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

Leslie Johns† Rachel Wellhausen‡

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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 for 293 disaggregated industries in up to 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.

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†Corresponding author. Department of Political Science, UCLA, ljohns@polisci.ucla.edu

‡Department of Government, University of Texas at Austin, rwellhausen@utexas.edu

1 Introduction

When firms 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 foreign direct investment (FDI). This political risk varies across both countries and industries. Political economy accounts of foreign direct investment have worked to explain cross-industry variation in expropriation by focusing on asset mobility and market exit. Under the well-known logic of the "obsolescing bargain," foreign firms that cannot credibly remove their investments from the host country see their contracts with the host government erode over time (Vernon, 1971).

We identify the limits of the obsolescing bargaining approach and establish another continuous, precise determinant of cross-industry variation in political risk. To do so, we examine political risk using a firm-level political economy model of FDI in a host country with multiple industries. Moreover, our model accounts for not just foreign but also understudied domestic firms in host countries. In short, when a host government chooses policies that do not drive all foreign firms from its market, the relative productivity and success of foreign and domestic firms varies based on how much it costs to startup production in their industries. The political risk inherent to economic globalization, as well as the likelihood of domestic firms' success, vary as a result of industry-level startup costs.

We model a host government that regulates its own market, and it can take rents from foreign firms using taxation or other policies that discriminate between domestic and foreign firms. We allow both kinds of firms to enter and exit the market over time in response to government policies and changing economic conditions. To enter the market, a firm must pay a one-time startup cost to establish new production, such as building a factory or buying basic machinery. If the firm 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. This distinguishes our model from the standard stark distinction between mobile and immobile industries. Industries vary in asset mobility as well as startup costs, and both of these attributes can vary across domestic and foreign firms.

The host government makes political decisions about takings from foreign firms based on these dynamics. Since the host government can only take from foreign firms that actually produce in its market, it must treat foreign firms in high startup cost industries favorably lest it drive all producing firms from the market and deter the entry of latent firms. After establishing that

an increase in government takings from foreign firms decreases their revenues, we derive a key implication: foreign firms facing high 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 enter the market and survive.

What characteristics of foreign firms sway the host government's decision over taking from them? The host government faces the reality that, when an industry has higher startup costs, 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 reduce the burden of startup costs in these industries: it limits creeping expropriation by regulating less, respecting contracts, committing to promised taxes rates, 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.

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- and industry-level data to measure industry-country startup costs for foreign- and domestically-owned firms in 293 industries in up to 207 states. 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. Finally, 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.

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 (FDI). 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

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

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

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.[3]

We acquire data from the Bureau van Dijk Oiris databases on industrial and subsidiary firms. Our sample includes parent- and subsidiary-level data from 20,808 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) that a parent firm reports in the year in which a subsidiary is incorporated.[4] Figure 1 averages industry-specific startup costs across the full sample, and classifies industries within the traditional categories of immobile and mobile industries. The large amount of variation in startup costs within each mobility category suggests that startup costs offer the potential to more fully explain the variation in government treatment of foreign investors.[5] Startup costs come with the added benefit of being a continuous, objective measure of both firm and industry attributes, while 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,

[3] In Figure 1, industries are defined by 2-digit NAICS codes. We combine industries for which there are multiple codes, such as manufacturing.

[4] 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 equivalent to its year of incorporation.

[5] Variation remains within asset mobility categories even if a reader might classify some industries, like public administration or waste management, differently.

relocating ex patriate 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 16,467 listed domestic 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 manufacturing firms. Somalia and other very poor countries have some of the highest startup costs in manufacturing. 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, Australia, a wealthy country with considerable preexisting infrastructure, has among the lowest startup costs. Interestingly, very small nations like Bermuda have the lowest manufacturing startup costs by our measure. Indeed, these countries often play host to the financial arms of multinational corporations (in whatever industry), meaning that startup costs are more about renting office 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 fixed and exogenous.

[Figure 3 goes here.]

We argue that startup costs are theoretically interesting because they influence political decision-makers via their implications for the replaceability of firms: how easy is it to find an alternative investor to replace a firm that exits the market? Government behavior is influenced 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 firms from the market, and make it less attractive for new firms to enter. As startup costs increase, the entry problem becomes exacerbated: entry by new firms 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 affect the host government's treatment of foreign firms.

By modeling interactions at the firm-level, we can provide the theoretical microfoundations for why some firms select into participation in the global economy through FDI and others do not. This approach also comes with empirical benefits. Direct tests of FDI decisions are difficult 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 firms, which are the 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 firms that select into FDI, including firm 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).[6] 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;

[6] 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).

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 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 different groups of firms in each industry. First, there are both foreign and domestic firms that are already "in" the market because they produced goods in the previous period. Second, there are both foreign and domestic firms 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 firm decides whether to pay a small cost, $\beta > 0$, to learn its type for that period, φ.[7] This type variable corresponds to the firm's productivity in producing its unique good. Each firm's type variable is independently and identically distributed across both players and times. We assume that Nature chooses a firm's type according to the Pareto distribution. A firm cannot produce without learning first 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 firm in industry j.[8] After hearing the government's announcement, each firm decides whether to produce its good in

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

[8] For now, we assume that this taking does not apply to domestic firms.

that period. As shown in Figure 4, firms that are "out" of the market must pay a startup cost, κ_i, in order to enter the market and establish production facilities.[9] We assume that the startup cost for a domestic firm is lower than the startup cost for a foreign firm, $\kappa_d < \kappa_f$. In contrast, firms 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 firm can take when it leaves the market. We assume that foreign firm assets are inherently less mobile than domestic firm assets, $\mu_f < \mu_d$. Over time, we allow firms to move both in and out of the market multiple times; that is, we do not assume that firms "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.

[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:

[9] Throughout this discussion we suppress the notation for different industries for the sake of clarity.

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 a 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 taking 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 possible comparative statics. Our main interest lies in the impact of startup costs on government takings. When a firm 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 firm must be more productive to be willing to enter the market. This ensures that as startup costs increase, fewer firms will be willing to enter into production. The government knows that if it takes more from foreign firms, more existing firms will choose to leave the market. If startup costs are lower, those firms that exit can be easily replaced by new firms that enter. However, if startup costs are high, new firms are less likely to enter and replace existing firms. This reduction in foreign firms reduces the amount that the host government can take. These dynamics ensure that high startup costs indirectly protect existing foreign firms: since it is more difficult to replace foreign firms when startup costs are higher, the government will treat them more favorably by taking less.

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

Of course, it is difficult to accurately observe and measure government treatment of foreign firms. 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 first consider the productivity of foreign firms that have selected into producing in the host country. Startup costs have both a direct economic effect and an indirect political effect on which foreign firms decide to produces. The direct economic effect of high startup costs is to deter low productivity foreign firms from entering the market. Simply put, a firm must be more productive in order to recoup the initial cost of entering the economy. However, since governments can only take from those foreign firms

that actually produce, high startup costs also cause the government to take less, per Proposition 4. So high startup costs have an indirect political effect by lowering government takings, which in turns allows less productive firms to produce, per 2. Which effect is stronger—the direct economic effect or the indirect political effect—depends on assumptions about the basic characteristics of the economy.

If foreign asset mobility is relatively high or per period production costs are relatively low, the fundamentals of the economy are sufficiently good that many foreign investors stand to benefit from market entry. The government takings rate affects firm decision-making at the margin, but the overall economic fundamentals are so strong that the aggregate impact of government policy is relatively small. Accordingly, the direct economic effect of startup costs is stronger, meaning that higher startup costs will be associated with high productivity. We believe that these conditions hold for our empirical analysis, given the overall high amount of FDI for the time periods and countries in our sample. In contrast, when foreign asset mobility is relatively low or per period production costs are relatively high, the fundamentals of the economy are weak, making it difficult for the government to secure FDI. Since government policy has a stronger impact on firm decision-making when the economy is weaker, the indirect political effect of startup costs will outweigh the direct economic effect, and higher startup costs will lead to less productivity.

Proposition 5. *For foreign firms, higher startup costs are associated with higher productivity when foreign asset mobility is relatively high or per period production costs are relatively low.*

The overall impact of startup costs on firm-level revenues is positive. Since startup costs deter foreign firms from entering a market, they reduce competition and increase prices for consumers. However, startup costs are only paid when a firm enters a market, meaning that they are sunk costs by the time that a foreign firm begins in actual production: they do not affect production costs after a firm has entered. By increasing prices without increasing production costs (for those firms that have already entered the market), startup costs indirectly lead to higher revenues for foreign investors in a market.

Proposition 6. *For foreign firms, higher startup costs are associated with higher revenues.*

We now assess the explanatory power of our model using cross-national data at the firm- and industry-level.

4 Empirics

4.1 Design and Measurement

Our formal results allow us to construct a set of hypotheses. The first two hypotheses are direct claims about government behavior.

Hypothesis 1. *Higher government takings from foreign firms will increase foreign productivity and decrease domestic productivity. (Proposition 2)*

Hypothesis 2. *For foreign firms, higher startup costs will be associated with lower government takings. (Proposition 4)*

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 second two hypotheses involve the attributes of firms that select into FDI, which we can use to indirectly test our theory.

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

Hypothesis 4. *For foreign firms, higher startup costs 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, firm productivity, and firm revenue. To do so, we use financial data collected in the Bureau van Dijk Osiris databases on industrial firms and their subsidiaries.[10] Osiris databases include all publicly listed firms worldwide (on 199 stock exchanges). We reduce our database to the 37,275 firms for which Osiris has industry data, parent firm financials, and observations of subsidiaries. We use data from 2008–2015 for firms in up to 207 countries in 293 disaggregated industries. We are left with around 300,000 firm-country-year observations.

Each line in our data is a firm-country-year observation. Our financial data are reported by the parent firm for firm operations in a given country-year. (We have one measure, revenues, reported at both the firm- and subsidiary-level.) By "foreign firm," we mean a firm that has a subsidiary in a given host country, but has a home address in a different country. In contrast, a

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

"domestic firm" owns a subsidiary, but both must be located in the same country. This selection criterion for domestic firms generates a non-representative sample of domestic firms, because we miss single-outlet "mom and pop" firms and the like.[11] Of the firms in our data, 56 percent are foreign and 44 percent are domestic. In sum, our final data include domestic firms that are likely to be relatively more successful than the average domestic firm, because they are listed and operate multiple outlets. We expect that this makes it more difficult to identify expected differences between foreign and domestic firms (Hypothesis 1).

As discussed in Section 2, to construct our startup cost measure, we begin with firm-level data on fixed assets. For a given firm-country observation, we capture the amount (USD, ln) of fixed assets in the first year for which data are reported. We take this as the best proxy for required startup costs that are incurred in the first year in which a subsidiary is operational.[12] Per our theory, we calculate separate measures for startup costs for foreign or domestic firms when we test Hypothesis 1. For our tests of Hypotheses 2–4, we calculate the average firm-level startup costs by ownership-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 subcategories such as cement and concrete manufacturing.

Our basic identification strategy uses cross-industry variation. However, groups of disaggregated industries—such as all manufacturing industries—surely share commonalities relevant to our variables of interest. Therefore, we use higher-level industries (INDUSTRY (2-DIGIT)) as control variables.[13] These fixed effects assist us in comparing within sets of industries that would be traditionally regulated together and thus receive similar baseline treatment.[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.[15] Although our measure of industry-country startup costs does not vary over time, we observe financial data and other variables of interest annually; we therefore include year dummies. Our main specifications thus consider variation across disaggregated industries within industry category-country-years.

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

[12] 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.

[13] See again Figures 1 and 2 for categories.

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

[15] See again Figure 3 for an example using higher-level industry data.

We also leverage firm-level and, in one case, subsidiary-level data in supplementary specifications. For these, the dependent variable is an observation of financial data at the firm/subsidiary-industry-country level. We must therefore take steps to measure a fixed effect for groups of firms that share commonalities relevant to our variables of interest. We call our resulting categorical variable FIRM STATUS. While all firms in the data have been listed, they are not all listed, active firms in every year. Thus, FIRM STATUS places each firm/subsidiary-industry-country observation into one of five categories: active and listed; active but delisted; in insolvency proceedings; in bankruptcy; or in liquidation. We expect that firms in each of these categories are likely to share characteristics relevant to their relative success.

Our main political variable of interest is government takings, which is difficult to observe. Our best approximation is to focus on taxes, which is one clear measure of government takings.[16] Our main tax measures average the amount (USD, ln) of taxes by industry-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 in a given year. This is the maximum amount of taxes that the government takes from the firm. Thus, when we want to measure the total tax burden a firm faces, or the average tax burden an industry faces, we rely on this measure. However, firms generally do not pay the total income tax charged immediately, in the year it is charged. Some taxes are deferred, for example. So, a second important measure of taxes arises. Whatever a firm's TOTAL INCOME TAX burden, it very likely pays a different amount in a given year (TAX PAID).[17] In our data, TOTAL INCOME TAX and TAX PAID are correlated at -0.60. This is logical: firms with bigger tax burdens can enjoy a greater difference between that burden and actual taxes paid in a given year.

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 measure productivity as the RETURN ON CAPITAL for a given unit-country-year (where unit is either an industry or firm).[18] Surely, expected future taxes shape immediate business decisions such as investing in capital. However, actual outlays in a given year have a direct, immediate effect on end-of-year financials, making TAX PAID the more appropriate measure. Moreover, recall that we hypothesize that the larger takings, the bigger the competing effects on foreign and domestic firms (Hypothesis 1). By choosing the

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

[17] 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.

[18] We take the natural log of our RETURN ON CAPITAL measures to account for outliers (and shift the data to eliminate negative values).

smaller Tax paid measure, we bias our specification toward finding null results.

For Hypothesis 2, taxes are the dependent variable: we expect higher startup costs to change government behavior such that the tax burden is lower. The most direct measure of a government's ultimate choice over taxes is the charged amount of Total income tax. This is the amount the government intends to take, whether or not it is paid immediately.[19] It is possible that the government chooses a higher Total income tax knowing that actual tax payments in a given year will be smaller. If this is true, Total income tax is consistently biased upward. Such a bias makes it more likely that we find null results.

Our final dependent variable is Revenue (ln, USD). We are able to employ three versions of this dependent variable: measured by industry-country-year, by firm-country-year, and by 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 operating in a given country-year.

Our most important control variable is Mobile, which is the standard dichotomous 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 country.

4.2 Regression Results

In testing Hypothesis 1, we expect the coefficient for Tax paid 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 higher average Return on capital. We are also able to verify this relationship with firm-level data in Model 3, with firm-level Firm status fixed effects. When a given foreign firm 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 taxes on foreign firms on domestic productivity. In Models 4 and 5, domestic firms operating in industries with higher average foreign Tax paid in a given year report lower Return on capital, but this is not significant at conventional levels. Nonetheless, we find it

[19] Total income tax is also more easily changed by the government than Tax paid. Tax paid depends in part on the "rules of the game" in the tax code. A government can much more readily change its total tax demand than the specifics of the tax code. Thus, it is more accurate for us to use Total income tax to capture the fuller spectrum of variation when we aim to explain government takings choices.

notable that the sign is opposite that for foreign firms, as expected, despite our biased sample of domestic firms and with a proxy measure of government takings from foreign firms. Regarding control variables, Startup costs (foreign) are associated with lower returns on capital, which makes sense as startup costs are measured in terms of fixed assets. However, Startup costs (domestic) do not have significant effects. Mobile firms report consistently lower Return on capital than immoible firms. Where significant, Democracy and GDP per capita are negative, whereas Trade has a consistent negative sign but is not significant.

[Table 1 goes here.]

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 the total tax burden on foreign firms, Total income tax. Models 1 and 2 measure this at the industry-level, and Model 3 provides further support at the firm-level, with Firm status fixed effects. Additionally, as expected, Mobile firms are taxed in significantly lower amounts than immobile firms. GDP per capita has a consistent, significant negative effect.

[Table 2 goes here.]

Finally, we explore the implications of our model for economic relationships between startup costs and productivity and revenue for foreign firms. Again, these tests are useful, because while they do not directly measure political relationships, support for Hypotheses 3 and 4 helps to corroborate the political dynamics we identify in Hypotheses 1 and 2. In Tables 3 and 4, we demonstrate that higher Startup costs (foreign) are associated with higher Return on capital and higher Revenue. These relationships hold at both the industry- and firm-levels. Further, we are able to test our expectations at the subsidiary-level in Model 4 of Table 4. Here, again, by subsidiary-country-year, we find that foreign firm subsidiaries with higher startup costs enjoy more revenue. Thus, we find a variety of support for our argument that more productive firms select into FDI in a given industry-country when the costs of starting up production are higher. We also find support for the analogous logic that these firms are also more successful in terms of generating more revenue. With regard to other covariates, Mobile firms are not significantly related to productivity in Table 3, although Mobile firms do report significantly more Revenue as seen in Table 4. Democracy and Trade are insignificant in Table 3, but while they have generally positive relationships with revenues averaged by industry or firm (Table 4).

[Tables 3 and 4 go here.]

In sum, we also find compelling evidence that higher startup costs are associated with more favorable government treatment, regardless of the effect of mobility. Results for the relative effects of foreign taxes on foreign versus domestic firms are weak but still supportive of the argument that foreign taxes have distributional effects across firms by ownership. Importantly, our indirect tests of the theory's political implications provide strong results. Startup costs have the predicted relationships with productivity and revenue.

5 Conclusion

Our main contribution in this paper is to draw out the political effects of startup costs on host governments' treatment of foreign firms. 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 firms 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.

A natural next step in our research agenda would be to develop a more complex model of policy-making in which the host government trades off consumer welfare against the rents that it takes from foreign firms. Since the model above focuses purely on rents, we expect that its findings are most relevant for governments that face few institutional constraints and little voter accountability. We expect that as the government places more weight on consumer welfare, the

impact of startup costs on government treatment is likely to be attenuated. Additionally, we plan to incorporate strategic decisions about the treatment of domestic firms, which may allow us both to examine investment incentives for foreign investors, and to develop a more nuanced understanding of the relationship between domestic and foreign firms. Finally, we plan to formalize the distributional impact of international investment law, which facilitates ISDS, on domestic and foreign firms. Because international arbitration is costly for foreign firms, we anticipate that international investment agreements provide greater benefits to larger, more productive firms than they do to smaller, less productive firms, *ceteris paribus*. But we also expect that investment law will yield more benefits to firms in industries with lower startup costs, precisely because the ease of market entry does not constrain host governments. And it is these industries with lower startup costs that are more likely to contain smaller, less productive firms.

One extension of our theory focuses on 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 thus provides insight into both variation in political risk across countries, and changing patterns of political risk over long time horizons.

Our theory also has important implications for a new research frontier that emphasizes government tradeoffs between promoting domestic or foreign firms. This tradeoff is especially salient as domestic firms originating in developing countries become multinationals. Competition between domestic and foreign firms is also important given normative concerns about the impact of FDI and international investment law on the development of domestic firms in developing countries.

Appendix

All derivations and proofs are provided in the Online Appendix, which is available for download here: `www.lesliejohns.me`

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Figure 1: Startup Costs Vary Within Mobile, Immobile Categories

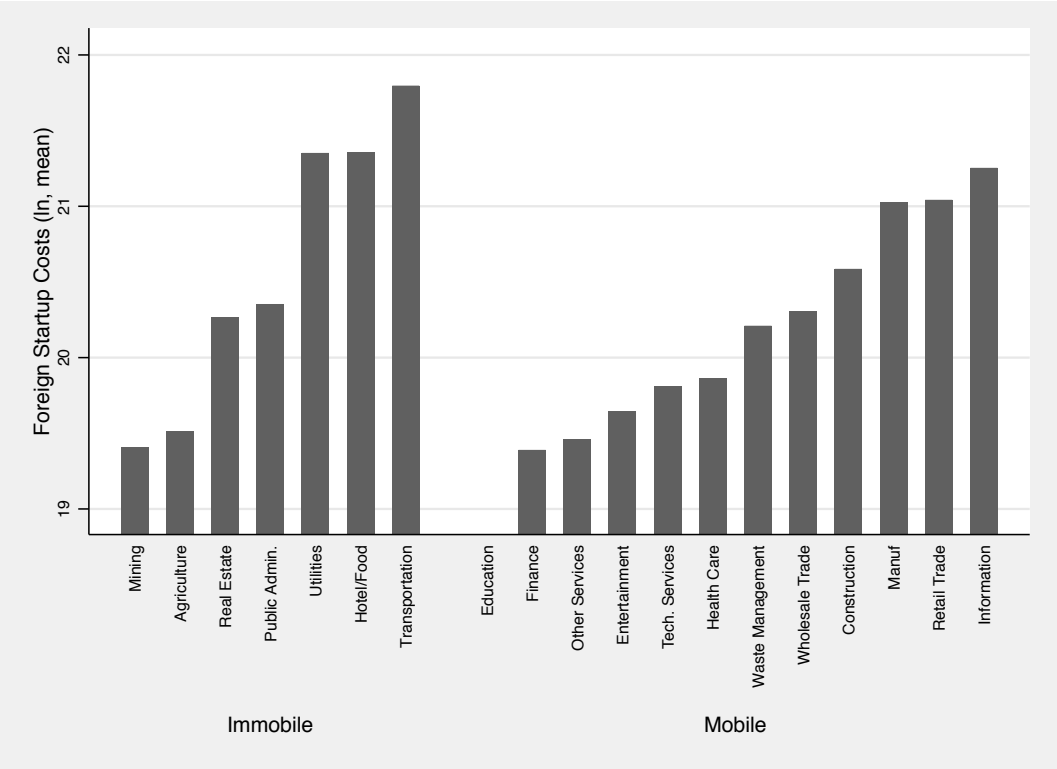

Figure 2: Startup Costs for Foreign Firms are Higher than for Domestic Firms

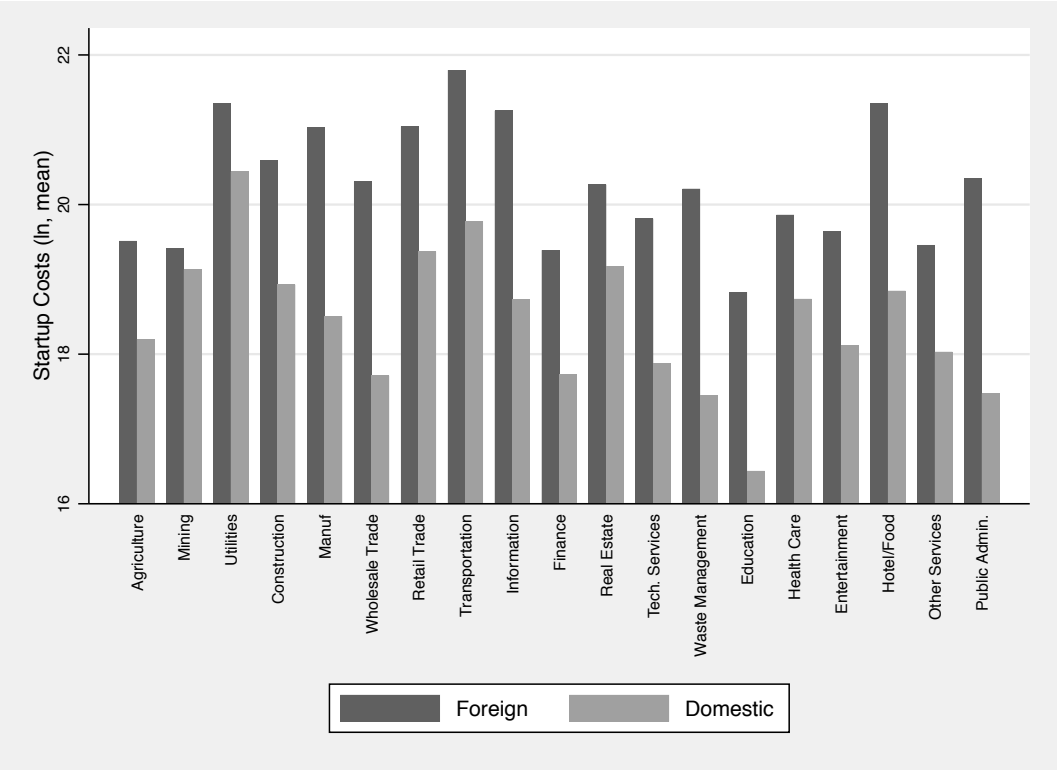

Figure 3: Startup Costs for Foreign Manufacturing Firms Vary Across Countries

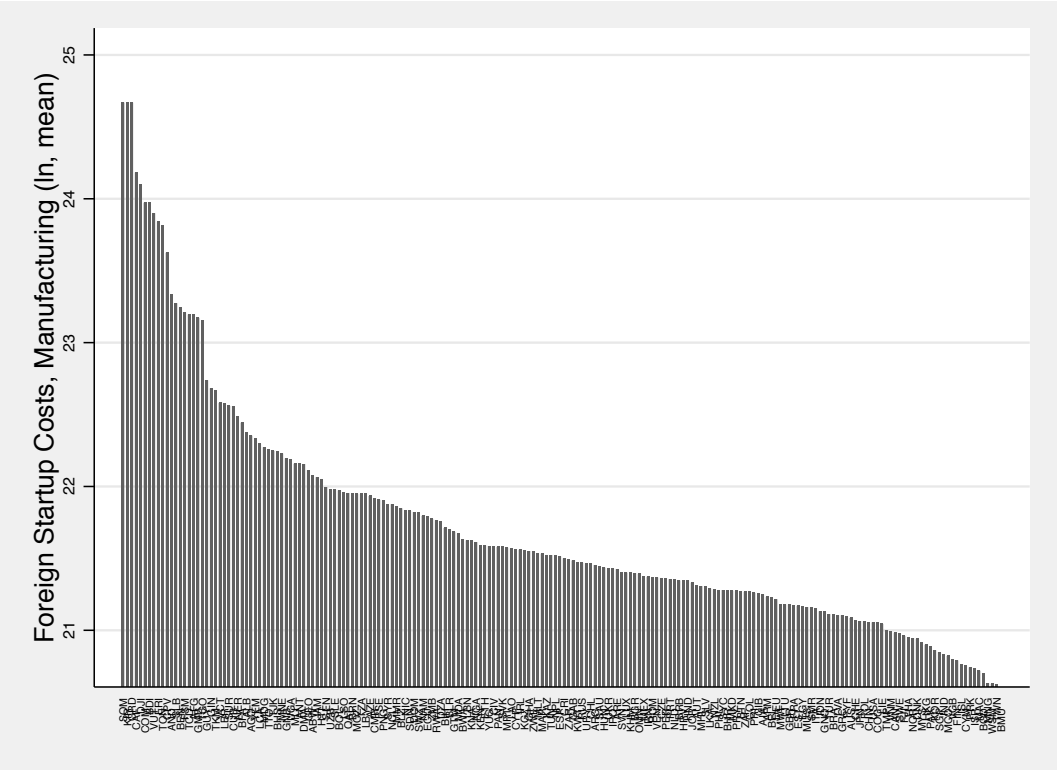

Figure 4: Firm Entry and Exit

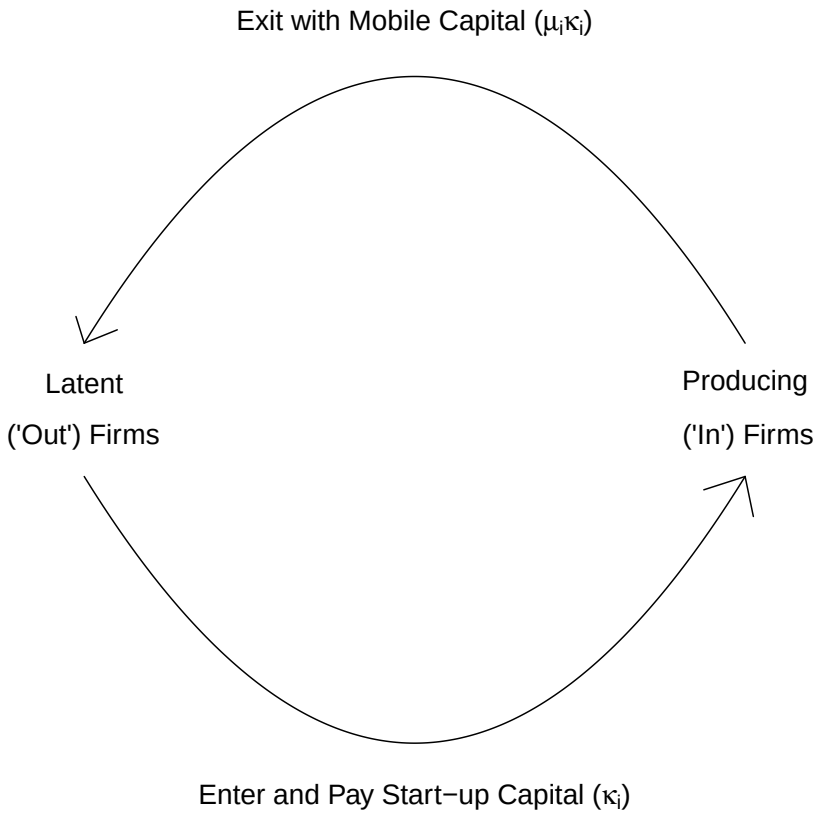

Figure 5: Equilibrium Market Behavior

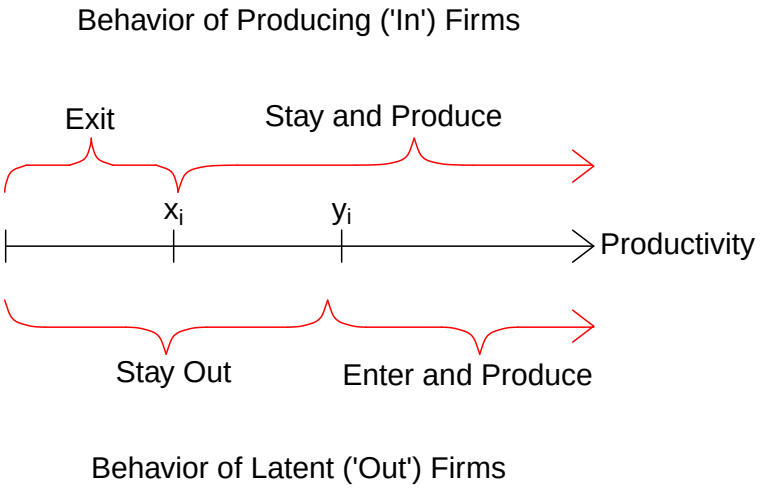

Table 1: When Foreign Firms Pay Higher Taxes, Foreign Return on Capital Increases and Domestic Does Not

	(1)	(2)	(3)	(4)	(5)
	Foreign Return on Capital (ln)†			Domestic Return on Capital (ln)	
	Industry	*Industry*	*Firm*	*Industry*	*Industry*
Tax paid by foreign firms (industry-level, ln)	0.00237***	0.00213***		-0.000841	-0.000862
	(0.000398)	(0.000288)		(0.000983)	(0.000788)
Tax paid by foreign firm (firm-level, ln)			0.0210***		
			(0.00198)		
Startup costs (foreign)	-0.000498*	-0.000634**	-0.000902***		
	(0.000264)	(0.000268)	(0.000194)		
Startup costs (domestic)				0.000853	0.000498
				(0.000768)	(0.000636)
Mobile	-0.00323**	-0.00247*	-0.000738	-0.00699**	-0.00703*
	(0.00137)	(0.00141)	(0.00110)	(0.00309)	(0.00415)
Democracy		0.0000513	-0.000230***		0.000835
		(0.000138)	(0.0000596)		(0.000583)
Trade		-0.0000502	-0.00000105		-1.86e-08
		(0.0000615)	(0.0000155)		(0.000115)
GDP per capita		-0.0118	0.00482		-0.0677***
		(0.00903)	(0.00421)		(0.0241)
Constant	6.784***	6.921***	6.394***	6.715***	7.447***
	(0.00526)	(0.0961)	(0.0575)	(0.0191)	(0.268)
Firm Status††	.	.	Yes	.	.
Industry (2-digit)	Yes	Yes	Yes	Yes	Yes
Host State	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes
Observations	275,084	217,086	173,562	279,936	220,208
Adj. R-squared	0.118	0.090	0.043	0.318	0.141

† Models 1, 2, 4, 5: industry (4-digit)-country-year. Model 3: firm-country-year.

†† Active, Active/delisted, Insolvency proceedings, Bankruptcy, In liquidation.

SE 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 Total Tax Burden

	(1)	(2)	(3)
	Total Income Tax Demanded (ln)†		
	Industry	*Industry*	*Firm*
Startup costs (foreign)	-0.0112***	-0.0126***	-0.00198***
	(0.00115)	(0.00139)	(0.000204)
Mobile	-0.0142***	-0.0130***	-0.00221***
	(0.00180)	(0.00163)	(0.000263)
Democracy		0.000190	0.0000271
		(0.000443)	(0.0000637)
Trade		-0.0000131	-0.00000525
		(0.000134)	(0.0000209)
GDP per capita		-0.0573***	-0.00914**
		(0.0190)	(0.00369)
Constant	10.57***	11.22***	25.99***
	(0.0251)	(0.219)	(0.0416)
Firm Status††	.	.	Yes
Industry (2-digit)	Yes	Yes	Yes
Host State	Yes	Yes	Yes
Year	Yes	Yes	Yes
Observations	286,716	225,047	222,789
Adj. R-squared	0.076	0.088	0.088

† Models 1-2: industry (4-digit)-country-year. Model 3: firm-country-year.

†† Active, Active/delisted, Insolvency proceedings, Bankruptcy, In liquidation.

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

Table 3: For Foreign Firms, Higher Startup Costs Associated with Higher Return on Capital

	(1)	(2)	(3)
	Foreign Firm Return on Capital (ln)†		
	Industry	*Industry*	*Firm*
Startup costs (foreign)	0.00107***	0.000674***	0.000471**
	(0.000228)	(0.000225)	(0.000202)
Mobile	-0.00191	-0.00139	-0.00115
	(0.00125)	(0.00131)	(0.00119)
Democracy		0.000280	0.000156
		(0.000239)	(0.000206)
Trade		-0.0000594	-0.0000471
		(0.0000628)	(0.0000688)
GDP per capita		-0.0128	-0.00501
		(0.00992)	(0.0105)
Constant	6.796***	6.942***	6.961***
	(0.00464)	(0.106)	(0.113)
Firm Status††	.	.	Yes
Industry (2-digit)	Yes	Yes	Yes
Host State	Yes	Yes	Yes
Year	Yes	Yes	Yes
Observations	284,676	223,713	210,170
Adj. R-squared	0.107	0.088	0.042

† Models 1-2: industry (4-digit)-country-year. Model 3: firm-country-year.

†† Active, Active/delisted, Insolvency proceedings, Bankruptcy, In liquidation.

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

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

	(1)	(2)	(3)	(4)
	Foreign Firm Revenue (USD, ln)			
	Industry	*Industry*	*Firm*	*Subsidiary*
Startup costs (foreign)	1.140***	1.153***	1.023***	0.0400***
	(0.0304)	(0.0274)	(0.0273)	(0.00748)
Mobile	4.643***	4.728***	1.741***	0.146***
	(0.180)	(0.196)	(0.101)	(0.0374)
Democracy		0.0757*	0.0571**	0.000464
		(0.0408)	(0.0226)	(0.00208)
Trade		0.00870	0.00405***	-0.00102
		(0.00675)	(0.00153)	(0.000830)
GDP per capita		-0.805	0.0468	0.0952
		(1.626)	(0.429)	(0.0771)
Constant	5.114***	12.64	5.903	5.097***
	(0.672)	(17.45)	(4.585)	(0.886)
Firm Status††	.	.	Yes	Yes
Industry (2-digit)	Yes	Yes	Yes	Yes
Host State	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Observations	276,777	219,364	193,314	54,679
Adj. R-squared	0.405	0.406	0.209	0.205

† Models 1-2: industry (4-digit)-country-year. Model 3: firm-country-year.

†† Active, Active/delisted, Insolvency proceedings, Bankruptcy, In liquidation.

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