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Article

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Economics: The Open-Access, Open-Assessment E-Journal

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Suggested Citation: Mina, Wasseem (2015) : Political risk guarantees and capital flows: The role of bilateral investment treaties, Economics: The Open-Access, Open-Assessment E-Journal, ISSN 1864-6042, Kiel Institute for the World Economy (IfW), Kiel, Vol. 9, Iss. 2015-26, pp. 1-38, <https://doi.org/10.5018/economics-ejournal.ja.2015-26>

This Version is available at:

<https://hdl.handle.net/10419/116790>

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Political Risk Guarantees and Capital Flows: The Role of Bilateral Investment Treaties

Wasseem Mina

Abstract

In this paper the author empirically examines whether the influence of bilateral investment treaties' political risk guarantees extends to other types of capital flows – FDI, private debt, public debt and portfolio equity. The paper uses panel data on middle and low income countries during the period 1984–2011 and adopts LSDV estimation methodology to account for heterogeneity arising from unobserved country, region, and time effects. The paper finds that ratified BITs with OECD countries increase FDI flows and reduce private debt flows. They also tilt the composition of capital flows in favor of FDI. The novelty of the paper stems from its extension of the examination BITs influence beyond FDI and the distinction between private and public debt flows. The paper contributes to the FDI and capital flows literatures.

JEL F21 F34 G15 G18 K33

Keywords Political risk; bilateral investment treaties; capital flows; debt flows; equity flows

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Citation Wasseem Mina (2015). Political Risk Guarantees and Capital Flows: The Role of Bilateral Investment Treaties. *Economics: The Open-Access, Open-Assessment E-Journal*, 9 (2015-26): 1—38. <http://dx.doi.org/10.5018/economics-ejournal.ja.2015-26>

1 Introduction

The use of bilateral investment treaties (BITs) has proliferated over the last three decades. The total number of newly ratified BITs by middle income countries multiplied more than 55 times, from 33 in 1985 to 1,854 in 2012.

BITs reduce political risk to foreign investors. They establish clear, simple, and enforceable rules for foreign investment protection from expropriation, specify the circumstances under which expropriation takes place and the compensation standards, and design the necessary investment dispute settlement mechanisms between states and investors (Ginsburg 2005; Hallward-Driemeier 2003; Mina 2009; Neumayer and Spess 2005; UNCTAD 1998).^{1,2} BITs therefore reduce policy uncertainty and guarantee the presence and adoption of rules for foreign investment protection, which may boost foreign investor's confidence and promote foreign investment flows.³

The domain of foreign investment BITs extends beyond FDI. FDI has been the only type of capital flows examined in the BITs literature. Foreign investment, in the 2012 U.S. Model Bilateral Investment Treaties for example, is defined as “every asset that an investor owns or controls, directly or indirectly, that has the characteristics of an investment, including such characteristics as the commitment of capital or other resources, the expectation of gain or profit, or the assumption of risk”. An investment may take the form of an enterprise; shares, stock, and other forms of equity participation in an enterprise; bonds, debentures, other debt

¹ For example, paragraphs 1 and 2 of Article 5 of the 2012 U.S. Model Bilateral Investment Treaty state that, “1. Neither Party may expropriate or nationalize a covered investment either directly or indirectly through measures equivalent to expropriation or nationalization (“expropriation”), except: (a) for a public purpose; (b) in a non-discriminatory manner; (c) on payment of prompt, adequate, and effective compensation; and (d) in accordance with due process of law and Article 5 [Minimum Standard of Treatment] (1) through (3). 2. The compensation referred to in paragraph 1(c) shall: (a) be paid without delay; (b) be equivalent to the fair market value of the expropriated investment immediately before the expropriation took place (“the date of expropriation”); (c) not reflect any change in value occurring because the intended expropriation had become known earlier; and (d) be fully realizable and freely transferable.” The 2012 U.S. Model Bilateral Investment Treaties available at <http://www.ustr.gov/sites/default/files/BIT%20text%20for%20ACIEP%20Meeting.pdf>.

² See for example sections B and C of the 2012 U.S. Model Bilateral Investment Treaty.

³ Recent empirical studies in the FDI literature show positive impact of bilateral investment treaties on FDI flows (Egger and Pfaffermayr 2004; Egger and Merlo 2007; Neumayer and Spess 2005; Tobin and Rose-Ackerman 2006).

instruments, and loans; and futures, options, and other derivatives.^{4,5} Therefore, BITs provide political risk guarantees to portfolio equity, private non-guaranteed debt in addition to FDI. They may even provide guarantees to public and publicly guaranteed debt as far as multinational corporations seek guarantees on their loans from host country governments.⁶

In this paper we empirically examine the influence of political risk guarantees of BITs on the different types of capital flows – FDI, private debt, public debt and portfolio equity. The paper uses panel data on middle and low income countries during the period 1984–2011 and adopts Least Squares Dummy Variables (LSDV) estimation approach. LSDV is used to account for unobserved country, region, and time heterogeneity. We find that ratified BITs with OECD countries increase FDI flows, but decrease private debt flows. Results also show that BITs tilt the composition of capital flows towards FDI.

The paper contributes to the FDI and capital flows literatures. First it extends the examination of BITs influence beyond FDI into the different types of capital flows constituting foreign investment. This has not been examined in the FDI literature before despite the wide definition of foreign investment in BITs.

Second, the paper distinguishes between private and public debt flows. This distinction helps provide an understanding of long-term creditors' responses to BITs political risk guarantees. It also contributes to the capital flows literature. This literature has examined the role of determinants like capital controls, financial

⁴ The definition of assets also includes “turnkey, construction, management, production, concession, revenue-sharing, and other similar contracts; intellectual property rights; licenses, authorizations, permits, and similar rights conferred pursuant to domestic law; and other tangible or intangible, movable or immovable property, and related property rights, such as leases, mortgages, liens, and pledges”.

⁵ UNCTAD (2007) identifies four definitions of investment: “asset-based” definition; a “tautological” definition; a “closed-list” definition; and a limiting definition which excludes certain assets and transactions. Most recent bilateral investment treaties have adopted the first definition, which covers every or any kind of assets and typically includes: a) movable and immovable property and any related property rights; b) interests in companies, such as shares, stock, bonds, and debentures; c) claims to money and claims under a contract having a financial value and loans directly related to a specific investment; d) intellectual property rights; and e) business concessions.

⁶ In discussing determinants of capital flows, Hooper and Kim (2007) point out that opacity in corruption might increase the likelihood of multinational corporations seeking loan guarantees resulting in an increase in capitals inflows.

development, and institutions and political risk in the inflows and outflows of different types of capital.

Public debt, as well as FDI, are particularly important capital flows in low income countries. Hindered by low per capita income, financial underdevelopment and low credit ratings, governments and financial institutions of low income countries tend to rely more heavily on public debt to finance their investment and possibly consumption needs.

This paper is structured as follows. Section 2 provides a brief survey of the determinants of capital flows, while Appendix A provides a more detailed summary of the literature. Section 3 specifies the empirical model and data. Section 4 discusses the estimation methodology. Section 5 presents and discusses the empirical results, while section 6 provides robustness checks of the estimates obtained. Section 7 concludes, highlights the policy implications, and identifies future research questions.

2 Literature survey

The capital flows determinants literature has developed over time. The development largely reflects the increasing financial globalization that has taken place over the past three decades and the role of external and domestic factors in mobilizing capital flows to recipient countries. Among the domestic factors, institutions and political risk has attracted special attention in the capital flows literature. Increasing corruption and weak rule of law were among the institutions that increased political risk and triggered the 1997 Asian financial crisis. In addition, the role of capital controls and financial development in attracting capital flows has been explored in the literature. In the FDI literature specifically the influence of BITs, as an investor protection mechanism, on FDI has also been examined. This logic underlies the brief literature survey discussion below, while a summary of the capital flows literature is provided in appendix A.⁷

⁷ A summary of the empirical literature on the influence of BITs on FDI can be found in Mina (2011; 2012). Summarized studies include Egger and Pfaffermayr (2004), Hallward-Driemeier (2003), Neumayer and Spess (2005), Tobin and Rose-Ackerman (2006) and UNCTAD (1998).

2.1 External and domestic factors

The determinants of capital flows have been extensively examined in the capital flows literature. Some studies have distinguished between the role of external (push) and domestic (pull) factors (Calvo et al. 1996; Fernandez-Arias 1996). Calvo et al. (1996) explain capital flows during the 1990s in terms of external factors to the recipient economy and domestic factors. External factors to the recipient economy include declining world interest rates, which improve creditworthiness and reduce default risk in developing countries, global business cycle, integration of world capital markets, diversification of investments internationally, and contagion effects.

Domestic factors include sound domestic monetary and fiscal policies, and trade and capital market liberalization. Similar to Calvo et al. (1996), Fernandez-Arias (1996) argued that the decline in world interest rates improved creditworthiness and reduced default risk in developing countries, and therefore perceived capital flows as a result of the interaction between external push factors and domestic pull factors.

2.2 Capital controls

Over the past three decades of increased global financial integration many governments adopted policies of financial liberalization in order to lure more capital flows and reap the benefits of smoothing consumption, boosting investment, and speeding up economic growth, while other governments adopted capital control measures to reduce the disruption that the high volumes and volatility of capital inflows and outflows create.⁸ A number of studies have focused on the impact of financial liberalization and capital controls (Binici et al. 2010; Campion and Neumann 2004; Okada 2013).

Binici et al. (2010) examine the efficacy of capital controls in 74 countries during the period 1995–2005 in stemming inflows and outflows of equity, FDI, and debt holdings. They find that the efficacy of capital controls is on the outflow side but is very little or absent on the inflow side. In addition they find that the efficacy of capital controls is low in low and middle income countries. Okada

⁸ See Galstyan (2009) on the persistence of the different types of capital flows.

(2013) attributes the efficacy of capital controls to institutional quality, and examines the effect of these two factors and their interaction on FDI and foreign private investment. He finds that while there is no individual impact of financial openness and institutional quality on capital inflows, the interaction between these two factors has a significant impact.

2.3 Institutions and political risk

Recent studies have focused on the role of institutions and political risk as domestic factors in attracting capital flows (Daude and Fratzscher 2008; De Santis and Luhrmann 2009; Fratzscher 2012; Hooper and Kim 2007; Kim and Wu 2008; Papaioannou 2009).⁹⁻¹⁰ Fratzscher (2012) explores the drivers of global portfolio investment flows using high frequency mutual funds data for the period 2005–2010 differentiating between financial crises and the subsequent recovery, and between common global shocks and country-specific factors.¹¹ He finds that during crises there is a strong divergence in capital flows across countries with dynamics of capital flows primarily driven by safe-haven flows. He also finds that the effect of global shocks, in particular during the recovery period, was heterogeneous and depended on the recipient country's institutional quality, country risk, and the strength of macroeconomic fundamentals and policies. He contends that, "countries are far from innocent bystanders that are powerless in

⁹ Other studies, which examine the influence of property rights protection on foreign direct investment and portfolio investment, include Alfaro et al. (2008), Asiedu (2006), Busse and Hefeker (2007), Daude and Stein (2007), Du et al. (2008), Faria and Mauro (2009), Mishra and Daly (2007), Naude and Krugell (2007), and Wei (2000). Studies examining the influence on international lending include Kraay and Nehru (2004), Lane (2004), Mina (2006; 2011), and Mina and Martinez-Vazquez (2006). The empirical evidence of these studies suggests that better domestic institutional functions encourage capital inflows and tilt the capital structure of countries towards equity and away from debt.

¹⁰ Hashimoto and Wacker (2012) study the quantitative impact of information, namely the IMF's Special Data Dissemination Standards (SDSS), on capital flows, specially portfolio and FDI, using unbalanced panel data on 55 countries for the period 1989-2008. They find that subscription to SDSS increases the level of FDI flows countries attract. Although their study focuses on the role of information, they include political and macroeconomic risks, as measured by ICRG indicators and exchange rate volatility. Thanks to anonymous referee for bringing this study to my attention.

¹¹ He focuses on common global liquidity, risk, and macroeconomic news shocks.

being exposed to volatile global markets, and that indeed they have tools to insulate to some extent their economies from adverse global shocks” (p 2). Earlier Daude and Fratzscher (2008) find that institutional quality matters most for portfolio investment and least for FDI.

Opacity of the operating environment seems to matter for capital flows. Hooper and Kim (2007) examine the role of operating environment opacity in influencing FDI, portfolio investment, and international bank lending.¹² They argue that opacity in general discourages capital flows. However, with the profit opportunities it creates, opacity may increase capital flows. For example, multinational corporations (MNCs) may concentrate on FDI to exploit accounting and reporting opacity in order to maximize profit. Other forms of capital flows may respond differently to accounting opacity.

Interestingly they point out that opacity in corruption might increase FDI or international bank lending. Corruption opacity can increase MNCs likelihood of obtaining loans, which are government guaranteed, or favorable tax treatments, thus increasing FDI flows to the country. Corruption opacity might take the form of government guarantees of crony capitalists’ international loans, increasing the likelihood of obtaining loans and thus international bank lending. In contrast, legal opacity reduces contract enforcement and protection of property rights and thus capital flows in general.

In explaining the Lucas (1990) paradox on why capital flows from poor to rich countries, contrary to the neoclassical model prediction of capital flowing in the opposite direction, Papaioannou (2009) focuses on the role of institutions in explaining these flows and finds that weak institutions – weak property rights protection, inefficient legal system and high risk of investment expropriation – deter banking flows. Similarly, in examining mainly the role of demographic structure in international portfolio flows, De Santis and Luhrmann (2009) find that lower quality institutions deter net portfolio inflows explaining the capital reallocation from developing to developed countries.

Going beyond specific institutional influence, Kim and Wu (2008) empirically examine the impact of country risk measured by sovereign credit ratings on capital

¹² They use Price Waterhouse Coopers’ opacity index covering corruption, legal, economic, accounting/reporting, and regulation opacity as well as aggregate opacity.

flows. They find that foreign currency long-term ratings proved to be the most important stimulus for international (as opposed to domestic) capital flows, while local currency long-term ratings had negative impact on international capital flows. Short-term foreign and domestic currency ratings have detrimental effect on international capital flows.

2.4 BITs influence on FDI

The influence of BITs has only been examined in the FDI literature (Egger and Pfaffermayr 2004; Hallward-Driemeier 2003; Mina 2012; Neumayer and Spess 2005; Tobin and Rose-Ackerman 2006; UNCTAD 1998). Earlier studies found little positive impact of these treaties, while the more recent ones found a significantly positive impact. UNCTAD (1998) examines the impact of investment treaties on FDI using both time series and cross-section analyses with results of time-series analysis more suggestive of the positive impact of investment treaties on FDI. Similar to UNCTAD's cross section analysis results, Hallward-Driemeier (2003) finds little positive impact of BITs, possibly masked by lower trade barriers between country pairs, increased knowledge of conducting business in the host country, or tax treaty ratification. She also finds that BITs are complementary to strong domestic institutions: Treaties become more effective when institutions are reformed or of high quality and are not short-cut for institutional reforms, a conclusion Mina (2012) reaches in the case of MENA countries.

Compared to UNCTAD (1998) and Hallward-Driemeier (2003), more recent studies found a significant positive impact of BITs (Egger and Pfaffermayr 2004; Neumayer and Spess 2005; Tobin and Rose-Ackerman 2006). Distinguishing between ratified and signed BITs, Egger and Pfaffermayr (2004) find a higher positive impact of ratified treaties reflecting the higher degree of commitment. Tobin and Rose-Ackerman (2006) find positive impact of treaties on FDI in subsequent periods though the marginal impact diminishes with the increase in the number of treaties. Similar to Hallward-Driemeier (2003), Tobin and Rose-Ackerman (2006) find that a stronger political environment complements BITs.

3 Empirical model and data

The empirical model specification builds on Wei and Wu (2001), who examine the effect of distortionary corruption on FDI by a multinational firm. Using a simple optimization model, they show that a multinational firm chooses the level of FDI, which maximizes its after-tax and after-bribery profit.

In this paper, we similarly formulate an optimization model. Instead of examining the effect of distortionary corruption on FDI however, we examine the effect of political risk, BIT's political risk guarantees, and the interaction between both of them on foreign investment.

Foreign investors obtain capital in world capital markets. A foreign investor chooses the level of foreign investment she extends to a host country j that maximizes her profit π . Foreign investment could be equity or credit. The optimization problem can be expressed as:

$$\pi = \sum_{j=1}^N [f(K_j) - c(r, p(x_j, g_j)K_j)] \quad (1)$$

where π is foreign investor's profit, $f(K_j)$ is the flow of foreign investment the foreign investor extends to the host country j , c is the cost of foreign investment to the investor, which is a function of the risk-free world interest rate r and a political risk premium p , and $j=1, \dots, N$.¹³ The political risk premium for country j is function of the rate of government expropriation x_j of a dollar of foreign investment and the rate of political risk guarantee g_j of investment, which BITs provide.

We model political risk premium using two approaches. The first approach assumes the presence of domestic institutions regardless of how perfect they are. Accordingly, it considers the premium to be driven primarily by the risk of investment expropriation, which domestic institutions influence. Political risk guarantees interact with investment expropriation risk and mitigate it. Accordingly the political risk premium can be expressed in specific form as:

$$p_j = x_j(1 + g_j) \quad (2)$$

¹³ The function $f(K_j)$ can be thought of as providing capital flow-related product, such as syndicated loans in case of bank lending, bonds in case of portfolio debt, or equity capital in cases of FDI and portfolio equity.

The second approach assumes that countries are young and largely lack domestic institutions. It considers the premium to be driven primarily by political risk guarantees. Investment expropriation risk interacts with the political risk guarantees. If the risk of investment expropriation is high, it may reduce the level of political risk guarantees BITs provide.¹⁴ Accordingly the political risk premium can be expressed as:

$$p_j = g_j(1 + x_j) \quad (2')$$

The effects of x and g on the political risk premium are intuitively expected to be positive and negative ($p_x > 0$; $p_g < 0$), respectively, which in turn have negative and positive effects on profits ($\pi_x < 0$; $\pi_g > 0$).

Accordingly, the corresponding empirical models we estimate are given by:

$$K_{it} = \beta_0 + \beta_1 R_{it} + \beta_2 X_{it} + \beta_3 (GX)_{it} + Z'_{it} \delta + \varepsilon_{it} \quad (3)$$

and

$$K_{i,t} = \beta_0 + \beta_1 R_{it} + \beta_2 G_{it} + \beta_3 (GX)_{it} + Z'_{it} \delta + \varepsilon_{it} \quad (3')$$

where K is the natural logarithm of the flows of foreign investment in billions of US\$, R is the (risk-free) cost of capital, G is the rate of political risk guarantee on investment, X is the rate of government expropriation of foreign investment, GX is an interaction term, Z is a vector of additional control variables, and ε an error term. The subscripts i and t are country and time indexes.

The interaction term in equation (3') suggests that political risk guarantees might have different effects on foreign investment flows for countries with different risk levels of investment expropriation. Alternatively the interaction term in equation (3) suggests that political risk might have different effects on foreign investment flows for countries with different political risk guarantee levels. The

¹⁴ Countries, which are not institutionally developed, rely primarily on BITs to attract capital flows. BITs may be thought of as a substitute for domestic institutions. Some young/small Gulf Cooperation Council (GCC) countries may be considered an example. This scenario is captured by the second modeling approach provided in equation 2'.

total effect of G on a flow of foreign investment K a country can attract is $\beta_2 + \beta_3 X$, where β_2 is the *direct* effect of the political risk guarantee and $\beta_3 X$ is the *indirect* effect through X or the interaction between G and X .

K could be debt flows of nonresidents.¹⁵ Unlike other studies examining capital flows, we distinguish debt flows into private (non-guaranteed – PNG) and public (public and publicly guaranteed – PPG) debt flows to allow us to explore whether the effect of political risk guarantees differs between one type of debt and the other.¹⁶ Private debt is an external obligation of a private debtor, the repayment of which is non-guaranteed by a public entity.¹⁷ Private debt flows are net flows of long term nature, calculated as the difference between disbursements and principal repayments.¹⁸ Long-term debt has an original or extended maturity of more than one year. Public debt is an external obligation of public sector, or of private sector the repayment of which is guaranteed by a public entity.¹⁹ Similar to private debt net flows, public debt net flows are of long-term nature, calculated as the difference between disbursements and principal repayments.

¹⁵ This is similar to Campion and Neumann (2004).

¹⁶ Private and public debt are the World Bank's private non-guaranteed debt (PNG) and public and publicly guaranteed debt (PPG), respectively.

¹⁷ The debt and portfolio equity definitions are those of the World Bank's World Development Indicators.

¹⁸ Net rather than gross capital flows are used to avoid the possible bias arising from the increasing volatility of gross capital flows over the last decades. See Broner et al. (2013) on the use of gross capital inflows.

¹⁹ The public sector includes the general government, monetary authorities, and public corporations. A public corporation, financial or nonfinancial, is subject to control by government units, where control over a corporation is defined as the ability to determine general corporate policy by choosing appropriate directors, if necessary. Control can be established through government ownership of more than half of the voting shares or more than half of the shareholder voting power (including through ownership of a second public corporation that in turn has a majority of the voting shares), or through special legislation, decree, or regulation that empowers the government to determine corporate policy or to appoint directors. The publicly guaranteed private sector external debt component of PPG is defined as the external debt liabilities of the private sector, the servicing of which is contractually guaranteed by a public entity resident in the same economy as the debtor. Private sector external debt, which is not contractually guaranteed by the public sector is classified as PNG. Chapter 5 of International Monetary Fund (2003) provides a detailed definition of the public sector.

K could also be equity flows, which are decomposed into FDI and portfolio equity. FDI is investment in equity capital, retained earnings, other long-term capital, and short-term capital, which acquires 10 percent or more of the voting stock in an enterprise operating in a foreign economy. FDI net inflows are the difference between new investment inflows and disinvestment. Portfolio equity, as defined by WDI, includes net inflows from equity securities other than those recorded as direct investment. Portfolio equity includes shares, stocks, depository receipts (American or global), and direct purchases of shares in local stock markets by foreign investors.

R is measured by the 3-month treasury bills rate. An increase in the interest rate is expected to increase the cost of capital, reduce profit, and decrease foreign investment flows. Campion and Neumann (2004) also control for the U.S. T-bill rate as an external factor that globally pushes capital flows to emerging economies. Accordingly, an increase in interest rates may increase capital flows. Thus the effect of an increase in the 3-month treasury-bills rate is ambiguous.

The rate of political risk guarantee G is proxied by the total number of BITs ratified with OECD countries relative to the total number of OECD countries (in percentage). The higher the percentage of ratified treaties, the closer is the degree of property rights protection to that in OECD countries, and the lower the political risk is. While we expect a positive effect of political risk guarantees on capital flows in general, the effect might differ with the income level of the recipient country and the type of capital flow.

Table 1 shows the correlation between annual and total BITs signed and ratified with OECD countries (political risk guarantees) and the different types of capital flows during the period 1984–2011. In middle income countries, the correlation between total ratified BITs on the one hand and FDI and debt flows on the other amounts to 0.266 and 0.242, respectively. In low income countries, those coefficients amount to 0.550 and 0.587, respectively. It is also observed that the correlation coefficient for public debt amounts to 0.571 in low income countries compared to 0.112 for middle income countries. These coefficients may lend initial support to the expected differential impact of political risk guarantees by type of capital flows and recipient country income level.

The rate of government expropriation of foreign investment, X , is measured by the International Country Risk Guide's (ICRG) investment profile component of

Table 1: Correlation between Political Risk Guarantees, Political Risk, and Types of Capital Flows

	FDI	Debt			Portfolio Investment		Political Risk	
		Total	Private	Public	Equity	Bonds		
Bilateral Investment Treaties								
Middle income countries								
Signed - Annual	0.022	0.006	0.003	-0.013	0.062	0.006	0.061	
Signed - Total	0.298	0.263	0.213	0.150	0.163	0.227	0.483	
Ratified - Annual	0.074	0.028	-0.007	0.020	0.084	0.051	0.129	
Ratified - Total	0.266	0.242	0.157	0.162	0.107	0.176	0.463	
Low income countries								
Signed - Annual	0.122	0.150	-0.082	0.190	-0.022	-0.333	0.182	
Signed - Total	0.503	0.585	0.063	0.573	0.012	-0.556	0.302	
Ratified - Annual	0.119	0.170	-0.064	0.225	-0.011	-0.333	0.188	
Ratified - Total	0.550	0.587	0.105	0.571	0.008	-0.577	0.210	
	Private Debt		Public Debt					
	Loans	Bonds	Creditor		Bonds	Loans	Concessional	
			Private	Official			Bilateral	Multilateral
Middle income countries								
Signed - Annual	-0.001	0.009	-0.009	-0.010	0.009	-0.004	-0.034	-0.010
Signed - Total	0.195	0.116	0.205	-0.052	0.226	-0.003	-0.113	0.107
Ratified - Annual	-0.011	0.007	0.026	-0.005	0.069	-0.017	-0.040	0.000
Ratified - Total	0.155	0.060	0.215	-0.047	0.227	0.004	-0.133	0.119
Low income countries								
Signed - Annual	-0.082	.	0.103	0.186	-0.014	-0.027	-0.037	0.251
Signed - Total	0.063	.	0.196	0.606	-0.027	0.144	0.012	0.698
Ratified - Annual	-0.064	.	0.012	0.262	-0.013	-0.006	0.037	0.313
Ratified - Total	0.105	.	0.178	0.613	-0.024	0.173	-0.007	0.697

Notes: “Loans” refers to commercial bank loans. Political risk guarantees is measured by bilateral investment treaties. Political risk is measured by ICRG’s risk of investment expropriation. Bold fonts indicate statistical significance at the 5 percent level.

the political risk index. Investment profile reflects the risk of investment expropriation, profits repatriation, and payment delays. This index ranges from 0 to 12, where 0 indicates the highest risk and 12 the lowest risk. The index in this paper is expressed as a percentage of the maximum score. Similar to political risk guarantees, we expect a positive effect of investment profile on capital flows in general. However, the effect might differ with the type of capital flows. For example, an improvement in investment profile might encourage more equity and private (long-term) debt flows but discourage the use of government guaranteed debt and thus public debt flows. It might also lengthen debt maturity and thus reduce short-term debt flows (Mina 2006).

Table 2 shows the correlation between risk of investment expropriation (political risk) and the different types of capital flows during the same period (1984–2011). In general an improvement in investment expropriation risk is positively correlated to FDI inflows (per capita) in middle income countries (0.453). This correlation coefficient is more than double that for (per capita) total debt (0.23) and portfolio bond flows (0.215). In low income countries, the positive correlation is highest with (per capita) multilateral concessional debt flows (0.219). On the other hand, a negative correlation with (per capita) public debt flows suggests that institutional development may generate finance from alternative channels like portfolio equity.

The vector of additional control variables, Z , includes variables which have been found to be significant in other capital flows studies. Studies have typically controlled for the level of economic development or the economy size (Binici et al. 2010; Hooper and Kim 2007; Kim and Wu 2008; Okada 2013; Papaioannou 2009), macroeconomic stability (Fratzscher 2012; Okada 2013), financial development (Binici et al. 2010; Campion and Neumann 2004; Okada 2013; Daude and Fratzscher 2008; De Santis and Luhrmann 2009; Hooper and Kim 2007; Kim and Wu 2008) and capital controls (Binici et al. 2010; Campion and Neumann 2004; Daude and Fratzscher 2008; De Santis and Luhrmann 2009; Okada 2013).

We include the natural logarithm of real GDP per capita based on purchasing power parity (in 2011 international dollars) to account for the level of economic development, the natural logarithm of the CPI-based inflation rate to account for

Table 2: Correlation between Political Risk and Types of Capital Flows

	Middle Income		Low Income	
		(per capita)		(per capita)
FDI	0.105	0.453	0.182	0.018
Debt - Total	0.101	0.230	0.126	0.101
Debt - Private	0.129	0.193	-0.001	-0.009
Debt - Private - Bonds	0.060	0.117	.	.
Debt - Private - Loans	0.123	0.179	-0.001	-0.009
Debt - Public	0.035	-0.145	0.100	-0.156
Debt - Public - Private Creditor	0.084	0.143	0.045	0.041
Debt - Public - Official Creditor	-0.068	-0.004	0.101	0.079
Debt - Public - Bonds	0.104	0.161	-0.036	-0.036
Debt - Public - Loans	-0.006	-0.007	0.051	0.055
Debt - Public - Bilateral concessional	-0.094	-0.145	-0.142	-0.156
Debt - Public - Multilateral concessional	-0.010	0.041	0.213	0.219
Portfolio Equity	0.059	0.117	0.064	0.132
Portfolio Bond	0.098	0.215	-0.999	-0.999

Notes: Political risk is measured by ICRG's risk of investment expropriation. Bold fonts indicate statistical significance at the 5 percent level.

macroeconomic stability, money supply M2 as a percentage of GDP to account for financial development, and the Chinn-Ito financial openness index to account for capital controls.²⁰

The Chinn-Ito financial openness index, which was initially introduced in Chinn and Ito (2006), measures the degree of capital account openness. The Chinn-Ito index codifies four restrictions on cross-border financial transactions reported in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions. The four restrictions the index cover are the existence of multiple exchange rates, the presence of restrictions on current and capital account

²⁰ Using the value of stocks traded as a percentage of GDP reduces sample size by nearly half. Thus we decided to use M2 as a percentage of GDP and the banking credit to private sector as a percentage of GDP as measures of financial development.

transactions, and the regulatory requirements of the surrender of export proceeds. The index ranges from zero to 100; the higher the index value the more open the country is to cross-border capital transactions. Chinn and Ito (2008) provide details on the construction of the index.

Data on ratified BITs with OECD countries are extracted and coded from the UNCTADSTAT database. Data on the risk of investment expropriation are obtained from ICRG's investment profile component of the political risk index, as mentioned above. Data on FDI flows are obtained from UNCTADSTAT database. Data on the other types of capital flows, real GDP per capita, the inflation rate, and M2 are obtained from the World Bank's World Development Indicators (WDI). Data on the Chinn-Ito index is available from the Chinn-Ito's website.²¹ Data on the 3-month treasury bills rate are obtained from the Board of Governors of the Federal Reserve System website. A potential sample of 85 countries for the period 1984–2011 are selected from a list of countries classified by the World Bank in July 2012 as low and middle income countries and on which ICRG's investment profile index data are available.²²

4 Estimation methodology

Unobserved country, region and time specific factors are likely to influence capital flows, political risk, and political risk guarantees. Conceptually, the presence of such factors may result in correlation between political risk and political risk guarantees on the one hand and capital flows on the other. However, such

²¹ The index is available at http://web.pdx.edu/~ito/Chinn-Ito_website.htm.

²² The sample countries are Albania, Algeria, Angola, Argentina, Armenia, Azerbaijan, Bangladesh, Belarus, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Cameroon, Chile, China, Colombia, Costa Rica, Cote d'Ivoire, Dominican Republic, Ecuador, Egypt, El Salvador, Ethiopia, Gambia, Ghana, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, India, Indonesia, Iran, Iraq, Jamaica, Jordan, Kazakhstan, Kenya, Latvia, Lebanon, Liberia, Libya, Lithuania, Madagascar, Malawi, Malaysia, Mali, Mexico, Moldova, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nicaragua, Niger, Nigeria, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Russia, Senegal, Sierra Leone, South Africa, Sri Lanka, Sudan, Suriname, Syria, Tanzania, Thailand, Togo, Tunisia, Turkey, Uganda, Ukraine, Uruguay, Venezuela, Vietnam, Yemen, and Zambia.

correlation is not necessarily a causal relationship.²³ Ignoring these unobserved effects constitutes variable omission and creates endogeneity.

As Papaioannou (2009) points out, social capital and norms, culture, geography, and trust are time invariant, unobserved country specific factors. These factors may affect both institutions and capital flows.

Thinking beyond the country level, there are factors such as common language and ethnic ties as well as culture and geography, which are time invariant and region specific. These factors may also influence capital flows to a specific region as well as the domestic institutions and contracted (i.e. signed and/or ratified) BITs.

In contrast to the unobserved time invariant country and region factors, there are country invariant, unobserved time specific factors, such as global shocks, which take place over time and are common to all countries. The most recent financial crisis of 2007–2008 is one example. These global shocks may influence not only capital flows but also the contracting of BITs.²⁴

Failure to control for these unobserved factors constitutes variable omission and creates endogeneity. We therefore use least squares dummy variables (LSDV) approach, similar to Binici et al. (2010), to account for them. We must note though that we have a potential sample of 85 countries in seven regions over the period 1984–2011.²⁵ Controlling for these unobserved effects at the same time significantly reduces the degrees of freedom and increases standard deviation, and therefore reduces estimation efficiency.²⁶ To avoid this issue, we account for each type of unobservable effects separately.

²³ Papaioannou (2009) is useful on this point.

²⁴ Global shocks can possibly advance or delay the contracting of bilateral investment treaties depending on the additional investor protection needed and the urge for it.

²⁵ The seven regions are East Asia and Pacific, Europe and Central Asia, Latin America and Caribbean, Middle East and North Africa, North America, South Asia, and Sub-Saharan Africa.

²⁶ They reduce the degree of freedom by 117.

5 Empirical results

Table 3 provides descriptive statistics for the empirical model variables. Our focus is on the level of capital flows and the degree of political risk and political risk guarantees in these countries. Middle income countries attract a higher level of capital flows compared to low income countries, even for public debt. The highest two levels of capital flows, which middle income countries attract are FDI and private debt. They amount on average to about US\$3 billion and US\$ 0.75 billion, respectively. In comparison low income countries rely more on public debt and FDI flows with average flows amounting to US\$ 0.15 billion and US\$ 0.13 billion, respectively. In addition, the risk of investment expropriation in middle income countries is about 17 percent lower than in low income countries. The number of middle income countries BITs is nearly four times the number for low income countries. These observations suggest that in exploring the effect of political risk guarantees we should focus on these three types of capital flows: FDI, private debt and public debt.

5.1 The influence of political risk guarantees

Tables 4, 5, and 6 report the LSDV estimation results after controlling for the unobserved country, region, and time effects, respectively. We should first note that the *R*-squared coefficient is highest after controlling for the unobserved country effects.

Table 4 shows that a reduction in political risk, as measured by the risk of investment expropriation, has no effect on either FDI or debt, private or public. On the other hand, political risk guarantees have a *direct*, positive marginal effect on FDI flows. An increase in the total number of BITs ratified with OECD countries by one percentage point increases FDI inflows by 1.6 percent.²⁷ Alternatively an increase in the total number of BITs ratified by one OECD country increases FDI inflows by 4.8 per cent. In contrast, the *direct* influence of ratifying one BIT with

²⁷ Since 1 percentage point of 34 countries is 0.34 country, it is perhaps better to state this result in terms of number of OECD countries.

Table 3: Descriptive Statistics: Empirical Model Variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
Dependent Variable(s)					
Middle Income Countries					
FDI Net Inflows	1723	2.975	12.583	−4.550	243.703
Private debt Net Inflows	1631	0.730	3.922	−19.223	71.878
Public Debt Net Inflows	1631	0.569	2.272	−14.429	28.256
Portfolio Equity Net Inflows	1489	0.497	3.106	−15.030	42.861
Low Income Countries					
FDI Net Inflows	512	0.134	0.259	−0.140	2.079
Private debt Net Inflows	532	−0.001	0.018	−0.085	0.264
Public Debt Net Inflows	532	0.145	0.219	−0.553	2.086
Portfolio Equity Net Inflows	380	0.001	0.017	−0.153	0.153
Explanatory Variables					
Middle Income Countries					
Investment Profile	1704	6.781	2.083	1.000	11.500
Number of OECD Treaties Ratified	1848	5.435	5.913	0.000	22.000
T-bills Rate (3 months)	1848	4.259	2.477	0.050	9.540
Real GDP per Capita (PPP)	1395	7,854.982	4,784.217	1,488.191	30,261.140
Inflation rate	1578	65.010	455.326	−16.117	11,749.640
M2 (% GDP)	1678	47.344	32.822	7.707	243.944
KA openness index	1671	−0.155	1.461	−1.864	2.439
Low Income Countries					
Investment Profile	522	5.797	2.162	0.000	10.000
Number of OECD Treaties Ratified	504	1.444	2.690	0.000	12.000
T-bills Rate (3 months)	532	4.259	2.479	0.050	9.540
Real GDP per Capita (PPP)	388	1,215.728	486.070	142.019	2,588.500
Inflation rate	454	13.914	21.112	−11.449	200.026
M2 (% GDP)	492	25.314	11.336	0.831	101.880
KA openness index	524	−0.582	1.220	−1.864	2.439

Table 4: Controlling for Unobserved Country Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	FDI	Private	Public	PE	FDI	Private	Public	PE
<i>X</i>	0.002	0.001	0.002	0.042 ^a				
	(0.006)	(0.014)	(0.006)	(0.014)				
<i>G</i>					0.016 ^c	−0.117 ^a	−0.014	−0.036
					(0.009)	(0.043)	(0.015)	(0.025)
<i>GX</i>	0.033 ^a	0.064 ^b	−0.008	0.012	0.017 ^c	0.191 ^a	0.010	0.091 ^a
	(0.009)	(0.029)	(0.012)	(0.021)	(0.010)	(0.055)	(0.018)	(0.031)
<i>R</i>	−0.065 ^b	0.016	−0.061 ^c	−0.021	−0.062 ^b	−0.006	−0.064 ^c	−0.029
	(0.028)	(0.090)	(0.034)	(0.087)	(0.028)	(0.089)	(0.034)	(0.089)
<i>Development</i>	1.885 ^a	−0.858	0.127	0.936 ^b	1.861 ^a	−0.553	0.179	0.738 ^c
	(0.325)	(1.237)	(0.476)	(0.391)	(0.346)	(1.241)	(0.480)	(0.385)
<i>Inflation</i>	−0.000 ^a	0.000	−0.000 ^a	−0.000	−0.000 ^a	0.000 ^c	−0.000 ^a	−0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
<i>Finance</i>	0.008	0.075 ^a	0.011	0.021 ^a	0.008	0.076 ^a	0.011	0.023 ^a
	(0.006)	(0.020)	(0.007)	(0.006)	(0.006)	(0.020)	(0.007)	(0.006)
<i>Capital</i>	0.162 ^b	0.338	−0.089	−0.199	0.156 ^b	0.404 ^c	−0.077	−0.165
	(0.065)	(0.217)	(0.077)	(0.174)	(0.066)	(0.215)	(0.077)	(0.170)
Constant	−19.099 ^a	−4.994	−3.727	−13.329 ^a	−18.973 ^a	−6.239	−3.906	−9.476 ^a
	(2.708)	(10.837)	(3.915)	(3.453)	(2.772)	(10.823)	(3.929)	(3.001)
Obs.	1,513	1,469	1,469	766	1,513	1,469	1,469	766
F test	350.11 ^a	5964.55 ^a	29.69 ^a	198.27 ^a	345.7 ^a	6264.09 ^a	30.22 ^a	215.34 ^a
R-squared	0.600	0.726	0.289	0.251	0.600	0.727	0.289	0.246

Notes: Robust standard errors in parentheses. ^a, ^b, ^c denote significance at the 1%, 5%, 10% levels, respectively.

an OECD country on private debt flows is to decrease them by more than one third (35.1 percent).²⁸

²⁸ This is calculated as: (−0.117)*(100)*3.

If we account for the *indirect* influence that ratified BITs with OECD countries exert on domestic institutions (the coefficient of *GX*), the total effect of ratifying a single treaty with an OECD country increases FDI inflows by 7.5 percent and decreases private debt flows by about 3.66 percent.²⁹

Table 5 shows the estimation results if instead we control for the unobserved region effects. The *direct* influence of ratifying an additional treaty with an OECD country increases FDI inflows by a maximum of 11.1 percent. The *indirect* influence is negative though statistically insignificant. This result may seem counter-intuitive despite its statistical insignificance. A possible explanation is when accounting for regional factors and competition for FDI inflows, BIT ratification may send an opposite (negative) signal about the status of political risk in the recipient country and the need for institutional reforms instead.

For private debt flows, the *direct* influence is negative and similar to the one obtained in Table 4. It is statistically insignificant nonetheless. The *indirect* influence is positive and increases private debt flows by nearly one third (30.6 percent). When we account for unobserved time effects, we obtain in Table 6 similar results to those of Table 5.

Regardless of the nature of unobserved effect we control for, the *direct* and *indirect* influence of political risk guarantees on public debt flows is statistically insignificant, as Tables 4, 5, and 6 show.

5.2 The influence of political risk

The results of Tables 4–6 show that the risk of investment expropriation does not have a statistically significant influence on capital flows except for portfolio equity flows. In Table 4, an improvement in investment expropriation risk by one percentage point increases portfolio equity flows by 4.2 percent. A similar positive effect holds in Table 5 but with a smaller coefficient (3.3 percent).

²⁹ This is calculated as the sum of the direct (0.016) and the indirect (0.017×0.5458) influence multiplied by 3 in order to express it per OECD country. The value 0.5458 is the average risk of investment expropriation ratio (to maximum score of 12). The sum is multiplied by 100 to express the value in percentage terms.

Table 5: Controlling for Unobserved Region Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	FDI	Private	Public	PE	FDI	Private	Public	PE
<i>X</i>	−0.001 (0.006)	0.003 (0.021)	0.003 (0.006)	0.033 ^b (0.014)				
<i>G</i>					0.037 ^a (0.009)	−0.038 (0.044)	−0.007 (0.011)	−0.023 (0.023)
<i>GX</i>	0.034 ^a (0.006)	0.140 ^a (0.027)	0.001 (0.007)	0.014 (0.016)	−0.010 (0.011)	0.187 ^a (0.054)	0.012 (0.014)	0.063 ^b (0.030)
<i>R</i>	−0.109 ^a (0.028)	0.229 ^c (0.120)	−0.035 (0.032)	0.036 (0.084)	−0.100 ^a (0.029)	0.218 ^c (0.120)	−0.038 (0.031)	0.022 (0.086)
<i>Development</i>	1.273 ^a (0.094)	2.717 ^a (0.454)	1.060 ^a (0.132)	0.618 ^c (0.327)	1.298 ^a (0.094)	2.709 ^a (0.450)	1.067 ^a (0.140)	0.693 ^b (0.325)
<i>Inflation</i>	−0.000 (0.000)	−0.001 (0.001)	−0.000 ^a (0.000)	0.000 (0.001)	0.000 (0.000)	−0.001 (0.001)	−0.000 ^a (0.000)	0.000 (0.000)
<i>Finance</i>	0.008 ^a (0.002)	0.024 ^b (0.010)	−0.001 (0.003)	0.018 ^a (0.006)	0.008 ^a (0.002)	0.024 ^b (0.010)	−0.001 (0.003)	0.018 ^a (0.006)
<i>Capital</i>	−0.135 ^a (0.037)	−0.744 ^a (0.183)	−0.320 ^a (0.070)	−0.190 (0.137)	−0.129 ^a (0.039)	−0.749 ^a (0.179)	−0.317 ^a (0.067)	−0.167 (0.134)
Constant	−11.072 ^a (0.820)	−32.010 ^a (3.793)	−8.974 ^a (1.316)	−9.360 ^a (2.700)	−11.574 ^a (0.827)	−31.498 ^a (3.881)	−8.826 ^a (1.270)	−8.250 ^a (2.820)
Obs.	1,513	1,469	1,469	766	1,513	1,469	1,469	766
<i>F</i> test	58.91 ^a	60.75 ^a	16.35 ^a	9.71 ^a	57.83 ^a	63.38 ^a	13.06 ^a	9.00 ^a
<i>R</i> -squared	0.313	0.279	0.148	0.101	0.317	0.279	0.148	0.095

Notes: Robust standard errors in parentheses. ^a, ^b, ^c denote significance at the 1%, 5%, 10% levels, respectively.

The FDI and debt flows results contrast the empirical evidence of Sánchez-Martín et al. (2014) and Mina (2012) for FDI flows to Latin America and the MENA region, respectively. We must note though that in this paper we examine the influence of risk of investment expropriation, as opposed to civil liberties (De

Table 6: Controlling for Unobserved Time Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	FDI	Private	Public	PE	FDI	Private	Public	PE
<i>X</i>	−0.003	−0.001	0.006	0.017				
	(0.005)	(0.021)	(0.006)	(0.013)				
<i>G</i>					0.030 ^a	0.053	−0.000	−0.012
					(0.008)	(0.040)	(0.010)	(0.022)
<i>GX</i>	0.027 ^a	0.179 ^a	−0.001	0.016	−0.013	0.110 ^b	0.002	0.037
	(0.005)	(0.026)	(0.006)	(0.014)	(0.011)	(0.051)	(0.014)	(0.030)
<i>R</i>	−0.213 ^a	0.588 ^b	0.019	−0.055	−0.200 ^a	0.608 ^b	0.012	−0.074
	(0.059)	(0.238)	(0.050)	(0.195)	(0.058)	(0.238)	(0.049)	(0.197)
<i>Development</i>	1.039 ^a	3.845 ^a	0.918 ^a	0.394	1.033 ^a	3.825 ^a	0.926 ^a	0.401
	(0.077)	(0.359)	(0.101)	(0.247)	(0.078)	(0.359)	(0.107)	(0.247)
<i>Inflation</i>	0.000	−0.000	−0.000 ^a	0.000	0.000	−0.000	−0.000 ^a	0.000
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
<i>Finance</i>	0.012 ^a	0.008	0.004 ^c	0.025 ^a	0.012 ^a	0.007	0.004 ^c	0.025 ^a
	(0.002)	(0.008)	(0.002)	(0.004)	(0.002)	(0.008)	(0.002)	(0.004)
<i>Capital</i>	−0.148 ^a	−0.157	−0.308 ^a	−0.197	−0.139 ^a	−0.130	−0.299 ^a	−0.180
	(0.035)	(0.170)	(0.064)	(0.129)	(0.037)	(0.171)	(0.060)	(0.126)
Constant	−9.529 ^a	−42.668 ^a	−8.826 ^a	−8.235 ^a	−9.745 ^a	−42.772 ^a	−8.573 ^a	−7.294 ^a
	(0.739)	(3.017)	(1.105)	(2.184)	(0.667)	(2.903)	(0.926)	(2.177)
Obs.	1,513	1,469	1,469	766	1,513	1,469	1,469	766
<i>F</i> test	30.33 ^a	21.67 ^a	8.53 ^a	4.76 ^a	30.52 ^a	23.09 ^a	6.55 ^a	4.69 ^a
<i>R</i> -squared	0.307	0.227	0.148	0.100	0.310	0.227	0.148	0.098

Notes: Robust standard errors in parentheses. ^a, ^b, ^c denote significance at the 1%, 5%, 10% levels, respectively.

Santis and Luhrmann 2009), opacity (Hooper and Kim 2007), sovereign credit rating (Kim and Wu 2008), and composite political risk index (Papaioannou 2009). None of these studies has taken into account BITs influence.

The sign of the interaction term coefficient in the FDI and private debt flows specifications in Tables 4–6 is positive. This suggests that the *indirect* influence of a reduction in political risk is positive unlike that of ratified BITs. Reform of

domestic institutions seems to pay off in terms of the *indirect* or secondary influence they have on FDI and private debt flows.

5.3 The influence of other explanatory variables

5.3.1 Cost of capital

The effect of an increase in interest rates on FDI inflows is consistently negative and statistically significant in Tables 4-6, regardless of how we model the risk premium and the nature of unobserved effects. An increase in world interest rates indicates a contractionary monetary policy and economic activity in OECD countries, which reduces world FDI flows including those of middle and low income countries. However, the magnitude of reduction in FDI flows depends on the unobserved effects. For example, an increases in interest rates by 1 percent reduces FDI flows by about 6 percent if we control for country effects, 10 percent for region effects, or 20 percent for time effects.

The negative interest rate extends to public debt flows, when unobserved country effects are controlled for (Table 4). As explained above this negative effect is a result of the economic downturn in OECD countries. An increase in world interest rates can also reduce the overall creditworthiness of middle and low income countries even if the debt is guaranteed by the government. In contrast to the negative interest rate effect, Tables 5 and 6 report positive interest rate effect on private debt flows. As interest rates rise and industrialized economies contract, private lenders extend loans to private borrowers in middle and low income countries.

5.3.2 Economic development

The level of economic development, as measured by real GDP per capita, has a consistently positive and statistically significant influence on FDI flows regardless of how we model risk premium and the nature of unobserved effects, as Tables 4-6 show. In Table 5, the positive coefficient of the level of economic development across all types of capital flows highlights its importance especially under regional competition.

5.3.3 Financial development

The level of financial development, as measured by money supply M2 as a percentage of GDP, has a consistently positive and statistically significant influence on portfolio equity flows regardless of how we model risk premium and the nature of unobserved effects, as Tables 4–6 show. This result suggests that banking development, as measured by money supply M2, is an important pull factor for portfolio equity. In addition, the results of Table 5 suggest the importance of financial development in attracting private capital flows, whether equity or private debt.

5.3.4 Capital controls

The results of Table 4 show that, when controlling for unobserved country effects, financial openness is positively associated with FDI inflows. However, the results of Tables 5 and 6 show that, when controlling for unobserved region and time effects respectively, financial openness reduces FDI flows and *public* debt inflows. These results contrast with Binici et al. (2010) who find that capital controls have little effect on capital inflows.

The robustness checks of Tables 7, 8, and 9 confirm the positive effect of financial openness on FDI inflows, when we weight OECD BITs by the aggregate OECD real GDP index, examine the composition of capital flows, and enlarge the country sample, respectively.

6 Robustness checks

To examine the robustness of the obtained results above, we undertake a number of checks, while controlling for the unobserved country effects. First, in considering BITs in Tables 4–6 we have disregarded the income level of the partner country. In FDI gravity models, home country GDP has been found to have a positive effect on FDI inflows to the host country. Thus we weight BITs by an index of OECD aggregate real GDP (Table 7). Second, since the above results suggest that BITs attract more FDI and less private debt flows, we check whether OECD GDP-weighted BITs change the composition of capital flows by increasing

Table 7: Robustness Checks: Weighted Political Risk Guarantees and Controlling for Unobserved Country Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	FDI	Private	Public	PE	FDI	Private	Public	PE
<i>X</i>	0.003 (0.006)	0.001 (0.014)	0.001 (0.006)	0.045 ^a (0.014)				
<i>G</i>					0.021 ^b (0.010)	-0.117 ^b (0.047)	-0.019 (0.017)	-0.043 (0.028)
<i>GX</i>	0.036 ^a (0.010)	0.073 ^b (0.030)	-0.003 (0.013)	0.005 (0.021)	0.015 (0.011)	0.204 ^a (0.060)	0.019 (0.020)	0.094 ^a (0.035)
<i>R</i>	-0.063 ^b (0.028)	0.021 (0.090)	-0.059 ^c (0.034)	-0.019 (0.089)	-0.060 ^b (0.028)	-0.002 (0.090)	-0.063 ^c (0.034)	-0.028 (0.092)
<i>Development</i>	1.728 ^a (0.345)	-1.207 (1.287)	0.073 (0.505)	0.989 ^a (0.383)	1.658 ^a (0.369)	-0.710 (1.305)	0.158 (0.519)	0.803 ^b (0.381)
<i>Inflation</i>	-0.000 ^a (0.000)	0.000 (0.000)	-0.000 ^b (0.000)	-0.000 (0.000)	-0.000 ^a (0.000)	0.000 ^c (0.000)	-0.000 ^a (0.000)	-0.001 (0.000)
<i>Finance</i>	0.008 (0.006)	0.074 ^a (0.021)	0.011 (0.007)	0.020 ^a (0.007)	0.007 (0.006)	0.076 ^a (0.020)	0.011 (0.007)	0.022 ^a (0.007)
<i>Capital</i>	0.165 ^b (0.065)	0.343 (0.217)	-0.092 (0.076)	-0.191 (0.173)	0.162 ^b (0.066)	0.393 ^c (0.214)	-0.082 (0.077)	-0.157 (0.170)
Constant	-17.727 ^a (2.898)	-1.954 (11.264)	-3.284 (4.176)	-13.824 ^a (3.374)	-17.176 ^a (2.974)	-5.119 (11.351)	-3.790 (4.250)	-9.894 ^a (2.980)
Obs.	1,513	1,469	1,469	766	1,513	1,469	1,469	766
<i>F</i> test	306.98 ^a	9569.65 ^a	29.69 ^a	198.45 ^a	323.17 ^a	11416.74 ^a	30.11 ^a	211.78 ^a
R-squared	0.600	0.726	0.289	0.250	0.601	0.727	0.289	0.243

Notes: Robust standard errors in parentheses. *G* and *GX* are weighted by an index of OECD real GDP. ^a, ^b, ^c denote significance at the 1%, 5%, 10% levels, respectively.

the FDI-debt and FDI-portfolio equity ratios (Table 8). Third, we expand the sample countries to include high income countries in examining the influence on FDI (Table 9).

Table 8: Robustness Checks: Weighted Political Risk Guarantees and Capital Flows Composition (Controlling for Unobserved Country Effects)

	(1)	(2)	(3)	(4)	(5)	(6)
	FDI/Private Debt	FDI/Public Debt	FDI/Portfolio Equity	FDI/Private Debt	FDI/Public Debt	FDI/Portfolio Equity
<i>X</i>	0.004	0.002	-0.041 ^a			
	(0.015)	(0.008)	(0.015)			
<i>G</i>				0.138 ^a	0.037 ^c	0.066 ^b
				(0.046)	(0.020)	(0.029)
<i>GX</i>	-0.041	0.032 ^b	0.034	-0.191 ^a	-0.007	-0.080 ^b
	(0.031)	(0.016)	(0.021)	(0.059)	(0.024)	(0.035)
<i>R</i>	-0.089	-0.015	0.002	-0.063	-0.008	0.019
	(0.093)	(0.045)	(0.087)	(0.093)	(0.045)	(0.090)
<i>Development</i>	3.013 ^b	1.719 ^a	-0.344	2.452 ^c	1.573 ^b	-0.249
	(1.343)	(0.582)	(0.384)	(1.364)	(0.611)	(0.384)
<i>Inflation</i>	-0.001 ^a	-0.000	-0.001	-0.001 ^a	-0.000	-0.000
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
<i>Finance</i>	-0.064 ^a	-0.001	-0.001	-0.067 ^a	-0.002	-0.002
	(0.021)	(0.008)	(0.007)	(0.021)	(0.008)	(0.007)
<i>Capital</i>	-0.183	0.261 ^a	0.282	-0.232	0.249 ^b	0.259
	(0.223)	(0.099)	(0.175)	(0.222)	(0.100)	(0.172)
Constant	-16.577	-14.955 ^a	6.434 ^c	-12.819	-13.938 ^a	3.254
	(11.699)	(4.901)	(3.413)	(11.787)	(4.999)	(3.003)
Obs.	1,459	1,459	766	1,459	1,459	766
<i>F</i> test	301.84 ^a	9.24 ^a	43.93 ^a	292.22 ^a	9.26 ^a	45.74 ^a
R-squared	0.671	0.316	0.195	0.673	0.317	0.191

Notes: Robust standard errors in parentheses. *G* and *GX* are weighted by an index of OECD real GDP. ^a, ^b, ^c denote significance at the 1%, 5%, 10% levels, respectively.

The results of Table 7 show a higher magnitude and statistical significance of the coefficient of BITs on FDI flows. However this comes at the loss of (marginal) statistical significance of the interaction term. The negative effect on private debt flows of ratifying a BIT with an OECD country is reduced to 1.68 percent (from 3.66 percent in Table 4).

The results of Table 8 show a positive total effect of OECD GDP-weighted BITs on the composition of capital flows in favor of FDI flows. The coefficients indicate that an increase in the number of ratified BITs by one increases the ratio of FDI to private debt flows by more than 10 percent and the ratio of FDI to portfolio equity flows by nearly 7 percent.

Table 9: Robustness Checks: Weighted Political Risk Guarantees and Enlarged Sample (Unobserved Country Effects)

	(1)	(5)
VARIABLES	FDI	FDI
<i>X</i>	0.001 (0.003)	
<i>G</i>		0.035 ^a (0.009)
<i>GX</i>	0.040 ^a (0.007)	0.006 (0.009)
<i>R</i>	−0.005 (0.021)	0.001 (0.021)
<i>Development</i>	2.176 ^a (0.276)	2.025 ^a (0.297)
<i>Inflation</i>	−0.000 ^a (0.000)	−0.000 ^a (0.000)
<i>Finance</i>	0.001 (0.002)	0.002 (0.002)
<i>Capital</i>	0.121 ^b (0.051)	0.122 ^b (0.051)
Constant	−21.394 ^a (2.318)	−20.474 ^a (2.443)
Obs.	2,201	2,201
<i>F</i> test	294.15 ^a	288.83 ^a
R-squared	0.671	0.673

Notes: Robust standard errors in parentheses. ^a, ^b, ^c denote significance at the 1%, 5%, 10% levels, respectively.

Finally, expanding the country sample to include high income countries as well (Table 9) shows an increase in the magnitude and statistical significance of the *direct* influence of GDP-weighted BITs to 3.5 percent from 2.1 percent in Table 7.

7 Conclusion

In this paper we have empirically examined the influence of political risk guarantees that BITs provide on FDI, private debt, public debt, and portfolio equity flows to 85 middle and low income countries over the period 1984–2011. We have used LSDV approach to control for country, region and time unobserved effects. Results show that BITs increase the volume of FDI flows in consistence with the recent FDI empirical research of Egger and Pfaffermayr (2004), Neumayer and Spess (2005) and Tobin and Rose-Ackerman (2006). They interestingly show also that BITs reduce private debt flows and tilt the composition of capital flows in favor of FDI. In other words, while BITs encourage FDI flows, they do not seem to encourage other types of capital flows.

The results of this research also suggest if countries are to attract portfolio equity, the other type of equity capital, they should consider developing the financial and banking systems in particular. This recommendation is based on the robust *FINANCE* coefficient in Tables 4–6, i.e., regardless of the type of unobserved effects controlled for.

While BITs can reduce political risk and increase country competitiveness especially in regional context, exchange rate policies also play an important role in boosting or at least maintaining competitiveness. A further robustness check shows, controlling for unobserved region effects, a depreciation in the real exchange rate by one percent increases FDI and private debt flows by 58 percent and 213 percent, respectively.³⁰ Policy makers should therefore consider the competitiveness of the economy through macroeconomic policies.

Finally the novelty of this paper lies in its examination of whether political risk guarantees of BITs extend beyond FDI to other types of capital flows. The

³⁰ Exchange rate depreciation is measured by the increase in real effective exchange rate index. Results are available from the author upon request.

legitimacy of this inquiry stems from the definition of foreign investment that BITs cover. While the impact of treaties on FDI inflows has been widely examined in the FDI literature, no study to the best of our knowledge has examined it on other types of capital flows in particular private and public debt.

Two additional research questions can be pursued. First, do political risk guarantees empirically affect country credit ratings and risk premia? Second, do financial institutions actually consider these guarantees in their investment decisions? Answering this second question requires financial institution level data. We leave answering these questions to the future.

Acknowledgements I would like to thank three anonymous referees and anonymous and invited readers for their invaluable and value-adding comments. I also wish to extend my sincere thanks to Mohamed Belkhir, Regis Blazy, Eduardo Cavallo, Amany Elanshasy, Hisham Fouad, Abdalnasser Hatemi, Louis Jaeck, Ozgur Kaya, Marina Selini Katsaiti, Minas Khatchadourian, Chiraz Labidi, Jorge Martinez-Vazquez, Osiris Parceró, Willem Selen, Raimundo Soto, Osama Sweidan, and participants at the 2012 Middle Economic Association Meetings (Chicago), the 2012 and 2014 annual Research Symposia in Business and Economics organized by the United Arab Emirates University (Al Ain), the 2012 and 2013 INFINITI Conferences in International Finance (Dublin and Aix en Provence), and the Department of Economics and Finance Research Seminar Series (United Arab Emirates University) for useful comments and suggestions on earlier versions of this paper. I am solely responsible for any errors.

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Appendix A

Capital Flows Determinants Literature Summary

Study	Summary
External and Domestic Factors	
Calvo et al. (1996)	They discuss the determinants of the 1990s capital flows to Asian and Latin American countries. Determinants include 1) sustained declined in world interest rates until 1992 and the recovery in 1994; 2) recession in US, Japan, and Europe followed by recovery in mid 1990s; 3) international diversification of investments and integration of world capital markets; 4) improvement in indebted country-creditor relationship; 5) adoption of sound monetary and fiscal policies, and market-oriented reforms including inflation stabilization and trade and capital market liberalization; and 6) contagion effects results from the capital outflows from Mexico and Chile and into smaller neighboring countries.
Fernandez-Arias (1996)	He assesses the debate on whether private capital flows are driven to middle income countries by pull factors, mainly improved recipient country creditworthiness, emanating in the domestic economy, or push factors, mainly international interest rates, external to the domestic economy. He argues that creditworthiness drives capital inflows to developing countries. However, such creditworthiness is driven by external factors, namely international interest rates. Therefore he argues that “country creditworthiness is not a good proxy for domestic factors” (p.391). He also finds that in most countries capital flows were driven by low returns in developed countries – a push factor, as opposed to domestic pull factors.
Capital Controls	
Binici et al. (2010)	They examine the effects of disaggregated capital controls on equity, FDI, and debt inflows and outflows in 74 countries during 1995–2005. In addition to capital controls, the empirical model includes the log of real per-capita GDP (to account for economic development); institutional quality, trade openness; private credit and stock market capitalization (relative to GDP) to proxy for financial development, and measure of natural resource endowment. The model is estimated using LSDV to control for country fixed effects. They find the effects of capital controls to vary significantly by type of control, asset categories and direction of capital flows. In particular, both debt and equity controls substantially reduce outflows with little effect on capital inflows. They also find the effects of capital controls vary by the countries’ income levels, with only high-income countries appearing to effectively impose debt outflow controls.
Campion and Neumann (2004)	They empirically examine the effects of government-imposed capital controls on the composition of international capital flows, focusing on the tradeoffs between debt and equity (both portfolio equity and FDI) financing, as well as the volume of capital flows. The empirical model explains capital inflow (first relative to gross private capital inflows and second relative to GDP) in terms of a capital control index; a capital market reform index; international interest rates (as a push factor); and domestic inflation, the real exchange rate, a measure of openness, and equity market capitalization as pull factors. They use panel data on seven Latin American economies during the 1990s and both fixed country and time effects panel models. Empirical results show a change in the composition of capital flows away from private debt and a decrease in the volume of private portfolio capital (as a percentage of GDP) in response to capital controls.

Study	Summary
Okada (2013)	He examines the effect of financial openness and institutional quality on capital flows using (five year period-average) panel data on 112 countries during 1985–2009 and system GMM estimation methodology. The empirical model explains capital inflows (FDI inflows per capita and the sum of per capita FDI and per capita portfolio equity) on a financial openness index, a measure of institutional quality, log of real GDP per capita in the initial year, education attainment in the initial year, trade openness, inflation, government expenditures, and/or private credit. He finds that financial openness and institutional quality do not individually have significant impacts on international capital inflows; their interaction effects do, however. In other words, capital inflows in countries with good institutional quality benefit more from financial openness than those in countries with poor institutional quality.
Institutions and Political Risk	
Daude and Fratzscher (2008)	<p>They re-visit the theory of pecking order in trade in financial assets and empirically examine the influence of information frictions and quality of institutions on composition of capital flows using bilateral holdings of financial assets for 77 countries. They measure institutional quality using transparency, investor protection, and corruption. Transparency is measured using the degree of information disclosure in local credit market regulations, accounting standards in the host country. Investor protection is measured using risk of expropriation, repudiation costs, and quality of enforcement of laws and regulations. Corruption is measured using data from Transparency International, the World Bank, and survey of German manufacturing firms. In examining the influence of institutions quality, they also control for market development and openness (capital account openness, financial development, and stock market development).</p> <p>Of relevance to this research are their results which show that, compared to FDI or loans, portfolio investment is more sensitive to quality of institutions, such as the risk of expropriation, repudiation costs, the degree of information disclosure in local credit market regulations, and accounting standards in the host country. They also find that portfolio investments and loans decrease with corruption, in contrast to FDI, which is less sensitive to corruption.</p>
De Santis and Luhrmann (2009)	<p>They empirically investigate the determinants of cross-border portfolio flows - net equity securities flows and net debt flows. They focus mainly on the role of demography (population ageing), the influence of political institutions (namely civil liberties) and money. Civil liberties examined include freedom of expression and belief, association and organization rights, rule of law and human rights, personal autonomy and economic rights.</p> <p>In their empirical model, they control for real GDP growth; the ratio of per capita income relative to the corresponding US level and the ratio squared to account for the stages of development hypothesis; real effective exchange rate to account for international competitiveness; GDP per worker growth rate to account for labor productivity; net financial assets; capital and current account controls using the IMF's <i>Exchange Arrangements and Exchange Restrictions</i> annual report; stock market capitalization to account for size effect; the deviation of the market's price-earnings ratio from its fundamental value; and the differentials in lagged equity returns and long-term bond yields in local currencies to determine net flows in equity securities and debt instruments.</p> <p>They use two panel data sets. The first is five-year period averages to capture medium-term effects, while the second is annual observations to capture shorter-term effects. Given their criticism of the fixed effects model, they mainly adopt pooled regression estimation methodology using the heteroskedasticity-robust Huber-White-Sandwich variance estimator and the random effects model.</p> <p>Of institutions relevance to this research, they find countries with better institutions are characterized by net portfolio inflows and</p>

Study	Summary
	current account deficits. This result helps explain the Lucas paradox of capital flows from developing to developed countries.
Fratzscher (2012)	<p>In analyzing the role of different drivers of global capital flows during the 2007–2008 global financial crisis and the subsequent recovery, he examines the importance of common global shocks to capital flows, and the insulation that pull factors - macroeconomic policies, institutions and financial policies - provide against global shocks. He uses high frequency mutual funds data on 50 countries and markets worldwide for the period October 2005 until November 2010 and factor model.</p> <p>Results indicate that common shocks, such as crisis-specific events, and changes to global liquidity and risk conditions, have a substantial effect on global capital flows. They also indicate that institutional quality and country risk and macroeconomic fundamentals and policies explain a significant share of the heterogeneity of capital flows during the crisis and the subsequent recovery period. They also argue that that “countries with a high institutional quality and strong macroeconomic fundamentals succeeded to insulate their financial markets from adverse common and idiosyncratic shocks during the financial crisis” (p. 351).</p>
Hooper and Kim (2007)	<p>They argue that the likely effects of opacity, defined as lack of transparency, are not clear. Effects may depend on the type of opacity. (Opacity may relate to corruption; legal, economic, or accounting reporting; or regulation.) Effects may also depend on the nature of capital flows (FDI, bank flows, or portfolio flows) and their duration (short- as opposed to long-term flows).</p> <p>They investigate the (heterogeneous) impact of opacity on the level of FDI, portfolio and banking flows using the 2000 Price Waterhouse surveys of opacity for 35 countries. The 2000 net capital flows are explained in terms of opacity index, institutional investors’ credit rating, GDP, stock market capitalization, competitiveness index, the top corporate tax rate, the share of resources (ores and metals) in total exports, the share of gross national saving in GDP, and the share of domestic credit provided by banking sector in GDP. OLS is used in cross section estimation.</p> <p>First, they find that overall opacity is negatively associated with all three types of capital flows. Second, they discover that opacity may increase profit opportunities and thus capital flows. Examples of such opacity are accounting and regulations opacities in the case of FDI flows, corruption and regulation opacities in the case of portfolio flows, and corruption and economic opacities in the case of banking flows. Of relevance to banking flows, more net lending is observed flowing to countries with higher levels of corruption and economic opacity, lower GDP, a smaller stock market, lower national savings, and higher reliance on the banking sector for business credits.</p>
Kim and Wu (2008)	<p>They hypothesize that sovereign credit ratings, as a measure of sovereign default risk, can facilitate long-run financial and economic development with their significant information value on institutional quality. Accordingly, they investigate the influence of sovereign ratings on the development of financial intermediary sectors in emerging markets and on the nature of international capital inflows.</p> <p>They investigate the role of sovereign ratings on various measures of financial (equity, banking and debt) market developments in emerging market countries. They also investigate the role of sovereign credit ratings on international capital flows - FDI, international banking, bond and equity flows. Standard and Poor's sovereign credit ratings on a total of 51 emerging market countries during the period 1995–2003 are used. Countries are from Asia, Latin America, Emerging Europe, and Africa/Middle East.</p> <p>In the international capital inflows estimations, they control for trade openness and financial market development in the three types of international flows. Trade openness is measured by the share of international trade to GDP, while financial market development is</p>

Study	Summary
	<p>measured by the stock market capitalization as a proportion of GDP. In addition, they control for the log of national income for the FDI and banking flows, domestic credit provided by banking sector (% of GDP) for the banking and portfolio flows, and GDP growth rate for the portfolio flows.</p> <p>Their results show strong evidence that sovereign credit rating measures affect financial intermediary sector developments and capital flows. Both long-term foreign and domestic currency sovereign credit ratings encourage financial intermediary development. However, long-term foreign (domestic) currency sovereign credit ratings encourage (discourage) capital flows. In contrast, short-term foreign and domestic currency sovereign credit ratings discourage all forms of financial developments and capital flows.</p>
Papaioannou (2009)	<p>This study contributes to the explanation of the Lucas paradox of why capital does not flow from rich to poor countries. The extant literature explains this phenomenon in terms of moral hazard, lack of collaterals, debt default, and informational frictions. This paper shows that political risk associated with institutional underdevelopment is key in explaining the lack of capital flows to developing countries. Property rights and contractual institutions affect productivity and economic development.</p> <p>The paper empirically examines the influence of institutions on cross-border bank lending to 140 industrial, emerging, and underdeveloped countries for the period 1984–2002. It employs two BIS datasets of bank lending. The first is quarterly data on bank flows from 19 source to 50 recipient countries. The second dataset is annual aggregate flows to 140 recipient countries. The paper employs fixed effects, instrumental variables as well as cross-section estimation methodologies.</p> <p>The paper estimates an empirical model using cross section data in which the dependent variable is the log of foreign net bank flows in the recipient country. Explanatory variables mainly include measures of the size of the economy and an aggregate measure of institutional quality.</p> <p>However because of the omitted variable bias and unobserved country heterogeneity, the paper estimates a gravity model using bilateral data in which the dependent variable is the log of capital inflows from source country banks to all sectors of the economy in the recipient country. In addition to the institutional quality, political risk index, the paper controls for economic size (proxied by real per capita GDP, population, and land area), information frictions and transaction costs (captured by distance, common colonial ties or language), and time-invariant fixed effects in source and recipient countries.</p> <p>The paper adopts fixed effects and instrumental variables approach to overcome the drawbacks of the widely used cross sectional analysis in the literature. Specifically the correlation between institutions and bank lending does not necessarily imply a causal relationship; the presence of correlation may be due to the presence of a factor different from institutions. In addition, cross sectional analysis may miss reverse causality. Fixed effects allow the utilization of the time-invariant, unobserved country characteristics – the factor(s) different from institutions, such as social norms, culture, geography, and trust, which affect both bank lending and institutional quality. To address reverse causality (and measurement errors), the paper uses instrumental variable techniques. The paper finds a robust positive relationship between institutions and cross border bank flows.</p>

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