The Price of Doing Business: How Upfront Costs Deter Political Risk*

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November 2017

Abstract

Our paper adapts contemporary trade theory to identify a key structural determinant of the political choices that governments make when taxing and regulating foreign and domestic investors. We argue that when the cost of starting up production in a new country is high, foreign investors receive better treatment by the host government and more easily dominate domestic competitors. Our political economy model, with endogenous entry and exit by foreign investors in response to policies chosen by a strategic government, formalizes the effects of startup costs. Since the host government can only take from foreign investors that actually produce in its market, it must treat foreign investors in high startup cost industries favorably lest it drive all foreign investors from the market. Therefore, market entry is a key determinant of government treatment, despite scholars' long-time focus on market exit and asset mobility. But at the same time, when the host government treats foreign investors better, less productive foreign investors can enter, and disadvantaged domestic competitors must be relatively more productive to survive. We use firm- and industry-level data in up to 293 disaggregated industries in 207 countries to demonstrate the theory's implications for government treatment in the form of taxes, as well as indicators of success for foreign and domestic firms. Our paper establishes a new measure of industry-level variation in political risk, crucial for our understanding of political constraints and their effects on not just foreign, but also understudied domestic firms.

*Prepared for the 2017 International Political Economy Society. For their helpful feedback, we thank participants at APSA 2017 and at the Conference on the Politics of Multinational Firms, Governments, and Global Production Networks at Princeton University in September 2016, particularly Stephen Weymouth and Peter Rosendorff. For excellent research assistance, we thank Jose Guzman and Siyun Jiang.

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1 Introduction

A canonical argument in political economy is that an individual who can more pro tably exit from an institution has more power to secure her preferred outcome within that institution (Hirschman, 1970). These dynamics are particularly important in international relations, because the anarchic nature of the international system allows states to act independently and violate existing cooperative agreements (Johns, 2007; Voeten, 2001). For example, when rms send their capital abroad to invest in the production of goods and services, they risk creeping expropriation by the host government: incremental, extra-contractual changes in taxes and regulations that erode the value of their foreign direct investment (FDI). This political risk varies across both countries and industries. However, just as host governments can abandon their contracts with foreign investors, these investors can exit from foreign markets in response to perceived mistreatment by their host governments. Under the well-known logic of the \obsolescing bargain," foreign rms that cannot credibly remove their investments from the host country see their contracts with the host government erode over time (Vernon, 1971). A foreign investor's economic power vis-a-vis a host government is thus shaped by her asset mobility | how easily she can recoup the value of her initial investment in order to pursue economic opportunities elsewhere.

We argue that the focus on asset mobility and market exit obscures the equally important in uence of market entry. Even rms with very high asset mobility may be attractive targets for mistreatment if new foreign rms are eager to enter the market as replacements. Conversely, rms with very low asset mobility may be protected from mistreatment if they cannot be easily replaced by new foreign rms. In analyzing global economic markets, the exclusive focus on market exit has caused us to overlook the equally important in uence of market entry.

To establish the importance of market entry, we examine political risk using a rm-level political economy model of FDI in a host country with multiple industries. Our model accounts for not just foreign but also for understudied domestic rms in a host country. We model a host government that regulates its own market, and can take rents from foreign rms using taxation or other policies that discriminate between domestic and foreign rms. We allow both foreign and domestic rms to enter and exit the market over time in response to government policies and changing economic conditions. To enter the market, a rm must pay one-time *startup costs* to establish new production, such as building a factory or buying basic machinery. If the rm subsequently exits the market, it can take back the portion of these costs that are mobile assets, such as machinery that can be redeployed in other activities or markets. Industries vary in both

asset mobility and startup costs, and both of these attributes can vary across domestic and foreign firms.

Our theory allows us to generate precise expectations about host government treatment of foreign firms, as well as the attributes and economic outcomes of firms that choose to produce in a market. We argue that when an industry has higher startup costs, foreign investors must pay higher upfront costs to begin producing goods and services, so it is more cost-prohibitive for new firms to enter and begin production. Thus, foreign firms that exit the market are less likely to be replaced by new foreign firms that enter the market. As a result, the host government does what it can to offset the burden of startup costs in these industries: it limits creeping expropriation by regulating less, respecting contracts, committing to lower taxes, and generally choosing policies that limit the costly burden of political risk. This logic generates our main, novel hypothesis: for foreign firms, higher startup costs are associated with lower government takings.

Additionally, our model shows that foreign firms facing higher takings must be more productive to enter and survive in the market. Yet because higher takings from foreign firms reduce foreign competition, less productive domestic firms can also enter the market and survive. Finally, our model shows that foreign firms in industries with higher startup costs will generate more revenue, both because they receive more favorable treatment from the home governments, and because selection effects ensure that only more productive firms will be willing to bear the cost of entry. Throughout our analysis, we carefully examine the impact of both asset mobility and startup costs to demonstrate that our theory is a complement to, rather than a substitute for, the existing obsolescing bargaining approach.

Of course, it is not possible to perfectly observe all the ways in which a host government generates political risk for foreign firms, particularly behind closed doors. Only some foreign firms make their complaints public by suing host governments for adverse treatment in international arbitration or by leaning on public diplomatic support from their home country. This has generated a long-standing problem: any causal statements about government takings, as either an explanatory or a dependent variable, are difficult to assess empirically. We do our best to measure government takings from foreign firms directly, through tax burdens. More exciting is that we can leverage the selection effects in our theoretical model to create indirect tests of our causal argument. Namely, we can examine the impact of startup costs on firm productivity and revenues, given that domestic and foreign firms are selecting to both enter and exit the market over time.

To assess our theory, we use firm-level data to measure industry-country startup costs

for foreign- and domestically-owned firms in up to 293 industries in 207 countries. We begin by validating our approach empirically: we provide evidence that startup costs are distinct from asset mobility. We then use the industry-country specific tax burdens on foreign firms as a best-available proxy for government treatment, showing that foreign firms in industries with higher startup costs do appear to receive better treatment from their host governments. Most importantly, we indirectly test our causal arguments about government treatment by providing statistical evidence of the selection effects in our model on firm productivity and revenue.

One major contribution of this paper is to adapt existing theoretical models of international trade with firm heterogeneity (Melitz, 2003; Melitz and Redding, 2014) to a new substantive realm: the study of FDI. Additionally, our formal model substantially expands on these prior trade models by modeling government policies and market exit and entry as strategic decisions. Our findings suggest that the political dynamics that have been identified in the study of trade policy also extend to the realm of FDI (Gulotty, 2017; Baccini, Pinto and Weymouth, 2017; Kim, 2017; Osgood et al., 2017; Owen and Quinn, 2016). Our primary empirical contribution is to identify a previously unexamined determinant of cross-country and cross-industry variation in political risk: the startup costs paid by new firms that enter a market.

2 Structural Determinants of Political Risk

When firms invest abroad, they expose themselves to possible mistreatment by the government of the host (receiving) country. This problem is most acute for firms that make longer-term investments and acquire at least some managerial control over operations abroad through foreign direct investment. Host governments that are eager for the positive developmental effects of FDI have reason to lure investors in with the promise of favorable treatment and, increasingly, investment incentives (Jensen and Malesky, Forthcoming; Jensen, Malesky and Walsh, 2015). Yet even if a government is genuine when making these promises, sometimes shocks like changes in government composition or economic conditions can lead a host government to break its prior promises (Johns and Wellhausen, 2016; Wellhausen, 2015*b*). For example, incentives are rolled back, promised tax relief disappears, social and environmental requirements are altered, or other investor expectations of favorable treatment are not met. Whatever the cause, these phenomena fall under the definition of creeping (or indirect) expropriation (Pelc, 2017).

The classic explanation for changes in government policies towards foreign firms is that investor-host contracts \obsolesce" when an investor's assets are immobile. If investors cannot

easily recoup their initial investment and exit the market, they are natural targets for government mistreatment and broken promises (Vernon, 1971). A robust literature has drawn out the implications of this argument for natural resource industries and other industries with immobile, site-specific investments (Frieden, 1994; Jensen and Johnston, 2011; Hajzler, 2012). Foreign firms understand this dynamic and, for decades, have written international arbitration clauses into their thick contracts with host governments, invoked bilateral investment treaties, and purchased political risk insurance to protect their assets (Jensen, 2008; Graham, Johnston and Kingsley, 2016).[1]

An additional research literature on political risk has focused on the political institutions and domestic politics of host states. Scholars have demonstrated the influence of many such factors on political risk, including: regime type; federalism; government turnover (especially between capital- or labor-friendly parties); benefits for unskilled workers; dependence on international institutions like the IMF or the World Bank; and variation in the set of investors present in a given host country (Jensen, 2006; Li, 2009; Pandya, 2010; Pinto, 2013; Wellhausen, 2015*a*; Biglaiser, Lee and Staats, 2016).[2]

Still, the structural characteristics of FDI remain key to understanding political risk. For example, Graham, Johnston and Kingsley (2017) explain how financial investments are subject to transfer risk, or the risk that the host government imposes controls on currency conversion. Johns and Wellhausen (2016) argue that the structure of supply chains and, in particular, the number of partners that a foreign firm has in a given host state is an important determinant of government treatment. Nonetheless, asset mobility remains a key control for baseline expectations about the vulnerability of any given investment to expropriation.

We too prioritize the role of asset mobility, and our formal model reaffirms its importance in explaining political risk. However, our main contribution is to identify the effects of *startup costs*, or the one-time upfront costs of establishing new production. Startup costs can include building factories or acquiring office space, buying basic machinery, establishing the infrastructure needed to transport goods, and so on. These costs can vary greatly across industries, as shown by Figure 1, which summarizes data from the Bureau van Dijk Oiris databases on industrial and subsidiary firms. Our sample includes parent- and subsidiary-level data from 37,275 multinational parent firms that are publicly listed (on 199 stock exchanges) in the years 2008-2015. We define startup costs as the fixed assets (USD, ln) that a parent firm reports in the year in which a subsidiary is

[1] For example, see the contracts available at `resourcecontracts.org`.

[2] For an overview of this literature, see Jensen et al. 2012.

incorporated.[3] Figure 1 averages industry-specific startup costs across the full sample, and classifies industries within the traditional categories of immobile and mobile industries.[4] The large amount of variation in startup costs within each mobility category suggests that startup costs offer the potential to more fully explain variation in government treatment of foreign investors. Startup costs come with the added benefit of being a continuous, objective measure of both firm and industry attributes, while standard measures of asset mobility are discrete and based on general intuitions about industry attributes.

[Figure 1 goes here.]

Startup costs can also vary by firm ownership, whether foreign or domestic. While all firms must pay some startup costs, foreign firms usually face higher startup costs than domestic firms because they face the added challenges of obtaining local knowledge, developing local contacts, relocating expatriate employees, and generally overcoming the "liability of foreignness" (Zaheer, 1995). Figure 2 demonstrates that industry-level startup costs are consistently higher for foreign firms than for domestic firms in our dataset, which includes 16,401 listed firms that operate subsidiaries in their own home country.

[Figure 2 goes here.]

Finally, startup costs vary not just by ownership-industry, but also by country. While some countries have an abundance of natural resources and other useful preexisting endowments, others do not. Which specific country attributes contribute to variation in startup costs will depend on the needs of a specific industry. For example, Figure 3 demonstrates variation across countries in the startup costs of foreign firms in pharmaceutical/medicine manufacturing (4-digit NAICS). Ghana, Angola, and other poor countries have some of the highest startup costs in this industry. These countries have very little preexisting infrastructure on which new firms can draw, so startup costs likely include large construction projects to build factories, acquisition of basic equipment, and so on. In contrast, Finland and Canada, wealthy countries with considerable preexisting infrastructure, have among the lowest startup costs. Interestingly, some very small nations like Barbados have quite low startup costs in this industry. Indeed, these countries often play host

[3] Fixed assets and total assets in the first year reported are correlated at 0.98 (1,514,497 observations). We log startup costs to minimize the effect of outliers. We take the first year for which a subsidiary reports data as the best proxy of its year of incorporation.

[4] In Figure 1, industries are defined by 2-digit NAICS codes. We combine industries for which there are multiple codes, such as manufacturing. Variation remains within asset mobility categories even if a reader might classify some industries, like public administration or waste management, differently.

to the nancial arms of multinational corporations (in whatever industry), meaning that startup costs are more about renting o ce space than constructing factories. In the long-run, host countries that invest in infrastructure, develop natural resources, or otherwise improve their endowments may be better able to lure in FDI. However, in the short-run, these country attributes are xed and exogenous.

[Figure 3 goes here.]

We argue that startup costs are theoretically interesting because they in uence political decision-makers via their implications for the replaceability of rms: how easy is it to nd an alternative investor to replace a rm that exits the market? Government behavior is in uenced by startup costs because a host government cares about its ability to seize rents in both the short- and long-term. Higher government takings increase the amount that the government receives from each unit of foreign production, but reduces the overall amount of foreign production, because higher takings drive existing rms from the market and make it less attractive for new rms to enter. As foreign startup costs increase, the entry problem becomes exacerbated: entry by new foreign rms becomes even less likely, meaning that a government must lower its taking rate in order to maximize its overall rents. Therefore, the selection processes that are driven by variation in startup costs (at the ownership-, industry-, and country-level) result in variation in government takings. In short, market forces implicitly and endogenously a ect the host government's treatment of foreign rms.

By modeling interactions at the rm-level, we can provide the theoretical microfoundations for why some rms select into participation in the global economy through FDI and others do not. This approach also comes with empirical bene ts. Direct tests of FDI decisions are di cult, because it is not possible to perfectly observe government treatment of foreign investors. In our empirical tests, we directly test our arguments using tax burdens for foreign rms, which are our best-available proxy for government treatment. But our model also allows us to derive indirect tests of our causal mechanism by examining the attributes of rms that select into FDI, including rm productivity and revenues. We are thus able to provide a variety of both direct and indirect evidence to support our theoretical argument.

3 Theory

Our model of FDI is based on the economic microfoundations of contemporary trade theory, as initially established in Melitz (2003) and subsequently extended to economies with multiple industries by Melitz and Redding (2014).[5] Rather than modeling trade across countries, we instead model decisions by both domestic and foreign firms about whether to invest in the production of goods for a single market.

3.1 Model Primitives and Structure

We focus on the economy of a single country that has J + 1 industries and a labor force of size L. We assume that industry j = 0 produces a homogenous good, which serves as our numeraire good. We assume that all other sectors (j = $1, \ldots, J$) produce differentiated goods. Firms can be either domestically- or foreign-owned, and each firm can produce a unique good from a set of industry-level varieties, $v \in V_j$. Whether a firm actually produces its good is an attribute of equilibrium behavior. At any given point in time, there are both domestic and foreign firms that are currently producing for the market; we describe these producing firms as being "in" the market. Similarly, there are also domestic and foreign firms that are not currently producing for the market; we describe these latent firms as being "out" of the market.

We assume that consumers have a preference for a variety of goods within an industry, and let $\sigma > 1$ denote the constant elasticity of substitution across goods within an industry. We let $q_j(v)$ denote the quantity of consumption of a specific variety v in industry j, and we let w_j denote the relative weight that consumers place on goods across industries, such that $\sum_j w_j$ = 1. Consumer utility from aggregate consumption (across all industries) is:

$$U = \sum_{h=0}^{J} w_j \log Q_j \quad \text{where: } Q_j \equiv \left[\int_{v \in V_j} q_j(v)^{\frac{\sigma-1}{\sigma}} dv \right]^{\frac{\sigma}{\sigma-1}}$$

The index Q_j represents consumer utility from consuming the goods produced by industry j using the standard functional form in the monopolistic competition literature, as first introduced by Dixit

[5] These microfoundations are used in almost all contemporary trade theory models that introduce firm-level heterogeneity. Other work in political science that draws on contemporary trade theory includes Baccini, Pinto and Weymouth (2017), Owen and Quinn (2016), and Pinto and Weymouth (2016).

and Stiglitz (1977). Consumers must optimize their utility subject to the budget constraint:

$$\sum_{j=0}^{J} \int_{v \in V_j} p_j(v)\, q_j(v)\, dv \leq R$$

where $p_j(v)$ is the price of good v in industry j, and R is aggregate revenue.

The game takes place over discrete time periods. At the start of every period, there are four di erent groups of rms in each industry. First, there are both foreign and domestic rms that are already \in" the market because they produced goods in the previous period. Second, there are both foreign and domestic rms that are \out" of the market because they did not produce goods in the previous period. In each period t, the game begins when each rm decides whether to pay a small cost, $\beta > 0$, to learn its type for that period, φ.[6] This type variable corresponds to the rm's productivity in producing its unique good. Each rm's type variable is independently and identically distributed across both players and times. We assume that Nature chooses a rm's type according to the Pareto distribution. A rm cannot produce without learning rst learning its type.

The government then announces a taking rate for each industry, τ_j, which corresponds to the amount per unit of production that the government takes from each foreign rm in industry j.[7] After hearing the government's announcement, each rm decides whether to produce its good in that period. As shown in Figure 4, rms that are \out" of the market must pay a startup cost, κ_i, in order to enter the market and establish production facilities.[8] We assume that the startup cost for a domestic rm is lower than the startup cost for a foreign rm, $\kappa_d < \kappa_f$. In contrast, rms that are \in" the market at the beginning of the time period (because they established production facilities in prior periods) can decide to exit the market, taking mobile capital with them. We measure mobility as the share $\mu_i \in [0, 1]$ of startup costs that a rm can take when it leaves the market. We assume that foreign rm assets are inherently less mobile than domestic rm assets, $\mu_f < \mu_d$. Over time, we allow rms to move both in and out of the market multiple times; that is, we do not assume that rms \die" based on exogenous and unexplained shocks, as in Melitz (2003). A decision to exit a market can always be reversed in future period, albeit after paying the startup cost to re-enter the market.

[6] We allow this cost to vary across foreign and domestic rms, across rms that were \in" or \out" of the market in the previous period, and across industries.

[7] To simply our presentation, we assume that this taking does not apply to domestic rms.

[8] Throughout this discussion we suppress the notation for di erent industries for the sake of clarity.

[Figure 4 goes here.]

We assume that production uses only one input, domestic labor, and there is a fixed production cost in each period, $c > 0$, which is measured in terms of a unit of labor. For a firm with a productivity φ, we let $p(\varphi)$ denote the price and $q(\varphi)$ denote the quantity of the differentiated good produced by the firm. The profit function for a domestic firm is accordingly:

$$\pi_d(\varphi) = p_d(\varphi)q_d(\varphi) - \left[\frac{q_d(\varphi)}{\varphi} + c\right]$$

Higher levels of productivity therefore correspond to lower unit production costs. Since a foreign firm must pay an additional per unit taking to the government, its profit function is:

$$\pi_f(\varphi) = p_f(\varphi)q_f(\varphi) - \left[\frac{q_d(\varphi)(1+\tau)}{\varphi} + c\right]$$

Note that this profit function assumes that more productive firms can both produce goods and pay the government taking rate at a lower cost in units of labor.

3.2 Equilibrium Behavior

The full derivation of equilibrium behavior is included in the Appendix. We first begin by examining market behavior after the government has announced its taking rate for each industry:

Proposition 1. *For any given takings rate, $\tau \geq 0$, there exist types x_i and y_i, for $i = d, f$, such that $0 < x_i < y_i$. Firms that are in the market decide to exit if $\varphi < x_i$, and stay and produce if $x_i \leq \varphi$. Firms that are out of the market decide to stay out if $\varphi < y_i$, and enter and produce if $y_i \leq \varphi$.*

As shown in Figure 5, those firms that are already \in" the market will find it profitable to stay and produce as long as they have moderate or high levels of productivity ($x_i < \varphi$). If a firm that is already in the market has low productivity for the period, it cannot compete profitably against the other firms in the market; accordingly, it will exit, taking its mobile capital with it. However, those firms that are \out" of the market will only enter and pay the accompanying startup cost if they have high levels of productivity ($y_i < \varphi$). If their productivity is either low or moderate, they cannot profitably pay the entry cost and compete against other firms in the market.

[Figure 5 goes here.]

To understand strategic behavior by the government, we must first understand how changing the taking rate for an industry affects economic outcomes. When the government increases the takings rate, it increases the unit cost of production for foreign firms. This increase in production cost means that each foreign firm produces less and earns lower profits. Since production is less profitable, existing foreign firms are more likely to leave the market, and potential foreign firms are less likely to enter. The aggregate effect of these changes is that there is less aggregate production by foreign firms, but those foreign firms that do survive in the market are more productive. Simply put, higher government takings drives less productive foreign firms out of the market. While the takings rate does not directly affect the domestic firms, the changing behavior of foreign firms changes overall market conditions. Domestic firms benefit from the reduced competition from foreign firms. Domestic firms produce more, both individually and collectively, and earn higher profits. These more favorable conditions allow less productive domestic firms to enter the market.

Proposition 2. *Higher government takings from foreign firms are associated with higher foreign productivity and lower domestic productivity.*

Given these market effects, we can now consider the host government's decision about how much to take from foreign firms. Since the takings rate applies to each unit of foreign production, the utility to the host government of the takings rate for an industry is simply:

$$W(\tau) = \tau Q_f$$

When choosing the optimal rate, the government must balance the benefit of taking more per unit of production against the cost of decreasing the number of units produced by foreign firms. The host government can find a unique takings rate that balances these two competing factors in order to maximize its own utility.

Proposition 3. *There exists an equilibrium in which the host government chooses an optimal takings rate, and firms operate in the resulting market equilibrium.*

3.3 Comparative Statics

Our model yields a wealth of possible comparative statics. Our main interest lies in the impact of startup costs on government takings:

Proposition 4. *For foreign firms, higher startup costs and higher mobility are associated with lower government takings.*

When a rm must only pay a small startup cost to begin production, it will be willing to enter the market even if it has only relatively low productivity. As the startup cost increases, a rm must be more productive to be willing to enter the market. This ensures that as startup costs increase, fewer rms will be willing to enter into production. The government knows that if it takes more from foreign rms, more existing rms will choose to leave the market. If startup costs are lower, those rms that exit can be easily replaced by new rms that enter. However, if startup costs are high, new rms are less likely to enter and replace existing rms. This reduction in foreign rms reduces the amount that the host government can take. These dynamics ensure that high startup costs indirectly protect existing foreign rms: since it is more di cult to replace foreign rms when startup costs are higher, the government will treat them more favorably by taking less.

Additionally, our model reinforces the central logic of the \obsolescing bargain" literature (Vernon, 1971). Higher levels of mobility mean that foreign investors can more easily exit the market in response to high government takings. Since the government can only take from rms that actually produce in the market, industries with higher asset mobility will receive better treatment from the host government. This result demonstrates that our theoretical argument serves as a complement to the large existing literature on asset mobility.

Of course, it is di cult to accurately observe and measure government treatment of foreign rms. In our empirical analysis, we examine taxes as a proxy for overall government treatment. However, our theoretical model allows us to state the implications of our theory on other economic outcomes that can be observed and measured more reliably. We next consider the productivity of foreign rms that have selected into producing in the host country:

Proposition 5. *For foreign firms, higher startup costs are associated with higher productivity when foreign asset mobility is high.*

Startup costs have both a direct economic e ect and an indirect political e ect on which foreign rms decide to produce. The direct economic e ect of high startup costs is to deter low productivity foreign rms from entering the market. Simply put, a rm must be more productive in order to recoup the initial cost of entering the economy. However, since governments can only take from those foreign rms that actually produce, high startup costs also cause the government to take less, per Proposition 4. So high startup costs have an indirect political e ect by lowering government takings, which in turns allows less productive rms to produce, per Proposition 2. Which e ect is stronger | the direct economic e ect or the indirect political e ect | depends on assumptions about the basic characteristics of the economy. However, when foreign mobility is

We do our best to measure government takings so as to provide evidence consistent with Hypotheses 1 and 2; yet proxy measures of government treatment can only go so far. Therefore, our next two hypotheses involve the attributes of rms that select into FDI, which we can use to indirectly test our theory.

Hypothesis 3. *For foreign firms that are mobile, higher startup costs will be associated with higher firm productivity. (Proposition 5)*

Hypothesis 4. *For foreign firms, higher startup costs and higher mobility will be associated with higher firm revenues. (Proposition 6)*

To empirically assess our theoretical argument, we must measure startup costs and multiple outcomes of interest, including government takings, rm productivity, and rm revenue. To do so, we use nancial data collected in the Bureau van Dijk Osiris databases on industrial rms and their subsidiaries.[9] Osiris databases include all publicly listed rms worldwide (on 199 stock exchanges). We reduce our database to the 37,275 rms for which Osiris has industry data, parent rm nancials, and observations of subsidiaries. We use data from 2008{2015 for rms in up to 207 countries in 293 disaggregated industries.

Each line in our data is a rm-country-year observation. Our nancial data are reported by the parent rm for rm operations in a given country-year. (We have one measure, revenues, reported at both the rm- and subsidiary-level.) By \foreign rm," we mean a rm that has a subsidiary in a given host country, but has a home address in a di erent country. In contrast, a \domestic rm" owns a subsidiary, but both the parent address and subsidiary address are located in the same country. This selection criterion for domestic rms generates a non-representative sample of domestic rms, because we miss single-outlet mom-and-pop rms and the like.[10] Therefore, our nal data include domestic rms that are likely to be relatively more successful than the average domestic rm, because they are listed and operate multiple outlets. We expect that this makes it more di cult to identify expected di erences between foreign and domestic rms (Hypothesis 1). Of the rms in our data, 43 percent are foreign and 57 percent are domestic.

As discussed in Section 2, to construct STARTUP COSTS (FOREIGN), we begin with rm-level data on xed assets. For a given rm-country observation, we capture the amount (USD, ln) of xed assets in the rst year for which data are reported. We take this as the best proxy

[9] Bureau van Dijk Osiris Industrial and Osiris Subsidiary. bvdinfo.com. Accessed July 2017.

[10] Bureau van Dijk recognizes this selection issue and compensates by including some domestic, unlisted rms in their databases that are deemed important. However, \important" is not well-de ned, so we drop these rms.

for required startup costs that are incurred in the first year in which a subsidiary is operational.[11] Per our theory, we calculate the average firm-level startup costs among foreign firms by industry-country (across the full time period). Importantly, we are able to calculate startup costs for highly disaggregated industries (4-digit NAICS codes). For example, rather than calculating startup costs for manufacturing, we calculate startup costs for a subcategory such as cement and concrete manufacturing.

Our basic identification strategy leverages cross-industry variation, at the 4-digit NAICS level of disaggregation. However, groups of disaggregated industries surely share commonalities relevant to our variables of interest. Those commonalities likely appear not just within manufacturing (2-digit), but within, say, computer and electronic product manufacturing (3-digit). Therefore, we use higher level INDUSTRY (3-DIGIT) categories as fixed effects that assist us in comparing within sets of industries that would be traditionally regulated together and thus receive similar baseline treatment.[12]

Industry-level covariates are also useful, because they can help us account for firm-level confounders, as firms in related industries likely share other characteristics relevant to their productivity. Importantly, we can plausibly consider industry categorization as separate from the treatment. In contrast, many other firm-level measures are effectively post-treatment. For example, managerial decisions over hiring practices would be made in the context of known startup costs. We endeavor to compare apples-to-apples when undertaking firm-level (and, in one case, subsidiary-level) analysis while avoiding post-treatment bias. Our main strategy is to measure STARTUP DIFFERENCE, which subtracts industry-level STARTUP COSTS (FOREIGN) from the startup costs of a given (foreign or domestic) firm. We expect firms that have startup costs above the average of industry-level STARTUP COSTS (FOREIGN) to be particularly useful examples of our posited relationships between startup costs and outcomes of interest.[13] Next, we include HOME STATE dummies in our firm-level analyses, as may expect foreign firms from the same home to share characteristics relevant to our outcomes of interest (Wellhausen, 2015*b*). Finally, we also include a set of fixed effects, FIRM STATUS, that categorize firms by firm-level managerial decisions. While all firms in the data have been listed, they are not all listed, active firms in every year. FIRM STATUS places each firm-industry-country observation into one of five categories: active and listed; active

[11] We do not have fixed assets at the subsidiary-level. We capture one startup cost no matter how many subsidiaries a given firm opens in a given country-year.

[12] To the extent that governments do not vary their takings demands at the 4-digit level, we are biasing our empirical tests against identifying our expected relationships.

[13] Surviving domestic firms with a positive STARTUP DIFFERENCE should be similar to relatively high startup cost foreign firms.

but delisted; in insolvency proceedings; in bankruptcy; or in liquidation.[14]

We include several other fixed effects in all specifications. Because startup costs for a given industry vary across countries, we include host country dummies. Our measure of industry-country startup costs does not vary over time, but we observe financial data and other variables of interest annually; we therefore include year dummies. Our specifications thus consider variation across disaggregated industries, or individual firms, within industry-country-years.

Our main political variable of interest is government takings, which is difficult to observe. Our best approximation is to focus on taxes, which are one clear measure of government takings.[15] Our tax measures average the amount (USD, ln) of taxes paid by foreign firms by industry-country-year or, in firm-level analyses, by firm-country-year. Data on taxes come in different forms, two of which are relevant here. First, each firm is charged a TOTAL INCOME TAX by a given host government. Income tax, as it appears on the income (profit and loss) statement, is an expense representing the amount of tax owed on net income generated during the period of the income statement, which in our case is one year. Thus, when we want to measure the tax burden that shapes firm planning, we rely on this measure. A separate measure is TAX PAID, which is the liability that represents the amount of tax expense that will be due within a year (minus how much was already paid).[16] This is the outlay incurred in the next year. Tax deferments, adjustments, quarterly payments, and annual profits and losses all generate differences between these two measures. In our data, TOTAL INCOME TAX and TAX PAID are correlated at -0.60.[17]

It is important for us to use each of these measures. In Hypothesis 1, taxes are an explanatory variable and productivity is the dependent variable. We use TAX PAID | actual tax outlays | to measure the impact of (incurred) government takings on productivity for a given observation. For Hypothesis 2, takings are the dependent variable: we expect higher startup costs to change government behavior such that the tax burden is lower. TOTAL INCOME TAX is the more direct measure of aggregate government takings, whatever the particular immediate liability in terms of actual cash flow.[18]

[14] These measures are likely post-treatment. Results are robust to excluding FIRM STATUS.

[15] We assume that taxes are correlated with, and thus a good proxy for, the full unobservable measure of takings.

[16] The precise term is tax payable. We assume firms pay their tax payable in full, or, to the extent that they do not, shirking is the same across industries/firms.

[17] We shift both measures so as not to drop negative observations. These data provide an excellent springboard for future research on the impact of investment incentives that likely contribute to these negative values.

[18] Moreover, TOTAL INCOME TAX is easier for the government to change (in our case, as an endogenous response to startup costs). This is because TAX PAID is directly tied to the "rules of the game" in the tax code and accepted accounting practices. In the short run at least, a government can much more readily change its tax demand than the specifics of the tax code and/or accounting standards.

To measure productivity at the industry- and firm-level, we use RETURN ON CAPITAL, and, because all firms are listed (at least at one point in the data), we also use RETURN TO SHAREHOLDERS.[19] Our final dependent variable is REVENUE (ln, millions of USD). We are able to employ three versions of this dependent variable: at the industry-country-year, firm-country-year, and subsidiary-country-year. Thus, we can conduct an indirect test of our political argument using the most micro-level data on each, individual foreign subsidiary present in a given country-year.

A key control variable is MOBILE, which is the standard dichotomous measure of mobility versus immobility based on industry, per the literature (see again Figure 1). In our full specifications, we also control for DEMOCRACY (-10 to 10 Polity IV scale), TRADE as a percentage of GDP, and GDP PER CAPITA (ln). Our regressions are straightforward OLS with standard errors clustered by host state.

4.2 Regression Results

In testing Hypothesis 1, we expect the coefficient for TAX PAID (FOREIGN) to be positive for foreign firms and negative for domestic firms, as government takings from foreign firms have opposing effects on productivity. Table 1 shows results. We find the hypothesized positive effects for foreign firms in Models 1-3 with a great degree of precision. In Models 1 and 2, we find that foreign firms in industries with higher average TAX PAID in a given year also report a higher average RETURN ON CAPITAL. We are also able to verify this relationship with firm-level data in Model 3: when a foreign firm itself has higher TAX PAID, it reports a higher RETURN ON CAPITAL. Results for domestic firms are not as strong. Recall that our expectations are about the effect of foreign takings on domestic productivity. In Models 4 and 5, domestic firms operating in industries with higher average TAX PAID (FOREIGN) in a given year report lower RETURN ON CAPITAL, but this is not significant at conventional levels. Nonetheless, we find it notable that the sign is opposite that for foreign firms, as expected, despite our biased sample toward more-productive domestic firms. At minimum, we have evidence that the relationships between foreign takings and foreign and domestic productivity are different. Results are robust to replacing the dependent variable with RETURN TO SHAREHOLDERS.

[Table 1 goes here.]

Regarding control variables, STARTUP COSTS (FOREIGN) are generally associated with

[19]

higher productivity. In our firm-level specifications (Models 3 and 6), firms | whether foreign or domestic | with startup costs higher than the industry average among foreign firms have significantly higher productivity. MOBILE foreign firms have higher returns on capital, whereas mobile domestic firms have lower returns on capital. These results complement our findings on TAX PAID. Country-level covariates are not consistently significant.

Despite our weak finding on the effect of TAX PAID (FOREIGN) on domestic productivity in Table 1, we are able to provide strong support for our theory with additional tests of predicted political and economic outcomes. In Table 2, we test Hypothesis 2, which focuses on the relationship between foreign firms' startup costs and government takings. Here, we find the hypothesized, direct negative association between STARTUP COSTS (FOREIGN) and foreign firms' tax burden, TOTAL INCOME TAX. Models 1 and 2 measure this at the industry-level, and Model 3 provides support at the firm-level, again with additional firm-level covariates. Further, Model 3 demonstrates that those firms with a positive STARTUP DIFFERENCE are particularly likely to report lower TOTAL INCOME TAX.

[Table 2 goes here.]

Table 2 also helps to highlight our contribution as an important complement to predictions about the effect of mobility. The expectation of the existing literature and our own theory is that MOBILE firms enjoy lower government takings. Here, we find the hypothesized negative sign but estimates are not significant at conventional levels. Our theoretically novel (continuous, and precise) measure of startup costs offers better explanatory power. Host states with higher GDP PER CAPITA are associated with lower takings from foreign firms.

Next, we explore the implications of our model for economic relationships between startup costs, productivity, and revenue. Again, these tests are particularly useful, because while they do not directly measure political relationships, support for Hypotheses 3 and 4 help to corroborate the political dynamics we predict per Hypotheses 1 and 2. We find evidence consistent with both Hypotheses 3 and 4.

Recall that Hypothesis 3 is expected to hold for mobile foreign firms. Consistent evidence thus provides another example of how our contribution can provide explanatory power beyond mobility alone. Indeed, in Table 3, higher STARTUP COSTS (FOREIGN) in mobile industries are associated with higher foreign firm productivity, whether measured as RETURN ON CAPITAL or RETURN TO SHAREHOLDERS at the industry- or firm-level. Again, the effect is particularly pronounced as a firm's STARTUP DIFFERENCE increases.

[Table 3 goes here.]

Evidence in Table 4 is consistent with Hypothesis 4: higher STARTUP COSTS (FOREIGN) are associated with signi cantly higher revenue for foreign rms. This relationship holds at the industry- and rm-level. While all our speci cations appear to explain a signi cant amount of overall variation in the data, the adjusted R-squared in these Models is particularly high. Moreover, our expectations hold at the subsidiary-level. Thus, we nd evidence supporting our theory with the most precise measure available of the actual economic outcomes of multinational outlets in a given host state. Again, rms and subsidiaries with a high STARTUP DIFFERENCE particularly demonstrate our expected relationship. Here, MOBILE rms are associated with higher revenues as well, as we also expect per Hypothesis 4.

[Table 4 goes here.]

In sum, we nd compelling evidence that higher foreign startup costs are associated with more favorable government treatment, and observable implications of this expectation hold as well, even controlling for | or subsetting on | mobility. Results in Table 1 for the relative e ects of foreign taxes on foreign versus domestic rms are signed as expected and, while domestic results are not statistically signi cant, they support our argument that foreign taxes have distributional e ects across rms by ownership. We nd compelling support for our argument that more productive rms select into FDI in a given industry-country when the costs of starting up production are higher. We also nd support for the analogous logic that these rms are also more successful in terms of generating more revenue. Our focus on startup costs is thus not only theoretically but also empirically important.

5 Conclusion

Our main contribution in this paper is to draw out the political e ects of startup costs on host governments' treatment of foreign rms. Our approach highlights that market entry conditions can play just as important a role as asset mobility and market exit, which have been the focus of previous scholars. When startup costs are high, host governments must take less lest they deter existing and potential foreign investors. Both direct and indirect empirical tests of our argument support our main conclusion: when it is more expensive to enter a market and start up new production, those foreign rms that are capable of doing so enjoy reduced political risk.

From the point of view of big multinational firms, our findings are controversial. Big multinational firms often complain of being victims of globalization. For example, foreign investors with over US$1 billion in annual revenues, and especially investors with over $10 billion, win more compensation, more often than smaller firms when they sue host states over adverse treatment in Investor-State Dispute Settlement (ISDS) arbitration proceedings (Van Harten and Malysheuski, 2016). But the perception that big, productive multinationals (the ones that can afford the legal teams necessary to sue under ISDS) face all or even most investor-state conflict is flawed. We argue that these loud multinationals are exactly the big, productive firms in expensive industries that in fact enjoy lower levels of political risk. In stark contrast, firms that operate in industries with lower startup costs have lower revenues, are less productive, and face more political risk.

One implication of our theory pertains to technology. If different technologies advance at different rates, today's ranking of low and high startup costs will likely someday change. Our theory implies that the distribution of political risk across industries would change as well. Consider the startup costs of small-scale, manual-labor-based farming in the past versus the large-scale, capital intensive farming of the present, where huge combines have GPS-tracking and complex irrigation systems can be precise to the square foot. Our theory is consistent with both today's lower risk of agricultural land expropriation in the United States, as well as the fact that highly productive multinational corporations now dominate the agricultural industry. Our approach can thus provide insight into both variation in political risk across countries and changing patterns of political risk over long time horizons.

Finally, our theory pushes a new research frontier that emphasizes government tradeoffs between promoting foreign or domestic firms. This tradeoff is especially salient as domestic firms originating in developing countries become multinationals. In future research, by incorporating strategic decisions about the treatment of domestic firms, we will be able to further develop our understanding of the relationship between foreign and domestic firms, for example, when it comes to investment incentives. Competition between foreign and domestic firms is also important given normative concerns about the impact of FDI and international investment law on the advancement of domestic entrepreneurship in developing countries.

Appendix

All derivations and proofs are provided in the Online Appendix, which is available for download here: www.lesliejohns.me/JoWe2-IPES-Appendix.pdf

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Figure 1: Startup Costs Vary Within Mobility Categories

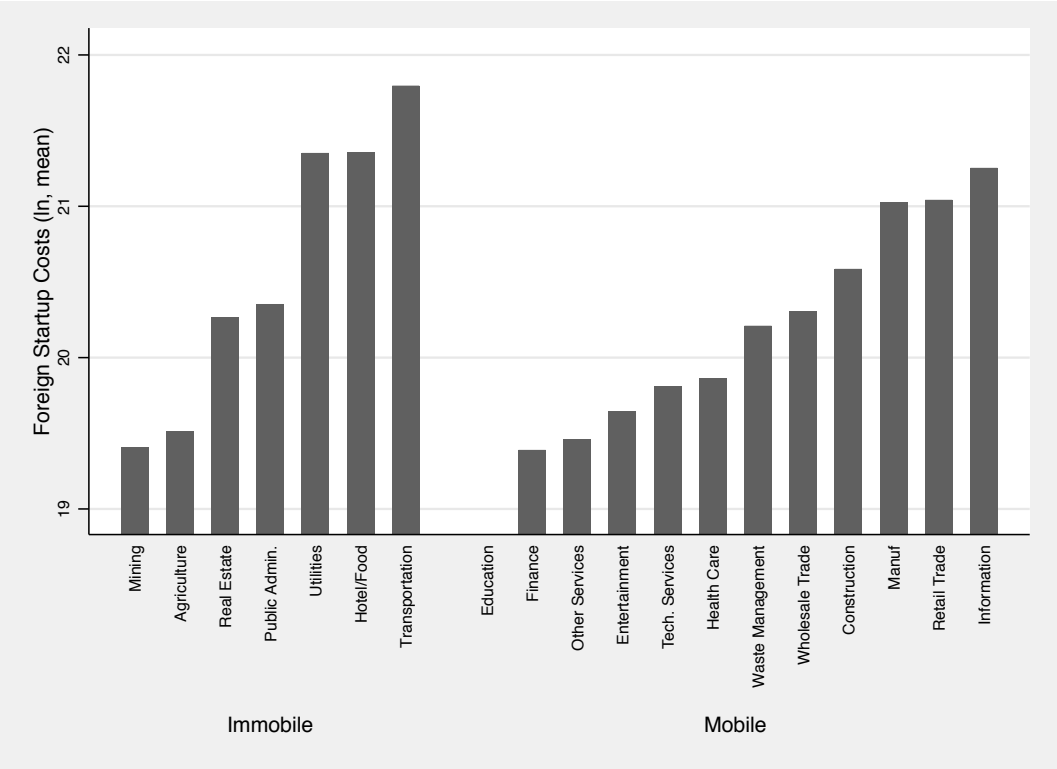

Figure 2: Startup Costs for Foreign Firms are Higher than for Domestic Firms

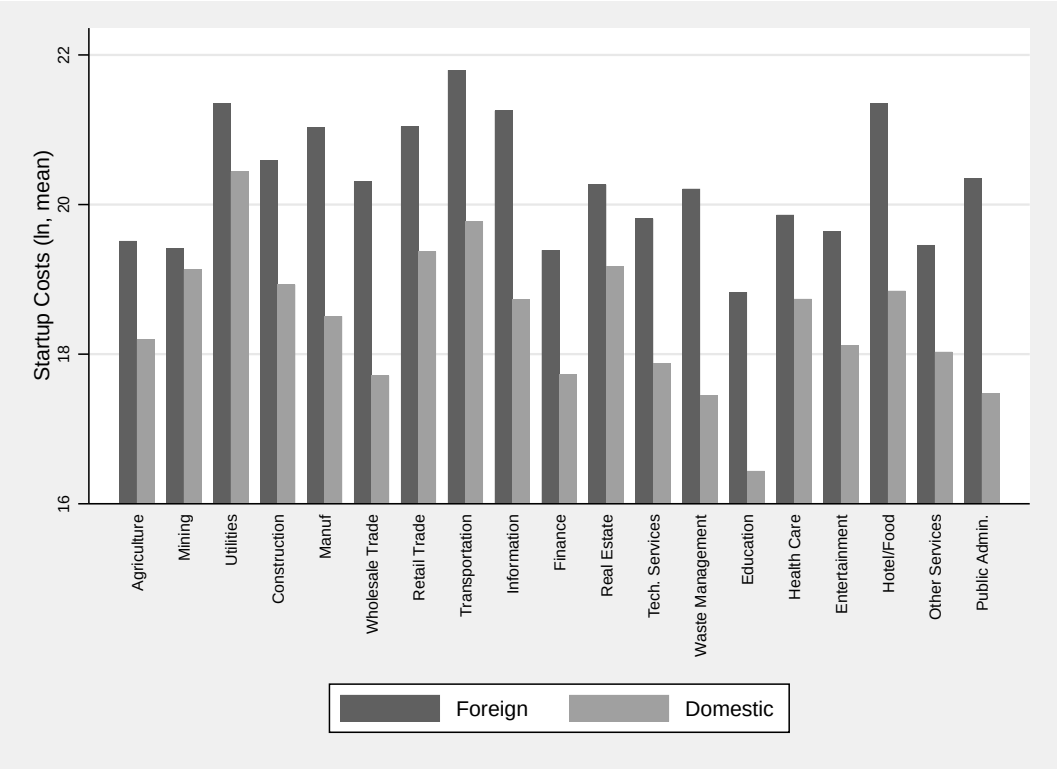

Figure 3: Startup Costs for Foreign Pharmaceutical/Medicine Manufacturers Vary Across Countries

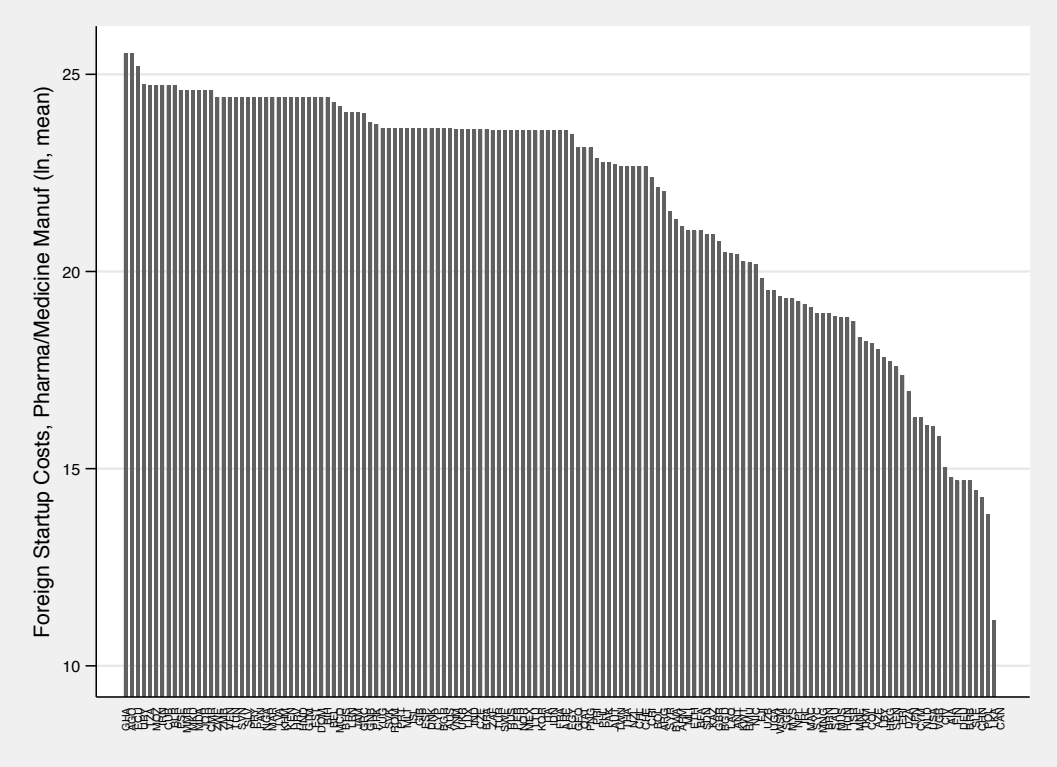

Figure 4: Firm Entry and Exit

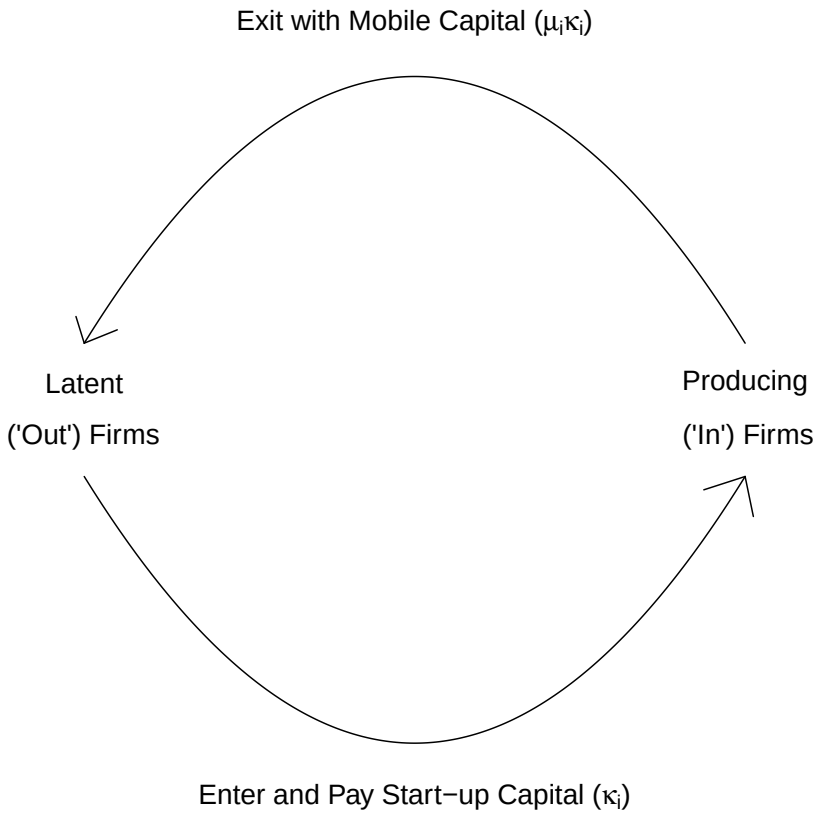

Figure 5: Equilibrium Market Behavior

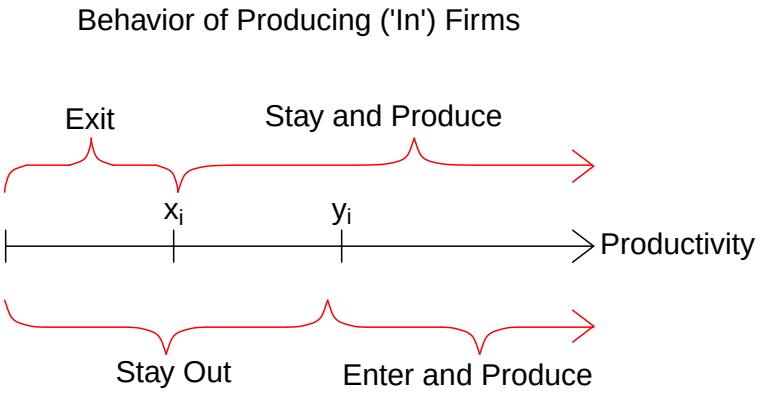

Table 1: With Higher Foreign Takings, Foreign Productivity Increases and Domestic Productivity Does Not

Dependent Variable:	(1)	(2)	(3)	(4)	(5)	(6)
	Foreign Return on Capital (ln)			Domestic Return on Capital (ln)		
	Industry	*Industry*	*Firm*	*Industry*	*Industry*	*Firm*
Tax paid (foreign, industry-level)	0.00314***	0.00263***		-0.000865	-0.00174	-0.00286
	(0.000731)	(0.000690)		(0.00185)	(0.00205)	(0.00224)
Startup costs (foreign)	0.000112	0.0000814	0.000585***	0.000259	0.0000227	0.00374***
	(0.000112)	(0.0000671)	(0.000136)	(0.000201)	(0.000120)	(0.00110)
Mobile	0.00852***	0.0104***	0.0191***	-0.00297	-0.00925***	-0.00867***
	(0.00252)	(0.00136)	(0.00172)	(25.67)	(0.00233)	(0.00155)
Democracy		0.000119	-0.000192***		0.000710	-0.0000960
		(0.000159)	(0.0000575)		(0.000504)	(0.000254)
Trade		-0.00000255	0.00000110		-0.0000229	-0.0000626
		(0.0000293)	(0.0000153)		(0.000108)	(0.0000952)
GDP per capita		-0.0124*	0.00316		-0.0619**	-0.0303*
		(0.00703)	(0.00476)		(0.0259)	(0.0166)
Tax paid (foreign, rm-level)			0.00260***			
			(0.000942)			
Startup di erence			0.000601***			0.00370***
			(0.000145)			(0.00111)
Constant	6.776***	6.910***	6.831***	6.696***	7.375***	7.179***
	(0.00593)	(0.0734)	(0.0534)	(0.0831)	(0.283)	(0.181)
Firm Status	No	No	Yes	No	No	Yes
Home State	No	No	Yes	No	No	Yes
Industry (3-digit)	Yes	Yes	Yes	Yes	Yes	Yes
Host State	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Observations	273,799	216,113	172,969	276,940	219,072	204,301
Adj. R-squared	0.147	0.112	0.065	0.343	0.168	0.070

Standard errors in parentheses, clustered by host state.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 2: For Foreign Firms, Higher Startup Costs Associated with Lower Government Total Takings

Dependent Variable:	(1)	(2)	(3)
	Income Tax (millions, ln) levied on foreign rms		
	Industry	*Industry*	*Firm*
Startup costs (foreign)	-0.000744***	-0.000938***	-0.000792***
	(0.000234)	(0.000233)	(0.0000372)
Mobile	-0.000521	-0.000382	-0.0000205
	(0.00113)	(0.00122)	(0.000242)
Democracy		-0.000177	0.0000124
		(0.000241)	(0.0000496)
Trade		-0.0000334	-0.00000354
		(0.0000628)	(0.0000137)
GDP per capita		-0.0335*	-0.00758**
		(0.0187)	(0.00342)
Startup di erence			-0.000733***
			(0.0000525)
Constant	10.34***	10.71***	25.94***
	(0.00499)	(0.202)	(0.0368)
Firm Status	No	No	Yes
Home State	No	No	Yes
Industry (3-digit)	Yes	Yes	Yes
Host State	Yes	Yes	Yes
Year	No	Yes	Yes
Observations	285,192	223,931	221,439
Adj. R-squared	0.373	0.439	0.382

Standard errors in parentheses, clustered by host state.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 3: For Mobile Foreign Firms, Higher Startup Costs are Associated with Higher Productivity

Dependent Variable:	(1)	(2)	(3)	(4)	(5)	(6)
	Foreign Return on Capital (ln)			Foreign Return to Shareholders (ln)		
	Industry	*Industry*	*Firm*	*Industry*	*Industry*	*Firm*
Startup costs (foreign)	0.000159**	0.000188***	0.00181***	0.000475***	0.000436***	0.00346***
	(0.0000763)	(0.0000697)	(0.000325)	(0.000162)	(0.000157)	(0.000384)
Democracy		0.0000264	-0.000173		0.000197	0.0000251
		(0.000161)	(0.000110)		(0.000312)	(0.000283)
Trade		-0.0000251	0.00000832		0.0000881	0.0000719
		(0.0000398)	(0.0000191)		(0.0000626)	(0.0000585)
GDP per capita		-0.0127*	0.00166		-0.0694**	-0.0414*
		(0.00759)	(0.00432)		(0.0333)	(0.0242)
Startup di erence			0.00193***			0.00366***
			(0.000357)			(0.000327)
Constant	6.813***	6.952***	6.847***	6.878***	7.627***	7.283***
	(0.00141)	(0.0825)	(0.0444)	(0.00332)	(0.359)	(0.261)
Firm Status	No	No	Yes	No	No	Yes
Home State	No	No	Yes	No	No	Yes
Industry (3-digit)	Yes	Yes	Yes	Yes	Yes	Yes
Host State	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Observations	226,645	177,730	167,248	227,097	177,901	173,799
Adj. R-squared	0.048	0.030	0.051	0.093	0.105	0.102

Standard errors in parentheses, clustered by host state.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: For Foreign Firms, Higher Startup Costs are Associated with Higher Revenues

Dependent Variable:	(1)	(2)	(3)	(4)
	Revenue (millions, ln)			
	Industry	*Industry*	*Firm*	*Subsidiary*
Startup costs (foreign)	0.0894***	0.0894***	0.941***	0.0422***
	(0.0249)	(0.0267)	(0.0115)	(0.00464)
Mobile	5.163***	5.249***	0.924***	0.0828
	(0.181)	(0.140)	(0.136)	(0.0756)
Democracy		0.0866*	0.0204***	-0.00114
		(0.0444)	(0.00509)	(0.00214)
Trade		0.0126*	0.00387***	-0.00121
		(0.00704)	(0.000893)	(0.000965)
GDP per capita		-2.570	-0.118	0.127
		(1.606)	(0.283)	(0.0949)
Startup di erence			0.948***	0.0431***
			(0.0119)	(0.00444)
Constant	28.16***	54.89***	8.990***	4.535***
	(0.543)	(17.16)	(3.010)	(1.029)
Firm Status	No	No	Yes	Yes
Home State	No	No	Yes	Yes
Industry (3-digit)	Yes	Yes	Yes	Yes
Host State	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Observations	275,388	218,314	192,537	54,475
Adj. R-squared	0.452	0.468	0.564	0.292

Standard errors in parentheses, clustered by host state.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$