

Industriousness: On the Sources of Cross-Industry Variation in Foreign Direct Investment Restrictions

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Abstract

Amid a growing interest in the political economy of foreign direct investment (FDI) an important fact has been overlooked: countries restrict FDI inflows. Countries have long placed limits on the entry and operation of foreign-owned firms yet we lack explanations for why these restrictions exist. This paper develops and tests a political economy explanation for FDI policies; FDI inflows alter returns to local factor groups creating incentives to lobby for specific policies regulating these inflows. These tests make use of a new data set of industry-level foreign ownership restrictions covering 119 countries and 58 industries. I find that governments are more likely to restrict FDI intended to compete in local markets than FDI that exploits cost advantages. Additionally, I find that the probability of restrictions decreases dramatically with electoral competition - governments with multi-party competition are half as likely to restrict foreign ownership as those governments dominated by a single party. These findings are robust to controls for nationalist and national security concerns.

Introduction

It is difficult to overstate the importance of foreign direct investment (FDI) to the contemporary international economy. FDI, which entails firms establishing overseas subsidiaries, is the single largest source of international capital flows (World Bank 2003). Additionally, FDI notably shapes other key features of the global economy. Amid anxieties that economic integration subjects countries to greater risk and volatility FDI flows are exceptionally stable. Figure 1 depicts FDI's steady increase over the past thirty years in contrast to frequent shifts to portfolio capital flows. The late 1990s are particularly illustrative; despite multiple major financial and currency crises FDI flows markedly increased while portfolio flows plummeted. FDI also generates approximately twenty percent of world trade flows through intrafirm trade, the movement of production inputs and final products within firms and across national borders (Hummels et al 2001).

Despite this crucial importance to the world economy we know little about how and why countries regulate FDI. In particular, we lack an account of how and why countries restrict FDI flows into their countries. There are three distinct patterns of variation in FDI regulation: a cross-industry trend of greater restrictions in service industries than in manufacturing; a cross-national trend of fewer restrictions in more developed countries as compared to developing countries, and a trend over time of declining restrictions. Existing research on the politics of FDI do not address the causes of restrictions. Countries themselves often justify their limits on FDI with concerns about national security or the integrity of national identity. To be sure, these concerns are relevant to understanding FDI restrictions but they are not sufficient to explain the range of observed variation. Current research on the politics of FDI considers how political

institutions influence the total amount of FDI that countries receive.¹ An earlier generation of scholars examined why governments expropriated foreign investments.² Juxtaposing these existing accounts reveals both that existing work relies on assumptions about governments' preferences for FDI flows and that over these assumptions have changed over time. This shift indicates the need for a more robust account of FDI's politics, one that gives purchase on the multiple dimensions along which FDI restrictions vary.

In this paper I develop and test a model of FDI regulation. I base this model on FDI's distributional effects, how FDI redistributes income within recipient countries. I make extensive use of existing economic models of FDI determinants to motivate the model. In particular, I argue that FDI's distributional effects depend on firms' motive for investment, either to reduce production costs or enter new markets. *Vertical FDI*, or FDI to reduce production costs, increase's labor income but may decrease returns to capital. FDI to compete in local markets, *horizontal FDI*, reduce both labor and capital income while increasing returns to consumers. From these distinct types of FDI arise different political alignments and the relevant features of policy-making also differ. My main theoretical finding is the horizontal FDI is more likely to be restricted than vertical FDI due to the relative severity of its distributional effects.

I empirically test this theoretical claim with a dataset that I collected of industry-level foreign ownership restrictions, a specific type of FDI regulation. I use a cross-section of these data, restrictions in the 1990s, for 119 countries and 57 industries, to test my hypothesis for why restrictions vary across countries and industries. I find that

¹ For example, Jensen 2003, Li and Resnick 2003

² For example, Jodice 1980, Kobrin 1987

governments are more likely to restrict foreign ownership when it results in increased market competition. Additionally, I find that countries with electoral competition are half as likely to have foreign ownership restrictions than those countries without such competition.

In the next section of this paper I derive FDI's distributional effects. I discuss some of the fundamentals of FDI that motivate my assumptions and building on these assumptions, I derive a model of FDI's distributional effects. Next, I build hypotheses for the cause of foreign ownership regulation based on FDI's predicted distributional effects and the resulting political cleavages. The following section describes my empirical tests including the measurement of key variables, the choice of statistical model, and, of course, empirical findings. In the concluding section, I return to the larger issue with which I began: FDI's role in the global economy. In light of the empirical findings presented here I revisit stylized facts about the politics of economic globalization and suggest additional avenues of research.

II. Distributional Effects of FDI Inflows

The defining feature of FDI is the firm-specificity of capital assets. FDI is the cross-border flow of firm-specific capital assets like proprietary production technologies, managerial and organizational practices, and trademarked brands. Firms engage in FDI to overcome the multiple inefficiencies of market-mediated licensing of assets including the incompleteness of contracts, misaligned incentives of contracting firms, and difficulties in monitoring licensees. For example, if firms license their technologies to partner firms abroad they run the risk of having these technologies stolen and losing the

future income that these assets generate (Horstmann and Markusen 1987, Either and Markusen 1996). FDI keeps assets internal to the firm and instead expands the firm itself in order to enter new markets and realize firm-level scale economies (Hymer 1976, Antràs 2003).³

The high costs of FDI ensure that only the most productive firms in the world undertake it. The establishment, coordination, and monitoring of multiple production facilities in geographically distant locations is a costly endeavor.⁴ Additionally, foreign-owned firms typically have less information about the local market than their domestic counterparts, placing them at a relative disadvantage. MNCs are firms whose capital assets confer a sufficiently large competitive advantage so as to offset these costs. Helpman, Melitz and Yeaple (2004) confirm this logic concluding that multinational exporting firms are, on average, fifteen percent more productive than their wholly domestic exporting counterparts.⁵ Firms that become multinationals not only tend to have more productive capital assets but after becoming multinational they register additional productivity gains owing greater firm-level scale economies. Barba-Navaretti and Falzoni (2004) document these two sources of productivity for a sample of Italian firms. Based on this reasoning, I assume that MNCs are more productive than local firms in host countries in which they invest.⁶

³ Firms resolve the incomplete contracting problem by allocating residual rights of control, those rights which cannot be specified *ex ante* in a contract, to the parent firm (Grossman and Hart 1986).

⁴ Firms engage in FDI by establishing new production facilities or acquiring existing firms in the host country. For simplicities sake, I assume all FDI is of the former variety. Most of the same conclusions apply to FDI through mergers and acquisitions but the predictions regard capital's preferences are somewhat complicated by the presence of a local capital beneficiary of FDI.

⁵ For similar empirical results based on a model of monopolistic competition see Melitz 2003.

⁶ In a few, mostly advanced host economies MNCs will face local firms who are themselves MNCs in which case the productivity gap will be narrower.

Before moving on the politics that follow from these effects the widely-touted benefits of FDI inflows merit a brief discussion in the present context. FDI is often considered a powerful engine of economic development by creating jobs; facilitating technology transfer and skill upgrading; and balancing national accounts by increasing export activity.⁷ Indeed, these effects are cited as the rationale for the generous incentives that countries sometimes use to entice foreign investors. There are prominent examples of economic development with extensive FDI including Ireland and China. The growth rates witnessed in these countries are sufficiently high so raise questions about what role these aggregate welfare effects play in shaping individuals' preferences. It also possibly casts doubt on a distributional explanation for FDI policies; politicians may be willing to disregard distributive concerns to obtain unusually high levels of growth associated with FDI flows. What role, then, do possible aggregate welfare gains play? It helps to first put FDI's aggregate effects into perspective. Analyses of FDI's influence on aggregate growth indicate no significant effect of FDI on growth (Carkovic and Levine 2005); or necessary preconditions for FDI to spur growth including sufficient levels of human capital, financial development, or international trade.⁸ A growing body of research utilizes firm-level data to identify productivity spillovers from foreign-owned firms to their local counterparts and linked industries.⁹ To be sure, there is evidence of positive productivity spillovers but these findings show that spillovers depend overwhelmingly on a variety of firm- and location-specific variables, precluding

⁷ See Romer 1993 for a discussion of FDI and technology transfer.

⁸ See Borzenstein, de Gregorio, Lee 1998, Alfaro, Chanda, Kalemli- Ozcan, Saye 2004, Balasubramaniam, Salisu, and Sapsford 1996.

⁹ Productivity spillovers, an increase in productivity in local firms, occurs through formal partnerships between local suppliers and investing firms, competition-induced innovation, mimicry, and technology diffusion through the movement of local labor out of foreign-owned firms into local firms. See Javorik and Spatareanu 2005 for review of the existing empirical findings on FDI-induced productivity spillovers.

generalized conclusions. Similarly, macroeconomic benefits like improved balances of payment are possible but do not systematically obtain. How, then, should these potential aggregate welfare gains be weighed against FDI's more pointed distributional effects? The expected gains in improved productivity and growth are unlikely to make a difference in FDI's net income effects for an individual, or any such effects would only be evident in the long run. The model does capture more pointed gains like job creation that are prominent justifications for FDI incentives.

Multinational Organization of Production

Firms organize their multinational production based on one of two goals: reducing production costs or entering new markets. Like all forms of international capital flows FDI is ultimately a strategy by which capital owners exploit potential returns to their assets. The mechanisms by which FDI generates returns, however, are quite different from those of more liquid forms of capital. In the presence of capital mobility, flows of financial capital follow the logic of factor price equalization: capital owners in capital-rich economies transfer their assets to capital-poor economies where, due to the relative scarcity of capital, a higher rental rate for capital prevails. The distributional implications of these capital flows all obtain from a single effect, a change in the price of financial capital. By contrast, owners of firm-specific capital, vulnerable to the incomplete contracting problems described above, do not seek returns to their assets in arms-length market transactions. Instead, FDI yields returns to firm-specific capital assets in foreign product markets. Specifically, MNCs use FDI to either lower production costs by exploiting differences in factor prices, *vertical FDI*, or enter new product markets,

horizontal FDI.¹⁰ These two types of FDI give rise to different ways of organizing multinational production. Firms pursuing vertical FDI fragment the production process, retaining “headquarter” functions like research and development, and marketing in the home country and relocating production activities to countries that are abundant in the factors used intensively in production (Helpman 1984). Most often these firms seek lower labor costs, but FDI in the primary sector naturally locates in countries abundant in the relevant natural resource. MNCs export the output of vertical investments. By contrast, horizontal FDI entails the replication of production facilities in multiple host countries in order to produce for that market (Markusen 1984). This production structure is geared towards foreign market entry; foreign affiliates compete in the local product market by producing locally.

Vertical and horizontal FDI are associated with distinct sets of industry and host country characteristics, that is, features of production that indicate which industries engage in each type of FDI and the characteristics of the countries in which they will chose to invest.¹¹ Identifying these two distinct motives for FDI is the first step in accurately deriving the income effects of FDI inflows. Rather than treating FDI as simply a form of capital I make detailed use of the known motives and characteristics of FDI flows to develop a nuanced account of FDI’s income effects. As will be evident in

¹⁰ A more elaborate specification of FDI types would include distinct varieties of each type, for example, fragmentation as an extreme form of vertical FDI (Feenstra 1998); or hybrid types like export-platform FDI (Eckholm, Forslid, Markusen 2003). The standard vertical-horizontal distinction abstracts away from some finer-grained distinctions in FDI motives but it is sufficient to capture the host country effects of the range of FDI types. For example, extensive fragmentation is identical to simple vertical FDI with regard to its host country distributional effects.

¹¹ The common components of standard models of FDI flows, e.g. property rights protections, information costs, taxation, are not included here because they are correlates of the relative amount of total FDI flows rather than the composition of those flows with respect to the purpose of investment.

the following section, the underlying distributional consequences of vertical and horizontal FDI differ dramatically.

FDI's income effects vary with the type of FDI, making this distinction crucial to correctly specifying FDI's implications for host countries. Many salient characteristics vary with the type of FDI including the specific activities of foreign-owned firms, their factor demands, and their relationship to other firms in the market. As a result the welfare and distributional effects of FDI vary and so do the salient political dynamics like the cleavages between groups. In order to explain variation across industries in FDI restrictions I make use of this distinction in types of FDI. The key to explaining industry-level restrictions on FDI is in identifying the income effect of FDI in a given industry. This, in turn, is an exercise in correctly identifying whether FDI into an industry will be vertical or horizontal.

To model the effect of FDI inflows on local factor incomes I begin with Jones' (1971) canonical specific factors model. The model is of three factor-two commodity economy, consisting of two types of sector-specific capital, K_1 and K_2 , and labor, L which is mobile across sectors.¹² Two commodities, X_1 and X_2 , are produced, each with a combination of one type of specific capital and labor. In the context of this model, FDI is an increase in one type of specific capital to "transmit equity capital, entrepreneurship, and technological or other productive knowledge in an industry-specific package" (Caves 1971, 3).¹³ Although in practice FDI is firm-specific capital, I assume that the

¹² An extension of this model to allow varying degrees of labor mobility is in development. See Grossman and Helpman 1996 for model of FDI policy preferences with sector-specific labor. See also Brown and Stern 2001.

¹³ See Batra and Ramachandran 1980 for a more elaborate model built on a similar premise.

commodities produced with such capital are sold in a single, sector-wide commodity market.¹⁴

Let a_{ij} refer to the amount of factor i necessary to produce a single unit of commodity j ; R_i represent the return to one unit of factor i ; and p_j the price of commodity j . In the competitive equilibrium there is full employment of all factors such that the following equations describe factor endowments and commodity prices:

$$a_{K11}X_1 = K_1 \tag{1}$$

$$a_{K22}X_2 = K_2 \tag{2}$$

$$a_{L1}X_1 + a_{L2}X_2 = L \tag{3}$$

$$a_{K11}R_{K11} + a_{L1}R_L = p_1 \tag{4}$$

$$a_{K22}R_{K22} + a_{L2}R_L = p_2 \tag{5}$$

The competitive market assumption implies that firms minimize unit costs. As both sectors utilize two factors, each chose of inputs based on the ratio of factor prices of the two factors used in industry j :

$$a_{ij} = a_{ij} \left(\frac{R_L}{R_{Kij}} \right) \tag{6}$$

From these equations the effect of changes in factor endowments and commodity prices on returns to both forms of capital and labor is derived through total differentiation:

¹⁴ Another key simplifying assumption of this model is that production technologies do not vary across firms. This assumption abstracts away the defining features of FDI as firms with exceptionally productive technologies, and with large economies of scale in production. This simplified model does nonetheless sharpen intuitions. A more complete model would be ideal but theoretical work on FDI that incorporates heterogeneous firms is still in the initial stages of development, and largely focuses on variation in firm-level productivity and the initial decision to undertake FDI (Melitz 2003).

$$\hat{R}_{K11} = \frac{1}{\Delta} \left\{ \left[\lambda_{L1} \frac{\sigma_1}{\theta_{K11}} + \frac{1}{\theta_{K11}} \lambda_{L1} \frac{\sigma_2}{\theta_{K22}} \right] \hat{p}_1 - \frac{\theta_{L1}}{\theta_{K11}} \lambda_{L2} \frac{\theta_{L2}}{\theta_{K22}} \hat{p}_+ + \frac{\theta_{L1}}{\theta_{K11}} [\hat{V}_L - \lambda_{L1} \hat{V}_{K1} - \lambda_{L2} \hat{V}_2] \right\} \quad (7)$$

$$\hat{R}_{K22} = \frac{1}{\Delta} \left\{ \left[\lambda_{L2} \frac{\sigma_2}{\theta_{K22}} + \frac{1}{\theta_{K22}} \lambda_{L2} \frac{\sigma_1}{\theta_{K11}} \right] \hat{p}_1 - \frac{\theta_{L2}}{\theta_{K22}} \lambda_{L2} \frac{\theta_{L1}}{\theta_{K11}} \hat{p}_+ + \frac{\theta_{L2}}{\theta_{K22}} [\hat{V}_L - \lambda_{L2} \hat{V}_{K2} - \lambda_{L1} \hat{V}_1] \right\} \quad (8)$$

$$\hat{R}_L = \frac{1}{\Delta} \left\{ \lambda_{N1} \frac{\sigma_1}{\theta_{K11}} \hat{p}_1 + \lambda_{L2} \frac{\sigma_2}{\theta_{K11}} \hat{p}_2 + [\lambda_{L1} \hat{V}_1 + \lambda_{L2} \hat{V}_2 - \hat{V}_L] \right\} \quad (9)$$

where

$$\Delta = \lambda_{N1} \frac{\sigma_1}{\theta_{K11}} + \lambda_{L2} \frac{\sigma_2}{\theta_{K22}}$$

λ_{Lj} is the fraction of the total labor force employed in the production of commodity j ; θ_{ij} is the portion of factor i that is used in the production of commodity j ; σ_j is the elasticity of substitution between the two factor inputs used in the production of commodity j ; and “^” over variables indicates relative change in a variable.

In the context of the model vertical FDI is akin to an increase in the supply one form of specific capital. Commodity prices are held constant to reflect that the output of vertical FDI is intended for export and does not enter the local commodity market. The resulting distributional effects derive solely from the change in relative factor endowments.

Consider vertical FDI as an increase in K_1 . Commodity prices are set exogenously such that p_1 and p_2 are fixed. The increase in available capital to produce X_1 increases the marginal revenue product of labor employed in that industry such that profit-maximizing firms increase production of X_1 until labor's marginal revenue product is equal to p_1 . This increase in labor demand leads to an increase in R_L :

producers X_1 offer higher wages to attract workers into their sector, forcing producers of X_2 match this higher wage in order to retain workers. Since prices remain constant an increase in R_L raises labor's real wage. At this higher wage, output of X_2 declines as does $R_{K22} \cdot R_{K11}$ also declines as labor captures a larger share of returns to the industry as a whole. While returns to both types of capital decline, the magnitude of this change hinges on the relative labor intensity of production, λ_{Kij} , such that returns to local capital owners are a declining function of λ_{Kij} . Vertical FDI, thus, triggers a reallocation of income from labor to capital by increasing labor demand. These are real income effects given that commodity prices are held constant.

A wealth of empirical findings supports these claims. There is evidence of general equilibrium wage effects in Ireland (Barry 2004) and Mexico (Feenstra and Hanson 1997), cases in which FDI inflows were sufficiently large relative to the host economy's size.¹⁵ Görg and Greenway (2001) find that local firms increase wages after the entry of foreign-owned firms despite their constant or even decreasing total factor productivity, further indicating a broader wage effect.¹⁶ In one of the few studies of FDI's localized wage impact, Blonigen and Figlio (2000) examine the effects of FDI on wages in South Carolina. They conclude that the entry of a single, average-sized foreign-owned plant, employing about 190 workers, increases by 2.3 percent the real wage of all

¹⁵ Feenstra and Hanson make the additional assumption that FDI entails shifting the least-skilled activities in the home country to a host country where that same activity is a skilled labor-intensive activity. The authors conclude that under these conditions FDI can actually reduce unskilled wages in the host economies by raising the average skill-level of labor demanded. This is, to the best of my knowledge, the only model of FDI that predicts FDI inflows reduce the income of any segment of the labor market. See Feenstra and Hanson (1996) for a detailed discussion of this model. Empirical findings of reduced unskilled labor demand, however, should be treated with some caution as this result is observationally consistent with skill-biased technological change.

¹⁶ These results also demonstrate that increased returns to labor are not due to the propensity of foreign investors to acquire firms that were more productive *ex ante*.

workers employed in the same industry and county as the foreign-owned plant. This wage increase, they argue, is simply too large not to reflect an overall increase in labor demand. There is less empirical evidence regarding vertical FDI's effects on capital income however Hiscox (2004) argues that US manufacturing industries that are *not* active in FDI are more likely to engage in political lobbying and file grievances with the International Trade Commission. This finding suggests that these capital owners have a greater incentive to lobby for protection due to the effect on factor incomes of FDI into other industries.

Horizontal FDI entails an increase in K_1 . For the sake of clarity now assume that X_1 is a nontraded commodity whose price is determined solely by local production, such that p_1 is set locally; p_2 remains fixed. As above, an increase in K_1 leads to expanded output of X_1 . With an increase in the supply of X_1 , p_1 declines. Recall that firms minimize unit costs in selecting their production inputs. Jones (1971, 7) notes that “the change in the market price of X_1 must be positively weighted average of (and therefore trapped between) the changes in individual factor prices.” With a reduction in p_1 the marginal revenue products of both factors employed in X_1 decline but R_{K11} falls by a greater percentage than does p_1 while R_L declines but by less than p_1 . This can be easily seen by solving Equation 4 for R_{K11} . Changes in capital income are more pronounced than labor due to sector specificity of capital. Unlike the vertical FDI case, returns to the two types of capital owners diverge. Although R_{K11} falls, R_{K22} increases with the decline in p_1 and p_2 remaining fixed. By contrast, wages are determined by the weighted sum of labor use in both sectors which cushions wages against the drop in p_1 . The net income

effect for labor is ambiguous with the precise effect depending on labor's consumption preferences.¹⁷ Unlike the vertical case, horizontal FDI reduces the income of capital owners in the industry of investment, thus dividing capital owners on the issue of horizontal FDI. The ultimate effects of labor require some further theorizing.

Although this model captures the general effects of price competition its spare assumptions obscure politically salient distributional effects. In order to discuss these effects I relax the assumption of perfectly competitive commodity markets and introduce sector-specific rents. As noted above, horizontal FDI indicates the existence of other market entry barriers; these entry barriers give rise to rents.¹⁸ With the protection of entry barriers local firms enjoy market power which allows them to set prices above their marginal cost. I assume that rents are specific to sectors because they originate from firms' ability to set the local price for their commodity. The income effects of horizontal FDI operate through a change in relative factor endowments and additionally, through a change in commodity prices. This effect on local commodity prices reflects the market access motive of horizontal FDI. Firms make horizontal investments when other, less costly, forms of market entry are unavailable. Often these investments are designed to circumvent trade restrictions and contest nontradables markets. Given these motives of horizontal FDI it is reasonable to infer that it occurs in commodity markets in which there is a wedge between world and local prices.

¹⁷Relaxing the assumption of uniform production technologies to allow for investing firms to be more productive creates the possibility that horizontal FDI would reduce overall labor demand. This is a possibility only when demand is sufficiently price inelastic such that there is not a compensating increase in demand with a reduction in price. In the case of vertical FDI this result would only obtain if MNCs systematically underinvested.

¹⁸Specific rents can also arise from product differentiation but these rents are generally less likely to be threatened by FDI because product varieties are not perfect substitutes. See Schmalensee 1989.

Sector-specific rents supplement the income of capital and labor employed in that sector. Empirical findings indicate that labor commands a larger share of rents than capital. Katz and Summers (1989) document a high correlation between product market and labor rents. They also find large interindustry wage differentials that are robust to controls for unobserved worker quality, non-wage compensation, and unionization, a result that the authors attribute to labor's share of product market rents.¹⁹ The standard explanation for these results is that labor rents amount to an efficiency wage designed to illicit a high level of effort (Krueger and Summers 1988, Dickens and Katz 1987).²⁰ Thus, even though labor is mobile, sector-specific rents tie local subsets of labor to their current sector. In the presence of rents price competition induced by horizontal FDI reduces returns to labor, aligning sector-specific labor with local capital against horizontal FDI into their sector.²¹ For example labor opposition to FDI in connection with privatization is associated with being a public sector employee (Branstetter and Feenstra 2002).

A growing body of empirical research documents how FDI reduces returns to local firms. The market competition introduced by FDI reduces returns to existing local firms. Sembenelli and Siotis (2002) find that the profit margins of non-R&D intensive Spanish firms declined with FDI inflows into their industry. Blonigen, Tomlin, and Wilson (2004) show that US firms register, on average, a three percent increase in their stock market value after filing an anti-dumping petition. FDI into the firms' US market reduces these abnormal returns by fifty percent, and lose statistical significance. Chari

¹⁹ For similar results see Chrisofides and Oswald 1992, Blanchflower, Oswald, Sanfey 1996

²⁰ Lindbeck and Snower 1988 offer a variation on the efficiency wage mechanism that points to labor's role in pre-empting outsiders from underbidding them.

²¹ This assumes that labor's share in sector-specific rents are sufficiently high to exceed any real wage effects with the reduction in p_1 .

and Gupta (2005) examine the effects of India's partial FDI liberalization in 1991 on firm profitability, finding that all liberalized sectors local firms saw a decline in market share with the entry of foreign-owned firms.

In summary, FDI's distributional effects depend on the purpose of the investment as this determines the activities of specific foreign affiliates. Vertical investments create divisions along factor lines while horizontal investments' effects are felt along sectoral lines. I derive FDI policy preferences based on FDI's expected effects on factor incomes. Preferences over vertical FDI inflows are straightforward: local capital owners are expected to oppose liberalization of vertical FDI whereas local labor will support vertical FDI inflows. The salient cleavage is between factors and therefore we expect to observe broad political coalitions of labor versus capital to arise with regard to vertical FDI policies. Coalition patterns regarding horizontal FDI depend on the existence of sector-specific rents. Where there are sector-specific rents we should observe industry-organized special interest groups in which labor and capital employed in the same industries are allied against horizontal FDI liberalization in their sector.

III. The Politics of FDI Regulation

Vertical FDI pits the interests of capital against those of labor. The politics of vertical FDI feature broad factor groups. Free-rider problems are likely to be acute because factor groups are large and diffuse. Political parties introduce factor preferences into the policy-making process. Political parties organize voters and politicians according to a stable set of policy orientations. I consider the distinction between left and right parties that represent the interests of labor and capital, respectively. Partisanship

informs how politicians resolve the tradeoff between capital and labor's preferred policies; politicians will support their constituents' preferred policies because they weight the welfare of their corresponding factor group more than that of the other factor. Accordingly, I hypothesize that countries led by left parties are more likely to liberalize FDI inflows, in accordance with labor's preferences, while right parties are, all else equal, likely to restrict FDI inflows. Dutt and Mitra (2005) present systematic evidence for this relationship in the trade policy context. They find that tariff levels vary systematically with relative factor endowments and the party in control of government; left governments in capital-abundant countries are more protectionist than right governments of capital-rich countries or left governments of labor-abundant economies. These results demonstrate how political parties respond directly to their constituents' policy preferences. Unlike this result, however, the distributional effects of FDI are not contingent on the relative factor endowments of host countries. Hiscox (2002) identifies a partisan cast to US trade policy but he clarifies that partisanship is salient only when distributional effects are felt along factor lines. When sector-type exercises a larger influence on factor incomes trade policy is only weakly related to partisanship. This is why partisanship is only relevant to explaining vertical FDI policies; the distributional effects of horizontal FDI do not neatly coincide with partisan ideology. Pinto (2003) provides one of the few direct tests of partisanship and FDI. He finds that countries with left governments, all else equal, receive more FDI inflows, a result he attributes to the left's preference for FDI inflows.

By contrast, the politics of horizontal FDI is defined by the tradeoff between preserving a large portion of income for a small group by protecting rents versus

marginally increasing the income of many, all consumers, by lowering commodity prices. The Stigler (1971)-Peltzman (1976) model of regulation describes politicians' calculations in this type of situation. The reelection-minded politician views this tradeoff as one between campaign contributions from sectoral interests and votes from consumers; contributions are useful for earning additional votes. This politician jointly maximizes contributions and votes such that marginal increase in contributions, or more precisely the votes that can be secured with that marginal increment, is equal to the loss in votes due to the deadweight efficiency loss. This same basic logic underlies the influential Grossman and Helpman (1994) model of trade policy formation. The overall level of democracy, in particular electoral competition, relates this tradeoff to FDI regulation.

Democracy informs the consumer side of the model. Underpinning this model is the assumption that politicians are ultimately accountable to voters to stay in office. This assumption ensures that politicians are responsive to the policy preferences of the electorate. In many countries, however, this is not a tenable assumption; politicians assume leadership roles with the support of small subset of people who assist in political repression or aid forceful ascents to office. For politicians in these countries the welfare effects of horizontal FDI policies are of little relevance, they weight the interest of their small group of supports more heavily because their support is necessary to remain in office. Democracy's effect is to increase the relative weight of consumer interests thus, the likelihood that countries restrict horizontal FDI is decreasing in its level of democracy. Once again evidence on trade policy supports this hypothesis. Mitra, Thomakos, and Ulubaşoğlu (2002) empirically test the predictions of the Grossman-Helpman model for Turkey and find that politicians' weighed consumer welfare more as Turkey

democratized. Milner and Kubota (2005) conclude that democratization contributed to a pattern of trade liberalization in their sample of seventy-five developing countries.

This account of the political process through which FDI policy is made highlights how FDI's distributional effects interact with precise features of the domestic political environment. It further demonstrates the importance of disaggregating FDI inflow; the different income effects of vertical and horizontal FDI alter the identity of the winners and losers, their numbers, and the sources of variation in policy outcomes. For example, an observable implication of this explanation is that within a host country the politics of FDI will vary and, to some extent, are orthogonal.

Alternate Explanations

National security concerns are among the most common justifications that countries offer for their FDI restrictions. Hosts' primary concern is that foreign-owned firms provide a conduit through which home governments can exert influence within the host country. In the context of a military conflict between the home and host countries a host country affiliate of a home country-based firm could undermine its host's defense capabilities by limiting access to war materials and infrastructure, or by funneling intelligence to their home government. In peacetime foreign affiliates may engage in espionage or inadvertently leak sensitive information to their home country governments. These arguments primarily implicate defense industries but are also made with regard to basic manufacturing and infrastructure. These arguments assume that firms are allied with or subject to the will of their home countries, a debatable assumption in a world where multinationals' profit motives can easily diverge from their home country's foreign policy goals.

The historical record is mixed on the national security implications of FDI. In their survey of the literature on multinational corporations during WWII Graham and Krugman (1995) find examples both of affiliates allied with home countries and those who sided with their host governments. They also note that host countries retain the option of seizing foreign assets on the onset of hostilities, and that by encouraging FDI in defense-related industries countries may actually expand their defense capabilities in those countries which have the requisite technological capacity to make use of these assets. With regard to the efficiency costs of restricting FDI, Graham and Krugman also describe the numerous provisions in place in the US to mitigate national security implications of foreign ownership including screening for defense contractors that have any foreign equity participation and technology transfer limits; suggesting that FDI bans are not necessary. Graham and Marchick (2006, Chapter 5) document several instance of US firms politicizing the US' investment review process to block the entry of foreign competitors or hostile takeovers by foreign firms. In many of these cases domestic firms pressed members of Congress to directly intervene in the screening of specific foreign investment proposals.

Observable implications of a national security rationale for FDI restriction include: cross-national variation in restrictions such that countries facing higher national security threats, infrastructure industries and natural resources like petroleum, more frequently restrict FDI; industries with greater national security implications should be more often and heavily protected from foreign involvement; and changes in national FDI restrictions

in response to external changes in security threats, for example at the end of the Cold War countries should have dismantled their restrictions.²²

Nationalist explanations for FDI restrictions posit that states are opposed to foreign ownership because citizens resent foreign economic control, particularly with regard to exploitation of resources perceived to be part of a common national heritage like mineral resources. Other forms of the argument emphasize anti-colonial ideology as the motive to restrict foreign ownership (Chua 1995). It is typically the case that nationalist opposition is aimed at a specific foreign country and rather than formal legislation barring investment from those countries informal barriers are used to deter and block such investments. For example, Fayerweather (1982) finds the perceptions of foreign-owned firms vary with the nationality of the firm. This suggests that countries are more likely to use informal barriers to deter specific investors rather than across the board limits on all FDI. An underlying distributional motivation may be couched in terms of national security in order to appeal to a broader audience. Breton's (1965) account of Quebecois nationalism suggests how nationalist claims are used instrumentally to reallocate wealth to particular groups. There are multiple types of economic activity which are amenable to nationalist claims including the entire primary sector, viewed as part a nation's right; and culture and media-related industries for the role they can play in preserving and perpetuating cultural knowledge and practices. If nationalist sentiments fuel FDI restrictions they are most likely to appear in these industries. I also consider the general sway of nationalist arguments as measured by the existence of nationalist political parties. My analysis of Mexican public opinion data

²² Given the range of industries that countries indicate as salient to national security identifying cross-national variation is not feasible.

shows that nationalism does influence attitudes on FDI inflows but that distributional concerns have a larger influence on attitudes (Pandya 2005).

IV. Empirical Tests: Sources of Foreign Ownership Restrictions

In this section I describe my empirical tests of the hypotheses. I first examine measurement of the dependent and explanatory variables and then discuss my empirical findings. The centerpiece of this analysis is a new measure of FDI regulation. To date, the single largest barrier to large-n empirical research on the political economy of FDI regulation is the absence of data on regulation. This absence reflected both conceptual ambiguity about what constitutes FDI regulation and a paucity of data sources. In this paper I utilize an original dataset of country-industry foreign ownership restrictions. Only data at this low level of aggregation can provide insights into cross-industry variation. To the best of my knowledge, these are the only such data in existence that are disaggregated by country and industry.

Dependent Variable

I operationalize FDI regulation using data on foreign ownership restrictions, one particular type of FDI regulation. Foreign ownership restrictions place limits on the amount of equity a foreigner can own in a single firm. Observations are at the country-industry level; for example Indonesia – telecommunications or Mexico – motor vehicles. *Ownership Restrictions* takes the value “1” if in a given country-industry there is any limit on foreign equity ownership, and “0” when there is not.²³ The dataset includes 119 countries and 58 industries. See the appendix for a complete list of industries and countries and further discussion of how the data are organized. The data is a sample of

²³ Below I consider finer-grained specifications of this variable.

country-industry restrictions pooled across the 1990s. Data are pooled at the decade level due to the absence of annual data for each country-industry.

Explanatory Variables

The key economic variables to be measured are the propensity of a country-industry to receive vertical and horizontal FDI. In measuring these concepts I draw on general equilibrium models of FDI flows. General equilibrium models of FDI inflows seek to explain the volume of FDI flows and the distribution of horizontal and vertical FDI across host countries and industries (Brainard 1997, Carr, Markusen, and Maskus 2001; Blonigen, Davies, and Head 2003; Yeaple 2003). The measures of vertical FDI used in these models capture the factor-cost-seeking motive that drives it.

Following Yeaple (2003), I measure vertical FDI as the interaction of host country skilled labor endowment and industry skilled labor demand. Skilled labor endowment is the average years of schooling in the total population above fifteen years of age in 1999 (Barro and Lee 2000). This is a measure of host country skill endowments with higher levels indicating an abundance of skilled labor.²⁴ Skilled labor demand is the per worker value-added of US-headquartered MNC parent companies and their majority-owned foreign affiliates.²⁵ In this context data for US-based MNCs is taken as representative of the skill intensity of multinational firms more generally. These data are taken from the 1999 Benchmark Survey of US Investment Abroad, a census of US-based

²⁴ The use of average skill level reflects the fact that multinational investors typically demand skilled labor in host countries even though vertical FDI represents the relocation of their relatively less skilled activities abroad (Feenstra and Hanson 1997).

²⁵ A more common measure is value-added per non-production worker but these data were not available. The use of aggregate employment data likely underestimates true skill intensity. It might be argued that a skill intensity measure utilizing foreign affiliate data may be endogenous to FDI restrictions. This is possible but it would have to be true that ownership restrictions influence the skill intensity of affiliate activities which seems implausible. Any bias should be averaged away with the use of a global industry average.

MNCs conducted by the Bureau of Economic Analysis (BEA) and are organized at the two-digit ISIC level.²⁶

The underlying logic of this specification is that vertical FDI is more likely when MNC skill demand and host country labor supply are matched. This logic informs the creation of the interaction term. For each component variable I calculate a binary variable that indicates whether a given value of the variable is below the twenty-fifth percentile of the observed values. I calculate a second binary variable that indicates whether a value is in the seventy-fifth percentile. I then interact these indicator variables to measure the alignment of industry skill demand and host country skill supply. This creates two variants of the propensity to vertical FDI measure, propensity to get low (*Low Skill*) and high-skilled (*High Skill*) FDI into a given country-industry. Based on the theory outlined above, the propensity to receive vertical FDI enters the empirical model with the partisanship but I expect that the marginal effect of propensity to vertical FDI is negatively related to incidences of foreign ownership restrictions.

Measures of horizontal FDI derive from the market-seeking motives that drive such investments. These measures reflect the trade-off between fragmentation, which facilitates market access in the presence of trade restrictions, and concentration of production that facilitates plant-level economies of scale. I use two separate measures of horizontal FDI which both independently increase the probability of a country receiving horizontal FDI - *Market Size* and *Trade Restriction*. The likelihood of receiving horizontal FDI is increasing in both the size of markets, as economies of scale are more

²⁶ The data are reported according to a BEA industry classification roughly similar to the ISIC. Foreign affiliate data were more disaggregated than parent data. In some instances the parent average value-added per worker, at the one-digit level, was substituted for a constituent two-digit category when parent data for that category were unavailable. This concordance is available upon request.

easily achieved in larger markets, and in the trade costs, such that exports are less efficient means of contesting the market.²⁷ Following the literature on FDI determinants I measure *MarketSize* as logged host country GDP. I measure *TradeBarrier* as a country-level gravity model estimate of the percent reduction in host country imports due to trade restrictions (Hiscox and Kastner 2002).²⁸ I expect that both of these variables will be positively associated with FDI restrictions owing to the costs that horizontal FDI imposes on local producers. This is a predicted marginal effect as these terms enter the empirical model interactively with level of democracy.

I operationalize both partisanship and level of democracy using data from the World Bank's Database on Political Institutions (DPI) (Beck et al 2001). I measure partisanship with three variables, each indicating the presence of a right, left, or center party as the largest party in government.²⁹ For each of these variables, a "0" value indicates that the leading party in government does not align itself with the given partisan ideology or that the party does not define itself along the left-right dimension.

In the DPI scheme partisanship refers to "preferences regarding greater or less state control of the economy, the standard-left right scale." (Beck et al 2001, 166). I interpret left parties as having an allegiance to labor and right parties as aligned with capital. The marginal effect of having the largest party in the government be leftist (*Left*) is predicted as negative because FDI increases returns to labor. Similarly, I expect that

²⁷ The ideal measure of trade costs would summarize industry-specific trade frictions including trade barriers and transport costs, and the ideal measure of market size would be industry-specific as well. In an earlier version of this paper I calculated

²⁸ This is the "pctbcfe" variable from the Hiscox-Kastner dataset.

²⁹ This is the "1GOVLRC" variable. Results are comparable with a measure of the executive's party (EXECRLC).

the marginal effect of a right party (*Right*) as the largest party on ownership restrictions will be positive.

I measure democracy using the DPI's Index of Executive Competitiveness, which measures the extent of party competition in executive elections.³⁰ The index varies from 1 = "no executive/legislature" to 7 = "the largest party received less than 75 percent of the seats." Executive competition captures the precise dimension of democracy suggested by theory; executives most directly face the tradeoff between concentrated costs to producers and diffuse benefits to producers. The marginal effect of *Democracy* on foreign ownership restrictions should be negative because competition for the executive increases so too does the executives incentives to privilege the interests of consumers over producers.

Alternate Explanations

I test the importance of two alternative explanations for foreign ownership restrictions, nationalism and national security concerns. In the absence of clear theories that link country-industry characteristics to nationalist and national security concerns to FDI regulations I approach these relationships in different ways. First, I include industry fixed-effects into the regression to ascertain whether some industries are more likely to face foreign ownership restrictions. To the extent that we have priors about which industries are more likely to implicate nationalism and national security concerns, we can interpret industry fixed-effect coefficients as suggestive. In particular I expect that infrastructure industries (ISIC 40, 41, 60-64) and natural resources industries (ISIC 1-15) are more likely to face restrictions. It is unclear, however, which of the two alternate explanations this finding would support; it is consistent with both national security and

³⁰ This is the "EIEC" variable in the World Bank DPI.

nationalist concerns. Defense and weapons industries (ISIC 29) provide a more precise test of national security concerns, while media (ISIC 92, 22) captures nationalist concerns. My second approach to measuring these issues is to capture nationalist and national security preferences among politicians; assuming that there is some latent salience, how likely are politicians to decide FDI regulation on these bases rather than distributional ones? From the World Bank's DPI I measure whether the executive is a member of the military and whether the leading party in government is nationalist.³¹ In light of the discussion of these factors above, I expect both of these variables to be positively associated with foreign ownership restrictions.

Empirical Analysis

As I am looking for empirical support for a new set of theoretical propositions I examine sets of explanations in isolation, building up to a full model. I look at first the economic and political effects alone to see how much of the variation they explain. Then I compare those results to those of the combined political model to see how much of an additional effect the political variables have. Then I introduce a full set of controls for nationalism and national security. The dichotomous nature of the dependent variable suggests that a logistic regression model is most appropriate. Tables 1 and 2 summarize regression results.

The economic components of the model, Model 1, yield the predicted results. The two measures of vertical FDI are both negative, indicating the probability of a foreign ownership restriction in a given industry is less when industry skill demand and host country skill supply are matched at either a low or high skill level. The positive sign

³¹ These are "MILITARY" and "IGOVNAT" respectively.

on the high skill suggest that governments are, at the margin, less likely to restrict FDI into high skilled industries. There are a number of explanations for this finding including a greater incentive for skilled labor to lobby against FDI limits due to higher expected returns to FDI than lower skilled labor; a systematic difference in the lobbying abilities of high and low skilled labor, or a preference among politicians for vertical FDI into high skilled industries due to greater expected productivity spillovers. The measures of horizontal FDI are statistically significant predictors of foreign ownership restrictions. Countries with larger markets are more likely to restrict FDI, reflecting the greater leverage of their governments vis-à-vis foreign investors. To the extent that ownership restrictions are not absolute, governments of larger economies can impose restrictions to attenuate FDI's distributional effects but still remain attractive enough to attract FDI. Similarly, those countries with trade restrictions are more likely to limit FDI, suggesting that trade and FDI policies can act as complements, both serving to protect the local market from competition.

The purely political model, Model 2, confirms both the role of partisanship and democracy in explaining foreign ownership restrictions. Both democracy and the presence of a leftist governing party are associated with a lower likelihood of imposing foreign ownership restrictions. The theoretical model does not have any predictions over the other segments of the partisan spectrum but I included measures of right and center governments in order to unclutter the implicit reference category, countries with a leading party that does not define itself primarily along economic divisions. As I discuss below, it is probably necessary to consider partisan ideology in a more complex manner.

Models 3 and 4 consider the complete political economy model. The effects described in the previous two models are best thought of as baseline effects on the likelihood of observing a foreign ownership restriction. The theoretical expectations, however, are based on the combined presence of economic and political factors. The complete model of vertical FDI regulation is confirmed for low skill intensive sectors, that is, left governments are significantly less likely to restrict ownership into lower skill industries. Results for higher-skilled sectors are not statistically significant but the very high standard errors on these estimates point to inadequate variation to identify a statistically meaningful effect. The results on the models of horizontal FDI point to a very large role for democracy in explaining foreign ownership restrictions. Table 3 considers democracy's role in greater depth. Table 3 provides expected probabilities of foreign ownership restrictions at each of the seven levels of democracy in the measure used here. The "1" values and the values approaching 1 indicate insufficient variation in democracy within the sample to make predictions about very low levels of democracy. The three highest values, however, demonstrate the substantive impact of democracy on FDI policy – a shift from nominal multi-party competition (*Democracy* = 5) to actual electoral competition (*Democracy* = 7) reduces the expected probability of imposing a foreign ownership restriction by nearly fifty percentage points. This is a striking empirical result given that it obtains with a relatively small change in the degree of electoral competition. The result shows that politicians that face electoral competition are more likely to enact policies that increase aggregate welfare rather than ones that preserve rents accruing to producers.

Finally, Models 5-7 examine the role of alternate, non-income-based explanations for foreign ownership restrictions. The industry fixed effects (coefficients not reported) comport with my expectations about which industries are salient. All of the above listed industries are significantly more likely to have foreign ownership restrictions. Two additional industries were also consistently positive and significant – ISIC 15 “Manufacture of food products and beverages” and ISIC 74 – “Other business activities.” To the extent that these industries are ones into which horizontal FDI dominates, they may be more likely to be restricted. There remains a larger question of how these fixed effects results should be interpreted substantively. In the absence of larger theories that explain cross-national variation in the nationalist sentiment and national security implications, the results indicate the need for further research into the specific political economy of these industries. The findings on nationalist and national security preferences of governments yield unexpected results – both are significantly associated with a lower probability of foreign ownership restrictions. Introducing a nationalist party-led government reduces the expected probability of foreign ownership restrictions by 24 percentage points. Similarly, the presence of an executive from the military reduces the expected probability of a foreign ownership restriction by 52 percentage points.³² These results rival democracy in their substantive effect but changes in other coefficients in the model suggest a more circumspect conclusion. Specifically, the signs on the coefficients of the partisanship variables and their associated interaction terms fluctuate across the different model specifications, raising questions about what precise information is contained in the party labels. To the extent that there is a systematic

³² These expected probabilities were calculated in the same manner as those described in Table 3. The standard errors on these estimates are 0.07 and 0.06 respectively.

relationship between nationalist preferences and concern for national security on one hand, and affinity with a factor group on the other, it is unwise to put too much stock in this finding.

V. Conclusion

FDI's sheer importance to the world economy makes a theory of its politics critical to any account of international economic integration. In this paper I present and test a political economy theory of why governments restrict FDI. I find that governments are more likely to restrict FDI that introduces market competition. Additionally, I find that in political systems with true electoral competition the probability of imposing foreign ownership restriction is half that in countries with nominal electoral competition. This theory and these empirical findings broaden the study of FDI, allowing us to pose a greater variety of questions about FDI as a form of international economic flow. It also yields new insights into enduring questions about countries' economic policy choices and the effect of economic integration on individual countries.

One area that will gain particularly is in how we think about actors in the study of international political economy (IPE). The theory in this paper highlights the role of firms as political actors. While firms' political presence is a widely-recognized phenomenon that underscores theories of campaign contributions, this theory suggests the rewards of opening up the black box of the firm. Different features of firms affect the distributional effects of policies as well as their abilities to engage in political behavior. These characteristics include the organization of firms across geographic space, the

various rules of corporate governance, and firm-level variation in productivity. At the theoretical level, FDI is particularly suited to testing claims about the sources of preferences, especially the role identity in the formation of economic policies.

We can also integrate the micro-processes of economic development to more precisely define distributional effects. Much of the debate regarding FDI hinges on whether FDI is good or bad for economic development. A complete treatment of this issue requires an understanding of FDI's costs and benefits. Typically, distributional theories in IPE focus on the aggregate welfare as returns to consumers. We can also integrate micro-processes through which FDI contributes to economic development including technology diffusion, building human capital, product variety, and generally a richer, more varied account of FDI's distributional effects.

Finally, this model helps use develop better theories of macropolitical processes that drive policy outcomes. This theory facilitates comparisons between the politics of different foreign economic policies. By analyzing FDI in the same manner as theories of other types of economic policies we can compare policy-making processes across issues like international trade, immigration, and various forms of investment. Comparisons across issues can highlight interesting nuances in the political process. For example, the same group may mobilize differently depending on the specific policy issue. Such studies would sharpen the political dimensions of foreign economic policy models.

Appendix: Measuring Foreign Ownership Restrictions

Foreign ownership data were coded from *Overseas Business Reports*, a US Commerce Department publication series that provides detailed summaries of individual countries' economic policies and market profiles to assist Americans contemplating commercial activities abroad.³³

Each observation is at the industry-country-year level. Industry designations are according to the International Standard Industrial Classification (ISIC) Revision 3.1.³⁴ The raw data were collected at the most appropriate industrial classification, ranging from one to four-digit aggregations. For example, a ban on foreign ownership in transportation is coded as a ban on foreign ownership in three two-digit categories: land transport (ISIC 6000), water transport (ISIC 6100), and air transport (ISIC 6200). By contrast, a ban on foreign ownership in railroads is coded as a restriction in the three-digit subcategory of land transportation for railroads (ISIC 6010 – rail transport). This dataset encompasses fifty-seven two-digit ISIC categories and their associated subcategories.³⁵ For analysis purposes in this paper I aggregated all industry-level data to the 2-digit level according to the rule that if a constituent sub-category has a restriction then the associated 2-digit category is restricted.

Foreign ownership restrictions refer to formal limits on equity ownership by non-citizens. Typically countries set these regulations by industry and set explicit limits on foreign equity participation. In some cases there are mandatory joint venture requirements that require the foreign investor to split ownership with a local partner firm.

³³ After 1993 this publication was discontinued and replaced by *US Country Commercial Guides*, another US Commerce Department publication for which 1993-2000 data were obtained. These publications are quite comparable but there are some minor differences. The Commerce Department's in-house country experts compiled *Overseas Business Reports* whereas US embassy staffs produce *US Country Commercial Guides*. The format of *US Country Commercial Guides* is standardized whereas *Overseas Business Reports* are somewhat less standardized and some, usually smaller, countries are treated infrequently. Due to the less frequent publication of *Overseas Business Reports* beginning in the early 1980s, the years 1985-2000 are supplemented with data coded from the annual *National Trade Barrier Estimate Report*, an annual reporting to the US Congress of foreign trade and investment barriers required under the 1983 US Trade Act.

³⁴ Due to the ISIC scheme it is sometimes necessary to classify restrictions at a higher level of aggregation than would be preferred. For example, countries often subject investment in domestic air transport to a different set of regulations than international air transport. The air transportation category (ISIC 6200), however, is only divided into two sub-categories: "scheduled air transport" (ISIC 6210) and "non-scheduled air transport" (ISIC 6220). In this case, an FDI restriction in domestic air transport is coded at the more aggregate (ISIC 6200) level.

³⁵ There are four additional two-digit categories in ISIC Rev. 3.1 that are not included in this dataset because, by definition, they cannot receive FDI. These include ISIC 95, 96, 97, all subsets of "Activities of private households as employers and undifferentiated production activities of private households" and ISIC 99 "Extraterritorial organizations and bodies."

Industries

Data were coded according to the most appropriate industry category of International Standard Industrial Classification (ISIC), Revision 3.1. Reported here is the two-digit level of industry classification. Each ISIC 2-digit category is further subdivided into more detailed three- and four-digit categories. The summary data used in this papers are two-digit industry aggregates. “n.e.c.” = “not elsewhere classified.”

<i>Agriculture, hunting and forestry</i>		19	Tanning and dressing of leather;		and computing machinery
01	Agriculture, hunting and related service activities		manufacture of luggage, handbags, saddlery, harness and footwear	31	Manufacture of electrical machinery and apparatus n.e.c.
02	Forestry, logging and related service activities	20	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	32	Manufacture of radio, television and communication equipment and apparatus
<i>Fishing</i>			Manufacture of paper and paper products	33	Manufacture of medical, precision and optical instruments, watches and clocks
05	Fishing, aquaculture and service activities incidental to fishing	21	Publishing, printing and reproduction of recorded media	34	Manufacture of motor vehicles, trailers and semi-trailers
<i>Mining and quarrying</i>			Manufacture of coke, refined petroleum products and nuclear fuel	35	Manufacture of other transport equipment
10	Mining of coal and lignite; extraction of peat	22	Manufacture of chemicals and chemical products	36	Manufacture of furniture; manufacturing n.e.c.
11	Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction, excluding surveying	23	Manufacture of rubber and plastics products	37	Recycling
12	Mining of uranium and thorium ores	25	Manufacture of other non-metallic mineral products	<i>Electricity, gas and water supply</i>	
13	Mining of metal ores		Manufacture of basic metals	40	Electricity, gas, steam and hot water supply
14	Other mining and quarrying	26	Manufacture of fabricated metal products, except machinery and equipment	41	Collection, purification and distribution of water
<i>Manufacturing</i>			Manufacture of machinery and equipment n.e.c.	<i>Construction</i>	
15	Manufacture of food products and beverages	27	Manufacture of office, accounting	45	Construction
16	Manufacture of tobacco products	28			
17	Manufacture of textiles	29			
18	Manufacture of wearing apparel; dressing and dyeing of fur	30			

*Wholesale and retail trade;
repair of motor vehicles,
motorcycles and personal
and household goods*

- 50 Sale, maintenance
and repair of motor
vehicles and
motorcycles; retail
sale of automotive
fuel
- 51 Wholesale trade and
commission trade,
except of motor
vehicles and
motorcycles
- 52 Retail trade, except
of motor vehicles and
motorcycles; repair
of personal and
household goods

Hotels and Restaurants

- 55 Hotels and
restaurants

*Transport, storage and
communications*

- 60 Land transport;
transport via
pipelines
- 61 Water transport
- 62 Air transport
- 63 Supporting and
auxiliary transport
activities;
- 64 Post and
telecommunications

Financial intermediations

- 65 Financial
intermediation,
except insurance and
pension funding
- 66 Insurance and
pension funding,
except compulsory
social security
- 67 Activities auxiliary to
financial
intermediation

*Real estate, renting and
business activities*

- 70 Real estate activities
- 71 Renting of machinery
and equipment
without operator and
of personal and
household goods
- 72 Computer and related
activities
- 73 Research and
development
- 74 Other business
activities

*Public administration and
defence; compulsory
social security*

- 75 Public administration
and defense;
compulsory social
security

Education

- 80 Education

Health and social work

- 85 Health and social
work

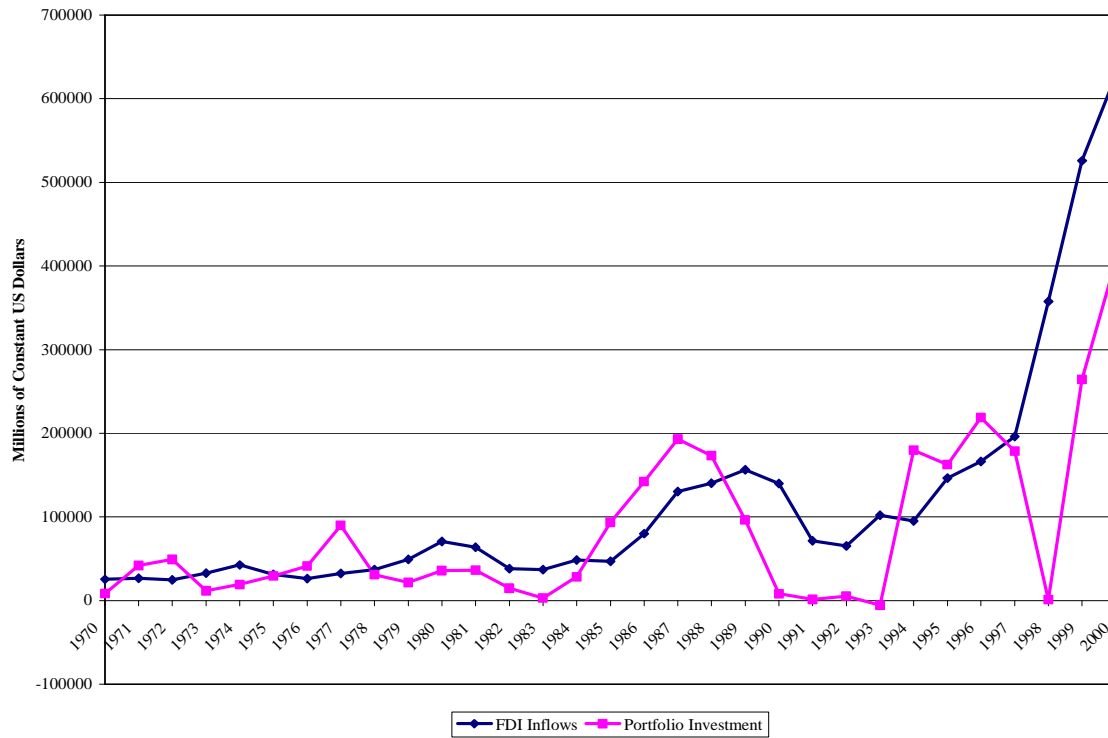
*Other community, social and
personal service
activities*

- 90 Sewage and refuse
disposal, sanitation
and similar activities
- 91 Activities of
membership
organizations n.e.c.
- 92 Recreational, cultural
and sporting
activities
- 93 Other service
activities

Countries

AGO	Angola	GNB	Guinea	OMN	Oman
ARG	Argentina	GRC	Greece	PAK	Pakistan
AUS	Australia	GTM	Guatemala	PAN	Panama
AUT	Austria	GUY	Guyana	PER	Peru
BEL	Belgium	HKG	China,P.R.:Hong Kong	PHL	Philippines
BEN	Benin	HND	Honduras	PNG	Papua New Guinea
BFA	Burkina Faso	HTI	Haiti	POL	Poland
BGD	Bangladesh	IDN	Indonesia	PRT	Portugal
BGR	Bulgaria	IND	India	PRY	Paraguay
BHR	Bahrain, Kingdom of	IRL	Ireland	QAT	Qatar
BHS	Bahamas, The	ISL	Iceland	SAU	Saudi Arabia
BLZ	Belize	ISR	Israel	SEN	Senegal
BOL	Bolivia	ITA	Italy	SIN	Singapore
BRA	Brazil	JAM	Jamaica	SLV	El Salvador
BRB	Barbados	JOR	Jordan	SUR	Suriname
BWA	Botswana	JPN	Japan	SWE	Sweden
CAN	Canada	KEN	Kenya	SYC	Seychelles
CHE	Switzerland	KOR	Korea	SYR	Syrian Arab Republic
CHL	Chile	KWT	Kuwait	TAI	Taiwan
CHN	China,P.R.: Mainland	LBN	Lebanon	TCD	Chad
CIV	Côte d'Ivoire	LBR	Liberia	TGO	Togo
CMR	Cameroon	LKA	Sri Lanka	THA	Thailand
COL	Colombia	LUX	Luxembourg	TTO	Trinidad and Tobago
CPV	Cape Verde	MAR	Morocco	TUN	Tunisia
CRI	Costa Rica	MDG	Madagascar	TUR	Turkey
CYP	Cyprus	MEX	Mexico	TZA	Tanzania
DEU	Germany	MLT	Malta	UAE	United Arab Emirates
DNK	Denmark	MMR	Myanmar	UGA	Uganda
DOM	Dominican Republic	MOZ	Mozambique	URY	Uruguay
DZA	Algeria	MRT	Mauritania	VEN	Venezuela, Rep. Bol.
ECU	Ecuador	MUS	Mauritius	VNM	Vietnam
EGY	Egypt	MWI	Malawi	WBG	West Bank/Gaza Strip
ERI	Eritrea	MYS	Malaysia	YEM	Yemen, Republic of
ESP	Spain	NAM	Namibia	ZAF	South Africa
ETH	Ethiopia	NER	Niger	ZAR	Congo, Dem. Rep. of
FIN	Finland	NGA	Nigeria	ZMB	Zambia
FJI	Fiji	NIC	Nicaragua	ZWE	Zimbabwe
FRA	France	NLD	Netherlands		
GAB	Gabon	NOR	Norway		
GBR	United Kingdom	NPL	Nepal		
GHA	Ghana	NZL	New Zealand		

Figure 1: Global Foreign Direct Investment and Portfolio Flows, 1970-2000



Sources: FDI data from the United National Conference on Trade and Development Database of FDI Statistics, Portfolio data from the International Monetary Fund's Balance of Payments Statistics.

Table 1: Political Economy Determinants of Foreign Ownership Restrictions

	(1)	(2)	(3)	(4)
Low Skill (SupplyxDemand)	-0.27281 (0.25641)		-0.1808 (0.4270)	0.2782 (0.4570)
High Skill (SupplyxDemand)	-0.41144 # (0.21710)		11.5715 (624.1943)	10.1493 (622.8295)
Market Size	0.45692 *** (0.03051)		0.3114 (0.3621)	0.4686 (0.3793)
Trade Restrictions	0.08874 *** (0.00630)		-1.4593*** (0.1753)	-1.5667*** (0.1794)
Democracy		-0.27908 *** (0.02011)	-10.1172*** (1.0918)	-10.3476*** (1.1434)
Left Party		-0.9301*** (0.0894)	0.6152** (0.2208)	0.6735** (0.2328)
Center Party		-0.4776 *** (0.1191)	1.2715 *** (0.2336)	(1.4211)*** 0.2465
Right Party		-0.0181 (0.0842)	0.8873*** (0.2002)	0.9765** (0.2102)
Democracy x Market Size			0.0365 (0.0520)	0.0193 (0.0545)
Democracy x Trade Restriction			0.2290 *** (0.0253)	0.2462*** (0.0259)
Left Party x Low Skill			-2.7121 # (1.6436)	-2.9969 (1.8310)
Center Party x Low Skill			14.8101 (394.7751)	14.4848 (390.9293)
Right Party x Low Skill			0.0362 (0.5761)	0.0201 (0.5869)
Left Party x High Skill			-12.0493 (624.1944)	-11.0008 (622.8296)
Center Party x High Skill			-11.1911 (624.1945)	-10.0610 (622.8297)
Right Party x High Skill			-10.3152 (624.1944)	-9.2027 (622.8296)
Industry Fixed Effects	Yes	Yes	No	Yes

(Standard Errors in Parentheses); Levels of Statistical Significance: '***' 0.001, '**' 0.01, '*' 0.05, # .1

Table 2 : Comparing Determinants of Foreign Ownership Restrictions			
	(5)	(6)	(7)
Low Skill (SupplyxDemand)		-0.25688 (0.48920)	0.2969 (0.5178)
High Skill (SupplyxDemand)		10.42964 (624.19440)	8.7620 (622.5779)
Market Size		0.58974 # (0.35238)	0.7952 * (0.3686)
Trade Restrictions		-1.65463*** (0.16425)	-1.8223*** (0.1715)
Democracy		-10.20810*** (1.08509)	-10.6110 *** (1.1128)
Left Party		-0.62030* (0.27568)	-0.6525* (0.2858)
Center Party		0.01905 (0.28691)	0.0747 (0.2977)
Right Party		-0.27423 (0.26402)	-0.2853 (0.2722)
Democracy x Market Size		-0.00343 (0.05083)	-0.0275 (0.0531)
Democracy x Trade Restriction		0.25761*** (0.02373)	0.2836*** (0.0248)
Left Party x Low Skill		-1.72730 (1.17878)	-2.0449 (1.2708)
Center Party x Low Skill		14.86320 (394.77516)	14.4221 (390.6774)
Right Party x Low Skill		-0.00394 (0.62492)	-0.0831 (0.6362)
Left Party x High Skill		-10.91975 (624.19448)	-9.6603 (622.5779)
Center Party x High Skill		-9.99571 (624.19456)	-8.6346 (622.5780)
Right Party x High Skill		-9.22519 (624.19448)	-7.8641 (622.5779)
Nationalist Party	-0.95276*** (0.13515)	-1.05731** (0.32554)	-1.1144 ** (0.3437)
Executive From Military	-0.78889*** (0.11463)	-2.35838 *** (0.31249)	-2.5847*** (0.3260)
Industry Fixed Effects	Yes	No	Yes

(Standard Errors in Parentheses); Levels of Statistical Significance: '***' 0.001, '**' 0.01, '*' 0.05, # .1)

Table 3: Expected Probability of Foreign Ownership Restrictions at Varying Levels of Democracy

Level of Democracy [value of variable]	E(Foreign Ownership Restriction Level of Democracy)
No executive/legislature [1]	1 (1.055e-05)
Unelected executive/legislature [2]	1 (5.468e-05)
Elected, one candidate [3]	0.9997 (0.0002540)
One party, multiple candidates [4]	0.998 (0.001379)
Multiple parties legal but only one won seats [5]	0.985 (0.006663)
Multiple parties compete and won seats but one party holds more than 75% of seats [6]	0.8937 (0.02157)
Largest party received less than 75% of seats [7]	0.5033 (0.02783)

(Standard errors of expected values in parentheses)

This table presents the expected probability of foreign ownership restrictions at each level of democracy represented in the dataset. These expected values were calculated via simulation with *Zelig* (Imai, King, Lau 2006), using the parameters of Model 6 in Table 2 and holding all other variables at their mean or median value. These estimates indicate that the negative relationship between democracy and FDI restrictions only really obtains when there are multiple parties in government and is only noticeable at sufficiently high levels of political competition.

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