FDI Policy and Firm Performance:

Evidence From India

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Abstract

We analyze the effects of acquisitions on firms' performance in the presence of FDI restrictions in India. First, the "cherry-picking" is amplified in restricted to FDI sectors. Second, when controlling for selection, the direct effect of the acquisition on the target firm's performance does not differ with FDI policy as it is restrained by restrictions. Third, the horizontal and vertical spillovers differ between restricted and unrestricted sectors. FDI results in negative horizontal spillovers to domestic firms in restricted sectors.

Keywords: Foreign Direct Investment, India, FDI Regulation, Mergers and Acquisitions, Spillovers

JEL Classification: F14, F13, F23, L44

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I. Introduction

There is a broad consensus in the literature and among policymakers that inward foreign direct investment (FDI) is an effective means to transfer technology and managerial practices across the border, ease financial constraints on local firms, favor their access to foreign markets, expand workers' skill set, and, at a more aggregate level, improve the balance of payments of the recipient country. For these reasons, FDI occupies an important role in the policy agenda, especially, in emerging markets.[1] In particular, several emerging economies adopt a proactive approach towards FDI inflows and try to balance two forces. On the one hand, by using taxation and promotion policies (e.g., the establishment of special economic zones), they aim to attract large capital inflows, especially those envisaging technology transfer and knowledge sharing. On the other hand, they safeguard the national interest in the form of national security, public order, protection of local firms from foreign competition. As a result, restrictions to inward FDI occur, at least in some sectors. Limitations typically consist of preventing foreign investors from accessing, capping the shares of equity they can hold, screening investment projects, or imposing accessory obligations. The extent and scope of such restrictions vary greatly across countries.[2] Finally, the ongoing COVID-19 pandemic may affect the stance towards FDI by inducing governments to tighten restrictions to prevent foreign investors from acquiring undervalued or strategic domestic assets.[3]

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[1] According to World Bank Group (2017), 40% of global FDI flows accrued to developing countries in 2016. For most of those countries, FDI has become the first source of external funding overtaking official development assistance.

[2] For a survey, see Mistura and Roulet (2019).

[3] Cakmakli, Demiralp, Kalemli-Ozcan, Yesiltas, and Yildirim (2020) note also that the pandemic may exert further pressure on emerging markets as they are less resilient than advanced economies.

In this paper, we analyze the role of FDI regulations on foreign firms' entry and the evolution of domestic target firms in India. Our analysis consists of two main building blocks. First, we explore the impact of mergers and acquisitions (M&As) on the financial structure and performance of target firms, focusing on how FDI policy interacts with it. Then, we consider how spillovers to non-acquired firms through horizontal and vertical linkages may be affected by the presence of restrictions to foreign capital inductions.

We tackle these questions by combining data on domestic and cross-border merger and acquisitions) involving Indian firms, and a novel hand-collected dataset on FDI policy restrictions in India spanning the period 2008–2019.[4]

The complication of assessing the effects of M&As is that potential target companies undergo a selection process in which the acquirer chooses the best targets among the available ones ("cherry-picking") by foreign acquirers. Therefore, as the choice of a target for M&A is likely to be not random, we deal with it by combining a propensity score matching (PSM) with a difference-in-differences (DiD) estimator under the assumption that the mechanism regulating this choice is based on domestic firm's observable and time-constant unobservable features. Moreover, as the evolution of productivity may also reflect the occurrence of an M&A resulting from a broadly defined technology transfer, we correct for the potential selection problem by adapting the framework proposed by Olley and Pakes (1996) and directly embedding the model of target selection within our productivity estimation.

We find that restrictions affect the selection of targets. In particular, the presence of limitations in the target industry amplifies a positive selection. While we find that M&As have a weakly

[4]UNCTAD (2019) reports that the average share of (net) sales associated with M&As over the total FDI received by India in the period 2016–2018 is almost 51%.

positive effect on the performance and financial structure of a target firm, we generally do not find significant coefficients for restrictions. On the one hand, restrictions influence selection and, therefore, one would expect acquired targets in restricted sectors to perform better; on the other hand, the restrictions *per se* may make transferring assets from the parent to the subsidiary harder. Our results suggest that the two effects offset each other.

We find that spillovers associated with horizontal and vertical linkages differ between restricted and unrestricted sectors. In the manufacturing sector, horizontal spillovers result in a reduction of assets for domestic firms operating in regulated sectors. At the same time, the revenues of those firms increase suggesting that FDI indirectly affects competition. Therefore, our results provide some rationale for the presence of FDI restrictions in manufacturing sectors. Moreover, domestic firms increase productivity and asset following the exposition to positive spillovers and thanks to the presence of backward linkages.

Our paper aims to contribute to the debate on the effects and desirability of FDI restrictions following the reforms of FDI policy and the introduction of FDI screening mechanisms occurring both in emerging markets (China and Russia) and advanced economies (see, for example, the recent reform of the Committee on Foreign Investment in the US[5] or the approval of an FDI screening framework in the EU.[6]

The rest of the paper goes as follows. The next section discusses the institutional background and the regulation of FDI in India. Section III describes the data. Section IV discusses in detail our empirical strategy. We present the results of estimation in Section V. Section VI concludes.

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[5]https://home.treasury.gov/policy-issues/international/the-committee-on-foreign-investment-in-the-united-states-cfius.

[6]https://trade.ec.europa.eu/doclib/press/index.cfm?id=2187.

A. *Related Literature*

The analysis of FDI policy has some elements in common with the study of industrial policy. In particular, when FDI interests large and productive firms, it is likely to change the overall level of competition and induce marginal firms to exit the market. However, the problems of choosing the optimal FDI and industrial policies are also somewhat different. In particular, as far as it concerns FDI, one also needs to account for the presence of geography; trade barriers, national interests, and potentially harmful international technology transfer and spillovers may play a role. In a two-country trade model with oligopolistic competition, Breinlich, Nocke, and Schutz (2019) characterize the conditions under which the merger policy, aiming to maximize the domestic consumer surplus, is too tough, or too lenient, from the perspective of the foreign country.

Moreover, different modes of FDI can result in different levels of competition, which can rationalize the presence of FDI restrictions. For example, joint ventures and greenfield investments produce a new plant in a foreign country, possibly resulting in tighter competition. Conversely, cross-border M&As may reduce competition because, instead of exporting, the foreign firm may use the domestic entity to serve the local market. Horn and Persson (2001), Qiu and Zhou (2006), Neary (2007), Raff, Ryan, and Stähler (2009) emphasize the differences between M&A and greenfield investment and joint ventures in terms of changes in the market structure. In line with this, Mattoo, Olarreaga, and Saggi (2004) and Qiu and Wang (2011) find a rationale for FDI restrictions and conditions under which a strict regulation increases social welfare. In particular, they demonstrate how restricting greenfield FDI is optimal if transferring technology has a large cost, whereas limiting M&A is optimal whenever this increases the degree of concentration in the market. According to Karabay (2010), the host country can prefer joint ventures over cross-border

M&A because the latter does not compel multinational enterprises (MNEs) to share firm-specific private information with their foreign counterparts in contrast to the former. Some authors discuss how restrictions to FDI can be harmful to the host country. For instance, Norback and Persson (2007) argue that a discriminatory policy that allows greenfield investment but not cross-border M&A can lead to inefficiencies. In particular, when domestic capital is a scant resource, domestic firms may be forced out by the entrance of a more efficient greenfield investor; if M&A is not viable, this can determine the loss of resources valuable to a potential acquirer.[7]

Besides setting limitations and conditions on entry, FDI policies may be designed to attract foreign investors and capital and technology flows. The aggregate level of technological development in a country consists of locally produced technology stock and internationally obtained technologies which can directly (through FDI) or indirectly (spillovers) affect the performance of local firms (Keller, 2010). Haskel, Pereira, and Slaughter (2007) derive the benefits from FDI spillovers to a host country associated with extra domestic output and compare them with the cost of some subsidization programs in the UK and US. Chor (2009) highlights how subsidization may favor the selection of the most productive foreign firms into the domestic market and the increase in the welfare of the host country induced by the trade cost savings.

Multinational enterprises (MNEs) tend to transfer knowledge and technologies to their foreign subsidiaries in the most efficient way (Keller and Yeaple, 2013). Arnold and Javorcik (2009) find evidence that foreign ownership leads to a substantial increase in the target's productivity. Moreover, Chen (2011) shows that the acquirer's country of origin matters: the productivity gain of a

[7]Moreover, the fact that a cross-border deal takes place only when it creates value for the parties should signal that a foreign investor aims to efficient use of the inputs of the domestic target. Conversely, deals that are deemed unprofitable will not take place independently from FDI restrictions.

target firm is larger when the acquirer is headquartered in an advanced economy rather than when it is acquired by a domestic firm or an MNE from emerging markets. Besides, Javorcik and Spatareanu (2011) demonstrate that the distance between headquarters and subsidiaries, together with the presence of a trade agreement between origin and destination countries, influences the magnitude of vertical spillovers through sectoral linkages. Consistently, we consider the differential effects of foreign and domestic acquisitions on the target's performance. The benefits of cross-border investments do not accrue only to targets but also to other firms in the industry. Related to this, Javorcik (2004) documents the existence of productivity spillovers through backward and forward linkages. The spillovers are also present in emerging markets, as reported by Blalock and Gertler (2008).

The performance of a domestic firm is relevant both to the selection process and to determine the effects of the cross-border deal on the subsidiary. For example, Guadalupe, Kuzmina, and Thomas (2012) find that foreign firms choose better targets ("cherry-picking") and that acquired subsidiaries are more likely to innovate due to the expansion of markets through their parents. Moreover, liberalization of FDI can open access to foreign capital and reduce capital misallocation, especially in the less developed local banking sectors (Bau and Matray, 2020).

Industrial, trade, and investment policy in India have been analyzed in several studies. Aghion, Burgess, Redding, and Zilibotti (2005) find that the delicensing reforms in 1985 and 1991 increased inequality of performance at the industry level across states. Aghion, Burgess, Redding, and Zilibotti (2008) show that the effects of delicensing may depend on the labor market conditions at the state level. Topalova and Khandelwal (2011) exploit the externally imposed trade reform of 1991 to pin down the link between firm productivity and tariffs. In particular, trade liberalization enhances a firm's performance through improved access to cheaper inputs and exposing firms to tougher external competition. Goldberg, Khandelwal, Pavcnik, and Topalova (2010) within-firm

reallocation following the trade liberalization in the country occurred in the 1990s.

II. Institutional Background of FDI Regulation in India

India represents a suitable setting for the empirical analysis of the role of FDI restrictions in emerging markets. First, the Indian government has explicitly stated its FDI policy and kept track of its evolution over time.[8] Despite liberalization of the FDI policy, India maintains several listed restrictions to foreign investors' activities ranging from equity cap to *ex ante* screening mechanisms imposing prior government approval. Second, India is one of the largest economies among the emerging market countries, and it has become an increasingly attractive destination for foreign investors.

As far as it concerns the liberalization, the pace of market-oriented reforms accelerated in India during the 1990s also induced by the so-called Washington Consensus (Sahoo, Nataraj, and Dash, 2014). Additionally, starting from 1991, the Indian government attempted to restore the equilibrium in the balance of payments and the liberalization process took off. First, the import licensing system was abolished for capital and intermediate goods (freely importable starting from 1993). Second, an exchange rate depreciation took place. These reforms came along with the reduction of quotas and non-tariff barriers. Furthermore, since 2000, activities carried out by foreign investors did not require approval except for a negative list with some sectors closed to foreign ownership (see Table 11). The status quo can be summarized using the OECD FDI Regulatory Restrictiveness Index. The Index measures the degree of FDI-related policy restrictiveness, and it ranges from 0 (no restriction) to 1 (highest value) and comprises (i) foreign equity restrictions, (ii) screening and

[8]The interested reader can find additional details about the evolution of the FDI policy in Appendix B.

prior approval requirements, (iii) rules for key personnel, and (iv) other restrictions. Among the 70 countries for which the OECD provides the index, India is one of the most restricted ones (the value of the index equals 0.21, OECD average 0.06). Moreover, equity restrictions constitute the largest component (0.16, 76% of the total value of the index).[9]

Along with the equity caps, the FDI policy prescribes screening and prior approval of investment proposals under some circumstances. In particular, the automatic route may apply so that the investors are only requested to notify the Reserve Bank of India (RBI) of the investment project. For sectors or investments exceeding prescribed limits, the automatic route does not apply. Hence, foreign firms have to seek government approval before completing an investment project. The sectors, the share of equity targeted by the foreign investor, and the amount of foreign capital involved in the proposal itself determine which route is appropriate.[10]

The main increase of FDI inflows occurs during the 1990s following the aforementioned process of liberalization. In 2019, India accounted for about 3.5% of world inward FDI flows, corresponding approximately to 50 billion US dollars whereas the FDI stock in India reached almost 400 billion US dollars, corresponding to more than 1% of the world total. The most important origins of FDI are Mauritius and Singapore. Other relevant sources of FDI are the USA, the Netherlands, Japan, Germany, and the United Kingdom.[11] Furthermore, the volume of investment varies greatly

[9]For additional information on the index, see Kalinova, Palerm, and Thomsen (2010).

[10]Clearly, FDI and cross-border M&As are not perfectly aligned. In particular, FDI includes also other types of investment whereas not every M&As involving a foreign counterpart is recorded as FDI. However, they are in a close relationship as discussed in Head and Ries (2008).

[11]See Table 12 in the Appendix for more details.

across sectors; most investments flow to communication services and manufacturing.[12]

III. Data

Data used in this paper come from three main sources. First, we obtain balance sheet data (e.g., revenues, total assets, cost of employees), main economic activity, and other characteristics of Indian firms from the Bureau van Dijk (BvD) Orbis database.[13] Second, we extract deal-specific information and additional balance sheet data from BvD Zephyr.[14] Finally, to construct a dataset on FDI restrictions, we collect data on restrictions from the FDI Policy Circulars uploaded on the website[15] of the Department for Promotion of Industry and Internal Trade (DIPP), a central government department under the Ministry of Commerce and Industry. For the years before 2010, we refer to the Master Circulars available on the RBI website[16].

As we want to define restricted sectors, we map manually the verbal text contained in the circulars issued by the RBIor the DIPP to sector codes for the period 2008 – 2019. In particular, the mapping mostly relies on the document issued by the DIPP (2016) that associates the de-

[12]See Table 13 in the Appendix for more details.

[13]To construct a representative dataset, we refer to the applicable indications of Kalemli-Ozcan, Sorensen, Villegas-Sanchez, Volosovych, and Yesiltas (2015).

[14]BvD Zephyr collects detailed reports on several types of deals (e.g., mergers and acquisitions, joint ventures, IPOs). Available data includes deal-specific information, e.g., the date, status, identity of the acquirers and targets (and the group they belong to), the acquired, initial, and final stakes. Moreover, Zephyr lists limited pre- and post-deal financials of targets and acquirers that we use to integrate when balance sheet data missing in BvD Orbis. The BvD identification number allows us to track a company across the two datasets.

[15]dipp.gov.in.

[16]rbi.org.in.

scribed activity to a 5-digits National Industrial Classification code (NIC-2008).[17] Especially for old circulars, we perform autonomously the matching as the mapping is not sufficient since some restrictions may have been dropped. We regard a sector as restricted if there is an equity cap associated with foreign ownership (i.e. whenever the automatic route cap is lower than 100%). Since the BvD data report sector information only at the 4-digit level, whereas restrictions are mostly at the 5-digit level, we have to aggregate the information. In our main specification, we take a conservative approach and consider a 4-digit sector to be restricted if at least one of the associated 5-digit subsectors is restricted.

As far as it concerns mergers and acquisitions, we consider a deal if the resulting ownership stake changes from below to above 10%.[18] When information on the stakes is not available, we still consider deals labeled by the data provider as acquisition.[19] We attribute the year of the deal

[17]NIC-2008 is the national industrial classification in place in India based on the International Standard Industrial Classification (ISIC) as revised in 2008 (Revision-4). For further information, refer to mospi.nic.in/sites/default/files/main_menu/national_industrial_classification/nic_2008_17apr09.pdf.

[18]When the BvD identifier is missing, we replace it with the acquirer's name to track and recover the evolution of ownership over time. Accordingly, we correct for a potential discrepancy in company names across different deals.

[19]Given the BvD Zephyr documentation, "acquisition" and "minority stake" should be interpreted as an increase from a zero initial stake. Therefore, we include in our sample also deals coded as "acquisition" or "minority stake" whenever the information on the initial stake is missing and acquired stake is larger than 50% and 10%, respectively. The last requirement is to grant the fact that the deals are coded consistently and that the 10% is achieved. Moreover, we consider all other deals that involve an acquired stake exceeding 90%, as this ensures that an initial stake is lower than 10%.

consistently with the closing date of the related financial report.[20] If two parties engage in multiple deals within a year, we aggregate the data about those deals. When deals comprise more than one target, we associate each distinct target to the indicated acquirer group. Additionally, we consider the global ultimate owner of an acquirer when the deal involves special vehicle firms belonging to the same global group.

We introduce additional requirements to the data on deals. First, to avoid overlapping effects from different acquisitions, we exclude targets that are involved in more than one deal with several groups of acquirers within three years. Second, for firms that are targeted by two acquisitions, we keep in our sample only the first one provided that the firm's financials before the deal itself are not missing. Finally, we drop firms that are present in BvD Zephyr and receive capital inflows that cannot be classified as a sizeable investment (for example, deals in which the final stake owned by the investor does not exceed the 10% threshold).

After dropping firms without (meaningful) financial information,[21] the final sample is an unbalanced panel comprising $55,346$ manufacturing and services firms in the period 2008 – 2019 (see Table 1 for summary statistics). Within this sample, we observe 434 deals with 137 involving at least one foreign party and 17.4% of firms operating in a restricted rector.

[20] In other words, to assign the year, we compare the deal date with the closing dates of the available accounts for the given target. If no financial information is available, we consider a deal to be completed in year x when its completion date occurs between $4/1/x$ and $3/31/x+1$. This choice is motivated by the fact that the fiscal year closes each year on March 31.

[21] For example firms with negative sales.

IV. Empirical Strategy

Our empirical analysis consists of two main parts. First, we investigate the direct effect of domestic and foreign acquisitions on the performance of Indian target firms and, in particular, we focus our attention on productivity. Second, we assess the presence of potential horizontal and vertical spillovers resulting from foreign acquisitions. In doing so, we allow domestic and foreign acquisitions to have a differential effect on target firms' performance both at the aggregate level and in restricted sectors.

To carry out the described econometric analysis, we have to tackle selection bias. In particular, economic evidence suggests that the selection of targets is not exogenous (e.g., Guadalupe et al., 2012). Different mechanisms can be in order. On the one hand, acquirers can prefer to invest in a firm well-performing in the domestic market to absorb its business practices, customer base, or technologies. On the other hand, acquirers can also decide to focus their attention on distressed companies, possibly available at a discounted price, especially if they plan to transfer their technology and business practices, exert a large control, or simply access the local market.

Our empirical strategy stands on three main components that allow us to address the selection issue and obtain consistent productivity estimates. We base the first part of the estimation on the insights of Olley and Pakes (1996) to proxy for unobserved productivity and correct for the selection bias. However, when modeling the process of M&As, we take a step further as an additional complication emerges. In fact, the firm's characteristics simultaneously affect both the likelihood of a takeover and productivity evolution. To account for that, we embed the takeover model within the productivity estimation by modeling the probability of being acquired as a function of pre-acquisition observable characteristics. Later, in a PSM procedure, the estimated probabilities of

acquisition are used to construct a pseudo-control group for the acquired firms (treated group); for each acquired firm, we find the closest non-target firm in terms of the observed characteristics. Third, we use a difference-in-differences (DiD) estimator to assess the direct effect of the acquisition on the target's performance and exclude firm-specific effects.[22] The latent assumption is that the difference in post-treatment performance is driven by the M&A once we condition on observables.[23]

A. Productivity Estimation

Static inputs We assume that each firm i produces a single product variety and has a Cobb-Douglas production function described by

$$Q_{it} = L_{it}^{\alpha_{l,s}} K_{it}^{\alpha_{k,s}} \exp(\omega_{it} + u_{it}), \tag{1}$$

where t denotes the time, s the sector, Q_{it} the quantity produced at time t using labor L_{it} and capital K_{it}, $\alpha_{l,s}$ and $\alpha_{k,s}$ labor and capital shares. Additionally, the level of output is determined by a firm-specific productivity shock ω_{it} and an i.i.d. error term u_{it} that reflects measurement errors and unexpected production shocks.

We also assume that the demand for firm i's product, q_{it}^d, is the outcome of the maximization of a CES utility function

$$q_{it}^d = \Phi_{t,s}^d (p_{it})^{-\sigma_s}, \tag{2}$$

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[22] DiD estimator paired with PSM has been widely implemented within several contexts (e.g., Arnold and Javorcik, 2009; Bandick, Görg, and Karpaty, 2014; Borin and Mancini, 2016; Stiebale and Wößner, 2020).

[23] As noted by Bandick et al. (2014), the combined approach using PSM and DiD can also account for the future potential of the firm as long as the observables included in the matching stage capture it.

where p_{it} is the price of firm i's product, $\Phi^d_{t,s}$ is the industry s demand shifter at time t, and σ_s is the constant elasticity of substitution between varieties in sector s.

Given the assumed production and demand structures, firm i's profit-maximization results in the following revenue, R_{it},

$$\begin{aligned} r_{it} &= \frac{\sigma_s - 1}{\sigma_s} q_{it} - \frac{1}{\sigma_s} \ln(\Phi^d_{t,s}) \\ &= \tilde{\alpha}_{l,s} l_{it} + \tilde{\alpha}_{k,s} k_{it} + \tilde{\omega}_{it} + \sum_t \alpha_{t,s} D_{t,s} + \tilde{u}_{it}, \end{aligned} \tag{3}$$

where lower-case letters denote the logarithms of the corresponding variables, $D_{t,s}$ controls for time-sector demand shifters, and the tilde variables represent the rescaling of productivity, capital and labor shares by $\frac{\sigma_s - 1}{\sigma_s}$.

Using the insights of Olley and Pakes (1996), we represent the investment policy function of firm i as $i_{it} = \iota_s(k_{it}, \omega_{it}; \Xi_{it})$, where Ξ_{it} equals one if the firm has been ever acquired before or at time t. By introducing acquisition status as a control, we allow for differences in investment decisions between acquired and non-acquired firms (for example, capital induction associated with acquisition may slack financial constraints). Assuming that investment is a monotone function of productivity, we can represent productivity as an inverse function of investment, i.e.

$$\omega_{it} = \iota_s^{-1}(k_{it}, \omega_{it}; \Xi_{it}) = h_s(k_{it}, \omega_{it}; \Xi_{it}). \tag{4}$$

This inversion allows us to control for unobserved firm-specific productivity shock in the equation (3) and, later, in the target selection model. Given the proxy for productivity, we rewrite equation (3) as

$$r_{it} = \tilde{\alpha}_{l,s} l_{it} + \phi_s(k_{it}, \omega_{it}; \Xi_{it}) + \sum_t D_{t,s} + \tilde{\zeta}_{it}, \tag{5}$$

where $\phi_s(k_{it}, \omega_{it}; \Xi_{it}) = \tilde{\alpha}_{k,s} k_{it} + \frac{\sigma_s - 1}{\sigma_s} h_s(k_{it}, \omega_{it}; \Xi_{it})$ and $\tilde{\zeta}_{it}$ is the error term.[24] As a robustness, we also consider two alternative specifications for the first stage of the production function estimation.[25] First, we implement Ackerberg, Caves, and Frazer (2015) correction to assess the endogeneity of labor choice and estimate labor coefficients in the second stage. Second, we check the robustness of the estimates excluding labor from the specification in line with Aw, Roberts, and Xu (2011).[26]

Selection process and productivity evolution Next, we discuss the selection process for targets. Productivity follows a Markov process that depends on firm's acquisition status

$$\omega_{it} = g_s(\omega_{it-1}, \chi_{it}) + \xi_{it}, \tag{6}$$

where χ_{it} is an indicator function which is equal to one if firm i is acquired in period t and zero otherwise,[27] and ξ_{it} is the shock to productivity which is not anticipated by the firm in $t-1$ and, thus, is not correlated with firm's past values. The specification in equation (6) suggests that, when involved in a deal, the acquired target can receive a shock to its productivity. In other words, if two firms share similar characteristics and one gets acquired, one may expect that their performances start to decouple in the years following the acquisition.

[24] We approximate $\phi_s(\cdot)$ by a third-degree polynomial of its arguments and estimate equation (5) with ordinary least squares separately at the 2-digit NIC level.

[25] Results are similar to the baseline specification and are available upon request.

[26] In the data, as the information on number of employees is missing, we use cost of employees in a similar fashion to Topalova and Khandelwal (2011) who use salary and wages in their production function estimation.

[27] Ξ_{it} and χ_{it} do not need to be equal. In particular, χ_{it} equals one if and only if company i is acquired at time t. Instead, Ξ_{it} is equal to 1 if and only if the company has ever been acquired at time t or before. For example, if firm i is acquired at time t and not acquired at time $t+1$, we will have $\chi_{it} = 1$, $\chi_{it+1} = 0$, $\Xi_{it} = \Xi_{it+1} = 1$.

To model the process of selection of targets, we use the following specification

$$\chi_{it}^{*} = \beta_{0,s} + \beta_{Xa,s} X_{ait-1} + \beta_{k,s} k_{it-1} + \beta_{\omega,s} \omega_{it-1} + \epsilon_{it}, \tag{7}$$

where X_{ait-1} includes controls for past period firm i's observable characteristics that are relevant for the target selection process,[28] ϵ_{it} is an error term, $(\beta_{0,s}, \beta_{Xa,s}, \beta_{k,s}, \beta_{\omega,s})$ represent respectively the constant, coefficients associated to the controls, capital, and productivity, and

$$\chi_{it} = \begin{cases} 1 & \text{if } \chi_{it}^{*} \geq 0 \\ 0 & \text{otherwise.} \end{cases} \tag{8}$$

Since the productivity of a firm is not observed, we again make use of the investment decision inversion and, thus, substitute equation (4) into (7) to get

$$\chi_{it}^{*} = \beta_{0,s} + \beta_{Xa,s} X_{ait-1} + \varphi_{s}(k_{it-1}, i_{it-1}) + \epsilon_{it}, \tag{9}$$

where $\varphi_{s}(k_{it-1}, i_{it-1}) = \beta_{k,s} k_{it-1} + h_{s}(k_{it-1}, i_{it-1})$ captures the joint effect of past productivity and capital on the probability of being acquired in period t.[29]. Under the assumption that $\epsilon_{it} \sim \mathcal{N}(0,1)$, we can estimate the model using a probit regression using the sample of firms before an acquisition, if any.[30]

Equation (9) represents the crux of our matching procedure. By using a one-to-one nearest neighbor matching without replacement, we construct a dataset consisting of the matched pairs

[28]The set of controls includes revenue and its growth, growth of fixed assets, cost of employees, age, and solvency ratio. Moreover, we allow for difference in selection patterns for restricted and unrestricted sectors.

[29]Note, that here we omit Ξ_{it-1}, as the model is perfectly predicted for $\Xi_{it-1} = 1$

[30]In other words, we consider firms that have never been acquired or firms up to the time of their acquisition. For the subset of acquired firm, the propensity degenerates to 1. Estimation is performed separately for firms operating in services and manufacturing.

of treated and non-treated firms.[31] We restrict the consideration set of potential matches to non-acquired firms operating in the same sector, year, and facing the same FDI policy regulation.[32] This requirement allows us to control for year- and sector-specific shocks that could otherwise result in differences of performances within a matched pair that cannot be attributed to the treatment; in particular, we rule out the possibility that the differences may stem from the variation in FDI regulation.

Dynamic input Estimation of equation (5) provides us with a quantification of the joint effect of productivity and capital on a firm's per-period revenue, $\hat{\phi}_{it}$. We can express productivity as $\omega_{it} = \sigma_s/(1-\sigma_s)(\hat{\phi}_{it} - \alpha_{k,s}k_{it})$. In the last step, we plug the obtained expression of productivity in equation (6) that describes the evolution of productivity.[33] We follow De Loecker, Eeckhout, and Unger (2020) to derive the scaling markup coefficients from an ordinary least squares regression of total variable costs on revenues and capital stock.

B. Difference-in-Differences Estimation

The direct effect of acquisition is obtained with the DiD estimator of the matched sample of acquired and non-acquired firms.[34] To obtain an estimate of γ_s on the matched sample, we run an

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[31] We stick to the choice of one-to-one nearest neighbor matching as the sample of non-acquired firms is populated enough to ensure a good quality of matching. For a discussion on the trade-off regarding different matching strategies, see Caliendo and Kopeinig (2008).

[32] Sectors are defined at the 2-digit NIC code.

[33] We approximate $g_s(\cdot)$ with a third degree polynomial in ω_{it} and $\hat{\chi}_{it}$ and estimate coefficient of interest using the nonlinear least squares for each aggregated to 2-digits NIC code.

[34] Estimation is performed separately for firms operating in services and manufacturing.

ordinary least squares (OLS) regression with the following specification

$$\Delta y_{it+\Delta t} = \alpha_s + \gamma_s \chi_{it} + \nu_{it}, \tag{10}$$

where $\Delta y_{it+\Delta t}$ is the change of the variable of interest from pre-acquisition $t-1$ to $t+\Delta t$.[35] We also distinguish between domestic and foreign deals to test if firms acquired by foreign companies perform better than those acquired by domestic ones.[36]

Finally, our main interest is in assessing the differences in targets performance in restricted and unrestricted sectors

$$\Delta y_{it+\Delta t} = \alpha_s + \gamma_s \chi_{it} + \gamma_s^r restr_{it-1} + \gamma_s^{r\chi} restr_{it-1}\chi_{it} + \nu_{it}, \tag{11}$$

where $restr_{it-1}$ is an indicator that equals 1 if firm i belongs to a restricted sector in period $t-1$ (a year before acquisition).[37] While the endogeneity of FDI policy to industry characteristics in the target sector could be a concern, Ali and Stiebale (2021) support the exogeneity of FDI restrictions in India.

Concerning the regulations, there are two possible offsetting channels worth considering. First, there can exist a further selection mechanism operating through the screening process and restrictions implemented by the Indian government. Increasing the costs of completing a deal can discourage deals that are not profitable enough (Norback and Persson, 2007). Discriminatory policies can result in different magnitudes of growth rates associated with the variables of interest where

[35] In particular, we take $\Delta \in \{0, 1, 2\}$.

[36] It is worth noting that Huang and Tang (2012) point out that foreign investors in India perceive more restrictions than domestic entrepreneurs. Hence, the effects of foreign acquisitions compared to domestic ones may be underestimated because of these hidden costs.

[37] In our final sample, only 2.8% of firms experience a liberalization of respective industry.

the benchmark consists of treated domestic firms operating in restricted sectors. Second, the restrictions in the form of equity caps can limit the amount of control exercisable by the acquirer and, consequently, reduce the performance of the target firm.

C. Vertical and Horizontal FDI Spillovers

We complement our analysis by considering potential vertical and horizontal spillovers of cross-border deals on firms that have never experienced an acquisition. To do so, we construct a relative measure of exposure to FDI at the 2-digit industry level.

In particular, horizontal spillovers are described by the share of sales originated by Indian firms acquired by foreign acquires

$$FDI_{t,s}^{horizontal} = \frac{\sum_{i \in \mathcal{I}_s^f} R_{it,s}}{\sum_{i \in \mathcal{I}_s} R_{it,s}}, \tag{12}$$

where $\mathcal{I}_s^f$ stands for the set of firms in sector s acquired by the foreign counterpart at time t or before, $\mathcal{I}_s$ is the set of all firms operating in sector s in time t. In this exercise, we also include targets that are not suitable for the previous analysis (e.g., firms involved in consecutive deals). Moreover, to avoid confounding effects potentially stemming from domestic and foreign acquisitions, we exclude from the sample domestically acquired companies and those targets for which the information in BvD Zephyr is not sufficient to classify a deal as foreign or domestic.

We follow the leads of Javorcik (2004) to compute the measures of backward and forward vertical spillovers and accommodate her methodology to our data availability. In particular, we

define

$$FDI_{t,s}^{backward} = \sum_{l \neq s} output_{sl} FDI_{t,s}^{horizontal} \tag{13}$$

$$FDI_{t,s}^{forward} = \sum_{l \neq s} input_{sl} FDI_{t,s^{horizontal}}, \tag{14}$$

where $output_{st}$ is the proportion of sector s's output supplied to sector l and $input_{sl}$ is the proportion of sector s's input sourced from sector l.[38] The measures are at the regional level to narrow the spread of FDI spillovers.

For each type of spillovers, we estimate the following specification on the sample of non-targets

$$\Delta y_{it} = \eta_s \Delta FDI_{t,s}^{k} + \eta_{i,s} D_i + \eta_{t,s} D_t + \vartheta_{it}, \tag{15}$$

where $k \in \{horizontal, backward, forward\}$, Δy_{it} is the one-period difference of the variable of interest y at time t, whereas D_i, D_t, and D_{reg} capture firm-, time-, and region-fixed effects, and θ_{it} is the error term. Accordingly, we estimate a similar specification to account for differential effects between restricted and unrestricted sectors

$$\begin{aligned} \Delta y_{it} = \eta_s \Delta FDI_{t,s}^{k} + \eta_s^{r} restr_{it-1} + \eta_s^{rk} restr_{it-1} \Delta FDI_{t,s}^{k} \\ + \eta_{i,s} D_i + \eta_{t,s} D_t + \vartheta_{it}, \end{aligned} \tag{16}$$

where $restr_{it-1}$ is an indicator that equals 1 if firm i belongs to a restricted sector in period $t-1$.

V. Results

The section describes the results of the empirical analysis. First, we discuss the determinants of acquisition. Second, we analyze the effects of acquisitions on firms' performance, also accounting

[38] We use input-output tables from the OECD for India in 2009. Since the earliest deal that is considered in our analysis occurs in 2010 (given the requirements for pre-trends), we select year 2009 to avoid potential endogeneity of sectoral output to FDI explosure.

for policy restrictions and the origin of the investor. Finally, we investigate if the presence of FDI restrictions affects the realization of spillovers in those industries that receive the capital flows and in those that are vertically and horizontally related to the destination sector.

Broadly speaking, we can think of three main channels activated by the FDI restrictions. First, higher barriers to foreign capital inflows increase firms' selection and consequently exclude the least technologically advanced foreign firms and hamper less promising deals. In line with this, the selection of targets in the restricted sector can be amplified, so that the "cherry-picking" is stronger in the protected sector. Thus, evidence of a positive associative matching would suggest that the direct effect from the acquisition would be larger for Indian firms operating in the restricted sectors if restrictions were to be lifted. Second, the presence of restrictions makes it harder to transfer technologies overseas by limiting the amount of control that a foreign investor may exert. Therefore, the magnitudes of these two effects would determine the paths of firms acquired by foreign or domestic acquirers in the restricted sectors. The third effect concerns the size of horizontal and vertical spillovers resulting from FDI, as restrictions reduce the extensive margin of FDI, while the effect for intensive margin is ambiguous.

A. Determinants of Acquisitions

Table 2 reports the results of the estimation of the probit model, which describes the probability of acquisition, whereas Table 3 summarizes the characteristics of targets and non-targets before the acquisition.[39] As the means of all variables we consider are statistically different, there is evidence

[39]Tables 8, 9 and 10 report the results for PSM and balancing test for the variables used as proxies for the joint effect of capital and productivity on acquisition. Given the significantly larger mean capital and investment by target firms prior acquisition, the comparison confirms the "cherry-picking."

of selection on observables justifying the use of PSM.

Despite in both manufacturing and services sectors the coefficients associated with revenues are negative and significant, they cannot be directly identified at this stage of estimation and, thus, should be taken with caution. This is a direct implication of equation (5), which suggests that time $t-1$ revenues are fully determined by the labor and the combination of capital and an unobserved productivity shock. Therefore, while the inclusion of the level of pre-deal revenues improves the matching, the negative sign cannot be interpreted as evidence against the "cherry-pick" hypothesis. Contrarily, looking at the means for treated and untreated firms before the matching, one can see that mean revenues for acquired firms are statistically larger than for control.

The coefficient associated with revenue growth is not significant for the manufacturing sector whereas it is negative and significant for the services sector. One explanation for this finding can be that firms in distress become an attractive target to the acquirer as the latter can obtain a discounted acquisition price or enjoy larger bargaining power during the deal negotiation (Jovanovic and Rousseau, 2002). Moreover, Nocke and Yeaple (2007) show that the acquirer may opt for either the most productive or the least productive firms depending on the degree of overseas transferability of technologies and capabilities.

For the implications of FDI restrictions, our evidence shows that restrictions play a role in the selection and favors the hypothesis of "cherry-picking" for the subsample of acquisitions in restricted sectors. In particular, we observe that the coefficient of the interaction between the dummy for restricted sector and growth rate of capital is positive and significant for both sectors. Moreover, the fast-growing firms are more likely to be acquired in restricted to FDI services sectors. Hence, acquisitions in restricted sectors tend to privilege firms that undergo an expansion of activities.

We also find that the effect of age on the probability of acquisition differs across sectors. In

particular, in the manufacturing sector, age is positively associated with the probability of acquisition whereas, in the services sector, the opposite occurs. This evidence may relate to the fact that younger firms in the services sector may be more innovative with respect to more established counterparts, whereas the opposite may be true for the manufacturing sector.

B. Direct Spillovers for Cross-Border and Domestic Deals

The effects of a cross-border deal can differ from those of a domestic one. For example, cross-border acquisition can provide targets with access to foreign markets and cost-efficient funding. Conversely, targets of domestic deals can perform better thanks to a deeper knowledge of the domestic market and discriminatory practices (Huang and Tang, 2012).

To assess if the effect of a deal depends on the national origin of the investor, we use specification (10) and perform our analysis by parting the acquirers into two groups based on the country of origin (Indian vs. non-Indian).

Table 4 shows the effect of deals in the manufacturing sector on post-merger target's performance distinguishing between cross-border and domestic deals. We observe a positive effect of acquisitions on the productivity of targets after one year. However, when we decompose the effects between foreign and domestic deals, we find that the effects are mostly attributable to domestic deals. Moreover, while the overall effects on productivity vanish after two years, we find that for domestic deals effects are still positive and significant. Hence, this evidence seems to be supportive that foreign ownership experiences some hardship to improve production processes in the target firms.

One and two years after a deal, targets enjoy a significant increase in the level of fixed assets. This would be in line with the fact that acquisition is increasing capital investment to improve the

acquired target's performance (Guadalupe et al., 2012). Also, in this case, we find that the effects are differentiated with respect to the deal origin but only when accounting for the presence of restrictions. However, this time the increase is associated with foreign acquisition not occurring in restricted sectors. Interestingly, though foreign firms increase the capital endowment of the target firm upon acquisition, they do not reap the benefits in terms of productivity.

As far as it concerns the service sectors, we observe that foreign acquisition increases total assets and solvency of the target firm upon acquisition (see Table 5). As far as it concerns total assets, the effect remains also in the period after but vanishes in the second year. The effect on solvency may highlight an improvement in the financial position of the acquired company and a relaxation of its financial constraints. However, this effect on the solvency ratio fades away one year after the acquisition. The relaxation of the financial constraints faced by foreign-owned firms is in line with Harrison and McMillan (2003) who find it in a sample of Ivorian firms.

As far as it concerns the restrictions in services and manufacturing, we observe that the coefficients are generally not significant. As discussed before, restrictions are correlated with the acquisition of better firms. Braguinsky, Ohyama, Okazaki, and Syverson (2015) show that acquired and target firms are often similar in terms of productivity. Hence, if restrictions were to play a role only in the selection of targets, we would expect targets in those industries to be more productive. Hence, the fact that the coefficients of restrictions are not significant hints at the fact that restrictions in place do not only affect the selection of targets but also ex-post target performance. In other words, restrictions may complicate the transfer of assets, broadly defined, from the parent to the subsidiary in line with Brakman, Garretsen, Gerritse, and van Marrewijk (2018), which offsets the selection effect.

C. FDI Spillovers

Horizontal FDI spillovers Table 6 reports results for horizontal FDI spillovers for non-target Indian firms active in the manufacturing sector. Results suggest a potential reshuffling of market shares in favor of the most productive firms and, accordingly, targets of MNEs. In other words, non-target firms operating in industries more exposed to horizontal FDI suffer from a reduction of revenues. Moreover, there is evidence that the size of non-target firms reduces, which is mainly explained by the effect being attributable to the subset of enterprises in the restricted sectors.

At the same time, we observe a significant increase in revenues of non-target firms in restricted sectors. Since productivity does not increase, this positive effect may be related to the change in the level of competition. Even if M&A does not result in the establishment of new firms, a capital reallocation between surviving firms may occur and result in the reduction of the firm's size or their exit. This process may favor the concentration of assets within a group of larger companies surrounded by a constellation of smaller firms. Accordingly, the horizontal FDI spillovers provide a rationale for the existence of FDI restrictions in the respective manufacturing sectors.

For the services sector, we do not find any significant difference in horizontal FDI spillovers between restricted and unrestricted industries (see Table 7). Contrarily to manufacturing, the services sector experiences significant positive spillovers to productivity and revenues. A potential explanation that may apply to the context of India, which is a hot-spot for information and telecommunication, horizontal FDI can enlarge the demand for Indian providers and stimulate export.

Vertical FDI spillovers The exposure to FDI in the manufacturing sector of downstream industries results in an enlargement of upstream domestic producers. Moreover, there is a significant

and positive backward FDI effect on the productivity of domestic firms in the restricted sectors. Combined with the corresponding results obtained for horizontal FDI in services and manufacturing, one would expect that an increase of margins in the downstream sector spurs investment and productivity of upstream industries. As a short-run effect, this can justify a decrease in the solvency ratio for protected sectors. We do not find any confirmation of the presence of forward FDI spillovers for manufacturing firms. Different from manufacturing, services firms in restricted sectors experience a reduction in productivity due to FDI expansion in their respective downstream sectors.

In the services sector, we document a positive significant effect from backward FDI for total assets whereas a negative impact on solvency ratio in a similar fashion to what occurs in manufacturing. Contrarily to the latter, we find negative spillovers to the productivity of upstream producers. Finally, downstream firms experience significant positive spillovers to revenues. This result paired with the negative spillovers for fixed and total assets in restricted sectors and no significant effect on productivity opens room for further analysis of vertical mergers followed by FDI in upstream sectors. In particular, M&A in the upstream sector increases incentives to collude. Therefore, one would observe a substantial increase in downstream profits without any significant change in quality and cost reduction.

VI. Conclusion

In this paper, we construct a dataset on Indian firms between 2008 – 2019 to study how the effects resulting from cross-border and domestic takeovers interact with the FDI policies in force. We show that the effect of target selection is stronger in the restricted sectors and find evidence that

the post-deal growth of such firms is slowed down by the presence of FDI restrictions. Therefore, though the pool of acquired firms in the restricted sectors is superior to the one in the unrestricted ones, the post-acquisition trends do not vary with the presence of FDI policy.

Therefore, our paper does not indicate that the FDI restrictions are necessarily positive. The direct effect of FDI on the intensive margin is reduced by the presence of equity caps and FDI regulation. At the same time, the significant positive spillovers resulting from backward linkages in the restricted manufacturing sector suggest that firms in restricted sectors can still gain benefits from MNEs in the Indian market through intersectoral channels. Moreover, negative horizontal FDI spillovers and an increase in sales paired with productivity fall of domestic producers suggest that the anticompetitive effects of FDI and, therefore, go in line with the presence of domestic producer protection in sectors exposed to FDI policy.

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Tables

TABLE 1.—DESCRIPTIVE STATISTICS

	Mean	Standard deviation	Number of observations	Mean	Standard deviation	Number of observations
	Manufacturing			Services		
ln(Revenue)	15.250	2.230	114,857	14.080	2.650	158,986
Δ ln(Revenue)	0.030	0.880	90,031	0.040	1.070	123,079
ln(Capital)	14.210	1.910	117,787	13.940	2.320	163,560
Δ ln(Capital)	0.020	0.480	93,030	0.040	0.650	127,838
ln(Total assets)	15.430	1.590	118,371	15.230	1.830	165,266
Age	17.800	13.790	118,385	16.200	11.980	165,290
ln(Cost of goods sold)	12.180	2.070	108,482	11.620	2.430	147,922
Solvency ratio	37.460	29.820	117,258	48.790	35.660	163,390
Restricted sector	0.150	0.360	118,385	0.180	0.390	165,290
Year	2014.560	2.130	118,385	2014.580	2.080	165,290
	Total					
ln(Revenue)	14.570	2.550	273,843			
Δ ln(Revenue)	0.030	0.990	213,110			
ln(Capital)	14.060	2.170	281,347			
Δ ln(Capital)	0.030	0.580	220,868			
ln(Total assets)	15.310	1.730	283,637			
Age	16.870	12.790	283,675			
ln(Cost of goods sold)	11.850	2.300	256,404			
Solvency ratio	44.060	33.810	280,648			
Restricted sector	0.170	0.370	283,675			
Year	2014.570	2.100	283,675			

Capital is measured by fixed assets. Δ stands for a one-period difference in a variable with respect to the previous period.

TABLE 2.—PROBIT RESULTS: PREDICTED ACQUISITIONS FOR MANUFACTURING AND SERVICES

	Manufacturing	Services		Manufacturing	Services
Revenue_{t-1}	-0.094^{***}	-0.025^{*}	Age_{t-1}	0.006^{***}	-0.006^{***}
	(0.022)	(0.015)		(0.001)	(0.002)
Revenue_{t-1}	0.053^{**}	-0.038	Age_{t-1}	-0.012^{***}	0.007^{**}
$\times$ Restricted sector_{t-1}	(0.027)	(0.017)	$\times$ Restricted sector_{t-1}	(0.004)	(0.004)
$\Delta\text{Revenue}_{t-1}$	0.033	-0.053^{*}	Labor costs_{t-1}	0.250	-0.021
	(0.042)	(0.028)		(-0.156)	(0.087)
$\Delta\text{Revenue}_{t-1}$	-0.130	0.096^{**}	$(\text{Labor costs})^2_{t-1}$	-0.006	0.005
$\times$Restricted sector_{t-1}	(0.097)	(0.041)		(0.006)	(0.003)
$\Delta\text{Capital}_{t-1}$	-0.442	0.030	Solvency ratio_{t-1}	-0.001	0.000
	(0.278)	(0.083)		(0.001)	(0.001)
$\Delta\text{Capital}_{t-1}$	0.459^{***}	0.128^{*}	Restricted sector_{t-1}	-0.506	0.435
$\times$ Restricted sector_{t-1}	(0.205)	(0.078)		(0.466)	(0.270)
Number of observations	66,867	88,743	Productivity proxies	Yes	Yes
Prob $>$ chi^2	0.00	0.00	$\phi_s(k_{t-1}, i_{t-1})$		
Pseudo R^2	0.16	0.11	Time trend	-0.096^{***}	-0.082^{***}
Number of acquisitions	176	258		(0.007)	(0.007)

The table reports probit coefficients from the target selection model. Standard errors in parentheses: $^{***}p < 0.01$, $^{**}p < 0.05$ and $^{*}p < 0.1$. The intercept and proxies for the joint effect from unobserved productivity and capital are reported in Table 8. All variables except age, solvency ratio, and restricted sector dummy are in logs. Δ stands for a one-period difference in a variable with respect to the previous period.

TABLE 3.—PROPENSITY SCORE MATCHING: BALANCING TEST

		Treated group mean	Control group mean	t-test	p-value
		Manufacturing			
Revenue_{t-1}	Unmatched	16.908	15.447	9.340	0.000
	Matched	16.908	17.201	−1.300	0.195
$\Delta\text{Revenue}_{t-1}$	Unmatched	0.008	0.077	−1.120	0.261
	Matched	0.008	−0.025	0.360	0.718
$\Delta\text{Capital}_{t-1}$	Unmatched	0.042	0.106	−2.040	0.042
	Matched	0.042	0.032	0.360	0.715
Age_{t-1}	Unmatched	25.944	18.775	6.880	0.000
	Matched	25.944	24.665	0.670	0.506
Labor costs_{t-1}	Unmatched	14.309	12.375	12.530	0.000
	Matched	14.309	14.583	−1.390	0.166
$\text{Labor costs}^2_{t-1}$	Unmatched	208.840	157.380	13.670	0.000
	Matched	208.840	215.440	−1.200	0.229
$\text{Solvency ratio}_{t-1}$	Unmatched	37.847	37.621	0.100	0.917
	Matched	37.847	44.457	−2.090	0.037
Propensity score	Unmatched	0.018	0.003	30.760	0.000
	Matched	0.018	0.015	1.130	0.258
		Services			
Revenue_{t-1}	Unmatched	16.130	14.282	11.640	0.000
	Matched	16.130	16.189	−0.270	0.788
$\Delta\text{Revenue}_{t-1}$	Unmatched	0.071	0.076	−0.070	0.947
	Matched	0.071	−0.004	1.020	0.308
$\Delta\text{Capital}_{t-1}$	Unmatched	0.229	0.181	1.370	0.170
	Matched	0.229	0.224	0.090	0.929
Age_{t-1}	Unmatched	16.585	17.230	−0.860	0.392
	Matched	16.585	17.919	−1.180	0.239
Labor costs_{t-1}	Unmatched	14.067	11.759	15.070	0.000
	Matched	14.067	14.164	−0.430	0.666
$\text{Labor costs}^2_{t-1}$	Unmatched	204.540	144.350	16.460	0.000
	Matched	204.540	207.070	−0.430	0.671
$\text{Solvency ratio}_{t-1}$	Unmatched	43.724	48.673	−2.280	0.022
	Matched	43.724	47.067	−1.180	0.240
Propensity score	Unmatched	0.011	0.003	22.180	0.000
	Matched	0.011	0.010	0.820	0.413

The table reports the balancing test for propensity score matching. The treated group includes Indian firms acquired in period t, control group firms are not acquired in period t. The intercept and proxies for the joint effect from unobserved productivity and capital are not reported in Tables 9 and 10. All variables except age, solvency ratio, and restricted sector dummy are in logs. Δ stands for a one-period difference in a variable with respect to the previous period. 176 and 258 pairs are matched for manufacturing and services respectively.

TABLE 4.—DIFFERENCE-IN-DIFFERENCE: PREDICTED EFFECTS FOR ACQUIRED TARGETS, MANUFACTURING

Sample		Productivity (0)	Productivity (1)	Fixed assets (0)	Fixed assets (1)	Total assets (0)	Total assets (1)	Solvency ratio (0)	Solvency ratio (1)
					Deal year				
All deals	Acquisition_t	0.129		0.070		0.036		3.918*	
		(0.148)		(0.049)		(0.038)		(2.268)	
Foreign	Acquisition_t	−0.254	−0.130	0.071	0.141	0.076	0.101	3.745	0.808
		(0.157)	(0.233)	(0.082)	(0.125)	(0.064)	(0.098)	(4.076)	(5.394)
	Acquisition_t		−0.289		−0.150		−0.055		6.405
	$\times\text{Restricted}_{t-1}$		(0.384)		(0.182)		(0.145)		(9.491)
Domestic	Acquisition_t	0.254	0.257	0.070	0.064	0.023	0.013	4.006	4.215
		(0.196)	(0.215)	(0.061)	(0.065)	(0.045)	(0.051)	(2.802)	(3.052)
	Acquisition_t		−0.050		0.035		0.071		−1.446
	$\times\text{Restricted}_{t-1}$		(0.344)		(0.163)		(0.097)		(7.948)
					One year after				
All deals	Acquisition_t	0.285*		0.144**		0.075		3.621	
		(0.153)		(0.072)		(0.058)		(2.760)	
Foreign	Acquisition_t	−0.164	0.037	0.202	0.287*	0.132	0.153	5.387	3.231
		(0.221)	(0.341)	(0.126)	(0.166)	(0.098)	(0.127)	(5.145)	(7.227)
	Acquisition_t		−0.463		−0.186		−0.043		4.595
	$\times\text{Restricted}_{t-1}$		(0.585)		(0.266)		(0.209)		(11.561)
Domestic	Acquisition_t	0.433***	0.287	0.126	0.078	0.057	0.009	3.005	3.943
		(0.180)	(0.182)	(0.089)	(0.089)	(0.068)	(0.071)	(3.446)	(3.819)
	Acquisition_t		0.954		0.331		0.324		−6.635
	$\times\text{Restricted}_{t-1}$		(0.764)		(0.339)		(0.234)		(10.201)
					Two years after				
All deals	Acquisition_t	0.256		0.155*		0.079		1.940	
		(0.200)		(0.094)		(0.075)		(3.337)	
Foreign	Acquisition_t	−0.235	−0.074	0.203	0.209	0.124	0.123	4.593	1.822
		(0.207)	(0.383)	(0.181)	(0.192)	(0.127)	(0.164)	(6.027)	(8.746)
	Acquisition_t		−0.390		−0.020		−0.001		5.969
	$\times\text{Restricted}_{t-1}$		(0.592)		(0.417)		(0.289)		(12.427)
Domestic	Acquisition_t	0.421*	0.300	0.139	0.101	0.065	0.027	0.976	2.279
		(0.237)	(0.218)	(0.108)	(0.114)	(0.085)	(0.092)	(4.239)	(4.647)
	Acquisition_t		0.785		0.256		0.253		−9.321
	$\times\text{Restricted}_{t-1}$		(0.804)		(0.367)		(0.280)		(12.046)
Number of matched pairs		160	160	164	164	176	176	160	160

The table reports coefficients from the OLS estimation of change in productivity, fixed, and total assets, and solvency ratio on acquisition in services. Bootstrapped standard errors in parentheses: $^{***}p < 0.01$, $^{**}p < 0.05$ and $^{*}p < 0.1$. Model (0) does not include the interaction with Restricted_{t-1} (indicator for restricted sector), while model (1) does. The intercept and coefficient for Restricted_{t-1} are not reported. All variables except the solvency ratio are expressed in logs. Three samples are considered: all deals, only domestic, and only foreign acquisitions.

TABLE 5.—DIFFERENCE-IN-DIFFERENCE: PREDICTED EFFECTS FOR ACQUIRED TARGETS, SERVICES

		Productivity		Fixed assets		Total assets		Solvency ratio	
Sample		(0)	(1)	(0)	(1)	(0)	(1)	(0)	(1)
					Deal year				
All deals	Acquisition_t	−0.037		−0.101		0.043		3.973*	
		(0.168)		(0.102)		(0.056)		(2.210)	
Foreign	Acquisition_t	−0.291	−0.267	0.114	0.123	0.140**	0.146**	7.922**	7.864*
		(0.249)	(0.283)	(0.100)	(0.113)	(0.062)	(0.066)	(3.900)	(4.471)
	Acquisition_t		−0.061		−0.046		−0.034		0.403
	$\times\text{Restricted}_{t-1}$		(0.600)		(0.255)		(0.205)		(12.452)
Domestic	Acquisition_t	0.132	0.113	−0.230	−0.341*	−0.013	−0.037	1.600	0.533
		(0.172)	(0.188)	(0.152)	(0.189)	(0.077)	(0.089)	(2.377)	(3.057)
	Acquisition_t		0.103		0.362		0.082		3.317
	$\times\text{Restricted}_{t-1}$		(0.413)		(0.294)		(0.167)		(5.570)
					One year after				
All deals	Acquisition_t	0.012		−0.033		0.055		3.235	
		(0.153)		(0.129)		(0.073)		(2.562)	
Foreign	Acquisition_t	−0.173	−0.243	0.110	0.162	0.143*	0.146	6.171	4.970
		(0.263)	(0.323)	(0.166)	(0.166)	(0.083)	(0.095)	(4.287)	(4.889)
	Acquisition_t		0.457		−0.290		−0.011		6.740
	$\times\text{Restricted}_{t-1}$		(0.856)		(0.498)		(0.206)		(12.576)
Domestic	Acquisition_t	0.138	0.085	−0.118	−0.169	0.004	−0.029	1.479	−0.301
		(0.178)	(0.205)	(0.175)	(0.206)	(0.099)	(0.106)	(2.967)	(3.782)
	Acquisition_t		0.222		0.164		0.115		5.561
	$\times\text{Restricted}_{t-1}$		(0.492)		(0.357)		(0.236)		(6.753)
					Two years after				
All deals	Acquisition_t	−0.036		0.003		0.059		1.912	
		(0.187)		(0.153)		(0.092)		(2.883)	
Foreign	Acquisition_t	0.013	−0.050	0.115	0.176	0.152	0.149	4.281	2.261
		(0.294)	(0.353)	(0.192)	(0.202)	(0.103)	(0.121)	(4.897)	(5.713)
	Acquisition_t		0.393		−0.331		0.017		11.410
	$\times\text{Restricted}_{t-1}$		(0.747)		(0.516)		(0.247)		(12.931)
Domestic	Acquisition_t	−0.063	−0.071	−0.063	−0.119	0.005	−0.018	0.506	−2.804
		(0.227)	(0.289)	(0.211)	(0.249)	(0.123)	(0.137)	(3.267)	(4.117)
	Acquisition_t		0.112		0.178		0.079		10.356
	$\times\text{Restricted}_{t-1}$		(0.849)		(0.417)		(0.278)		(7.397)
Number of matched pairs		214	214	236	236	257	257	230	230

The table reports coefficients from the OLS estimation of change in productivity, fixed, and total assets, and solvency ratio on acquisition in services. Bootstrapped standard errors in parentheses: $^{***}p < 0.01$, $^{**}p < 0.05$ and $^{*}p < 0.1$. Model (0) does not include the interaction with Restricted_{t-1} (indicator for restricted sector), while model (1) does. The intercept and coefficient for Restricted_{t-1} are not reported. All variables except the solvency ratio are expressed in logs. Three samples are considered: all deals, only domestic, and only foreign acquisitions.

TABLE 6.—SPILLOVER EFFECTS ON DOMESTIC FIRMS: MANUFACTURING SECTOR

	Productivity		Fixed assets		Total assets		Solvency ratio		Revenue	
	(0)	(1)	(0)	(1)	(0)	(1)	(0)	(1)	(0)	(1)
$\Delta FDI^{horizontal}$	-0.160^{*}	-0.190^{**}	-0.084^{**}	-0.051	-0.012	-0.011	-1.421	-1.624	-0.111	-0.177^{**}
	(0.092)	(0.097)	(0.041)	(0.043)	(0.029)	(0.030)	(0.991)	(1.013)	(0.081)	(0.084)
$\Delta FDI^{horizontal}$		0.405		-0.443^{***}		-0.011		2.510		0.894^{***}
$\times$Restricted$_{t-1}$		(0.311)		(0.159)		(0.107)		(4.437)		(0.312)
$\Delta FDI^{backward}$	-0.252	-0.827	0.417	0.458	1.409^{**}	1.225^{**}	-24.115^{*}	-15.949	-0.718	-0.723
	(1.165)	(1.253)	(0.724)	(0.772)	(0.559)	(0.598)	(14.225)	(14.588)	(1.355)	(1.359)
$\Delta FDI^{backward}$		6.148^{**}		-0.451		1.993		-92.042^{*}		0.059
$\times$Restricted$_{t-1}$		(2.829)		(2.108)		(1.501)		(55.427)		(6.110)
$\Delta FDI^{forward}$	-3.965	-4.136	-0.713	-0.568	-0.897	-0.849	0.218	-1.138	-1.189	-1.421
	(2.909)	(2.950)	(0.937)	(0.944)	(0.654)	(0.658)	(24.141)	(24.163)	(1.814)	(1.833)
$\Delta FDI^{forward}$		8.256		-8.063		-2.212		59.243		12.626
$\times$Restricted$_{t-1}$		(19.607)		(6.399)		(4.849)		(241.310)		(15.454)
Number of observations	79,666	79,666	90,121	90,121	90,674	90,674	89,489	89,489	86,854	86,854

The table reports coefficients from OLS estimation of horizontal and vertical FDI spillovers in manufacturing. Standard errors in parentheses: $^{***}p < 0.01$, $^{**}p < 0.05$ and $^{*}p < 0.1$. Model (0) does not include the interaction with Restricted$_{t-1}$ (indicator for restricted sector), while model (1) does. Δ stands for a one-period difference in a variable with respect to the previous period. The intercept and coefficient for Restricted$_{t-1}$ are not reported. All variables except solvency ratio and FDI measures are expressed in logs. All regressions include time- and firm-fixed effects.

TABLE 7.—SPILLOVER EFFECTS ON DOMESTIC FIRMS: SERVICES SECTOR

	Productivity		Fixed assets		Total assets		Solvency ratio		Revenue	
	(0)	(1)	(0)	(1)	(0)	(1)	(0)	(1)	(0)	(1)
$\Delta FDI^{horizontal}$	0.396**	0.366**	0.038	0.062	0.059	0.044	−1.266	−1.907	0.322***	0.369***
	(0.156)	(0.171)	(0.073)	(0.076)	(0.043)	(0.046)	(1.540)	(1.665)	(0.120)	(0.133)
$\Delta FDI^{horizontal}$		0.237		−0.170		0.079		4.011		−0.275
$\times$Restricted$_{t-1}$		(0.417)		(0.230)		(0.115)		(4.187)		(0.307)
$\Delta FDI^{backward}$	1.299	2.292	−0.374	−0.714	1.107**	1.013*	−37.522**	−44.521**	2.632*	2.598
	(1.389)	(1.596)	(1.007)	(1.180)	(0.514)	(0.594)	(17.176)	(20.016)	(1.541)	(1.835)
$\Delta FDI^{backward}$		−5.168*		1.844		0.507		37.757		0.190
$\times$Restricted$_{t-1}$		(3.052)		(2.014)		(1.110)		(35.280)		(2.761)
$\Delta FDI^{forward}$	0.036	0.017	0.036	0.097	0.130	0.154	−2.952	−2.805	0.760***	0.761***
	(0.289)	(0.286)	(0.150)	(0.149)	(0.104)	(0.105)	(4.974)	(5.008)	(0.277)	(0.277)
$\Delta FDI^{forward}$		1.570		−5.412**		−2.012*		−15.466		−0.188
$\times$Restricted$_{t-1}$		(6.055)		(2.740)		(1.181)		(40.005)		(3.593)
Number of observations	104,107	104,107	123,090	123,090	124,904	124,904	122,830	122,830	117,932	117,932

The table reports coefficients from OLS estimation of horizontal and vertical FDI spillovers in services. Standard errors in parentheses: $^{***}p < 0.01$, $^{**}p < 0.05$ and $^{*}p < 0.1$. Model (0) does not include the interaction with Restricted$_{t-1}$ (indicator for restricted sector), while model (1) does. Δ stands for a one-period difference in a variable with respect to the previous period. The intercept and coefficient for Restricted$_{t-1}$ are not reported. All variables except solvency ratio and FDI measures are expressed in logs. All regressions include time- and firm-fixed effects.

Appendix

A. Productivity and Capital Controls in the Propensity Score Matching

TABLE 8.—PROBIT RESULTS: PREDICTED ACQUISITIONS FOR MANUFACTURING AND SERVICES FOR PRODUCTIVITY PROXIES

	Manufacturing	Services		Manufacturing	Services
Capital_{t-1}	-2.541^{**}	-0.557	Investment_{t-1}	1.031	0.299
	(1.252)	(0.664)		(0.968)	(0.584)
Capital^2_{t-1}	0.271	0.127	$\text{Investment}^2_{t-1}$	0.155	0.128^{*}
	(0.168)	(0.106)		(0.106)	(0.069)
Capital^3_{t-1}	-0.010	-0.005	$\text{Investment}^3_{t-1}$	0.003	-0.002
	(0.007)	(0.006)		(0.003)	(0.003)
Capital^2_{t-1}	-0.015	-0.005	Capital_{t-1}	-0.334	-0.239
$\times\text{Investment}^2_{t-1}$	(0.013)	(0.012)	$\times\text{Investment}_{t-1}$	(0.244)	(0.165)
Capital_{t-1}	0.020	0.011			
$\times\text{Investment}_{t-1}$	(0.016)	(0.014)			
Number of observations	66867	88743			
Prob $>$ chi^2	0.00	0.00			
Pseudo R^2	0.16	0.11			
Number of acquisitions	176	258			

The table reports probit coefficients for control function $\phi_s(\cdot)$ reflecting the joint effect of pre-acquisition capital and productivity at the probability of being acquired. Standard errors are in parentheses: $^{***}p < 0.01$, $^{**}p < 0.05$ and $^{*}p < 0.1$. The intercept and variables reported in Table 2 are not reported. All variables are expressed in log form. Given the significantly larger mean capital and investment by target firms prior to acquisition, the comparison confirms "cherry-picking" behaviour.

TABLE 9.—PROPENSITY SCORE MATCHING: BALANCING TEST FOR PRODUCTIVITY PROXIES IN MANUFACTURING

		Manufacturing			
		Treated group mean	Control group mean	t-test	p-value
Capital_{t-1}	Unmatched	16.484	14.406	15.560	0.000
	Matched	16.484	16.674	−0.850	0.394
Capital^2_{t-1}	Unmatched	276.790	210.700	17.150	0.000
	Matched	276.790	281.660	−0.700	0.485
Capital^3_{t-1}	Unmatched	4717.200	3126.000	18.480	0.000
	Matched	4717.200	4811.400	−0.550	0.581
$\times\text{Investment}_{t-1}$	Unmatched	14.127	12.260	11.550	0.000
	Matched	14.127	14.385	−1.070	0.286
$\times\text{Investment}^2_{t-1}$	Unmatched	205.370	154.950	12.800	0.000
	Matched	205.370	211.390	−0.910	0.364
$\times\text{Investment}^3_{t-1}$	Unmatched	3055.200	2011.400	13.740	0.000
	Matched	3055.200	3164.500	−0.760	0.445
Capital_{t-1}	Unmatched	3507.000	2311.500	15.270	0.000
$\times\text{Investment}^2_{t-1}$	Matched	3507.000	3620.800	−0.770	0.444
Capital^2_{t-1}	Unmatched	4051.800	2676.400	16.950	0.000
$\times\text{Investment}_{t-1}$	Matched	4051.800	4162.900	−0.710	0.478
Capital_{t-1}	Unmatched	237.490	179.860	15.010	0.000
$\times\text{Investment}_{t-1}$	Matched	237.490	243.350	−0.890	0.376

The table reports the balancing test for propensity score matching for control function $\phi_s(\cdot)$ reflecting the joint effect of pre-acquisition capital and productivity on the probability of being acquired (manufacturing sector). All variables are expressed in log form. 176 pairs are matched.

TABLE 10.—PROPENSITY SCORE MATCHING: BALANCING TEST FOR PRODUCTIVITY PROXIES IN SERVICES

		Services			
		Treated group mean	Control group mean	t-test	p-value
Capital_{t-1}	Unmatched	16.152	14.210	14.740	0.000
	Matched	16.152	16.228	−0.370	0.714
Capital^2_{t-1}	Unmatched	267.010	206.420	16.150	0.000
	Matched	267.010	268.360	−0.210	0.836
Capital^3_{t-1}	Unmatched	4504.700	3060.100	17.300	0.000
	Matched	4504.700	4511.300	−0.040	0.967
$\times\text{Investment}_{t-1}$	Unmatched	14.241	12.212	13.710	0.000
	Matched	14.241	14.260	−0.080	0.935
$\times\text{Investment}^2_{t-1}$	Unmatched	210.080	154.810	15.290	0.000
	Matched	210.080	210.500	−0.070	0.948
$\times\text{Investment}^3_{t-1}$	Unmatched	3190.100	2027.200	16.470	0.000
	Matched	3190.100	3194.900	−0.030	0.973
Capital_{t-1}	Unmatched	3559.200	2308.200	16.980	0.000
$\times\text{Investment}^2_{t-1}$	Matched	3559.200	3561.100	−0.010	0.990
Capital^2_{t-1}	Unmatched	3991.700	2646.900	17.330	0.000
$\times\text{Investment}_{t-1}$	Matched	3991.700	3993.700	−0.010	0.989
Capital_{t-1}	Unmatched	236.020	177.990	16.010	0.000
$\times\text{Investment}_{t-1}$	Matched	236.020	236.740	−0.110	0.911

The table reports the balancing test for propensity score matching for control function $\phi_s(\cdot)$ reflecting the joint effect of pre-acquisition capital and productivity on the probability of being acquired (services sector). All variables are expressed in log form. 258 pairs are matched.

B. Institutional Background of FDI Regulation in India

A. FDI Policy in India

According to the DIPP (2011) and Sahoo et al. (2014), the Indian policy on FDI can be segmented into four stages.

1. *1948 – 1969*. The Industrial Policy Statement in 1948 welcomed the investments aiming to fasten the industrialization of the country whereas discouraged capital inflows targeted to produce consumer goods. The Industries Development and Regulation Act (1951) mandated the government to screen foreign investors' proposals to set up a new production facility or even to expand the range of activities of a preexisting firm. Similarly, exit from an industry and labor force adjustment were also regulated and needed approval. Despite that, the government tried to attract foreign investments in selected sectors (e.g., fertilizers, machine tools, and oil extraction). The system contributed to deterring business activities in the country.

2. *1969 – 1991*. The Indian Parliament passed the Monopolies and Restrictive Trade Practices Act in 1969. The Act provided firms with the possibility to refer to the Monopolies and Restrictive Trade Practices Commission against alleged unfair trade practices.[40] In 1968 the government set up an agency, the Foreign Investment Board, to deal with foreign investments or collaborations involving up to 40% of foreign equity and above. The Foreign Exchange Regulation Act (FERA) was passed in 1973 to domestically retain corporate earnings and managerial controls and protecting local competitors. Under the FERA "everything was prohibited unless specifically permitted." In particular,

[40]Pathak, A., "New law, statutory body imperative to foster fair trade practices in India," *LiveMint*, April 18, 2016, https://www.livemint.com/Opinion/zAwaIsYu54i7oKNZ8aPV7J/New-law-statutory-body-imperative-to-foster-fair-trade-prac.html (accessed September 25, 2019).

the FERA restricted foreign equity participation to 40%.[41] However, companies operating with "sophisticated technologies" or exporting significant proportions of output could derogate from this cap (yet, even for those firms an equity cap of 74% was present). Subsequently, the limit was raised to 74%.[42] The restrictive policies limited the increase of FDI stocks during 1974 – 1980 (see Figure 1b). Moreover, a recomposition of flows took place: the government intervention induced a replacement of the investment stock in the non-manufacturing sector favoring the manufacturing sector, especially technology-intensive areas. In the aftermath of the oil shock during the 1970s, Indian goods bore the cost of technological obsolescence and a disadvantaged position on the quality ladder. In response, the Government reacted by encouraging export-oriented affiliates and controlling import activities. A crisis of the balance of payment and a large loan received from the International Monetary Fund (IMF) in 1981 induced a policy change.[43] Following the opening up, the number of joint ventures (especially with Japanese manufacturers) increased, initially in the automotive sector and subsequently in the computer industry. The consequences of the largely protectionist policies adopted by the Indian authorities were twofold. On the one hand, the system of licensing mitigated domestic competition. On the other hand, import controls and high tariffs discouraged imports (Estrin and Meyer, 2004). As a consequence, domestic firms were mostly shielded from external and internal competition.

3. *1991–2000*: The cited balance of payments crisis of 1991 induced the approval of several reforms,

[41] Generally, multinational companies comply with the equity cap restrictions. Two notable exceptions were IBM and Coca Cola which were asked to shut down their Indian facilities because of their non-compliance with the rule (Estrin and Meyer, 2004).

[42] No limit applied to a company exporting the whole output.

[43] The Indian Government obtained the right to a loan of 5 billion Special Drawing Rights (SDRs) from the IMF. However, thanks to an improved financial position, only 3.9 billion were actually used.

affecting domestic firms, multinational enterprises, and prospective investors.[44]

De-licensing granted to the firms the right to decide on investments, plants' locations, and scales. In 35 high-priorities industries, FDI up to 51% was allowed without requiring any government approval. Similarly, the regime for foreign technical collaborations was liberalized. Trading companies engaged primarily in export activities were also allowed up to 51% foreign equity. 100% foreign equity was allowed in power generation. The government set up the Foreign Investment Promotion Board, an agency authorized to provide a single-window clearance for FDI proposals. Existing companies operating in the 35 high-priorities industries, were also allowed to raise foreign equity levels to 51% in case of expansion plans.

The relaxation of the FDI policy played an important role in the Indian economy, favoring an increase in the number of international collaborations and wholly-owned subsidiaries. In particular, two main reasons can explain the increasing number of joint ventures. First, in several cases operating in the country required to partner with an Indian company. Second, a partnership with an Indian company was necessary not only to circumvent policy restrictions but also to reduce the frictions associated with different market conditions. The use of joint ventures as an entry mode to the country was also frequent in sectors in which the requirement of an Indian partner did not apply (Estrin and Meyer, 2004).

4. *2000 – current*: Starting from 2000, activities carried out by foreign investors did not require approval except for a negative list. The Reserve Bank of India (RBI) dealt with the proposals not requiring prior approval while the government was in charge of approving other proposals and issuing the FDI policies. Three different institutions: the Foreign Investment Promotion Board (FIPB), the Secretariat

[44]Huang and Tang (2012) argue that, despite the reform process in the Indian economies, the advantage enjoyed by domestic firms is still present, especially in comparison to China.

of Industrial Assistance (SIA), and the Foreign Investment Implementation Authority (FIIA). In particular, the FIPB was a government agency established to deal with FDI. The main activities of the FIPB were to undertake investment promotion activity, negotiate and interact with potential investors, recommend approvals or rejections of received proposals. Over time, the easing of FDI policy has been quite regular. For example, foreign equity caps were raised in several sectors and activities (e.g., in the defense, telecom, industry, and single-brand retailing sectors), and non-banking financial companies (NBFC) did not have to obtain government approval. As a consequence of reforms, domestic producers faced increasing competition from international firms.

Several restrictions were still in place during the period in our sample. The different FDI policies were collected in a series of Circulars issued by the DIPP and the Reserve Bank of India.[45] During the period, the main FDI policy instruments were foreign equity caps and different entry routes.[46] Clearly, the presence of equity caps relates to the amount of control the Indian government grants to a foreign entity. Mostly, the limits of foreign share bunch at four distinct levels: 26%, 49%, 51%, and 74%.[47] Moreover, in some sectors, no foreign ownership was allowed (see Table 11). For example, the government permitted FDI in retail trading starting from 2013 whereas restricted manufacturing of cigars and products associated with tobacco or its substitutes until 2010.

[45]In particular, the Master Circular No. 02/2008-09, Master Circular No.2/2009-10 Circulars 1/2010, 2/2010, 1/2011, 1/2012, 1/2013, and the Consolidated FDI Policy Circulars 2014, 2015, 2016, 2017.

[46]In some sectors, conditionalities were imposed on foreign investment firms. For example, some subsectors of telecommunications were open to foreign investors conditionally to the improvement of the physical network.

[47]The rationale behind these caps has to be found in the Companies Act, 1956. In particular, a limit equal to 26% provides the foreign shareholders with the right to stop a special resolution. A limit equal to 49% prevents the foreign shareholders from passing all ordinary resolutions. Conversely, a limit equal to 51% grants the foreign shareholders block the right to pass all ordinary resolutions. Finally, a limit equal to 74% still safeguards the right of domestic shareholders to block a special resolution.

TABLE 11.—EVOLUTION OF PROHIBITED SECTORS FOR INWARD FDI, 2008 – 2018

Sectors	Circulars			
	2/08-09 - 1/10	2/10-1/12	1/13 - 1/15	1/16-1/17
Retail trading	✓	✓	✗	✗
Atomic energy	✓	✓	✓	✓
Lottery business	✓	✓	✓	✓
Gambling and betting	✓	✓	✓	✓
Chit funds	✓	✓	✓	✓
Nidhi company	✓	✓	✓	✓
Trading in TDRs	✓	✓	✓	✓
Real estate business	✓	✓	✓	✓[1]
Construction of farm houses	✓	✓	✓	✓
Cigars, cheroots, cigarillos, and cigarettes of tobacco or of tobacco substitutes	✗	✓	✓	✓
Activities/sectors not opened to private investment (e.g., railway transport)	✓	✓	✓	✓

Source: Authors' elaboration of RBI Master Circular No. 02/2008-09, Master Circular No. 02/2009-10, and DIPP Consolidated FDI Policy Circulars 2010 – 2017.

✓: corresponding circular does not allow any foreign equity induction in the sector;

✗: corresponding circular allows foreign equity induction in the sector under some route.

[1] does not include development of townships, construction of residential/commercial premises, roads or bridges, and Real Investment Trusts (REITs) registered and regulated under the SEBI (REITs) Regulations 2014.

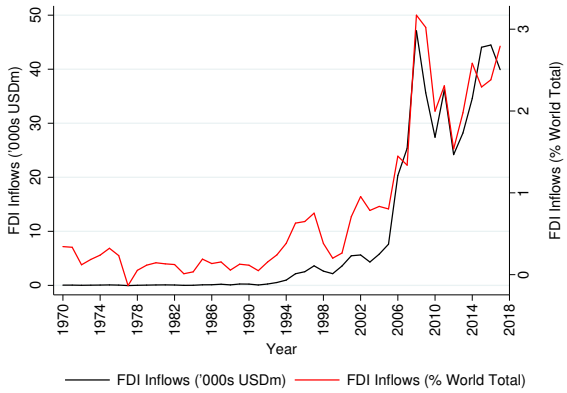
With respect to other sectors, the FDI policy distinguishes between automatic and government routes when evaluating a foreign investment proposal. The regime to be applied to each proposal depends on the sectors and on the share of foreign capital implied by the proposal itself. In particular, under the automatic route, the investors are only required to notify the RBI. If an activity does not fall under the automatic route, then government approval through the FIPB is needs. In this case, the government accepts or rejects proposals on a case-by-case basis. Before the dismissal of the FIBP in 2017, the government received recommendations from the agency regarding the received proposals.

B. India as an FDI Destination

The perception towards FDI in India changed over time. After the end of British rule, foreign capital inflows were considered as an essential resource by the Indian government to support the development of the local economy in selected sectors to compensate for a low saving rate and lack of technology and skills. The preferred approach was to welcome foreign investors as long as their activity was useful to improve the condition of the Indian economy and to impose tight restrictions in non-essential sectors alongside (Estrin and Meyer, 2004). Despite the aforementioned opening up of the economy dated from 1991, this standpoint persisted, and FDIs mostly represented an important means to cover the deficit of the current account.

FIGURE 1.—FDI INFLOWS AND STOCK IN INDIA

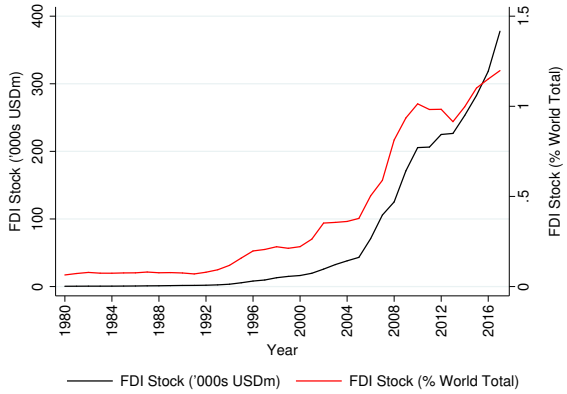
(A) FDI INFLOWS IN INDIA



Source: UNCTAD.

FDI inflows in India expressed in '000s USDm (left-hand side axis), FDI inflows in India as a percentage of the world total (right-hand side axis).

(B) FDI STOCK IN INDIA



Source: UNCTAD.

FDI stock in India expressed in '000s USDm (left-hand side axis), FDI stock in India as a percentage of the world total (right-hand side axis).

As Figure 1a shows, the amount of FDI flows accruing to India has been sharply increasing in both absolute and relative terms. In particular, India accounted for about 3% of world FDI in 2017, corresponding approximately to 40 billion US dollars. The growth of the investment flow to India paired with a sharp increase of the FDI stock. As Figure 1b displays, the amount of FDI stock was almost 400 billion US dollars, corresponding to more than 1% of the world total.

Table 12 shows that in recent years the most important origins of FDI, as measured by their amount, are Mauritius and Singapore. Indeed, many investment projects from foreign entities are routed through these two countries because of tax and regulatory arbitrage. The USA, the Netherlands, Japan, Germany, and the

United Kingdom constitute important investing economies, too.[48]

TABLE 12.—COUNTRY-WISE FOREIGN DIRECT INVESTMENT FLOWS TO INDIA

Country	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Mauritius	3,695	5,878	7,452	13,383	13,415
Singapore	4,415	5,137	12,479	6,529	9,273
Netherlands	1,157	2,154	2,330	3,234	2,677
USA	617	1,981	4,124	2,138	1,973
Japan	1,795	2,019	1,818	4,237	1,313
Cayman Islands	25	72	440	49	1,140
Germany	650	942	927	845	1,095
Hong Kong	85	325	344	134	1,044
United Kingdom	111	1,891	842	1,301	716
Switzerland	356	292	195	502	506
UAE	239	327	961	645	408
France	229	347	392	487	403
China	121	505	461	198	350
Italy	185	167	279	364	308
South Korea	189	138	241	466	293
Cyprus	546	737	488	282	290
Canada	11	153	52	32	274
Others	1,626	1,682	2,243	1,490	1,889
Total	16,054	24,748	36,068	36,317	37,366

Source: Reserve Bank of India, Annual Report 2018.

[48]Due to the presence of routing through Singapore and Mauritius, the number of flows from each of those countries can be underrepresented.

When disaggregating FDI inflows by recipient sector, manufacturing, retail & wholesale trade, and communication, financial and business services play a prominent role in terms of attracting foreign capital inflows, as Table 13 depicts. Especially in the recent past, the share of FDI in communication and business services rose substantially.

TABLE 13.—SECTOR-WISE FOREIGN DIRECT INVESTMENT FLOWS TO INDIA

Sector	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Communication services	1,256	1,075	2,638	5,876	8,809
Manufacturing	6,381	9,613	8,439	11,972	7,066
Retail & wholesale trade	1,139	2,551	3,998	2,771	4,478
Financial services	1,026	3,075	3,547	3,732	4,070
Computer services	934	2,154	4,319	1,937	3,173
Business services	521	680	3,031	2,684	3,005
Electricity	1,284	1,284	1,364	1,722	1,870
Construction	1,276	1,640	4,141	1,564	1,281
Transport	311	482	1,363	891	1,267
Miscellaneous services	941	586	1,022	1,816	835
Restaurants and hotels	361	686	889	430	452
Real estate activities	201	202	112	105	405
Education, research & development	107	131	394	205	347
Mining	24	129	596	141	82
Trading	0	228	0	0	0
Others	293	232	215	470	226
Total	16,054	24,748	36,068	36,317	37,366

Source: Reserve Bank of India, Annual Report 2018.