance to minimize gender inequality while enhancing the gender development. Basing on existing data available in UNDP, The UN Development Program, indexes of gender inequality and gender development, linked to specific SDGs, were considered by using elaborate aggregation procedure. Partial order-based approach was used to analyze the gender inequality and development. The major focus of this study was on elucidating indicator importance, averaging rankings, and disclosing so-called unusual countries. The results showed that to provide inequality and promoting development, there was dire need to focus on education.

Wu et al. (2020) examined the effect of foreign direct investment (FDI) on economic growth in China and observed a U shape relationship between FDI and Economic Growth. The reason is that when a country faces a budget deficit, then an increase in budget deficit crowds out foreign direct investment.

Nantharath and Kang (2019) conducted a study to check the effect of foreign direct investment on economic growth in the Lao People's democratic republic. The results revealed that foreign direct investment enhances economic growth. Infrastructure improvement, human capital and quality of institutions attract foreign direct investment.

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Besides, Fofana (2014) measures the influence of economic freedom components on FDI in 25 Western European and 26 Sub-Saharan countries through 2001-2009 where he discovers that the aggregate index of economic freedom is not a significant explanatory of FDI for African case, but European countries. He proxies economic freedom with three institutional variables such as "the size of the economy" "the size of the population", and "the legal system and rule of law"; and with three regulatory variables such as "size of government", "freedom of international trade", and "regulations of labor, credit, and business" As a results he observes that only "legal system and rule of law" variable appears significant in African sample, where it fails to be significant in European sample.

More specifically, the author also discovers positive links between GDP and FDI, and Population and FDI; meanwhile he finds negative association of Natural Resources and FDI in fixed-effects model with cross-section dummy variables where he accounts 94% of variation in FDI. He addresses it to the current stage of this region which is in the development process.

They proxy domestic factors with market size (logarithm of GDP); financial factors with national stock index; institutional factors with investment profile and corruption levels; policy factors with inflation rate and government spending; and external factors with global liquidity and trade freedom. As a result they find out that the FDI is largely determined by the market size and trade freedom which generate coefficient of 98.15 and 12.43, alongside with minor determinants such as investment profile, corruption level, inflation rates, government spending, natural resources, and growth expectation. Unlike to these results, in case of MENA countries the trade freedom turns out insignificant. Indeed it might be due to political instabilities and conflicts in this region. Latterly, Chaib and Siham[11] (2014) also address to the same issues by referring importance of institutional quality and political stability in order to attract FDI in Algeria.

Supplementary, Pearson et al (2012) investigate the impact of economic freedom and growth on FDI in state levels, indifferent to most studies that consider determinants of FDI inflows into United States as a country.

In another regional study Mohamed and Sidiropoulos(2010) look at the determinants of FDI in 12 MENA (Middle East North African countries) where their find in line results with the traditional literature of economic freedom and FDI. To capture more variations in FDI, they include domestic, financial, institution, policy, and other external variables into fixed-effects model, and compare estimations of MENA countries with other developed ones.

On the other hand, Quazi(2007) investigates the collision of economic independence on the flow of foreign investment in a panel data regression for seven major East Asian countries over 1995-2000 periods, employing both fixed- and random-effects models. Initially he examines the full sample where 70% of FDI is explained by its first lag, political instability, and market size variables in random-effects model. But both in random-effects and GLS models the economic freedom fails to be significant. However when he adds a dummy variable for China, a country in sample that requires an exceptional attention due to being magnet for FDI, both random-effects and GLS models estimate significant but negative impact of economic freedom on FDI.

Carkovic and Levine (2005). Use a panel data analysis of 50 states through the period of 1984-2007 employing random-effects model. They find that both growth and economic freedom have significant positive impact on FDI in all states. However, the authors also explore that per capita income and unemployment rate cause negative impact on FDI.

They address these relations to the fact that states with higher per capita income repel FDI inflows since higher income implies higher wages, and high unemployment rate is positively associated with crime ratio, thus discourages investors' interests. Likewise Bengoa and Sanchez-Robles [3] (2003) also examine the interplay between economic freedom, growth, and FDI inflows using a panel data analysis of sample of 18 Latin American countries from 1970-1999. They observe that economic freedom remains positive and significant both in fixed- (0.0043) and random-effects (0.0046) regression models deriving similar coefficient magnitudes which imply their robustness. On the other hand, the impact of growth on FDI appears significant only in fixed-effects model with magnitude of 0.01.

V. METHODOLOGY AND THEORY AND HYPOTHESIS

This study examines the macroeconomic impact of economic freedom on the foreign direct investment (FDI) inflows over the globe. The initial sample size was comprised of 189 countries over the period of 1995-2013. However due to unavailability of macro data for 33 countries, the sample size decreased to 156 countries. The freedom of economic activity of the country is proxies by Economic Freedom Index (EDI) which is formed by Business Freedom Index (BFI), Trade Freedom Index (TFI), Investment Freedom Index (IFI), and Financial Freedom Index (FFI). The data for these indexes are gathered from online database of Heritage Foundation. We also investigate magnitude of FDI and EFI interaction on the regional basis holding the control variables such as GDP growth, Import and Export per GDP, Trade per GDP, Inflation, and Interest rates. The data for these variables are derived from online database of World Bank. Unlike to prior literature our study pursues the analysis with larger sample where often neglected nations such as fragile and conflict-affected states, sub-Saharan areas, and Oceania countries are also captured. Meantime with panel data analysis, we explore both fixed- and random-effects approaches, as well as a pooled regression of EFI on FDI.

For this purpose the representation of the variable is in the following form:

HDI we well-known that is the Human Development Index
E DEBT it is called External Debt
TRADE it is called Trade Openness
REMITT it is the Personal Remittance
FDI it is the Foreign Direct Investment
FI it's known as Freedom Index

A. Data Source

It is a research analysis based upon the secondary type of data and collected data of all variables from World Development Indicators (WDI).

B. Model

Below is the functional form which is being used in this research paper.

HDI = f (E DEBT, TRADE, REMITT, FDI, FI)

To estimate the coefficients the well-known multiple regression line in general form would be:

$$Y = \beta 0 + \beta 1\ X1 + \beta 2\ X2 + \beta 3\ X3 + \beta 4\ X4 + \beta 5\ X5 + Ɛ$$

In the above model Ɛ is an error term therefore, together with these variables the regression line would be look like as follows:

$$HDI = \beta 0 + \beta 1\ EDEBT + \beta 2\ TRADE + \beta 3\ REMITT + \beta 4\ FDI + \beta 5\ FI + Ɛ$$

C. Table

Feasible Generalized Least Squares model (FGLS)

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Cross-sectional time-series FGLS regression

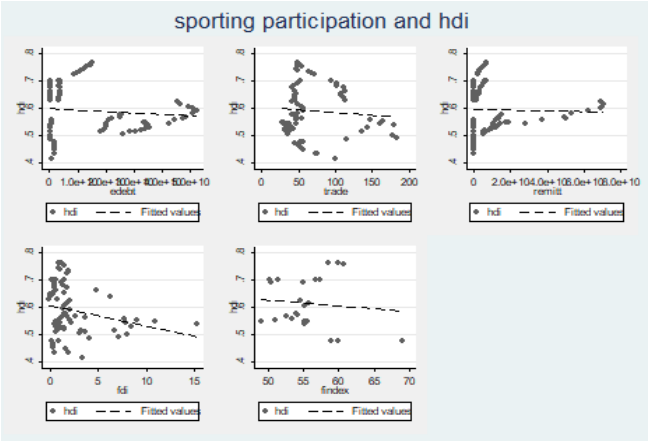
Coefficients:  generalized least squares
Panels:        heteroskedastic
Correlation:   no autocorrelation

Estimated covariances      =         8          Number of obs      =        24
Estimated autocorrelations =         0          Number of groups   =         8
Estimated coefficients     =         4          Time periods       =         3
                                                Wald chi2(3)       =     79.95
                                                Prob > chi2        =    0.0000
```

hdi	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
edebt	-4.85e-12	1.45e-12	-3.35	0.001	-7.68e-12	-2.01e-12
trade	.0005422	.0006177	0.88	0.380	-.0006685	.001753
remitt	2.80e-12	7.02e-13	3.99	0.000	1.42e-12	4.17e-12
fdi	-.0218775	.0071139	-3.08	0.002	-.0358205	-.0079346
findex	-.0042311	.0037402	-1.13	0.258	-.0115617	.0030995
_cons	.893845	.1719989	5.20	0.000	.5567334	1.230957

- **Interpretation:** If there is one percent increase in HDI then external debt will decrease by -4.85 percent. Second variable interpretation if there is one percent increase in HDI then trade will increase by 0.00054 percent. Third variable interpretation if there is one percent change HDI then remittance will increase by 2.80 percent. Fourth variable interpretation if there is one percent change in HDI then FDI will decrease by -0.021%. Fifth variable if there is one percent increase HDI then freedom index will decrease by -0.0042%. We can see that all independent variable have significant impact and overall p-value is also significant.

VI. COMBINE GRAPHS



- **Interpretation:** According to the above graph 1st diagram shows that smoothly trend it means HDI and external debt are smoothly correlate with each other. Second diagram shows the same relationship between HDI and trade, third diagram HDI and remittance are showing positive relationship between them, Fourth diagram shows the negative relationship between HDI and FDI and last diagram show the negative and positive relationship between HDI and freedom index.

VII. CONCLUSION

The global analysis shows that HDI is largely affected by domestic and external (import and export) trades, as well as economic freedom level of the countries in fixed-effects model. Although random-effects model generates quite similar results, the Hausman test implies that they are biased. On the regional basis, the analysis derives significant coefficients for economic freedom variable, but indifferent in magnitudes.

The largest EFI impact is obtained by Asian sample where a unit increase amplifies FDI by roughly -0.021 under fgls model. Equally, Post-Soviet states as one of often neglected regions records the fourth largest EFI impact with followed by North American region with under fixed- and random-effects models respectively. Interestingly inflation and interest rates as well as domestic trade and export appear insignificant for Post-Soviet states as they are restrictive, and closed economies. They mainly attract FDI with import and economic growth. However, the North American region besides Asian countries appears as the top two well-established markets as they are keenly sensitive to almost all control variables.

Particularly, the relationship of inflation and interest rates with FDI obvious that one with basic economy knowledge would know that, they are strict inverse related with FDI Unfortunately, this conjecture is satisfied only by Asian and North American samples.

On the other hand, Latin American and African samples generate EFI coefficients and with random- and fixed-effects models respectively. However explanatory power of Latin Americansample is barely which was the same case for European sample. Indeed this implies that the main motivators of FDI are omitted in the Latin American and European models. Therefore, for further research one shouldconsider variables such as political stability, corruption level of the country, institutionalrights, financial market and employment regulations, as well as the country's credit rates, in order to account more than 80-90% of variations in FDI. To conclude, to our knowledge, Oceania and Post-Soviet countries alongside with Fragile-Conflict affected states have never been subjected to such analysis as estimating impact economic freedom on FDI before. Therefore, this study brings a noteworthy contribution to the current literature.

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