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Trade Policy Space and Foreign Direct Investment Inflows

Sèna Kimm GNANGNON¹

Abstract

This article introduces a quantitative measure of trade policy space at the national level, and investigates empirically whether it influences foreign direct investment (FDI) flows to countries. The empirical analysis covers an unbalanced panel dataset of 158 countries (both developed and developing countries), over the period 1995-2015, and uses the two-step system Generalized Methods of Moments (GMM) approach. Results suggest that the impact of trade policy space on FDI inflows is positive and increases as countries enjoy greater trade policy space. Furthermore, advanced economies tend to experience a higher positive impact of trade policy space on FDI inflows than less advanced economies. Overall, trade policy space matters significantly for countries' FDI inflows.

Keywords: Trade policy space; FDI inflows.

JEL Classification: F13; F14; F21; F36.

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1. Introduction

The issue of the policy space that would help governments pursue their development objectives, has gained a momentum after the creation of the World Trade Organization (WTO) in 1995 and the implementation of its founding Agreements. The international trade and development literature has defined in various ways the concept of policy space (e.g., Chang, 2002; Wade, 2003; DiCaprio and Gallagher, 2006; UNCTAD, 2006; Mayer, 2009; UNCTAD, 2014; Van der Ven, 2017). The current paper focuses on the policy space relating to trade, i.e., trade policy space. The latter is defined here in relation to the structural factors that could contribute to shaping it. In particular, to define trade policy space, we start with the fact that the design of trade policy to address short term and long-term challenges, does not take place in a vacuum, but rather in a context characterized by a number of structural factors, including both structural domestic and international factors. These structural factors are implicitly (or explicitly) taken into account by policymakers when they are defining, in a given year, their trade policy stance. Hence, trade policy space is the room of manoeuvre available to a government once its current trade policy is depurated from the impact of these structural domestic and international factors. In other words, trade policy space reflects the space for trade policy design, which is available to a country, once the structural (measurable) domestic and international policies and factors that can constrain trade policy design are taken into account. This definition of trade policy space reflects much more a 'De jure trade policy' rather than a 'De facto trade policy space'. This trade policy space could be used by governments to address short term and long-term challenges. Specifically, it could be used in various ways to promote foreign direct investment (FDI) inflows as long as trade measures adopted by governments are coherent and consistent with countries' international, regional and bilateral commitments, including vis-à-vis the WTO.

The current article relies on a quantitative measure of countries' trade policy space used in Gnanangnon (2019a) to examine empirically the impact of trade policy space on countries' FDI inflows. To the best of our knowledge, this is the first study of this nature. Indeed, the link between trade policy liberalization and FDI inflows has been largely discussed in the theoretical and empirical literature, without reaching any concrete. From a theoretical point of view, the impact of trade policy liberalization on FDI inflows depends on the nature of FDI, i.e., whether this is a horizontal FDI, vertical FDI, export platform FDI, and complex-vertical FDI. High trade barriers in any destination country allow MNEs engaged in horizontal-type FDI inflows to serve the local market and to benefit from the protection of their output from imports of foreign competitors (tariff-jumping hypothesis) (e.g, Markusen, 1984; Markusen and Venables, 1995). Vertical FDI

(involved due to the fragmentation of the production process geographically) are highly complementary with trade, the lower the parent country's tariffs (e.g., Helpman, 1984; Helpman and Krugman, 1985). Likewise, high trade barriers, in particular high tariffs in the host-country discourage export platform FDI, undertaken by MNEs in a host country with a view to serving the local market and the surrounding countries (Fugazza and Trentini, 2014). For complex-vertical FDI, which are the most advanced investment strategies, and are particularly motivated by the minimization of production costs, third countries' access to the host country and the host country's openness to the rest of the world are important. Additionally, authors such as Busse and Hefeker (2007) have noted that trade restrictions, particularly in developing countries, could be associated with other forms of policy restrictions such as exchange-rate controls, and consequently result in lower FDI inflows. Many empirical analyses on the macroeconomic determinants of FDI inflows have reported a positive and significant effect of trade openness in the host-countries on their FDI inflows. These include Grossman and Helpman (1991); Chakrabarti (2001); Liu et al. (2001); Noorbakhsh et al. (2001); Asiedu (2002); Mina (2007); Trevino et al. (2008); Asiedu and Lien (2011); Boateng et al. (2015); Gnangnon and Iyer (2017). Against this background, we expect that the availability of greater trade policy space would allow policymakers to pursue their development objectives, including through the design of appropriate trade policy to attract FDI inflows. For example, depending on the trade policy space that countries enjoy, policymakers could combine different measures, including subsidies for export promotion and trade-related investment measures (such as local content requirements, export performance requirements measures) to ultimately attract FDI inflows.

The empirical analysis shows that greater trade policy space is conducive to higher FDI inflows, and the higher the level of trade policy space, the higher is the size of FDI inflows. Furthermore, compared to less advanced countries, advanced economies experience higher FDI inflows thanks to trade policy space.

The rest of the article is structured as follows. Section 2 presents a brief literature on the debate concerning trade policy space. Section 3 describes how trade policy space is measured. Section 4 presents the model specification that would allow addressing the question of this paper. Section 5 discusses the econometric methodology. Section 6 analyses empirical results, and Section 7 deepens the analysis by investigating whether there is a non-linear impact of trade policy space on FDI inflows. Section 8 undertakes a robustness check analysis. Section 9 concludes.

2. A brief literature review on the debate concerning trade policy space

As noted above, the international trade and development literature has provided several definitions of the concept of policy space. According to UNCTAD (2014), policy space is the freedom and ability of a government to identify and pursue the most appropriate mix of economic and social policies to achieve equitable and sustainable development that is best suited to its particular national context. Along the same lines, Mayer (2009) has defined policy space as the combination of *de jure* policy sovereignty and *de facto* national policy autonomy. *De jure* policy sovereignty refers to the formal authority of national policymakers over policy goals and instruments, while *de facto* national policy control involves the ability of national policymakers to set priorities, influence specific targets, and weigh possible tradeoffs. A more restrictive definition of the concept of policy space (confined only to trade and investment matters) has appeared in UNCTAD documents in about 2002, and was officially used for the first time in the São Paulo Consensus of 2004 (see UNCTAD, 2004). Policy space was then defined as ‘the scope for domestic policies, especially in the areas of trade, investment and industrial development’, which might be ‘framed by international disciplines, commitments and global market considerations’.

More recently, Van der Ven (2017:39) has focused on the concept of 'WTO trade policy' and defined policy space as the 'unrestricted space non-LDCs (non-Least developed countries) have under the WTO to implement strategic interventions concerning trade, investment and industrial policy. She has argued that this definition of trade policy space is more closed to 'a *de jure* approach' of defining policy space, which identifies the theoretical policy space, in contrast with the '*de facto* space approach', which focuses on the extent to which WTO Members can engage in certain conduct – irrespective of its WTO consistency – without experiencing repercussions under the Dispute Settlement Understanding (DSU) of the WTO.

Policy space related to trade could involve the flexibilities embodied in multilateral rules contained in WTO Agreements and Decisions in favour of developing countries - the so-called 'Special and Differential Treatment (SDT) to developing countries'. These entail for example², tariffs water (i.e., the difference between the applied tariffs and the bound tariff that a country commits at the WTO not to exceed), flexibilities on subsidies, performance requirements measures on trade and investment, flexibilities concerning quantitative restrictions contained in the General Agreement on Trade in Services (GATS), as well as flexibilities embodied in the General

² See for example, UNECA (2016) for a discussion on the flexibilities contained in different multilateral (WTO) Agreements for developing countries, and in particular African countries to achieve development objectives such as the industrialization.

Agreement on Tariffs and Trade (GATT), the Agreement on Trade and Investment Measures (TRIMS), and in the Agreement on Subsidies and Countervailing Measures (SCM).

Two main views have emerged from the debate on whether multilateral trade agreements constrain policy space, in particular in developing countries.

The first view, supported by authors such as Wade (2003), Chang (2002); DiCaprio and Gallagher (2006), UNCTAD (2006), Mayer (2009) and Rowden (2015), is that the WTO reflects the economic interests of rich countries and undermines the ability of poor countries to create their own industries, develop technology, and strengthen their domestic markets (see Santos, 2012: p560-561). The other view postulates that the main obstacle for developing countries is one of political vision, still very much under the influence of liberal trade tenets, not of law (see for example, Amsden and Hikino, 2000, 2005; Evan, 2005). According to the tenants of this view, many of the mechanisms of protection that existed under the GATT could be used in a different legal form under WTO rules (see Santos, 2012). This view has been supported by many scholars and researchers such as Aggarwal and Evenett (2014) and Chang (2015) who have argued that there is tendency to exaggerate the constraints imposed by WTO rules to countries, including developing countries' policy space. Along the same lines, UNCTAD (2014: Chapter V) has underlined that even though the Uruguay Round Agreements (URAs) (that have established the WTO) have reduced the policy space available to WTO Members, some flexibilities have remained intact for these Members. Furthermore, Regional Trade Agreements³ (RTAs) have reduced considerably the policy space that was preserved under the multilateral trade regime. UNECA (2015: Chapter 5, p157) has also underscored that the main concern for Africa in terms of policy space relates to regional trade agreements, which may further limit policy options for industrialization. In light of the favourable treatment offered to LDCs under WTO rules, the UNECA report has also noted that the loss of policy space for African economies has so far been relatively insignificant. Van der Ven (2017: p75) has argued that the complexity of WTO rules and their economic effect may lead a country, in good faith, to adopt WTO-inconsistent policies. Based on empirical analysis (case studies) of industrial policy priorities and key trade and investment laws and regulation in three non-LDCs African countries - Ghana, Kenya and Namibia- she has deduced that the shrinking of the WTO policy space has not been a significant policy constraint to Africa's industrialization. She has then concluded that a key impediment to the implementation

³ According to UNCTAD (2014: Chapter V), North-South Agreements contain a larger number of both WTO-plus and WTO-extra provisions than either North-North or South-South Agreements. These provisions cover competition policy, investment and capital movement, government procurement, labour mobility and environmental standards. UNECA (2016) has provided concrete examples on how RTAs such as Economic Partnership Agreements could restrict more policy space than WTO rules.

of industrial policy objectives in Africa was the lack of policy alignment and understanding of the WTO policy space. Along the same lines, the Overseas Development Institute (ODI, 2007) has indicated that even though trade policy space is constrained, *inter alia*, by international trade obligations, there are some gains that flow precisely from the limitation of trade policy space. This is because international regulations provide an international commitment ('lock in'), which is more stable than domestic regulation.

3. Measure of trade policy space

As noted above, this analysis considers the 'De Jure trade policy space', which is defined as the room of manoeuvre available to a government once its current trade policy is depurated from the impact of domestic and international structural factors. Drawing from the literature on the macroeconomic determinants of trade policy (e.g., Svaleryd and Vlachos, 2002; Ancharaz, 2003; Milner and Kutoba, 2005; Rose, 2013; and Gnangnon, 2017a) as well as from the previous (qualitative) analyses on trade policy space, we consider as structural domestic factors the level of financial openness (capital account openness); the depth of financial development; the (economic) development level; the size of population; and the institutional and governance quality. International structural factors include the level of multilateral trade liberalization and terms of trade. Hence, the indicator of trade policy space would reflect the influence of other factors, which are difficult to measure and which include, *inter alia*, the extent of constraints imposed by countries' non-trade international obligations, constraints imposed by bilateral and regional agreements, and constraints related to development aid imposed by aid providers to developing countries: the higher these constraints, the lower is the trade policy space.

It is noteworthy that this article does not purport to provide a perfect measure of trade policy space, given the difficulty to measure it. Its objective is rather to provide a first attempt to measure trade policy space, at the macroeconomic level. We hope that this would open avenue for further research on the macroeconomic measure of trade policy space as well as its macroeconomic impact.

Drawing from the existing empirical literature on the determinants of trade policy that we highlight above, we postulate the following model:

$$DTP_{it} = \alpha_0 + \alpha_1 DTP_{it-1} + \alpha_2 MTP_{it} + \alpha_3 FINOPEN_{it} + \alpha_4 FINDEV_{it} + \alpha_5 Log(GDPC)_{it} + \alpha_6 Log(POP)_{it} + \alpha_7 TERMS_{it} + \alpha_8 INST_{it} + \mu_i + Trend + \omega_{it} \quad (1)$$

where i represents a country's index; t denotes the annual time-period. The panel dataset used in the analysis is unbalanced and comprises 158 countries (including both developed and developing countries) over the period of 1995 to 2015 (annual data has been used). α_0 to α_8 are parameters to be estimated. "Trend" is a time trend variable. μ_i are countries' fixed effects; ω_{it} is a well-behaving error term.

"DTP" is the index of domestic trade policy, while "MTP" is the index of multilateral trade policy. Following the recent literature (e.g., Ratnaik, 2012 and Gnanon, 2017a to 2017e; 2019b), we use the 'freedom to trade internationally' indicator proposed by the Heritage Foundation (see Miller et al., 2017) as our measure of domestic trade policy liberalization. Therefore, following the same authors, we compute the index of multilateral trade policy liberalization ("MTP") as follows: for a given country, it is the average trade freedom score of the rest of the world, i.e., for all the other countries (except for the concerned country) for which data exist. Hence, this indicator of 'multilateral trade liberalization' is a proxy of the level of international trade barriers faced by a given country in acceding other countries' markets, i.e, the international trade market. We believe that the impact of this measure of multilateral trade liberalization on domestic trade policy would reflect the extent to which a country is expected to implement trade policy reforms, including in light of the multilateral trade agreements.

In this model specification, we have controlled for international structural factors, including the level of multilateral trade policy liberalization ("MTP") and terms of trade ("TERMS"). Domestic structural factors used as controls include the level of financial openness (capital account openness) ("FINOPEN"), the depth of financial development ("FINDEV"), the (economic) development level ("GDPC"), the size of population "POP", and the institutional and governance quality ("INST"). The latter has been measured using the factor analysis, notably the Principal Component Analysis (PCA) (e.g., Globerman and Shapiro, 2002 and Buchanan et al., 2012) (see Appendix 1 for more details).

Gnanon (2017a) has provided evidence that multilateral trade liberalization is conducive to domestic trade policy liberalization. Therefore, we expect a positive impact of the variable "MTP" on the dependent variable. Concerning other variables, we expect an increase in countries' per capita income to be associated with greater domestic trade policy liberalization (see Rodrik, 1995 and Svaleryd and Vlachos, 2002). Financial development could be associated with trade policy liberalization (Svaleryd and Vlachos, 2002). Terms of trade improvement could influence positively or negatively trade policy liberalization (see Gnanon, 2017a). Concerning the impact of financial openness on domestic trade policy, some studies have underlined the positive link between

financial openness and trade liberalization/or trade openness (e.g., Obstfeld and Rogoff, 2000; Lane and Milesi-Ferretti, 2003; Vo and Daly, 2007). Therefore, we expect higher financial openness to be positively associated with domestic trade policy liberalization.

From equation (1), the indicator of trade policy space (also referred to as 'De Jure Trade Policy Space') is calculated as the gap (or space) between the current level of trade policy and the predicted level of trade policy (we refer to this predicted level as 'trade policy potential'), given the structural factors highlighted above. Hence, the De Jure Trade Policy Space denoted "TPSPACE" is given by $TPSPACE = \frac{DTP}{\widehat{DTP}}$, where DTP represents the current level of trade policy and \widehat{DTP} is the predicted values of DTP based on the estimation of equation (1). As an increase in the values of trade policy reflects greater trade policy liberalization, an increase in the level of current of trade policy relative to the predicted level of trade policy would signify that the country is enjoying greater trade policy space (the numerator of the trade policy space ratio increases more rapidly compared to the denominator of the ratio). Thus, a rise in the values of this indicator reflects greater trade policy space, and lower values of this index reflect the fact that the trade policy space is shrinking. Appendix 1 provides the description and source of variables used in model (1), while Appendix 2 presents the list of countries contained in the sample. Appendix 3 shows the descriptive statistics on the variables used in model (1).

4. Model specification

To investigate the impact of trade policy space on FDI inflows, we draw on the existing literature on the macroeconomic determinants of FDI inflows and estimate a model where the control variables (relating to the host country of FDI inflows) include the domestic market size, the degree of multilateral trade liberalization, the human capital level, the financial development depth, and the degree of financial openness (capital account openness).

The host-country's market size is measured by its real per capita GDP, the growth rate and the size of the population. We postulate that a host-country's market size would be positively related to FDI inflows into the country (e.g., Billington, 1999; Chakrabarti, 2001; Asiedu, 2002; Prasad et al., 2003; Busse and Hefeker, 2007; Vo and Daly, 2007 and Boateng et al. 2015). However, as we are using aggregate FDI, including both market-seeking FDI as well as other types of FDI inflows into the host-country, we could not rule out the possibility to obtain a statistically nil (or even a negative) effect of the market size of the host-countries on FDI inflows into these countries.

Financial openness (also referred to as capital account openness): the impact of financial openness in the host-countries on FDI inflows remains indeterminate. From a theoretical perspective, a number of authors, including Kaminsky and Schmukler (2003), Kose et al. (2003), Campion and Neumann (2004) have highlighted that countries can attract more international capital flows by de-regulating activities in their domestic financial markets, liberalizing their capital account transactions and their equity markets. The theoretical impact of capital account openness on capital inflows, including FDI inflows have been summarized by Brafu-Insaidoo and Biekpe (2014) as follows. First, by removing or relaxing restrictions on foreign ownership limitations, countries could attract FDI inflows. Second, the de-regulation of offshore borrowing can lead to higher foreign private loan inflows, including through the removal of quantitative restrictions on overseas borrowing and the provision of tax incentives. Third, the abolition of multiple exchange rate practices can enhance the foreign capital inflows by eliminating economic distortions and reducing the uncertainties and the risks about exchange rates, particularly during repatriation of capital or income from capital. From an empirical perspective, Gastanaga and al. (1998) have reported a positive impact of capital account liberalization on FDI inflows. In the same vein, Noy and Vu (2007) have provided, inter alia, evidence for both developed and developing countries that capital account openness is positively associated with FDI inflows. They have additionally shown that for capital account openness to be associated with a rise in FDI inflows, it should be accompanied by lower corruption, and political risk. However, Asiedu and Lien, (2004) have examined the impact of three types of capital control policies on FDI flows to a large set of developing countries, and concluded that this impact varies by region and has changed over time. The capital control measures that they have used include the existence of multiple exchange rates; restrictions on capital account, and restrictions on the repatriation of export proceeds. Aizenman and Noy (2004) have obtained no significant effect of capital controls on aggregate capital flow volumes. Brafu-Insaidoo and Biekpe (2014) have found, among others, for sub-Saharan African countries that while the aggregate capital account liberalization is not significant in these countries, the liberalization of inward FDI directly increases FDI flows to these countries.

The human capital development, proxied by the education level in host countries, has also been found to be an important driver of FDI inflows into these countries. Higher literacy and education levels in a host country act as a proxy for labor quality and hence, signal that labour is more skilled. For example, Noorbakhsh et al. (2001), Asiedu (2006), Trevino et al. (2008); and Okafor et al. (2015) have provided empirical evidence that human capital accumulation, proxied by the education level in host-countries is an important driver of FDI inflows in these countries.

However, authors such as Cleeve et al. (2015) have obtained evidence that while human capital, proxied by the level of educational attainment had exerted a significant positive impact on FDI inflows in Sub-Saharan African countries (SSA), there was no evidence of its increasing importance for FDI flows to SSA. Against this backdrop, we hypothesize that higher educational attainment in host countries would be conducive to greater FDI inflows into these countries.

Multilateral trade liberalization: the impact of multilateral trade liberalization on FDI inflows has been discussed by Collie (2011) and Gnanon (2017a). In particular, Gnanon (2017a) has reported empirically a positive impact⁴ of multilateral trade liberalization on FDI inflows. Therefore, we expect a positive impact of multilateral trade liberalization on FDI inflows.

Financial development

The literature on the macroeconomic determinants of FDI inflows has emphasized that host-countries' financial development could play an important role in attracting FDI in these countries. However, the impact of host-countries' domestic financial market on FDI inflows remains indeterminate. Desbordes and Weic (2017) have summarized this impact by distinguishing several channels, including through a direct and indirect influence. Greater financial development in the host-country could directly influence FDI inflows into these countries by making more outside capital available to foreign investors. However, greater financial development in the host-country could also create an incentive for multinational enterprises to substitute foreign outsourcing for integration (FDI-specific disintegration effect). The indirect impact of greater financial development in a host-country on its FDI inflows could take place through a general competition effect and a general agglomeration effect. Indeed, better access to external finance facilitates local development, which could in turn raise the likelihood of more intense local competition (in which case, there would be a general competition effect) as well as the likelihood of the presence of positive agglomeration externalities (in which case, there would be a general agglomeration effect). Overall, from a theoretical perspective, higher financial development in host-countries can attract or deter FDI inflows, depending on the aggregate influence of these four channels. Nevertheless, the limited studies on the impact of FDI on non-sector specific FDI have reported an overall positive impact of financial development in the host-country on its FDI inflows (e.g., Klein et al. 2002; Desai et al. 2006; Alfaro et al. 2008 and Antras et al. 2009). More recently, Desbordes and Wei (2017) have provided a sector-specific FDI (real manufacturing FDI)

⁴ For a theoretical discussion on the channels through which multilateral trade liberalization would influence FDI inflows, see for example, Collie (2011) and Gnanon (2017a).

analysis and shown, inter alia, that host-countries' financial development is strongly conducive to real manufacturing FDI inflows in the financially vulnerable sectors of these countries.

Institutional and governance quality: the importance of institutional quality in promoting FDI inflows has been highlighted in the literature (e.g., Busse and Hefeker, 2007; Alfaro et al. 2008; Buchanan et al., 2012). We expect a positive impact of an improvement in the quality of institutions and governance on FDI inflows.

In light of the foregoing, we postulate the following model:

$$\begin{aligned} \text{Log}(FDI)_{it} = & \beta_0 + \beta_1 \text{Log}(FDI)_{it-1} + \beta_2 \text{Log}(TPSPACE)_{it} + \beta_3 \text{Log}(GDPC)_{it} \\ & + \beta_4 \text{GROWTH}_{it} + \beta_5 \text{FINOPEN}_{it} + \beta_6 \text{Log}(MTP)_{it} + \beta_7 \text{Log}(EDU)_{it} \\ & + \beta_8 \text{Log}(POP)_{it} + \beta_9 \text{INST}_{it} + \vartheta_i + \text{Trend} + \tau_{it} \end{aligned} \quad (2)$$

where i represents the country's index; t denotes the time-period. The model is estimated using an unbalanced panel dataset comprising 158 countries, including both developed and developing countries, over 7 sub-periods of non-overlapping 3-year average data covering the annual period 1995-2015. These sub-periods include 1995-1997; 1998-2000; 2001-2003; 2004-2006; 2007-2009; 2010-2012 and 2013-2015. Non-overlapping sub-periods have been used to smooth out business fluctuations in the variables contained in model (1). The definition and sources of all variables used in model (1) are described in Appendix 1.

β_0 to β_9 are parameters to be estimated. ϑ_i are countries' fixed effects. "Trend" represents a time trend variable. τ_{it} is a well-behaving error term.

The dependent variable "FDI" represents a given country's FDI⁵ Inflows, in % GDP of the host country. This variable contains negative and positive values and displays a high skewness. Therefore, we cannot transform it using natural logarithm. Therefore, we use the transformation method suggested by Yeyati et al. (2007), which is also used in studies such as Dabla-Norris et al.

⁵ According to the United Nations Conference on Trade and Development (UNCTAD), Foreign direct investment (FDI) is an investment made by a resident enterprise in one economy (direct investor or parent enterprise) with the objective of establishing a lasting interest in an enterprise that is resident in an another economy (direct investment enterprise or foreign affiliate). The lasting interest implies the existence of a long-term relationship between the direct investor and the direct investment enterprise and a significant degree of influence on the management of the enterprise. The ownership of 10% or more of the voting power of a direct investment enterprise by a direct investor is evidence of such a relationship. (see online on the UNCTAD Website: <http://unctadstat.unctad.org/wds/TableViewer/summary.aspx?ReportId=96740>).

(2015). The technique goes as follows: $Y = \text{sign}(x) * \log(1 + |X|)$ (3), where "X" denotes the variable to be transformed, and "Y" is the outcome of the transformation.

The control variables used in model (2) include:

- the financial openness (capital account openness)
- the level of development, proxied by countries' real per capita income (denoted "GDPC"); the growth rate of the real per capita income (denoted "GROWTH"): these two variables capture the market size of a country.

- the level of human capital development, proxied by the level of education (denoted "EDU");

- the depth (or level) of financial development (denoted "FINDEV");

- the degree of multilateral trade liberalization (denoted "MTP");

- the population size, denoted "POP" and the institutional and governance, denoted "INST".

All variables used in model (2) are described in Appendix 1. Appendix 2 presents the list of the 158 countries used in the analysis. Standard descriptive statistics on these variables are reported in Appendix 4.

5. Econometric strategy

A number of endogeneity concerns can plague models (1) and (2). Both models would suffer from the Nickell bias (Nickell, 1981) if they were estimated by estimators such as the Least Square dummy variables (LSDV) or within fixed effects estimators. This is because of the dynamic nature of these models, i.e., the presence of the one-year lag in model (1) (or one-period lag in model (2)) of the dependent variable as a regressor, which would generate the Nickell bias (Nickell, 1981) on a panel dataset with a limited time dimension ($T=7$), and a relatively large number of cross-sections ($N=158$). Second, many explanatory variables of these two models could be considered as endogenous due to the reverse causality problem. In particular, the variables "FINPOL" and "FINDEV" are considered as endogenous in model (1), while "TPSPACE", "FINPOL", "EDU", "GROWTH" and "GDPC" are considered as endogenous in model (2). The other variables have been considered as exogenous. One estimator that could help address all these endogeneity issues is the difference-GMM approach proposed by Arellano and Bond (1991). However, highly persistent time series could introduce weak instrument bias, and render less appropriate this estimator. Furthermore, Roodman (2009) has suggested avoiding the use of the difference GMM

estimator when the panel dataset is unbalanced (which is the case for the panel dataset used in the current analysis), as this estimator has a weakness of magnifying gaps. In this context, the most appropriate estimator for carrying out the estimations of models (1) and (2) is the two-system Generalized Methods of Moments (GMM) approach developed by Blundell and Bond (1998). This estimator combines the equation in differences with the equation in levels where lagged first differences are used as instruments for the levels equation, and lagged levels are used as instruments for the first-difference equation.

To assess the validity of the two-step system GMM, we use three standard diagnostic tests. These include the Arellano–Bond test of first-order serial correlation in the error term (AR(1)) and no second-order autocorrelation in the error term (AR(2)), as well as the Sargan test of over-identifying restrictions, which determines the validity of the instruments used in the estimations. We additionally report the number of instruments used in the regressions, as the GMM estimator may lose power if the number of instruments is higher than the number of countries (Roodman, 2009).

In a nutshell, the empirical analysis proceeds as follows.

- First, we estimate model (1), which allows computing the indicator of trade policy space. Results of this estimation are reported in Table 1.

- Second, we estimate model (2), which allows examining the impact of trade policy space on FDI inflows. The results of this estimation are presented in Table 2. Specifically, in column [1] of this Table, we report the results of the estimation of model (2) over the full sample. In column [2] of this Table, we report the outcome of the estimation of a variant of model (2), which allows examining whether the effect of trade policy space obtained in column [1] is similar for developed countries (referred here to as old industrialized countries) and developing countries (countries in the full sample not classified as old industrialized countries). The list of countries qualified as old industrialized countries is contained in Appendix 2. This involves creating a dummy variable (denoted "OLDINDUST") for developed countries, which takes the value 1 for countries considered as old industrialized countries, and 0, otherwise. This variable is then interacted with the "TPSPACE" variable, and both the dummy and the interaction variable are introduced in model (2). We denote "variant 1", this variant of model (2). The results of the estimation of variant 1 by means of the two-step system GMM approach are presented in column [2] of Table 2.

6. Analysis of empirical results

Across all columns of Tables 1 and 2, we note that the coefficient of the one-period lag of the dependent variable is positive and statistically significant at the 1% level. This signifies that FDI inflows (% GDP) exhibit a state dependence path. At the bottom of all columns of these three Tables, we report the outcome of the diagnostic tests that help assess the validity of the two-step system GMM estimator. It appears that the p-values associated with the AR(1) are 0 across all columns, while the p-values relating to AR (2) are higher than 0.10. Moreover, the p-values associated with the Sargan test are higher than 0.10. Taken together, the results of these diagnostic tests are satisfactory and suggest the appropriateness of the two-step system GMM to perform the empirical analysis.

Results in Table 1 indicate that financial openness, multilateral trade liberalization, financial development, countries' development level (the real per capita income) and the size of the population exert a positive and significant impact on domestic trade policy liberalization. However, terms of trade improvements influence negatively and significantly domestic trade policy liberalization, while the quality of institutional and governance do not exert any significant impact on domestic trade policy. These results allow computing the indicator of trade policy space. A graphical representation of the average of this indicator (using non-overlapping sub-periods of 3-year average) is provided in Figure 1, and covers the sub-samples of Low-income countries (LICs), Lower and middle-income countries (LMICs), Upper middle-income countries (UMICs) and High-income countries (HICs). These sub-samples are defined based on the World Bank's classification of countries. Figure 1 suggests that in 1995-1997, HICs exhibited the highest level of trade policy space, followed by UMICs, LMICs and LICs (i.e., LICs exhibited the lowest level of trade policy space). However, over the sub-periods, the level of trade policy space of HICs has declined at the benefit of the trade policy space of other sub-samples, so that in 2013-2015, all sub-samples have almost the same levels of trade policy space.

Before turning to the estimates reported in Tables 2 and 3, we present in Figure 2 the evolution of FDI inflows (% GDP) for each of the afore-mentioned sub-samples, over the sub-non-overlapping sub-periods of 3-year average. While this Figure indicates that for each of the sub-samples, FDI inflows have fluctuated over the entire period, these inflows have specifically been on a declining trend during 2010-2012 and 2013-2015. Additionally, the Figure reveals that while at the beginning of the period (i.e., over 1995-1997), LICs have experienced, compared to other sub-samples, the lowest level of FDI inflows (% GDP), during 2010-2012 and 2013-2015 sub-periods, their FDI inflows (% GDP) have exceeded those of LMICs and UMICs, but

remained lower than FDI inflows (% GDP) of HICs. Figure 3 displays the correlation pattern between the indicator of trade policy space and FDI inflows (% GDP), over the entire period, using non-overlapping sub-periods data. The graph shows that there exists a non-linear pattern in the form of an inverted U-curve between these two indicators. The observation of this non-linear correlation between trade policy space and FDI inflows prompts us to slightly modify model (2) by introducing the square term of the "TPSPACE" variable (see the analysis performed in section 7).

Let us now consider the outcome of the estimations reported in Table 2.

Results in column [1] suggest that trade policy space exerts a positive and significant impact on FDI inflows. A 1 percentage increase in the TPSPACE index is associated with a 0.74 percentage increase in FDI inflows. Put differently, a 1 standard deviation increase in TPSPACE (by 0.117 - see Appendix 4) induces a rise in FDI inflows (% GDP) by 0.087 [= 0.742*0.117] percentage. Results in column [2] (based on the estimation of variant 1 of model (2)) indicate that the coefficient associated with the interaction variable is not statistically significant at the 10% level. This therefore suggests that there is no differentiated effect of trade policy space on FDI inflows in old industrialized countries versus developing countries. Hence, a 1 percentage change in TPSPACE generates a rise in FDI inflows (% GDP) by 0.64 percentage in Old industrialized countries and developing countries alike.

Control variables reported in columns [1] and [2] display similar results (with exception of the coefficients associated with the variable "Log(POP)" in these two columns), including in terms of the coefficients of the variables, the sign of these coefficients and their statistical significance. Focusing on estimates presented in column [2], we note that higher economic growth rate, greater multilateral trade policy liberalization, higher education level and better institutional and governance quality are positively and significantly associated with FDI inflows. However, real per capita income exerts a negative and significant impact on FDI inflows, while the population size and the capital account openness do not exert a significant impact on FDI inflows. It is worth noting that in column [2] of Table 2, a higher population size is negatively and significantly associated with FDI inflows.

7. Analysis of the existence of a non-linear relationship between TPSPACE and FDI inflows

In light of the observation in Figure 3 that there exists a non-linear correlation pattern in the form of an inverted U-curve between TPSPACE and FDI, we deepen the previous analysis by

examining in this section the existence of a non-linear relationship in the form of causality between TPSPACE and FDI. To do so, we estimate another variant of model (2) (denoted "variant 2"), which consists of model (2) in which we include the square term of TPSPACE. The outcome of the estimation of variant 2 of model (2), using the two-step system GMM technique, is provided in column [1] of Table 3. We further check whether this non-linear relationship (if any at all) holds for developed countries (old industrialized countries) and for developing countries (non-old industrialized countries), by introducing in variant 2 of model (2) two interaction variables along with the dummy variable "OLDINDUST". These interaction variables include the interaction between the dummy OLDINDUST and the variable TPSPACE, and the interaction between OLDINDUST and the square term of TPSPACE. This new variant of model (2) is denoted variant 3. The results of the estimation of variant 3 of model (2) by means of the two-step system GMM are displayed in column [2] of Table 3.

Finally, we examine whether the non-linear effect (if any at all) of trade policy space on FDI inflows depends on countries' development levels. To do so, we estimate another variant of model (2) (denoted variant 4) which consists of model (2) in which we introduce the interaction variables capturing the interaction between TPSPACE and Log(GDPC) (which represents the development level) on the one hand, and on the other hand, the interaction between the square term of TPSPACE and Log(GDPC). The outcome of the estimation of variant 3 of model (2) by means of the two-step system GMM technique is presented in Table 4.

Let us now discuss the estimations' results provided in Tables 3 and 4. We first note that the results of the diagnostic tests that help assess the validity of the two-step system GMM approach (see the bottom of the columns of these two Tables) are fully satisfactory. This therefore suggests that the two-step system GMM approach is well appropriate to estimate variants 2 and 3 of model (2). Taking up the estimates in column [1] of Table 3, we observe that there exists a non-linear impact of trade policy space on FDI inflows, as the coefficients of TPSPACE and its square term are both positive and statistically significant at the 1% level. This shows that trade policy space consistently induces higher FDI inflows as countries experience a greater trade policy space. To get a better picture on the impact of trade policy space on FDI inflows, we present in Figure 4, at the 95 per cent confidence intervals, the evolution of the marginal impact of "TPSPACE" on FDI inflows (% GDP) for different countries' levels of trade policy space. The marginal impacts that are statistically significant at the 95 per cent confidence intervals are those encompassing only the upper and lower bounds of the confidence interval that are either above or below the zero line. It could be noted from this Figure that the marginal impact of "TPSPACE" on "FDI" increases as countries enjoy greater trade policy space. However, this marginal impact is not always statistically

significant. It is statistically significant only when the level of trade policy space is strictly higher than 0.584 [=exponential (-0.5375657)]. Thus, countries whose level of trade policy space is strictly lower than 0.58 experience a non-statistically significant impact of trade policy space on FDI inflows. For the other countries (i.e., those with a level of trade policy space higher than 0.5), there is a positive and significant impact of trade policy space on FDI inflows. Additionally, for this latter group of countries, the magnitude of this positive impact increases as countries enjoy a higher degree of trade policy space.

Estimates in column [2] of Table 3 suggest that the coefficient of the two interaction variables are statistically non-significant at the 10% level, thereby suggesting that the non-linear effect of trade policy space on FDI inflows applies equally to old industrialized countries and developing countries. For example, a one-standard deviation increase (by 0.117) in TPSPACE is associated with a rise in FDI inflows (% GDP) by 0.147 [= $1.166 \cdot 0.117 + 0.747 \cdot (0.117)^2$] percentage in developed countries and developing countries alike. Results concerning control variables are similar in columns [1] and [2] of Table 3 (with the exception that financial openness is positively and significantly associated with FDI inflows in column [1], but it is not significantly related to FDI inflows in column [2]). In addition, estimates related to control variables are broadly in line with those reported in Table 2.

Turning to results presented in Table 3, we observe a negative and statistically significant (at the 1% level) coefficients of the "TPSPACE" indicator and its square term, while the interaction variable between "TPSPACE" and "GDPC" on the one hand, and between the square term of "TPSPACE" and "GDPC" on the other hand, exhibit a positive and statistically significant coefficient at the 1% level. However, as they stand, the joint interpretation of these results is difficult to make, as long as we are interested in how the impact of trade policy space on FDI inflows evolves for different countries' development level. Nonetheless, a graphical representation would provide a clear picture on this impact. This is why we present in Figure 5, at the 95 per cent confidence intervals, the evolution of the marginal impact of "TPSPACE" on FDI inflows (% GDP) for different countries' development levels. The Figure suggests that this marginal impact is always positive and statistically significant, and increases as countries experience a higher development level. In other words, the higher countries' development level, the higher is the magnitude of the positive impact of trade policy space on FDI inflows. This means that trade policy space exerts a higher positive impact on FDI inflows in advanced economies than in less advanced economies.

8. Robustness check analysis

So far, we have obtained the existence of a non-linear effect of TPSPACE on FDI inflows (% GDP), whereby the effect of TPSPACE on FDI inflows (% GDP) consistently increases as countries enjoy greater trade policy space. In this section, we check the robustness of these results by estimating the variant 2 of model (2) where the variable FDI inflows (% GDP) is replaced with real values of FDI, expressed in constant 2010 US dollars. As real values of FDI inflows data are not provided by the UNCTAD database (from which data on FDI inflows, in % GDP has been collected – see Appendix 1), we follow Herzer (2011) and Nagel et al. (2015) and calculate the real values of FDI inflows by multiplying the FDI inflows (% GDP) (i.e., the "FDI" variable) by the real GDP variable collected from the World Bank's World Development Indicators (WDI). Thus, our variable measuring the real values of FDI inflows, and denoted "FDICST" is expressed in constant 2010 US dollars. As this variable also contains negative and 0 values, we transform it using the transformation method proposed by Yeyati et al. (2007) (see Section 4 above). The results of the estimation of variant 2 of model (2) where the variable "FDI" is replaced with "FDICST" are provided in column [2] of Table 4. It is worth noting that in column [1] of this Table, we report the estimates stemming from the estimation of variant 2 of model (2) (with "FDICST") from which we remove the square term of TPSPACE. This is merely to allow for the comparison of results of this variant of model (2) without/and with the square term of TPSPACE.

We have introduced the one-period and two-period lags of the "FDICST" variable in the model in order to meet the requirements of the two-step system GMM estimator (as with only the one-period lag of the "FDICST", the results of the diagnostic tests relating to this estimator are not satisfactory). In particular, results in columns [1] and [2] of the Table suggest that there is a state dependence path in real values of FDI inflows (the one-period lag and two-period lag of this variable are positively and significantly associated with the current values of FDI inflows). Additionally, across the two columns of this Table, the p-values related to the AR(1) are 0, the p-values relating to AR (2) are higher than 0.10, and the p-values associated with the Sargan test are higher than 0.10. These clearly indicate that the two-step system GMM approach is suitable to estimate the model described above. Column [1] of this Table indicates that trade policy space is positively and significantly associated with real values of FDI. At the same time, we note from column [2] of this Table that both the coefficient of TPSPACE and the interaction term are positive and statistically at the 1% level, thereby confirming the existence of a non-linear effect of trade policy space on FDI inflows, whereby this effect is positive and consistently increases as countries further enjoy greater degree of trade policy space. In terms of magnitude of the impact,

we obtain that an increase of TPSPACE by a standard deviation (i.e., by 0.117) leads to 1.38 [= $11.47 \times 0.117 + 2.893 \times (0.117)^2$] percentage increase in real values of FDI inflows.

Results concerning control variables reported in columns [1] and [2] of Table 4 align well with those reported in Table 2.

9. Conclusion

This article provides a quantitative measure of the trade policy space available to countries, and investigates empirically how it influences FDI inflows to these countries. The analysis is conducted on a set of 158 countries, including both developed and developing countries, over the period 1995-2015. The empirical exercise uses the two-step system GMM approach and obtains that greater trade policy space exerts a positive and significant impact on FDI inflows, and the higher the level of trade policy space, the higher is the magnitude of this positive impact on FDI inflows. Additionally, the impact of trade policy space on FDI inflows depends on countries' development level, proxied by their real per capita income. This impact is positive and higher, the higher are countries' development levels. These clearly suggest that advanced economies tend to experience a higher positive impact of trade policy space on FDI inflows than less advanced economies. Overall, the analysis shows that trade policy space is an important determinant of FDI inflows.

References

- Aggarwal, V.K. and Evenett, S.J. (2014). Do WTO rules preclude industrial policy? : Evidence from the global economic crisis. *Business and politics*, 16(4), 481-509.
- Aizenman, J., and Noy, I. (2004). Endogenous Financial and Trade Openness. *Review of Development Economics*. 13(2), 175–189.
- Alfaro, L., Kalemli-Ozcan, S., Volosovych, V. (2008). Why Doesn't Capital Flow from Rich to Poor Countries? An Empirical Investigation. *The Review of Economics and Statistics*, 90, 347–368.
- Amsden, A. H. (2005). Promoting Industry under WTO Law, In *Putting Development First: the importance of policy space in the WTO and international financial institutions* (Kevin P. Gallagher ed., 2005).
- Amsden, A.H. and Hikino, T. (2000). The Bark Is Worse Than the Bite: New WTO Law and Late Industrialization, *Annals AM. ACAD. POL. & SOC. SCI.*, July 2000, at 104, 110.
- Ancharaz, V. D. (2003). Determinants of Trade Policy Reform in Sub-Saharan Africa. *Journal of African Economies*, 12(3), 417-443.
- Antras, P., Desai, M. A., and Foley, C. F., (2009). Multinational firms, FDI flows, and imperfect capital markets. *The Quarterly Journal of Economics* 124 (3), 1171-1219.
- Arellano, M., and Bond, S. (1991) Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations, *Review of Economic Studies*, 58, 277–297.
- Asiedu, E. (2002). On the determinants of foreign direct investment to developing countries: Is Africa different? *World Development*, 30(1), 107–119.
- Asiedu, E., and Lien, D. (2004). Capital Controls and Foreign Direct Investment. *World Development*, 32(3), 479–490.
- Asiedu, E. (2006). Foreign Direct Investment in Africa: The Role of Natural Resources, Market Size, Government Policy, Institutions and Political Instability. *World Economy*, 29(1), 63–77.
- Asiedu, E., and Lien, D. (2011). Democracy, foreign direct investment and natural resources. *Journal of international economics*, 84(1), 99-111.
- Billington, N. (1999). The Location of Foreign Direct Investment: An Empirical Analysis. *Applied Economics*, 31(1), 65-76.
- Blundell, R., and Bond, S. (1998). Initial Conditions and Moment Restrictions in Dynamic Panel Data Models. *Journal of Econometrics*, 87, 115–143.
- Boateng, A., Hua, X., Nisar, S., Wu, J. (2015). Examining the determinants of inward FDI: evidence from Norway. *Economic Modelling* 47, 118-127.

- Borensztein, E., Degregorio, J., and Lee, J.W. (1998). How does foreign direct investment affect economic growth? *Journal of International Economics*, 45, 115-135.
- Brafu-Insaidoo, W., and Biekpe, N. (2014). Determinants of foreign capital flows: The experience of selected Sub-Saharan African countries. *Journal of Applied Economics*, 17, 63-88.
- Buchanan, B.G., Le, Q.V., and Rishi, M. (2012). Foreign direct investment and institutional quality: some empirical evidence. *International Review of Financial Analysis*, 21, 81-89.
- Busse, M., and Hefeker, C. (2006). Political risk, institutions and foreign direct investment. *European Journal of Political Economy* 23, 397-415.
- Campion, M.K., Neumann, R.M. (2004). Compositional effects of capital controls: evidence from Latin America. *The North American Journal of Economics and Finance* 15, 161–178.
- Chakrabarti, A. (2001). The determinants of foreign direct investment: sensitivity analyses of cross-country regressions. *Kyklos*, 54, 89–113.
- Chang, H-J. (2002). *Kicking Away the Ladder: Development Strategy in Historical Perspective*, London, UK; NY, USA: Anthem Press.
- Chinn, M. D. and Ito, H. (2006). What Matters for Financial Development? Capital Controls, Institutions, and Interactions. *Journal of Development Economics*, 81(1), 163-192.
- Cleeve, E.A., Debrahb, Y. and Yiheyisc, Z. (2015). Human Capital and FDI Inflow: An Assessment of the African Case. *World Development*, 74, 1–14.
- Collie, R. D. (2011). Multilateral trade liberalisation, foreign direct investment and the volume of world trade. *Economics Letters*, 113, 47–49.
- Dabla-Norris, E., Minoiu, C., and Zanna, L-F. (2015). Business Cycle Fluctuations, Large Macroeconomic Shocks, and Development Aid. *World Development*, 69, 44-61.
- Desai, M. A., Foley, C. F., and Hines, J. R. (2006). Capital controls, liberalizations, and foreign direct investment. *Review of Financial Studies* 19(4), 1433–1464.
- Desbordes, R., and Wei, S-J. (2017). The effects of financial development on foreign direct investment. *Journal of Development Economics*, 127, 153-168.
- DiCaprio, A., and Gallagher, K. P. (2006). The WTO and the Shrinking of Development Space: How Big is the Bite?. *Journal of World Investment and Trade* 7(5), 781-803.
- Edison, H. and Reihart, C. (2001). Stopping hot money. *Journal of Development Economics*, 66, 533-553.
- Evans, P. (2005). Neoliberalism as a Political Opportunity: Constraint and Innovation in Contemporary Development Strategy, In *Putting Development First: the importance of policy space in the WTO and international financial institutions* (Kevin P. Gallagher ed., 2005).

Feenstra, R. and Hanson, G. (1997). Foreign direct investment and relative wages: Evidence from Mexico's Maquiladoras. *Journal of International Economics*, 42, 371-393.

Fugazza, M. and Trentini, C. (2014). Empirical Insights on Market Access and Foreign Direct Investment. UNCTAD Policy Issues in International Trade and Commodities, Study Series, N°) 63, Geneva, Switzerland.

Gastanaga, V.M., Nugent, J.B., and Pashamova, B. (1998). Host country reforms and FDI inflows: How much difference do they make? *World Development*, 26(7), 1299–1314.

Gnangnon, S. K. (2017a). Empirical Evidence on the Impact of Multilateral Trade Liberalization on Domestic Trade Policy. *Global Economy Journal*, 17(3) <https://doi.org/10.1515/gej-2017-0047>

Gnangnon, S. K. (2017b). Multilateral Trade Liberalization and Foreign Direct Investment Inflows, *Economics Affairs*, 37(1), 66-84.

Gnangnon, S. K. (2017c). The Impact of Multilateral Trade Liberalization on Economic Development: Some Empirical Evidence, *Economic Affairs*, 37(3), 397–410.

Gnangnon, S. K. (2017d). Multilateral Trade Liberalization and Government Revenue. *Journal of Economic Integration*, 32(3), 586-614.

Gnangnon, S. K. (2017e). Multilateral Trade Liberalization, Export Share in the International Trade Market and Aid for Trade. *Journal of International Commerce, Economics and Policy*, 08(03), 1750014.

Gnangnon, S. K. and Roberts, M. (2017). Aid for Trade, Foreign Direct Investment and Export Upgrading in Recipient Countries. *Journal of International Commerce, Economics and Policy*, Volume 08, Issue 02, 1750010 (2017), 36 pages.

Gnangnon, S.K., Iyer, H. (2017). Structural Economic Vulnerability, Trade Policy and FDI Inflows. *Journal of International Commerce, Economics and Policy*, 08 (01), 35 pages.

Gnangnon, S. K. (2018). Effect of multilateral trade liberalization on foreign direct investment outflows amid structural economic vulnerability in developing countries. *Research in International Business and Finance*, 45, 15-29.

Gnangnon, S.K. (2019a). Trade Policy Space, Economic Growth, and Transitional Convergence in terms of Economic Development. *Journal of Economic Integration*, 34(1),1-37.

Gnangnon, S.K. (2019b). Effect of Multilateral Trade Liberalization on Export Performance in Developing Countries: Does Aid for Trade matter? Accepted and forthcoming in the *Review of International Business and Strategy*, 2019.

Grossman, G., and Helpman, E. (1991). *Innovation and Growth in the Global Economy* Cambridge. MIT Press, Cambridge.

Grossman, G., and Helpman, E. (1991). *Innovation and Growth in the Global Economy* Cambridge. MIT Press, Cambridge.

- Helpman, E. (1984). A simple theory of international trade with multinational corporations. *Journal of Political Economy*, 92(3), 451–471.
- Helpman, E., and Krugman, P. (1985). *Market Structure and Foreign Trade*. The MIT Press, Cambridge.
- Herzer, D. (2011). The long-run relationship between outward FDI and total factor productivity: Evidence for developing countries. *Journal of Developing Studies*, 47, 767–785.
- Kaminsky, G., and Schmukler, S. (2003). Short-Run Pain, Long-Run Gain: The Effects of Financial Liberalization. NBER Working Paper No. 9787. National Bureau of Economic Research.
- Kaufmann, D, Kraay, A., and Mastruzzi, M. (2010). The Worldwide Governance Indicators Methodology and Analytical Issues. World Bank Policy Research N° 5430 (WPS5430).
- Kish, R.J., and Vasconcellos, G.M. (1993). An empirical analysis of factors affecting cross-border acquisitions: US–Japan. *Management International Review*, 33(3), 227–245.
- Klein, M. W., Peek, J., and Rosengren, E. S. (2002). Troubled banks, impaired foreign direct investment: the role of relative access to credit. *American Economic Review* 92 (3), 664–682.
- Kose, A., Prasad, E., Rogoff, K., Wei, S.-J. (2003). The Effects of Financial Globalization on Developing Countries: Some Empirical Evidence. Occasional Paper No. 220, International Monetary Fund.
- Lane, P.R., and Milesi-Ferretti, G. M. (2003). International financial integration. Discussion Article 03, Institute for International Integration Studies.
- Liu, X.M., Wang, C.G., and Wei, Y.Q. (2001). Causal links between foreign direct investment and trade in China. *China Economic Review*, 12, 190–202.
- Nagel, K., Herzer, D., and Nunnenkamp, P. (2015). How Does FDI Affect Health? *International Economic Journal*, 29(4), 655–679.
- Markusen, J.R. (1984). Multinationals, multi-plant economics, and the gains from trade. *Journal of International Economics*, 16, 205–226.
- Markusen, J.R., and Venables, A.J. (1995). *Multinational firms and the New Trade Theory*. NBER Working Paper, No. 5036. NBER, Cambridge.
- Mayer, J. (2009). Policy space: What, for what and where? *Development Policy Review*, 27(4), 373–395.
- McCulloch, R. (1989). Japanese Investments in the United States, in David B. Audretsch and Michael, P. Claudon (eds). *The Internationalisation of U.S. markets*, New York University Press, 171–179.

Miller, T., Kim, A. B., Roberts, J.M., Riley, B., and Whiting, T. (2017). 2017 Index of Economic Freedom, Institute for Economic Freedom, The Heritage Foundation, Washington, DC. See online: <http://www.heritage.org/index/download>

Milner, H. V., and Kubota K. (2005). Why the Move to Free Trade? Democracy and Trade Policy in the Developing Countries. *International Organization* 59(1), 107-143.

Mina, W. (2007). The location determinants of FDI in the GCC countries. *Journal of Multinational Financial Management*, 17, 336–348.

Neary, J. P. (2009). Trade costs and foreign direct investment. *International Review of Economics and Finance*, 18, 207–218.

Nickell, S. (1981). Biases in dynamic models with fixed effects. *Econometrica* 49, 1417–1426.

Noorbakhsh, F., Paloni, A. and Youssef, A. (2001). Human Capital and FDI Inflows to Developing Countries: New Empirical Evidence. *World Development*, 29(9), 1593–1610.

Noy, I., and Vu, T.B. (2007). Capital Account Liberalization and Foreign Direct Investment. *The North American Journal of Economics and Finance*, 18(2), 175-194.

Obstfeld, M., and Rogoff, K. (2000). The Six Major Puzzles in International Macroeconomics: Is There a Common Cause?". NBER Working Article No. W7777.

Okafor, G., Piesse, J. and Webster, A. (2015). The motives for inward FDI into Sub-Saharan African countries *Journal of Policy Modeling*, 37(5), 875–890.

Overseas Development Institute (ODI) (2007). Policy space: Are WTO rules preventing development?, Briefing Article 14, January 2007, London, United Kingdom.

Prasad, E., Rogoff, K., Wei, S-J., and Kose, M. A. (2003). Effect of financial globalization on developing countries: Some empirical evidence. Occasional Paper 220, IMF, Washington, D.C. Press, pp. 171–179.

Ratnaik, Y. C. (2012). Is there an empirical link between trade liberalisation and export performance? *Economics Letters*, 117, 375–378.

Roodman, D. M. (2009). A note on the theme of too many instruments, *Oxford Bulletin of Economic and Statistics*, 71 (1), 135–158.

Rose, A. (2013). The March of an Economic Idea? Protectionism Isn't Counter-Cyclic (Anymore). *Economic Policy*, 28(76), 569-612.

Rowden, R. (2015). Africa's boom is over. *Foreign Policy Magazine*, 31 December, 2015.

Santos, A. (2012). Carving out Policy autonomy for developing countries in the World Trade Organization: the experience of Brazil and Mexico. *Virginia Journal of International Law*, 52(3), 551.632.

Svaleryd, H. and Vlachos J. (2002). Markets for Risk and Openness to Trade: How are They Related? *Journal of International Economics*, 57(2), 369-395.

Trevino, L.J. Thomas, D.E., and Cullen, J. (2008). The three pillars of institutional theory and FDI in Latin America: An institutionalization process. *International Business Review*, 17(1), 118–133.

Trevino, L.J. Thomas, D.E., and Cullen, J. (2008). The three pillars of institutional theory and FDI in Latin America: An institutionalization process. *International Business Review*, 17(1), 118–133.

Uddin, M., and Boateng, A. (2011). Explaining the trends in the UK cross-border mergers and acquisitions: an analysis of macro-economic factors. *International Business Review*, 20, 547-556.

UNCTAD (2004) São Paulo Consensus, UNCTAD TD/410. Eleventh session of UNCTAD, São Paulo, 13–18 June 2004.

UNCTAD (TDR 2006) Trade and Development Report, 2006. Global partnership and national policies for development. United Nations publication, Sales No: E.06.II.D.6, New York and Geneva.

UNECA (2015). Economic Report on Africa, 2015. Industrialization through trade. United Nations Economic Commission for Africa Publication, Sales no.: E.15.II.K.2, Addis Ababa, Ethiopia.

UNECA (2016). Transformative Industrial Policy for Africa. United Nations Economic Commission for Africa, Addis Ababa, Ethiopia.

United Nations Conference on Trade and Development (UNCTAD) (2017). World Investment Report - Investment and the Digital Economy. United Nations Publication, UNCTAD/WIR/2017. Sales No. E.17.II.D.3, Geneva.

van der Ven, C.M.A. (2017). Trade, Development and Industrial Policy in Africa: The Case for a Pragmatic Approach to Optimizing Policy Coherence between Industrial Policy and the WTO Policy Space. *Law and Development Review*, 10(1), 29-80.

Vo, X. V., and Daly, K. J. (2007). The determinants of international financial integration. *Global Finance Journal*, 18, 228-250.

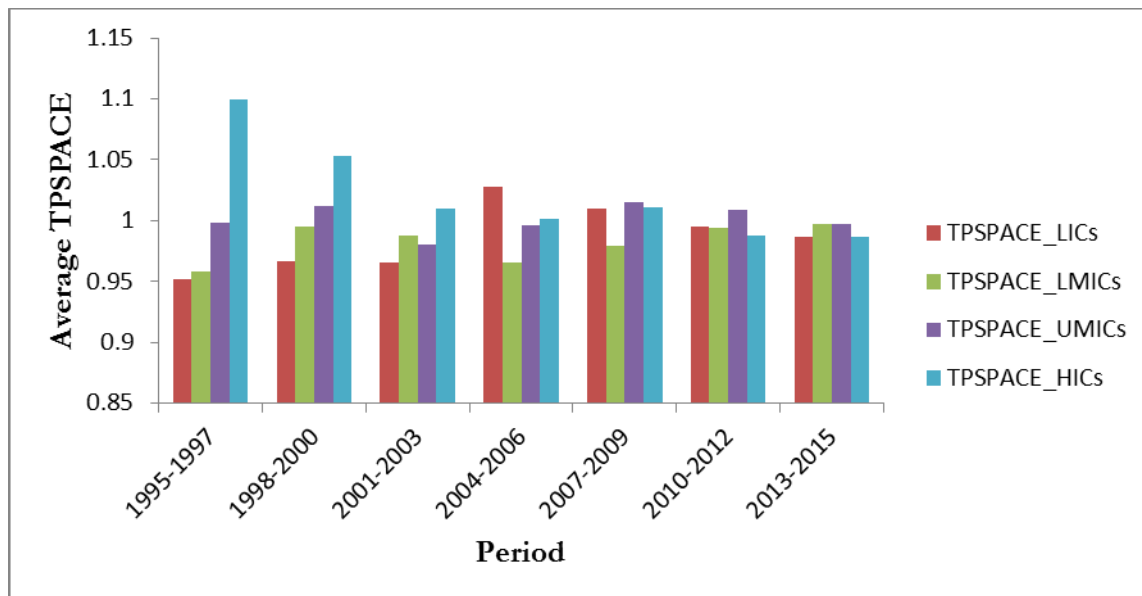
Wade, R.H. (2003). What Strategies Are Viable for Developing Countries Today? The World Trade Organization and the Shrinking of 'Development Space'. *Review of International Political Economy*, 10(4), 621-644.

Wei, S.J. (2000). How taxing is corruption on international investors? *Review of Economics and Statistics*, 82(1), 1-11.

Yeyati, E. L., Panizza, U., and Stein, E. (2007). The cyclical nature of North-South FDI flows. *Journal of International Money and Finance*, 26, 104-130.

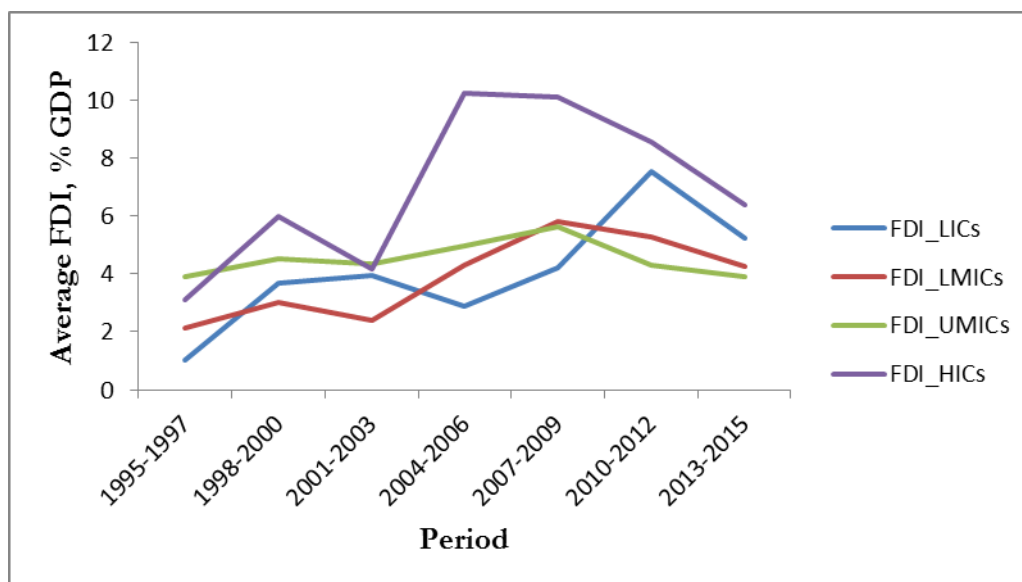
FIGURES

Figure 1: Comparative evolution between "TPSPACE" across sub-samples_Over non-overlapping periods of 3-year average



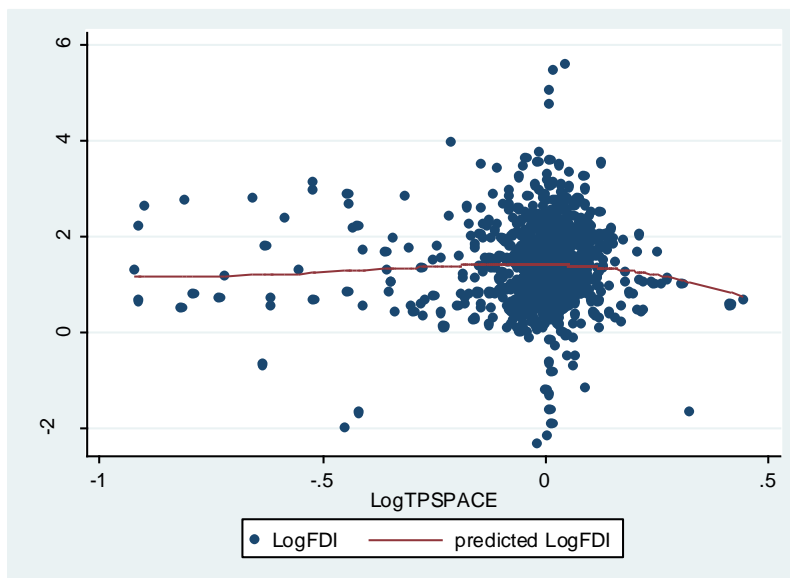
Source: Author

Figure 2: Comparative evolution between "FDI" across sub-samples_Over non-overlapping periods of 3-year average



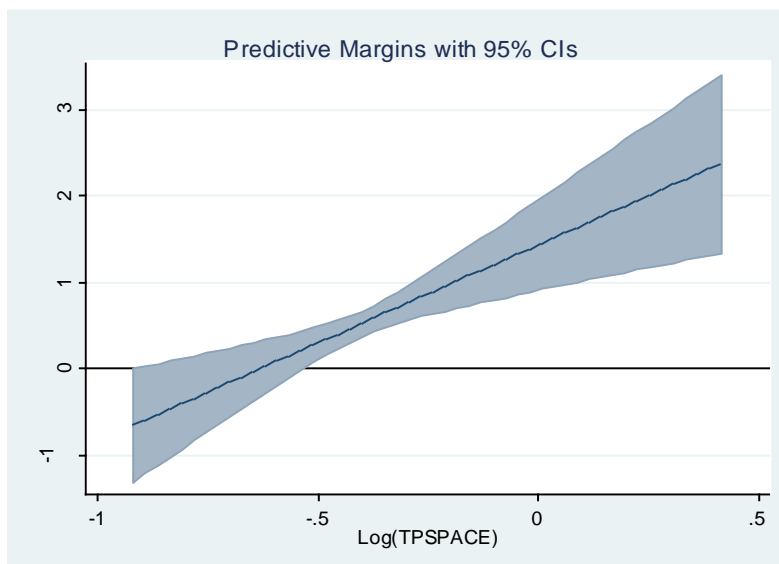
Source: Author

Figure 3: Correlation pattern between "TPSPACE" and "FDI"_ Over the Entire Sample_ Use of non-overlapping periods of 3-year average



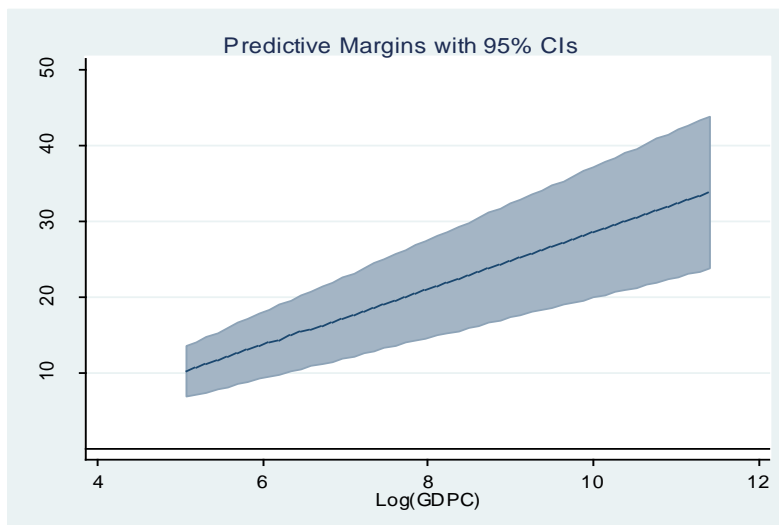
Source: Author

Figure 4: Marginal Impact of "TPSPACE" on "FDI", for varying levels of "TPSPACE"



Source: Author

Figure 5: Marginal Impact of "TPSPACE" on "FDI", for varying levels of "GDPC"



Source: Author

Tables and Appendices

Table 1: Estimating the level of Trade Policy Space

Estimator: Two-Step System GMM

VARIABLES	DTP
	(1)
DTP _{t-1}	0.512*** (0.00496)
MTP	0.504*** (0.0112)
FINPOL	0.0780*** (0.00344)
FINDEV	0.0181*** (0.00136)
Log(GDPC)	0.284*** (0.103)
Log(POP)	0.173*** (0.0574)
TERMS	-0.00594*** (0.00150)
INST	0.125 (0.0988)
Constant	-9.984*** (0.965)
Observations - Countries	2,278 – 158
Number of Instruments	147
AR1 (P-Value)	0.0000
AR2 (P-Value)	0.9532
Sargan (P-Value)	0.1777

*Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis. In the two-step system GMM estimations, the variables "FINPOL", "FINDEV" and "Log(GDPC)" have been considered as endogenous. The variable "INST" has been considered as exogenous for two reasons: first, it changes little over time; second the use of factor analysis severely mitigates the endogeneity concern that could stem from the reverse causality from the dependent variable, i.e., the "DTP" variable to the "INST" variable. A time trend variable has been included in the regression. In the regressions, we have used 3 lags of dependent variable as instruments and 2 lags of endogenous variables as instruments.*

Table 2: Impact of Trade Policy Space on FDI inflows (% GDP)
Estimator. Two-Step System GMM

VARIABLES	FDI	FDI
	(1)	(2)
FDI _{t-1}	0.430*** (0.0240)	0.398*** (0.0255)
Log(TPSPACE)	0.742*** (0.224)	0.641*** (0.227)
[OLDINDUST]*[Log(TPSPACE)]		-2.494 (2.115)
OLDINDUST		-0.571*** (0.138)
Log(GDPC)	-0.254*** (0.0298)	-0.230*** (0.0337)
GROWTH	0.0395*** (0.00536)	0.0382*** (0.00516)
FINPOL	0.000660 (0.000868)	5.13e-05 (0.000856)
Log(MTP)	4.054*** (0.463)	3.923*** (0.440)
Log(EDU)	0.434*** (0.0726)	0.407*** (0.0739)
Log(POP)	-0.0404 (0.0309)	-0.0729** (0.0294)
INST	0.128*** (0.0217)	0.193*** (0.0244)
Constant	-14.70*** (1.926)	-13.58*** (1.886)
Observations - Countries	764 - 158	764 - 158
Number of Instruments	89	90
AR1 (P-Value)	0.0004	0.0005
AR2 (P-Value)	0.3290	0.2915
Sargan (P-Value)	0.1548	0.1311

*Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis. In the two-step system GMM estimations, the variables "TPSPACE", "Log(GDPC)", "FINPOL", "EDU", "GROWTH" and the interaction variables have been considered as endogenous. The variable "INST" has been considered as exogenous for two reasons: first, it changes little over time; second the use of factor analysis severely mitigates the endogeneity concern that could stem from the reverse causality from the dependent variable to the "INST" variable. A time trend variable has been included in the regressions. In the regressions, we have used 2 lags of dependent variable as instruments and 3 lags of endogenous variables as instruments.*

Table 3: Impact of Trade Policy Space on FDI inflows (% GDP)
Estimator. Two-Step System GMM

VARIABLES	FDI	FDI
	(1)	(2)
FDI _{t-1}	0.419*** (0.0193)	0.368*** (0.0224)
Log(TPSPACE)	1.431*** (0.267)	1.166*** (0.243)
[Log(TPSPACE)] ²	1.130*** (0.316)	0.747** (0.304)
[OLDINDUST]*[Log(TPSPACE)]		-0.856 (1.762)
[OLDINDUST]*[Log(TPSPACE)] ²		13.30 (40.51)
OLDINDUST		-0.578*** (0.118)
Log(GDPC)	-0.266*** (0.0242)	-0.241*** (0.0246)
GROWTH	0.0440*** (0.00399)	0.0404*** (0.00440)
FINPOL	0.00212*** (0.000662)	0.000875 (0.000651)
Log(MTP)	4.402*** (0.381)	4.575*** (0.325)
Log(EDU)	0.352*** (0.0670)	0.350*** (0.0688)
Log(POP)	-0.0796*** (0.0176)	-0.0951*** (0.0172)
INST	0.147*** (0.0178)	0.215*** (0.0174)
Constant	-15.24*** (1.528)	-15.62*** (1.374)
Observations - Countries	764 - 158	764 - 158
Number of Instruments	106	108
AR1 (P-Value)	0.0004	0.0005
AR2 (P-Value)	0.3903	0.2953
Sargan (P-Value)	0.1316	0.1636

*Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis. In the two-step system GMM estimations, the variables "TPSPACE", its square, "Log(GDPC)", "FINPOL", "EDU", "GROWTH" and the interaction variables have been considered as endogenous. The variable "INST" has been considered as exogenous for two reasons: first, it changes little over time; second the use of factor analysis severely mitigates the endogeneity concern that could stem from the reverse causality from the dependent variable to the "INST" variable. A time trend variable has been included in the regressions. In the regressions, we have used 2 lags of dependent variable as instruments and 3 lags of endogenous variables as instruments.*

Table 4: Does the impact of Trade Policy Space on FDI inflows (% GDP) depend on countries' development level?

Estimator. Two-Step System GMM

VARIABLES	FDI
	(1)
FDI _{t-1}	0.409*** (0.0197)
Log(TPSPACE)	-8.972*** (1.222)
[Log(TPSPACE)] ²	-10.76*** (1.691)
[Log(GDPC)]*[Log(TPSPACE)]	1.141*** (0.149)
[Log(GDPC)]*[Log(TPSPACE)] ²	1.291*** (0.205)
Log(GDPC)	-0.234*** (0.0260)
GROWTH	0.0413*** (0.00375)
FINPOL	0.00145** (0.000631)
Log(MTP)	4.248*** (0.368)
Log(EDU)	0.263*** (0.0609)
Log(POP)	-0.0926*** (0.0191)
INST	0.135*** (0.0191)
Constant	-14.23*** (1.515)
Observations - Countries	764 - 158
Number of Instruments	108
AR1 (P-Value)	0.0004
AR2 (P-Value)	0.3308
Sargan (P-Value)	0.1597

Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis. In the two-step system GMM estimations, the variables "TPSPACE", its square, "Log(GDPC)", "FINPOL", "EDU", "GROWTH" and the interaction variables have been considered as endogenous. The variable "INST" has been considered as exogenous for two reasons: first, it changes little over time; second the use of factor analysis severely mitigates the endogeneity concern that could stem from the reverse causality from the dependent variable to the "INST" variable. A time trend variable has been included in the regression. In the regressions, we have used 2 lags of dependent variable as instruments and 3 lags of endogenous variables as instruments.

Table 5: Robustness check: impact of Trade Policy Space on real values of FDI inflows (Constant 2010 US Dollars)

Estimator. Two-Step System GMM

VARIABLES	FDICST	FDICST
	(1)	(2)
FDICST _{t-1}	0.392*** (0.00639)	0.410*** (0.00506)
FDICST _{t-2}	0.0545*** (0.00265)	0.0719*** (0.00228)
Log(TPSPACE)	8.144*** (1.378)	11.47*** (0.819)
[Log(TPSPACE)] ²		2.893** (1.240)
Log(GDPC)	-1.183*** (0.285)	-1.182*** (0.231)
GROWTH	0.213*** (0.0225)	0.277*** (0.0199)
FINPOL	0.00663 (0.00499)	0.0138*** (0.00294)
Log(MTP)	17.13*** (2.185)	17.23*** (1.842)
Log(EDU)	0.600 (0.523)	-0.132 (0.471)
Log(POP)	-0.301** (0.144)	0.181 (0.125)
INST	1.223*** (0.145)	1.395*** (0.124)
Constant	-44.81*** (7.840)	-51.75*** (6.757)
Observations - Countries	646 - 158	646 - 158
Number of Instruments	83	96
AR1 (P-Value)	0.0309	0.0311
AR2 (P-Value)	0.1928	0.3360
Sargan (P-Value)	0.3568	0.2507

*Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis. In the two-step system GMM estimations, the variables "TPSPACE", its square, "Log(GDPC)", "FINPOL", "EDU", "GROWTH" and the interaction variables have been considered as endogenous. The variable "INST" has been considered as exogenous for two reasons: first, it changes little over time; second the use of factor analysis severely mitigates the endogeneity concern that could stem from the reverse causality from the dependent variable to the "INST" variable. A time trend variable has been included in the regressions. In the regressions, we have used 2 lags of dependent variable as instruments and 3 lags of endogenous variables as instruments.*

APPENDICES

Appendix 1: Definitions and sources of variables

Variable	Definition	Source
FDI	Inward FDI, in percentage of Gross Domestic Product (GDP)	UNCTAD Database
FDICST	Inward FDI, in constant 2010 US\$.	Author's calculation using FDI data (from UNCTAD Database) and Real GDP Data extracted from the World Development Indicators (WDI) of the World Bank.
TPSPACE	Index of Trade Policy Space	Author's calculation
DTP	This is the measure of domestic trade policy. It is indeed the index of "Freedom to trade internationally", which is a major component of the Economic Freedom Index. It is composite measure of the absence of tariff and non-tariff barriers that affect imports and exports of goods and services. Its computation is based on two components: trade-weighted average tariff rate and non-tariff barriers (NTBs), the extent of latter having been determined on the basis of quantitative and qualitative available information. NTBs include quantity restrictions, price restrictions, regulatory restrictions, investment restrictions, customs restrictions, and direct government interventions. This score is graded on a scale of 0 to 100, with a rise indicating lower trade barriers, i.e., higher trade liberalization, while a decrease reflects rising trade protectionism.	Heritage Foundation (see Miller et al., 2017)
MTP	Average Trade Policy of the Rest of the World. For a given country, this variable has been calculated as the average trade freedom score of the rest of the world.	Author's calculation based on Heritage Foundation data.
GDP	GDP per capita (constant 2010 US\$)	World Development Indicators (WDI) of the World Bank
GROWTH	GDP growth (annual %)	WDI
EDU	Secondary School enrollment rate (% gross)	WDI
FINOPEN	This is the measure of de jure financial openness.	This index has been computed by Chinn and Ito (2006) and updated in July 2017. Its value ranges between 0 and 1. We have multiplied by 100 so as to ensure a coherence with the trade policy

		variable defined below (which is also a measure of a de jure trade policy, whose value range between 0 and 100) See: http://web.pdx.edu/~ito/Chinn-Ito_website.htm
FINDEV	Domestic credit to private sector by banks (% of GDP)	WDI
POP	Total population	WDI
INST	<p>This is the variable capturing institutional quality in a given country. It has been computed by extracting the first principal component (based on factor analysis) of the following five indicators of governance. These indicators a measure of Voice and Accountability; a measure of political stability and absence of violence/terrorism; a Regulatory Quality index; an index of rules of law index; an index of government effectiveness index an index of corruption.</p> <p>It is worth noting that the values of each of these indicators oscillate range from – 2.5 to 2.5, with the lower values being associated with ‘worse’ governance and institutional quality, and the higher values being associated with ‘better’ governance and institutional quality.</p>	<p>Data on the components of the variable "INST" have been extracted from World Bank Governance Indicators developed by Kaufmann et al. (2010) and recently updated.</p>

Appendix 2: List of countries contained in the Entire Sample

Entire sample					
Albania	Colombia	Guinea	Malawi	Romania	Uganda
Algeria	Comoros	Guinea-Bissau	Malaysia	Russian Federation	Ukraine
Angola	Congo, Dem. Rep.	Guyana	Mali	Rwanda	United Kingdom***
Argentina	Congo, Rep.	Honduras	Malta	Samoa	United States***
Armenia	Costa Rica	Hong Kong SAR, China	Mauritania	Sao Tome and Principe	Uruguay
Australia***	Cote d'Ivoire	Hungary	Mauritius	Saudi Arabia	Venezuela, RB
Austria***	Croatia	Iceland***	Mexico	Senegal	Yemen, Rep.
Bahamas, The	Cyprus	India	Moldova	Seychelles	Zimbabwe
Bahrain	Czech Republic	Indonesia	Mongolia	Sierra Leone	
Bangladesh	Denmark***	Iran, Islamic Rep.	Morocco	Singapore	
Barbados	Djibouti	Ireland***	Mozambique	Slovak Republic	
Belarus	Dominica	Israel	Myanmar	Slovenia	
Belgium***	Dominican Republic	Italy***	Namibia	Solomon Islands	
Belize	Ecuador	Jamaica	Nepal	South Africa	
Benin	Egypt, Arab Rep.	Japan***	Netherlands***	Spain***	
Bhutan	El Salvador	Jordan	New Zealand***	Sri Lanka	
Bolivia	Equatorial Guinea	Kazakhstan	Nicaragua	St. Lucia	
Botswana	Eritrea	Kenya	Niger	St. Vincent and the Grenadines	
Brazil	Estonia	Korea, Rep.	Nigeria	Suriname	
Bulgaria	Ethiopia	Kuwait	Norway***	Swaziland	
Burkina Faso	Fiji	Kyrgyz Republic	Oman	Sweden***	
Burundi	Finland***	Lao PDR	Pakistan	Switzerland***	
Cabo Verde	France***	Latvia	Panama	Tajikistan	
Cambodia	Gabon	Lebanon	Papua New Guinea	Tanzania	
Cameroon	Gambia, The	Lesotho	Paraguay	Thailand	
Canada***	Georgia	Liberia	Peru	Togo	
Central African Republic	Germany***	Libya	Philippines	Tonga	
Chad	Ghana	Lithuania	Poland	Trinidad and Tobago	
Chile	Greece***	Macedonia, FYR	Portugal***	Tunisia	
China	Guatemala	Madagascar	Qatar	Turkey	

Note: "****" refers to the sub-sample of old industrialized countries (considered as developed countries).

Appendix 3: Descriptive statistics on variables used model (1)

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
DTP	3,035	68.282	15.516	0.000	95.000
MTP	3,318	67.228	6.452	56.388	75.582
TERMS	2,923	109.208	31.664	21.397	290.904
INST	2,678	-0.051	2.190	-5.408	4.886
FINPOL	3,290	51.714	36.980	0	100
FINDEV	3,209	47.231	44.304	0.001	312.118
GDPC	3,292	11656.250	16327.390	115.436	91593.670
POP	3,314	3.91e+07	1.41e+08	69660	1.37e+09

Note: The statistics concern the entire sample and cover annual data of the period 1995-2015.

Appendix 4: Descriptive statistics on variables used in the model (2) concerning the impact of "TPSPACE" on "FDI"

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
FDI	1,106	5.051	12.683	-9.154	257.086
FDICST	1,101	7.74e+11	2.26e+12	-1.65e+12	3.20e+13
TPSPACE	917	0.996	0.117	0.399	1.559
INST	1,100	-0.051	2.192	-5.139	4.802
FINPOL	1,104	51.689	36.541	0	100
GDPC	1,101	11667.040	16347.300	157.565	90204.810
POP	1,105	3.91e+07	1.41e+08	69841.33	1.36e+09
EDU	953	75.038	31.200	5.391	163.956
GROWTH	1,099	4.001	4.341	-28.527	78.013

Note: The statistics concern the entire sample and cover non-overlapping 3-year average data of the period 1995-2015.