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FDI Entry Modes and the Demand for Regulations on Inward FDI

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Abstract

In this paper, I examine the relationship between the choice of foreign direct investment (FDI) entry modes and inward FDI regulations in high-income countries from the perspective of domestic firms. I argue that domestic firms in industries with more greenfield investment will demand stricter FDI regulations from their government, while domestic firms in industries with more cross-border mergers and acquisitions (M&As) will want looser FDI regulations. Domestic firms are favorable to cross-border M&A deals because M&As often involve no new entries and high technology and information spillovers. However, they are opposed to greenfield investment projects that bring large-scale new entries without positive spillover effects. By examining the FDI Regulatory Restrictiveness Index of the 36 OECD member states, I find that industries with more cross-border M&As have lower FDI restrictiveness, while industries with more greenfield investments have higher FDI restrictiveness. Thus, FDI regulation policy reflects how different types of FDI entry mode affect domestic producers.

Keywords: Foreign direct investment, domestic producers, market competition, greenfield investment, cross-border mergers and acquisitions

1 Introduction

As the effects of the pandemic severely curbed global economic activity, foreign direct investment (FDI) in 2020 fell to one of the lowest levels in recent decades.¹ The sharp fall in FDI activity came amidst an already declining trend in FDI since 2015, when FDI reached its peak (a total of 2 trillion USD). Several factors, particularly the uncertainty regarding the global economy due to Brexit and the US-China trade war, have contributed to the decrease in FDI. In addition, a recent move to stricter FDI regulations has caused both types of FDI – greenfield investment and cross-border mergers and acquisitions (M&As) – to decrease in developed countries.² While the main reason for this move toward stricter regulation is the acquisition by Chinese state-owned enterprises of sensitive technology and information in developed countries, FDI regulation is not limited to Chinese FDI. Moreover, restrictions on FDI are prevalent in many industries that are not security-sensitive, and sharply vary across countries for the same industries. This indicates that FDI regulation policy reflects concerns beyond national security.

To understand the variation of FDI restrictiveness across industries, I focus on the different types of FDI entry mode and how each type of entry mode affects domestic producers. In the existing international political economy (IPE) literature, studies have treated FDI as a single type of investment. To be more accurate, however, FDI should be disaggregated into different entry modes. The choice of market entry mode – either greenfield investment projects or cross-border M&A deals – by foreign multinational corporations (MNCs) reveals significant information about the investment motivations of MNCs, the investment climate of the host country, the characteristics of the target industry, and the possible economic consequences (Nocke and Yeaple, 2007; Müller, 2007; Brouthers and Brouthers, 2000). Depending on the firm-specific skills of the foreign MNC and the structure of the domestic market, domestic rival firms will have to prepare for future changes accordingly. Thus, the entry mode decision of a foreign investor is one of the key determinants of domestic firms' preferences regarding FDI policy.

I argue that FDI regulations, which reflect the preferences of domestic producers regarding inward FDI, will be stricter in industries with more greenfield investments and looser in industries with more cross-border M&As. While both types of FDI increase domestic market competition, the degree to which competition increases is different between greenfield invest-

¹According to UNCTAD's *World Investment Report 2020*, global FDI dropped by more than 50 percent in the first half of the year compared to 2019.

²The European Union have gradually imposed stricter FDI regulations on the basis of national security threat. See Kirkland & Ellis 'New EU Foreign Direct Investment Regulations Take Effect', October 29, 2020.

ments and cross-border M&As. Cross-border M&As are typically more frequent in industries with many small- and medium-size firms. As a result, new entries do not significantly alter the market equilibrium. M&As also involve no (or few) new entries because foreign MNCs acquire existing domestic firms when entering the market. Active cross-border M&As can even increase the value of domestic small businesses, which are potential targets of foreign acquirers. Moreover, M&As typically result in direct information and technology spillovers for domestic firms. Therefore, domestic producers are favorable to cross-border M&As.

In contrast, greenfield investment projects are typically more frequent in industries with few large firms that dominate the market. Moreover, greenfield investments often bring large-scale new entries into the market without positive spillover effects of firm-specific skills or information. These large new incomers also increase demand for talented labor, resulting in talent bidding wars. Therefore, domestic producers want protection in industries with many greenfield investment projects. These preferences shape the government’s FDI regulation policies.

Using the industry-level FDI Restrictiveness Index of 36 high-income countries from the *OECD.Stat* database, I examine whether FDI entry modes have different effects on industry-level FDI regulations. The analysis in this paper is focused on high-income countries (i.e., the 36 members states in the Organization for Economic Cooperation and Development [OECD]), because inward FDI in developed and developing countries is characterized by different motivations and patterns of foreign investment (Blonigen and Wang, 2004). For instance, MNCs investing abroad are more likely to be efficiency- and resource-seeking in developing countries, while they are more likely to be information- and market-seeking in developed countries (Wadhwa and Reddy, 2011; Brouthers et al., 2008). Moreover, the types of FDI entry modes are balanced in developed countries, while FDI that enters developing countries is most likely to be greenfield investments. In addition, political institutions (e.g., democracy or non-democracy) have significant effects on the type of inward FDI (Henisz, 2000; Jensen, 2008). This paper therefore focuses on a set of countries that are politically and economically similar.

I test the hypothesis using data on OECD FDI restrictiveness index, greenfield investment projects and cross-border M&As worldwide. The choice of entry mode, however, is inherently endogenous, where FDI restrictiveness may cause changes in the pattern of MNCs’ entry mode. To account for such reciprocal causation, I utilize industry “total expenditures on research and development (R&D)” as an instrumental variable in the two-stage least squares (2SLS) estimate. Total R&D expenditures have direct relationship with the choice of FDI entry mode, while they are only remotely relevant to FDI restrictiveness. High R&D expenditures, which is a proxy for high technological dynamism, make the speed of mar-

ket entry to be a crucial factor in MNCs’ business strategy. Hence, MNCs would choose cross-border M&As over greenfield investment to quickly enter local markets. Admittedly, industries with high R&D expenditure may be associated with low FDI restrictiveness level through industry feature, as mentioned in Chapter 2; however the total amount of R&D expenditure do not provide information about whether the incumbent firms only use the technology within themselves or they benefit from technology spillovers within the industry. Thus, total amount of R&D expenditures serves as a good instrumental variable.

I find evidence that industries with more cross-border M&As relative to greenfield investments are associated with lower FDI restrictiveness, while industries with more greenfield investments relative to cross-border M&As are associated with higher FDI restrictiveness. The results are consistent when controlling for the size of the M&A deals. These results show evidence that domestic producers are more favorable to FDI entering via cross-border M&As than FDI entering as greenfield projects. Therefore, I conclude that the type of FDI entry modes plays a crucial role in shaping the preferences of domestic firms regarding inward FDI policy.

This study of FDI entry modes and domestic firm preferences offers two main contributions to the IPE literature. Firstly, while studies on the politics of FDI have significantly developed in the past couple of decades, I contend that it is also important to distinguish between the two different types of FDI entry mode. As greenfield investment is building a new start-up while a M&A is acquiring an existing firm, the economic consequences of each entry mode differ in the local market. Moreover, compared to greenfield investment, cross-border M&As each year comprise more than half of the total FDI in high-income countries.³ Secondly, previous studies on FDI regulation have not connected domestic actors’ preferences with industry characteristics. By focusing on the preferences of domestic producers, I demonstrate that industry features are crucial in understanding why there are variations in FDI regulations across industries. With the recent increase in barriers to FDI in high-income countries, this study of FDI entry modes and domestic firm preferences based on industry characteristics adds to the explanation of FDI restrictiveness across industries.

2 Literature Review: FDI Preferences and Policies

Studies on FDI preferences and policies in the IPE literature have found that democratic institutions can act as barriers to FDI due to domestic political divergence, interest groups’ resistance, and protectionist labor unions (Owen, 2015; Li and Resnick, 2003). A host government’s partisanship may also play a role in restricting inbound FDI by favoring MNCs that

³See OECD, “FDI in Figures”, April 2021, p.8.

complement the factor endowments of the incumbent’s electoral base (Pinto and Pinto, 2008; Pinto, 2013; Malesky and Mosley, 2018). Pandya (2014), in contrast, found that democracies are relatively more open to FDI than nondemocracies because electoral accountability makes policy makers more attentive to domestic actors’ economic preferences. However, domestic preferences are not always supportive of FDI. Because MNCs demand more skilled labor and are generally more productive than domestic firms, low-skilled laborers feel job insecurity when facing market-oriented FDI (Pandya, 2010, 2014). While previous studies have progressed understanding of FDI, they treat FDI as a single type of investment, rather than disaggregating FDI into greenfield investment and cross-border M&As.

Several studies on cross-border M&As have demonstrated that FDI regulation is on the rise due to national security concerns resulting from the increase in outward FDI by emerging economies, where many MNCs are state owned (Kang, 1997; Meunier et al., 2014). Many developed governments have adopted FDI screening processes for cross-border M&As in so-called “crucial” sectors, which have led to transactions being denied and potential investors being discouraged (Marchick and Slaughter, 2008). Sauvart (2009) also argued that many countries make the FDI regulatory environment more restrictive for foreign investors by linking the concept of “national interests” to strategic sectors or national champion companies. If this is really the case, governments should have tighter restrictions on FDI in industries where cross-border M&As are dominant. However, in reality, greenfield investments face the same set of regulation policies as M&As. Thus, the national security factor cannot explain why FDI regulation policies are stricter in industries in which greenfield investment is the dominant entry mode.

Building upon the existing literature on FDI regulation, this paper explores how two different entry modes affect FDI policy preferences, particularly from domestic producers’ perspective. Host governments may regulate FDI based on entry mode in order to induce more technology transfers to domestic firms, which can improve economic welfare (Mattoo et al., 2004). Foreign MNCs, on the other hand, take various market and nonmarket factors into consideration when choosing their entry model type Kogut and Singh (1988); Zaheer and Mosakowski (1997); Shaver (1998); Siegel et al. (2011). Studies have found that foreign MNCs tend to choose greenfield investment as their primary entry mode when they have a strong competitive advantage (in terms of firm-specific skills), are entering a market with limited competition, and are facing low policy barriers (Hennart and Park, 1993; Zejan, 1990; Caves, 1996; Larimo, 2003; Henisz, 2000). These studies provide insight into the environment in which a domestic firm is situated when facing the imminent entry of a foreign firm.

Drawing from several studies on the effect of inward FDI on domestic firms, it is evident that a new foreign entry is not always good news (Aitken and Harrison, 1999; Haller, 2009).

Foreign MNCs often possess higher skills and are more efficient than domestic firms (Knickerbocker, 1973; Bloom et al., 2012, 2013). In fact, Qiu and Wang (2011) demonstrated via a formal model that depending on the national welfare, which is calculated based on domestic consumers and producers, governments will enact FDI policies that promote either greenfield investment or cross-border M&As. This paper expands on these earlier studies and explores how different FDI entry modes affect domestic firms' preferences regarding FDI, which are reflected in the host government's FDI regulation policies.

The emphasis on FDI entry modes and industry features in this research fills gaps that exist in both IPE and business literature. While studies in IPE have recently begun to distinguish between the two different types of FDI entry mode, most studies have focused on greenfield investment in developing countries, where the presence of cross-border M&As is relatively negligible. Meanwhile, studies in business have focused more on the entry mode strategy of MNCs rather than on how these strategies affect domestic producers. By examining domestic producers' preferences regarding greenfield investment and cross-border M&As, I provide another perspective on why FDI regulation varies across industries. In addition, by highlighting the importance of industry features in shaping the preferences of domestic producers regarding FDI, this study bridges the gap between IPE literature, which often focuses on the distributional consequences for individuals, and business literature, which often focuses on firm strategies.

3 Theory: Domestic Firm Preferences and FDI Policy

3.1 Greenfield Investment and Domestic Firms

Greenfield investment is a type of FDI in which a foreign MNC builds its operations in a foreign country from scratch, like a start-up. Greenfield projects involve the establishment of new entities, such as offices, buildings, and factories. Thus, greenfield investments generally entail higher fixed expenditures at the initial setup stage. These investment projects can be new production facilities, but also additional distribution hubs or subsidiaries of the parent companies. The foreign subsidiary can either be a wholly foreign-owned enterprise (WFOE) or a joint venture co-owned by a local partner with complementary assets (Barkema and Vermeulen, 1998). The purpose of this paper is to compare different types of majority-owned foreign affiliates, which do not include minority-share joint ventures.

There are numerous market and non-market factors that contribute to an MNC's choice of greenfield investment as the primary entry mode, but this paper focuses in particular on

market/economic reasons.⁴ Firstly, foreign MNCs typically enter via greenfield investment in industries that generate scale economies in the long run. Greenfield projects require large lump-sum fixed costs in the initial establishment phase; therefore, MNCs will only enter the market if they expect to achieve profits in the future (Pandya, 2014). Secondly, there are often firm-specific skills that cannot be cleanly separated into management and workers' skills in the business operation. In such cases, a foreign MNC cannot easily enter via M&A, because M&As involve foreign management replacing the domestic management while domestic workers remain the same. Finally, an MNC will choose greenfield investment over cross-border M&A if the MNC possesses sensitive technology that must be kept within the company in order to maintain its competitiveness.

The above-mentioned reasons behind the choice of entry mode by a foreign MNC also affect how domestic producers react to greenfield investment. Firstly, domestic producers will oppose FDI if market competition increases due to large-scale new entries. Greenfield investment projects often involve large-scale projects because foreign companies want to recover their initial high fixed costs through generating long-term profits by lowering variable costs. Thus, in industries like oil, mining, and heavy metals, MNCs often enter via greenfield investment rather than acquiring an existing company. Each new project entering the local market results in the introduction of a new competitor producing differentiated goods. Large incumbent companies will consider these large FDI projects to be taking over a significant amount of market share. Due to the specific industry features, which require high fixed costs at the initial establishment period and scale economies in the long run, there is already a high concentration of large domestic firms. As the industries tend to be oligopolistic, the potential disruption to the market equilibrium is great.

Figure 1 shows this market-stealing effect of the share of greenfield investment projects on the net export value (logged) by plotting the regression line. In industries with higher share of greenfield investment, net export value tends to increase, confirming that goods and services by the new foreign entries are not directed towards exports, but rather competing for the existing customers. Therefore, domestic incumbent companies will want protection from FDI entering via greenfield investment.

Secondly, firm-specific skills tend to be more advanced among MNCs compared to average local companies.⁵ MNCs tend to come from developed countries where technologies are

⁴Foreign companies decide to enter via greenfield if there exist more similarities in culture, language, and history. Geographic proximity also encourages greenfield investment. Moreover, scholars have also found that political affinity or lower political risks are often associated with foreign multinationals entering via greenfield investment. Existence of contractual hazard also increase possibility of greenfield investment.

⁵Nocke and Yeaple (2007) shows that firms engaging in greenfield investment are more efficient than those engaging in cross-border mergers and acquisitions.

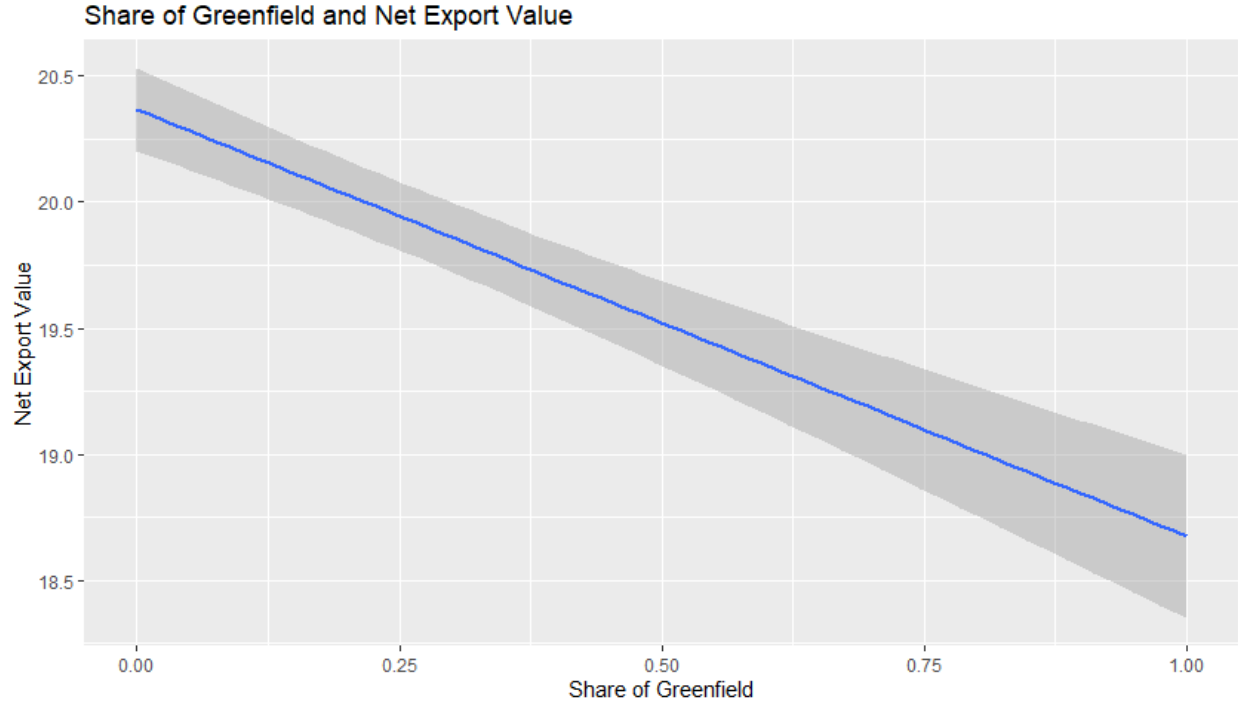


Figure 1: Linear Regression Line of Greenfield Investment and Net Export Value

highly advanced and there are more resources, including managerial and production skills and capital. The technology gap may not be large between domestic and foreign MNCs, but average domestic companies may be in an inferior position compared to large foreign MNCs. While incumbent companies may have an advantage in non-market factors, such as local information or cultural experience, the long-run profit favors foreign MNCs that produce high-quality goods and services at lower prices using advanced technology and skills. Domestic MNCs will also oppose such FDI entering the market because it means fiercer competition. In order to maintain market dominance, domestic MNCs would need to find a way to lower their price, either by investing more in R&D or reducing the markup of their products.

Thirdly, firm-specific skills are not easily transferred to local companies. In addition to possessing advanced skills, foreign companies often keep these skills within the company. As such, local companies cannot expect knowledge or information spillovers. As mentioned above, one of the reasons why MNCs pursue a greenfield investment strategy is to maintain their competitiveness by not sharing know-how. This is particularly true if the motivation for FDI is market oriented and competing for existing customers (Knickerbocker, 1973). Some foreign MNCs even locate their factories far away from domestic rival MNCs to rule out any possibility of information leaks resulting from geographic proximity (Hanson, 2001).

Without any information or technology spillovers, local companies have no reason to welcome the new entry of a large foreign MNC.

Finally, greenfield investment substantially increases the demand for high-skilled labor, resulting in a talent bidding war between local firms. Under such conditions, foreign MNCs are likely to pay high wages in order to attract local talent, because local workers have information on the domestic market and are experienced. Foreign MNCs are also in need of high-skilled labor because their business operations are typically advanced compared to average local companies (Blonigen and Slaughter, 2001). Thus, from domestic producers' perspective, new entries of foreign MNCs are likely to result in increased demand in the high-skilled labor market, resulting in a talent bidding war and increased wages (Gopinath and Chen, 2003). The increase in competition not only in the product market but also in the labor market further feeds the anti-FDI sentiment among domestic producers.

The above logic of why domestic producers are wary of greenfield investment is particularly true in high-income countries. The same logic may not apply in developing countries, because more greenfield projects lead to an increase in foreign capital and job creation, which are crucial for economic development. Moreover, local companies may not even be present in some of the industries that require large fixed costs. Thus, host governments in developing countries sometimes not only deregulate FDI policy, but also provide incentives to attract more foreign capital.

3.2 Cross-border M&As and Domestic Firms

An acquisition is a corporate action taken by a foreign parent company that entails purchasing more than 50% of an existing domestic firm's ownership. Thus, acquisitions are different from mergers in that the acquiring company buys the targeted company's stocks or assets to obtain control. There are two types of acquisitions, a friendly acquisition and a hostile takeover. A friendly acquisition happens when the board directors agree to sell the targeted company's shares to the potential acquirer. A hostile takeover occurs when the board directors reject the deal offered by the potential acquirer, but the acquirer nevertheless tries to buy the target company by purchasing a controlling share of stocks. Moreover, an acquirer can be either a company that produces goods and services, a financial company, or an individual financier. The first case, in which non-financial companies acquire a domestic company, is the direct alternative to greenfield investment. In the latter two cases, however, most acquisition transactions are performed when financial companies or individuals want to resell the company they bought at a profit. This paper focuses on the acquisitions made by non-financial companies.

As in the case of greenfield investment, there are numerous market and non-market factors that contribute to a foreign MNC's choice of entering a local market via cross-border M&As. This section focuses on market factors.⁶ MNCs often choose M&As as their primary entry mode to avoid the large fixed costs in the setup stage by simply acquiring a domestic company. For this reason, cross-border M&As are most frequent in industries that have many small- and medium-size local companies, which are attractive potential targets for M&As. In addition, MNCs choose cross-border M&As when their owners' management skills and the workers' skills are readily separable, because firms can increase profits by introducing better management to enhance production.

The above-mentioned reasons form the basis for domestic producers' preferences regarding regulation of cross-border M&As. Firstly, industries with many cross-border M&As already have large numbers of small- and medium-size incumbent firms; therefore, a few new additions to the market do not alter the market equilibrium. As previously mentioned, cross-border M&As are most frequent in industries where there are many affordable potential targets. In markets that resemble perfect competition, additional entries will not make a significant difference in the price. With many small- and medium-size domestic firms existing in the market, foreign entries do not lead to immediate changes in prices that are set in the local market. Moreover, average cross-border M&A deals are much smaller in scale compared to average greenfield investment projects. Thus, the market equilibrium price is likely to be further undisturbed. Even if cross-border M&As may result in higher productivity in the long run due to synergistic effects, studies have found that merged companies need an adjustment period, which often leads to relatively poor performance due to corporate cultural differences (King et al., 2004; Bertrand and Zitouna, 2008; Chakrabarti et al., 2009). This effect may give domestic firms time to react accordingly to the potential market changes in the short term. Since the effect of FDI on the market is relatively negligible, incumbent domestic firms are indifferent towards FDI of this type.

Secondly, market competition may either remain the same or become reduced as a result of cross-border M&As. As foreign MNCs enter the market by acquiring an existing domestic firm, the total number of competitors usually remains the same. In other cases, if an existing foreign affiliate acquires an existing domestic firm, the number of competitors may even be reduced. From domestic producers' point of view, no new entry is better than an increase in new entries. In addition to such market-neutral effect, FDI entering via cross-border M&As tends to be directed towards more exports within the industry. As shown in Figure 2, in

⁶There are also non-market strategies that affect the entry mode decision of multinationals. Firms are more likely to enter via cross-border M&As if the acquiror do not have much information or knowledge about the local market due to lack of experience. Furthermore, differences in corporate culture or high political risk may also encourage foreign investors to enter via cross-border M&As.

industries with higher share of cross-border M&A deals, goods and services are more likely to be exported, unlike in the case of greenfield investment, which has market-stealing effects. Figure 2 plots the regression line between the share of cross-border M&As in each industry and logged value of net exports. As a result, domestic producers are relatively unconcerned about FDI increasing the market competition.

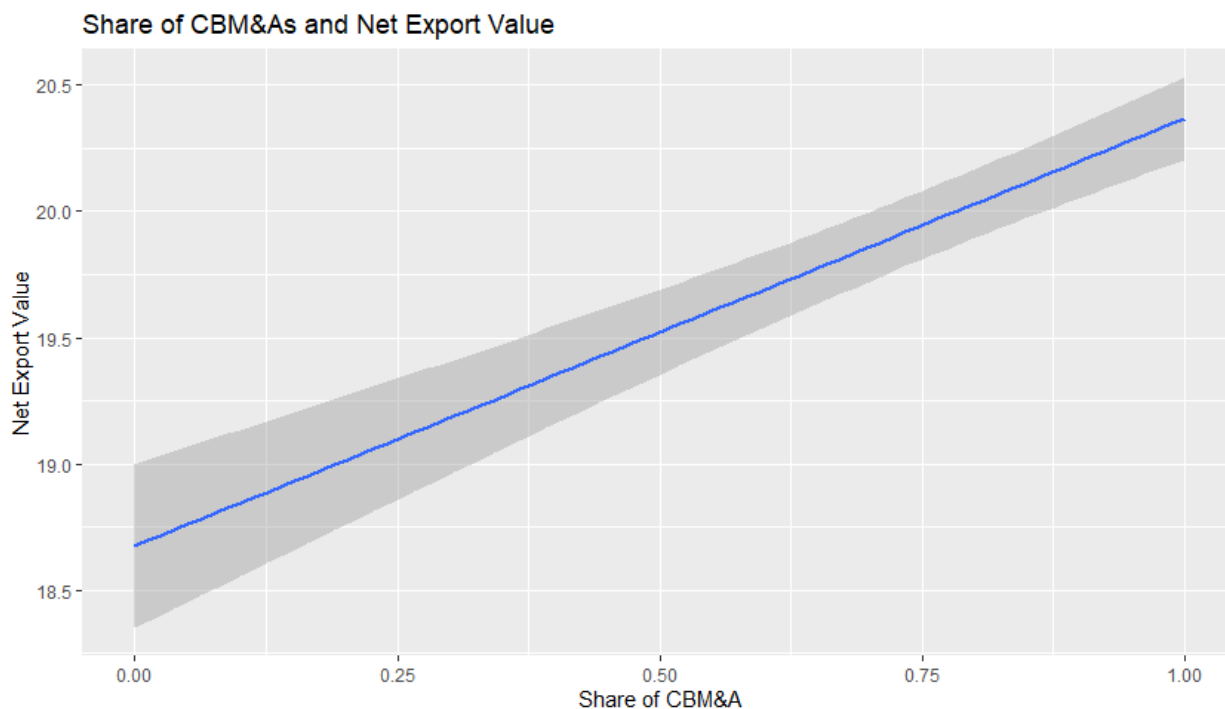


Figure 2: Linear Regression Line of Cross-border M&A and Net Export Value

Thirdly, active cross-border M&As increase the share prices of small domestic firms that are likely to be targets for acquisition. Indeed, some incumbent firms welcome foreign firms' active M&A behavior, because higher M&A demand increases their overall share prices. Studies demonstrate that the value of targeted firms increases significantly each time there has been a wave of M&A activities worldwide (Goergen and Renneboog, 2004). Cross-border M&As increase target firms' value even more than domestic M&As, because foreign firms often pay large premiums for successful bids (Kaplan and Weisbach, 1992). Thus, domestic firms, particularly small- and medium-size businesses that are likely to be the targets of foreign multinational acquirers, welcome FDI in their industries.

Finally, while foreign acquirers' firm-specific skills are more advanced compared to average domestic firms, these skills are directly transferred to local companies. M&As allow the transfer of managerial skills and technology, which are crucial to firms' development. Acquiring an existing domestic company will lead to more spillovers than a greenfield invest-

ment project would, because the existing company is more integrated into the local supply chain and interacts more with local competitors. In the process of merging, two companies often reorganize and enhance their R&D activities (Röller et al., 2000). This process makes re-training local workers and managers with new technology/skills more conducive to spillovers between firms. Such technology transfers particularly benefit the targeted domestic firms because foreign acquirers use advanced skills to better perform in the local market (Bertrand and Zuniga, 2006). Therefore, domestic producers welcome FDI that generates positive externalities.

While cross-border M&As do not pose a greater threat on average compared to greenfield investment, there are two cases in which cross-border M&As may be a larger threat to domestic companies. Firstly, cross-border M&As may give the foreign acquirer a large market share with considerable market power. Secondly, both companies and the government fear national security breaches due to the information transfers inherent in the nature of M&As. The first scenario is true if a global MNC tries to enter an oligopolistic market through cross-border M&A. These markets are also those that have more greenfield investment; therefore, there is no overall effect on FDI restrictiveness.⁷ The second scenario applies in security-sensitive industries, such as information or electricity, or if the country of nationality of the acquirer is not a security ally. Thus, greenfield investment will be more frequent in industries that are security sensitive, which goes hand in hand with the government's regulation of FDI. In order to account for this endogeneity, I describe below an instrumental variable strategy.

3.3 Domestic Firm Preferences and FDI Policy

Governments have a few constituencies whose varying preferences regarding FDI influence the regulatory restrictiveness toward inward FDI. First, incumbent domestic firms may either support or oppose FDI depending on whether the foreign entries will increase market competition in favor or against them. Second, while domestic workers may support inward FDI due to job creation, studies have found that workers' preferences vary across industries (Owen, 2013; Pinto and Pinto, 2008). Thirdly, consumers may support inward FDI because FDI increases consumer welfare by introducing a variety of goods at lower prices. Fourth, foreign firms already located in the local market may also have mixed attitudes towards inward FDI, depending on whether the newly entering foreign MNC is a rival to the incumbent foreign firms. In the face of the diverging interests of these constituencies, governments are likely to listen to producers' demands, mainly because they are better organized and have more political resources compared to other constituencies, such as consumers or incumbent

⁷While these industries do have a few number of M&A deals, greenfield investment projects are more frequent, resulting in higher FDI restrictiveness.

foreign MNCs. These domestic firms have political influence either financially or through personal ties and thus can influence the government’s FDI policy in their favor (Faccio, 2006). Therefore, domestic producers, particularly larger ones, have more influence over FDI policy-making compared to domestic consumers or foreign MNCs.

Domestic producers in industries with many greenfield investment projects are likely to oppose FDI. Large-scale foreign entries in markets that are highly concentrated among a few large companies will likely create even more intensifying competition. Without any knowledge or information spillover from foreign entries to domestic incumbents, the competition would further increase. The possibility of a talent bidding war in the labor market also contributes to the anti-FDI sentiment among domestic producers. Since the threat to market and labor competition is high, domestic producers are likely to demand protection via strict FDI regulations. Moreover, these large domestic companies have better means to access the political decision-making process. Therefore, industries with a high share of greenfield investment projects are more likely to have relatively strict FDI regulations.

In contrast, domestic producers in industries with many cross-border M&As are more likely to be favorable to FDI. In an industry with many existing competitors, new entries of foreign MNCs via M&As do not matter much to the existing market equilibrium and may even reduce market competition. Moreover, since these industries have many small- and medium-size firms, active cross-border M&As increase the share prices of domestic incumbent firms. Domestic producers are also less wary of FDI in these industries because they expect sharing of information, technology, and advanced skills with foreign MNCs through M&As. Therefore, industries with a high share of cross-border M&As are likely to be associated with relatively loose FDI regulations.

Hypothesis: Industries with a greater share of greenfield investments are likely to have higher FDI restrictiveness than industries with a greater share of cross-border M&As.

4 Data and Methodology

The main dependent variable in this research is the OECD FDI Restrictiveness Index, which is available through the OECD Statistics database. This index include the years 2003, 2006, and 2010-2019. The unit of analysis is at the industry level, where there are 30 separate industries. To match the industries with independent variables, however, I used the aggregated industry category, which is divided into 11 separate industries. There are four types of FDI restrictions: equity restrictions, screening and approval requirements,

restrictions on foreign key personnel, and other.⁸ In the main analysis, I utilized “all types” of restrictions, which is the summation encompassing all four types. Relevant data were available for 68 countries, including 36 OECD member countries and 32 non-OECD countries. I mainly analyzed my theory for the 36 OECD countries, because these countries have a sufficient amount of greenfield investment projects and cross-border M&A deals.⁹

Greenfield Investment Data

The best data for global greenfield investment projects is available via the *fDi Markets* database managed by the Financial Times. This database includes all individual global greenfield investment projects worldwide. I aggregated individual projects at the industry level for each country, then calculated the share of greenfield investments in each industry by dividing the number of greenfield projects by the sum of greenfield projects and cross-border M&As. In order to match the industry categorization of the FDI Restrictiveness Index, I referred to all information available in the dataset, including “industry,” “subsector,” “industry activity,” and “(industry) cluster.” For example, if the industry was “leisure and entertainment” and the industry cluster was ‘tourism’, I classified the industry under “hotels and restaurants.” However, if the industry was “leisure and entertainment” and the cluster was ‘retail trade,’ I classified the industry under “retail.”

Cross-border Mergers and Acquisitions Data

The total number of cross-border M&A deals was calculated based on the data available via SDC Platinum. The SDC Platinum database includes comprehensive data on all individual M&A transactions – both domestic and international – worldwide. For cross-border M&A transactions, I only included transactions that involve a pair of companies with differing parent company nations. For instance, even if a Chinese company acquired a United States company, if the ultimate parent company of the United States company was Chinese, I did not regard it as a cross-border M&A transaction. However, if a United States company acquired another United States company but the latter had a Chinese parent company, I regarded this transaction as a cross-border M&A. For industry classification, I referred to the four-digit Standard Industrial Classification code and matched it with the closest industry category in the FDI Restrictiveness Index. I then aggregated each transaction at the industry level by country and year. Finally, I calculated the share of cross-border M&As in each industry by dividing the number of M&A deals by the sum of greenfield projects and cross-border M&A deals.

Control Variables

⁸Other types include operational restrictions such as limits on purchase of land or on repatriation of profits and capital.

⁹Regressions on each type of restriction and non-OECD countries are reported in the Appendix section.

I used several control variables to account for alternative explanations for FDI restrictiveness.¹⁰ First, domestic firms may welcome cross-border M&As if they involve smaller acquisition targets and thus cause their own firm prices to rise because of acquisition expectations. If this is the case, industries with many small targets, or small-size companies, will have lower FDI restrictiveness. Since small companies often do not involve high fixed capital, I use “consumption of fixed capital (CFCC)” as a proxy for the availability of small targets. If CFCC is high, there will be fewer small targets, while low CFCC indicates many small targets. High CFCC industries will likely have high FDI restrictiveness. Thus, I expect CFCC to have a positive relationship with the FDI Restrictiveness Index.

Second, domestic firms’ perceptions of greenfield investment projects may depend on whether they expect to lose their own key talent (skilled labor) to a talent bidding war. This expectation may in turn depend on talent scarcity in the overall local labor market. If this is the case, the cost of labor should increase due to the increase in labor demand. I used “labor costs (LABR)” as a proxy for changes in the local labor market. An increase in LABR is likely to be associated with lower FDI restrictiveness, because active FDI is correlated with greater competition for labor, which leads to increases in the cost of labor. Thus, I expect LABR to exhibit a negative relationship with the FDI Restrictiveness Index.

Third, domestic firms’ perceptions of greenfield investment and cross-border M&As may depend on whether the foreign entrant has a reputation for helping average local industry prices or if the foreign entrant is known for engaging in price wars. In the former case, extra value added over the original price will either not change or increase, while in the latter case, extra value added over the original price will decrease such that that companies can further lower the price of their products. Thus, I used “value added at factor costs (VAFC)” as a proxy for changes to price within an industry. VAFC matters more in industries with large companies that have a significant impact on market prices. Thus, changes in VAFC – regardless of whether the price increases or decreases – would be associated with high FDI restrictiveness.

Fourth, domestic firms may welcome both cross-border M&As and greenfield investments because of the geographic location of the investment. For instance, inward FDI into existing agglomeration locations may lead to spillovers, while investment into geographically distanced domestic locations may result in few or no spillovers. To account for geographic clustering, I included the “number of persons engaged/total employment (EMP_N)” variable. When LABR and EMP_N are high, the industry is likely to be geographically concentrated, and when both LABR and EMP_N are low, the industry is likely to be sparsely located.

¹⁰Data on the control variables can be found at OECD.Stat database. I mainly use “Structural Analysis” data under “Industry and Services.”

Finally, I included “taxes less subsidies on products (OTXS)” to account for governmental tax incentive policies granted to companies. Higher OTXS industries will be associated with lower FDI restrictiveness, as those industries are financially supported by the government.

R&D Expenditures as the Instrumental Variable

While the number of greenfield investment projects or cross-border M&As may affect the FDI regulation policy in different industries, reverse causation is also possible: regulation policy may affect FDI behavior. Restrictions on inward FDI may deter foreign MNCs from entering a certain industry via greenfield investment because they would have to pay even higher costs at the initial setup stage on top of an already high fixed cost. Similarly, industries with low barriers to FDI may cause many foreign MNCs to enter the market, either through cross-border M&As or greenfield investment. These possibilities complicate identification of the independent effects of greenfield investment and M&As on FDI restrictions.

To account for this endogeneity issue between the share of each type of FDI and FDI restrictiveness, I tested the hypothesis using a two-stage least square (2SLS) method with an instrumental variable. I used industry-level data on *R&D Expenditure* as a proxy for industry features that affect the number of greenfield investment projects and cross-border M&As.¹¹ R&D expenditures are typically high in industries where technologies change and advance quickly. A foreign MNC is more likely to choose cross-border M&A as its market entry mode when the speed of entry is crucial due to fast-changing technology. Therefore, R&D expenditures directly affect the number of cross-border M&As in industries where technological dynamism is high. In contrast, as greenfield investments require a longer time to establish a business, MNCs tend to choose greenfield investment when they are less sensitive to technological dynamism.

As for the relationship between R&D expenditures and FDI restrictiveness, the two variables may be associated through industry features mentioned in Chapter 2, but the total amount of R&D expenditures itself do not provide any information on whether the incumbent firms benefit from their own R&D or from the R&D of the entire industry. This is particularly true in high-income countries, where large domestic firms in industries with high international economies of scale also possess competitive skills through their own R&D expenditures within the firm. Thus, I expect that R&D expenditures will affect FDI restrictiveness only via their effect on the relative prevalence of the two types of FDI.

$$\text{Stage 1: } X_{it} = Z_{it}\delta + e_{it} \quad (1)$$

In stage 1, I estimated the effect of R&D expenditure (Z_{it}) on the share of each type of

¹¹ *Business enterprise R&D expenditure* data is available from OECD Stat database.

FDI: greenfield investment projects and cross-border M&A deals (X_{it}).

$$\text{Stage 2: } y_{it} = \alpha + \widehat{X}_{it}\beta + U_{it}\gamma + \epsilon_{it} \quad (2)$$

In stage 2, I tested the hypothesis using the estimates from stage 1 (\widehat{X}_{it}). I used a panel linear model with time (t , year) and group (i = country and industry pair) fixed effects for the models in both stages. X represents the total amount of FDI (either greenfield investment projects or cross-border M&A deals). U represents the control variables including LABR, EMPN, VAFC, OTXS, and CFCC.

5 Results

Table 1 details the effect of each FDI type on FDI restrictiveness without control variables. Models (1) and (2) are reduced forms that do not include the instrumental variable, while models (3) and (4) are the 2SLS regression results using R&D expenditure as the instrumental variable. The results of the reduced form models support the first part of my hypothesis, which states that industries with a higher share of greenfield investment are more likely to have higher FDI restrictiveness. However, it is unclear whether industries with a higher share of cross-border M&As are more likely to have lower FDI restrictiveness. Models (3) and (4) produced the expected results: industries with a higher share of greenfield investment are more likely to have stricter FDI regulations, while industries with a higher share of cross-border M&As are more likely to have looser FDI regulations. However, by including an instrumental variable, the total observation has been significantly reduced, which may cause biased results. That said, in looking at all the models, there is evidence that industries with more greenfield investment relative to the share of M&As are more likely to have stricter regulations on inward FDI.

Table 2 presents the regression result of the share of each FDI entry mode type on FDI restrictions including the control variables. As in Table 1, the first two models are reduced forms without instrumental variables, while models (3) and (4) include R&D expenditure as the instrumental variable. While model (1) revealed the opposite result of what the theory expects, models (2) to (4) support the hypothesis. In model (2), a higher share of greenfield investment projects is associated with higher FDI restrictiveness. The positive association is consistent even when the instrumental variable is included in model (4). Model (3) also found a negative and statistically strong association between the industries with a higher share of cross-border M&As and FDI restrictiveness. This finding means that industries with a higher share of cross-border M&As are more likely to have lower FDI restrictiveness. Thus,

Table 1: FDI Entry Modes and FDI Restrictiveness

	<i>Dependent variable: FDI Restrictiveness</i>			
	Reduced Form		2SLS	
	(1)	(2)	(3)	(4)
Share of M&A	0.004 (0.004)			
Share of Greenfield		0.016*** (0.005)		
Share of M&A'			-3.116*** (0.573)	
Share of Greenfield'				4.091*** (0.752)
Observations	13,950	13,950	4,866	4,866
R ²	0.406	0.406	0.461	0.461
Adjusted R ²	0.402	0.403	0.454	0.454
Residual Std. Error	0.138 (df = 13872)	0.138 (df = 13872)	0.089 (df = 4805)	0.089 (df = 4805)
Fixed Effects	C,I,Y	C,I,Y	C,I,Y	C,I,Y

Note: C=country, I=Industry, Y=year

*p<0.1; **p<0.05; ***p<0.01

it is safe to conclude that industries with higher shares of greenfield investment relative to cross-border M&As are more likely to demand stricter regulations on inward FDI. In short, FDI entry mode matters in the variation of FDI restrictiveness across industries.

The control variables demonstrate some interesting results. First, the logged value of labor costs (LABR), which is the proxy for labor demand or labor availability, is positively associated with FDI restrictiveness. This indicates that the higher the demand for labor in an industry (which also affects the cost of labor), the higher the FDI restrictiveness index. In other words, an increase in the cost of labor (perhaps due to an increase in labor demand or higher competition for talented labor) is more likely to increase FDI restrictiveness. Second, the logged value of total employment (EMP_N), which is the proxy for industry agglomeration, demonstrates mixed results: this variable is negatively associated with the FDI restrictiveness value in the reduced form models, but positively associated at a statistically significant level with FDI restrictiveness in the 2SLS models. In considering only models (3) and (4), the positive association indicates that when industry agglomeration is high, FDI restrictiveness also tends to increase, perhaps because industries are highly concentrated among a few large companies. These large companies are likely to pressure the government for stricter regulations on inward FDI to prevent an increase in market competition. Third, value added

Table 2: Entry Modes and FDI Restrictiveness (With Control Variables)

	<i>Dependent variable: FDI Restrictiveness</i>			
	Reduced Form		2SLS	
	(1)	(2)	(3)	(4)
Share of M&A	0.013** (0.006)			
Share of Greenfield		0.015** (0.008)		
Share of M&A'			-2.256*** (0.550)	
Share of Greenfield'				3.503*** (0.854)
log.LABR	0.062*** (0.008)	0.061*** (0.008)	0.001 (0.008)	0.001 (0.008)
log.EMPN	-0.009 (0.007)	-0.007 (0.007)	0.014** (0.006)	0.014** (0.006)
log.VAFC	-0.042*** (0.007)	-0.043*** (0.007)	-0.021*** (0.007)	-0.021*** (0.007)
log.CFCC	-0.008* (0.005)	-0.008* (0.005)	0.008* (0.005)	0.008* (0.005)
OTXS	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
Observations	4,350	4,350	3,385	3,385
R ²	0.361	0.361	0.399	0.399
Adjusted R ²	0.352	0.352	0.389	0.389
Residual Std. Error	0.098 (df = 4292)	0.098 (df = 4292)	0.080 (df = 3329)	0.080 (df = 3329)
Fixed Effects	C,I,Y	C,I,Y	C,I,Y	C,I,Y

Note: C=country, I=Industry, Y=year

*p<0.1; **p<0.05; ***p<0.01

at factor costs (VAFC), which is the proxy for price changes, is negatively associated with FDI restrictiveness, indicating that industries with significant changes in prices tend to have lower FDI restrictiveness. Furthermore, the other taxes less subsidies (OTXS) variable is negatively correlated with FDI restrictiveness, which indicates that government subsidies go hand in hand with looser FDI regulations. Finally, consumption of fixed capital (CFCC), a proxy for whether there are many small M&A targets available, is negatively associated with the FDI restrictiveness index in the reduced form, while positively associated in the 2SLS form.

Finally, I present results using a disaggregated version of FDI restrictiveness, which includes foreign equity limitations, screening and approval mechanisms, restrictions on hiring foreign key personnel, and other operational restrictions (e.g. capital repatriation or branching). The results that include instrumental variable are consistent with the regression models with the 2SLS results in Tables 1 and 3. Industries with higher share of greenfield investments are more likely to have higher restrictiveness in all types of FDI restrictions. Therefore, these results provide evidence for my theory on FDI entry modes and FDI regulation.

6 Conclusion and Future Research

How do domestic producers perceive foreign entries? Does the entry mode of FDI matter to domestic producers? The empirical analysis in this paper suggests that FDI entry modes matter to domestic producers and influence variations in FDI restrictiveness levels across industries. Cross-border M&As do not pose as much a threat to domestic producers as greenfield investments. M&As often involve the elimination of existing competitors, an increase in stock prices, and the direct transfer of valuable knowledge. Greenfield investments, however, often involve an increase in the number of competitors with no direct transfer of knowledge or information. Thus, greenfield investments are more disruptive to the local market, posing a greater threat to domestic incumbent producers than cross-border M&As.

By analyzing the FDI Restrictiveness Index of 11 industries in 36 OECD countries in the years 2003, 2006, and 2010-2019, I found evidence for both patterns. In order to account for the endogeneity inherent in the relationship between the two types of FDI entry modes and FDI restrictiveness level, I utilized R&D expenditures as an instrumental variable and used the two-stage least square method to test my hypotheses. The findings indicate that industries with higher R&D expenditures tend to have a higher percentage of cross-border M&As and a lower share of greenfield investment. Using the fitted values obtained from the first regression, I tested the effect of the share of each type of FDI entry mode on the FDI regulatory restrictiveness level. The findings indicate that industries with more cross-border

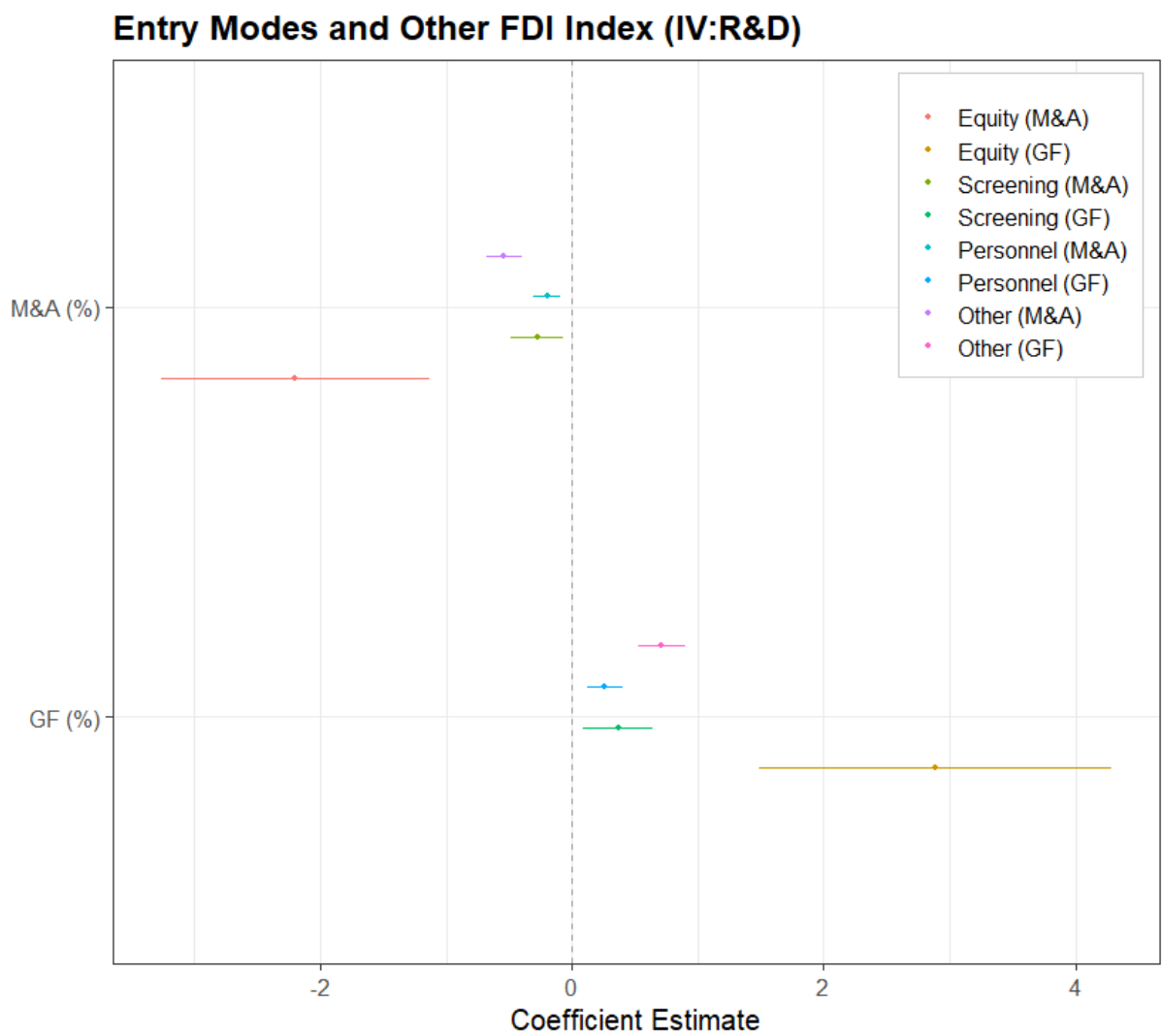


Figure 3: FDI Entry Modes and Other Types of Restrictions

M&As are more likely to have looser FDI restrictions, while industries with more greenfield investments are more likely to have stricter FDI restrictions. These results are consistent even when including important control variables. Therefore, FDI entry modes matter to domestic producers' preferences regarding inward FDI policy.

In future research, I plan on applying different empirical methods, such as system generalized method of moments (GMM), to account for Nickell-bias and endogeneity. Another appropriate empirical model would be a multilevel model using linear mixed effects to account for country-level effects. Moreover, some of the control variables should be replaced with better proxies. For instance, value added factor costs and total employment do not accurately capture the presence of price wars or geographic agglomeration. Finally, there are other contingencies that may affect the way domestic firms perceive inward cross-border M&As and greenfield investment. For instance, the way domestic firms view inward cross-border M&A and greenfield investment may depend on whether they perceive that an M&A transaction or a greenfield project will lead to a removal of tacit or explicit collusion by industry incumbents. In another case, domestic firms' perception of cross-border M&As and greenfield investment could depend on whether the foreign entrant is expected to be investing in market expansion or competing for existing customers. Domestic firms' perceptions of cross-border M&As and greenfield investment could also depend on whether the foreign entrant is expected to follow a low cost or differentiation strategy. Therefore, further research on domestic firms' preferences regarding inward FDI policies on the different types of FDI should carefully take these contingencies into consideration.

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7 Appendix

7.1 Top 10 Industries for Each Type of FDI

The following two tables display the top 10 industries with most greenfield projects and cross-border M&As in OECD countries from 2003 to 2019.¹² Industries with most global greenfield projects and that of cross-border M&As transactions are different. While greenfield projects are most frequent in engineering, transport equipment manufacturing, and retail, cross-border M&A deals are most frequent in agriculture mining and quarrying, and food and other manufacturing industries. The only industries that are both commonly frequent in both greenfield investments and M&As are electric, electronics and other instruments manufacturing, real estate investment, and metals, machinery, and other minerals manufacturing industries.

Table 3: Top 10 Industries in Greenfield Projects (OECD)2003-2019

Top 10 Industries in Greenfield Projects (OECD)2003-2019	
Industry	No. of Projects (% of Total)
Engineering	26,160 (15.1%)
Transport Equipment Manufacturing	12,452 (7.2%)
Retail	11,296 (6.5%)
Banking	10,274 (6.0%)
Electric, Electronics and Other Instruments	8,125 (4.9%)
Real Estate Investment	6,271 (3.6%)
Other Media	5,778 (3.3%)
Hotels and Restaurants	5,593 (3.2%)
Food and Other Manufacturing	5,411 (3.1%)
Metals, Machinery, and Other Minerals Manufacturing	4,433 (2.6%)

7.2 Data Description for FDI Entry Modes

1. OECD Countries (36): Australia, Austria, Belgium, Canada, Switzerland, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Republic of Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, Norway, New Zealand, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Turkey, the United Kingdom, and the United States.
2. Industries (28): Agriculture, Forestry, Fisheries, Mining and Quarrying, Food and other manufacturing, Oil and Chemicals manufacturing, Metals and non-metals manufacturing, Transportation Equipment, Electronics and Machinery, Construction, Elec-

¹²Number of greenfield projects are gathered from *fDi Market* database. For consistent categorization of industries, I re-categorized the industries by referring to the information on subsectors and industry activities. Industries are then matched to the OECD FDI Restrictiveness Index data. Total number of M&A deals are gathered from *Thomson SDC Platinum* database. For SDC data, industries are re-categorized based on the four-digit Standard Industrial Classification (SIC) code.

Table 4: Top 10 Industries in Cross-border M&A Deals (OECD) 2003-2019

Top 10 Industries in Cross-border M&A Deals (OECD) 2003-2019	
Industry	No. of Deals (% of Total)
Agriculture	27,789 (20.4%)
Mining and Quarrying	10,304 (7.6%)
Food and Other	9,652 (7.0%)
Metals, machinery and other minerals	8,844 (6.5%)
Forestry	8,789 (6.5%)
Electric, Electronics and other instruments	8,619 (6.3%)
Real Estate Investment	8,437 (6.2%)
Oil ref. and Chemicals	8,395 (6.2%)
Other finance	6,582 (4.8%)
Wholesale	5,847 (4.3%)

tricity, Wholesale, Retail, Hotels and Restaurants, Air transportation, Maritime transportation, Surface transportation, Telecommunications, Radio and TV broadcasting, Other Media, Banking, Insurance, Other Financial Services, Accounting and Audit services, Architectural services, Legal services, Engineering services, and Real Estate Investment

3. Summary Statistics

Table 5: Summary Statistics - FDI Entry Modes

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Year	14,364	2,012.520	5.792	1,997	2,010	2,017	2,019
FDI Index	14,364	0.123	0.196	0.000	0.000	0.167	1.000
GF Total	14,364	10.016	54.430	0	0	5	1,738
M&A Total	14,364	37.969	157.085	0	1	22	5,283
R&D	5,717	1,671.113	7,946.219	0.000	3.601	383.859	114,468.400
lag.R&D	5,126	1,642.152	7,813.901	0.000	3.557	378.377	114,468.400
Share of GF	14,364	0.180	0.276	0	0	0.3	1
Share of M&A	14,364	0.616	0.407	0	0.1	1	1
OECD	14,364	0.583	0.493	0	0	1	1
EMPN	2,482	393,548.200	737,125.400	99.000	32,040.250	359,944.800	6,632,960.000
VAFC	1,152	92,373.500	281,395.400	231.600	4,255.350	83,244.070	4,001,530.000
CFCC	4,412	647,166.200	3,667,346.000	2.700	402.828	15,174.500	70,555,485.000
LABR	5,015	1,155,439.000	5,971,376.000	13.900	1,073.466	53,057.500	84,691,500.000
OTXS	4,850	102,248.800	818,676.900	-6,067,552.000	-3.000	1,507.850	15,932,043.000

7.3 Using the Sum of Values of FDI Projects/Deals

Table 6: Total Value of FDI and FDI Restrictiveness

	<i>Dependent variable: FDI Restrictiveness</i>			
	Reduced Form		2SLS	
	(1)	(2)	(3)	(4)
Share of Greenfield	0.003 (0.004)			
Share of M&A		-0.006* (0.003)		
Share of Greenfield'			0.422*** (0.078)	
Share of M&A'				-0.545*** (0.100)
Observations	13,950	13,950	4,866	4,866
R ²	0.406	0.406	0.461	0.461
Adjusted R ²	0.402	0.402	0.454	0.454
Residual Std. Error	0.138 (df = 13872)	0.138 (df = 13872)	0.089 (df = 4805)	0.089 (df = 4805)
<i>Note:</i>			*p<0.1; **p<0.05; ***p<0.01	

Table 7: Total Value of FDI and FDI Restrictiveness (with Controls)

	<i>Dependent variable: FDI Restrictiveness</i>			
	Reduced Form		2SLS	
	(1)	(2)	(3)	(4)
Share of Greenfield		0.018*** (0.005)		
Share of M&A	0.011** (0.005)			
Share of Greenfield'				0.333*** (0.081)
Share of M&A'			-0.406*** (0.099)	
log.LABR	0.062*** (0.008)	0.062*** (0.008)	0.001 (0.008)	0.001 (0.008)
log.EMPEN	-0.008 (0.007)	-0.008 (0.007)	0.014** (0.006)	0.014** (0.006)
log.VAFC	-0.043*** (0.007)	-0.043*** (0.007)	-0.021*** (0.007)	-0.021*** (0.007)
log.CFCC	-0.009* (0.005)	-0.007 (0.005)	0.008* (0.005)	0.008* (0.005)
OTXS	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
Observations	4,350	4,350	3,385	3,385
R ²	0.361	0.362	0.399	0.399
Adjusted R ²	0.352	0.354	0.389	0.389
Residual Std. Error	0.098 (df = 4292)	0.098 (df = 4292)	0.080 (df = 3329)	0.080 (df = 3329)

Note:

*p<0.1; **p<0.05; ***p<0.01

7.4 Different Types of FDI Restrictiveness

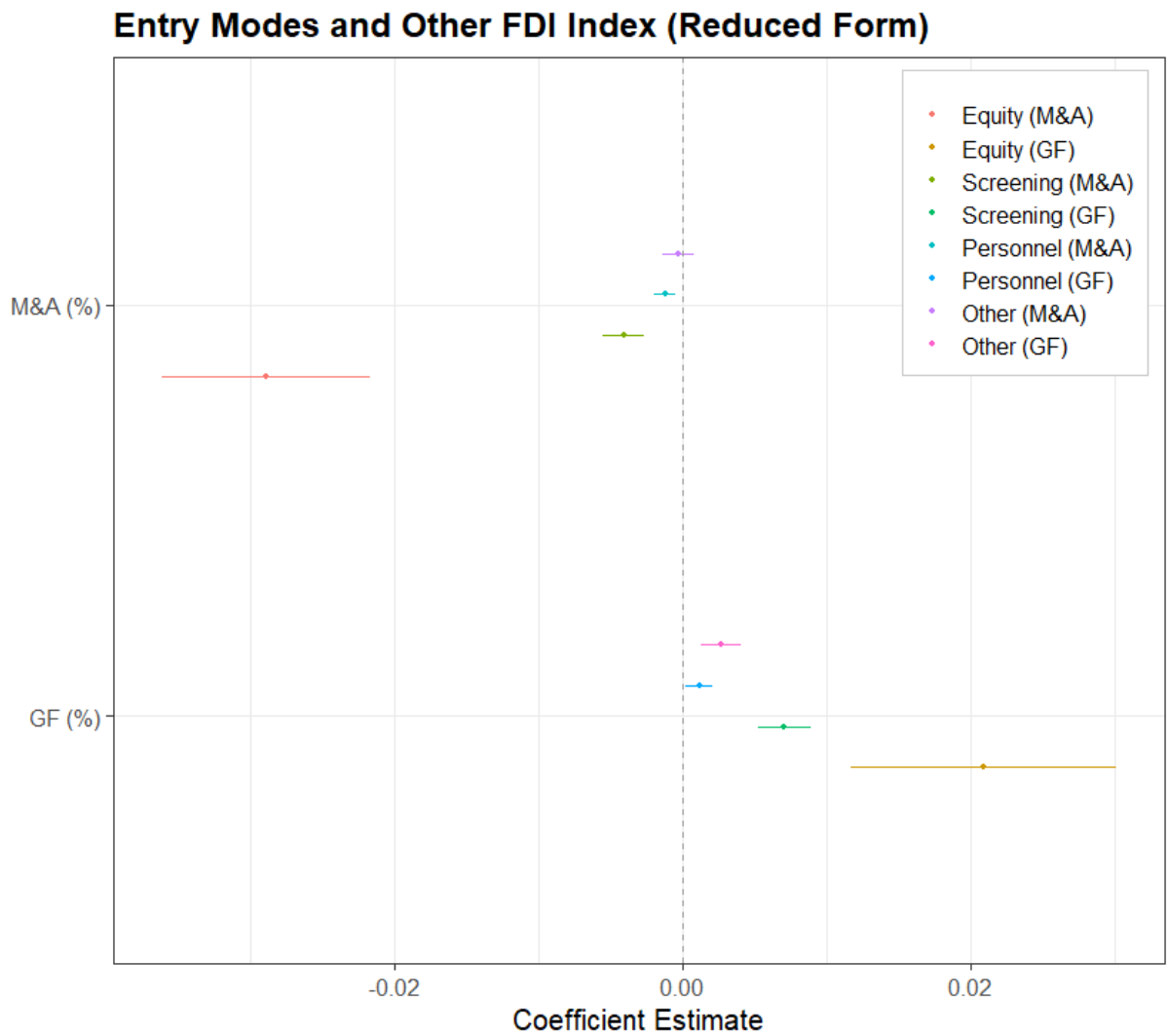


Figure 4: FDI Entry Modes and Other Types of Restrictions