

The Politics of Investment Partisanship and the Sectoral Allocation of Foreign Direct Investment*

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Abstract

This paper analyzes how foreign direct investment (FDI) reacts to changing political conditions in host countries. More specifically, we explore the existence of partisan cycles in FDI investment performance. We develop a model that predicts that the incumbent government's partisanship -i.e.: its allegiance to labor or capital- should affect foreign investors' decision to flow into different sectors. Next, we analyze the pattern of direct investment to OECD countries disaggregated by sector from roughly 1985 through 2000. We find evidence of the existence of such partisan cycles in the patterns of direct investment performance across countries and over time at the industry level. In particular, we observe that in countries that are governed by parties of the left, FDI tends to flow into industries associated with the production of food, textiles, machinery, and vehicles, financial intermediation, mining and quarrying, and utilities, and out of sectors such as construction and transportation. We also find preliminary evidence of a positive correlation between foreign investment and economy wide change in wages under left-leaning incumbents, which is consistent with the assumptions around which our model is built. Our tentative conclusion is that foreign investors do seem to respond to partisan cycles: when parties of opposite ideologies alternate in power, FDI flows into those sectors where foreign capital is a complement of the factor of production owned by the core constituent of the incumbent party, and out of those sectors where it substitutes for the factor owned by that constituent.

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1 Introduction

This paper tries to answer the following question: how does foreign investment react to changing political conditions in host countries? We develop a theory that predicts that the incumbent government's partisanship (i.e.: its allegiance to labor or capital) affects the sectoral destination of foreign direct investment flows into a host country. We argue that when parties of opposite ideologies alternate in power, investors respond by flowing into those sectors where foreign investment is more likely to be a complement to the factor of production owned by the core constituent of the incumbent party, and out of those sectors where it substitutes for the factor of production owned by that constituent. We analyze the pattern of direct investment flows into a sample of OECD countries from roughly 1985 through 2000, disaggregated into seventeen sectors.¹ We find a systematic relationship between the incumbent government's partisanship and the pattern of direct investment performance across countries and over time. We speculate that under the left, foreign investment flows into sectors where it is more likely to have a positive effect on the return to labor, and out of those where it has a negative impact. However, due to data constraints, we can only test this hypothesis indirectly by looking at the relationship between inflows and the returns to labor under incumbents of different ideology: we find tentative evidence that, on average, when the left is in power FDI inflows have a positive effect on economy-wide wages. Moreover, we find no correlation between inflows and wages under center or right-leaning governments.

To explain these partisan cycles in investment performance, we develop a model that captures the interaction between investors, host governments, and owners of factors of production in the host country (section 2). Comparative statics from this model allow us to derive several hypotheses about the link between partisanship and different types of foreign investment which we test, albeit indirectly, in section 3. Specifically, the model assumes that inflows of

¹We are constrained to look at those sectors for which data was available through SourceOECD (See Table 9).

direct investment affect the returns to economic agents according to their ownership of domestic factors of production. These factors of production can be either complements or substitutes in production to FDI. We also assume that host governments are partisan: they value more the well-being of a core set of constituents (labor and capital in the stylized model) than the well-being of opposing groups in the electorate, or respond more systematically to the demands of that constituent, which varies with the government's type (ideology).² Parties of the left will try to advance the political agenda of owners of labor, while parties of the right are identified with the interests of domestic business owners. When in power the party of the right will offer a more favorable investment environment to foreign investors that would flow into those sectors where FDI is a complement of domestic capital, and limit the inflow of foreign capital to those sectors where FDI substitutes for domestic capital because direct investment inflows into those sectors are more likely to compete down the rents that would have otherwise accrued to domestic business owners. Investors anticipate and react to government's strategy by investing in that country and sector when the government is of the "right" type, or withholding investment altogether.

Thus, we predict that left-leaning governments -those governments that cater to labor- are more likely to provide better investment conditions to lure foreign investment into those sectors where labor is a complement of FDI. Investors react positively to that invitation by flowing into these sectors. Right-leaning governments, on the other hand, will usually try to protect the earnings of domestic capital owners by restricting the entry of foreign capital into these sectors. We speculate that governments of the right would encourage the entry of foreign investors that could help increase the rents of domestic businesses, i.e.: investors who either complement capital in production, or introduce labor saving technologies. In fact, we theorize that domestic business

²The assumption that governments have partisan (and electoral) incentives in regulating economic activity is ubiquitous in the literature on politics and macro-economic performance. Hibbs (1977, 1992), Tufte (1978) are the precursors in this tradition. More recent models of partisan and electoral business cycles are: Alesina (1987, 1988), Alvarez, Garrett and Lange (1991), Alesina and Rosenthal (1995), Boix (1997, 1998), Garrett (1998), Iversen (1999), and Franzese (2002), among others. The existence of a partisan business cycle has received more support than its electoral counterpart. See Franzese (2003) for an excellent review of this literature.

interests would strictly prefer technology transfer agreements to investment capital inflows.³

We are not able to test these hypotheses directly, since we cannot measure complementarity or substitutability of foreign and domestic capital with the data at hand.⁴ However, we are able to test one of the implications of the model, which is less demanding in terms of data requirements: namely, that the incumbent partisanship affects the pattern of sectoral allocation of FDI. The results discussed in empirical section of the paper suggest that this argument is plausible: we find a systematic association between government partisanship and the sectoral allocation of FDI inflows.

These patterns are also revealed by anecdotal evidence from sectoral FDI inflows into the United Kingdom since the 1990s. Figure 1 shows a comparison of the average ratio of FDI inflows to GDP in the United Kingdom disaggregated by sectors, under the Conservative Cabinet led by John Major (1991-1996), with the average sectoral performance under Labour rule (1997-2003). The graph points to the presence of such differential pattern in the UK. Our preliminary tests discussed in section 3 suggest that the UK pattern is generalizable: foreign investment seems to covary with host governments' partisanship in line with the predictions from the model. Using data on investment flows to seventeen sectors for a sample of OECD countries over a period of roughly 15 years, we look for and find a systematic relationship between partisanship in the host country and cross-country sectoral allocation of FDI. In particular, we observe the following empirical regularity: countries that are governed by left-leaning parties are associated with larger FDI flows into mining and quarrying, manufacturing of food, vehicles and textiles (to a lesser extent), electricity, gas and water, financial intermediation, and to a lesser extent

³South Korea's regulation of FDI and MNC activity through the late 1990s seems to support this assumption. The Korean government, conspicuously influenced by the *chaebols* adopted a highly restrictive investment regime, limiting foreign capital to hold a non-controlling stake in Korean corporations, promoting technology licensing to indigenous firms, and ultimately forcing foreign MNCs to divest from those joint ventures they entered into once the Korean firm had mastered the technological innovations furnished by its foreign counterpart (see Haggard 1990; Mardon 1990; Nicolas 2001, 2003; Pinto 2004; Sachwald 2003; and Yun 2003).

⁴See section 3 for a discussion on the constraints we faced in designing a direct test of our thesis.

into textiles and telecommunications. Left-leaning governments are negatively associated with inflows into sectors such as construction and transportation.

Last, we underscore the originality of our research, which fills two gaps in the literature. While there has been extensive work on the effects of political institutions (Oneal 1994; Li and Resnick 2003; Jensen 2003, 2006; among others) and on the effects of policy decisions (trade and tax policy in particular) on aggregate FDI flows (Feldstein, Hines, and Hubbard 1995; Hines 2001), we find that the link between partisanship and investment performance has not been duly explored in extant studies of the politics of FDI and MNCs activity.⁵ Most of the recent contributions assume that investors put emphasis on minimizing ex-post expropriation risk, and look at the role of policy and political stability on investment decisions: FDI would strategically flow to countries that look politically and institutionally stable, and whose economy is well-managed.⁶ While these are sensible explanations, they leave a large part of the variance in FDI performance unexplained. Recent academic work has analyzed the effect of politics on investment decisions within an individual industry (see Levy and Spiller 1994, Henisz and Zelner 2001, Henisz 2002, among others). However, we are not aware of any study that looks at this relationship over multiple sectors.

⁵A vast body of literature that examines the behavior of MNCs in host countries (Dunning 1989; Caves 1996; among others). These classical studies suggest that affiliates of MNCs are more likely to be more productive and enjoy higher profitability than their counterparts in host countries; yet they have been criticized for failing to control for the significant difference between MNC affiliates and domestic firms at the firm, plant and industry level, and for simultaneity bias (Feliciano and Lipsey 1999; Tybout 2000; Conyon et. al 2002). After controlling for these effects, recent studies have found evidence that affiliates of MNCs in the United Kingdom indeed affect the return to labor: when compared to their domestic counterparts affiliates of foreign MNCs in the United Kingdom increase labor productivity by 13 percent, and pay higher wages to their employees (Conyon et al., 2002). The controversy over the effects of MNC activity underscores the driving point of this paper: the differential effect of direct foreign investments on wages and returns to local capital in host countries is likely to depend on the characteristics of the sector and firm, as much as it could be a response of this firm to political conditions in the host country. Whether MNCs pay higher wages, foster better labor relations with unions, or transfer technology and know-how to domestic firms is likely to reflect their internalization of the expected behavior of political actors.

⁶The role of inflexible policy is stressed in a recent body of literature in the transaction costs tradition (Williamson 1985; Henisz and Williamson 1999; Spiller and Tommasi 2003).

The paper is organized as follows: section 2 presents our conceptual framework and derives testable hypotheses. In section 3 we discuss our empirical strategy and display the results from the statistical analyzes used to test the plausibility of the argument. The last section concludes and discusses possible extensions.

2 The Model

Let us consider a three-factor, two sector, small-open economy. World prices in both sectors are normalized to one. The production of both goods require labor, domestic capital, and foreign capital. Production in sector i is given by $q^i = f^i(K^i, k^i, L^i)$, where K^i denotes domestic capital, k^i foreign capital, and L^i labor in sector $i = 1, 2$. The production function f^i exhibits constant returns to scale. Total domestic capital and labor are assumed fixed in supply, i.e., $\bar{K} = K^1 + K^2$, and $\bar{L} = L^1 + L^2$. Foreign capital is in perfectly elastic supply and can be rented at an exogenous rate r . Throughout the analysis we assume that domestic capital is mobile across sectors within the country, but internationally immobile. Labor, on the other hand, is sector specific (in other words, it is completely immobile).⁷

For simplicity we assume that there are only two kinds of factor owners: workers (who only own labor), denoted with a \mathcal{L} , and capitalists (who only own capital), denoted with a \mathcal{K} .⁸ Consumers derive utility directly from income and from an in-kind transfer they receive from

⁷Our stylized model intends to capture the following conditions. First, different types of foreign capital are available in infinite supply and ready to enter the country as either a complement or substitute of capital (or labor). Second, for a given country, the amount of domestic capital is limited. Finally, we emphasize the idea that, within the country, the cost of moving across sectors is higher for labor than for domestic capital. The assumptions we make, are however, extreme in the sense that domestic capital is perfectly mobile across sectors, but completely immobile internationally, while labor is sector specific and completely immobile. The predictions from our model would be substantively similar if we made labor mobile and domestic capital sector specific. A variant of the model, available from the authors upon request, makes both labor and domestic capital sectorally mobile.

⁸Thus, \bar{L} is the number of workers and \bar{K} the number of capitalists in the economy with L^i and K^i their corresponding number in each sector.

the government denoted g .⁹ Utility of individual h is given by $U_h = y_h + v(g_h)$, for $h = \mathcal{L}, \mathcal{K}$, where y_h is her income and $v' > 0, v'(0) \rightarrow \infty, v'' < 0$.

The government exclusively collects a tax on foreign capital and the receipts are distributed across the population, as mentioned above. We assume that the government can impose different tax rates on foreign capital allocated in different sectors. Let t^i be the capital tax rate on foreign capital allocated in sector i , for $i = 1, 2$. The allocation of foreign capital in sector i is determined by

$$f_k^i - t^i = r. \quad (1)$$

Free mobility of domestic capital across sectors assures that the return on domestic capital will be equalized, i.e.,

$$\bar{r} \equiv f_K^1 = f_K^2, \quad (2)$$

where \bar{r} is the common return on domestic capital in every sector.

The model assumes that decisions are taken sequentially as follows: (1) the government chooses the values of t^1 and t^2 ; (2) after observing the tax rates, local and foreign capitalists decide their capital allocation. We find the sub-game perfect Nash Equilibrium of the game. For this, we solve the model using backwards induction, i.e., we start solving the capital allocation decisions made by capitalists in the second stage, and then derive the government's solution in the first stage.

⁹The results will not change if g is interpreted as an in-cash transfer.

2.1 Second Stage

At the second stage, the sectoral allocation of domestic and foreign capital is simultaneously determined. The Nash Equilibrium at this stage is given by the allocation (K^1, k^1, k^2) implicitly defined by the following conditions:¹⁰

$$f_k^1 - r - t^1 = 0, \quad (3)$$

$$f_k^2 - r - t^2 = 0, \quad (4)$$

$$f_K^1 - f_K^2 = 0. \quad (5)$$

As a result, K^1 , k^1 , and k^2 are all functions of t^1 and t^2 , i.e., $K^1(t^1, t^2)$ and $k^i(t^1, t^2)$, for $i = 1, 2$.

The following comparative static results are obtained by implicitly differentiating the previous system of equations:

$$\frac{\partial k^1}{\partial t^1} = \frac{f_{kk}^2(f_{KK}^1 + f_{KK}^2) - (f_{kK}^2)^2}{|J|} < 0, \quad \frac{\partial k^1}{\partial t^2} = -\frac{f_{kK}^1 f_{Kk}^2}{|J|}, \quad (6)$$

$$\frac{\partial k^2}{\partial t^1} = -\frac{f_{Kk}^1 f_{kK}^2}{|J|}, \quad \frac{\partial k^2}{\partial t^2} = \frac{f_{kk}^1(f_{KK}^1 + f_{KK}^2) - (f_{kK}^1)^2}{|J|} < 0, \quad (7)$$

$$\frac{\partial K^1}{\partial t^1} = -\frac{f_{Kk}^1 f_{kk}^2}{|J|}, \quad \frac{\partial K^1}{\partial t^2} = \frac{f_{Kk}^2 f_{kk}^1}{|J|}, \quad (8)$$

where $|J| = f_{kk}^1 f_{kk}^2 (f_{KK}^1 + f_{KK}^2) - f_{kK}^2 (f_{kK}^1)^2 - f_{kK}^1 (f_{kK}^2)^2$. Note that as the production functions are concave in k and K , i.e., $f_{kk}^i < 0$, $f_{KK}^i < 0$, and $f_{kK}^i f_{Kk}^i - (f_{kK}^i)^2 > 0$, for $i = 1, 2$, then $|J| < 0$. Except for the signs of $(\partial k^1 / \partial t^1)$ and $(\partial k^2 / \partial t^2)$, the results depend on the particular relationship between the factors of production k and K in each sector. For instance, if k and K are complements in both sectors, i.e., $f_{kK}^i > 0$, for $i = 1, 2$, then $(\partial k^2 / \partial t^1) > 0$ and $(\partial K^1 / \partial t^1) < 0$. The intuition behind these results is straightforward. An increase in t^1 reduces the amount of foreign capital in sector 1. Given that k^1 and K^1 are complements, the marginal productivity of domestic capital in sector 1 declines. Consequently, domestic capital shifts to

¹⁰Recall that $\bar{K} = K^1 + K^2$.

sector 2. As k^2 and K^2 are also complements, the marginal productivity of foreign capital increases in that sector, attracting foreign capital to sector 2. Similar conclusions apply for changes in t^2 and for different technological relationships between inputs.

By differentiating (2) with respect to t^1 and t^2 , we can derive the effect of a change in t^i on the domestic return on capital. The results can be written as

$$\frac{\partial \bar{r}}{\partial t^1} \frac{1}{f_{Kk}^1} = \frac{f_{kk}^2 f_{KK}^2 - (f_{kK}^2)^2}{|J|} < 0, \quad (9)$$

$$\frac{\partial \bar{r}}{\partial t^2} \frac{1}{f_{Kk}^2} = \frac{f_{kk}^1 f_{KK}^1 - (f_{kK}^1)^2}{|J|} < 0. \quad (10)$$

Therefore, $\partial \bar{r} / \partial t^i$ and f_{Kk}^i have opposite signs, which means that an increase in t^i increases the return of domestic capital if domestic and foreign capital are substitutes, i.e., $f_{Kk}^i < 0$, and decreases \bar{r} if they are complements, i.e., $f_{Kk}^i > 0$.

Finally, how do tax rates affect wages in each sector? Henceforth, we normalize the labor force in each sector to 1.¹¹ We assume perfect competition in the labor market, so labor is paid its marginal productivity. Due to the assumption of constant returns to scale, we can write

$$w^i = q^i - \bar{r}K^i - (r + t^i)k^i, \quad i = 1, 2. \quad (11)$$

The following results can be obtained:

$$\frac{\partial w^1}{\partial t^1} = - \left(\frac{\partial \bar{r}}{\partial t^1} K^1 + k^1 \right), \quad \frac{\partial w^1}{\partial t^2} = - \frac{\partial \bar{r}}{\partial t^2} K^1, \quad (12)$$

$$\frac{\partial w^2}{\partial t^1} = - \frac{\partial \bar{r}}{\partial t^1} K^2, \quad \frac{\partial w^2}{\partial t^2} = - \left(\frac{\partial \bar{r}}{\partial t^2} K^2 + k^2 \right), \quad (13)$$

$$\left(\frac{\partial w^1}{\partial t^1} + \frac{\partial w^2}{\partial t^1} \right) = - \left(\frac{\partial \bar{r}}{\partial t^1} \bar{K} + k^1 \right), \quad \left(\frac{\partial w^1}{\partial t^2} + \frac{\partial w^2}{\partial t^2} \right) = - \left(\frac{\partial \bar{r}}{\partial t^2} \bar{K} + k^2 \right). \quad (14)$$

Changes in the tax rates may affect workers in sectors 1 and 2 differently. If K^i and k^i are

¹¹Equivalently, we can also think that $f^i(k^i, K^i, 1)$ represents production in sector i in its intensive form.

substitutes, then both w^i and w^j decrease with t^i , so total wages decrease with t^i . If K^i and k^i are complements, then w^j increases with t^i , but the effect on w^i is ambiguous. Only when K^i and k^i are complements and $-(\partial\bar{r}/\partial t^i)\bar{K} > k^i$ will total wages increase with t^i .

Table 1 summarizes all the different possibilities that may arise depending on whether domestic and foreign capital are complements or substitutes, as specified in the first two columns of the table. We indicate with a (+) or (−) the signs of the comparative static results $\partial(w^1+w^2)/\partial t^i$ and $\partial\bar{r}/\partial t^i$, for $i = 1, 2$. At the bottom of the table we present the conditions under which the derivatives are positive or negative when domestic and foreign capital are complements. The results suggest that, in general, if workers and local capitalists are only concerned about their income, they will tend to favor antagonistic positions in the debate on the tax policy towards foreign direct investment. For instance, when foreign and domestic capital are substitutes, a reduction of tax rates increases total wages, but decreases the return on domestic capital. If domestic and foreign capital are complements and $-(\partial\bar{r}/\partial t^i)\bar{K} > k^i$, then labor favors higher tax rates and domestic capitalists lower tax rates. However, if K^i and k^i are complements and $-(\partial\bar{r}/\partial t^i)\bar{K} < k^i$, they will both support lower taxes in sector i because total wages and the return on domestic capital decline with t^i . Note that, on the other hand, higher taxes will never be unanimously supported by both groups.

2.2 First Stage

At this stage, governments, characterized by different political orientation (defined as pro-labor or pro-capital), decide the values of $\{t^1, t^2, g_L, g_K\}$ that maximize an objective function, subject to a budget constraint that assures that the government's tax revenue, $T = t^1k^1 + t^2k^2$ is enough to finance the in-kind transfers. The government's political orientation is determined by the objective function it chooses to maximize. We assume that the latter is a weighted sum of the aggregate welfare of workers and capitalists, where β is the weight attached to workers and

$(1 - \beta)$ to capitalists. Governments with $\beta > 1/2$ have a pro-labor orientation, and those with $\beta < 1/2$ primarily respond to the interests of capitalists. The problem becomes

$$\Omega = \beta(U_{\mathcal{L}}^1 + U_{\mathcal{L}}^2) + (1 - \beta)(K^1 U_{\mathcal{K}}^1 + K^2 U_{\mathcal{K}}^2), \quad (15)$$

where $U_{\mathcal{L}}^i = w^i + v(g_{\mathcal{L}})$ and $U_{\mathcal{K}}^i = \bar{r} + v(g_{\mathcal{K}})$ for $i = 1, 2$, subject to

$$2g_{\mathcal{L}} + \bar{K}g_{\mathcal{K}} = T, \quad (16)$$

and $K^1(t^1, t^2)$ and $k^i(t^1, t^2)$, for $i = 1, 2$, i.e., anticipating the behavior of domestic and foreign capital owners in the second stage. Denoting with λ the Lagrange multiplier associated with the budget constraint, the first-order conditions of this problem are given by:¹²

$$t^1 : \quad \beta \left(\frac{\partial w^1}{\partial t^1} + \frac{\partial w^2}{\partial t^1} \right) + (1 - \beta) \frac{\partial \bar{r}}{\partial t^1} \bar{K} + \lambda \frac{\partial T}{\partial t^1} = 0, \quad (17)$$

$$t^2 : \quad \beta \left(\frac{\partial w^1}{\partial t^2} + \frac{\partial w^2}{\partial t^2} \right) + (1 - \beta) \frac{\partial \bar{r}}{\partial t^2} \bar{K} + \lambda \frac{\partial T}{\partial t^2} = 0, \quad (18)$$

$$g_{\mathcal{L}} : \quad \beta v'(g_{\mathcal{L}}) - \lambda = 0, \quad (19)$$

$$g_{\mathcal{K}} : \quad (1 - \beta)v'(g_{\mathcal{K}}) - \lambda = 0, \quad (20)$$

$$\lambda : \quad T - 2g_{\mathcal{L}} + \bar{K}g_{\mathcal{K}} = 0, \quad (21)$$

where

$$\frac{\partial T}{\partial t^i} = k^i + t^i \frac{\partial k^i}{\partial t^i} + t^j \frac{\partial k^j}{\partial t^i} \quad (22)$$

is the change in tax revenue due to a change in t^i .¹³

¹²Note that we do not restrict tax rates to be non-negative. However, it is clear that they cannot be both negative or zero at the same time.

¹³Note that we assume that β , the welfare weight attached to labor by governments of different political ideology, is the same across sectors. Alternatively, one could consider that the government is mostly identified with workers of certain sectors. The latter would imply considering different values of β for each sector. The maximization problem stated in the paper is similar to the problem of optimal indirect taxation when the government has redistributive considerations.

The system of equations (17) - (21) determine the values of $t^1, t^2, g_{\mathcal{L}}, g_{\mathcal{K}}$, and λ as a function of the exogenous parameters. Equations (19) and (20) simply establish the rule followed by the government to distribute the tax revenue across individuals: $g_{\mathcal{L}}$ and $g_{\mathcal{K}}$ are such that $\beta v'(g_{\mathcal{L}}) = (1 - \beta)v'(g_{\mathcal{K}}) = \lambda$, or alternatively $[v'(g_{\mathcal{K}})/v'(g_{\mathcal{L}})] = [\beta/(1 - \beta)]$. If $\beta > 1/2$, then $v'(g_{\mathcal{K}}) > v'(g_{\mathcal{L}})$, which implies that $g_{\mathcal{K}} < g_{\mathcal{L}}$ given that $v'' < 0$. As a result, governments with higher values of β will distribute g in favor of labor.

Equations (17) and (18) can be rewritten as

$$b_{\mathcal{L}} \left[\frac{(\partial \bar{r} / \partial t^i) \bar{K} + k^i}{k^i} \right] - b_{\mathcal{K}} \left[\frac{(\partial \bar{r} / \partial t^i) \bar{K}}{k^i} \right] = \frac{\partial T / \partial t^i}{k^i}, \quad (23)$$

where $b_{\mathcal{L}} = \beta/\lambda$ and $b_{\mathcal{K}} = (1 - \beta)/\lambda$ are the government's valuation of a change in workers' and capitalists' income, respectively (measured in terms of government revenue). They measure the government's marginal benefit of transferring \$1 to household $h = \mathcal{L}, \mathcal{K}$. The expressions between square brackets on the left-hand side represent the proportional change in income for group h when t^i is modified. The right-hand side is the increase in tax revenue due to an increase in t^i as a proportion of the tax base. We can also write (23) as follows

$$b_{\mathcal{L}} + (b_{\mathcal{L}} - b_{\mathcal{K}}) \left[\frac{(\partial \bar{r} / \partial t^i) \bar{K}}{k^i} \right] = \frac{\partial T / \partial t^i}{k^i}. \quad (24)$$

Note that if $b_{\mathcal{K}} = b_{\mathcal{L}}$,¹⁴ then the left-hand side does not depend on i , implying that the tax rates are such that the proportional change in tax revenue due to a change in t^i should be equalized across all sectors, i.e., $(\partial T / \partial t^1) / k^1 = (\partial T / \partial t^2) / k^2$.¹⁵

¹⁴In other words, $\beta = 1/2$.

¹⁵Note that using (22) and the fact that $\partial k^1 / \partial t^2 = \partial k^2 / \partial t^1$, expression (24) can be written

$$\frac{t^i (\partial k^i / \partial t^i) + t^j (\partial k^i / \partial t^j)}{k^i} = \beta_{\mathcal{L}} - 1 = \theta \quad \text{for } i \neq j.$$

The right-hand side does not depend on i . In fact, θ is presumably negative, so the left-hand side should be negative. Multiplying and dividing the left-hand side by $(r + t^i)$ and $(r + t^j)$, respectively, gives

$$\frac{t^i}{(r + t^i)} e^{i i} + \frac{t^j}{(r + t^j)} e^{i j} = \theta, \quad (25)$$

In general, when $b_{\mathcal{K}} \neq b_{\mathcal{L}}$, the expression $(\partial\bar{r}/\partial t^i)\bar{K}/k^i$ will also affect the choice of the tax rate. Unfortunately, these rules only suggest general observations about the structure of the tax rates but they do not have precise implications. However, the following statements can be made if we assume that smaller values of $(\partial T/\partial t^i)/k^i$ would be consistent with higher values of t^i , while a larger $(\partial T/\partial t^i)/k^i$ would be consistent with lower t^i 's.

For instance, suppose that initially $b_{\mathcal{L}} = b_{\mathcal{K}}$ and consider a new situation characterized by a slightly higher β and $b_{\mathcal{L}}$ (or lower $(1 - \beta)$ and $b_{\mathcal{K}}$), representing a government that values (relatively) more the well-being of labor. Then, for those sectors where domestic and foreign capital are substitutes, i.e., $\partial\bar{r}/\partial t^i > 0$, the left-hand side of (24) increases, implying a larger value of $(\partial T/\partial t^i)/k^i$ and, consequently, smaller tax rates. In sectors where domestic and foreign capital are complements, the first term on the left-hand side of (24) increases with β , but the second term is negative because $\partial\bar{r}/\partial t^i < 0$. In this way, tax rates in those sectors can either go up or down.

The opposite effect takes place when we move from $b_{\mathcal{L}} = b_{\mathcal{K}}$ to a higher $b_{\mathcal{K}}$ so that $b_{\mathcal{L}}$ decreases and $(b_{\mathcal{L}} - b_{\mathcal{K}}) < 0$. In this case the first term on the left-hand side of (24) declines and the second becomes negative when $\partial\bar{r}/\partial t^i > 0$. As a result, $(\partial T/\partial t^i)/k^i$ declines, implying

where $\epsilon^{ii} = \frac{t^i}{(r+t^i)/k^i}(\partial k^i/\partial t^i) < 0$ is the own price elasticity and $\epsilon^{ij} = \frac{t^j}{(r+t^j)/k^j}(\partial k^i/\partial t^j)$ is the cross-price elasticity of demand for foreign capital in sector i . Alternatively, the latter can be rearranged as follows:

$$\frac{t^i}{(r+t^i)} = \frac{\theta}{\epsilon^{ii}} - \frac{t^j}{(r+t^j)} \frac{\epsilon^{ij}}{\epsilon^{ii}}.$$

Thus, when either f_{Kk}^1 or f_{Kk}^2 are equal to zero, i.e., domestic and foreign capital are not related, then $\epsilon^{ij} = 0$, so the inverse elasticity rule applies: the tax rate in sector i is inversely proportional to the own-price elasticity of demand for foreign capital in i . When $\epsilon^{ij} < 0$, the rule has to be corrected. If $\epsilon^{ij} > 0$, then t^i should be corrected upwards, while if $\epsilon^{ij} < 0$, t^i should be lowered. Recall that ϵ^{ii} was defined negative. In addition, given that (25) holds for $i, j = 1, 2$, we can solve for $[t^1/(r+t^1)]/[t^2/(r+t^2)]$ and obtain:

$$\frac{t^1/(r+t^1)}{t^2/(r+t^2)} = \frac{\epsilon^{22} - \epsilon^{21}}{\epsilon^{11} - \epsilon^{12}},$$

which means that relative taxes (as a proportion of the final price of foreign capital) only depend on the own price elasticity as $\epsilon^{12} = \epsilon^{21}$.

lower tax rates in that sector. However, if foreign and domestic capital are complements (i.e., $\partial \bar{r} / \partial t^i > 0$), then the two terms on the left-hand side move in opposite directions and the effect on $(\partial T / \partial t^i) / k^i$ is ambiguous.

2.3 Numerical Example

To illustrate the implications of the theoretical model, we compute several examples using specific functional forms. In particular, our objective is to examine how tax rates on foreign capital across sectors chosen by pro-labor governments differ from those imposed by pro-capital governments. In doing so, we also try to shed some light in understanding the role played by the degree of substitutability between domestic and foreign capital.

In the examples, we use the following functional specifications. First, the utility function is defined by $U_h = y_h + b \ln(g_h)$, for $h = \mathcal{L}, \mathcal{K}$. Second, the production technology is represented by the following production function¹⁶

$$q = AL^\alpha [K^\sigma + ak^\sigma]^{(1-\alpha)/\sigma}, \quad (26)$$

where $\alpha \in (0, 1) < 1$, $\sigma \in (-\infty, 1)$, and $a > 0$. The production function has the the following characteristics. The parameter a is the effectiveness of foreign capital relative to domestic capital. The production function is a CRS Cobb-Douglas function in the inputs L and the composite term $[K^\sigma + ak^\sigma]^{1/\sigma}$. The function allows for different substitution possibilities across factors, determined by the parameter σ . In fact, the elasticity of substitution between domestic and foreign capital is $1/(1 - \sigma)$.¹⁷ In the previous section, we define complementarity and substitutability between domestic and foreign capital in terms of the sign of f_{Kk} : if $f_{Kk} > 0$,

¹⁶We use a similar specification as the one employed by Katz and Murphy (1992), Krussel et al (2000), and Ciccone and Peri (2003). The functional form is the same for each sector, but the parameters may differ. In fact, the numerical examples will consider the effect on the policy variables when σ differs across sectors.

¹⁷ σ also indirectly affects the elasticities of substitution between labor and domestic capital and between labor and foreign capital.

they are complements, and if $f_{Kk} < 0$, they are substitutes. When the production function is specified as in (26), the following relationship between σ , α and f_{Kk} holds:

$$f_{Kk} = \frac{(1 - \alpha - \sigma) f_k f_K}{(1 - \alpha) q}. \quad (27)$$

The latter implies that when $\sigma < (1 - \alpha)$, then k and K are necessarily complements, while when $\sigma > (1 - \alpha)$, they are substitutes.

Tables 2 through 8 present the results of different numerical examples. The tables show the equilibrium values of the endogenous variables $g_{\mathcal{L}}$, $g_{\mathcal{K}}$, K^1 , k^1 , k^2 , t^1 , and t^2 for governments with different political orientations (characterized by the parameter β), and for different types of relationships between domestic and foreign capital in each sector (determined by the relative values of σ^i and α^i). The values of the exogenous variables are shown at the bottom of the tables.

Tables 2 and 3 assume that domestic and foreign capital are substitutes in both sectors. Under these conditions, the return on domestic capital increases and aggregate wages decreases with t^1 and t^2 . Thus, as shown by the last two columns of Table 2, pro-labor (pro-capital) governments tend to choose lower (higher) tax rates. In other words, pro-labor (pro-capital) governments would stimulate (discourage) the entry of foreign capital into all sectors. Tax rates are 10.42 percent when $\beta = 0.45$ and falls to 9.44 percent when $\beta = 0.55$. It is also evident from the second and third columns of the table that $g_{\mathcal{L}}$ ($g_{\mathcal{K}}$) increases (decreases) with β , and $g_{\mathcal{L}} = g_{\mathcal{K}}$ when $\beta = 0.50$. Finally, given that both sectors are identical, domestic capital is equally divided across sectors ($K^1 = 0.50$) and $t^1 = t^2$, implying that that $k^1 = k^2$ for all β . In Table 3, the parameters are such that $(1 - \alpha^1 - \sigma^1) < (1 - \alpha^2 - \sigma^2) < 0$, so that evaluated at the same

These elasticities are not constant and they are given, respectively, by

$$\varepsilon_{LK} = \frac{\alpha K^\sigma + ak^\sigma}{\alpha K^\sigma (1 - \sigma) + ak^\sigma} \quad \text{and} \quad \varepsilon_{Lk} = \frac{K^\sigma + \alpha ak^\sigma}{K^\sigma + \alpha ak^\sigma (1 - \sigma)}.$$

values of K and k , $|f_{Kk}^1| > |f_{Kk}^2|$.¹⁸ Hence, not only domestic and foreign capital are substitutes, but the degree of substitutability is larger in sector 1. We observe, as before, that t^1 and t^2 both decrease with β , but tax rates in sector 1 are always lower than those in sector 2. This last effect is independent of the government's political ideology (i.e., it holds for every β) and is fundamentally explained by the effect of tax rates on tax revenue.

Tables 4 through 7 show different cases in which domestic and foreign capital are complements. In particular, Table 4 indicates that when $\sigma^1 = \sigma^2 = -0.20$, tax rates decline with β . In this example, both capitalists and labor gain from the entry of foreign capital. Given that $f_{Kk}^i > 0$, then $\partial\bar{r}/\partial t^i < 0$, so lower taxes benefit capitalists. We also showed in section 2.1 that if $-(\partial\bar{r}/\partial t^i)\bar{K} < k^i$ total wages increase when t^i is lowered. So for pro-labor governments to choose lower tax rates (as shown by the last two columns in the table) when foreign and domestic capital are complements, the latter condition should be met. Table 5 illustrates that even though domestic and foreign capital are complements, tax rates may follow different patterns. In this case, t^1 declines while t^2 increases with β . According to the theoretical model, the result holds if $-(\partial\bar{r}/\partial t^1)\bar{K} < k^1$ and $-(\partial\bar{r}/\partial t^2)\bar{K} > k^2$. In Table 6, domestic and foreign capital are complements and the degree of complementarity is identical in both cases, but, contrary to the results in Table 4, tax rates increase with β . By comparing the results from Tables 4 and 6, it is possible to claim that the condition $-(\partial\bar{r}/\partial t^i)\bar{K} > k^i$ would most likely hold if the degree of complementarity between domestic and foreign capital is higher.¹⁹

In Table 7, the degree of complementarity is larger in sector 2. As before, the tax rates increase with β , but t^2 is always larger than t^1 . Finally, Table 8 considers an example where foreign and domestic capital are substitutes in sector 1 and complements in sector 2. Pro-labor (pro-capital) governments impose lower (higher) taxes in both sectors, and t^2 is greater than t^1 for every β .

¹⁸The elasticity of substitution in sector 1 is $1/(1 - \sigma^1) = 2.22$, while the corresponding elasticity in sector 2 is $1/(1 - \sigma^2) = 2.00$.

¹⁹ σ goes from -0.20 in Table 5 to -0.80 in Table 7.

This numerical exercise suggest that governments are likely to adopt different policies towards foreign investment depending on the characteristics of FDI and the government's type (ie: partisanship). As government weigh more heavily the welfare of labor (as β approaches 1) we should expect them to encourage FDI inflows into some sectors -those where FDI is likely to have a positive effect on the return to labor- and discourage inflows into those sectors where labor would be hurt by FDI. The reverse would be true for right-leaning governments, ie: those that place a higher value on the material welfare of domestic owners of capital. To the extent that foreign investors respond to these incentives, we would expect a differential pattern of sectoral allocation of FDI inflows between countries ruled by left-leaning incumbents compared to countries ruled by right-leaning incumbents, and we should also see changes within countries as governments move from Right to Left (and back).²⁰ Moreover, if the assumptions upon which our model is built are correct -ie: that left-leaning governments are more likely to care about the welfare of labor- FDI inflows should be positively correlated with changes in wages when the left (pro-labor) party is in government, and negatively associated with changes in wages when the right (pro-business) party is in power. The ensuing section discusses our preliminary empirical strategy aimed at assessing the plausibility of the argument.

3 FDI Allocation Across Sectors: Empirical Evidence

In the previous section we argued that the effect of capital inflows on wages and domestic capitalists' income depends on the technological relationship between foreign and domestic capital. Moreover, the technological relationship may vary across sectors. Accordingly, we would only expect higher direct investment inflows that are substitutes of domestic capital when the interests of domestic capital owners are misaligned with those of the incumbent government, i.e.: when left parties are in power. The opposite situation would be observed when right leaning

²⁰Our model also identifies the conditions under which both left and right leaning governments would reduce the tax on FDI, suggesting that in some sectors we should expect no relationship between partisanship and inflows.

governments are in power.²¹ Testing these hypotheses directly would require data on factor endowment, production technology (including σ , ie: the substitutability/complementary of foreign and domestic capital), and the own and cross-price elasticity of demand for foreign capital at the sector/industry level (see section 2). Ideally we would need access to micro-level data on the activity of MNCs in different countries and sectors. The U.S. Bureau of Economic Analysis collects such data for affiliates of US MNCs: Bureau of Economic Analysis (BEA), Surveys of U.S. Direct Investment Abroad (see Mataloni 1995, for a description of this data). We believe that the financial statement of the affiliates of U.S. MNCs would tend to reflect the change in the company's strategy in response to changes in political conditions in general, and government partisanship in particular. We would also expect MNCs strategies to covary with the degree of organization and political influence of labor and capital in host countries. Moreover, these changes should co-vary with the characteristics of the firm and their ability to adapt to those political changes (see Hanson, Mataloni and Slaughter 2001). Unfortunately the BEA survey is proprietary (ie: only available to BEA employees and/or researchers who are US citizens that have obtained security clearance from the federal government), and we have not been yet able to obtain access to their dataset. However, using data on FDI inflows disaggregated at the industry level (obtained from OECD's Direct Investment Statistical Database) we are able to test an additional implication of our argument. Consider the existence of two different types of FDI: one type is a complement to domestic capital, and hence more likely to negatively (positively) affect the returns to labor (capital), while a different type of FDI is a substitute of domestic capital, and has a positive (negative) effect on wages (rents to domestic capital owners). We expect to find an association between government partisanship and the sectoral allocation of FDI inflows.

In this section, we present some evidence indicating that the pattern of FDI allocation across sectors is systematically different for governments with different political ideology. Next,

²¹The theoretical model also pointed out different situations under which labor and domestic capitalists' incentives are aligned. The latter occurs when domestic and foreign capitals are complements.

we claim that these patterns maybe explained by the fact that left leaning governments would be inclined to promote measures that stimulate the entry of foreign capital into those sectors which generate an increase in total wages, consistent with the previous theoretical reasoning.

3.1 Political Ideology and FDI Allocation Across Sectors

We begin by running the following regressions

$$FDI_{ijt} = \alpha_{0i} + \alpha_{1i}Left_{jt} + \beta'_i X_{ijt} + \varepsilon_{ijt}, \quad (28)$$

for each sector i . The subscripts ijt respectively denote sector i , country j , and time t . FDI is (net) inflow of foreign direct investment in sector i as a proportion of total investment in country j . $Left$ is a dummy variable indicating whether a left wing party is in government in country j at time t , and X is a vector of control variables, which includes real GDP per capita, degree of openness, population, and country and year dummies.²² A value of α_{1i} significantly different from zero suggests that sector i receives higher FDI flows (as a proportion of domestic investment) when left governments are in power relative to countries and governments of other partisan orientation/political ideologies.²³ Table 9 provides a list of the sectors employed in the analysis.²⁴

Following (28), we perform a pooled regression for each sector separately. The estimates are presented in Table 10. Two results are are worth emphasizing. First, it becomes clear that the pattern of FDI allocation systematically differs across countries or governments with different partisan orientation/ideology. The results suggest that when the party in government is categorized as left, FDI predominantly flows into the primary sector 2 (mining and quarrying), into the manufacturing sectors 3 (food products), 6 (metal and mechanical products),

²²See Appendix A.1 for a detailed description of the variables.

²³We conduct similar tests with FDI inflows into sector i as a proportion of gross domestic product, yielding identical results.

²⁴Data on FDI inflows is only available for 17 sectors from SourceOECD.

and 8 (vehicles and transport equipment), and into the service sectors 9 (electricity, gas and water), (telecommunications) and 15 (financial intermediation), relative to right and center governments.²⁵ On the other hand, inflows into sectors 10 (construction) and 13 (transportation) are negatively correlated with left partisan orientation of the incumbent.²⁶ Second, among the sectors with a positive correlation between inflows and left, the effect is most important for sector 15 (i.e.: when left governments are in power we tend to observe larger capital inflows in the banking sector and other financial intermediation activities).²⁷

3.2 FDI Allocation Across Sectors and Aggregate Wages

In this section, we want to study whether the effect of capital inflows into different sectors on labor welfare (measured by aggregate wages) is systematically different when governments of different partisan orientation/ideology are in power. Our theoretical findings predict that left leaning governments would stimulate the entry of foreign capital flows into different sectors as long as aggregate wages unambiguously rises. For this purpose, we estimate the model:

$$\Delta W_{jt} = \gamma_0 + \gamma_1 FDI_{ijt} + \gamma_2 Left_{jt} + \gamma_3 FDI_{ijt} \times Left_{jt} + \delta' Z + \nu_{jt}, \quad (29)$$

²⁵We include country and year dummies in all sectoral regressions. Due to data limitations, the set of countries included in each regression is not always the same. We correct for heteroscedasticity by using the command *xtpcse* in STATA 8.0 (see Stata Corporation (2003)). Alternative specifications include a dummy for countries coded as “Center” in DPI. The coefficient on *Left* does not change sign, magnitude or significance level. However, our model does not make any predictions about the effect of moving towards the center of the political spectrum.

²⁶Our theoretical model claims that when domestic and foreign capital are complements, labor and capitalists would be willing to implement the same tax policy concerning foreign capital. In light of our empirical results, the latter would be consistent with the variable *Left* being not significantly different from zero.

²⁷Unfortunately, sectoral information is not readily available for most countries throughout the period under analysis. Thus, we use country aggregates such as real GDP per capita, openness, and population, in addition to country and year dummies, to control for other effects. The impact of the previous variables on sectoral inflows is not uniform. For instance, real GDP per capita and capital inflows move in the same direction for all sectors except for sector 12 (hotels and restaurants); the degree of openness is positively correlated with inflows into all sectors except for sector 10 (construction); finally, countries with larger population attract foreign capital into sectors 12 (hotels and restaurants) and 17 (other business activities), but discourage the entry of capital into sectors 7 (total machinery, computers, RTV, communication), 14 (telecommunications), and 15 (financial intermediation).

where ΔW is the change in total wages (per hour) for country j at time t . Our focus is on the coefficient γ_3 . A positive and significantly different from zero estimate of γ_3 would indicate that the increase in wages when foreign capital enters sector i in country j is higher if $Left = 1$. Among the vector of control variables Z , we include change in real GDP per capita, change in openness, and dummy variables for sector i , country j , and time period t . We perform a pooled regression adjusting for heteroscedasticity and autocorrelation.²⁸ Table 11 presents the corresponding results.

First of all, the estimation shows that left governments are associated with higher changes in total wages, as indicated by the the positive and significantly coefficient of the variable $Left$. Second, capital inflows do not systematically affect wages: the value of the coefficient is negative but not significantly different from zero. Third, only when left governments are in power, capital inflows increase total wages. The latter results suggest that when dealing with foreign investors, left-leaning governments are selective: they would encourage inflows of foreign direct investment into those sectors that have the potential to improve aggregate labor welfare.

4 Conclusions, Caveats, and Extensions

4.1 Conclusions

Recent work on the political determinants of FDI has found preliminary evidence that, controlling for the determinants of capital flows identified in the literature, aggregate FDI inflows tend to be larger to governments that cater to labor (Pinto 2004). That work assumed that foreign capital was a substitute of domestic capital and, hence, a complement of labor. There is reason

²⁸We use, as before, the command *xtpcse* in STATA 8.0 (see Stata Corporation (2003)). Among other things, we assume that the effect of capital inflows into different sectors have the same effect on the change in total wages. We argue that this should be true in equilibrium, as if this was not the case, a left government would stimulate the entry of capital into those sectors where the effect on wages is greatest.

to believe that this assumption does not hold for all types of FDI. In this paper we relaxed the assumption of foreign capital being a complement of labor. We assumed that foreign capital could be a complement or a substitute of domestic capital, through the introduction of labor saving technologies, for instance. We argued that different forms of FDI react differently to political incentives, and hence predicted the existence of partisan cycles in the flow of foreign direct investment to different industries. In host countries governed by the left, FDI will flow to sectors where it is a complement of labor, such as manufacturing. Moreover we expect that capital will be attracted to those sectors where foreign capital is a complement of capital, hence substituting for labor, when the right/pro-business party is in power.

We tested these hypotheses using data available for a subset of OECD countries from 1985 to 2000, disaggregated at the industry level, and found that the pattern of FDI inflows covaries with government partisanship, providing preliminary support to one of the implications of our theory. We also find tentative support to our assumption that FDI inflows under left-leaning governments are more likely to have a positive impact on aggregate wages. As discussed in the following section our findings are far from conclusive: there we suggest different extensions to the theoretical and empirical strategies in future research.

4.2 Caveats

Our results seem to be robust to different model specifications and are in line with other papers that have followed similar approaches.²⁹ However, there are two caveats that we should mention. First of all, the results should be qualified by the usual problem of data availability. The most important restriction that we encountered was the impossibility of controlling for sector specific variables. Due to a significant amount of missing data points for some countries, whenever we attempted to introduce these variables into the model the number of observations was drastically reduced.

²⁹See, for example, Pinto (2004) and Dutt and Mitra (2005).

Second, our argument on the effects of partisanship on investment performance could also be interpreted as a response to the literature on opportunism and credible commitment. Under right-leaning (left-leaning) governments, strategic investors who want to maximize the return to their investment and minimize potential political backlash, will reduce the risk of opportunistic behavior by host governments by flowing into the sectors where capital (labor) is their complement, and shun those sectors where domestic capital (labor) is their substitute. Furthermore, partisan allegiances make governments internalize the preferences of their core constituents, forcing them to abide by the conditions offered ex-ante to foreign investors, securing investment opportunities for FDI that would have been missed otherwise. However, we do not explicitly test the commitment story, but speculate that such mechanism could be at play. In order to test this last hypothesis, we would need information about particular measures implemented by governments of different ideological orientation to attract FDI to specific sectors, and examine whether these measures remain effective for the period that the government stays in power.

4.3 Extensions

The paper can be extended in many different directions. However, two of them are worth mentioning. First, our analysis so far has concentrated on OECD countries. However, we think that it would be important to investigate the determinants of FDI allocation across sectors in developing countries.³⁰ Second, we would also like to test the technology assumption implicit in the complementary versus substitutive effects of FDI depending on its type (and sector) using micro-level data on the activity of the multinational corporations. We hypothesize that partisanship could not only affect the amount of foreign investment capital flowing in, but also affect the form of entry of MNCs. We intend to test additional implications of this model looking

³⁰The nature of the relationship between FDI inflows and governments' ideologies in less developed countries might be different, so the conceptual framework would also need to be extended.

at micro-data on the activity of affiliates of MNCs collected annually by the U.S. Bureau of Economic Analysis. Technology transfers (reflected in royalty payments), employment, output and capital stock of the affiliates of U.S. MNCs are likely to expand or contract with changes in government partisanship, and with the degree of organization and political influence of labor and capital in the host country. Moreover, these changes should co-vary with the characteristics of the firm and their ability to adapt to those political changes.

A Appendix

A.1 Data Description

The data employed in the analysis comes from various places. We provide below a description of the variables and their corresponding sources.

Inflows Share of Investment: is the ratio of FDI inflows into a sector in year t , as a share of domestic investment in that year.

FDI inflows: is the yearly amount of net direct investment inflows to a host country broken down by individual sectors. The source for this variable is OECD, International Direct Investment Statistics Yearbook (online resource, accessed on: 07/06/05). Data is available for OECD countries for the period 1980-2002.³¹

Investment: calculated using CI (investment share of GDP), CGDP (Real Gross Domestic Product per Capita, in current prices) and POP (population). Source: Penn World Tables 6.1 (Heston, Summers et al. 2002)

Employment: is the total number of persons employed in the sector/year (EMPN). The source for this data is OECD, SStructural ANalysis (STAN) Industry database (online resource, accessed on: 07/04/05). This data is available at the ISIC Rev. 3 2-digit level for all OECD countries (except Ireland, Iceland and Turkey) for the period 1970-2001 (data availability varies across

³¹Data is available for all or part of the following countries and sectors: Countries: Australia, Austria, Belgium-Luxembourg, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom, and United States. Sectors (identifying code in parenthesis): Primary Sector: (1) Agriculture and Fishing and (2) Mining and Quarrying (including extraction of petroleum and gas). Manufacturing: (3) Food products; (4) Textile and wood activities; (5) Petroleum, chemical, rubber, plastic products; (6) Metal and mechanical products; (7) Machinery, computers, RTV, communication; (8) Vehicles and other transport equipments. Service Sector: (9) Electricity, Gas and Water; (10) Construction; (11) Trade and Repairs; (12) Hotels and Restaurants; (13) Transports; (14) Telecommunications; (15) Financial Intermediation; (16) Real Estate; (17) Other Business Activities.

countries and sectors).

Left: is a dummy variable coded 1 when the party of the chief executive is listed as Left in the Database of political institutions (Beck, Clarke et al. 2000). The ideological position assigned to each country corresponds to the orientation of the chief executive for political systems classified as presidential in the database, and that of the majority or largest government party for systems classified as parliamentary.³²

Openness: total trade (exports plus imports) as a percentage of GDP, in constant prices. Openness may affect investors' decision to flow into the host country to jump over trade restrictions to supply local consumers, or cater to foreign consumers using the facility in the host country as an export platform. Source: Penn World Tables 6.1 (Heston, Summers et al. 2002)

Real GDP per capita: gross domestic product divided by total population (in thousands of US dollars), proxying for relative endowment of capital.³³ Source: Penn World Tables 6.1 (Heston, Summers et al. 2002).

Population: population (thousands) in the host country, to control for country size. Source: Penn World Tables 6.1 (Heston, Summers et al. 2002).

Wages: Hourly wage index (economy-wide or in manufacturing depending on the country);

³²DPI does not code the orientation of the chief executive for Switzerland, since the Federal Council's role is mostly ceremonial, and the four most important parties are represented in it. We experimented with an alternative coding for the left dummy where we assign to Switzerland the orientation of the largest party in the Assembly. Results remain robust to this change. Results also hold when we use an alternative measure of ideological orientation of government from Duane Swank's Comparative Parties Data Set: left party cabinet portfolios as a percent of all cabinet portfolios. Swank's dataset is available online at: <http://www.marquette.edu/polisci/Swank.htm>. It covers the period 1950-1999 for 21 countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, Portugal, New Zealand, Norway, Spain, Sweden, Switzerland, United Kingdom and United States. These results are available from the authors.

³³Comparable measures of capital stock and labor endowment across countries are notoriously limited in coverage, suffer from measurement error, and hence seriously flawed (See Dutt and Mitra 2005). For practical reasons in the tests we use per capita GDP instead. Yet GDP per capita may also signal larger consumption potential in the host economy, similarity of consumption preferences or complementarities between home and host countries.

base recoded to 1995=100. Source: IMF International Financial Statistics Database (electronic resource accessed on: 03/06/06).

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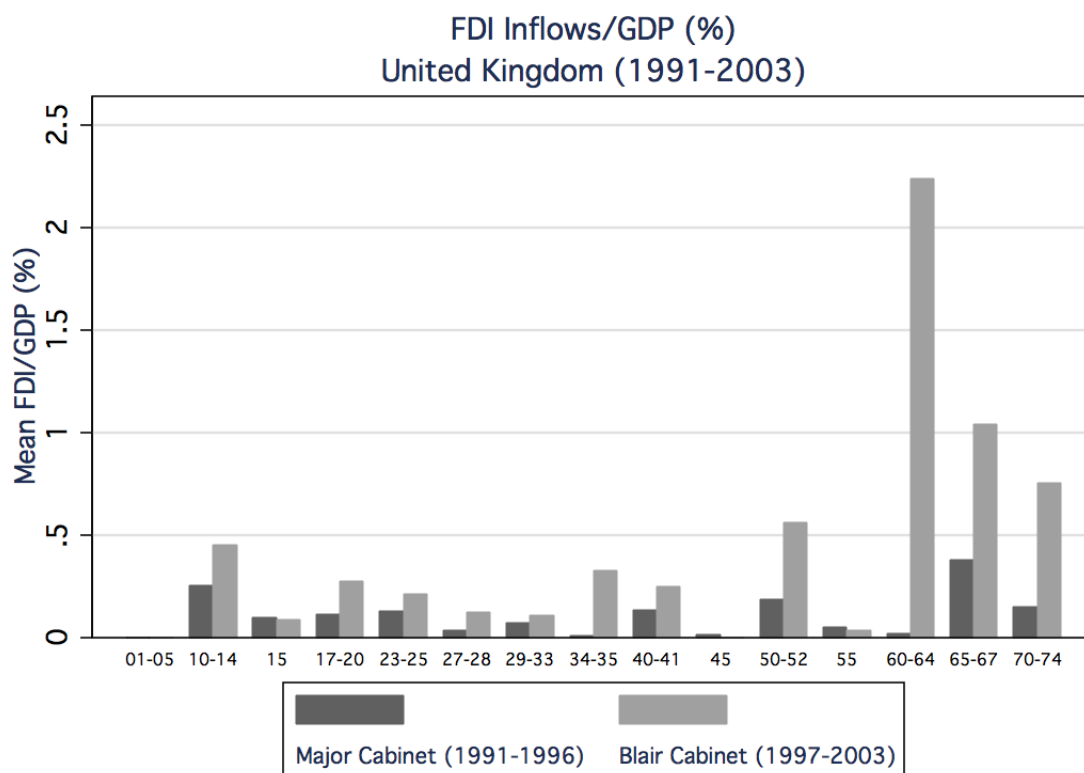
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Figure 1: FDI/GDP share by industrial sector - United Kingdom (1991-2003)



ISIC Code	Industry Description
01-05	Agriculture and Fishing
10-14	Mining and Quarrying
15	Food
17-20	Textile, leather, footwear and wood
23-25	Petroleum, chemical, rubber
27-28	Basic metals and metal products
29-33	Machinery and Equipment
34-35	Vehicles and transportation equipment
40-41	Electricity, Gas and Water
45	Construction
50-52	Trade and Repairs
55	Hotels and Restaurants
60-64	Transports, Storage and Communication
65-67	Financial Intermediation
70-74	Real Estate and Business Activities

Table 1: Results: Summary

Sector 1	Sector 2	$\partial(w^1 + w^2)/\partial t^1$	$\partial(w^1 + w^2)/\partial t^2$	$\partial\bar{r}/\partial t^1$	$\partial\bar{r}/\partial t^2$
Complements	Complements	(+)* or (-)**	(+) [†] or (-) [‡]	(-)	(-)
Complements	Substitutes	(+)* or (-)**	(+)	(-)	(+)
Substitutes	Complements	(-)	(+) [†] or (-) [‡]	(+)	(-)
Substitutes	Substitutes	(-)	(-)	(+)	(+)

* It is (+) when $[-(\partial\bar{r}/\partial t^1)\bar{K} > k^1]$. ** It is (-) when $[-(\partial\bar{r}/\partial t^1)\bar{K} < k^1]$.

[†] It is (+) when $[-(\partial\bar{r}/\partial t^2)\bar{K} > k^2]$. [‡] It is (-) when $[-(\partial\bar{r}/\partial t^2)\bar{K} < k^2]$.

Table 2: Domestic and foreign capital are substitutes in both sectors: $\sigma^1 = \sigma^2 > 1 - \alpha^1 = 1 - \alpha^2$.

β	$g\kappa$	$g\mathcal{L}$	K^1	k^1	k^2	t^1	t^2
0.45	0.0866	0.0708	0.5000	1.0956	1.0956	0.1042	0.1042
0.46	0.0842	0.0717	0.5000	1.1047	1.1047	0.1031	0.1031
0.47	0.0819	0.0726	0.5000	1.1136	1.1136	0.1020	0.1020
0.48	0.0796	0.0735	0.5000	1.1224	1.1224	0.1009	0.1009
0.49	0.0774	0.0743	0.5000	1.1311	1.1311	0.0999	0.0999
0.50	0.0751	0.0751	0.5000	1.1395	1.1395	0.0989	0.0989
0.51	0.0730	0.0760	0.5000	1.1479	1.1479	0.0980	0.0980
0.52	0.0708	0.0767	0.5000	1.1560	1.1560	0.0970	0.0970
0.53	0.0687	0.0775	0.5000	1.1641	1.1641	0.0961	0.0961
0.54	0.0667	0.0783	0.5000	1.1719	1.1719	0.0952	0.0952
0.55	0.0647	0.0790	0.5000	1.1797	1.1797	0.0944	0.0944

Parameter values: $K = 1, r = 0.12, \alpha_1 = \alpha_2 = 0.70,$
 $\sigma_1 = \sigma_2 = 0.55, A_1 = A_2 = 1, a_1 = a_2 = 1, b = 0.30.$

Table 3: Domestic and foreign capital are substitutes in both sectors: $\sigma^1 > \sigma^2 > 1 - \alpha^1 = 1 - \alpha^2$.

β	g_K	g_L	K^1	k^1	k^2	t^1	t^2
0.45	0.0637	0.0521	0.4816	0.6616	0.6355	0.1244	0.1346
0.46	0.0620	0.0528	0.4815	0.6667	0.6403	0.1232	0.1334
0.47	0.0603	0.0535	0.4814	0.6718	0.6450	0.1221	0.1322
0.48	0.0587	0.0542	0.4813	0.6768	0.6496	0.1210	0.1311
0.49	0.0571	0.0549	0.4812	0.6816	0.6541	0.1200	0.1300
0.50	0.0555	0.0555	0.4811	0.6864	0.6586	0.1190	0.1289
0.51	0.0540	0.0562	0.4810	0.6912	0.6630	0.1180	0.1278
0.52	0.0524	0.0568	0.4809	0.6958	0.6673	0.1170	0.1268
0.53	0.0509	0.0574	0.4808	0.7004	0.6716	0.1160	0.1258
0.54	0.0494	0.0580	0.4807	0.7049	0.6758	0.1151	0.1249
0.55	0.0480	0.0586	0.4806	0.7093	0.6799	0.1142	0.1239

Parameter values: $K = 1, r = 0.12, \alpha_1 = \alpha_2 = 0.75,$
 $\sigma_1 = 0.55, \sigma_2 = 0.50, A_1 = A_2 = 1, a_1 = a_2 = 1, b = 0.30.$

Table 4: Domestic and foreign capital are complements in both sectors: $\sigma_1 = \sigma_2 < 0$.

β	g_K	g_L	K^1	k^1	k^2	t^1	t^2
0.45	0.0265	0.0216	0.5000	0.1448	0.1448	0.2408	0.2408
0.46	0.0258	0.0220	0.5000	0.1453	0.1453	0.2399	0.2399
0.47	0.0251	0.0223	0.5000	0.1457	0.1457	0.2391	0.2391
0.48	0.0245	0.0226	0.5000	0.1462	0.1462	0.2382	0.2382
0.49	0.0238	0.0229	0.5000	0.1467	0.1467	0.2373	0.2373
0.50	0.0232	0.0232	0.5000	0.1471	0.1471	0.2365	0.2365
0.51	0.0226	0.0235	0.5000	0.1475	0.1475	0.2357	0.2357
0.52	0.0220	0.0238	0.5000	0.1480	0.1480	0.2349	0.2349
0.53	0.0213	0.0241	0.5000	0.1484	0.1484	0.2341	0.2341
0.54	0.0207	0.0244	0.5000	0.1488	0.1488	0.2334	0.2334
0.55	0.0202	0.0246	0.5000	0.1492	0.1492	0.2326	0.2326

Parameter values: $K = 1, r = 0.05, \alpha_1 = \alpha_2 = 0.75,$
 $\sigma_1 = \sigma_2 = -0.20, A_1 = A_2 = 1, a_1 = a_2 = 1, b = 0.18.$

Table 5: Domestic and foreign capital are complements in both sectors: $\sigma_2 < \sigma_1 < 0$.

β	$g_{\mathcal{K}}$	$g_{\mathcal{L}}$	K^1	k^1	k^2	t^1	t^2
0.45	0.0513	0.0420	0.3984	0.2449	0.3683	0.1812	0.2469
0.46	0.0500	0.0426	0.3986	0.2451	0.3680	0.1810	0.2472
0.47	0.0488	0.0433	0.3988	0.2453	0.3677	0.1808	0.2474
0.48	0.0476	0.0439	0.3990	0.2455	0.3674	0.1806	0.2477
0.49	0.0463	0.0445	0.3991	0.2457	0.3670	0.1805	0.2479
0.50	0.0451	0.0451	0.3993	0.2459	0.3667	0.1803	0.2482
0.51	0.0439	0.0457	0.3995	0.2461	0.3664	0.1802	0.2484
0.52	0.0428	0.0463	0.3996	0.2463	0.3662	0.1800	0.2486
0.53	0.0416	0.0469	0.3998	0.2465	0.3659	0.1799	0.2489
0.54	0.0404	0.0475	0.3999	0.2467	0.3656	0.1797	0.2491
0.55	0.0393	0.0481	0.4001	0.2469	0.3653	0.1796	0.2493

Parameter values: $K = 1, r = 0.05, \alpha_1 = \alpha_2 = 0.70,$
 $\sigma_1 = -0.30, \sigma_2 = -0.80, A_1 = A_2 = 1, a_1 = a_2 = 1, b = 0.19.$

Table 6: Domestic and foreign capital are complements in both sectors: $\sigma_1 = \sigma_2 < 0$.

β	$g_{\mathcal{K}}$	$g_{\mathcal{L}}$	K^1	k^1	k^2	t^1	t^2
0.45	0.0675	0.0552	0.5000	0.4266	0.4266	0.2086	0.2086
0.46	0.0659	0.0562	0.5000	0.4249	0.4249	0.2098	0.2098
0.47	0.0644	0.0571	0.5000	0.4231	0.4231	0.2110	0.2110
0.48	0.0629	0.0580	0.5000	0.4215	0.4215	0.2122	0.2122
0.49	0.0613	0.0589	0.5000	0.4198	0.4198	0.2134	0.2134
0.50	0.0598	0.0598	0.5000	0.4182	0.4182	0.2146	0.2146
0.51	0.0583	0.0607	0.5000	0.4166	0.4166	0.2158	0.2158
0.52	0.0569	0.0616	0.5000	0.4150	0.4150	0.2169	0.2169
0.53	0.0554	0.0625	0.5000	0.4135	0.4135	0.2181	0.2181
0.54	0.0540	0.0633	0.5000	0.4120	0.4120	0.2192	0.2192
0.55	0.0525	0.0642	0.5000	0.4105	0.4105	0.2203	0.2203

Parameter values: $K = 1, r = 0.05, \alpha_1 = \alpha_2 = 0.60,$
 $\sigma_1 = \sigma_2 = -0.80, A_1 = A_2 = 1, a_1 = a_2 = 1, b = 0.20.$

Table 7: Domestic and foreign capital are complements in both sectors: $\sigma_2 < \sigma_1 < 0$.

β	g_K	g_L	K^1	k^1	k^2	t^1	t^2
0.45	0.0630	0.0516	0.4672	0.3975	0.4399	0.1871	0.2085
0.46	0.0615	0.0524	0.4673	0.3962	0.4383	0.1880	0.2096
0.47	0.0601	0.0533	0.4674	0.3949	0.4368	0.1889	0.2106
0.48	0.0586	0.0541	0.4675	0.3936	0.4352	0.1897	0.2116
0.49	0.0572	0.0549	0.4677	0.3923	0.4337	0.1906	0.2126
0.50	0.0557	0.0557	0.4678	0.3911	0.4323	0.1915	0.2136
0.51	0.0543	0.0566	0.4679	0.3898	0.4308	0.1923	0.2146
0.52	0.0529	0.0574	0.4680	0.3886	0.4294	0.1931	0.2156
0.53	0.0516	0.0581	0.4681	0.3874	0.4280	0.1940	0.2166
0.54	0.0502	0.0589	0.4682	0.3862	0.4267	0.1948	0.2175
0.55	0.0488	0.0597	0.4683	0.3851	0.4253	0.1956	0.2185

Parameter values: $K = 1, r = 0.05, \alpha_1 = \alpha_2 = 0.60,$
 $\sigma_1 = -0.60, \sigma_2 = -0.80, A_1 = A_2 = 1, a_1 = a_2 = 1, b = 0.20.$

Table 8: Domestic and foreign capital are substitutes in Sector 1 and complements in Sector 2: $\sigma^2 < 0 < \sigma^1$.

β	g_K	g_L	K^1	k^1	k^2	t^1	t^2
0.45	0.0576	0.0471	0.7920	2.3442	0.2008	0.0539	0.1266
0.46	0.0560	0.0477	0.7915	2.3625	0.2017	0.0534	0.1259
0.47	0.0545	0.0484	0.7911	2.3805	0.2026	0.0529	0.1253
0.48	0.0531	0.0490	0.7906	2.3983	0.2034	0.0524	0.1246
0.49	0.0516	0.0496	0.7902	2.4157	0.2042	0.0519	0.1240
0.50	0.0502	0.0502	0.7898	2.4328	0.2050	0.0515	0.1235
0.51	0.0488	0.0507	0.7894	2.4497	0.2058	0.0510	0.1229
0.52	0.0474	0.0513	0.7890	2.4663	0.2066	0.0506	0.1223
0.53	0.0460	0.0519	0.7886	2.4826	0.2074	0.0502	0.1218
0.54	0.0447	0.0524	0.7882	2.4987	0.2081	0.0497	0.1212
0.55	0.0433	0.0530	0.7878	2.5145	0.2089	0.0493	0.1207

Parameter values: $K = 1, r = 0.08, \alpha_1 = \alpha_2 = 0.75,$
 $\sigma_1 = 0.55, \sigma_2 = -0.20, A_1 = A_2 = 1, a_1 = a_2 = 1, b = 0.25.$

Table 9: Codes for Industrial Sectors Used in Empirical Analysis

Code	Industrial Sector
1	Agriculture and fishing
2	Mining and quarrying
3	Food products
4	Total textile and wood activities
5	Total petroleum, chemical, rubber, plastic products
6	Total metal and mechanical products
7	Total machinery, computers, RTV, communication
8	Total vehicles and other transport equipments
9	Electricity, gas and water
10	Construction
11	Trade and repairs
12	Hotels and restaurants
13	Transportation
14	Telecommunications
15	Financial Intermediation
16	Real estate
17	Other business activities

Table 10: FDI Inflows and Government Political Orientation. Regressions by Sectors.

Dependent Variable: FDI Inflows into Sector i as a Proportion of Country Investment													
Industry Code	Left		Real GDP (per capita)		Openness		Population (millions)		Constant	Obs.	Countries	R^2	
1	0.0029 (0.0110)		0.0017 (0.0036)		0.0011 (0.0006)	*	0.0002 (0.0005)		-0.0224 (0.0791)	249	21	0.175	
2	0.3591 (0.1543)	**	0.0773 (0.0520)		0.0156 (0.0092)	*	-0.0211 (0.0083)	**	-1.4820 (1.1527)	271	21	0.28	
3	0.3065 (0.0791)	***	-0.0262 (0.0265)		0.0092 (0.0046)	**	-0.0173 (0.0053)	***	0.7598 (0.5467)	280	23	0.404	
4	0.0813 (0.1272)		0.0033 (0.0344)		0.0093 (0.0049)	*	-0.0125 (0.0105)		-0.1457 (0.7179)	220	23	0.291	
5	0.7963 (1.3968)		0.1580 (0.3152)		0.0306 (0.0457)		-0.1049 (0.1172)		-2.8113 (6.8114)	209	22	0.158	
6	0.4318 (0.2284)	*	0.0638 (0.0592)		0.0297 (0.0137)	**	-0.0148 (0.0162)		-1.9186 (1.3009)	224	22	0.471	
7	0.1550 (0.2132)		0.1273 (0.0446)	***	0.0322 (0.0114)	***	0.0062 (0.0109)		-4.7107 (2.0412)	**	200	20	0.343
8	0.3533 (0.1293)	***	-0.0122 (0.0333)		-0.0080 (0.0072)		-0.0076 (0.0110)		-0.3975 (1.0082)	166	18	0.534	
9	0.3560 (0.2066)	*	0.1565 (0.1709)		0.0194 (0.0138)		-0.0507 (0.0382)		-2.5914 (3.3463)	123	18	0.39	
10	-0.0733 (0.0256)	***	-0.0021 (0.0082)		-0.0024 (0.0015)	*	-0.0056 (0.0015)	***	0.1811 (0.1745)	278	23	0.364	
11	0.1776 (0.1156)		0.0727 (0.0447)		0.0390 (0.0101)	***	-0.0114 (0.0075)		-1.1418 (0.9592)	326	23	0.379	
12	-0.0145 (0.0880)		-0.0231 (0.0136)	*	0.0040 (0.0041)		0.0106 (0.0054)	**	0.6198 (0.3325)	*	148	19	0.155
13	-0.0667 (0.0398)	*	0.0053 (0.0133)		-0.0054 (0.0033)		-0.0031 (0.0020)		0.6563 (0.6179)	196	18	0.531	
14	0.9110 (0.4844)	*	0.6229 (0.2290)	***	0.0459 (0.0247)	*	-0.1157 (0.0430)	***	-13.069 (4.2292)	***	137	17	0.465
15	1.4960 (0.4321)	***	0.4363 (0.2114)	**	0.0965 (0.0329)	***	-0.1156 (0.0314)	***	-8.2864 (4.2416)	*	342	24	0.943
16	-0.0436 (0.0643)		0.1526 (0.0431)	***	0.0217 (0.0058)	***	-0.0278 (0.0113)	**	2.4710 (2.2152)	109	18	0.768	
17	-0.0588 (1.0898)		0.4501 (0.9774)		-0.1083 (0.1222)		-0.6815 (0.2449)	***	148.71 (50.978)	***	109	18	0.471

Note: All regressions include country and year dummies.
Heteroscedastic Panel Corrected Standard errors in brackets.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 11: Sectoral Effect FDI Inflows on Aggregate Total Wages.

Dependent Variable: Δ Aggregate Wages		
Left	0.9643 (0.0841)	***
FDI Inflows	-0.0036 (0.0050)	
Left \times (FDI Inflows)	0.0185 (0.0086)	**
Δ Real GDP (per capita)	0.0012 (0.0002)	***
Δ Openness	-0.0082 (0.0416)	
Constant	3.3828 (0.4909)	***
Sector Dummies	Yes	
Country Dummies	Yes	
Year Dummies	Yes	
Observations	3077	
Parameters	61	
R^2	0.578	

Note: Heteroscedastic Panel Corrected Standard errors in brackets.

* significant at 10%; ** significant at 5%; *** significant at 1%