What drives FDI policy liberalization? An empirical investigation

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A B S T R A C T

Do countries compete for FDI by liberalizing policies favoring FDI? Our measure of policies favoring FDI is an event count of changes made by a country in a given year in the arena of approval procedures, sectoral restrictions, operational conditions, incentives, investment guarantees, foreign exchange, and corporate regulations to attract FDI. Using spatial econometric estimations on panel data for 148 countries over the 1992–2009 period, we find that favorable policy changes to attract FDI in one country are positively correlated with FDI policy changes elsewhere (i.e., policy changes favorable to FDI from other countries, increase the likelihood of liberalizing policies favoring FDI in the country in question). Developing countries compete more intensively among themselves for investment via liberalization of policies favoring FDI. These results are robust to alternative weighting schemes, estimation methods, sample size, and controlling for the possibility of endogeneity.

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1. Introduction

Do nation states compete for Foreign Direct Investment (FDI hereafter) by altering policies to favor FDI? While there is much anecdotal evidence to suggest that they do, surprisingly, to the best of our knowledge, there is no empirical evidence to support these claims. The present study attempts to fill this gap by specifically examining competition among countries in liberalizing FDI policies in the areas of foreign ownership, approval procedures, sectoral restrictions, operational conditions, incentives, investment guarantees, foreign exchange, and corporate regulations. It is often argued that globalization gives *footloose* capital greater bargaining power, while placing host country governments under pressure to liberalize laws and regulations governing FDI policy, leading to FDI competition between countries. Countries compete for FDI due to the benefits it yields – infrastructure upgrading, the transfer of technology, the promotion of institutions, improvements in managerial knowledge, and skill upgrading – that are important for competition in global markets (Dunning, 1993). The main underlying argument here is that entrepreneurial politicians respond to capital mobility through a process of regulatory and incentive based competition, in the expectation that FDI will create job opportunities increasing wages. This forms a huge political capital for

incumbent politicians. Although both developed and developing countries compete for mobile capital, we believe that developing countries could compete more intensively among themselves, as well as with developed countries, to attract FDI. Developed countries already possess quality infrastructure and property rights protection, well developed institutions and an educated work force. This reduces the need for them to compete, making them attractive destinations for FDI in the long run. Developing countries on the other hand, could compete more intensively because they stand to gain more from FDI inflows due to increased employment, technology transfers, and productivity spillovers.[1] Developing countries may also compete more intensively among themselves because they tend to use similar methods such as reducing entry barriers and changing policies to encourage FDI which do not pose a strain on their scarce financial resources, as opposed to developed nations which provide more financial incentives. This is supported by Bora (2002), Blomström and Kokko (2003) and Madies and Dethier (2010) who show that developing countries offer more incentives in the form of tax holidays, investment allowances, import duty exemptions and duty drawbacks compared to OECD economies.

Previous studies on the liberalization of policies favoring FDI have examined the effects of openness (Asiedu and Lien, 2004), tax incentives (Banga, 2006), administrative barriers (Morisset and Neso, 2002) and deregulation (Golub, 2003; Gastanga et al., 1998) to attract FDI.

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[1] FDI inflows into the developing nations was 52% of global FDI inflows in 2013 (UNCTAD, 2014).

Although Kobrin (2005) attempts to study the basic determinants of FDI liberalization policy, curiously, the key aspect of inter-country competition has yet to be explored. In this paper, we use spatial econometrics to examine whether changes in laws and regulations which are favorable to attracting FDI in one country, are influenced by favorable policy changes elsewhere. We also examine if such competition is evident both within group as well as across various groups of countries.

Spatial econometrics has been used in the literature to explore the extent of competition in tax, environmental standards, economic policy reforms, bilateral investment treaties and labor standards, among other areas. Early studies that use spatial econometrics to examine tax competition among developed countries include those by Davies Ronald et al. (2003), Devereux et al. (2008), Davies Ronald and Voget (2008), Overesch and Rincke (2008) and Klemm and van Parys (2009). Davies and Vadlamannati (2011) use spatial econometrics to examine the extent of competition in labor standards among nation states to attract FDI. Neumayer and de Soysa (2011) use a similar technique with a different weighting matrix and find support for a race to the top with respect to women's labor rights. Spatial econometrics is additionally used by Markusen et al. (1995), Fredriksson and Millimet (2002), Beron et al. (2003), Murdoch et al. (2003), Davies Ronald and Naughton (2006) and Perkins and Neumayer (2011) to explore a race to the bottom in the adoption of environmental agreements and policies. Spatial econometrics has also been used in studies measuring the extent of diffusion of policy liberalization and investment treaties. For example, Pitlik (2007) and Gassebner et al. (2011) find evidence of competition among countries in regulatory, monetary and trade policy liberalization. Simmons and Elkins (2004) find that the adoption of economic practices is highly clustered, both temporally and spatially. Using subnational data in Germany, Potrafke (2012) finds that economic liberalization in one state is influenced by economic liberalization in a neighboring state. Simmons and Elkins (2004) also find that inter-country competition drives the signing of bilateral investment treaties.[2]

While most of these studies are cross-country analyses, to the best of our knowledge there are no studies investigating competition among countries in liberalizing FDI policy. Our paper attempts to fill this gap, by specifically focusing on competition among countries in attracting FDI through liberalizing policies. We further examine whether this competition is different within and between developing and developed countries. Using information on changes in laws and regulations favoring FDI in 148 countries during the 1992–2009 period, we find that policy changes favorable to FDI in one country, are positively correlated with the liberalization of FDI policy changes in other countries.[3] Furthermore, we find that developing countries compete more intensively among themselves for FDI, by relaxing policy regulations. Our results remain robust to an alternative weighting scheme and controlling for endogeneity. We interpret these results as direct evidence of interstate strategic interactions in the liberalization of policies favoring FDI. This competition could lead to harmful bidding wars for FDI leading to a race to the bottom. The implications of this are discussed in the Conclusion.

The rest of the paper is structured as follows. Section 2 illustrates the reasons as to why countries compete for FDI. Section 3 describes the data used and the spatial econometric methodology. Section 4 discusses the results and Section 5 concludes.

2. Hypothesis

The 1990s witnessed a marked increase in economic integration which resulted in a dramatic surge in FDI inflows into the developing nations. It is estimated that FDI inflows into developing countries increased by about 520% in the 1990s (UNCTAD, 2004). This increase was a consequence of liberalization of laws and regulations favoring FDI. According to Kobrin (2005), the 1992–2001 period witnessed roughly 1029 changes in policies favorable to FDI in developing countries alone. While many developing countries began to frame policies favoring FDI and reduce regulations for the entry of foreign firms in the 1990s, this trend became even more pronounced in the 2000s. Using a different measure of changes in FDI policy, Pandya (2010) finds that a median country, protecting about 40% of its industries from the entry of foreign firms in the 1970s, dropped its protection to about 12% by the end of 2000. These drastic changes in policies favoring FDI are a significant reversal from the 1970s and 1980s as the general consensus until the 1980s was that economic incentives had an ambiguous effect on economic growth, or no impact at all (Peters and Fisher, 2004; Markusen and Nesse, 2006). Subsequent studies have shown that tax and other incentives have a significant effect on regional growth (Bartik, 1993, Phillips et al., 1995; Newman and Sullivan, 1988). Moreover, traditional economic growth theory highlights the importance of investment in attaining higher rates of economic growth (Barro and Sala-i-Martin, 2004).

The advent of the democratization process in the 1990s, with a large number of countries adopting free market economic policies, paved way for competition between countries to attract investment. Along with economic and governance issues, attracting investment and job creation became a key priority for many governments in the post-reform period in the 1990s (Markusen and Nesse, 2006). Policy changes made by host country governments to attract FDI, increases the bargaining power of potential foreign investors who seek investment avenues with the aim of increasing the expected return on investment due to reduced entry barriers. Surely, reducing entry barriers give host country governments a competitive edge in attracting FDI? Governments compete against each other for investment, not only to generate jobs and promote growth, but also for the huge political capital that it creates for incumbent politicians. Even autocratic governments may be driven to liberalize their FDI policies to address weak economic development and popular protests. For example, it is possible that the liberalization of Chinese FDI policies in the 1990s to some extent was a response to the economic and political tensions leading to the Tiananmen Square incident (see Fewsmith, 2001).

The movement of capital across nations can be understood in terms of theory. According to Neoclassical theory, in the presence of factor mobility, capital should flow from capital abundant to capital scarce countries (and similarly, labor from labor abundant to labor scarce countries), leading to the equalization of factor prices across countries. Hymer (1970) introduced the market imperfections theory according to which imperfect competition causes firms to restrict their output in the home country to raise the price. This leaves firms with excess capacity that may be used profitably abroad, where it does not influence the domestic monopolistic price level. According to Dunning's (1980) international production theory, ownership-specific assets, internalization motives, and location-specific advantages are the key determinants of FDI. New Economic Geography (NEG) theory associated with Krugman (1991), explains agglomeration at the geographical level. The NEG is based upon a general equilibrium framework and emphasizes the importance of the clustering of economic activity due to increasing returns to scale, transportation costs, and linkages between firms, and consumers.

Since developing countries are labor rich and capital poor, their openness to foreign investment is expected to benefit labor, while hurting domestic rent-seeking capitalists (see Pandya, 2011 for similar arguments). Foreign investment can provide significant benefits for labor by

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[2] There are also other areas where spatial econometrics has been used. For instance, Cho et al. (2011) examine the diffusion of anti-trafficking government policies.

[3] Given that the study covers a period in which a number of liberalization policies were undertaken due to failure of state led development policies, it is difficult to exactly identify in some cases, whether the basis for liberalization was due to competition or the standard diffusion process. Therefore, we acknowledge that a potential omitted variable bias could affect our estimates.

creating better quality jobs leading to an increase in wages and better working conditions compared to those offered by existing local firms, thus resulting in a higher marginal revenue product of labor. Competing with foreign firms operating at a higher level of labor productivity in turn leads domestic firms to increase wages (see Pandya, 2010, for example). Note that the previous literature finds a positive impact of FDI and wage increases in both developing and developed countries (Huttunen, 2007; Almeida, 2007; Girma and Görg, 2007; Aitken et al., 1996; Haddad and Harrison, 1993).[4]

In addition, workers and consumers could gain when goods become cheaper and access to better quality goods increase. As large sections of the middle class stand to gain, the electorate would prefer those governments which support capital importation (Jakobsen and de Soysa, 2006; Bhagwati, 1999). The decision to allow FDI into the multi-brand retail sector by the Indian government in 2011 is a prime example. While farmers and agricultural labor associations openly supported opening up the retail sector to foreign investment, anticipating an increase in wages, this created back-end supply chain networks in the farming sector which eliminated middlemen and reduced product prices, and was opposed by lobby groups in domestic small scale industries (see Subramanya, 2011; The Economist, 2011). Moreover, competition theorists' Markusen and Venables (1999) argue that incentive competition not only creates jobs, but also increases the tax base of host countries.[5] Blomström (1986) for example, finds evidence of greater structural efficiency and competition in the presence of a foreign firm in Mexico. Markusen and Venables (1999) show that for a group of Newly Industrialized Countries where FDI is complementary to local industry, FDI could lead to the establishment of local industries which could grow at a faster rate than foreign plants. New jobs created by FDI also lead to skill acquisition, a transfer of managerial skills, and lower unemployment in host countries (see Markusen and Nesse, 2006). These benefits, in turn, are expected to spill over to domestic firms leading to improved productivity, innovation in local markets and an increase in exports (Globerman, 1979; Blomström and Kokko, 1998).

It is however, important to note that countries compete for different types of FDI. For example, some countries may compete intensively for export oriented manufacturing FDI, while others may compete for skill upgrading and managerial expertise. Unfortunately given the data limitations, it is difficult to identify the dimensions along which competition varies between countries.[6] Given however, the benefits associated with FDI, even if FDI into certain industries do not flow in as a result of incentive competition and deregulation, if the incumbent government believes that it does, then this alone could lead to competition among countries.

The other important change driving inter-state competition is the failure of state-led development policies in developing countries, which led to free market economic systems and increased the bargaining power of FDI vis-à-vis governments. Because of these profound changes, countries which would be better off colluding to reduce the size of incentives offered to investors, i.e., so that there are net benefits to both investors and host countries, a country has the incentive to deviate from colluding, and offer incentives to investors individually. Due to the *footloose* nature of capital on the one hand, and competitive international political systems on the other, individual governments are left with no choice but to compete with their peers. However, Borensztein et al. (1998) argue that in order to reap the benefits from FDI, a country should have a minimum threshold of human capital. This effectively means that

under the absence of certain preconditions, technology and other spillover benefits tend to diffuse slowly (Kathuria, 2002). Despite these limitations countries continue to compete for FDI. This can result in *bidding wars*, leading to a *prisoner's dilemma* situation forcing states to compete aggressively to attract FDI through policy liberalization measures and the provision of various incentives. In fact, successive governments in many developing countries started to deregulate their FDI policies throughout the 1990s in their bid to attract FDI and signal to investors after their competitors have done so. This type of intensive competition puts more pressure on smaller countries with even weaker bargaining power to follow suit to retain and attract mobile capital. Simmons and Elkins (2004) allude to the case of Chile in Latin America, which liberalized capital controls, subsequently leading to a wave of capital account liberalization in other countries in the region. Based on our discussion, we test the following hypothesis:

Hypothesis 1. Potential host countries are more likely to change policies favoring FDI when their competitors have done so.

A related issue that has not been explored is the nature of this competition between countries. Foreign investors are encouraged to set up in countries with strong economic fundamentals. Among the reasons put forward are market size, the level of income, skill level in the host country, infrastructural facilities, and political and economic stability (Blomström and Kokko, 2003). Usually it is argued that developing nations offer an environment less conducive to FDI inflows compared to developed nations. In such instances, the lack of infrastructure, skilled labor, property rights, and political and economic stability can be compensated for through other incentives. For instance, Azemar and Delios (2008) argue that the level of statutory tax rates, as an incentive to attract FDI, influences the destination of Japanese firms, and allows the host country to compensate for disadvantages related to public good provision or governance. However, the need to provide greater incentives decreases with a high provision of public goods and better quality of public governance. This does not mean that developed countries do not compete for foreign capital. They also provide incentives and subsidies to foreign firms to attract FDI. However, unlike developing countries, they do not focus on short run effects, but compete for capital based on their 'inherent' strength (quality infrastructure, educated work force, institutions and property rights). Developing countries also do not often have the financial resources to match the amount of financial incentives provided by developed countries (Moran, 1998). This in turn forces developing countries to resort to other methods such as reducing entry barriers by changing policies in favor of FDI in order to remain competitive. In fact Bora (2002), and Madies and Dethier (2010) show that developing countries offer more incentives in the form of tax holidays, investment allowances, import duty exemptions and duty drawbacks compared to OECD economies. Madies and Dethier (2010) find that more than 70% of African countries use tax holidays as incentive to attract FDI, compared to only 20% of OECD countries. Competition is likely to be more intensive among developing countries because they have more to gain from attracting FDI. Barros and Cabral (2000) examining policy competition for FDI between a small country with a high unemployment problem and a large country without an unemployment problem, show that the smaller country with high unemployment is more likely to attract the FDI because it is willing to offer a larger subsidy. Similarly, Fumagalli (2003) shows that when there are two locations: one technologically lagging, and another which is technologically advanced, the MNE finds it more profitable to locate in the technologically advanced one in the absence of incentives. However, when there are incentives, the MNE locates in the country where there are highest welfare gains. Thus, because developing countries offer similar incentives, and stand to gain more by offering FDI incentives, we expect FDI competition to be more intensive among developing countries relative to developed countries.

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[4] See Zhao (1998) who on the contrary argues that FDI always reduces the negotiated wage.
[5] See Blomström and Kokko (1998) for a survey of the spillover effects of MNCs.
[6] Note that the data on number of policy changes favoring FDI in five different areas provided by UNCTAD does not provide details by industry or specific sector. Therefore, it becomes extremely difficult to examine the dimensions along which competition for FDI varies.

Hypothesis 2. Competition to attract FDI via the liberalization of policies favoring FDI is more intensive among developing countries.

Although our hypotheses are motivated by competition among countries to attract FDI, it is important to note that there could be factors other than inter-state competition to attract FDI which cause a diffusion of policies favoring FDI. One such alternative is the model of 'yardstick competition'. This model was developed by Salmon (1987) and applied to taxes wherein the tax authority in one jurisdiction depends on that elsewhere not because officials use taxes to attract mobile firms, but because voters in their jurisdiction judge the performance of the authority by comparing the local tax rate to those elsewhere. Similarly, one might expect existing foreign firms in one country to observe greater policy changes favoring foreign investments in other countries and demand similar treatment, thus introducing the possibility of yardstick competition rather than competition among countries for FDI. Second, changes in policies favoring FDI can also be influenced by public awareness. That is, those who have strong preference towards opening up markets to the outside world which leads to the spread of 'norms and ideas' or 'imitation', explored by Neumayer and de Soysa (2006), and Bhagwati (2004). A third possibility is a setting of information asymmetry where government and policy makers access information about consequences from liberalizing policies favorable to FDI which are set elsewhere, leading them to revise their policies favoring FDI when those elsewhere change. Fourth, some liberalization measures could have taken place in response to the Trade-Related Investment Measures (TRIMS) introduced by the WTO in 1995, and in response to treaties between certain groups of countries (for example, the EIU, NAFTA, AFTA among others). Ideally, these liberalization measures associated with the WTO and treaties should be accounted for separately. Our dataset however, does not allow us to make this distinction. Finally, some nations, for example the European Union (EU) have legislation that limits the competition for FDI. These explanations also give rise to alternative interpretation of the empirical results, which we do not rule out.

3. Data and methods

3.1. Model specification

We use panel data covering 148 countries over the 1992–2009 (18 years) period. The baseline specification estimates the number of annual changes in laws and regulations (which we describe in detail below) affecting inflows of FDI into country i in year t, which is a function of a set of exogenous variables Z_{it}:

$$FDI\ Policy_{it} = \phi_i + \beta Z_{it} + \omega_{it} \qquad (1)$$

where, ϕ_i is a country specific dummy and ω_{it} is the error term. The control variables are drawn from the existing FDI literature and are described below. We now include competition with other countries by introducing the number of annual changes in policies favoring FDI in other countries in year t to the baseline specification (Eq. (1)), a variable known in the spatial econometric literature as the spatial lag (Madison, 2007). We thus estimate:

$$FDI\ Policy_{it} = \varphi_i + \rho \sum_{j \neq i} \varpi_{jit} FDI\ Policy_{jt} + \beta Z_{it} + \omega_{it} \qquad (2)$$

where, $\sum_{j \neq i} \varpi_{jit}\ FDI\ Policy$ is the spatial lag, i.e., the weighted average of the number of annual changes in laws and regulations favoring FDI in other countries. With respect to weighting, we weigh the policy changes in favor of FDI with the distance between each country, under the presumption that a country closer to those countries with higher levels of liberalization in policies favoring FDI are well placed to compete. We use the distance in kilometers from country i as the weighting scheme, so that more distant countries are given smaller weights. Hence, we use inverse distance, with a weighting as follows: $\omega_{i,j,t} = \frac{\frac{1}{dist_{i,j,t}}}{\sum_{k \neq i} \frac{1}{dist_{i,k,t}}}$.

The importance of agglomeration at the geographic level is highlighted by New Economic Geography (NEG) theory associated with Krugman (1991). Buch and Toubal (2009) for example, investigating the difference in convergence in per capita incomes between East and West Germany, conclude that geographic variables have a significant impact on regional openness; controlling for geography, East German states are less integrated into international markets along all dimensions of trade integration considered; the degree of openness has a positive impact on regional income per capita.

We include country fixed effects to control for unobserved country specific heterogeneity in the panel dataset. As the dependent variable here is a count of the number of annual changes in policies favoring FDI, the preferred estimates are those from the negative binomial regression method (Brandt et al., 2000; King, 1988) with heteroskedasticity consistent robust standard errors
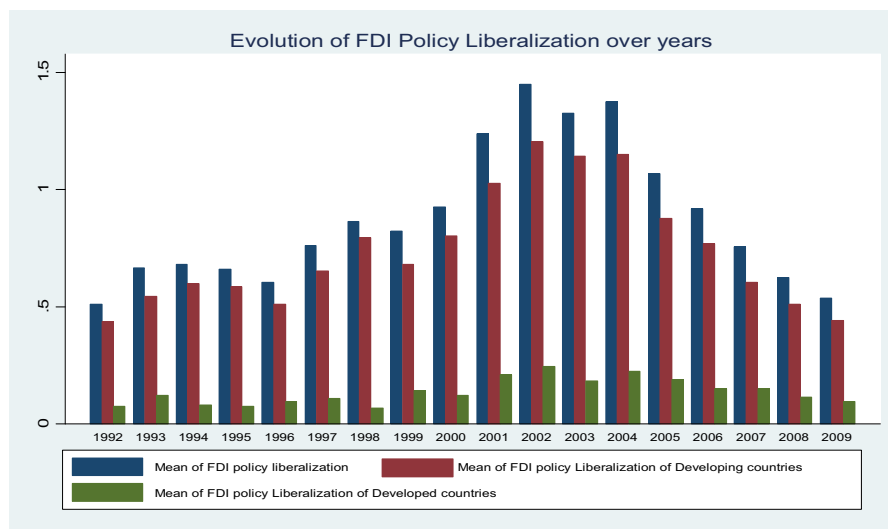

Fig. 1. Evolution of FDI policy liberalization over years. (For interpretation of the references to color in this figure, the reader is referred to the web version of this article.)
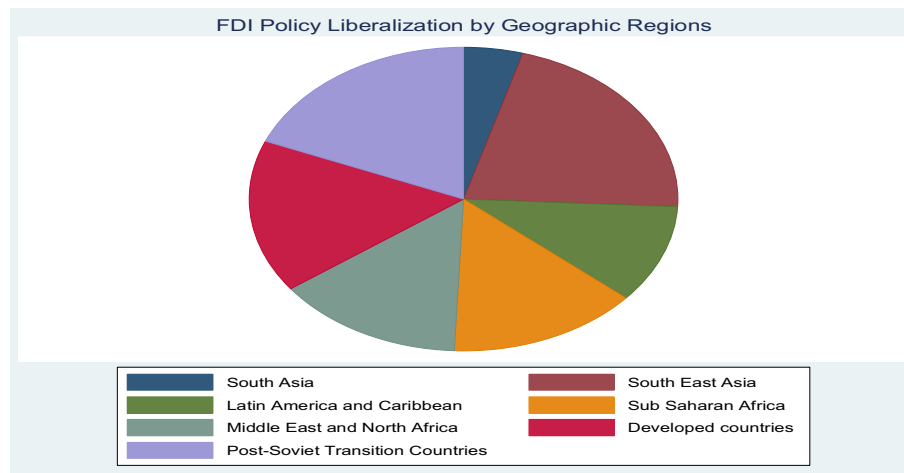
Fig. 2. FDI policy liberalization by geographic regions.

(Beck and Katz, 1995). It is noteworthy that our dependent count variable not only exhibits a distribution that is strongly skewed to the right (accumulation of observations at zero), but also shows over-dispersion (variance being greater than the mean — see descriptive statistics in Appendix 3) with excess zeros (zeros represent about 40%). To counter these problems, we make use of the negative binomial estimation method (Lambert, 1992; Greene, 1994).

3.2. Data

We use annual data for 148 countries from 1992 to 2009. Appendix 1 includes the list of countries that are in our study. For the dependent variable in the negative binomial regression, we make use of the number of annual changes in laws and regulations favorable to FDI, which is the aggregation of changes occurring in the following categories: (a) Foreign ownership, (b) approval procedures, (c) sectoral restrictions, (d) operational conditions, (e) incentives, (f) guarantees or protections, (g) foreign exchange, and (h) corporate regulations. The details for each of these categories are described in Appendix 2. This data is generated by the UNCTAD, which has been collecting information on annual changes in the FDI policies of respective countries since 1992. The UNCTAD collects this information for its annual World Investment Reports, which monitor and analyze global and regional policy trends affecting FDI flows. As an initial step, the UNCTAD collects these data from various sources ranging from the media and private consulting firms, to official government sources such as investment promotion agencies or respective ministries. In the second step, this information is sent to the respective government ministries for proper verification. Upon verification, if revisions are warranted, then changes are made to the data. In a final step, the changes are categorized according to the eight relevant categories listed above. Our dependent variable is the count of changes in laws and regulations favorable to FDI in all eight aforementioned categories combined. Unfortunately, UNCTAD does not provide disaggregated data on each of the eight categories. It is, however, important to note that changes in laws and regulations favoring FDI reflect the mere openness to FDI and not the degree of openness at that particular point in time. With this caveat in mind, we use this dataset with the intention of capturing broader trends reflecting changes in policies favoring FDI across countries.

Fig. 1 captures the evolution of the liberalization of policies to attract FDI across the 148 countries analyzed over the 1992–2009 period. As one can see, the number of annual changes in laws and regulations favoring FDI saw a steady increase during the mid to late 1990s, and then declined towards the end of 2009. This decline in the late 2000s can be attributed to the global financial crisis. This

trend is also broadly reflected among developing countries (in red bars). On the other hand, despite being low, the liberalization of policies favoring FDI among developed countries remains fairly constant over the years. On average, the number of policy changes carried out by a median developing country was below 0.5 in 1992. This increased to almost 1.5 during 2002, and remained at just 0.5 in 2009. By contrast, the number of changes carried out by a median developed country always remained below 0.5 during our study period. Thus, much of the changes in laws and regulations favoring FDI in our sample period are largely driven by developing countries. Fig. 2 provides a geographic breakdown of the number of changes in laws and regulations favoring FDI over the 1992–2009 period. As seen, Southeast Asia has witnessed the majority of the changes in policies favoring FDI, at 21.3% (494 changes) of the total share, followed by post-Soviet transition countries, at 18.8% (about 435 changes). Sub-Saharan Africa and the Middle East/North Africa accounted for roughly 14% each, with 335 and 331 policy changes, respectively. Developed countries, comprising of Europe, Australia, New Zealand, Canada and the USA, saw 378 policy changes favoring FDI, which is about 16.3% of the total changes registered worldwide. South Asia saw the least number of changes at 104, which is roughly 4.5% of the total share. It is noteworthy that many of the changes in South Asia and Southeast Asia are driven by India and China, respectively.

With respect to the control variables, we follow other studies on determinants of FDI – Blonigen (2005), Chakrabarti (2001), Wheeler and Mody (1992) – and other comprehensive evaluations of the liberalization of FDI policy (e.g. Kobrin, 2005). Accordingly, we include GDP per capita, measured in 2000 US$ constant prices (logged), as a proxy for the level of development in the host country. We also control for the rate of growth in GDP of the respective host countries. Following others (Robertson and Teitelbaum, 2011; Pandya, 2010), we incorporate a measure of democracy which takes the value 1 if the Marshall and Jaggers (2002) polity IV index is equal to, or above $+6$ on the scale of -10 to $+10$, with higher values representing a greater level of democracy.[7] In addition to these variables, we include oil export dependency, which is expected to have a negative effect on the liberalization of policies favoring FDI. Oil wealth is a dummy variable taking the value 1 if oil exports exceed one-third of export revenue, and 0 otherwise. We also include a variable capturing the ideology of the incumbent government. Many studies have found ideology to be a key determinant of the market economic liberalization process (Bjørnskov and Potrafke,

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[7] Though Polity IV index has faced some criticism, it captures three important elements of democracy namely, presence of institutions, existence of effective constraints on executive and participation in political process, which are found to be key for economic openness (Henisz and Manfield, 2006).

2011, 2012). The data on ideology comes from Beck et al. (2001), which is coded 1 for leftist governments in power, and 0 otherwise. Finally, using the dataset developed by Dreher et al. (2009), we include a dummy if the host country participates in the IMF structural adjustment program in year t as a proxy for external pressures to deregulate and liberalize the existing FDI policy regime (Kobrin, 2005). The volume of FDI inflows and KOF trade and investment reforms index are used to measure the degree of openness of a country. The KOF trade and investment reforms index is measured on 0–100 scale where a higher value denotes more openness towards investments and trade. The details on definitions and data sources are provided in Appendix 3.

3.3. Endogeneity concerns

The spatial lag variable is bound to be endogenous because if the liberalization of FDI policy in country i depends on that of country j, then the reverse is also true. In order to address this endogeneity problem, we utilize a negative binomial instrumental variable estimation. For the instruments, we use $\sum_{j \neq i} \varpi_{jit} \ Z_{jt}$, i.e., the weighted average of the other countries' control variables, namely GDP per capita (log), the GDP growth rate, labor force, democracy, the oil export dummy, government ideology, and IMF program participation. The intuition behind using these variables is twofold. First, economic and political factors are found to be a very important force driving the liberalization of policies favoring FDI. Second, for a given country j, these exogenous variables directly impact its policies favoring FDI, but are not dependent on those in country i, thus satisfying both the instrument relevance and exclusion criteria.

Employing two-stage instrumental variable estimations (2SLS-IV) for models such as negative binomial may be problematic, and the relevant parameters are difficult to estimate directly. Therefore, we opt to regress our endogenous variable – the spatial lag – on the selected instrumental variables by using pooled OLS models (which are the first stage regressions). We then predict the values of the endogenous variable and regress our dependent variable – FDI policy liberalization measure – using negative binomial estimations (the second stage regressions).

As highlighted above, the validity of the selected instruments depends on two conditions. First is *instrument relevance*, i.e., they must be correlated with the explanatory variable in question. Bound et al. (1995) suggest examining the F-statistic on the excluded instruments in the first stage regression. The selected instrument would be relevant when the first stage regression model's F-statistic is above 10 (Staiger and Stock, 1997). Second, the selected instrumental variable should not vary systematically with the disturbance term in the second stage equation, i.e., $[\omega_{it}|IV_{it}] = 0$. That is, instruments cannot independently affect the dependent variable. As for the exclusion restriction, it is hard to believe that the exogenous variables of country j directly impact the liberalization of policies favoring FDI in country i. We however, note that this measure is not without its shortcomings. The ambition to catch up to country j could lead to the imitation of FDI policies.[8] Hence we use the exogenous variables of country j as instruments keeping this in mind. The F-statistic and Hansen J-test also are employed (using 2SLS-IV) to check instrument relevance and exclusion criterion (results are provided at the end of all the tables reporting regression estimations).

4. Empirical results

4.1. Baseline results

We begin our analysis by first presenting the results estimated using OLS-fixed effects examining whether FDI policy reforms influence FDI inflows in global sample and a sample of developing countries alone in Table 1. In Table 2 we present the baseline results examining whether favorable policy changes to attract FDI in one country are positively correlated with policies favoring FDI in another estimated using negative binomial regression method. Note that the LR statistic test results support using negative binomial regressions over Poisson estimations. Table 3 focuses exclusively on the sample of developing countries alone. In Table 4 we replicate our baseline results for both global sample and developing countries sample with instrumental variable estimations. Note that the results presented in Tables 2–4 report marginal effects at the mean of the explanatory variables.[9] A summary of the data statistics is presented in Appendix 3.

As seen in column 1 of Table 1, we find a positive and significant relationship between FDI policy changes and inflow of FDI. An additional FDI policy change in favor of FDI is associated with an increase in FDI inflows by roughly 4.7% points which is significantly different from zero at the 10% level. These results are upheld when we control for a lagged dependent variable in column 2 though the magnitude of the coefficient comes down marginally by 0.06% points. In columns 3 and 4, we replicate the analysis by excluding the developed countries from the global sample. As seen, the positive significant effect remains robust in both columns. An additional FDI policy change in favor of FDI is associated with a 5% increase in FDI inflows into developing countries which is significantly different from zero at 10% level. These results hold when we include a lagged dependent variable in column 4. Note that the substantive impact is large as the mean of FDI inflows (log) is around 5.6%. It is also noteworthy that our results are net of political and economic development variables which influence FDI inflows. Among the controls, we find that market size proxied by GDP (log) and democracy are positive and significantly different from zero at conventional levels of statistical significance. Also, per capita income, a crude proxy for wage cost is as expected negative and significant at the 5% level across the both samples of countries.

It is possible that while FDI policy influences FDI inflows, the direction of causality is in the opposite direction with FDI inflows causing countries to change their FDI policy framework. We therefore, examine for the presence of reverse causality by employing Granger Causality tests (see Table 1A). We examine the null hypothesis of whether FDI policy liberalization does not Granger cause FDI inflows, and also whether FDI inflows do not Granger cause FDI policy liberalization at 2, 4 and 6 lags. The results indicate that FDI policy liberalization Granger causes, FDI inflows at 2, 4 and 6 lags. However, FDI inflows do not Granger cause FDI policy liberalization at all lag levels.

Beginning with column 1 in Table 2, which includes only the spatial lag term, the result is positive and significantly different from zero, at the 1% level. An increase in FDI policy changes elsewhere is associated with at least a couple of policy changes in the country in question. This result remains robust when we control for other key determinants of FDI policy changes in column 2 which forms our preferred specification. As seen, holding all control variables constant at their mean, an increase in FDI policy changes in favor of FDI in other countries is associated with an increase of at least two FDI policy changes in the country in question, which is significantly different from zero at the 1% level. In column 3, we also control for the extent of external sector liberalization the country has undergone. As discussed earlier, countries that are relatively more open are the countries where there is less scope for further opening to FDI. To control for this factor, we include KOF trade and investment reform index. Controlling for this variable did not yield any major change in our main variable of estimate. It is noteworthy though that the marginal effect comes down albeit not dramatically. The positive significant effect of spatial lag still remains positive and significantly different from zero at the 5% level. Finally, adding a lagged dependent variable in column 4 does not change the results of the spatial

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[8] We wish to thank a referee who pointed this out to us.

[9] We use Stata 11.0's margins command to calculate marginal effects.

Table 1
OLS estimation.

Dependent variable: Log FDI inflows				
	(1)	(2)	(3)	(4)
Lagged dependent variable		0.235***		0.351***
		(0.0472)		(0.0494)
FDI policy liberalization	0.0470*	0.0401*	0.0507*	0.0377*
	(0.0241)	(0.0239)	(0.0219)	(0.0227)
GDP (log)	2.818**	3.034**	1.481	1.775
	(1.376)	(1.278)	(1.458)	(1.141)
Per capita GDP (log)	−3.409**	−3.538***	−2.100*	−2.125**
	(1.305)	(1.261)	(1.255)	(1.041)
GDP growth rate	0.0330*	0.0254	0.0178	0.0107
	(0.0178)	(0.0184)	(0.0166)	(0.0187)
Democracy dummy	0.957***	0.720**	0.790**	0.507
	(0.361)	(0.356)	(0.377)	(0.347)
Oil and gas exporting countries dummy	−0.237	−0.0933	−0.162	0.0165
	(1.209)	(1.056)	(1.238)	(0.960)
IMF program participation dummy	−0.286*	−0.180	−0.192	−0.0940
	(0.146)	(0.125)	(0.145)	(0.128)
Trade/GDP	-0.00116	−0.000691	−0.00251	−0.00142
	(0.00262)	(0.00226)	(0.00215)	(0.00172)
Electricity consumption (log)	0.0972	0.191	−0.280	−0.221
	(0.427)	(0.344)	(0.413)	(0.289)
ICRG corruption index	0.157	0.116	0.321*	0.220
	(0.164)	(0.144)	(0.180)	(0.137)
Constant	1.148	−1.240	4.549	0.416
	(10.23)	(8.329)	(10.44)	(7.101)
Country specific dummies	Yes	Yes	Yes	Yes
Time specific dummies	Yes	Yes	Yes	Yes
Sample of countries	Global	Global	Developing	Developing
R squared	0.116	0.156	0.199	0.291
Number of countries	124	124	100	100
Number of observations	2158	2043	1736	1644

Notes: standard errors in parentheses. Level of significance: ***0.01, **0.05, *0.1.

Table 3
Zero-inflated negative binomial.

Dependent variable: Count of FDI policy liberalization measures				
	(1)	(2)	(3)	(4)
Lagged dependent variable				−0.013
				(0.83)
Spatial lag	1.900***	1.836***	1.725***	1.646***
	(15.10)	(12.04)	(10.80)	(10.01)
Per capita GDP (log)		−0.474***	−0.411***	−0.372***
		(3.50)	(2.95)	(2.63)
GDP growth rate		−0.000	0.000	0.001
		(0.23)	(0.15)	(0.46)
GDP (log)		0.451***	0.392***	0.344**
		(3.35)	(2.87)	(2.38)
IMF program participation dummy		0.030	0.037	0.045
		(1.01)	(1.24)	(1.48)
Oil and gas exporting countries dummy		−0.059	−0.046	−0.048
		(0.75)	(0.54)	(0.55)
Democracy dummy		0.072**	0.082**	0.117***
		(2.19)	(2.19)	(3.03)
Left-wing government dummy		0.003	−0.001	0.003
		(0.07)	(0.02)	(0.07)
FDI inflows (log)		0.008	0.006	0.008
		(1.62)	(1.08)	(1.50)
Trade & investment reforms index			0.002	0.002
			(1.14)	(1.24)
Country specific dummies	Yes	Yes	Yes	Yes
Time specific dummies	Yes	Yes	Yes	Yes
Sample of countries	Developing	Developing	Developing	Developing
Number of countries				
Number of observations	2214	2143	1868	1770

Notes: (a) Z-statistics in parentheses ***p < 0.01, **p < 0.05, *p < 0.1. (b) Reports average marginal effects of all explanatory variables.

lag. To interpret the marginal effects, a single standard deviation increase in the liberalization of policies favoring FDI in other countries would increase the policy liberalization measures to attract FDI in country i by roughly 1.76. These results therefore provide some evidence that countries do in fact compete for FDI via liberalization of policies favoring FDI after their competitors have done so.

Table 2
Zero-inflated negative binomial.

Dependent variable: Count of FDI policy liberalization measures				
	(1)	(2)	(3)	(4)
Lagged dependent variable				−0.011
				(0.70)
Spatial lag	2.037***	1.964***	1.864***	1.758***
	(17.15)	(13.29)	(11.80)	(10.87)
Per capita GDP (log)		−0.334**	−0.280**	−0.235*
		(2.49)	(2.00)	(1.67)
GDP growth rate		−0.001	−0.001	0.000
		(0.75)	(0.39)	(0.07)
GDP (log)		0.276**	0.225*	0.165
		(2.14)	(1.71)	(1.20)
IMF program participation dummy		0.030	0.038	0.046
		(0.97)	(1.21)	(1.45)
Oil and gas exporting countries dummy		−0.083	−0.067	−0.071
		(1.04)	(0.79)	(0.83)
Democracy dummy		0.065**	0.069*	0.104***
		(2.03)	(1.89)	(2.82)
Left-wing government dummy		0.013	0.004	0.011
		(0.50)	(0.12)	(0.37)
FDI inflows (log)		0.005	0.004	0.004
		(1.55)	(1.07)	(1.27)
Trade & investment reforms index			0.002	0.002
			(1.28)	(1.41)
Country specific dummies	Yes	Yes	Yes	Yes
Time specific dummies	Yes	Yes	Yes	Yes
Sample of countries	Global	Global	Global	Global
Number of countries				
Number of observations	2646	2572	2208	2093

Notes: (a) Z-statistics in parentheses ***p < 0.01, **p < 0.05, *p < 0.1. (b) Reports average marginal effects of all explanatory variables.

Table 4
IV estimation.

	(1)	(2)	(3)	(4)
	2nd stage	2nd stage	2nd stage	2nd stage
Spatial lag	1.283**	1.300**	1.283**	1.300**
	(2.11)	(2.21)	(2.21)	(2.23)
Per capita GDP (log)	1048	1.184*	1048	1184
	(1.40)	(1.67)	(1.53)	(1.63)
GDP growth rate	0.001	0.002	0.001	0.002
	(0.22)	(0.50)	(0.22)	(0.58)
GDP (log)	−1158	−1.272*	−1158	−1.272*
	(1.46)	(1.69)	(1.61)	(1.75)
IMF program participation dummy	−0.154	−0.134	−0.154	−0.134
	(1.22)	(1.08)	(1.22)	(1.17)
Oil and gas exporting countries dummy	0.230	0.251	0.230	0.251
	(0.92)	(0.99)	(0.84)	(0.96)
Democracy dummy	−0.184	−0.172	−0.184	−0.172
	(1.20)	(1.30)	(1.26)	(1.22)
Left-wing government dummy	0.020	0.018	0.020	0.018
	(0.40)	(0.33)	(0.34)	(0.30)
FDI inflows (log)	−0.021	−0.024*	−0.021	−0.024*
	(1.35)	(1.67)	(1.50)	(1.85)
Trade & investment reforms index		0.001		0.001
		(0.36)		(0.43)
Country specific dummies	Yes	Yes	Yes	Yes
Time specific dummies	Yes	Yes	Yes	Yes
Sample of countries	Global	Global	Developing	Developing
Number of countries				
Number of observations	2572	2208	2572	2208

Notes: (a) Robust standard errors in parentheses in column 1 and 3 and Z-statistics in parentheses in column 2 and 4 ***p < 0.01, **p < 0.05, *p < 0.1.

Table 1A

Granger causality test.

Null hypothesis	Number of lags	F statistic	Probability
FDI policy liberalization does not Granger cause FDI inflows	2	11.85	0.026**
FDI inflows does not Granger cause FDI policy liberalization	2	1.12	0.137
FDI policy liberalization does not Granger cause FDI inflows	4	12.94	0.013***
FDI inflows does not Granger cause FDI policy liberalization	4	1.01	0.177
FDI policy liberalization does not Granger cause FDI inflows	6	13.65	0.011***
FDI inflows does not Granger cause FDI policy liberalization	6	1.15	0.145

Note: ***, ** statistically significant at the 1% and 5% levels respectively.

In Table 3, we split the sample by excluding the developed countries.[10] Note that when doing this, we recalculate the spatial lag using only those countries in the subsample, i.e., assigning those outside of the subsample a zero weight. This assumes that the subsample of developing countries does not respond to changes in the policies favoring FDI of developed countries. As seen in column 1, despite excluding the developed countries from the sample, the spatial lag term retains its positive sign and statistical significance, at the 1% level. These results remain consistent with the inclusion of the lagged dependent variable in column 4 of Table 3. The substantive effects suggest that a standard deviation increase in the policies favoring FDI of all other developing countries would increase the policy liberalization favoring FDI in a developing country i by roughly 1.84. Our results provide further evidence suggestive of an intergroup competition among developing countries.

In Table 4, we report the results based on negative binomial IV estimations. Note that columns 1 and 2 represent the global sample, while columns 3 and 4 represent the developing countries sample. Note that the first stage regressions are estimated using the pooled OLS method with robust standard errors.[11] As argued earlier the standard errors are corrected by bootstrapping. As seen from Table 4, the positive significant effect of the spatial lag term remains robust in the IV models across the sample of global and developing samples. The substantive effects for both the global and developing country samples suggest that a one standard deviation increase in the spatial lag of the IV models is associated with an increase in the policy changes favoring FDI in country i by roughly 1.3.[12] Note that including a lagged dependent variable in both first and second step models do not change our main results.

4.2. Checks on robustness

We examine the robustness of our main findings in a number of ways (the results of the robustness checks are not reported due to space considerations, but are available upon request).

We use an alternative weighting approach where we weigh the policy changes in favor of FDI with the distance weighted population between each country, instead of pure inverse distance, under the presumption that a country closer to those countries (weighted by population) with higher levels of liberalization in policies favoring FDI are well placed to compete. We use the distance weighted population from country i as the weighting scheme, so that more distant countries are

given smaller weights. Hence, we use inverse distance weighted population with a weighting as follows: $\omega_{i,j,t} = \dfrac{\frac{1}{dist_{i,j,t}}}{\sum_{k \neq i} \frac{1}{dist_{i,k,t}}}$. The baseline results basically remain unchanged, although the magnitude of the results does vary marginally. When weighted by distance weighted population we still find that changes in policies favoring FDI in one country are positively correlated with the policy changes favoring FDI elsewhere. Here, the results of inter-country competition to attract FDI remain robust. Second, we use a weighting scheme which follows: $\varpi_{ijt} = \dfrac{GDP_{jt}}{\sum_{k \neq i} GDP_{kt}}$, i.e., the share that country i gives to country j is equivalent to j's share of the total GDP across all countries in our sample, excluding country i.[13] Note, however, that the sum of the weights across the other countries for country i will equal 1. This weighting procedure assumes that big countries (such as the USA, Japan, China, and so on) receive larger weights. We make use of GDP as the weight because when the goal of liberalizing the foreign investment policy regime is to attract FDI, this will then depend on the elasticity of investment to a given country's changes in its foreign investment policy regime. Thus, if country j is more attractive to FDI relative to country k, then changes in the policy regime in j will have a larger impact on the policy changes to attract FDI in country i than a comparable change in k. This, in turn, would make country i more responsive to j's changes in its policy regime than to those of k. The literature on FDI shows that FDI is attracted to larger countries (see Blonigen, 2005), which would imply a greater sensitivity on the part of country i to the changes in the FDI policies of a large country. We also trialed with different time lags of the spatial variable, however, the basic conclusions do not change. Third, as an additional test for robustness we exclude the observations with extreme values. The main results still remain qualitatively unchanged, suggesting that the results are not driven by extreme values. Fourth, in a similar fashion, we also exclude a few countries which might be suspected of driving our results, such as Argentina, Brazil, China, India, Indonesia, Malaysia, Russia, South Korea, South Africa and Turkey, i.e., the emerging countries group. Estimating our baseline models without these countries generate very similar results with respect to the spatial lag, which remains positive and significant, at the 5% level. In summary, the results seem to be very robust to sample size, specification, and testing procedure.

5. Conclusion

In this paper, we present empirical results exploring the possibility of competition between countries to attract FDI through changes in policies favoring FDI. Using spatial econometric estimations for a panel dataset of 148 countries over the 1992–2009 period, we find that favorable policy changes to attract FDI in one country are positively correlated with policies favoring FDI in another. This does not imply that such competition is universal. We also find evidence that low income countries compete more intensively among themselves for investments through the liberalization of policies favoring FDI. We interpret these results as direct evidence of inter-country strategic interactions in policy changes meant to attract FDI. Given that changes in policies favorable to FDI in one country are positively correlated with policy changes in another, local governments should ensure that this competition is welfare enhancing, leading to a more equitable spatial distribution of investment in host countries. Secondly, it is important to recognize the fact that the ability of a country to attract FDI via liberalization of policy is contingent on other factors that attract investment, such as domestic market size, property rights, and institutional quality, among others. Thus, if a country attracts more FDI as a result of dramatic liberalization of its policies, our estimates indicate that this would force others to respond by competing more intensively by

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[10] These include: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Italy, Ireland, Netherlands, New Zealand, Norway, Portugal, Spain, Switzerland, Sweden, United States of America, and United Kingdom.

[11] Note that the results capturing the first step analysis are not shown here due to brevity but are provided upon request.

[12] We examine the validity of the instruments using Kleibergen–Paap rk LM statistic and Anderson canon LR statistics that report the test statistic used to test the null hypothesis, i.e., the parameter estimate for the instrument in the first stage regression is equal to zero. Both these tests prove the validity of the instruments used.

[13] "Row standardization" is a common procedure where the sum of the weights adds up to one.

liberalizing their policy regime to avoid losing potential investment. The potential adverse effects of FDI competition and harmful bidding wars between nations could lead to a race to the bottom. An uncontrolled increase in investment incentives and rising costs, place a strain on government budgets as the incentives offered could be far in excess of what a government can afford. This in turn can lead to market distortions in the distribution of investment giving rise to concerns about global standards of protection, environmental and labor standards (Oman, 2000). Moreover, the absence of transparency and government accountability in global competition can foster corruption and rent-seeking behavior by governments which are counter-productive to economic growth. As countries compete to attract FDI as suggested by our results, governments may relax their enforcement of standards thereby placing pressure on other governments to follow suit. One of the main concerns is that 'bidding wars' could erode the tax base of smaller less competitive countries channeling public expenditure away from priority sectors. Incentive competition can also lead to low taxes on mobile activities such as finance and high taxes on immobile activities such as labor income and consumption (Kuroda, 2002). Therefore it would be beneficial for countries to co-operate on incentives so that they are strongly aligned with the region's overall cooperation objectives.

Acknowledgments

Appendix 1. Countries under study

Albania	Denmark	Kyrgyzstan	Qatar
Algeria	Djibouti	Lao People's Dem. Rep.	Romania
Angola	Dominican Republic	Latvia	Russian Federation
Argentina	Estonia	Lebanon	Rwanda
Armenia	Ethiopia	Liberia	Saudi Arabia
Australia	Fiji	Libyan Arab Jamahiriya	Senegal
Austria	Finland	Lithuania	Sierra Leone
Azerbaijan	France	Macedonia	Singapore
Bahrain	Gabon	Madagascar	Slovakia
Bangladesh	Gambia	Malawi	Slovenia
Barbados	Georgia	Malaysia	South Africa
Belarus	Germany	Mali	Spain
Belgium	Ghana	Mauritania	Sri Lanka
Benin	Greece	Mauritius	Sudan
Bolivia	Guatemala	Mexico	Sweden
Botswana	Guinea	Moldova	Switzerland
Brazil	Guyana	Mongolia	Syria
Brunei Darussalam	Honduras	Morocco	Taiwan
Bulgaria	Ecuador	Mozambique	Tajikistan
Burkina Faso	Egypt	Myanmar	Tanzania
Burundi	El Salvador	Namibia	Thailand
Cambodia	Equatorial Guinea	Nepal	Tunisia
Cameroon	Eritrea	Netherlands	Turkey
Canada	Hungary	New Zealand	Turkmenistan
Central African Republic	India	Nicaragua	Uganda
Chile	Indonesia	Niger	Ukraine
China	Iran	Nigeria	United Arab Emirates
Colombia	Ireland	Norway	United Kingdom
Comoros	Israel	Oman	United States
Congo Republic	Italy	Pakistan	Uruguay
Congo, Democratic Republic	Jamaica	Panama	Uzbekistan
Costa Rica	Japan	Papua New Guinea	Venezuela
Croatia	Jordan	Paraguay	Vietnam
Cuba	Kazakhstan	Peru	Yemen
Cyprus	Kenya	Philippines	Zambia
Czech Republic	Korea, Republic of	Poland	Zimbabwe
Côte d' Ivoire	Kuwait	Portugal	

Appendix 2. Categories under FDI policy Liberalization

FDI liberalization categories	Definition
Approval procedures	Relaxing, lifting, simplifying, and streamlining the procedure for approval of FDI into the host country.
Sectoral restrictions	Liberalizing the restrictions placed on foreign investors with respect to entry in different sectors namely, manufacturing, agro-based industries, natural resource sectors, and services (including market access restrictions).
Operational conditions	Deals with post-entry phase of investment. Includes: relaxing, lifting, removal of performance requirements by foreign investors; fair and equitable treatment of foreign investors, relaxing restrictions on the employment of foreign personnel; easing restrictions on imports of capital goods, spare parts and manufacturing inputs.
Incentives	Incentives provided to foreign investors include, fiscal incentives such as: reduction of taxes on income or profit and exemptions from payments of import duties on capital goods; financial incentives include: direct grants, subsidized credits and credit guarantees and government equity participation. Regulatory incentives comprise: relaxation of environmental, health, safety or social standards, and other non-financial incentives consists of subsidized services, the granting of market privileges through import protection or preferential government procurement contracts.
Investment guarantees	Guarantees provided by host country governments to foreign investors with respect to protection of intellectual property rights, laws, dispute settlement, ownership and other interests. It also includes providing clauses of guarantees to repatriate capital, dividends, profits and royalties
Foreign exchange	Relaxing various controls and laws over foreign exchange.
Corporate regulations	Liberalizing investment norms related to financial markets, stock exchange.

Source: http://www.sice.oas.org/Glossary/iteiit20042_e.pdf.

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Appendix 3. Descriptive statistics

Variables	Mean	Standard deviation	Minimum	Maximum	Observations
FDI policy liberalization	0.877	1.738	0.000	41.000	2646
Spatial lag	0.086	0.165	0.000	3.166	2646
Spatial lag of developing countries	0.072	0.161	0.000	3.166	2646
Per capita GDP	8613.06	12,764.07	74.29	67,227.55	2645
Per capita GDP (log)	7.876	1.658	4.308	11.116	2645
GDP growth rate	3.800	6.601	−48.812	106.280	2646
GDP	271,535.30	1,047,362.00	144.48	13,300,000.00	2645
GDP (log)	10.231	2.123	4.973	16.405	2645
IMF program participation dummy	0.118	0.322	0.000	1.000	2646
OIL exporting countries dummy	0.220	0.415	0.000	1.000	2646
Democracy dummy	0.457	0.498	0.000	1.000	2608
Left wing governments dummy	0.294	0.456	0.000	1.000	2645
FDI inflows	5456.92	19,660.18	0.00	314,007.00	2609
FDI inflows (log)	5.637	3.507	−11.513	12.657	2609
Trade & investments reforms index	56.516	21.854	7.670	98.510	2279

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