



## **Foreign Portfolio Investments and Economic Freedom: Empirical investigation of the World Countries grouping based on the Level of Income**

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ARTICLE DETAILS	ABSTRACT
<p><b>History</b> Revised format: 30 Nov 2019 Available Online: 31 Dec 2019</p> <hr/> <p><b>Keywords</b> FPI, EFI, Economic Development, Developed Countries</p> <hr/> <p><b>JEL Classification:</b> G11 G38 E22 F38</p>	<p>This study investigates the effect of the economic freedom on the foreign portfolio investments in various countries of the World classified based on the level of income. The study used a sample of 184 countries for a period of 2001 to 2017, the full sample is further divided based on the level of income into a subsample of 74 high-income countries, 52 upper-middle-income countries, 32 lower-middle-income countries, and 26 lower income countries. The study estimated panel data regression models and found that a fixed effect is prevailing in all models. The regression results show that economic freedom has a positive effect on foreign portfolio investments. Furthermore, the results of the subsample also shows that economic freedom has a significant positive effect on foreign equity and foreign debts portfolio investments in high income, upper middle income, and lower-middle-income countries, however, there exists an insignificant effect of the economic freedom on the foreign equity and debts portfolio investments in the lower income countries.</p>

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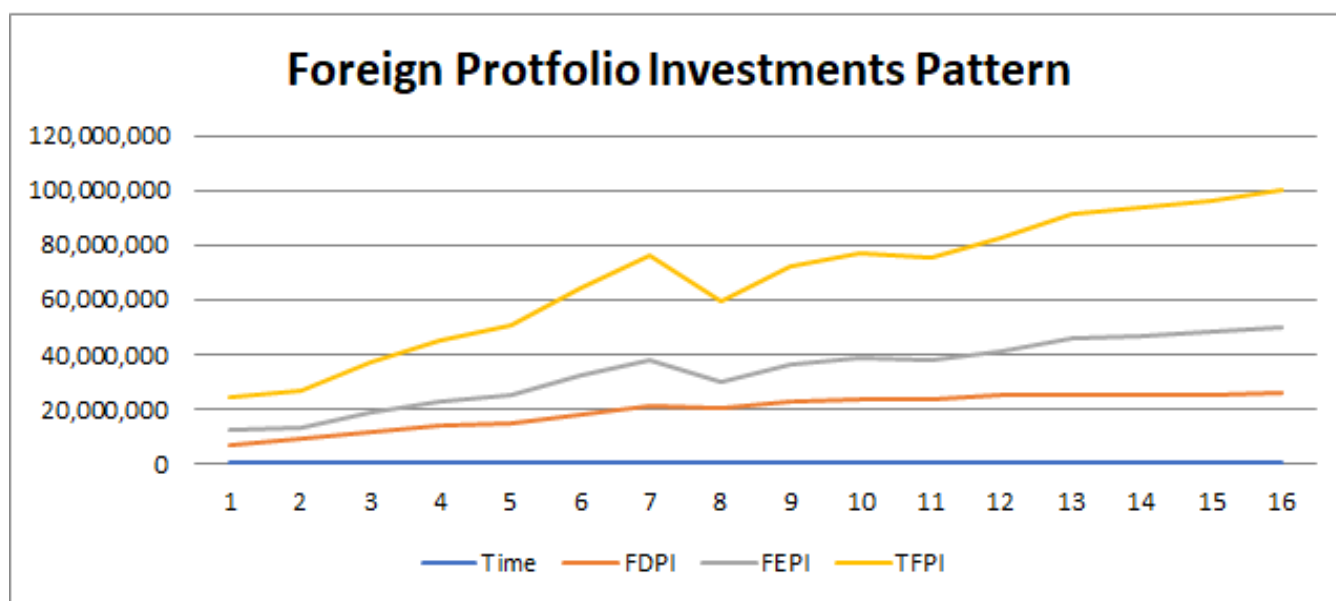
**Recommended citation:** Ullah, H., Wahid, F., Mohmand, M.I.K. and Ali, A. (2019). Foreign Portfolio Investments and Economic Freedom: Empirical investigation of the World Countries grouping based on the Level of Income. *Review of Economics and Development Studies*, 5 (4), 827-846

**DOI:** 10.26710/reads.v5i4.899

### **1. Introduction**

From the early 1980s till the international debts crisis, the syndicated loan of the commercial banks is sole private capital to among the different countries of the world. However, the current trends in the international markets show a gradual decline in the medium and long-term bank loans and increasing

trends in foreign direct investments and foreign portfolio investment inflows<sup>1</sup> (Agarwal, 1997). The IMF survey reveals that the foreign portfolio investment increased from \$22,210,124 Million in 2001 to \$58,153,742 Million in 2016, which is almost a 310.75% increase. This increase in foreign portfolio investment is mainly attributed to the growing globalization and liberalization of stocks and bonds markets across the world, which tremendously contributes towards the economic development of the countries (Singhain & Saini, 2017). During the last two decades, almost all economies have initiated reforms with the aim to bring strategic competitiveness in the business environment in order to attract foreign capital investments to achieve their targeted goals of economic development. The extant literature shows that foreign portfolio inflows have a fundamental role in the developmental process of all countries. On one hand, the developed economies required foreign capital inflows for maintaining development, while on the other hand the developing economies needed the foreign portfolio investment for the high economic growth and to fulfill the financing needs of the domestic business sectors. So, foreign capital investments act as a fuel for the economic engine of a country and overall industrial growth. Furthermore, this flow of funds in terms of foreign capital can bridge the gap between demand for funds with supply of funds into and out of the economy.



The graph shows the foreign portfolio investments over time, whereas *FDPI* stands for foreign debts portfolio investments, *FEPI* stands for foreign equity portfolio investment and *TFPI* stands for total foreign portfolio investment over time.

Similarly, Wu, Li, and Selover (2012) also investigated the impact of country environment on the foreign capital investment and found that a country with relatively more stable environment has a positive role in attracting foreign portfolio investment. Similar, studies conducted on the BRICS countries such as Garg and Dua (2014), Ghosh and Herwadkar (2009) and Srinivasan and Kalaivani, (2005) also suggested that flow foreign portfolio investments in to a country is mainly due to the stable economic policies, with potential for economic growth and more specifically scope of diversifications prevailing in these countries. Similarly, exporting countries are more attracted towards the portfolio investments in order to hedge their currency risk and other country-specific risks (Agarwal, 1997; Grubel, 1968; and Levy & Sarnat, 1970).

The prior literature also highlighted various reasons of such investments i.e. diversification of portfolio

<sup>1</sup> International Monetary Fund defines portfolio investments includes long term bonds, equity and some money market instruments such as commercial papers and certificate of deposits.

investment, fulfilling gap between the savings and investment across the different countries and benefits of the inflows to the hosts country such as economic growth, social well-being, employment generation and local stock and bonds market development (Mody, Taylor, & Kim, 2001). Chakrabarti (2001) reported a positive relation of the stock market returns and foreign investment portfolio (Boyer & Zheng, 2009). Rai and Bhanumurthy (2004) suggested that a decrease in the stock market and exchange rate volatility attract more foreign portfolio investments (Lin, Lee & Chiu, 2009). Portes and Rey (2005) used gravity model and reported that market size, liquidity, efficiency in transactions and technology positively affect the equity inflows, Moreover, Byrne and Fless (2011) found interest rate as a determining factor of foreign capital inflows (Ghosh, Qureshi, Kim & Zalduendo, 2014).

This study investigates the impact of the EFI on the FPI of the world countries grouping based on the level of income. This study is beyond the scope of the region and applied a holistic approach of considering countries across the world based on the level of income. Furthermore, the prior studies have taken the total FPI as a dependent variable which includes equity and debts. We argued that equity investments are different from the debts instruments and therefore, these should be considered separately therefore, this study has used total FPI, equity and debts foreign investments. Moreover, this study also focused on those factors especially affecting to the overall business sector of a country such as business development, ease of doing business, level of financial development, tax on capital gains and income as causes of FPI along with the other commonly used measures of macroeconomic variables.

## **2. Review of Literature**

Generally, the foreign capital inflow is divided into two main forms: the most common form is a foreign direct investment (FDI) and foreign portfolio investments (FPI). The foreign investors invest in FPI with the aim to participate in the overall management and have the power to take decisions deemed fit for the success of the business. Thus, in this form of investment the investors hold ownership and control of the firm. However, the foreign portfolio investments give the investors ownership in firms of the host country and in return the investors earn short-term profit only.

### **2.1 Theoretical Background of the Study**

This study is based on the following theories related to the foreign portfolio investments and provides theoretical grounds to the understanding of the topic.

The portfolio balance framework explain that foreign investors evaluate various possibilities of earning abnormal profits by exploiting the available arbitrage opportunities in different countries (Grubel, 1968; and Harvey, 1991). This study is considering all those factors categorized into pull and push factors that attract the foreign investment inflows based on this theoretical framework. The international finance theory explains the main motivation of the FPI that underpin outcome of those investors, who wish to invest across the countries. The most fundamental benefit of foreign portfolio investments is diversification of risk, fulfilling gap between the savings and investment across the different countries (Dell'Araccia et al., 2008; and Obstfeld, 2009).

Capital allocation theory stress on the allocation of investments in either developing countries markets or industrialized countries markets or both. Buckberg (1996) suggested two-step process of capital allocation i.e. In the first step the investor determine the amount of capital available for investment and in the second step identify the potential markets based on expected returns and risk.

### **2.2 Foreign Portfolio Investment Determinants**

The theories that underpinning the determinants of the capital inflows are broadly classified into three categorize; “firms level determinants”, “industry level”, and “country level” determinates of foreign capital inflows (Calvo, Leiderman, & Reinhart, 1993, 1996; Chuhan, Claessens, & Mamingi, 1998; and Dell'Araccia et al., 2008). This study mainly focuses on the country level factors that can affect foreign capital investments and also examined its variations with the income level of countries.

Many studies highlighted the global factors that affect the portfolio inflows such as economic growth, business opportunities, stability and liquidity of stock markets, interest rate and exchange rate stability created attraction for the foreign capital inflows in to the emerging countries (Byrne & Fiess, 2011; Kim, 2000; and Mody et al., 2001). Another group of researchers considered home country factors that can affect the inflow of foreign capital investments in both developing and developed countries (De Vita & Kyaw, 2007). In a similar manner, another stream of studies highlighted the benefits of diversification inherited in the foreign portfolio investments and that motivate the foreign investors to invest across the border (Grubel, 1968; Harvey, 1991; Obstfeld, 2009). Chakrabarti (2001) found a positive relation of the stock market returns and foreign investment portfolio (Boyer & Zheng, 2009). Similarly, Rai and Bhanumurthy (2004) concluded that countries with stable stock market returns and exchange rate attract more foreign portfolio investments (Lin, Lee & Chiu, 2009). French and Vishwakarma (2013) concluded that foreign equity inflows positively affect conditional volatility in the stock market and exchange rate for two to three weeks of the host country. Srinivasan and Kalaiyani (2015) reported that foreign portfolio investments have a negative effect in short run and positive effect in long run on the stock market of India. However, Arora (2016) found contrary results and suggested that foreign equity inflows have no relationship with the future returns while there is a significant relationship of the domestic equity investments with the future stock market returns.

The extant literature also highlighted the role of globalization and liberalization in developed and developing countries that extensively attracted the inflow of capital into the countries. The last two decades have evidenced a tremendous increase in the capital inflows into the developing regions like BRICS and ASEAN countries (Garg & Dua, 2014). Holtbrügge and Kreppel (2012) highlighted the importance of human capital, consumption, productivity, innovation and savings for the capital inflows in the BRICS and G7 countries (Morck, Yeung & Zhao (2008); Mostafa & Mahmood, 2015)). Agarwal (1997) reported a negative effect of inflation on the foreign portfolio investments and a positive effect of the exchange rate, economic freedom, and domestic capital in Asian countries. Portes and Rey (2005) used gravity model to find-out various factors that could influence the foreign capital inflows and found that market size, liquidity, efficiency in transactions and advancement in technology is positively associated with the equity inflows. Moreover, Byrne and Fless (2011) found the interest rate as a determining factor of foreign capital inflows (Ghosh, Qureshi, Kim & Zalduendo, 2014). Dua and Garg (2013) examines the effect of domestic stock market performance, risk diversification, interest rate risk, country risk, economic growth, exchange rate volatility on foreign capital investments and found that high economic growth, low exchange rate volatility and stability of stock market performance positively affected the capital inflows in India (Bhasin & Khandelwal, 2013; and Ahmad & Zlate, 2014).

### 3. Research Design and Methodology

This section includes discussion on the data collection and sampling techniques, research modeling and variables definitions.

#### 3.1 Data Collection and Sampling Techniques

The study has used a total of 184 countries data ranging from 2001 to 2017 for which the EFl and foreign portfolio data available. The full sample countries were further divided based on the level of income into a subsample of 74 high-income countries 52 upper-middle-income countries 32 lower-middle-income countries and 26 lower income countries. The division of the whole sample into subsample is based on the World Bank classification of countries into four groups and subject to availability of data for the considered variables.<sup>2</sup> The EFl data is collected from the Heritage Foundation<sup>3</sup>. The foreign portfolio of investments annual data were extracted from the database available on the International Monetary Fund

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<sup>2</sup> [www.worldbank.org](http://www.worldbank.org)

<sup>3</sup> [www.heritage.org/index/](http://www.heritage.org/index/) The Heritage Foundation is an American conservative think tank based in Washington, DC.

website.<sup>4</sup> Data of other variables such as ease of business development index, financial development index, business development index, trading volume, interest rate, exchange rate, literacy rate, gross domestic product growth rate and total trade to gross domestic product ratio data are taken from the World Bank Indicators (WDI).

### 3.2 Research Modelling

The research study has used models adopted from the study of the Singhania and Saini (2017) and Afaq and Khan (2016) to test the relationship of the EFI and foreign portfolio investments.

$$TFPI_{i,t} = \alpha + \beta EFi_{i,t} + \beta MCAPI_{i,t} + \beta BDI_{i,t} + \beta EDBI_{i,t} + \beta TrVoli_{i,t} + \beta POPI_{i,t} + \beta GDPGi_{i,t} + \beta IRSpreadi_{i,t} + \beta INFi_{i,t} + \beta TaxRatei_{i,t} + \beta LitRatei_{i,t} + \beta TRADI_{i,t} + \beta Yearsi + \beta Country + \mu_{i,t} \text{---Eq - 1}$$

$$FEPI_{i,t} = \alpha + \beta EFi_{i,t} + \beta MCAPI_{i,t} + \beta BDI_{i,t} + \beta EDBI_{i,t} + \beta TrVoli_{i,t} + \beta POPI_{i,t} + \beta GDPGi_{i,t} + \beta IRSpreadi_{i,t} + \beta INFi_{i,t} + \beta TaxRatei_{i,t} + \beta LitRatei_{i,t} + \beta TRADI_{i,t} + \beta Yearsi + \beta Country + \mu_{i,t} \text{---Eq - 2}$$

$$FDPI_{i,t} = \alpha + \beta EFi_{i,t} + \beta MCAPI_{i,t} + \beta BDI_{i,t} + \beta EDBI_{i,t} + \beta TrVoli_{i,t} + \beta POPI_{i,t} + \beta GDPGi_{i,t} + \beta IRSpreadi_{i,t} + \beta INFi_{i,t} + \beta TaxRatei_{i,t} + \beta LitRatei_{i,t} + \beta TRADI_{i,t} + \beta Yearsi + \beta Country + \mu_{i,t} \text{---Eq - 3}$$

Whereas *TFPI* stands for the total foreign investment, *FEPI* stands for the foreign equity portfolio investments and *FDPI* stands for the foreign debts portfolio investments in the country “i” at a time “t” represents the dependent variables. The value of country ranges from 1, 2, 3...N and “t” represents the number of years ranging from 2000 to 2017.

The independent variables include *EF*, which stands for the EFI computed by the Heritage Foundation. *MCAP* stands for market capitalization, *BDI* stands for the business development index, *EDBI* stands for the ease in doing business index, *TrVol* stands for trading volume, *POP* stands for annual population growth, *GDPG* stands for the gross domestic products annual growth, *IRspread* is the interest rate spread between the lending and borrowing rates, *INF* stands for consumer price index and represents inflation, *Tax Rate* represents the tax on income and capital gains from investments, *LitRate* stands for literacy rate, *Year* stands for the year dummy and *country* stands for the country dummy. The data of the macroeconomic variables are collected from the World Bank indicators (WDI).

## 4. Research Results and Discussions

The results section discusses the results of descriptive statistics, correlation, and panel regression analysis.

### 4.1 Descriptive Statistics

Table 4.1 shows the results of descriptive statistic i.e. mean of the full sample, “high-income countries”, “upper medium-income countries”, “low medium income”, and “low-income countries”. The descriptive shows that on average the total foreign portfolio investment is highest in upper-middle-income countries and lowest in the lower middle-income countries. The total portfolio investment is divided into equity portfolio investment and debts portfolio investment. On average the equity and debts portfolio investments are highest in the upper-middle-income countries while lowest in the lower middle-income countries. However, the EFI posed a different trend. It is varying with the income level and is highest for the high-income level countries and lowest in case of low-income countries.

The results of the other variables also show interesting patterns such as on average the value of financial development index is highest for the lower middle-income countries while the lowest for the low-income

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<sup>4</sup> [www.imf.org](http://www.imf.org) Foreign portfolio investments data is collected from the coordinated Portfolio Investment Survey (CPIS).

countries. Similarly, GDP growth rate, inflation rate, tax rate and ease in doing business is highest in the low middle-income countries, while the lowest for the high-income countries. However, population growth rate and the literacy rate is highest in lower middle-income countries while lowest in the lower income countries.

#### 4.2 Panel Unit Root Test

Table 4.2 represents the result of "Phillips-Perron" tests and "Augmented Dickey-Fuller" tests for Panel Unit Root. The null hypothesis of these tests is "All panels contain unit roots" while the alternate hypothesis is "At least one panel is stationary". Table 4.2 shows that the calculated statistics value of all variables in both of these tests is more than the critical value at 5%. Therefore, for all of the variables and in both of the tests the null hypothesis is rejected and alternate hypothesis is accepted i.e. At least one panel is stationary. Thus, the data is stationary at level and panel data regression modeling may be used to test the proposition that the economic freedom has a significant effect on the foreign portfolio investments inflows in countries group by income level.

#### 4.3 Pearson Correlation

The Pearson correlation coefficients show no issue of high correlation between any two exogenous variables and likely there is no multicollinearity in regression models. Furthermore, total FPI is positively associated with the EFI, GDP growth, Market capitalization, business development index, ease in doing business index, literacy rate, trading volume of total stocks in a year, the strength of legal rights index, and financial development index. However, there is negative association between the total FPI and population growth, inflation rate, borrowing-lending spread and the tax rate on income and capital gains. Similar results are found in case of total foreign equity portfolio investment and total foreign debts portfolio investments with other explanatory variables. The results suggest a positive association of EFI with total FPI, foreign equity portfolio investments and debts. Thus, an increase in economic freedom is likely improving the inflow of foreign investments in terms of equity and debts.

#### 4.4 Total FPI and EFI Income Group Countries.

Table 4.4 shows regression results of total FPI and EFI of different countries categorized by their income level. The first column shows the names of different explanatory variables used in the study while column 2<sup>nd</sup> 3<sup>rd</sup> 4<sup>th</sup> 5<sup>th</sup> and 6<sup>th</sup> represent results of different regression models of various groups of countries based on income.

The lower part shows an additional statistic of the regression models such as R-square, Hausman test for fixed effect Vs random effect modeling. The R-square values vary from 19% to 42%, suggesting that the economic freedom and other explanatory variables better explain the changes in the FPI. The results of the Hausman tests of different regression models suggested that fixed effect data modeling is more suitable as compared to random effect modeling. Therefore, year and country fixed effect exists in all regression models.

The results of the regression models show that there is a positive and significant effect of the EFI on the total FPI in high income, upper-middle-income, and lower middle-income countries. However, insignificant and a positive effect of the economic freedom on the FPI is found in case of low-income countries. These results suggest that improvement in the country economic freedom is likely to increase the confidence of the foreign investors on countries, which may increase the FPI. The insignificant effect of the economic freedom on the foreign portfolio in case of low-income countries may be due to the presence of a low-level economic freedom.

The results of the macroeconomic variables show consistent results to the existing literature such as GDP growth, literacy rate, the strength of legal regulatory index have a positive effect on the total FPI. Thus, countries with more GDP growth, high literacy rate and improvement in the strength of the legal regulatory system are likely to increase the inflow of FPI in the country. However, the increase in

inflation and income and capital gain tax has a negative and significant effect on the country inflow of FPI. Thus, countries with a high rate of inflation and high rate of tax on income and capital gains are less likely to be the choice of foreign investors.

Moreover, the institutional and financial soundness factors such as market capitalization, business development index, and ease in doing business; trading volume and financial development index have a positive effect on the foreign investment inflows (Mengistu and Adams, 2007; Cotton and Ramachandran, 2001; Botric and Škuflic, 2006; Zhang, 2001). Thus, countries with more market capitalization provide more market liquidity that attracts foreign investors and are likely to increase the foreign investment inflows. In a similar manner, high rate of trading volume of securities would improve the market liquidity and act as a catalyst for foreign investors to invest (Calvo et al., 1993, 1996; Taylor & Sarnio 1997). The extant literature shows that due to liquidity factors the foreign investors prefer to invest in foreign portfolio rather than as a FPI.

Moreover, ease in doing business would improve the foreign investments in different sectors that would increase the FPI. The financial development index shows the soundness of a country financial system, the higher is the rating on the financial index is likely an indication of the sound economic system which will improve the foreign investors' confidence on the markets and will attract more foreign investment inflows.

The cross countries analysis based on the income group show interesting results such as interest rate spread is insignificant for all income countries except the low-income countries. The insignificance and negative results may be due to the fact that the spread is very small and is the same in almost all countries except in the low-income countries also reported in the descriptive statistics (Verma & Prakash, 2011). Similar differences are found in case of other variables such as population growth is an insignificant effect on the foreign portfolio investment in case of upper middle-income countries and partially significant in lower income countries. The inflation rate is also insignificant in upper middle-income countries and lower middle-income countries, while ease of doing business is insignificant in case of lower middle-income countries only.

Instead of the few anomalies in the cross countries results, most of the macroeconomic and financial soundness variables show a significant effect on the foreign portfolio investment inflows to a country. Moreover, the variable of interest that is EFI has a positive effect on the foreign portfolio investment in all groups of countries segregated by income group, except the low-income countries, where there is a weak economic freedom as supported in the descriptive statistics. Thus, these results support the proposition that the country economic freedom is an important determinant of the FPI to a county, irrespective of the fact that to which income group the country is belonging.

#### **4.5 Robustness Check**

The total foreign portfolio investment is broadly consisting of foreign equity portfolio investments and foreign debt portfolio investments. In order to verify that the foreign equity and debts portfolio investments have a relationship with the economic freedom index, this study has used both foreign equity and debts portfolio investment separately in different cross income group countries regression models.

##### **4.5.1 FPI Equity and EFI in Income Group Countries.**

Table 4.5 shows regression results of the foreign equity portfolio investments and EFI in cross income group countries. The results of the regression models of foreign equity investment and economic freedom show similar results to the baseline regression models. The results show that there is a positive and significant effect of the economic freedom on the foreign portfolio investment inflows to a country except in low-income countries. Moreover, GDP growth, market capitalization, business development index, ease in doing business index, literacy rate, trading volume, strength in the legal regulatory index, and



financial development have a positive and significant effect on the foreign equity portfolio investment inflows. However, there are some variations in cross countries results such as literacy rate is insignificant in case of upper middle-income countries, trading volume is insignificant in case of high-income countries, and strength in the legal regulatory index is insignificant in case of high income and low-income countries. Moreover, the financial development index is significant in the case of lower middle and low-income countries.

Moreover, population growth rate, inflation rate and tax on income and capital gains have a significant negative effect on the foreign portfolio investment. However, few anomalies exist in cross countries analysis such as the tax rate is insignificant in case of lower middle income and low-income countries. Furthermore, the interest rate is insignificant in all cases except the lower income countries.

Based on the above results, it is concluded that economic freedom has a significant and positive effect on the foreign equity portfolio investment. Moreover, the macroeconomic variables and financial soundness indicators remain important factors in attracting the foreign equity portfolio investment inflows in income group countries.

#### **4.5.2 FPI (Debts) and EFI in cross Income Group Countries.**

Table 4.6 shows the results of the regression models that test the effect of economic freedom on the foreign debts portfolio investments. The results show a positive and significant effect of the economic freedom on the foreign debts inflows in all income countries except low-income countries. Thus, these results also supported the baseline regression results and an increase in the economic freedom of a country would likely improve the foreign debts portfolio investment inflows in that country. The results of macroeconomic variables are also consistent with the baseline models such as GDP growth, business development index, ease in doing business, literacy rate, strength in the legal regulatory index, financial development index have a positive and significant effect on the foreign debts investment inflows. However, population growth, inflation rate and tax on income and gains remain negative and significant in a relationship with the foreign debts portfolio investment inflows.

Contrary to the baseline models, the interest rate spread has positive effect on foreign debts portfolio investment inflows, while market capitalization has a negative and significant effect on the foreign debts portfolio of investment inflows in all income group countries. Based on the above results and discussions it is concluded that economic freedom has a significant effect in both foreign equity portfolio investment and debts portfolio investment inflows in a country and is consistent with baseline models. Moreover, the results of the sub-indices are also found to have similar in effect to the base line models.

### **5. Conclusion and Future Scope of the Study**

This study examines the impact of economic freedom on the portfolio investments in countries classified based on the level of income of the World. The study used a sample of 184 countries for a period of 2001 to 2017 subject to the availability of data of EFI and foreign portfolio. The full sample countries are further divided based on the level of income into a subsample of 74 “high-income countries” 52 “upper-middle-income countries” 32 “lower-middle-income countries” and 26 “lower income countries”. The study estimated panel data regression models and found that a fixed effect is prevailing in the data. The regression results show that economic freedom has a positive effect on the foreign capital invested in terms of foreign portfolio. Furthermore, the results of the subsample also in line with the baseline regression results and showed that economic freedom has a significant and positive effect on the foreign equity and foreign debts portfolio investments in high-income, upper-middle-income and lower-middle-income countries, however, there exists an insignificant relationship of the economic freedom and foreign equity and debts portfolio investments in the lower income countries. Moreover, the results of the economic freedom sub-indexes of like trade freedom, business freedom, labor freedom, financing freedom, investment freedom, and monetary freedom also found to have a positive effect on the FPI in case of high-income, upper middle-income countries. However, labor freedom, business freedom, and investment freedom indexes are significant with the FPI in case of lower-middle-income and low-income countries. These results have a great deal of implications for the policy makers and regulators of countries where economic freedom is weak and need a dire concern of the authorities.



The results of the study can be further improved by taking in to consideration more sample size for the long term effect, however, this study has based its conclusion on the available data. Furthermore, the results of the study are based on the data collected from various data basis, therefore, validity and reliability of the results totally depends upon the sources that have actually collected data. The results can be further improved by taking in to consideration more variables that could also affect the foreign capital inflows such as country governance, internal and external conflicts and stock market liberalization.

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**Table 4.1 Descriptive Statistics**

Variables	Full Sample	HIC	UMIC	LMIC	LIC
TFPI	227152.50	180505.70	700454.60	133995.40	157319.50
FEPI	109533.20	87361.74	325410.40	66444.13	81587.96
TDFPI	47281.84	37877.34	127251.80	30714.08	41946.71
EFI	52.53	56.48	54.18	46.05	43.02
FDI	2.23	2.30	2.39	3.68	0.49
GDPG	3.45	3.11	3.20	4.87	3.56
INF	16.14	11.13	4.16	19.40	40.18
BDI	36.11	36.34	43.02	42.69	24.26
EDBI	0.06	0.05	0.09	0.09	0.04
Irspread	0.02	0.02	0.02	0.02	0.01
MCAP	19.26	27.12	18.30	8.96	0.24
POP	1.55	1.31	1.21	1.66	2.58
Litrate	4.50	4.78	5.10	5.56	2.08
TaxRate	0.98	0.86	1.11	1.46	0.90

Table 4.1 shows descriptive statistics of dependent variables such as TFPI which stands for the total foreign investment, FEPI stands for the foreign equity portfolio investments and FDPI stands for the foreign debts portfolio investments. The independent variables include EF, which stands for the economic freedom index computed by the Heritage Foundation. MCAP stands for market capitalization, BDI stands for the business development index, EDBI stands for the ease in doing business index, TrVol stands for trading volume, POP stands for annual population growth, GDPG stands for the gross domestic products annual growth, IRspread is the interest rate spread between the lending and borrowing rates, INF stands for consumer price index and represents inflation, Tax Rate represents the tax on income and capital gains from investments, LitRate stands for literacy rate, Year stands for the year dummy and country stands for the country dummy.

**4.2: Phillips-Perron tests and Augmented Dickey-Fuller tests for Unit Root**

S.No	Variables	Phillips-Perron tests		Augmented Dickey-Fuller tests	
1	TFPI	8.161	0.000	3.275	0.000
2	FEPI	15.231	0.000	4.199	0.000
3	TDFPI	7.155	0.000	3.965	0.000
4	EFI	2.477	0.006	5.484	0.000
5	FDI	25.745	0.000	4.536	0.000
6	GDPG	14.356	0.000	6.571	0.000
7	INF	15.804	0.000	4.503	0.000
8	BDI	14.343	0.000	5.128	0.000
9	EDBI	18.573	0.000	4.538	0.000
10	IRspread	3.976	0.000	4.346	0.000
11	MCAP	20.960	0.000	4.684	0.000
12	POP	2.994	0.001	6.309	0.000
13	Lirate	3.453	0.000	5.574	0.000
14	TaxRate	4.567	0.000	4.689	0.000

Table 4.2 shows results of Panel Unit root tests, moreover, the variables definition is given under the Table 4.1

**Table 4.3 Pearson Correlation**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
(1) TFPI	1.000																		
(2) FEPI	0.949	1.000																	
(3) TDFPI	0.972	0.907	1.000																
(4) LDFPI	0.966	0.905	0.995	1.000															
(5) STFPI	0.863	0.865	0.886	0.873	1.000														
(6) EF	0.103	0.083	0.104	0.104	0.104	1.000													
(7) POP	-0.030	-0.023	-0.043	-0.043	-0.013	0.192	1.000												
(8) GDP	0.023	0.009	0.020	0.020	0.003	0.011	0.045	1.000											
(9) INF	-0.081	-0.091	-0.087	-0.088	-0.086	-0.128	0.126	0.136	1.000										
(10) MCAP	0.016	0.007	-0.004	-0.005	-0.034	0.260	0.343	-0.061	-0.237	1.000									
(11) BDI	0.243	0.224	0.231	0.228	0.176	0.220	0.035	-0.031	-0.165	0.088	1.000								
(12) EDBI	0.003	-0.012	0.003	0.005	0.016	0.014	0.010	0.014	0.006	-0.036	0.018	1.000							
(13) IRspread	-0.023	-0.025	0.019	0.018	0.019	-0.105	-0.027	0.003	0.078	-0.086	-0.072	-0.001	1.000						
(14) Lirate	0.051	0.044	0.053	0.052	0.041	-0.027	0.098	0.071	0.056	0.016	0.103	-0.018	0.006	1.000					
(15) TrVol	0.001	0.013	0.011	0.012	0.059	0.107	0.320	-0.049	-0.223	0.566	0.041	-0.017	-0.063	-0.035	1.000				
(16) SLegRL	0.130	0.110	0.127	0.128	0.062	0.075	-0.016	-0.053	-0.194	-0.057	0.391	0.070	-0.026	0.005	-0.015	1.000			
(17) Taxrate	-0.020	-0.020	-0.024	-0.025	-0.058	-0.123	0.197	-0.041	-0.089	0.297	0.056	0.003	-0.059	-0.043	0.249	0.055	1.000		
(18) EDIndex	0.251	0.239	0.247	0.244	0.248	0.136	0.095	-0.092	-0.192	0.358	0.120	-0.034	-0.052	-0.038	0.325	0.019	0.153	1.000	

Table 4.3 shows results of the correlation matrix moreover, the variables definition is given under the Table 4.1.

**Table 4.4: Regression results of Total FPI and EFI**

	Full Sample)	(HIC)	(UMIC)	(LMIC)	(LIC)
	TFPI	TFPI	TFPI	TFPI	TFPI
EF	0.126***	0.193***	0.085***	0.238**	0.059
	(0.029)	(0.054)	(0.026)	(0.095)	(0.167)
POP	-0.056**	-0.203***	-0.016	-0.750***	-0.552*
	(0.028)	(0.053)	(0.021)	(0.114)	(0.324)
GDP	0.020***	0.021*	0.010***	0.030**	0.076***
	(0.005)	(0.011)	(0.005)	(0.015)	(0.024)
INF	-0.079*	-0.311***	-0.007	-0.019	-0.433**

	(0.047)	(0.100)	(0.044)	(0.162)	(0.202)
MCAP	0.274***	0.105**	0.135***	0.338**	0.325**
	(0.039)	(0.050)	(0.036)	(0.153)	(0.153)
BDI	0.111***	0.221***	0.058***	0.197***	0.241***
	(0.009)	(0.017)	(0.008)	(0.032)	(0.047)
EDBI	0.015***	0.007***	0.004***	0.003	0.015***
	(0.003)	(0.002)	(0.001)	(0.002)	(0.005)
IRSpread	-0.000	-0.001	0.001	0.010	-0.043***
	(0.001)	(0.001)	(0.001)	(0.010)	(0.011)
Lrate	0.128***	0.235***	0.025	0.247**	0.242**
	(0.041)	(0.077)	(0.034)	(0.114)	(0.118)
TrVol	0.010***	0.003*	0.001**	0.021***	0.031***
	(0.001)	(0.002)	(0.000)	(0.004)	(0.004)
SLegRI	0.027**	0.054**	0.024**	0.095**	0.112***
	(0.013)	(0.022)	(0.010)	(0.037)	(0.043)
Txrate	-	-0.115	-0.219*	-0.342**	-0.483***
	0.075***				
	(0.012)	(0.195)	(0.120)	(0.154)	(0.081)
FDIndex	2.066***	0.005	0.144***	0.144***	0.659
	(0.113)	(0.316)	(0.034)	(0.034)	(2.599)
_cons	0.806***	2.478***	0.220	6.383***	5.246**
	(0.185)	(0.353)	(0.147)	(0.781)	(2.128)
Year	Yes	Yes	Yes	Yes	Yes
Country	Yes	Yes	Yes	Yes	Yes
Hausman Test	21.05	25.05	20.43	19.89	18.09
P-Value	0.00	0.00	0.00	0.00	0.00
Obs.	9087	2744	2489	1609	1245
R-squared	0.134	0.194	0.421	0.198	0.358

Table 4.4 shows the results of different regression models based on cross countries grouping base income,

Moreover, the variables definition is given under the Table 4.1. Standard Errors are in parenthesis.  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 4.5: Regression results of FPI (Equity) and EFI**

	(Full Sample1)	(HIC)	(UMIC)	(LMIC)	(LIC)
	FEPI	FEPI	FEPI	FEPI	FEPI
EF	0.072***	0.149***	0.051**	0.326***	0.267
	(0.026)	(0.050)	(0.023)	(0.093)	(0.173)
POP	-0.030	-0.121**	-0.003	-0.724***	-0.641*
	(0.025)	(0.049)	(0.019)	(0.111)	(0.338)
GDP	0.014***	0.088***	0.009**	0.077***	0.082***



	(0.005)	(0.010)	(0.004)	(0.014)	(0.023)
INF	-0.125***	-0.311***	-0.014	-0.056	-0.508**
	(0.043)	(0.095)	(0.039)	(0.157)	(0.198)
MCAP	0.235***	0.076**	0.113***	0.242*	0.242**
	(0.035)	(0.036)	(0.033)	(0.122)	(0.121)
BDI	0.096***	0.190***	0.043***	0.160***	0.214***
	(0.009)	(0.017)	(0.007)	(0.033)	(0.046)
EDBI	0.008**	0.004*	0.003***	0.003**	0.039***
	(0.004)	(0.002)	(0.001)	(0.001)	(0.013)
IRSpread	-0.000	-0.000	-0.001	-0.012	-0.064***
	(0.000)	(0.000)	(0.001)	(0.010)	(0.016)
Lrate	0.100***	0.178**	0.006	0.230**	0.931***
	(0.038)	(0.078)	(0.031)	(0.111)	(0.183)
TrVol	0.010***	0.002	0.001***	0.018***	0.018***
	(0.001)	(0.002)	(0.000)	(0.004)	(0.004)
SLegRI	0.024**	0.030	0.019**	0.080**	0.072
	(0.012)	(0.022)	(0.008)	(0.038)	(0.046)
Txrate	-0.054	-0.293**	-0.188*	-0.251	-0.401
	(0.114)	(0.141)	(0.105)	(0.277)	(1.054)
FDIndex	1.754***	0.569*	0.247**	0.127	3.066
	(0.106)	(0.308)	(0.121)	(0.121)	(2.674)
_cons	0.579***	1.491***	0.105	2.098***	2.622***
	(0.168)	(0.329)	(0.137)	(0.773)	(2.234)
Year	Yes	Yes	Yes	Yes	Yes
Country	Yes	Yes	Yes	Yes	Yes
Hausman Test	20.07	21.00	23.21	21.81	19.11
P-Value	0.00	0.00	0.00	0.00	0.00
Obs.	9087	2744	2489	1609	1245
R-squared	0.114	0.175	0.034	0.181	0.342
Table 4.5 shows the results of different regression models based on cross countries grouping base income,					
Moreover, the variables definition is given under the Table 4.1 Standard Errors are in parenthesis.					
*** p<0.01, ** p<0.05, * p<0.1					

**Table 4.6: Regression results of Debts FPI and EFI**

	(Full Sample)	(HIC)	(UMIC)	(LMIC)	(LIC)
	TDFPI	TDFPI	TDFPI	TDFPI	TDFPI
EF	0.126***	0.171***	0.081***	0.166*	0.036
	(0.027)	(0.052)	(0.022)	(0.091)	(0.162)
POP	-0.095***	-0.245***	-0.030	-0.775***	-0.460
	(0.026)	(0.053)	(0.019)	(0.098)	(0.314)
GDP	0.019***	0.022**	0.008**	0.077***	0.051*
	(0.005)	(0.011)	(0.004)	(0.015)	(0.027)
INF	-0.075*	-0.286***	-0.005	-0.031	-0.375*
	(0.044)	(0.097)	(0.039)	(0.151)	(0.199)

MCAP	-0.223**	-0.099***	-0.120***	-0.463***	-0.261**
	(0.036)	(0.017)	(0.031)	(0.138)	(0.131)
BDI	0.095***	0.194***	0.049***	0.158***	0.220***
	(0.009)	(0.017)	(0.007)	(0.031)	(0.046)
EDBI	0.007**	0.007***	0.003***	0.005	0.007
	(0.003)	(0.003)	(0.001)	(0.005)	(0.005)
IRSpread	0.010***	0.001	0.020***	0.015*	0.036***
	(0.001)	(0.001)	(0.001)	(0.009)	(0.011)
Lrate	0.136***	0.234***	0.020	0.291***	0.230
	(0.038)	(0.074)	(0.031)	(0.105)	(0.174)
TrVol	0.001	0.003*	0.001	0.016	0.017
	(0.001)	(0.002)	(0.000)	(0.015)	(0.015)
SLegRI	0.028**	0.051**	0.022**	0.097***	0.110***
	(0.012)	(0.022)	(0.009)	(0.034)	(0.042)
Txrate	-0.103***	-0.030	-0.225**	-0.320	-0.499**
	(0.013)	(0.182)	(0.109)	(0.285)	(0.199)
FDIndex	0.861***	0.628**	0.236*	0.331***	2.934
	(0.108)	(0.310)	(0.121)	(0.121)	(2.616)
_cons	0.962***	2.531***	0.279**	2.293***	3.936*
	(0.172)	(0.350)	(0.130)	(0.679)	(2.040)
Year	Yes	Yes	Yes	Yes	Yes
Country	Yes	Yes	Yes	Yes	Yes
Hausman Test	19.10	15.15	19.13	20.15	25.14
P-Value	0.00	0.00	0.00	0.00	0.00
Obs.	5087	1744	2489	609	245
R-squared	0.126	0.173	0.391	0.211	0.333
Table 4.6 shows the results of different regression models based on cross countries grouping base ncome, Moreover, the variables definition is given under the Table 4.1 Standard Errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1					

**Table 4.7: Regression results of Total FPI and EFI components Indices for all countries**

	(BF)	(LF)	(MF)	(TF)	(IF)	(FF)
	TFPI	TFPI	TFPI	TFPI	TFPI	TFPI
Business Freedom	0.123***					
	(0.021)					
Labor Freedom		0.418***				
		(0.032)				
Monetary Freedom			0.146***			
			(0.021)			
Trade Freedom				0.134***		
				(0.021)		
Investment Freedom					0.105***	

					(0.022)	
Financial Freedom						0.117***
						(0.023)
POP	-0.107***	-0.104***	-0.113***	-0.109***	-0.101***	-0.102***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
GDP	0.006**	0.007***	0.006**	0.008***	0.005*	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
INF	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
MCAP	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
BDI	0.125***	0.060***	0.123***	0.123***	0.127***	0.126***
	(0.008)	(0.010)	(0.008)	(0.008)	(0.008)	(0.008)
EDBI	0.005***	0.005***	0.005***	0.005***	0.005***	0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
IRSpread	0.001	0.001	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Lrate	0.077**	0.075**	0.077**	0.077**	0.077**	0.077**
	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
TrVol	0.001*	0.001	0.001*	0.001*	0.001*	0.001*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
SLegRI	0.031***	0.026***	0.031***	0.031***	0.031***	0.032***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
TaxRate	-0.089***	-0.096***	-0.092***	-0.090***	-0.085***	-0.088***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.026)
FDIndex	1.680***	1.695***	1.672***	1.675***	1.683***	1.679***
	(0.101)	(0.101)	(0.102)	(0.101)	(0.101)	(0.101)
_cons	1.228***	1.235***	1.254***	1.234***	1.205***	1.208***
	(0.106)	(0.105)	(0.106)	(0.106)	(0.106)	(0.106)
Year	Yes	Yes	Yes	Yes	Yes	Yes
Country	Yes	Yes	Yes	Yes	Yes	Yes
Hausman Test	16.10	17.14	18.12	19.05	21.15	18.12

P-Value	0.000	0.000	0.000	0.000	0.000	0.000
Obs.	9775	9775	9775	9775	9775	9775
R-squared	0.104	0.119	0.105	0.104	0.103	0.103

Table 4.7 show the results of different regression models for sub-indices Moreover, the variables definition is given under the Table 4.1 Standard errors are in parenthesis.\*\*\* p<0.01, \*\* p<0.05,\* p<0