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# The Role of Foreign Direct Investment on Press Freedom

Nabamita Dutta and Sanjukta Roy\*

## Abstract

In our paper we establish foreign direct investment (FDI) as a major determinant of media freedom. Global integration can strengthen the media sector financially, make it technologically enhanced and can also improve the economic environment as a whole. This, in turn, would work towards the enhancement of media freedom. The sample includes high, middle and low income economies. Using a panel of 115 countries over a period of 20 years, our results reveal that FDI is an absolute necessity for a free and efficient media. The results are robust to various alternate specifications and inclusion of additional control variables.

*JEL Classification: O10; O12; F01*

*Key Words: Foreign Direct Investment; Press Freedom; Institutions.*

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## I. INTRODUCTION

Almost all countries today realize the importance of foreign direct investment (FDI) for economic development. FDI has been one of the major contributors in globalizing the economy. According to an IMF report, while FDI has increased by an average of 13 percent a year during 1990-97, it increased by an average of nearly 50 percent a year during 1998-2000. FDI flows can have considerable impacts on the overall shaping of an economy. As a nation becomes more integrated with the world economy, there is a huge impact on the GDP growth rate, economic policies adopted and, most importantly, the overall institutional framework. The important benefits of FDI, as cited in the literature, is that it generates externalities in the form of technology transfers, creates spillover effects of knowledge and also adds to the capital stock of an economy.

Previous literature has explored the relationship between FDI and growth. The conclusions are conflicting. While one set of researchers support a positive relationship between FDI and growth (Bosworth and Collins, 1999; Lipsey and Sjöholm, 2004), others find that the relationship is ambiguous (Lipsey, 2000). However, a major strand of the literature seems to agree that in the presence of sound financial institutions, greater trade openness and greater human capital, FDI exerts a positive impact on growth (Balasubramanyam, Salisu and Sapsford, 1996; Alfaro, Chanda, Kalemli-Ozcan and Sayek, 2003; Hermes and Lesink, 2003). All these findings stress the impact FDI has on the host country. Another strand of literature has concentrated on the determinants of FDI flows and what kind of institutional framework is desirable for a nation to attract greater FDI flows. Yet, the FDI flows itself may have important implications for the institutional framework of an economy. This is even more important given the positive impact free market institutions have on the growth of a nation, either directly through enhancing total factor productivity or indirectly by stimulating investment (Dawson, 1998).

We therefore deviate from the existing literature concentrating on FDI-growth linkage and determinants of FDI per se, and focus on the positive spillover of FDI on a country's institutional framework. We choose to concentrate on a particular institution, namely the media sector, in this regard. FDI inflows into a country, in general, can have considerable positive spillovers on the media sector. Media – in all its form namely print, internet, television and advertisements plays an indispensable role in informing and shaping the mindset of an economy,

be it at the local or the national level. It goes beyond being merely “cultural” and is infact an “institution” which, perhaps, has the largest immediate effect on the population at large. The indispensability of media is largely owing to its capacity to reach people at every corner of the society. Hence it bears the brunt of channelizing information, biased or otherwise to the beneficiaries. It has the sole potential to make the government and businesses accountable and enable the populace to make more informed decisions.

The past decade has seen this industry as the fastest growing around the world, with globalization catalyzing its pace. Since media plays a significant role in affecting an entire nation’s outlook, understanding of the FDI inflow-media freedom relation is of utmost importance. With no previous studies of the relationship between FDI and media, our research makes a significant contribution in this regard. We base our arguments on the premise that FDI brings in sufficient capital and also the infrastructure for an efficient institutional framework. “Media” being an institution should thus be affected as well. A privately controlled media has been proved to be desirable for the welfare of an economy (Besley and Burgess, 2002; Djankov, McIiesh, Nenova and Shleifer, 2003; Coyne and Leeson, 2005). Presence of foreign capital spurs healthy competition in the society in general, including the media sector, and, thus, media quality is enriched. FDI brings with it new technology, economies of scale and global standards to look up to. It brings with it the capital to relieve the media sector from the stringent control of the government. This would bring financial comfort to the sector, giving it wings for expansion, experimentation and freedom from bias arising from any governmental financial obligation. Apart from this, presence of a privatized and international media houses itself generates healthy competition in the sector. This is because these private parties have an incentive to build reputation in the foreign land as that impacts their presence globally. Thus, the mere presence of private and foreign media would ensure a higher quality of broadcast and propagation of unbiased information. Our argument is based on a similar study by Eichenberger and Frey (2002) where they investigate the inclusion the inclusion of foreigners in supplying political services. Their study reveals that it not only raises the supply of candidates but also raises competition which eventually renders the domestic producers more efficient and credible. This is made possible because the performance of internationally active policy firms in a country determines their chance of winning in other countries. Hence, they have a higher incentive to build up their reputation vis-à-vis traditional supplier of politics.

We explore our hypothesis using a panel of 115 countries for a period of 20 years. The sample includes high, middle and low income economies. The results reveal that greater FDI flows to an economy lead to higher levels of press freedom. The conclusions distinctly stress the need for privatization in the media industry. We confirm the findings that state's control over the media sector is detrimental from the development perspective. Our results are robust with both ordinary least squares (OLS) and ordered probit specifications. Further, we run 2SLS specifications to control for endogeneity in the specifications. The conclusions remain unchanged. The results are, further, robust to the addition of control variables and alternate specifications.

Section II discusses the impacts of FDI on the development of the host countries. Additionally, it also charts out the impact of FDI inflows on one of the most sensitive institutions, the media sector. Section III discusses the dataset used in the paper and its sources. Section IV describes the benchmark results using an OLS specification. It also justifies the rationale for using 2SLS specification. Section V presents the Ordered Probit specification and the results. Further, it also discusses the 2SLS results. Section VI discusses some robustness issues. Section VII concludes.

## II. THE ROLE OF FOREIGN DIRECT INVESTMENT

A concrete definition of foreign direct investment is 'the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence by the direct investor and the enterprise' (IMF, 1993). Although multinational firms are the most significant sources of foreign direct investments (FDI), a direct investor can also be an individual, a firm or a government. During recent times, lesser restrictions on capital movements across the world have increased the importance of foreign direct investment for the developing world. The importance of FDI for economic development and modernization are being realized more and more by the developing countries, emerging countries and countries in transition. Statistics reveal that FDI flows have increased by four or five times from 1995 to 2000 amounting to an astronomical figure of 1.3 trillion US dollars. According to United Nations Conference on Trade and Development (UNCTAD), 'the use of locational incentives to attract FDI has considerably expanded in frequency and value.' During financial crisis period of many economies, FDI flows

have recovered back quickly from the depression unlike private capital flows like portfolio and debt flows (Dadush, Dasgupta and Ratha, 2000; Lipsey, 2001). Thus, these might provide developing countries with enough incentives to prefer FDI over other sources of private capital.

Free flow of capital is largely favored by economists due to the higher rate of return it seeks. Foreign Direct Investment, either as Greenfield investments or Mergers and Acquisitions, form a major part of this. As noted by Feldstein (2000), unrestricted capitals flows have several advantages like reduction of risk faced by owners of capital through diversification opportunities of lending and investment, spread of best practices in corporate governance, accounting rules and legal traditions and restricting bad policy practices by the government through global mobility of capital. Apart from the above, there exists an extensive literature that points towards various other benefits that host countries derive from FDI.

FDI contributes to growth in host countries through various channels. It allows the transfer of technology, particularly in the form of new varieties of capital inputs that cannot be achieved through financial investments or trade in goods and services. According to most empirical research, FDI flows accelerate factor productivity and bring about income growth for economies much more than the capacity of domestic investment. Since the firms bring with them superior technology, there is quality enhancement for the goods produced as well as rise in the volume (Lipsey and Sjöholm, 2004). A comprehensive study by Bosworth and Collins (1999) provides evidence on the effect of capital inflows on domestic investment for 58 developing countries during 1978-95. The authors distinguish among three types of inflows: FDI, portfolio investment, and other financial flows (primarily bank loans). While an increase of a dollar in capital inflows is associated with an increase in domestic investment of about 50 cents, FDI appears to bring about a one-for-one increase in domestic investment. They conclude that the benefits of FDI thus are sufficient enough to offset the evident risk of allowing markets to freely allocate capital across borders of developing countries.

The rise in the income levels of the host country is caused by addition to the capital stock. Studies have shown that FDI flows into Canada have led to increased capital formation (Lipsey, 2000). Lipsey (2000) did not find any significant impact on capital formation for other countries. Other evidences ruled out the possibility that FDI improves growth by helping in capital formation (Borensztein, et al 1998). They confirm that FDI is instrumental to economic growth by means of stimulating technological progress. They found a positive impact of FDI on growth through technology spillover that is labor augmenting or Harrod-neutral. Technological progress

leads to knowledge spillovers which can be through the channels of imitation, competition, linkages and/or training (Lensink and Morrissey, 2001; Barry, Gorg and Strobl, 2001; Hermes and Lensink, 2003). Borensztein, De Gregorio, and Lee (1998) proved that the presence of a threshold level of educated labor force is needed in recipient countries for FDI to have a positive impact on growth. Hermes and Lensink (2003) confirmed this finding using a panel of 67 LDCs. They also came up with evidence that the development of the domestic financial system is a necessary condition for FDI to generate positive externalities that increase output.

The impacts of FDI on trade, i.e. exports and imports, are ambiguous. A horizontal FDI, for instance, theoretically induces a decrease in the host country's imports and, *ceteris paribus*, an improvement of its trade balance. This prediction may not hold true if the inputs used by the foreign-owned firm are imported from abroad. Furthermore, a FDI consisting of selling in the host country goods manufactured abroad, that is, a vertical integration forward will have the effect of increasing the home country's imports. MNCs are also capable of setting up their own corporate governance systems in the sense of imposing new company policies, internal reporting systems and rules about information disclosures and employment of foreign managers. This may boost corporate efficiency.

There exists a dearth of literature on the impact of FDI inflow on media freedom. Previous research has proved that state control suffer from poverty, high infant mortality rates, higher corruption and less developed capital markets (Djankov, McIiesh, Nenova and Shleifer, 2003). Further, for a state controlled media, politicians get an additional edge in manipulating information reaching the public and serving their private interests at the expense of the society (Coyne and Leeson, 2005). Besley and Burgess (2002) consider the case of India, a well established federal democracy with a relatively free media, to establish how a free press can affect the political economy of responsiveness. India embarked on its process of liberalization in the 1990s. Since this period, the country has seen an increasing inflow of FDI into various sectors of the economy. Post 1990s, the media sector has also seen the entry of a plethora of private channels in the broadcasting sector. They turned news into an essential commodity. Their vastly improved quality, quantity and variety have given the freedom of choice to the various section of the population. It is reasonable to assume that following the past trend, continued inflows of FDI into the Indian economy will bring, further, freedom to the media sector.

It is expected that greater FDI flows will eventually bring forth financial comfort to the sector and take a step forward to "free" it. A competitive, free media, both print and electronic,

will be more transparent in its activities and will possess enriched economic and functional environment. In the presence of abundant private capital, the media outlets need not depend on funds from the government for their functioning. This enables them not to become a spokesperson for the government and frees them from the burden of circulating biased and manipulated information. Anam (2002) mentions that with the advent of privatization of electronic media in Bangladesh, the media houses have ceased to be mere extensions of the 'government's propaganda mechanism' and are thinking freely. In Bangladesh, today most of the leading newspapers derive 70-90% of their advertising revenue from the private sector.

Alongside the provision of direct control as mentioned above, government also can have a stronghold through indirect hold on media through ownership of vital infrastructural and distributional facilities of a privately owned media-outlet. Leeson and Coyne (2008) gives extensive examples from Romania and Vietnam where various privately owned media-outlets were dependent on the state for infrastructure and distribution network and hence generated biased opinions. Kassem (2002) points out that the Egyptian press is a prominent stronghold of the government and is prime target for corruption. 'Since the region is ruled either by monarchies or military dictatorships that have huge budgets they can use to embellish their image in the media.' A significantly high (to the proportion of 90%) of the previously "independent" press was backed by one or more of the above-mentioned regimes. This led to replacement of sales and marketing managers to be replaced by 'pushy publishers' trying to impress the regimes' embassies. Furthermore, the distribution figures of these publications were also never audited and this destroyed competition. In situations like this FDI can provide for the infrastructure and distributional facilities. From our data and Fig (2A) it is evident that, since 1990 FDI flows to Egypt have decreased, and the status of media freedom has degraded from 'partly free<sup>1</sup>' to 'not free'. Foreign capital brings with it new and innovative technical know-how which is capable of changing the face of media infrastructure. The superior technology would ensure trained efficient journalists, willing to take up the risk of covering any political event. This would lead to the spread of unbiased information in the society and contribute towards a healthy political environment. Further, the enhanced technology will ensure rich content, unbiased viewpoint and good journalistic ethics.

Since FDI flows can ensure better corporate governance, efficient laws and criterions will be enforced. This will definitely generate better legal environment leading to greater media

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<sup>1</sup> Free, Partly Free and Not Free are the press freedom scores categorized qualitatively by Freedom House.



freedom. Journalists will be able to operate freely and government will have less power to curb media operations. For example, the media freedom of Zimbabwe is paralyzed by domineering laws like LOMA and Public Order and Security Act. These violate freedom of expression in the country (Chavunduka, 2002). As documented by him, they faced the first of the several instances of journalist harassments in the country. Most importantly, Zimbabwe has a history of low FDI inflows (see Fig 2A)

### III. THE DATA

The data is taken from various sources. Media freedom data is taken from the Freedom House Index. Freedom House's survey data, spanning over a large time frame, is the most comprehensive dataset available on global media freedom. The level of press freedom in each country is based on twenty three methodology questions divided into three categories: the legal environment, the economic environment and the political environment. The legal environment category judges laws and criterions that could influence media contents, the ability of journalists' to operate freely and the government's use of regulations to curb media operations. The degree of political control over the content of news media forms the basis for the political environment. The economic environment includes the structure of media ownership, transparency and concentration of ownership and the impact of corruption and economic institutions on media. The press freedom score ranges between 0 and 100 points. The Freedom House index has assigned higher points to lower levels of press freedom. For the convenience of analysis, the scores have been rescaled so that higher scores denote more free environment.

The data on FDI is taken from United Nations Conference on Trade and Development (UNCTAD) database. The measure considered is FDI inflows to a country as a percentage of GDP. Since data is available 1984 onwards, the sample period considered is 1984 to 2003. Several explanatory variables are used besides FDI over GDP. To control for openness, we use trade as percentage of GDP as one of the controls. Since FDI over GDP and trade over GDP are correlated, we have taken care of the possible biasness in the estimates by running two stage least squares later. Following Djankov, McLiesh, Nenova and Shleifer (2002) and Egorov, Guriev and Sonin (2007), we use GDP per cap as one of the major determinants of press freedom. GDP per capita is used as an indicator of economic well being of an economy. Population can also be a major determinant of press freedom of an economy. Since we use per

capita figures for both GDP and FDI, it allows us to take the relative country size into account and, hence, we exclude population as one of the controls. We, instead, use population as one of the instruments<sup>2</sup> in the 2SLS specifications. Further, we use primary years of schooling as another control. It is used as a proxy for the level of education of the population. A higher level of education raises the general awareness of the population<sup>3</sup>. This is in accordance with the theory that a free media is strongly related to the demand of the public (Egorov, Guriev and Sonin, 2007).

Further, DEMOC has been used from the polity IV dataset as a proxy for institutions. Research has shown that political institutions of an economy has important implications for its press freedom (Djankov, McLiesh, Nenova and Shleifer, 2002; Egorov, Guriev and Sonin, 2007). The variable ranges from 0 to 10 with higher values representing more democratic institutions. Periods of interruption, interregnum and transition are assigned scores of -66, -77 and -88 respectively. Such values are excluded from the dataset. We also control for natural resource dependence in our regressions. Egorov, Guriev and Sonin (2007) argues that the chances of having a free press in a resource rich country are low since the ruler has incentives to exploit the rents generated and curb information flows. The share of natural resource exports to GDP in 1980 is used as a proxy for natural resource dependence. Natural Resource exports are defined as the sum of exports of primary agriculture, fuels and minerals. The data is taken from Sachs and Warner (1997) paper. Finally, regional dummy variables have been used as additional regressors so that the estimates are not over or under estimated by regional characteristics. The regional dummy variables considered are Middle East and North Africa (MEN), South East Asia (SAR), East Asia and Pacific (EAP), Europe and Central Asia (EAC), Sub-Saharan Africa (SSA) and Latin America and the Caribbean (LAC). A pooled OLS approach for 115 countries over the sample period 1984 to 2003 is used. We control for time effects in our specifications. Further, we check for robustness of the results by controlling for specific effects. We control for corruption, infrastructure and technology in the specifications. Corruption is taken from ICRG dataset while the rest are from the World Bank World Development Indicators (WDI). The list of countries used in the paper is provided in Appendix (1). A detailed description of the variables used in the paper is provided in Appendix (2).

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<sup>2</sup> To add to the validity of our results (discussed later), we also use a different set of instruments (exchange rate and financial development). This is in accordance with the paper by Murray (2006).

<sup>3</sup> Nieswiadomy and Strazicich (2004) have shown that education is strongly related to the level of political freedom of an economy.

#### IV. THE EMPIRICAL CONNECTION

Since the press freedom scores are available as quantitative data from 1994 onwards, our sample period for ordinary least squares (OLS) is from 1994 to 2003. The dependent variable is the rescaled press freedom score for which higher values indicate a more free press. All the variables, except democracy and schooling are standardized in terms of GDP or per capita figures. Controlling for time effects helps to control for the presence of autocorrelation in the data to some extent. The regression specification is as follows

$$PF_{it} = \beta_0 + \beta_1 FDI_{it} + \beta_2 X_{it} + \beta_3 REGIONAL_i + Z_t + \varepsilon_{it} \quad (1)$$

where  $PF_{it}$  denotes the press freedom level for country  $i$  in period  $t$ ,  $FDI_{it}$  represents the net inflow of Foreign Direct Investment as a percentage of GDP to country  $i$  in period  $t$ ,  $X$  is a vector of covariates containing the set of control variables,  $REGIONAL$  represents the vector of regional dummies and  $Z_t$  represents the vector of year dummies. The set of control variables include Gross Domestic Production (GDP) per capita, trade openness, schooling, resource abundance and the proxy for political institutions, democracy<sup>4</sup>. Table (1) presents the results of the OLS regression. The results suggest that greater FDI flows lead to a more free press. The coefficient is positive and significant at the 1% level. The value of the coefficient suggests that a unit rise in FDI over GDP leads to a significant increase in the value of press freedom. To express in figures, a 10 percentage point rise in FDI leads to a 4.4 unit (or a 7.5 percentage point) rise in the extent of media freedom. This is suggestive of the greater need of FDI in the media industry. GDP per cap is positive and significant at the 1% level signifying that an increase in the level of GDP per cap leads to an improvement in the press freedom situation. Resource abundance is negatively related with press freedom but the coefficient is insignificant. Theory suggests that more resource rich countries have poor institutions and hence are prone to having more state controlled press. Thus, greater resource abundance should lead to lower press freedom levels and this is what the result confirms. As expected, schooling is positive and significantly related with press freedom. Political institution has a positive and significant impact on press freedom signifying that better institutional quality would be associated with more free press. Trade as percentage of GDP has a positive and significant impact on press freedom indicating

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<sup>4</sup> The results remain unaffected when GDP growth is included as an additional control in both OLS and OProbit specifications.

that greater openness leads to a more free press. All the regional dummies, except LAC, are significantly related with press freedom. The year dummies are insignificant. They are not reported in Table (1). The R square is 0.8 which suggests that the explanatory variables explain 80% of the variation in the dependant variable. Figure 1 shows the scatter plot of FDI and press freedom. The positive slope of the trend line confirms our findings. Further, we plot the association for the periods 1994, 1999 and 2003 separately. The association is clearly positive for all the diagrams.<sup>5</sup>

There can be potential problems of endogeneity in the model. The main variable of interest, FDI over GDP, can be endogenous and, hence, a simple OLS would lead to biased estimates. Domestic capitalists may block FDI flows for an economy to have control over the press. This is evident from incidents in countries like India. Recently, government imposed restrictions on levels of FDI which are allowed in print or broadcast. Thus, the extent of press freedom can actually be a determinant of FDI flows into an economy. To resolve the endogeneity problem, we run 2 stage least squares (2SLS)<sup>6</sup>. The choice of our instruments in running 2SLS has followed the methods propounded by the studies of Murray (2006)<sup>7</sup> and Levitt (2002). We use exchange rate as the instrument for FDI over GDP. In the first stage, FDI over GDP is regressed on the exogenous instrument and set of variables which also affect press freedom. These variables are democracy, schooling, natural resource abundance, GDP per cap, and the set of regional and year dummies. Trade over GDP is excluded due to the inherent correlation between trade and exchange rate. The 2SLS specification is as follows

$$FDI_{it} = \beta_0 + \beta_1 exchangerate_{it} + \beta_2 W_{it} + \delta_{it} \quad (2)$$

$$PF_{it} = \beta_0 + \beta_1 \widetilde{FDI}_{it} + \beta_2 X_{it} + \beta_3 REGIONAL_i + Z_t + \varphi_{it} \quad (3)$$

Equation (2) represents the 1<sup>st</sup> stage of our 2SLS specification. *FDI* or Foreign Direct Investment is the regressand. The instrument is exchange rate while *W* contains the set of variables which also affect press freedom in equation (3), including the regional and time dummies. Equation (3) represents the specification of the 2<sup>nd</sup> stage.  $\widetilde{FDI}$  denotes the instrumented FDI. The second stage

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<sup>5</sup> We have not excluded the outliers from the scatter plots. The exclusion of the outliers will strengthen the association for the different diagrams.

<sup>6</sup> Wu-Hausman test confirms the need for 2SLS. The small p value of the test suggests that OLS is inconsistent and that 2SLS is appropriate

<sup>7</sup> Following those studies we have used alternative sets of instruments which have kept our results unchanged and robust. Further we ran reduced form regressions by taking the instruments as explanatory variables and the troublesome explainer and the dependant variable of interest as the dependant variables. Our results show that the coefficients are significantly different from zero and have the desired signs, thus proving the credibility of the instruments. For example, according to the established argument and intuition, exchange rate bears a negative relation with FDI.

regression results are presented in Column (1) of Table (2). The results show that FDI has a positive and significant impact on press freedom even after controlling for time and regional effects. The coefficient remains significant at the 5% level and signifies that a 10 percentage point increase in FDI leads to a 17.1 unit rise in press freedom. Democracy, GDP per capita and Schooling have a positive and significant effect on press freedom. Resource abundance has a negative impact on press freedom but it is not significant. All the regional dummies are significant. The year dummies remain mostly insignificant.

Democracy may also have reverse causality problems with press freedom (Egorov, Guriev and Sonin, 2007). More democratic countries may be associated with more free press but it is also possible that press freedom makes a country more democratic instead. To correct for this endogeneity issue, we run a 2SLS specification by instrumentalizing both FDI and democracy. For this 2SLS specification, we use exchange rate and population as instruments for both FDI and DEMOC. Column (2) of Table (2) presents the 2SLS results when both the variables are instrumentalized. The coefficient of FDI is positive and significant at the 1% level. GDP per cap and DEMOC still have a positive and significant impact on press freedom but the schooling variable loses its significance. Resource abundance becomes positive but is highly insignificant. Other than MEN, the other regional dummies are significant. To confirm our findings, we re-run the regressions by using exchange rate and financial development as instruments<sup>8</sup>. The results remain more-or-less the same.<sup>9</sup>

## V. ORDERED PROBIT SPECIFICATION

The press freedom scores from Freedom House are available as quantitative data from 1994 onwards. Prior to 1994, the status of the press freedom of an economy is stated as ‘Free’, ‘Partly Free’ and ‘Not Free’. Thus, due to data constraints, we cannot check our results over a larger sample period by a simple OLS approach. An alternative approach would be to adopt an ordered-response model which is characterized by the indexed nature of the outcome variable. The dependant variable is latent but a continuous descriptor of the response. We adopt a particular type of ordered-response model, the ordered probit model. Ordered probit is the appropriate model when the responses are ordinal and not numerical. For our model, the limited dependent

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<sup>8</sup> Following Murray (2006) we use alternative sets of instruments to enhance the credibility of our 2SLS results.

<sup>9</sup> FDI over GDP is significant with a “p” value of 0.11.

variable is a dummy for press freedom. The dummy takes 3 values, 0 for a *not free* status, 1 for a *partly free* status and 2 for *free* status. Thus, the variable is ordinal in nature. In such a model, it is assumed that the random errors are distributed normally. The implicit assumption of the model is that the differences of the occurrences of *free* and *partly free* may not be the same as that of *partly free* and *free*. The regression specification is as follows

$$PressDummy_{it} = \beta_0 + \beta_1 FDI_{it} + \beta_2 X_{it} + \beta_3 REGIONAL_i + Z_t + \theta_{it} \quad (4)$$

where *PressDummy* represents the dependant variable which is ordinal in nature. The rest of the variable notations are same as equation (1). Table (3) presents the results of the ordered probit regression. As evident from the table, the coefficient of FDI is positive and significant suggesting that greater FDI flows increases the probability of having a free press. Trade as percentage of GDP is significant at the 1% level. GDP per cap, democracy and schooling have significant impacts on press freedom. Unlike the OLS specification, some of the year dummies become significant for the probit specification. Other than SA, the other regional dummies are significant. The likelihood ratio test statistic is the test of overall significance of the explanatory variables. The small “p” value is suggestive of the overall strong significance.

For a linear regression, the dependant variable is expected to change in response to a one unit change in the explanatory variable. To interpret the impact of FDI on press freedom we need to calculate the marginal effects. Marginal effects are calculated for each category of the dependant dummy variable, ‘free’, ‘partly free’ and ‘not free’. The figures reveal that a one unit increase in FDI raises the probability of having a free press by 1 percentage points. On the other hand, a one unit increase in FDI lowers the probability of having a ‘not free’ press by 1 percentage points. Thus, greater FDI flows always help towards the enhancement of press freedom levels. In Fig2, we plot the association between FDI and media freedom over the time period. The press dummy is represented on the primary y-axis. The primary y-axis represents the press freedom score, 2, 1 or 0, for a particular year. The secondary y-axis represents the FDI inflows over the years. For example, as FDI inflows decrease from 1994 onwards for Egypt, press freedom degraded from ‘partly free’ to ‘not free’. Cameroon has a low history of FDI inflows and, thus, the press freedom has retained the ‘not free’ status over the entire period.

As evident from the OLS specification, there will be potential endogeneity problems in the ordered probit specification as well. To treat the endogeneity problem, we run a 2SLS

ordered probit specification. We use the same instruments as used before<sup>10</sup>, population and exchange rate. In the first stage, FDI is regressed on the exogenous instruments and a set of variables which also affect press freedom. The second stage results are represented in column (1) of Table (4). The conclusion remains unchanged with the alternate specification. The coefficient of FDI as percentage of GDP is positive and significant at the 1% level. The low “p” value of the likelihood ratio test statistic is suggestive of the overall strong significance. GDP loses its significance but resource abundance now has a strong impact on the press freedom dummy. The marginal effects confirm the conclusions. Further, we run a 2 SLS specification by instrumenting both FDI and DEMOC. The results are presented in Column (2) of Table (4). The results are robust to the findings. FDI over GDP is positive and significant at the 1% level.

## VI. ROBUSTNESS

We run more regressions to ensure the robustness of our findings. We consider the same FDI measure but from a different database. The alternative measure is net FDI flows as percentage of GDP from the WDI statistics. We run both OLS and ordered probit with the alternative measure. The results are presented in table (5). Column (1) presents the results with OLS specification while column (2) presents the results with the ordered probit specification. As evident from the Column (1), FDI is positive and significant at the 10% level. Trade, Schooling Democracy and GDP have significant impacts on press freedom levels. The results of the ordered probit specification are presented in Column (2) of table (5). The coefficient of FDI is positive but not significant.<sup>11</sup>

We use an alternative measure by controlling for the total years of schooling instead of average years of schooling. The measure is taken from Barro and Lee (2000) dataset. The results are robust to the inclusion of the alternative measure for both OLS and the probit specification. Further, we strengthen our findings by controlling for corruption in the specifications. A higher level of corruption should be associated with poor institutional quality and, thus, lower levels of press freedom. The data on corruption is taken from International Country Risk Guide (ICRG) dataset. Corruption variable is rescaled so that higher values denote higher levels of corruption.

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<sup>10</sup> As robustness checks we re-run the specifications with exchange rate and financial development. The results are robust.

<sup>11</sup> The results are robust with 2SLS specifications. We check with alternative sets of instruments. The results are robust with the expanded dataset.

The results are checked for both the smaller (OLS) and the extended (Oprobit) sample. The results are robust to our findings. FDI remains positive and significant at the 1% level for OLS but it insignificant for the ordered probit specification. Corruption is negatively related with press freedom for OLS suggesting that a higher level of corruption degrades the press freedom levels.

Egorov, Guriev and Sonin (2007) control for internet penetration in their specification based on the argument that greater technological improvement should lead to greater levels of press freedom. We check our results by controlling for both infrastructure and technological improvement in our specification. The proxy used for infrastructure is number of telephone mainlines per 1000 population. The results are robust to the inclusion of the variable. FDI remains significant for the OLS specification but becomes insignificant for Ordered Probit. Infrastructure is positive and significant in Oprobit specification, but not in OLS. The results are, qualitatively, similar when we control for number of television sets per 1000 people and internet penetration.

We also check our results by running cross country regressions. The OLS regression confirm the finding that greater FDI flows is beneficial for the extent of press freedom of an economy. The FDI coefficient is positive and significant at the 5% level. Further, we check for convergence effects in our model. The results are run with cross country regressions but with change in the values of press freedom as the dependant variable. The dependent variable is the press freedom level of 1994 subtracted from the press freedom level of 2003. Each country has a single observation for every variable and the independent variable consists of the average values of the variables. The findings do not change our conclusion. The coefficient of FDI is positive and significant showing that higher levels of FDI leads to positive changes in press freedom levels. Further, we run our specification by controlling for both the levels and changes in FDI. It can be possible that the changes in FDI flows over the years matter more than the levels. The change in FDI considered is the FDI flow in 1994 subtracted from the FDI flow in 2003. FDI average remains positive and significant while the change is positive but not significant. This suggests that the levels of FDI matters more for changes in press freedom levels rather than changes in the flows of FDI.



## VII. CONCLUSION

In this paper we establish that higher inflow of FDI to an economy has a positive spillover effect on its media sector. It significantly enhances media freedom. FDI in an economy strengthens all its institutions and the general socio-economic framework. The higher level of FDI inflow within a country has its share of impact on media sector as well, which is one of the most important and sensitive institutions. The positive spill-over effect works by removing information asymmetry, bringing financial independence, bestowing technological superiority, enhancing quality and reach and raising public awareness. These, in turn, pave the way for a free and potent media. The results establish FDI inflow as an important contributor to media freedom. The higher the flow of FDI into an economy, the freer and more efficient is the media. Numerically, a 10 percentage point increase in FDI inflows leads to 4.4 unit rise in press freedom. The results are robust to both OLS and ordered probit specifications. Further, to control for endogeneity in the data, we run 2SLS specifications and the conclusions remain unchanged. The results also remain robust with the inclusion of control variables and alternate specifications.

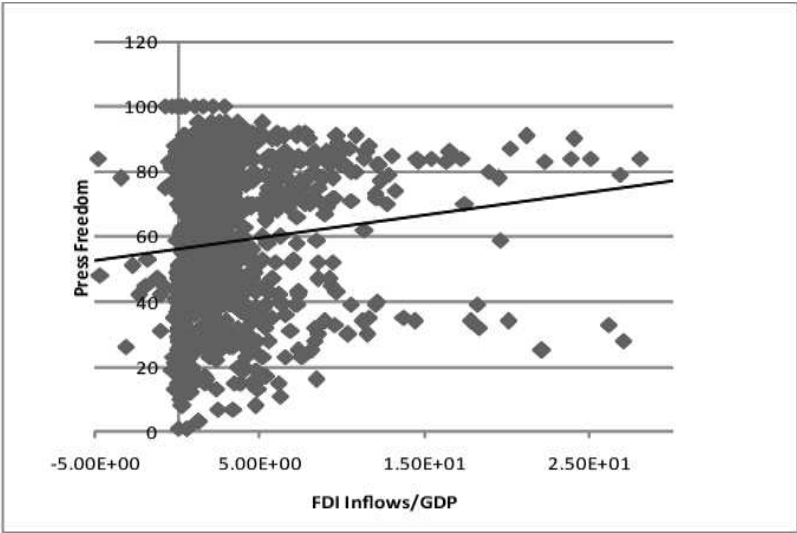
The argument however could be better established if data on FDI inflow into the media-sector itself could be known for economies across the world. Our future research endeavor definitely wants to take that into account but is sadly dependent on data availability.

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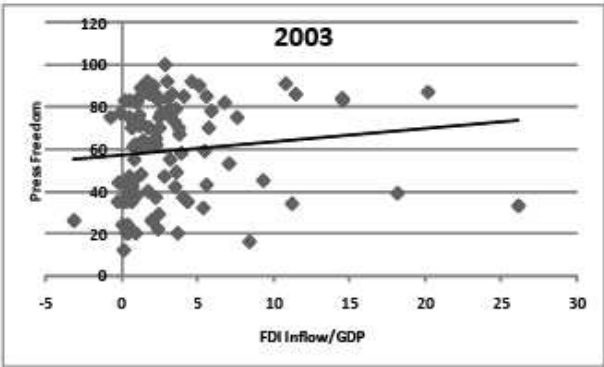
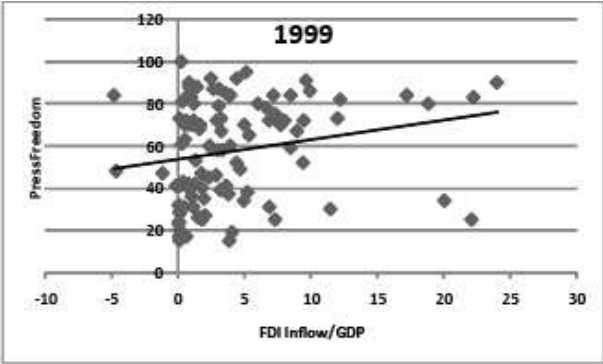
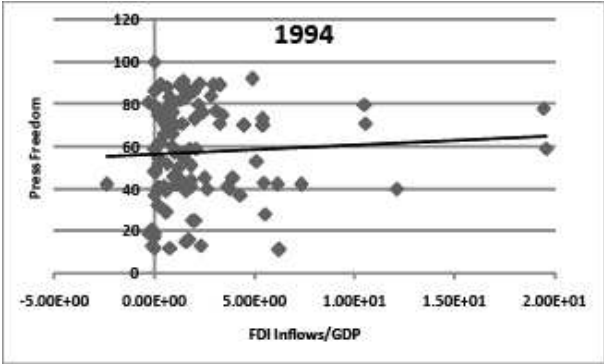
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**Fig 1A: The Association between Foreign Direct Investment Inflows and Press Freedom (Whole Sample)**

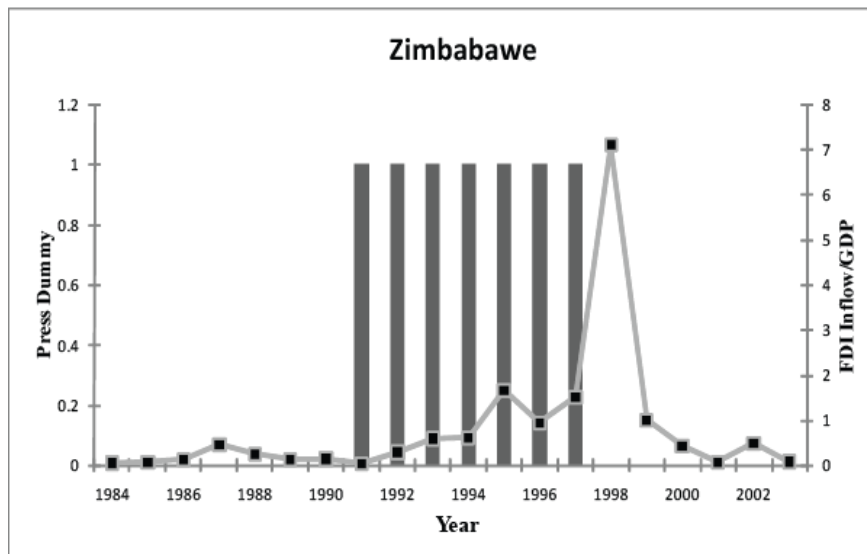
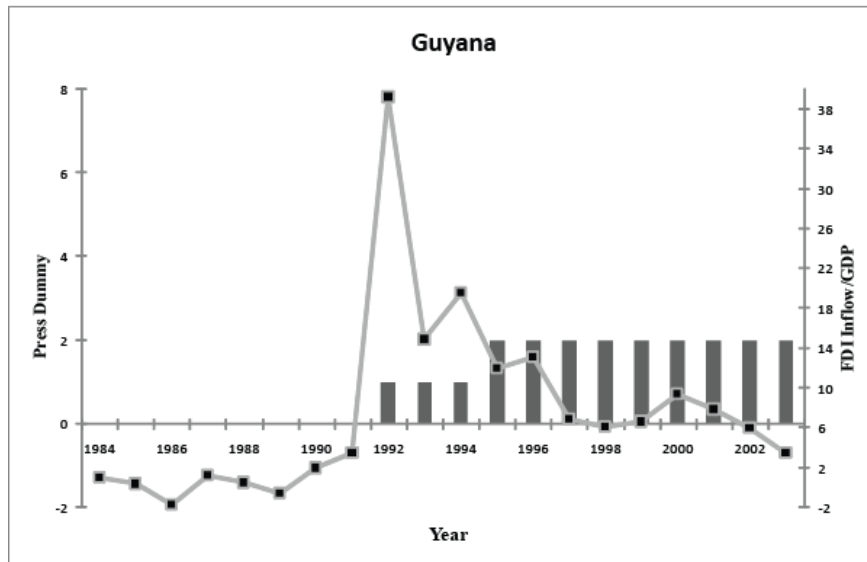
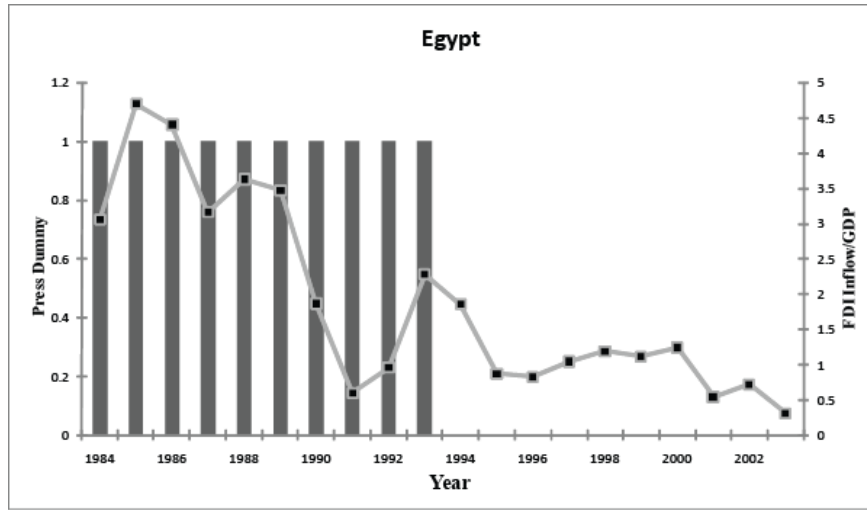


**Fig 1B: The Association between Foreign Direct Investment Inflows and Press Freedom (Specific Years)**



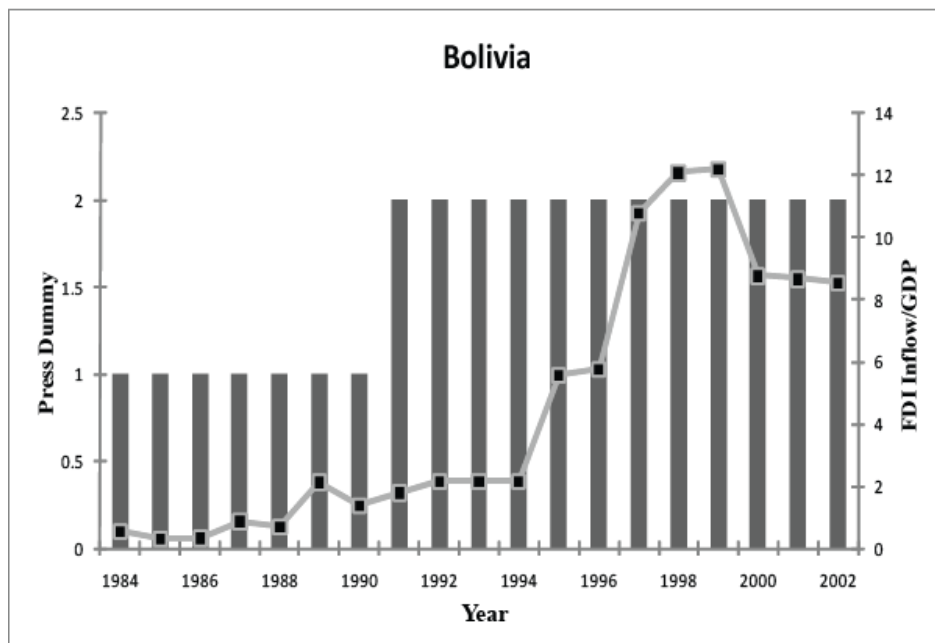
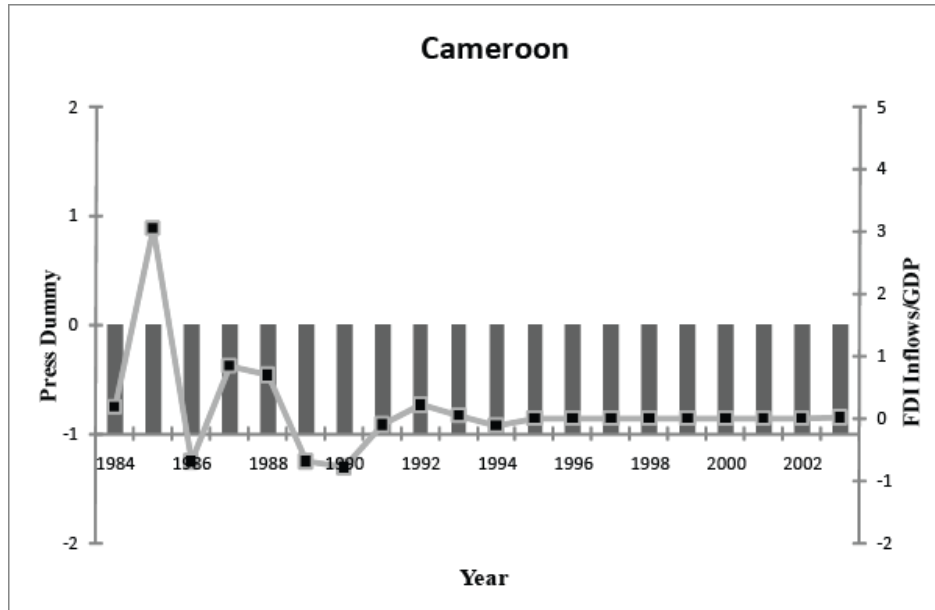
**Fig 2A: The Association between FDI and Press Freedom**

Note: 0 denotes 'Not Free'; 1 denotes 'Partly Free'; 2 denotes 'Free'



**Fig 2B: The Association between FDI and Press Freedom**

Note: 0 denotes 'Not Free'; 1 denotes 'Partly Free'; 2 denotes 'Free'



**Table 1: OLS and Ordered Probit showing the impact of FDI on Press Freedom**  
 Dependent Variable: Press Freedom

<i>Independent Variables</i>	(1) <sup>1</sup>	(2)
Trade	0.04*** (0.02)	0.01*** (0.001)
GDP per cap	0.001*** (0.0001)	0.00003*** (0.000001)
Schooling	1.38*** (0.42)	-0.14*** (0.03)
Democ	4.03*** (0.19)	0.16*** (0.01)
Resource Abundance	-1.56 (2.75)	-2.04*** (0.37)
FDI	0.44*** (0.12)	0.03* (0.02)
Dummy for Sub-Saharan Africa	6.32*** (1.49)	-0.28* (0.15)
Dummy for Latin America and the Caribbean	-0.44 (1.39)	0.36*** (0.13)
Dummy for Middle East and North Africa	-6.92*** (1.79)	-0.62*** (0.16)
Dummy for East Asia and Pacific	-7.85*** (1.38)	-0.40*** (0.14)
Dummy for South Asia	-4.52** (2.01)	0.32 (0.20)
Dummy for Europe and Central Asia	-19.06*** (2.66)	-0.78*** (0.19)
R - squared	0.81	---
Pseudo R Squared	---	0.27
Observations	764	1492

Note: The robust Standard Errors are quoted in parenthesis. The year dummies are not reported.  
 \*\*\* significant at 1% ; \*\* significant at 5% ; \* significant at 10% .

<sup>1</sup> Column(1) represents the OLS specification while Column(2) represents the Ordered Probit specification.

**Table 2: 2SLS<sup>1</sup> and Ordered Probit<sup>2</sup> with 2SLS showing the impact of FDI on Press Freedom**  
 Dependent Variable: Press Freedom

<i>Independent Variables</i>	(1) <sup>3</sup>	(2) <sup>4</sup>	(3)	(4)
GDP per cap	0.0002*** (0.0001)	0.0002*** (0.0001)	0.0004 (0.0001)	-0.00001 (0.00001)
Schooling	1.26*** (0.46)	0.46 (0.62)	-0.14*** (0.04)	-0.28*** (0.04)
Democ	4.50*** (0.26)	5.56*** (0.69)	0.21*** (0.02)	0.51*** (0.06)
Resource Abundance	-1.49 (6.22)	-0.35 (6.60)	-3.21*** (0.76)	-1.23*** (0.38)
FDI	1.71** (0.87)	1.76** (0.91)	0.50*** (0.16)	0.20*** (0.06)
Dummy for Sub-Saharan Africa	5.95*** (1.95)	8.99*** (2.67)	0.05 (0.22)	0.97*** (0.25)
Dummy for Latin America and the Caribbean	-4.32*** (1.56)	-4.18*** (1.54)	-0.06 (0.12)	0.25** (0.11)
Dummy for Middle East and North Africa	-5.15* (2.91)	0.61 (4.27)	-0.01 (0.28)	1.50*** (0.38)
Dummy for East Asia and Pacific	-9.78*** (1.71)	-7.34*** (2.52)	-1.02*** (0.18)	0.19 (0.22)
Dummy for South Asia	-5.26** (2.43)	-4.55* (2.73)	0.75*** (0.27)	0.91*** (0.22)
Dummy for Europe and Central Asia	-21.57*** (1.93)	-22.001*** (2.003)	-1.30*** (0.28)	-0.74*** (0.26)
R – squared	0.77	0.76	---	---
Pseudo R Squared	---	---	0.26	0.21
Observations	796	796	1701	1774

Note: The robust Standard Errors are quoted in parenthesis. The year dummies are not reported.  
 \*\*\* significant at 1% ; \*\* significant at 5% ; \* significant at 10%

<sup>1</sup> Column( 1) and Column(2) represent 2SLS

<sup>2</sup> Column( 3) and Column(4) represent Ordered Probit with 2SLS

<sup>3</sup> Column (1) and Column (3) represent the specifications with instrumented FDI.

<sup>4</sup> Column (2) and Column (4) represent the specifications with both instrumented FDI and DEMOC.



**Table 3: OLS and Ordered Probit with Alternative Measure of FDI**  
 Dependent Variable: Press Freedom

<i>Independent Variables</i>	(1) <sup>1</sup>	(2)
Trade	0.05*** (0.01)	0.01*** (0.001)
GDP per cap	0.001*** (0.0001)	0.00003*** (0.00001)
Schooling	0.89** (0.41)	-0.10*** (0.03)
Democ	3.91*** (0.19)	0.16*** (0.01)
Resource Abundance	5.27 (4.41)	-2.65*** (0.33)
FDI	0.16* (0.08)	0.02 (0.02)
Dummy for Sub-Saharan Africa	5.02*** (1.55)	-0.31** (0.15)
Dummy for Latin America and the Caribbean	1.49 (1.37)	0.31*** (0.12)
Dummy for Middle East and North Africa	-5.49*** (1.82)	-0.73*** (0.15)
Dummy for East Asia and Pacific	-5.75*** (1.49)	-0.50*** (0.13)
Dummy for South Asia	-3.34* (1.98)	0.38** (0.20)
Dummy for Europe and Central Asia	-16.45*** (2.86)	-0.82*** (0.18)
R – sq/Pseudo R-sq	0.79	0.27
Observations	832	1630

Note: The robust Standard Errors are quoted in parenthesis. The year dummies are not reported.  
 \*\*\* significant at 1% ; \*\* significant at 5% ; \* significant at 10%

<sup>1</sup> Column(1) represents the OLS specification while Column(2) represents the Ordered Probit specification

## Appendix 1: List of Countries

Algeria	Ghana	Norway
Argentina	Greece	Oman
Australia	Guatemala	Pakistan
Austria	Guinea-Bissau	Panama
Bahrain	Guyana	Papua New Guinea
Bangladesh	Haiti	Paraguay
Barbados	Honduras	Peru
Belgium	Hong Kong	Philippines
Belize	Hungary	Portugal
Benin	Iceland	Rwanda
Bolivia	India	Saudi Arabia
Botswana	Indonesia	Sénégal
Brazil	Iran	Sierra Leone
Burkina Faso	Ireland	Singapore
Burundi	Israel	Solomon Islands
Cameroon	Italy	South Africa
Canada	Jamaica	Spain
Cape Verde	Japan	Sri Lanka
Central African Republic	Jordan	St. Vincent and the Gredines
Chad	Kenya	Sudan
Chile	Korea, Rep.	Swaziland
China	Kuwait	Sweden
Colombia	Lesotho	Switzerland
Congo, Dem. Rep.	Madagascar	Syrian Arab Republic
Congo, Rep.	Malawi	Thailand
Costa Rica	Malaysia	Togo
Cyprus	Mali	Trinidad and Tobago
Denmark	Malta	Tunisia
Dominica	Mauritania	Turkey
Dominican Republic	Mauritius	Uganda
Ecuador	Mexico	United Arab Emirates
Egypt	Morocco	United Kingdom
El Salvador	Mozambique	United States
Fiji	Nepal	Uruguay
Finland	Netherlands	Venezuela
France	New Zealand	Zambia
Gabon	Nicaragua	Zimbabwe
Gambia	Niger	
Germany	Nigeria	

## Appendix 2: Data and its Sources

<b>Variables</b>	<b>Source</b>
FDI over GDP	United Nations Conference in Trade and Development (UNCTAD)
Press Freedom Index	Freedom House Organization
Trade over GDP	WDI 2005
Population	WDI 2005
GDP per capita	WDI 2005
Exchange Rate	Penn World Tables
Schooling (Primary and Total)	Barro and Lee
Resource Abundance	Sachs and Warner dataset (1995b)
Democracy	Polity IV Dataset
Corruption	ICRG Dataset
Number of Telephones per 1000	WDI 2005
Internet Penetration	WDI 2005
Financial Development	Beck, Demirguc-Kunt and Levine (2000) dataset
Growth	WDI 2005