Export-Contingent Tax Incentives and Multinational Activity*

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Abstract

How do tax incentives tied to export share requirements shape the markets foreign affiliates serve and where multinationals expand? I study China's 2008 Enterprise Income Tax reform which abolished a tax preference for firms exporting at least 70 percent of output value. Using 2004–2012 panel data on Korean manufacturing affiliates, I compare affiliates in China by their average pre-reform export intensity in a difference-in-differences design. Relative to less export-oriented affiliates, previously highly export-oriented affiliates increased local sales by approximately 82 percent. Their local sales to unaffiliated customers and participation in the local market also rose, while total sales and exports show no statistically significant differential change. These patterns are consistent with the export share requirement having limited local sales. Parents that owned highly export-oriented affiliates in China before the reform experienced an approximately 3-percentage-point larger increase in their probability of affiliate entry into Southeast Asia than other parents. These findings highlight affiliates' market orientation and parents' subsequent foreign entry as complementary dimensions of adjustment to investment incentives.

Keywords: Multinational firms, Export share requirements, Corporate tax incentives, Foreign affiliates, Foreign direct investment

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1. Introduction

Investment incentives are widely used in developing countries to attract multinational firms. Yet attracting foreign investment does not necessarily mean attracting production for the local market. A foreign affiliate may sell to customers in its host country, export to its parent firm's home country, or supply third-country markets (Tintelnot, 2017). This distinction matters because investment incentives can change the markets served by existing affiliates, even without changing where they operate. Evaluating these policies therefore requires examining how incumbent affiliates adjust the markets they serve alongside where their parents make subsequent investments.

This distinction is particularly clear when tax incentives are tied to export share requirements.[1] By granting tax benefits only to affiliates that export a minimum share of their output, these policies can discourage sales to local customers. An affiliate may lose its tax advantage simply by expanding local sales, even if its exports remain unchanged. Such requirements can therefore distort firms' allocation of sales across markets and potentially weaken competition in the host economy (Defever and Riaño, 2017). Removing the preference eliminates the incentive to maintain a high export share but also withdraws a tax advantage from previously eligible activities in the host country. How incumbent affiliates respond in their sales orientation and scale, and whether their parents redirect subsequent investment, is therefore an empirical question.

This paper examines these responses using China's 2008 Enterprise Income Tax reform. Before the reform, qualifying foreign-invested enterprises whose exports accounted for at least 70 percent of annual output value were eligible for an additional 50 percent corporate income tax reduction, which I refer to as the *export-contingent tax preference*. The reform eliminated this preference as part of a broader overhaul that established a statutory corporate income tax rate of 25 percent for foreign-invested enterprises. As a result, meeting the export requirement no longer provided an additional tax advantage.

To study how multinational firms responded, I use panel data on foreign manufacturing affiliates of Korean multinationals from the Export-Import Bank of Korea, covering 2004–2012.[2] A key feature of these data is that they identify affiliate sales by both destination (local markets, Korea, or third countries) and transaction type (the parent, another affiliate within the same

[1] According to OECD (2025), 23 of the 70 economies covered offer at least one corporate income tax incentive requiring a minimum share of exports in total sales. The database covers mostly emerging and developing economies and records incentives available as of July 1, 2024. Table A.1 summarizes selected corporate income tax incentives linked to export share requirements.

[2] Korean multinationals constituted an important part of foreign investment in China during this period. Using the origin of the largest foreign equity owner to identify source countries, Ma and Zhang (2025) report that Korean investors accounted for 5.7% of multinational affiliates in China between 2000 and 2015, the same share as investors from the United States and close to Japan's 5.9%.

multinational, or an unaffiliated part). This detail allows me to examine not only whether affiliates shift between local and export markets, but also which sales relationships drive these changes. By linking affiliates to their parent firms, I can also track subsequent manufacturing entry across foreign destinations.

Descriptive patterns suggest that the adjustment of existing affiliates is an important part of the response. Between 2007 and 2012, the share of Korean manufacturing affiliates in China exporting at least 70 percent of their sales declined from 37.8 to 31.0 percent, a decline of about 18 percent relative to its 2007 level. A decomposition of this distributional change attributes roughly three quarters of this decline to continuing affiliates, while new entrants also contributed to an increase in the share of non-exporters. Thus, the shift toward the local market was not simply driven by changes in the composition of firms operating in China. It also reflected changes among affiliates already in operation.

To investigate these responses, I use a difference-in-differences design comparing affiliates in China with different pre-reform export orientations. Specifically, I compare affiliates whose average export share over 2004–2007 was at least 70 percent with those below this threshold. I then examine subsequent foreign entry by comparing parents that owned at least one highly export-oriented affiliate in China before the reform with other parents. These comparisons identify differential responses under the assumption that the groups would have followed parallel trends in the absence of the reform. Importantly, because the reform also changed other aspects of corporate taxation, the estimates cannot isolate the removal of the export-contingent preference from the broader effects of the reform.

The results show a substantial shift toward the local market among previously highly export-oriented affiliates. Relative to affiliates below the threshold, their export intensity declined by 17 percentage points, while local sales increased by approximately 82 percent after the reform. This increase was driven primarily by sales to unaffiliated customers. The probability of reporting positive local sales also rose by about 17.5 percentage points, indicating that some affiliates entered the local market while others expanded their existing sales. In contrast, I find no statistically significant differential changes in total exports or total sales. The decline in export intensity thus reflects a substantial expansion of local sales rather than a clearly detectable contraction in exports—a response that would be missed by examining export performance alone.

The local sales response is most evident among affiliates with pre-reform export intensity of at least 80 percent, rather than those just above the 70 percent threshold. Moreover, similarly export-oriented Korean affiliates operating outside China do not exhibit a comparable response. These patterns are consistent with an adjustment associated with the Chinese reform rather than a general shift in the behavior of Korean exporting affiliates across host countries.

The reform was also associated with changes in where multinational parents expanded. Parents that owned highly export-oriented affiliates in China before the reform became approximately 3 percentage points more likely to establish affiliates in Southeast Asia than other parents, relative to a pre-reform annual entry rate of 3.2 percent. This finding reveals a distinct geographic margin of adjustment. While existing affiliates became more oriented toward serving China's local market, their parents also became more likely to expand production into other countries.

Taken together, these findings highlight two ways multinational firms can respond to changes in investment incentives. Existing affiliates can adjust whom they sell to without changing where they operate, while parent firms can reconsider the location of new investments. The results are consistent with the removal of export-share requirements encouraging local market expansion, while changes in relative after-tax returns may influence subsequent investment decisions. Costs already incurred in existing operations may further contribute to differences between these responses, although the underlying mechanisms cannot be separately identified. More broadly, evaluating investment incentives solely through export volumes or new investment may overlook how these policies reshape the markets served by foreign production.

Related Literature This paper contributes to three strands of literature.

First, I provide evidence on how changes in export-contingent incentives affect firms' allocation of sales between domestic and foreign markets. Theoretical studies show that export requirements and subsidies conditioned on export shares can encourage exporting while distorting firms' domestic sales decisions and weakening competition in the host market (Davidson et al., 1985; Rodrik, 1987; Defever and Riaño, 2017). Export intensity also reflects country size and firm-destination heterogeneity, beyond the effects of export-oriented policies (Defever and Riaño, 2022). Empirical evidence on firms' responses to the removal of such requirements remains limited. Defever et al. (2019) find that eliminating export requirements while retaining incentives in the Dominican Republic's special economic zones attracted exporters but did not significantly increase aggregate exports. However, their customs data do not observe domestic sales, leaving open how incumbent firms adjust their allocation across markets. I examine a different policy change involving the withdrawal of an export-contingent tax preference as part of China's broader tax reform, and observe local sales alongside exports. Previously highly export-oriented affiliates expanded sales to local customers, particularly unaffiliated buyers, and became more likely to serve the local market relative to less export-oriented affiliates. These findings reveal an important margin of adjustment that cannot be captured by export outcomes alone.

Second, I contribute to research on how host-country conditions shape multinational production and the markets served by foreign affiliates. Multinationals choose production locations jointly with their affiliates' sales destinations (Tintelnot, 2017), while corporate taxation influences foreign investment and its composition (Becker et al., 2012; Wang, 2020). Host-country financial

development and FDI liberalization can also affect how affiliates allocate sales across local, home, and third-country markets (Bilir et al., 2019; Alviarez et al., 2026). Studies of China's 2008 tax reform have examined profit shifting and the geographic allocation of foreign production within China (Lu and Wang, 2024; Deng et al., 2025). I extend this literature by examining how affiliates already operating in China adjusted the markets and customers they served following the reform. The expansion of local sales among previously export-oriented affiliates highlights a dimension of multinational adjustment that need not be reflected in investment location or overall activity alone.

Third, I add to the literature on how policy changes in one country affect multinational activity elsewhere. Previous research shows that tax policies, labor regulations, and trade restrictions can influence multinational operations and cross-border sourcing decisions (Becker and Riedel, 2012; Ahn et al., 2025; Flaaen et al., 2020). Recent work also examines shifts in sourcing and indirect trade links during the US–China trade war (Alfaro and Chor, 2023; Fajgelbaum et al., 2024; Freund et al., 2024; Iyoha et al., 2025). I examine a distinct margin of cross-border response: subsequent foreign entry by multinational parents following a tax reform in a country where they already operate. Parents with previously highly export-oriented affiliates in China became more likely to enter Southeast Asia after the reform than other parents. Together with the expansion of local sales among existing affiliates in China, this finding illustrates how adjustment within established foreign operations can coexist with parents' new investment in other countries.

The remainder of the paper proceeds as follows. Section 2 provides background on China's tax reform and the overseas investment patterns of Korean multinationals. Section 3 presents the data and descriptive evidence on multinational affiliates' market orientation. Section 4 examines adjustment among incumbent affiliates in China. Section 5 studies parent firms' entry into other host countries. Section 6 concludes.

2. Background

2.1. The Export-contingent Tax Preference and China's 2008 Enterprise Income Tax Reform

Before 2008, China maintained separate enterprise income tax regimes for Chinese-owned enterprises and foreign-invested enterprises (FIEs).[3] Although FIEs faced a standard enterprise income tax rate of 30 percent, preferential rates were available depending on their location and activities. These included a 15 percent rate for eligible enterprises in Special Economic Zones and Economic and Technological Development Zones, and a 24% rate for eligible enterprises in Coastal Open Economic Zones.

This paper focuses on an additional enterprise income tax preference conditional on an export share requirement, which is referred to as the *export-contingent tax preference*. Under Article 75(7) of the implementing rules for the *1991 FIE Tax Law*, qualifying export-oriented FIEs could receive a 50 percent reduction in their applicable enterprise income tax rate, provided that the value of exported products accounted for at least 70 percent of annual product output value. Firms already subject to a 15 percent rate instead paid 10 percent, as summarized in Table 1. This export-contingent preference was available to qualifying FIEs regardless of their location. It reduced the tax rate on enterprise income conditional on meeting the export share requirement, rather than applying a separate preferential rate only to export values.

By making a lower enterprise income tax rate conditional on export intensity, this preference rewarded firms for maintaining a high share of sales abroad. Its economic relevance therefore extended beyond the overall tax burden to the allocation of sales across markets. As Defever and Riaño (2017) show, subsidies with export share requirements can encourage exports while limiting beneficiaries' sales in the domestic market, thereby reducing competitive pressure on firms serving domestic consumers.

The Enterprise Income Tax (EIT) reform, adopted in March 2007 and effective January 1, 2008, established a unified statutory rate of 25 percent for Chinese-owned enterprises and FIEs and abolished the export-contingent tax preference.[4] Although certain other tax benefits remained subject to transition arrangements, meeting the 70 percent export threshold no longer conferred an additional income tax reduction. Overall tax-rate changes nevertheless depended on affiliates'

[3] Chinese-owned enterprises were governed by the *1993 Provisional Regulations on Enterprise Income Tax*, which specified a statutory rate of 33 percent. FIEs were governed by the *1991 Income Tax Law for Enterprises with Foreign Investment and Foreign Enterprises*, which specified an enterprise income tax rate of 30 percent and a separate local income tax of 3 percent. The rates discussed below refer to the enterprise income tax component, excluding local income tax.

[4] In February 2007, the United States and Mexico challenged several Chinese export and import-substitution subsidies in WTO disputes DS358 and DS359. Under its November 2007 agreement with the United States, China committed to eliminate the challenged subsidies by January 1, 2008 and not to reintroduce them.

Table 1: Chinese Enterprise Income Tax Rates for FIEs by Export Share and Location

	SEZs and ETDZs	Coastal Open Economic Zones	Other Areas
Panel A. Before the reform, 1991–2007			
Export share $< 70\%$	15%	24%	30%
Export share $\geq 70\%$	10%	12%	15%
Panel B. After the reform, 2008 onward			
Any export share	25%	25%	25%

Notes: Table 1 panel A summarizes the main location-based enterprise income tax rates for qualifying FIEs and the associated export-contingent reductions. Export share is measured as the value of exported products divided by total annual output value. SEZs and ETDZs refer to "Special Economic Zones" and "Economic and Technological Development Zones." Coastal Open Economic Zones include designated open areas in the "Yangtze River Delta," "Pearl River Delta," and other coastal regions. The export-contingent reduction applies after the expiration of the initial tax exemption and reduction periods. Panel B reports the standard statutory rate introduced in 2008. Rates applicable to individual enterprises could differ because of transition arrangements and other tax preferences. The export-contingent reduction ended on January 1, 2008 with no transition.

pre-reform tax treatment and eligibility for other preferences and transition arrangements.[5] Appendix A.2 provides further institutional details.

2.2. Korean Multinationals in China and the Rise of Manufacturing FDI into Southeast Asia

The 2008 reform took place in a setting where Korean multinationals had a substantial presence in China. Figure 1(a) reports the distribution of foreign affiliates in China by source economy over 2000–2015. Korea accounts for 5.7 percent of all affiliates and 16.1 percent when Hong Kong, Macau, and Taiwan are excluded.[6] Among the remaining source economies, Korea's share equals that of the United States and is close to Japan's 16.6 percent, placing Korea among the largest sources of foreign affiliates in China by number of affiliates (Ma and Zhang, 2025).

Figure 1(b) shows annual Korean manufacturing outward foreign direct investment (FDI) flows to China and eight Southeast Asian economies from 2004 to 2012. Flows to China fluctuated over the period, reaching a peak in 2007. In contrast, investment in Southeast Asia increased substantially, rising from approximately \$250 million in 2004 to more than \$2 billion annually in 2010–2012. China remained the larger recipient throughout this period, but the investment gap between the two destinations narrowed considerably from its 2007 level.

[5]Other preferences under the post-reform regime included a 15 percent rate for qualifying high and new technology enterprises (Chen et al., 2021) and for qualifying enterprises in encouraged industries in western regions (Deng et al., 2025). Eligibility for these preferences depended on R&D intensity, industry, or location rather than an export share requirement.

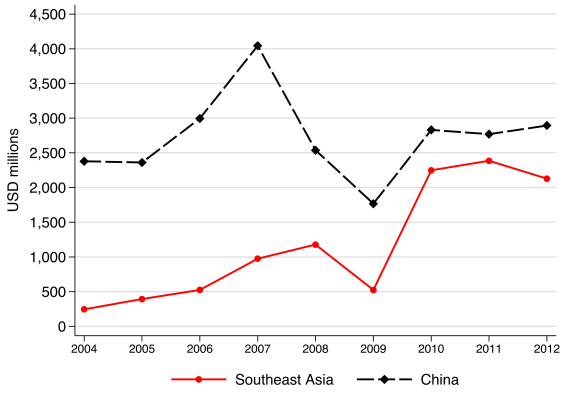
[6]Some investment originating from Hong Kong, Macau, and Taiwan may reflect round-tripping by Chinese investors seeking preferential treatment for foreign-invested enterprises. Excluding these source economies does not necessarily eliminate all round-tripping investment.

Figure 1: Foreign Affiliates in China and Korean Manufacturing Outward FDI

(a) Foreign Affiliates in China by Source Economy, 2000–2015

Source country	All affiliates (%)	Excluding Hong Kong, Macau, and Taiwan (%)
Hong Kong	53.9	—
Taiwan	9.3	—
Japan	5.9	16.6
United States	5.7	16.1
Korea	5.7	16.1
British Virgin Islands	2.5	7.0
Singapore	2.3	6.5
Macau	1.3	—
Rest of the World	13.4	37.8

(b) Korean Manufacturing FDI by Destination



Notes: Figure 1 panel (a) reports the distribution of foreign affiliates in China by source country from 2000 to 2015. The second column excludes affiliates from Hong Kong, Macau, and Taiwan and recalculates the shares among the remaining affiliates. Panel (b) plots annual Korean manufacturing outward FDI flows to China and Southeast Asia from 2004 to 2012, in millions of US dollars. The Southeast Asian aggregate includes Vietnam, Indonesia, Thailand, the Philippines, Cambodia, Malaysia, Laos, and Myanmar. *Sources:* Panel (a) – Ma and Zhang (2025), Table A.1, and author's calculations. Panel (b) – Korea Export-Import Bank and author's calculations.

These patterns establish the importance of China as a host for Korean multinationals and the growing role of Southeast Asia in Korean manufacturing investment. Aggregate investment flows, however, do not reveal how existing affiliates in China adjusted their activities or which parent firms added affiliates in other destinations. The next section introduces the Korean multinational data and documents changes in affiliates' export orientation, providing the basis for the affiliate-level and parent-level analyses that follow.

3. Data and Stylized Fact

3.1. Multinational Affiliate Data

The affiliate-level dataset is from the "Benchmark Survey of Korean Multinational Affiliate Abroad," collected by the Korea Export-Import (EXIM) Bank. Since 1999, the Korea EXIM bank has surveyed Korean overseas affiliates with cumulative investment exceeding one million USD, which are required by law to submit annual business reports. In 2012, for example, there were 40,127 Korean affiliates abroad and the EXIM bank attempted to survey 7,813 affiliates. My original sample includes 13.0% of Korean affiliates abroad, but it covers 71.3% of total cumulative investments of all Korean affiliates. Thus, the dataset is a non-random sample that disproportionately represents larger Korean foreign affiliates by cumulative investment.

The dataset provides the information for the affiliate-level variables such as their host country,

industry, parent firm identifier, employment, sales and purchases, from 2004 to 2012.[7,8] Some affiliates reported either sales or employment of zero throughout the sample period, and I exclude these affiliates from my analysis. I restrict the sample to majority-owned affiliates, defined as those in which the Korean parent's ownership share exceeds 50%. I also exclude affiliates located in tax haven countries, since these affiliates tend to be established for different purposes rather than production motives. Finally, I focus on affiliates operating in the manufacturing sector, which accounts for 71% of the data and provides more complete sales information than affiliates in service or other sector. Appendix A.3 describes more details on the sample construction. In the end, there are 8,548 affiliate-year observations, and I use 2,149 foreign affiliates.

Korean manufacturing foreign affiliates in these dataset operate across 53 different host countries. Table 2 shows the top countries hosting Korean manufacturing affiliates in terms of the number of affiliates in my sample between 2004 and 2012. China is the most important host country, accounting for more than half of all Korean manufacturing affiliates with 1,243 (57.8%) in the sample. The next largest host country is Vietnam with 204 (9.5%), followed by US with 142 (6.6%), and Indonesia with 91 (4.2%). This pattern indicates that China is the main foreign production platform for Korean multinationals, which makes China's 2008 tax reform both economically important and highly relevant for understanding subsequent changes in affiliate activity.

A distinctive feature of the dataset is its detailed decomposition of each affiliate's sales by both destination market and transaction type. Along the destination dimension, the dataset separately records local sales in the host country, exports to home country (i.e. Korea), and exports to third countries. Along the transaction-type dimension, each affiliate's sales to each destination are further divided into intra-firm transactions, namely sales to parent or other affiliates of the same Korean multinational, and arm's-length transactions with unaffiliated buyers. This distinction yields a six-way decomposition of total sales.

3.2. Export Intensity Distribution of Korean Affiliates in China

I measure each affiliate's exposure to the removal of export-contingent tax incentives using their export intensity before the 2008 tax reform. Export intensity is defined as the ratio of total exports to total sales, where total exports include all sales outside the host country, that is, exports to Korea and third countries. The pre-reform measure of export intensity is the average of each affiliate's export share between 2004 and 2007, so that treatment status is not affected

[7] Admittedly, one limitation of the dataset is that the survey identifies an affiliate's host country but does not provide its specific location within host countries.

[8] Industries are classified by a two-digit Korean Standard Industrial Classification (KSIC), which correspond to the two-digit level of the International Standard Industrial Classification (ISIC).

Table 2: Manufacturing Affiliates of Korean Multinationals in Top Host Countries, 2004-2012

Host country	#(Affiliates)	Percent
1. China	1,243	57.8%
2. Vietnam	204	9.5%
3. United States	142	6.6%
4. Indonesia	91	4.2%
5. India	57	2.7%
6. Thailand	36	1.7%
7. Japan	31	1.4%
8. Philippines	27	1.3%
9. Hong Kong	25	1.2%
9. Mexico	25	1.2%
11. Rest of the World	268	12.5%
Total	2,149	100%

Notes: Table 2 reports the number of Korean manufacturing multinational affiliates by host country from 2004 through 2012. Each top 10 country accounts for at least 1% of Korean manufacturing affiliates between 2004 and 2012.

by post-reform changes in affiliates' sales destinations.[9]

Table 3 shows the the average pre-reform sales composition of Korean manufacturing affiliates in China by their average export intensity over 2004–2007. Of the 774 affiliates, 273 had average export shares of at least 70 percent, including 123 pure exporters that sold exclusively to foreign markets.[10] Among affiliates with export intensity between 70 percent and 100 percent, excluding pure exporters, intra-firm exports accounted for 65.5 percent of total sales, representing approximately 74 percent of their exports. Among pure exporters, intra-firm exports accounted for 82.6 percent of total sales. In contrast, among affiliates with export intensity below 70 percent, arm's-length transactions accounted for approximately 73–80 percent of local sales. These patterns indicate that exports were predominantly intra-firm transactions, whereas local sales were primarily arm's-length transactions.

Figure 2 shows how Korean manufacturing affiliates' export orientation in China changed around the 2008 tax reform by comparing the distributions of export intensity in 2007 and in 2012. In 2007, the distribution was bimodal, with substantial concentrations of affiliates at both low and high export intensities. Notably, affiliates at the high end of the distribution were concentrated

[9]Some affiliates with pre-reform export intensity between 35% and 80% exhibit substantial variation in their export shares over time. As a robustness check, I therefore use the minimum and maximum export shares of each affiliate during the pre-reform period.

[10]Dai et al. (2016) document high export intensities among processing exporters in China. Pure exporters in my sample are defined by their export shares, and the data do not identify whether affiliates engage in processing trade.

Table 3: Pre-reform Sales Composition of Korean Affiliates in China by Export Intensity, 2004–2007

	Log Total Sales	Total Exports (%)	Local Sales (%)	Arm's-length Local Sales (%)	Intra-firm Exports (%)	# (Affiliates)
(Pre-reform) Export intensity						
Non-exporters	15.70	0.0	100.0	73.1	0.0	201
$\in (0, 0.35)$	16.51	13.2	86.8	69.4	9.4	184
$\in [0.35, 0.70)$	16.01	53.4	46.6	35.9	41.9	116
$\in [0.70, 1)$	16.53	88.9	11.1	8.0	65.5	150
Pure exporters	15.34	100.0	0.0	0.0	82.6	123

Notes: Table 3 reports the average pre-reform sales composition of Korean manufacturing affiliates in China. Affiliates are grouped according to their average export intensity over 2004–2007. Log total sales and sales shares are averaged across available pre-reform years at the affiliate level and then across affiliates within each group. Total exports, local sales, arm's-length local sales, and intra-firm exports are reported as percentages of total sales.

at export shares between 80 percent and 100 percent, rather than immediately above the 70 percent eligibility threshold. This pattern is consistent with the bimodal distribution of export intensity among firms in China in the early 2000s, as documented by Defever and Riaño (2017).

Between 2007 and 2012, the distribution shifted toward lower export intensity. The density increased at low export shares and declined among highly export-oriented affiliates, particularly those with export shares above the 70 percent threshold. Although the high-export-intensity mode remained visible in 2012, it became less pronounced relative to the pre-reform distribution.

3.3. Decomposition of Export Intensity in China

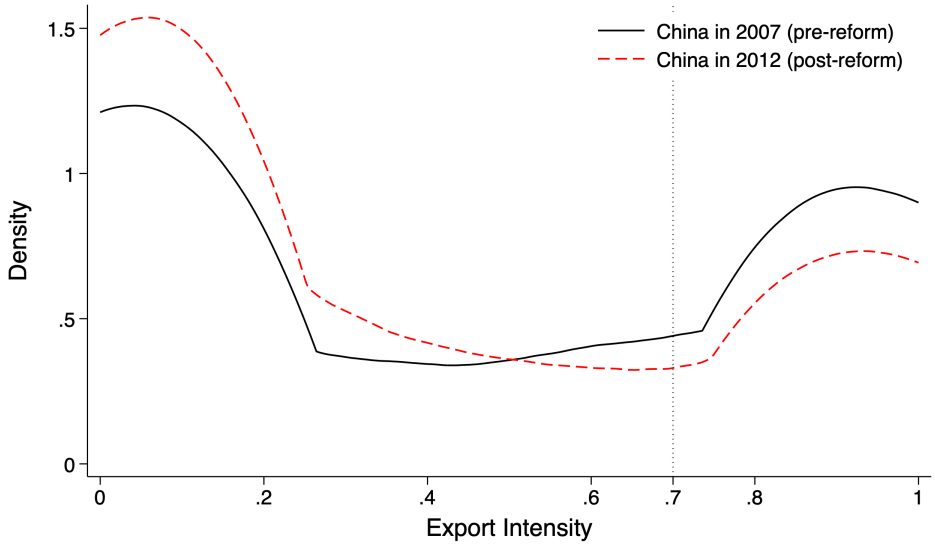
The shift toward lower export intensity in Figure 2 can reflect changes among affiliates that operate in China throughout the period (within-affiliate channel) or changes in which affiliates operate there (compositional channel). To separate these channels, I decompose the change in the export intensity distribution between 2007 and 2012 following the framework of Melitz and Polanec (2015).[11]

Let EI_{it} denote the export intensity of affiliate i in year t. For an export-intensity bin B, the share of affiliates in that bin is given by

$$p_{B,t} = \frac{1}{N_t} \sum_{i \in \mathcal{A}_t} \mathbb{1}\{EI_{it} \in B\},$$

[11] I follow the decomposition exercise developed by Melitz and Polanec (2015) because it compares entrants and exiting affiliates with continuing affiliates in the same year, so changes common to all affiliates between 2007 and 2012 are not attributed to entry or exit.

Figure 2: Change in Export Intensity of Korean Affiliates in China before and after 2008



Notes: Figure 2 shows the distribution of Korean manufacturing affiliates' export intensity in China in 2007 (solid) and 2012 (dashed). The vertical dotted line marks the 70% export-intensity threshold, the statutory cutoff for the export-contingent tax incentive.

where $\mathcal{A}_t$ is the sample of Korean manufacturing affiliates in China in year t, $N_t = |\mathcal{A}_t|$ is the number of affiliates in year t, and $\mathbb{1}\{\cdot\}$ is an indicator function. I consider five mutually exclusive bins B: non-exporters, $EI \in (0, 0.35)$, $[0.35, 0.7)$, $[0.7, 1)$, and pure exporters.

To decompose the change in each bin's share between 2007 and 2012, I classify affiliates observed in either 2007 or 2012 into four mutually exclusive groups. *Continuing affiliates (C)* are observed in both years. *Entrants (E)* are newly established affiliates in China between 2008 and 2012, while *Exiting affiliates (X)* are observed in 2007 but exit from China between 2008 and 2012. *Other changes in sample composition (O)* comprise the remaining samples, including previously established affiliates but appear after 2007.

For group $G = \{C, E, X, O\}$, I define the within-group share as

$$p^G_{B,t} = \frac{1}{N^G_t} \sum_{i \in \mathcal{A}_t \cap G} \mathbb{1}\{EI_{it} \in B\}, \qquad N^G_t = |\mathcal{A}_t \cap G|$$

where N^G_t is the number of affiliates in group G observed in the sample year t. Then, the change

Table 4: Decomposition of Share Changes in the Export Intensity Distribution

	Non-exporter	$(0, 0.35)$	$[0.35, 0.70)$	$[0.70, 1)$	Pure exporter
Observed share change	+3.11	+5.00	-1.33	-1.30	-5.49
Continuing affiliates (C)	-1.31	+5.01	+1.31	-1.53	-3.49
New entrants (E)	+4.17	-1.72	-0.93	-0.81	-0.71
Exiting affiliates (X)	-0.49	+1.79	-0.57	+0.62	-1.35
Other (O)	+0.74	-0.07	-1.13	+0.42	+0.05

Notes: Table 4 decomposes the change in the share of affiliates in each export-intensity bin into contributions from continuing affiliates, new entrants, exiting affiliates, and other compositional changes. All entries are reported in percentage points.

in each bin's share can be decomposed as

$$p_{B,2012} - p_{B,2007} = \underbrace{p^C_{B,2012} - p^C_{B,2007}}_{\text{Continuing}} + \underbrace{\frac{N^E}{N_{2012}}\left[p^E_{B,2012} - p^C_{B,2012}\right]}_{\text{Entrant}} + \underbrace{\frac{N^X}{N_{2007}}\left[p^C_{B,2007} - p^X_{B,2007}\right]}_{\text{Exit}} + O_B, \tag{1}$$

where N^E and N^X are the numbers of new entrants and exiting affiliates. The continuing component captures changes in the distribution of affiliates observed in both years. The entry component compares entrants with continuing affiliates in 2012, while the exit component compares exiting affiliates with continuing affiliates in 2007. The term O_B captures the contributions of remaining samples, using the same year-specific comparisons with continuing affiliates. These components sum exactly to the observed change in each bin's share.

Table 4 shows that these contributions differ across the export-intensity distribution. Each row sums to zero and reports the contribution of one component $\{C, E, X, O\}$ to changes in affiliate shares across bins. New entrants contributed to the rising share of non-exporters, consistent with new investment in China serving the local market, while exits contributed to the declining share of pure exporters. Continuing affiliates made negative contributions in the pure-exporter and $[0.70, 1)$ bins and positive contributions in $(0, 0.35)$ bins. Combining the top two bins, the share of affiliates with export intensity of at least 70 percent fell from 37.8 percent in 2007 to approximately 31.0 percent in 2012, a decline of 6.8 percentage points, or 18 percent of its 2007 level. Continuing affiliates accounted for about three quarters of this decline.

Because continuing affiliates account for most of the decline in the high-export-intensity share, the following sections focus on affiliates operating in China before the reform. Using pre-reform export intensity as a measure of exposure to the abolished tax preference, I estimate difference-in-differences regressions to examine whether exposed affiliates adjusted their sales across markets differently after the reform.

4. Evidence on Affiliate-level Adjustments in China

4.1. Empirical Strategy

To examine how incumbent affiliates adjusted to the removal of export-contingent tax incentives, I restrict the sample to Korean manufacturing affiliates located in China that were established before the reform. I measure an affiliate's exposure to the withdrawal using its pre-reform export intensity, defined as the ratio of total exports to total sales, with exports including those to Korea and third countries. An affiliate is classified as a high-export-intensity (i.e. high-EI) affiliate if its average export intensity over 2004–2007 is at least 70 percent, the statutory threshold described in Section 2. Affiliates below this threshold constitute the low-export-intensity (i.e. low-EI) comparison group.

I begin by estimating respective trends in outcomes by year for low-EI and high-EI groups, separately, as follows:

$$y_{it} = \sum_{k=-4,\, k\neq -1}^{4} \beta_k \times \mathbb{1}\{t - 2008 = k\} + \alpha_i + \varepsilon_{it} \tag{2}$$

where y_{it} is an outcome of affiliate i in year t, α_i capture affiliate fixed effects, and ε_{it} is an error term. I define the event time dummies as $\mathbb{1}\{t-2008=k\}$ which is an indicator variable equals one if the year t is an event year k before or after the reform. I normalize $\beta_{-1}=0$, so that 2007, the last pre-reform year, serves as the reference year. The outcome variables are the share of total exports, the log of total sales, log of total exports, and log of local sales.

The estimates in the equation (2) describe within-affiliate changes over time but do not isolate the effect of the reform from other contemporaneous changes.[12] I therefore compare the evolution of high- and low-EI affiliates using a difference-in-differences (DiD) event study specification that also controls for time-varying industry-specific shocks:

$$y_{it} = \sum_{k=-4,\, k\neq -1}^{4} \beta_k \, \mathbb{1}\{t - 2008 = k\} \times \text{High EI}_i + \alpha_i + \delta_{j(i)t} + \varepsilon_{it} \tag{3}$$

where $j(i)$ is an industry j of an affiliate i, High EI_i is the high-export-intensity indicator and $\delta_{j(i)t}$ capture industry-year fixed effects. All the rest are the same as before.

Each β_k measures the change in the outcome of high-EI affiliates between 2007 and event year $2008+k$, relative to the corresponding change among low-EI affiliates, controlling for affiliate and industry-year fixed effects. The pre-reform coefficients are used to assess differential pre-

[12] For example, a decline in demand for electronics industry relative to textiles industry could generate different outcome paths for high- and low-EI affiliates if their industry composition differs. Industry-year fixed effects absorb such shocks common to affiliates within an industry and year.

existing movements, while the post-reform coefficients trace the subsequent adjustment path. Standard errors are clustered at the parent level, allowing for correlation across affiliates of the same parent.

Identification of β_k hinges on the assumption that, absent the tax reform, affiliates with high- and low pre-reform export-intensity affiliates would have followed parallel outcome paths conditional on the fixed effects. Affiliate fixed effects absorb time-invariant differences in affiliates' size, productivity, and relationship to the parent. Industry-year fixed effects absorb shocks common to affiliates in the same industry and year, including industry-level demand and industry-level policy changes.

4.2. Export Intensity and Sales Responses

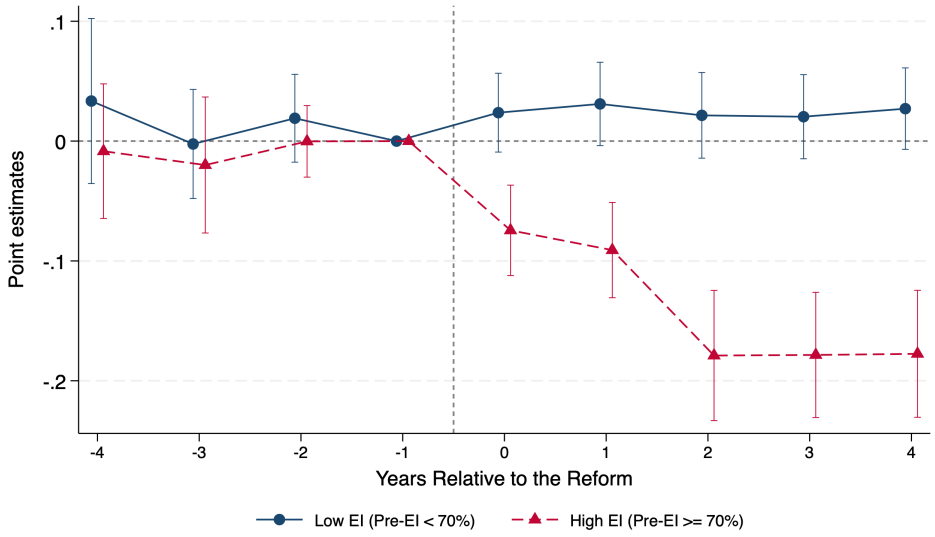
Export intensity Figure 3 panel (a) plots the group-specific estimates from equation (2), with each group's total export share normalized to zero in 2007. Before the reform, both groups were on parallel paths, and their paths diverge after 2008. Among high-EI affiliates, the export share falls by about 7 percentage points in 2008 relative to 2007 and by about 18 points in 2010, and stays at that level through 2012. Low-EI affiliates, by contrast, exhibit small positive changes relative to 2007. The decline therefore occurs within the high-EI group rather than reflecting a rise in the comparison group.

Figure 3 panel (b) plots the corresponding dynamic estimates from equation (3), controlling for affiliate and industry-year fixed effects. The pre-reform coefficients fluctuate around zero and are statistically indistinguishable from zero. Following the reform, the coefficients become negative and remain statistically significant throughout the post-reform period. The estimated relative decline is approximately 11 percentage points in 2008, increases to about 23 points in 2010, and persists through 2012. Column (1) of Table C.1 and Table C.5 provide additional details on the pre- and post-reform estimates. Overall, the timing and direction of the response are consistent with affiliates adjusting their sales orientation after the removal of a tax preference tied to export performance.

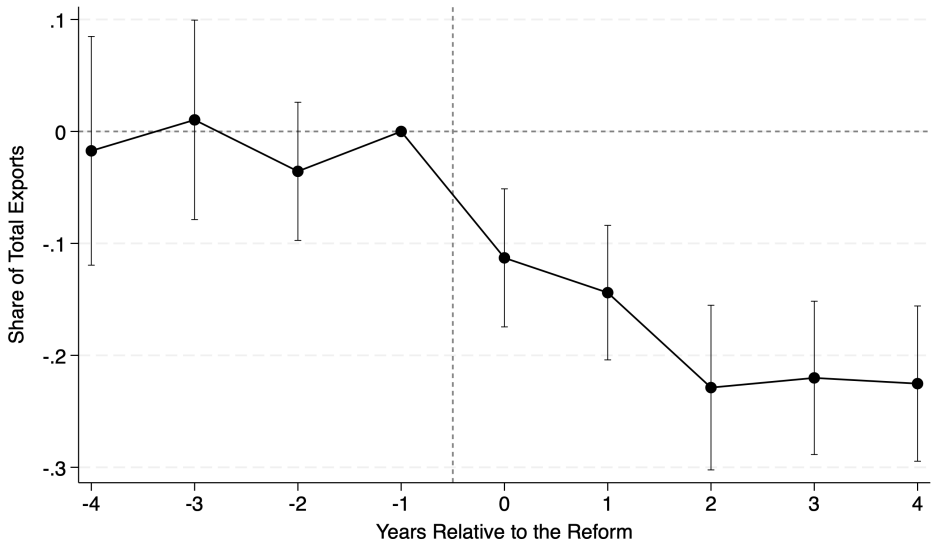
Total sales, exports, and local sales A decline in export share does not reveal how affiliates adjusted their sales structure. It could reflect lower exports, higher local sales, or changes in both. I therefore examine total sales, total exports, and local sales separately, and Figure B.1 panel (a)–(c) show the group-specific paths for these outcomes. Both groups' total sales rise before the reform along similar paths and remain above their respective 2007 benchmarks afterward. Total exports also increase before the reform, but their subsequent paths are less pronounced and more variable. Log local sales display a clearer divergence. Although both groups' estimated log local sales rise after 2007, the increase is substantially larger among high-EI affiliates, particularly from 2010 onward. These descriptive paths provide context for the differential responses estimated

Figure 3: Effect of Tax Preference Removal on Share of Total Exports

(a) Pre-trend in Share of Total Exports



(b) Difference-in-Differences Estimates on Share of Total Exports



Notes: Figure 3 panel (a) plots the evolution of the share of total exports around the tax reform. Panel (a) shows the pre-reform trend. Panel (b) shows the estimated β_k coefficients from equation (3). Standard errors are clustered at the parent level, and each bar represents 95% confidence intervals.

below.

Figure 4 plots the dynamic estimates from equation (3) for three sales outcomes. For log total sales in panel (a), the pre-reform coefficients are close to zero, and the post-reform estimates show no statistically significant differential change between high-EI and low-EI group. The estimate for log total sales is positive in 2008 and modestly negative thereafter. Log total exports in panel (b) display a similar pattern. Columns (2) and (3) of Table C.1 and Table C.5 provide additional details on the estimates. The post-reform coefficients of both log total sales and log total exports are mostly negative, with the largest estimated decline occurring in 2010, but their confidence intervals include zero in every year. However, these estimates do not establish that the reform had no effect on either outcome. They indicate that the analysis does not detect a differential change.

Local sales in China exhibit a different pattern. In Figure 4, panel (c), the pre-reform coefficients display no sustained differential trend, although they are estimated imprecisely. The post-reform coefficients show an estimated relative increase of approximately 58 percent in 2009, significant at the 10 percent level.[13] By 2010, the estimate implies that local sales more than double relative to the change among low-EI affiliates, using 2007 as the baseline, and the response remains elevated through 2012. The estimates for 2010–2012 are statistically significant at the 1 percent level. Column (4) of Table C.1 and Table C.5 provide additional details on the estimates.

The magnitude of the local-sales response should be interpreted in light of affiliates' initial sales composition. Because high-EI affiliates initially derive most of their sales from exports, a large proportional increase in local sales can translate into a much smaller proportional change in total sales. The estimates on log local sales are therefore compatible with the absence of a statistically significant differential change in total sales. They also help characterize the shift in sales orientation. The relative decline in export share is accompanied by an expansion of sales to the Chinese market. These results do not, however, provide an exact accounting of the export-share decline, since the outcomes are estimated separately and the log local-sales specification excludes observations with zero local sales (that is, *pure exporter*).[14]

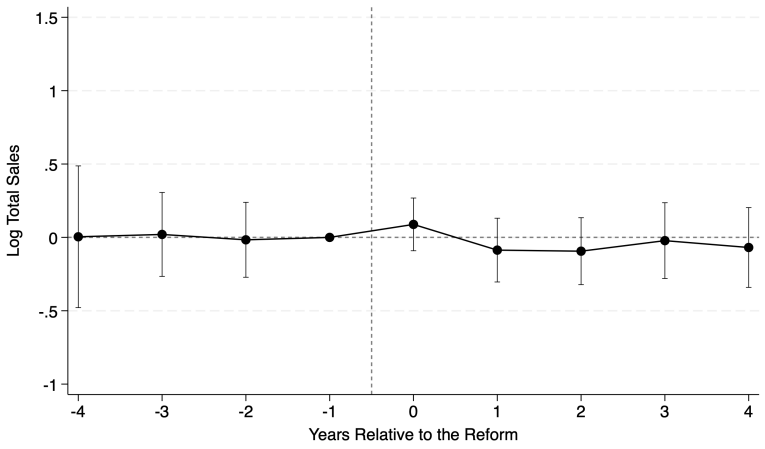
Arm's-length and intra-firm sales in China The rise in local sales could reflect greater sales to unaffiliated buyers in China or changes in transactions within the multinational group, such as supplying related affiliates in China. To distinguish these dimensions of adjustment, I split local sales into sales to unaffiliated buyers (arm's-length) and sales to related parties

[13] Coefficients in Figure 4 are reported in log points and converted to percentages as $100 \times (e^{\hat{\beta}} - 1)$.

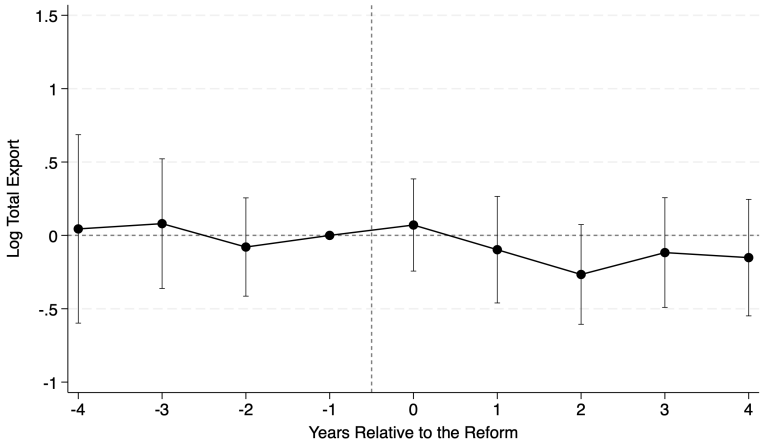
[14] The log local-sales specification excludes affiliate-year observations with zero local sales and therefore does not directly measure transitions from zero to positive local sales. The decomposition in Table 4 provides complementary descriptive evidence on changes in export orientation among continuing affiliates, including movements out of pure-exporter status.

Figure 4: Effect of Tax Preference Removal on Affiliate Sales Outcomes

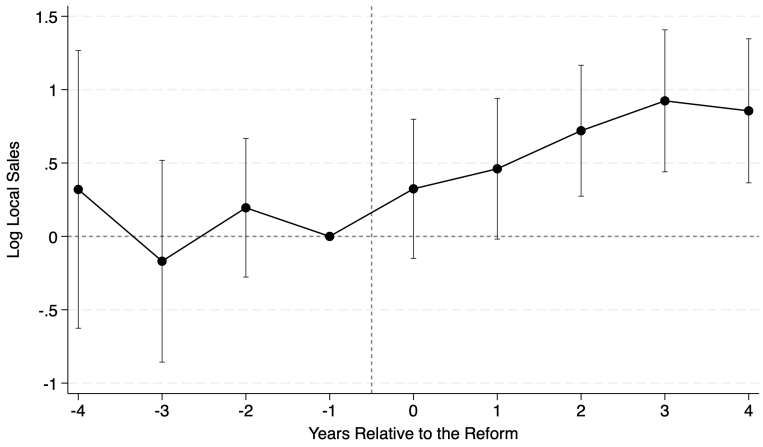
(a) Log Total Sales



(b) Log Total Exports



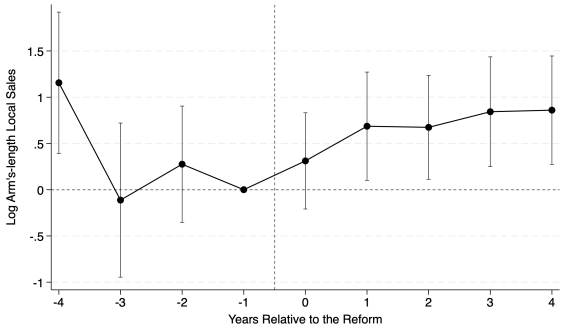
(c) Log Local Sales in China



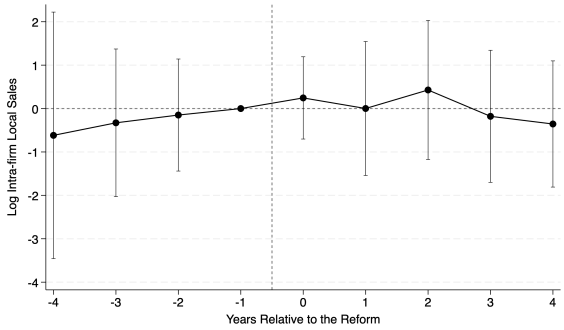
Notes: Figure 4 plots the estimated β_k coefficients from equation (3), where the dependent variable is, in turn, log total sales (panel a), log total exports (panel b), and log local sales in China (panel c). Standard errors are clustered at the parent level, and each bar represents 95% confidence intervals.

Figure 5: Effect of Tax Preference Removal on Intra-firm and Arm's-length Local Sales in China

(a) Log Arm's-length Local Sales in China



(b) Log Intra-firm Local Sales in China



Notes: Figure 5 plots the estimated β_k coefficients from equation (3), where the dependent variable is, in turn, log arm's-length local sales in China (panel a) and log intra-firm local sales in China (panel b). Standard errors are clustered at the parent level, and each bar represents 95% confidence intervals.

(intra-firm).[15] Figure 5 plots the corresponding dynamic estimates from equation (3).

Arm's-length local sales rise among high-EI affiliates relative to low-EI affiliates after the reform. The coefficients are positive in every post-reform year and become statistically significant in 2009. By 2011–2012, the estimates imply relative increases of more than 100 percent, using 2007 as the baseline. [16] The increase in arm's-length local sales shows that the relative expansion of sales to the Chinese market includes transactions with buyers outside the multinational group. This finding helps characterize the change in affiliates' activities by identifying a response in sales beyond their existing ownership networks. By contrast, intra-firm local sales show no statistically significant differential response. The estimates are imprecise, however, and do not rule out economically meaningful changes in transactions within multinational groups. Last two columns of Table C.1 and Table C.5 provide additional details on the estimates.

Taken together, the estimates indicate a reorientation of high-EI affiliates' sales toward the Chinese market relative to low-EI affiliates after the reform. The decline in export share is accompanied by a substantial relative expansion of local sales, including sales to unaffiliated buyers, while no statistically significant differential change is detected in total sales or total exports. This pattern is consistent with export-contingent tax incentives influencing affiliates' sales orientation.

[15] Ramondo et al. (2016) find that the median foreign affiliate of a US multinational sells most of its output to unaffiliated buyers, primarily in its host country. In my sample of Korean manufacturing affiliates in China, arm's-length sales also represent the larger component of local sales across export-intensity groups (Table 3).

[16] Among the pre-reform coefficients, only 2004, the year with the fewest observations, differs significantly from zero while the estimates for 2005 and 2006 are small and statistically insignificant.

4.3. Local Market Participation

The preceding section shows that the relative expansion of local sales includes sales to unaffiliated buyers in China. A related question is whether the reform also changed affiliates' participation in the Chinese market. Export share requirements can affect both the allocation of sales across markets and the choice of which markets to serve. In the presence of fixed costs of serving the local market, such incentives can make operating exclusively as *pure exporters* more attractive for some firms (Defever and Riaño, 2017).

I construct three indicators equal to one if an affiliate reports positive local sales, positive arm's-length local sales, or positive intra-firm local sales, respectively, and zero otherwise. I then estimate linear probability models using the specification in equation (3), retaining the same fixed effects. The coefficients measure changes in the participation gap between high-EI and low-EI affiliates relative to 2007. Among affiliates with positive total sales, zero local sales imply pure-exporter status. The relative increase in local-market participation therefore corresponds to a relative decline in the prevalence of pure exporters.

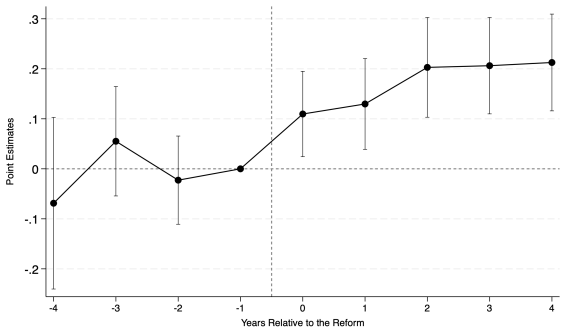
Figure 6 plots the corresponding estimates. For overall local-market participation, the pre-reform coefficients are statistically indistinguishable from zero. Following the reform, high-EI affiliates become more likely to report local sales relative to low-EI affiliates. The estimated differential increase is approximately 11 percentage points in 2008 and reaches about 20–21 percentage points in 2010–2012, remaining statistically significant throughout the post-reform period. Among affiliates with positive total sales, participation in the local market implies that they are no longer pure exporters. The increase in participation thus corresponds to a relative decline in the prevalence of pure-exporter status.

The participation results also differ by transaction type. Arm's-length local-market participation increases among high-EI affiliates relative to low-EI affiliates, with statistically significant estimates of approximately 15–17 percentage points in 2010–2012. This finding complements the arm's-length sales results in Figure 5 (a) by showing that the relative expansion also involves an increase in the probability of selling to unaffiliated buyers. Intra-firm local-market participation, by contrast, shows no statistically significant differential change, although the estimates are imprecise. Table C.2 and Table C.6 presents the details on the estimates.

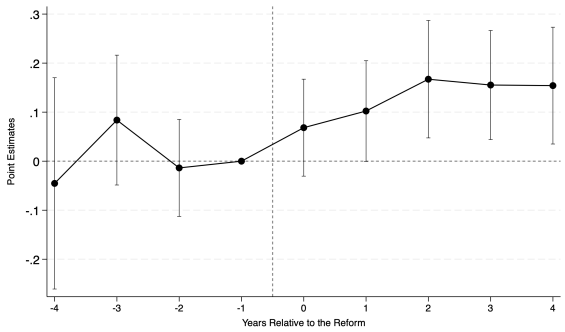
Together, these findings indicate that the shift toward the Chinese market is evident in both local-sales outcomes and the probability of selling locally, including to unaffiliated buyers. The participation estimates capture net changes in participation, which may reflect increased entry into local selling, reduced exit, or both. Nevertheless, they provide complementary evidence that the adjustment extends to whether affiliates serve the Chinese market.

Figure 6: Effect of Tax Preference Removal on Affiliate Local-market Participation

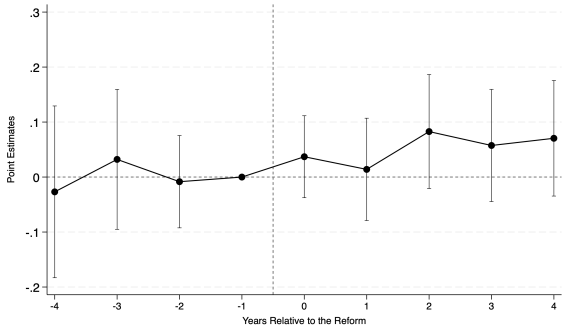
(a) $\mathbb{1}\{\text{Local Sales in China} > 0\}$



(b) $\mathbb{1}\{\text{Arm's-length Local Sales in China} > 0\}$



(c) $\mathbb{1}\{\text{Intra-firm Local Sales in China} > 0\}$



Notes: Figure 6 plots the estimated β_k coefficients from equation (3), where the dependent variables are indicators for positive local sales (panel a), positive arm's-length local sales (panel b), and positive intra-firm local sales (panel c). Standard errors are clustered at the parent level, and each bar represents 95% confidence intervals.

4.4. Discussion and Robustness Checks

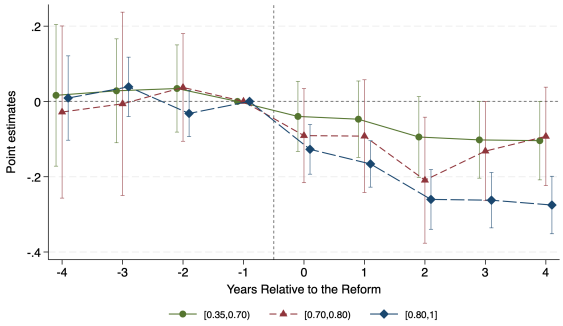
Absence of bunching and heterogeneity by export intensity The export intensity distribution of Korean manufacturing affiliates in China in 2007, shown in Figure 2, displays no pronounced bunching at the 70 percent eligibility threshold. A similar pattern appears in the distribution of manufacturing exporters in China presented by Defever and Riaño (2017), with substantial mass at full export intensity but no distinct concentration around 70 percent. The absence of visible bunching does not itself invalidate the DiD design.[17] The distribution nevertheless provides little direct support for interpreting the estimated responses as adjustments by affiliates that had kept their export shares at or just above the 70 percent threshold to retain the tax preference.

To examine where the responses occur within the pre-reform export intensity distribution, I divide affiliates into four groups based on their average pre-reform export intensity. Using

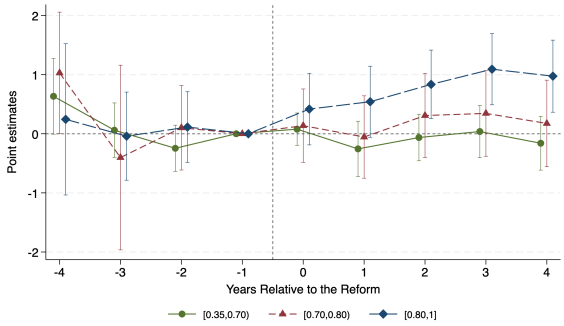
[17] Identification in the DiD design relies on parallel counterfactual trends rather than a concentration of affiliates at the threshold.

Figure 7: Effect of Tax Preference Removal on Export Share Local Sales in China: Heterogeneity by Export Intensity Bin

(a) Share of Total Exports



(b) Log Local Sales in China



Notes: Figure 7 plots the estimated β_{kg} coefficients from equation (4). The reference group consists of affiliates with export intensity in $[0, 0.35)$, and the comparison groups are $[0.35, 0.7)$, $[0.7, 0.8)$, and $[0.8, 1]$. Standard errors are clustered at the parent level, and each bar represents 95% confidence intervals.

affiliates' export intensity in $[0, 0.35)$ as the reference group, I estimate separate dynamic responses for affiliates in $[0.35, 0.7)$, $[0.7, 0.8)$, and $[0.8, 1]$, retaining the same fixed effects used in the main specification. [18] Figure 7 plots the estimates for export share and log local sales in China. The corresponding estimates for log total sales and log total exports appear in Figure B.3.

The clearest sustained responses appear among affiliates with pre-reform export intensity of at least 80 percent. Relative to the reference group, their export share falls by approximately 26–28 percentage points in 2010–2012, while the estimated relative increases in local sales exceed more than double over the same period. For affiliates in $[0.7, 0.8)$, the export-share estimates are also negative after the reform, but their confidence intervals generally include zero, with a significant decline in 2010. Their local-sales estimates do not show a statistically significant increase. Affiliates in $[0.35, 0.7)$ likewise exhibit no sustained relative expansion of local sales.

These patterns suggest that the sustained shift toward the Chinese market is most evident among affiliates initially well above the eligibility threshold, extending beyond adjustment immediately around the 70 percent cutoff. However, the imprecision of the estimates for affiliates in $[0.7, 0.8)$ prevents a conclusion that their responses are absent or statistically different from those of the highest-EI group.

[18] More specifically, I run the following DiD event study specification:

$$y_{it} = \sum_{g \in \mathcal{G}} \sum_{\substack{k=-4 \\ k \neq -1}}^{4} \beta_{kg} \mathbb{1}\{t - 2008 = k\} \times \mathbb{1}\{EI_i^{pre} \in g\} + \alpha_i + \delta_{j(i)t} + \varepsilon_{it}, \tag{4}$$

where $\mathcal{G} = \{[0.35, 0.7), [0.7, 0.8), [0.8, 1]\}$ and EI_i^{pre} denotes affiliate i's average export intensity over 2004–2007. Affiliates in $[0, 0.35)$ form the omitted reference group, and $k = -1$ corresponds to the omitted baseline year, 2007.

Comparison with affiliates outside China To assess whether the local-sales pattern observed in China also appears among initially export-oriented affiliates elsewhere, I repeat the analysis using the sample with affiliates located outside China. I apply the same pre-reform export-intensity classification and add host-country-year fixed effects to the baseline specification to absorb annual shocks common to affiliates within each host country. Figure B.4 plots the estimates for log local sales and participation in arm's-length local sales. In panel (a), the post-reform coefficients show no sustained increase. In panel (b), the participation estimates are positive in the later post-reform years but remain imprecisely estimated. All post-reform coefficients in both panels have 95 percent confidence intervals that include zero. The non-China estimates therefore provide no comparably clear evidence of a shift toward local sales. However, their imprecision prevents ruling out economically meaningful responses or establishing that the responses differ statistically from those in China.

Robustness checks I conduct two robustness checks to assess the sensitivity of the main results. First, the log specifications exclude observations with zero sales, including local sales of pure exporters and exports of non-exporters. I therefore re-estimate the sales regressions using Poisson pseudo-maximum likelihood (PPML), which accommodates zeros with sales measured in levels (Santos Silva and Tenreyro, 2006). Figure B.5 and Table C.7 show qualitatively similar results. The estimates for total sales and total exports are positive but statistically insignificant, while those for local sales and arm's-length local sales indicate significant relative increases. The magnitudes are not directly comparable to the log-OLS estimates because PPML captures the conditional mean of sales in levels rather than average percentage effects.

Second, affiliates may cross the 70 percent export-share threshold during the pre-reform period, so classification based on average export intensity can combine affiliates with different histories of potential eligibility. To assess whether the results depend on these affiliates, I classify high-EI affiliates as those whose minimum pre-reform export intensity is at least 70 percent and low-EI affiliates as those whose maximum is below 70 percent, excluding affiliates that cross the threshold. Figure B.6 and Table C.8 show that the main results remain qualitatively similar under this alternative definition, suggesting that the findings are not driven by affiliates whose potential eligibility varies across pre-reform years.

5. Parent Firm's Affiliate Expansion across Destinations

Sections 4 documented how high-export-intensity affiliates adjusted their existing operations in China. These affiliate-level responses do not capture adjustments made elsewhere in the multinational's global affiliate network. Korean multinationals whose Chinese affiliates had been oriented toward exports could respond to the reform both by reorienting those affiliates and by expanding their affiliate networks in other host countries. Examining this second response

requires shifting the unit of analysis from the affiliate to the parent firm. This section asks whether parents with pre-reform export-oriented affiliates in China became more likely to have entering manufacturing affiliates elsewhere relative to other parents.

5.1. Empirical Strategy

I aggregate the affiliate-level data into a panel of parent firms to examine how Korean parent firms expand their foreign affiliate networks across destinations. The sample consists of parents with at least one foreign manufacturing affiliate observed before 2008. I classify a parent as exposed if it held at least one manufacturing affiliate in China whose average export intensity over its observed years during 2004–2007 was at least 70 percent. The comparison group consists of all remaining parents in the sample, including parents whose Chinese manufacturing affiliates were all below this threshold and parents without pre-reform manufacturing operations in China. There were 224 parent firms with high-EI affiliate in China and 582 other parent firms. This classification remains fixed throughout the analysis.

Figure B.7 shows the distribution of the number of manufacturing affiliates observed per parent during 2004–2007 and 2008–2012. In both groups and periods, most parents have only one affiliate, while exposed parents are more likely to have five or more affiliates. The share of parents with multiple affiliates also increases in both groups in the later period. These distributions illustrate differences in the scale of parents' foreign affiliate networks. The number of affiliates is measured by counting distinct affiliates observed within each period.

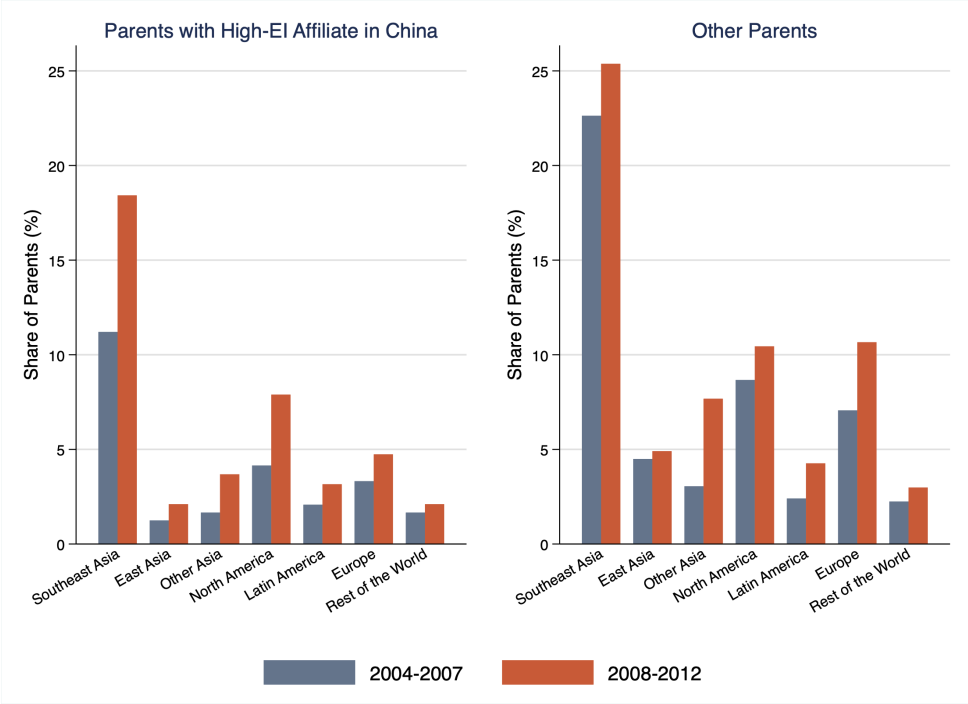
Korean manufacturing affiliates were highly concentrated in China, as shown in Table 2. I examine affiliate entry outside China by grouping these destinations into seven mutually exclusive regions: Southeast Asia, East Asia (excluding China), Other Asia, North America, Latin America, Europe, and the Rest of the World.[19]

Figure 8 shows the percentage of parents with at least one manufacturing affiliate observed in each region outside China. Southeast Asia is the most common non-China region for both groups. Among exposed parents, the share with affiliates in Southeast Asia rises from approximately 12 percent during 2004–2007 to around 18 percent during 2008–2012. The corresponding share among other parents remains higher but increases by less. The share of exposed parents with affiliates in other regions, particularly North America, also rises. These percentages are calculated among parents observed with at least one foreign manufacturing affiliate in the corresponding period. These percentages describe regional presence, including both continuing and entering affiliates, rather than the annual probability of affiliate entry.

Table 5 reports average annual affiliate entry rates during 2004–2007 for the two parent groups. Southeast Asia has the highest entry rate among the seven destination regions in both groups,

[19]Table C.9 lists the countries included in each region. A parent may have affiliates in several regions and may have entering affiliates in more than one region in the same year.

Figure 8: Regional Presence of Parent Firms' Manufacturing Affiliates outside China before and after the Reform



Notes: Figure 8 shows the percentage of Korean parent firms with at least one manufacturing affiliate observed in each region outside China during 2004–2007 and 2008–2012. The sample includes parents with at least one manufacturing affiliate observed, including parents observed only in China, before 2008. Parents are classified by whether they held an affiliate in China with average pre-reform export intensity of at least 70 percent, and this classification remains fixed. Percentages are calculated separately by group and period among parents with at least one manufacturing affiliate observed anywhere, including those observed only in China. Each parent is counted once per region and period and may appear in multiple regions. Presence includes continuing and entering affiliates. Regional definitions follow Table C.9.

averaging 3.24 percent among exposed parents and 5.93 percent among comparison parents. Entry into the other regions is less frequent. These pre-reform rates provide a benchmark for assessing the magnitude of the estimated changes in entry probabilities.

To assess whether the reform affected affiliate entry outside China among exposed parents relative to other parents, I use a difference-in-differences event study design. I define an entering affiliate as a manufacturing affiliate newly observed in each year t. For a given region r, the entry outcome, Entry_{pt}^{r}, equals one if parent p has at least one entering affiliate in that region in year t, and zero otherwise. This measure captures both a parent firm's first affiliate entry into a region and subsequent entries by additional affiliates into regions where the parent firm was already present. Multiple entering affiliates within the same parent-year are counted as a single event.

Table 5: Pre-reform Average Annual Affiliate Entry Rates by Destination Region, 2004–2007

	Southeast Asia	East Asia excl. China	Other Asia	North America	Latin America	Europe	Rest of the World
Exposed parents	3.24%	0.33%	0.22%	1.12%	0.45%	0.78%	0.56%
Other parents	5.93%	0.95%	0.86%	2.36%	0.64%	1.85%	0.60%

Notes: Table 5 reports the average of annual affiliate entry rates over 2004–2007. For each group, region, and year, the entry rate is the percentage of parents that had at least one manufacturing affiliate in that region and year. Multiple entering affiliates within the same parent–region–year count as a single event. The sample includes parents with at least one foreign manufacturing affiliate observed during 2004–2007. Exposed parents are those with at least one manufacturing affiliate in China whose average export intensity over its observed years during 2004–2007 was at least 70 percent. Other parents comprise all remaining parents in the sample. Regional definitions follow Table C.9.

$$\text{Entry}_{pt}^{r} = \sum_{k=-4, k\neq -1}^{4} \beta_k \mathbb{1}\{t - 2008 = k\} \times \text{Exposed}_p + \psi_p + \tau_t + \varepsilon_{pt}, \tag{5}$$

where Exposed_p denotes the pre-reform classification defined above, ψ_p capture parent fixed effects, and τ_t capture year fixed effects. [20] The omitted baseline year is 2007. Parent fixed effects absorb time-invariant differences in parents' propensity for affiliate entry in a given region, while year fixed effects absorb annual shocks common to parents within that region. Standard errors are clustered at the parent level.

For each region, β_k measures the change from 2007 in the probability of having at least one entering manufacturing affiliate among exposed parents relative to the corresponding change among comparison parents. A coefficient of 0.01 indicates that, relative to 2007, exposed parents experienced a 1 percentage point higher increase in the probability of an entry event than other parents in year $2008 + k$. Identification relies on the assumption that, absent the reform, the probability of observed affiliate entry would have followed parallel trends across the two groups. The pre-reform coefficients provide evidence on whether their entry probabilities were already evolving differently before 2008, while the post-reform coefficients capture the reform's differential effect on affiliate entry probabilities among exposed parents relative to comparison parents.

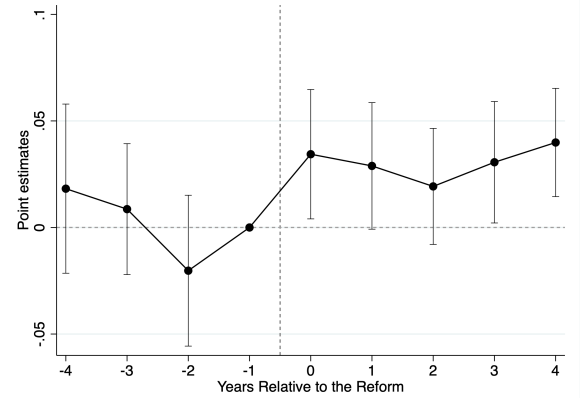
5.2. Affiliate Entry across Destinations

Panel (a) of Figure 9 plots the dynamic estimates for affiliate entry in Southeast Asia from equation (5), with the corresponding estimates reported in column (1) of Table C.3. The pre-reform coefficients are statistically indistinguishable from zero and show no sustained differential

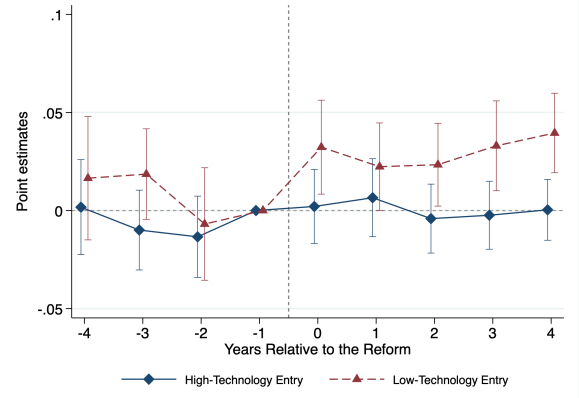
[20] The data report each affiliate's industry but do not identify a single industry for its parent firm. The baseline specification therefore includes parent and year fixed effects without assigning parents an industry classification.

Figure 9: Manufacturing Affiliate Entry in Southeast Asia

(a) All Entry



(b) Entry by Technology Level



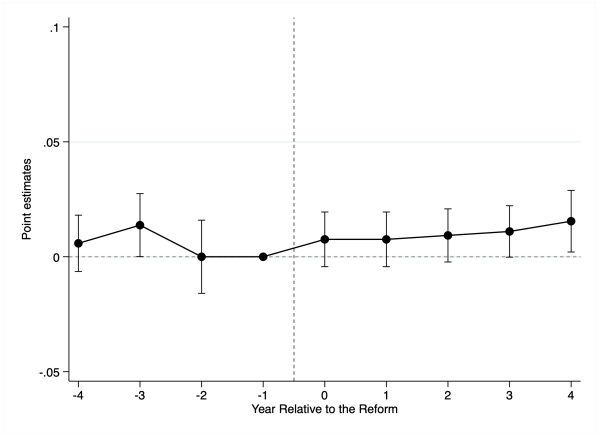
Notes: Figure 9 plots the estimated β_k coefficients from equation (5) for Southeast Asia where the dependent variable equals one if a parent has at least one entering affiliate in that region and year, and zero otherwise. Panel (a) includes all manufacturing industries, while panel (b) reports separate estimates for low-tech and high-tech industries. Standard errors are clustered at the parent level, and each bar represents 90% confidence intervals.

trend. The post-reform coefficients are positive in every year and statistically significant at the 10 percent level in 2008, 2011, and 2012. Relative to 2007, the estimated differential change in entry probability is approximately 3.5 percentage points in the first post-reform year, 2008, and 4 percentage points in the final sample year, 2012. These two estimates are comparable in magnitude to the exposed group's pre-reform average annual entry rate of 3.24 percent, reported in Table 5.

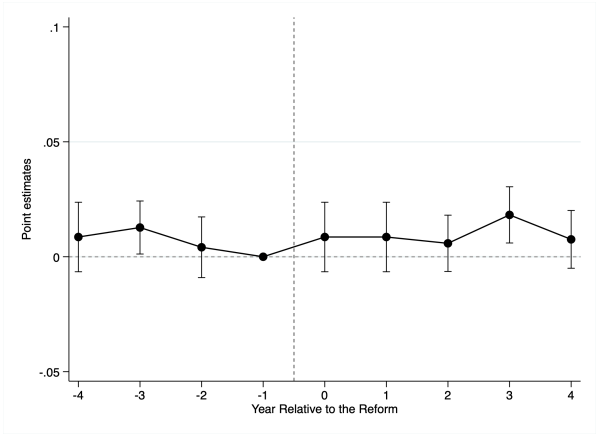
I next examine whether similar differential responses appear in other destinations. Figure 10 plots the estimates for the other six regions from equation (5). Affiliate entry was less frequent in these destinations before the reform, with average annual rates among exposed parents ranging from 0.22 to 1.12 percent, compared with 3.24 percent in Southeast Asia. These differences in initial entry rates provide context for interpreting the magnitude of the regional estimates. North America in panel (c) also exhibits positive and statistically significant post-reform coefficients. However, its coefficients for 2005 and 2006 are already positive and statistically significant relative to 2007, making it difficult to interpret the post-reform estimates as a divergence emerging with the reform. East Asia (excluding China) and Other Asia display positive post-reform estimates, with a statistically significant response in 2012 and 2011, respectively. The remaining regions provide less consistent evidence of a differential change. Southeast Asia therefore provides comparatively clear evidence of a sustained positive differential response following the reform, although positive estimates are not confined to that region. Table C.4 provides the details on dynamic estimates for each region.

Figure 10: Manufacturing Affiliate Entry into Other Regions

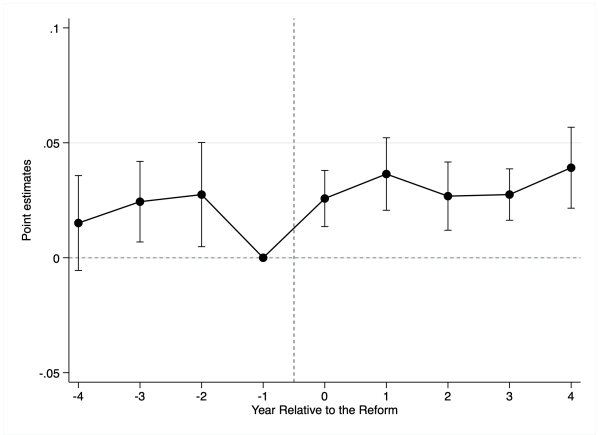
(a) East Asia (Excluding China)



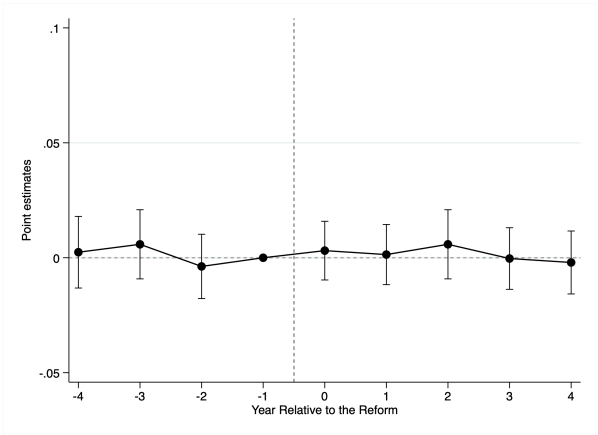
(b) Other Asia



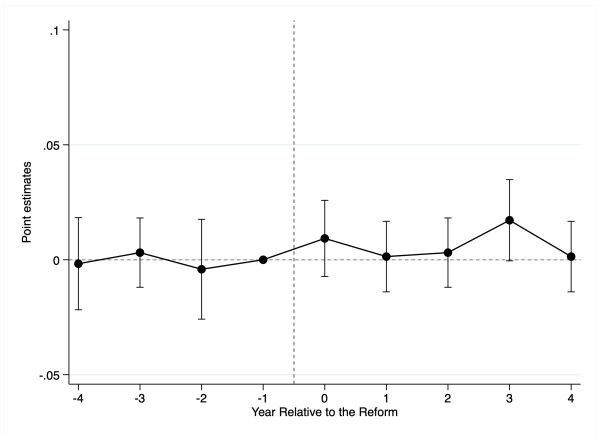
(c) North America



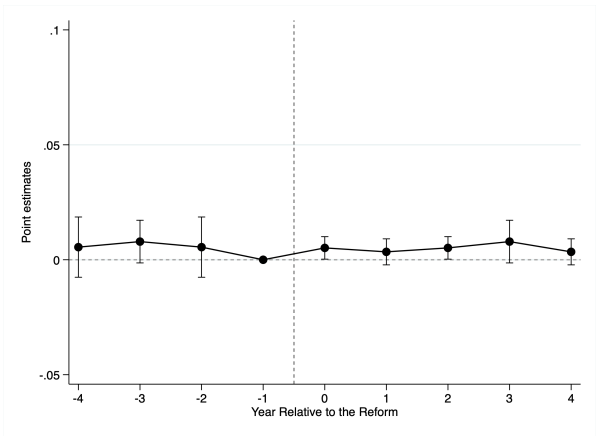
(d) Latin America



(e) Europe



(f) Rest of the World



Notes: Figure 10 plots the estimated β_k coefficients from equation (5), estimated separately for six destination regions outside China and Southeast Asia. The dependent variable equals one if a parent has at least one entering affiliate in the corresponding region and year, and zero otherwise. Regional definitions follow Table C.9. Standard errors are clustered at the parent level, and each bar represents 90% confidence intervals.

To characterize the affiliates underlying the Southeast Asian response, I distinguish entry into low-tech and high-tech manufacturing industries.[21] For each category, the outcome equals one if a parent has at least one entering affiliate in that category in Southeast Asia in a given year. Figure 9, panel (b), shows that the positive post-reform response is most evident in low-tech manufacturing. The low-tech coefficients are positive throughout the post-reform period and reach approximately 4 percentage points in 2012. By contrast, the high-tech coefficients remain close to zero and are statistically insignificant. These results suggest that the relative increase in affiliate entry in Southeast Asia is concentrated in low-tech manufacturing. Column (2) and (3) of Table C.3 provides the details on dynamic estimates by technology.

5.3. Discussion and Robustness Checks

These parent-level results complement the adjustments documented in Section 4. Among incumbent affiliates in China, highly export-oriented affiliates expanded their local sales, including sales to unaffiliated buyers, more than less export-oriented affiliates did. Exposed parents also experienced a relative increase in the probability of affiliate entry in Southeast Asia, with larger point estimates in low-tech industries. Together, these findings suggest that adjustment following the reform involved both the sales orientation of incumbent affiliates in China and affiliate entry elsewhere. These separately estimated responses do not establish that the two adjustments occurred within the same parent firms or that Southeast Asian entry involved a transfer of production from China. The importance of affiliate entry connects these results to McCaig et al. (2025), who show that improved access to the US market generated employment growth in Vietnam largely through the entry and subsequent expansion of foreign affiliates, predominantly from East Asia. My analysis examines a complementary setting in which exposure to a tax reform in an existing host country is associated with affiliate entry in other destinations.

The parent-level estimates should also be interpreted in light of other changes in China's production environment. Rising labor costs, for example, could have encouraged parents with Chinese operations to expand elsewhere. Consistent with this possibility, Fan et al. (2018) find that higher minimum wages increase the probability of outward FDI by firms operating in China, with stronger responses among foreign-owned firms and firms in labor-intensive industries. Exposure to these pressures could differ across parents depending on their pre-reform presence in China and the industry composition of their Chinese operations. To assess the sensitivity of the results to industry-specific changes, I replace year fixed effects with industry-year fixed effects while retaining parent fixed effects. Each parent's industry is assigned using the modal KSIC two-

[21] Low-technology industries consist of two-digit industries under "Light and Consumer-Goods Manufacturing" and "Materials, Chemicals, and Processing Manufacturing," whereas high-technology industries consist of those under "Electronics, Electrical, and Precision-Technology Manufacturing" and "Machinery and Transport-Equipment Manufacturing," as shown in Table A.7.

digit industry among its manufacturing affiliates observed before the reform and is held fixed throughout the analysis. Figure B.8 shows that the post-reform coefficients remain positive throughout 2008–2012 and are larger than the baseline estimates. The positive differential response therefore persists in a specification that allows for annual changes common to parents in the same assigned industry. This specification does not, however, absorb differences in exposure to Chinese labor-cost changes within industries. A causal interpretation continues to require that, absent the reform, such differences would not have generated differential trends in affiliate entry between exposed and comparison parents.

6. Conclusion

This paper studies how tax incentives tied to export share requirements shape the markets that foreign affiliates serve and where multinationals expand. Using panel data on Korean manufacturing affiliates, I examine China's 2008 Enterprise Income Tax reform, which withdrew an export-contingent tax preference. After the reform, the distribution of affiliates in China shifted toward the local market, with continuing affiliates accounting for most of the decline in the share of highly export-oriented affiliates.

Difference-in-differences estimates show that, relative to less export-oriented affiliates, previously highly export-oriented affiliates increased their participation in the local market and expanded local sales, primarily through sales to unaffiliated customers. Total sales and exports showed no statistically significant differential change. This pattern is consistent with the export share requirement having limited affiliates' sales in the local market. Parents with highly export-oriented affiliates in China also experienced a larger increase in the probability of entering Southeast Asia than other parents. Expansion in the local market by incumbent affiliates thus coexisted with their parents' expansion elsewhere.

These findings highlight adjustment margins that evaluations based solely on exports, investment amounts, or affiliate counts may overlook. Evaluations should consider changes in the markets served by incumbents, which matter for competition and local buyers, alongside parents' subsequent foreign entry. Because export share requirements remain in use in many economies (OECD, 2025), the Chinese experience illustrates adjustments worth examining where similar incentives are reformed, including in response to WTO disciplines on export subsidies. [22]

Two questions remain for future research. First, how did the expansion of affiliates' sales to unaffiliated local customers affect competition and buyer–supplier relationships in China? In Defever and Riaño (2017), export share requirements soften domestic competition in a model

[22] Article 3.1(a) of the WTO Agreement on Subsidies and Countervailing Measures generally prohibits subsidies conditional on export performance, whether the condition is explicit in law or operates in practice. Article 27 sets out special and differential treatment for developing-country Members, including exemptions and transition provisions whose applicability depends on the Member and the relevant conditions.

without multinational location choice. Linking the responses documented here to prices and firm-to-firm transactions would help assess effects on competing producers and downstream buyers, including changes in input access. Such evidence would inform welfare assessments that also account for multinational entry across countries. Second, did entry into Southeast Asia following the 2008 reform shape the speed and form of firms' responses to the later US–China trade war? Addressing this question requires tracing the subsequent production and sourcing decisions of the new affiliates and their parents over a longer horizon.

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Appendix A. Policy and Data Appendix

A.1. Developing Countries' Tax Incentives conditional on Export Share

Table A.1: Selected Corporate Income Tax Incentives Linked to Export Shares

Country	Export-share requirement	Corporate income tax incentive
A. Active provisions		
DR Congo	Exports $\geq 20\%$ of total turnover (excluding tax) in the asset-entry year.	Optional first-year depreciation of 60% of eligible asset cost, followed by accelerated depreciation.
Gambia	EPZ: $\geq 80\%$ of output. Outside EPZs: $\geq 30\%$.	EPZ: corporate/turnover-tax exemption for up to 10 years. Outside EPZs: 10% tax-liability reduction for 5 years.
Ghana	Exports $\geq 70\%$ of annual goods-and-services production.	10-year CIT exemption, then 15% CIT on export income.
Kenya	Exports outside the EAC $\geq 80\%$ of sales.	Non-commercial EPZ enterprises: 10-year CIT holiday, then 25% CIT for 10 years.
Madagascar	Domestic sales $\leq 5\%$ of exported production (implied export share $\approx 95.24\%$).	10% CIT after exemption: 3 years for industry, 1 for services, and 10 for free zones/basic intensive production, following a 12-month set-up period.
Nigeria	Domestic sales $\leq 25\%$ of total sales, plus export/input and petroleum/gas-sales conditions.	Qualifying EPZ profits exempt. Above the domestic-sales cap, all domestic-sales profits taxable. All domestic-sales profits taxable from 2028.
Philippines	Direct/qualifying indirect exports $\geq 70\%$ of total production/output.	Income-tax holiday followed by 5% tax on gross income, or enhanced deductions with 20% CIT. Direct entry into either regime also available.
Rwanda	Export turnover: 30 50%, or $\geq 50\%$ of total turnover.	25% or 15% CIT, respectively, for up to 5 years, with annual eligibility testing.
Senegal	Exports $\geq 80\%$ of production (industry, agriculture or teleservices).	Deduction of 50% of taxable profit for CIT purposes.
Tanzania	Exports $\geq 80\%$ of goods produced for EPZ licensing.	10-year exemption for qualifying EPZ/SEZ income. Domestic-market production/sales excluded.
Uganda	Exports $\geq 80\%$ of finished consumer/capital goods produced.	10-year exemption of qualifying export income.
Zimbabwe	Exported manufacturing output: $30 \sim 41\%$, $41 \sim 51\%$, or $\geq 51\%$.	20%, 17.5%, or 15% CIT, respectively, excluding the AIDS levy.
B. Grandfathered provisions		
Ethiopia	Exports/inputs supplied to exporters $\geq 60\%$ outside parks/SEZs, or $\geq 80\%$ within them.	Additional 2-year income-tax exemption for eligible legacy investments. Replaced for new permits in February 2026.
C. Historical provisions: export condition withdrawn or incentive discontinued		
China	Exports $\geq 70\%$ of annual output value.	After initial relief: 50% reduction in the applicable CIT rate, or 10% CIT if otherwise taxed at 15%. Repealed in 2008.
Vietnam	Manufacturing exports $\geq 50\%$ or $\geq 80\%$ of output.	50% route: 15% CIT, 2 years exempt + 3 at half rate. 80% route: 10% CIT, 4 years exempt + 4 at half rate. Legacy export preferences ended after 2011.
India	Exports $\geq 75\%$ of total sales for covered export-oriented units.	Qualifying profits exempt (10 consecutive assessment years in the late-1990s version). Threshold removed from AY 2001–02. Successor deduction ended from AY 2012–13.
Dominican Republic	Ordinarily, exports $\geq 80\%$ of production.	100% CIT exemption for 15 years (20 in border areas), renewable. General export condition removed in 2011, with free-zone tax relief retained.
Namibia	Exports outside SACU $\geq 70\%$ of manufactured products.	CIT exemption for qualifying EPZ enterprises. Closed to new certificates from end-2020, with legacy relief ending in 2025.

Notes: Table A.1 summarizes selected corporate income tax incentives that condition preferential tax treatment on firms meeting minimum export-share requirements, distinguishing currently active, grandfathered, and historical provisions. Madagascar's implied share assumes only export and domestic sales on a comparable basis. Historical entries refer to the specified condition or benefit, not all tax incentives. CIT: corporate income tax. EPZ/SEZ: export processing/special economic zone. EAC: East African Community. SACU: Southern African Customs Union. AY: assessment year.

A.2. Corporate Income Tax in China: Laws and Regulations

This section includes details on the Chinese corporate income tax system before and after the 2008 Enterprise Income Tax (EIT) reform.

1991 Income Tax Law for Enterprises with Foreign Investment and Foreign Enterprises, the People's Republic of China, 1991 - 2007

Basic regulations

8.1.1. The State shall, in accordance with its industrial policies, guide the orientation of foreign investment and encourage the establishment of enterprises with foreign investment which adopt advanced technology and equipment and export all or the greater part of their production. (April 9, 1991)

8.1.2. Foreign investment enterprises encouraged by the State which request preferential treatments in relation to enterprise Income Tax shall be treated in accordance with the relevant laws and administrative regulations promulgated by the State. (June 30, 1991)

Lowering tax rate in economic zone

8.2.1. The Income Tax on enterprises with foreign investment established in special economic zones, foreign, enterprises which have establishments or sites in special economic zones engaged in production or business operations, and enterprises with foreign investment of a production nature in economic and technological development zones shall be levied at the reduced rate of 15%. (April 9, 1991)

8.2.4. Income Tax on enterprises with foreign investment of a production nature established in coastal economic open zones, or in the old urban districts of cities where the special economic zones or the economic and technological development zones are located, shall be levied at the reduced rate of 24%. (April 9, 1991)

Regulations on tax exemptions; Article 75 of "FIE Income Tax Implementing Rules"

8.3.5.G. Export-oriented enterprises with foreign investment may, upon the expiration of the tax exemption and reduction period as provided for in the Tax Law, enjoy a further 50% reduction in Enterprise Income Tax based on the rate stipulated by the Tax Law, if the value of their exported products of the year exceeds 70% of the total value of their products of the year. But for the Special Economic Zones and the Economic and Technological Development Zones and other export-oriented enterprises where Enterprise Income Tax has already been reduced to 15% and the above requirements are met, the Enterprise Income Tax shall be levied at 10%. (June 30, 1991)

Source and translation: Kaisen Corporate Service Limited and Subsidy Program: General

2008 Enterprise Income Tax Law of the People's Republic of China

Tax incentives for high and new technology enterprises

Source: CMS Legal

Transition period for enterprises enjoying lower tax rate before 2008

Foreign-invested enterprises that had previously paid an EIT of 15% before 2008 were allowed to pay a tax rate of 18% in 2008, 20% in 2009, 22% in 2010, 24% in 2011 transition rates in the following four years (Chen et al., 2021).

Table A.2: Change in Tax rate for FIEs between 2004 and 2015

EIT rate	2004-2007	2008	2009	2010	2011	2012-2015
FIEs in SEZs and ETDZs						
Export Share $<$ 70%	15%	18%	20%	22%	24%	25%
Export Share $\geq$ 70%	10%	18%	20%	22%	24%	25%
FIEs in Coastal Open Economic Zones						
Export Share $<$ 70%	24%	25%	25%	25%	25%	25%
Export Share $\geq$ 70%	10%	25%	25%	25%	25%	25%
FIEs in Other Areas						
Export Share $<$ 70%	33%	25%	25%	25%	25%	25%
Export Share $\geq$ 70%	10%	25%	25%	25%	25%	25%

World Trade Organization (WTO) Dispute

US and Mexico challenged China's export-contingent tax measures

During the consultations, the United States (Mexico) described its concerns about the WTO-consistency of tax preferences provided under:

(a) ... Article 75, paragraph 1, section 8 of the Rules for the Implementation of the Income Tax Law of the People's Republic of China on Enterprises with Foreign Investment and Foreign Enterprises, Decree No. 85, issued by the State Council on 30 June 1991 (hereinafter "FIE Income Tax Implementing Rules");

(b) ... Article 75, paragraph 1, section 7 of the FIE Income Tax Implementing Rules; ...

China confirms that, effective 1 January 2008, the Enterprise Income Tax Law of the People's Republic of China, Order No. 63, promulgated on 16 March 2007 (hereinafter "Enterprise Income Tax Law"), repeals the FIE Income Tax Law. In addition, China has explained that legal instruments to be issued by, and made effective no later than, 1 January 2008, will contain provisions stating that the FIE Income Tax Implementing Rules are repealed.

... China confirms that the tax preferences under the legal provisions identified in sub-paragraphs (a), (b) and (c) above will not be reinstated.

Source: WTO DS358 and WTO DS359

A.3. Data Cleaning Procedure

Panel dataset I use the Korean affiliate-level dataset from "Benchmark Survey of Korean Multinationals Abroad," collected by the Export-Import (EXIM) Bank of Korea. My original sample from 2007 to 2012 is a affiliate-level panel dataset, while the sample from 2004 to 2006 is affiliate-level repeated cross-sections. Table A.3 shows annual sample coverage of Korean foreign affiliates in all sectors.

To construct the affiliate-year panel, I link the 2004–2006 repeated cross-sections to the post-2007 panel using affiliate identifiers. Because the official affiliate code is not consistently available before 2006, I use the 2006 raw file, which contains both the official affiliate code and detailed affiliate characteristics, to recover identifiers for earlier observations. I construct provisional affiliate identifiers using a four-way key based on the affiliate's establishment date, industry, host country, and investment type. I then use the official affiliate code observed in 2006 to assign identifiers to the corresponding 2004 and 2005 observations. Ambiguous cases are manually checked using affiliate-level information such as employment composition (e.g. the number of executives, managers, and production workers), and observations that cannot be uniquely linked are excluded.

After recovering affiliate identifiers for the 2004–2006 data, I append these observations to the 2007–2012 affiliate panel. Before appending, I harmonize variable names, host country names, and variable types across the two data sources, and retain only variables that are consistently available in both datasets. After appending, I retain affiliates that are majority-owned by Korean parent firms in at least half of their observed affiliate-year observations. In addition, affiliates with zero or missing employment and total sales are excluded.

Table A.4 and A.5 report the number of observations per affiliate and the number of unique affiliates by year. The number of affiliates increases substantially over time, which partly reflects the expansion of the underlying EXIM survey universe. For example, in the Korea EXIM Bank's "Foreign Direct Investment Management Analysis," the number of analyzed affiliates increased from 2,710 in 2007 to 5,204 in 2012. Consistent with this pattern, the cleaned analysis sample contains many fewer affiliates in the early years than in later years.

Table A.3: Sample Coverage by Year

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Sample Coverage	–	47.1%	56.4%	58.0%	63.9%	66.2%	63.9%	–	71.3%

Notes: Table A.3 reports annual sample coverage of Korean foreign affiliates in "Benchmark Survey of Korean Multinational Abroad." Dashes indicate years for which coverage is not reported in annual business reports.

Table A.4: Number of Observations per Affiliate

#(Obs. per affiliate)	#(Obs.)	%(Obs.)
9	1,350	15.79%
8	1,192	13.94%
7	1,085	12.69%
6	1,158	13.55%
5	930	10.88%
4	748	8.75%
3	900	10.53%
2	712	8.33%
1	473	5.53%
Total	8,548	100.00%

Table A.5: Number of Affiliates by Year

Year	#(Affiliates)
2004	318
2005	464
2006	862
2007	973
2008	1,004
2009	1,003
2010	1,079
2011	1,311
2012	1,534

Tax haven My sample contains affiliates that do not operate in tax haven countries. Affiliates in tax haven countries are likely to open for different reasons than production purposes, and to be subject to different cost structures than affiliates in non-tax haven countries. I exclude countries defined as tax havens by Gravelle (2009), except for Ireland, Hong Kong and Singapore, countries that meet some of the criteria for tax haven status but also have a substantial amount of Korean multinational production. Also, Guam and New Caledonia are excluded from the sample due to small samples and its territory belonging to other countries (US and France, respectively). Table A.6 reports the list of countries that I exclude from my sample.

Table A.6: Tax Haven Countries excluded from My Sample

Bermuda	Cayman Islands	Panama	Bahamas
Barbados	Marshall Islands	Malta	US Minor Outlying Islands
Kiribati	Cyprus	Vanuati	Samoa
Isle of Man	Fiji	Costa Rica	American Samoa
British Virgin Islands	Macau	Papua New Guinea	Luxembourg
Northern Mariana Islands	Faroe Islands	Timor-Leste	Jordan
Jersey	Solomon Islands	Madagascar	Lebanon
Guam	New Caledonia		

Industry classification Industry classification of Korean affiliates is based on the Korean Standard Industrial Classification (KSIC) system. In particular, each manufacturing affiliate follows 2-digit KSIC codes, which is closely related to 2-digit ISIC codes. The KSIC system was revised during the sample period. From 2008 to 2017, the KSIC is based on revision 9, while, from 2000 to 2007, the KSIC is based on revision 8.

For consistency, I harmonize affiliates' industry classifications across the 8th and 9th KSIC revisions. The harmonization is conducted at the broad manufacturing-industry level by recoding pre-2008 industry labels into the corresponding post-2008 categories. I also correct a small number of affiliates whose sector classification is inconsistent with their detailed industry

description. Table A.7 presents 24 two-digit KSIC industry groups.

Table A.7: Classification of Korean Manufacturing Industries

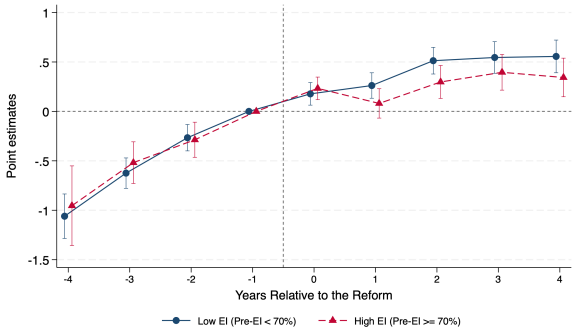
KSIC 2-digit Code	Industry
Light and Consumer-Goods Manufacturing	
10	Food products
11	Beverages
12	Tobacco products
13	Textiles, excluding apparel
14	Apparel, clothing accessories, and fur articles
15	Leather, luggage, and footwear
16	Wood and cork products, excluding furniture
18	Printed materials and reproductions of recorded media
32	Furniture
33	Other manufacturing
Materials, Chemicals, and Process Manufacturing	
17	Pulp, paper, and paper products
19	Coke, briquettes, and refined petroleum products
20	Chemicals, excluding pharmaceuticals
21	Pharmaceuticals, medicinal chemicals, and botanical products
22	Rubber and plastic products
23	Other non-metallic mineral products
24	Basic metals
25	Fabricated metal products, excluding machinery and furniture
Electronics, Electrical, and Precision-Technology Manufacturing	
26	Electronic components, computers, visual, sound, and communications equipment
27	Medical, precision, and optical instruments, watches, and clocks
28	Electrical equipment
Machinery and Transport-Equipment Manufacturing	
29	Other machinery and equipment
30	Motor vehicles, trailers, and semitrailers
31	Other transport equipment

Notes: Industries follow the Korean Standard Industrial Classification at the two-digit level. Manufacturing comprises divisions 10 through 33.

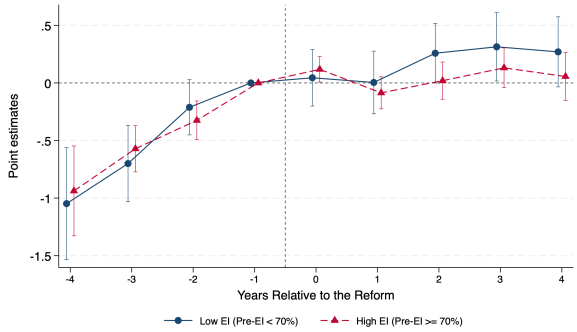
Appendix B. Additional Figures

Figure B.1: Trend in Sales Outcomes around Tax Reform

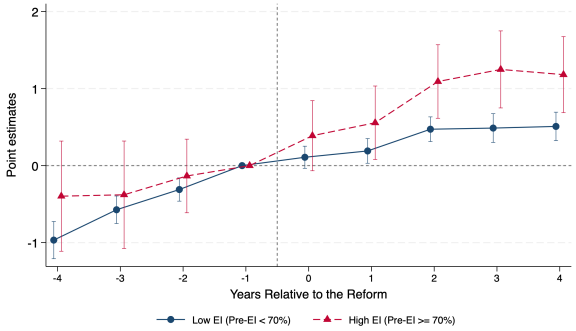
(a) Log Total Sales



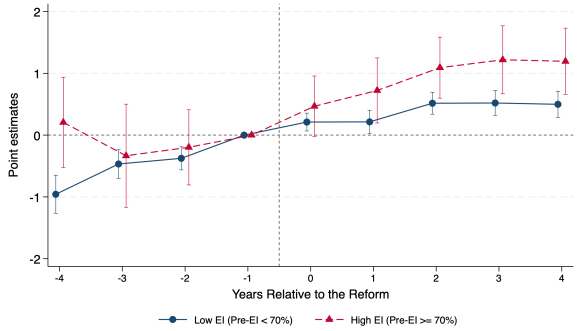
(b) Log Total Exports



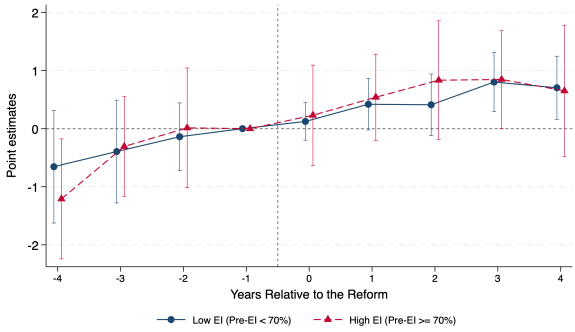
(c) Log Local Sales in China



(d) Log Arm's-length Local Sales in China



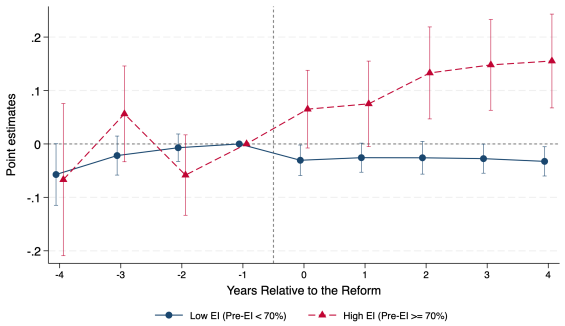
(e) Log Intra-firm Local Sales in China



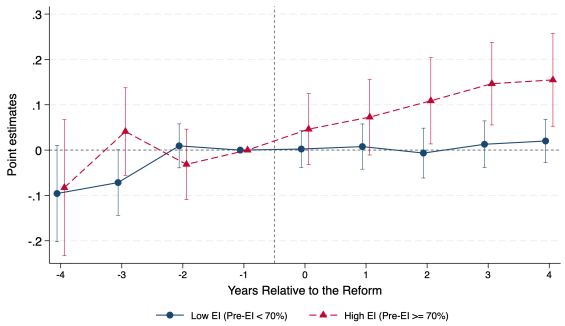
Notes: Figure B.1 plots the estimated β_k coefficients from equation (2), where the dependent variable is, in turn, log total sales (panel a), log total exports (panel b), log local sales in China (panel c), log arm's-length local sales in China (panel d), and log intra-firm local sales in China (panel e). Standard errors are clustered at the parent level, and each bar represents 95% confidence intervals.

Figure B.2: Trend in Local Market Participation around Tax Reform

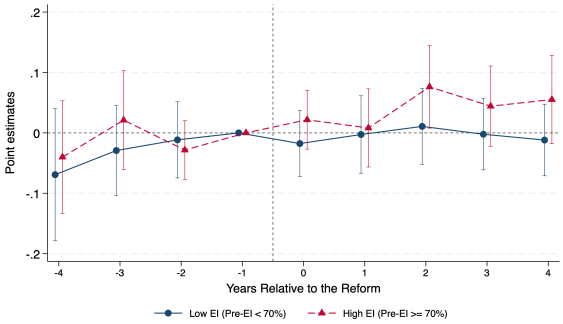
(a) $\mathbb{1}\{\text{Local Sales in China} > 0\}$



(b) $\mathbb{1}\{\text{Arm's-length Local Sales in China} > 0\}$



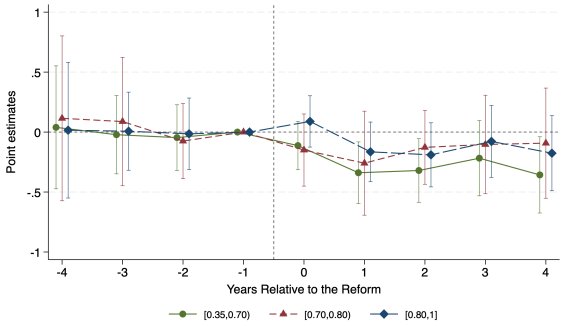
(c) $\mathbb{1}\{\text{Intra-firm Local Sales in China} > 0\}$



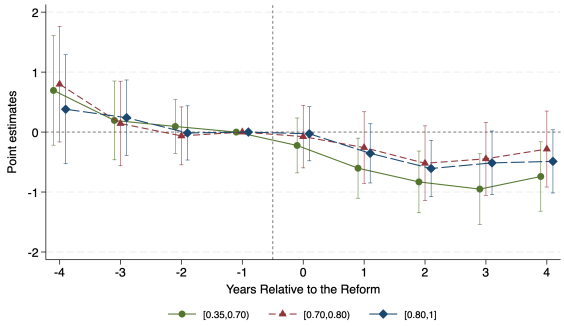
Notes: Figure B.2 plots the estimated β_k coefficients from equation (2), where the dependent variables are, in turn, indicators for positive local sales in China (panel a), positive arm's-length local sales in China (panel b), and positive intra-firm local sales in China (panel c). Standard errors are clustered at the parent level, and each bar represents 95% confidence intervals.

Figure B.3: Effect of Tax Preference Removal on Total Sales and Total Exports: Heterogeneity by Export Intensity Bin

(a) Log Total Sales



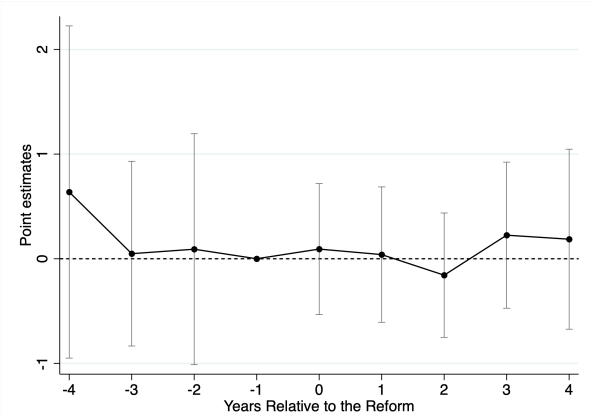
(b) Log Total Exports



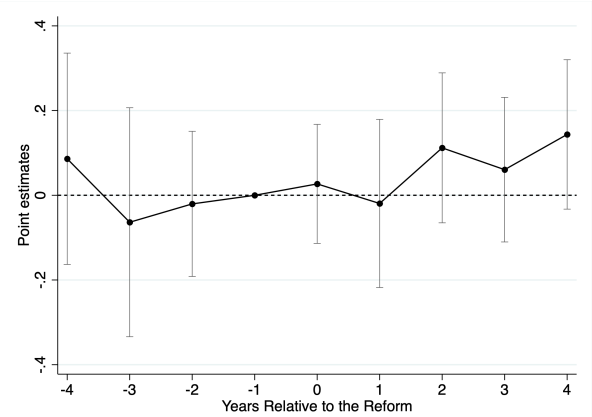
Notes: Figure B.3 plots the estimated β_{kg} coefficients from equation (4). The reference group consists of affiliates with export intensity in $[0, 0.35)$, and the comparison groups are $[0.35, 0.7)$, $[0.7, 0.8)$, and $[0.8, 1]$. Standard errors are clustered at the parent level, and each bar represents 95% confidence intervals.

Figure B.4: Falsification Test using Affiliates outside China

(a) Log Local Sales outside China



(b) $\mathbb{1}\{\text{Arm's-length Local Sales outside China} > 0\}$



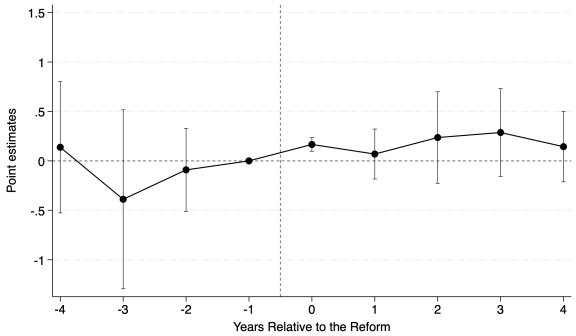
Notes: Figure B.4 plots the estimated β_k coefficients from the following DiD event study specification:

$$y_{it} = \sum_{\substack{k=-4 \\ k\neq -1}}^{4} \beta_k \mathbb{1}\{t - 2008 = k\} \times \text{High EI}_i + \alpha_i + \delta_{j(i)t} + \kappa_{d(i)t} + \varepsilon_{ij(i)d(i)t}.$$

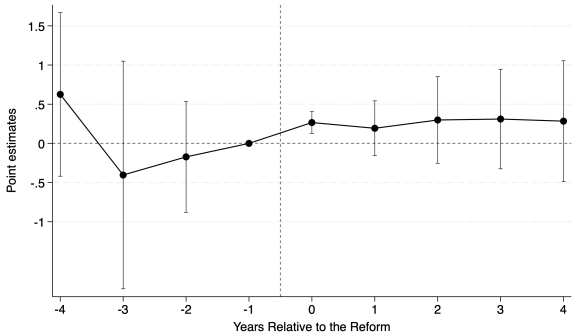
where α_i, $\delta_{j(i)t}$ and $\kappa_{d(i)t}$ capture affiliate, industry-year and host-country-year fixed effects, respectively. The sample is restricted to affiliates located outside China. The outcome variable of panel (a) is log of local sales in other host countries, while that of panel (b) is an indicator equal to one if the affiliate has positive arm's-length local sales in other host countries. The omitted category is one year before the reform. Standard errors are clustered at the parent level, and each bar represents 95% confidence intervals.

Figure B.5: Effects of Tax Incentive Removal on Sales Outcomes: PPML

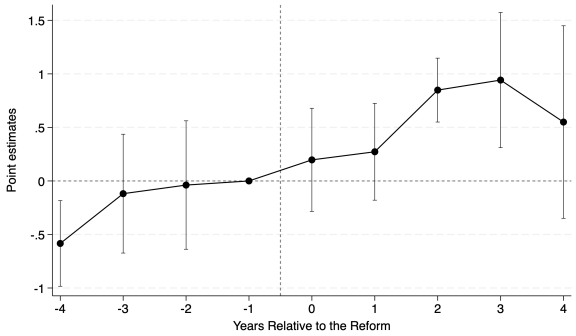
(a) Total Sales



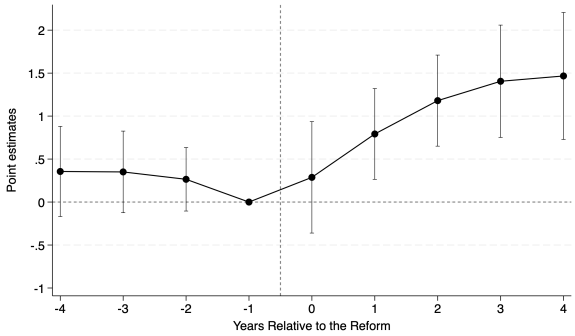
(b) Total Exports



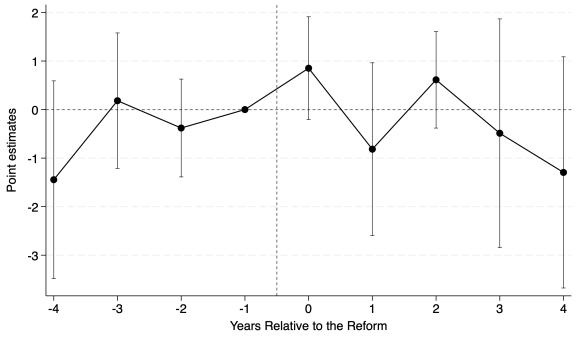
(c) Local Sales in China



(d) Arm's-length Local Sales in China



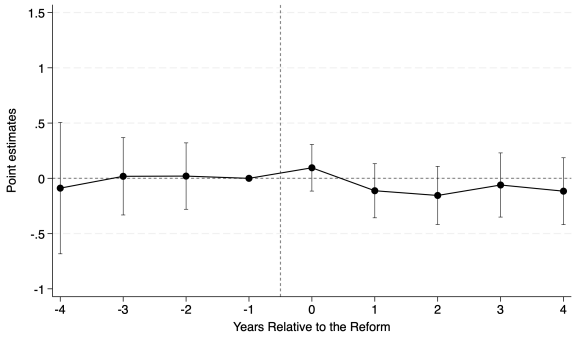
(e) Intra-firm Local Sales in China



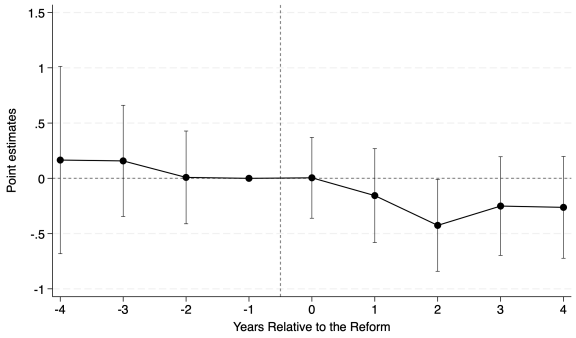
Notes: Figure B.5 plots the estimated coefficients using the PPML regression, where the dependent variables is, in turn, total sales (panel a), total exports (panel b), local sales in China (panel c), arm's-length local sales in China (panel d), and intra-firm sales in China (panel e). Standard errors are clustered at the parent level, and each bar represents 95% confidence intervals.

Figure B.6: Effects of Tax Incentive Removal on Sales Outcomes: Alternative Definition of Treatment

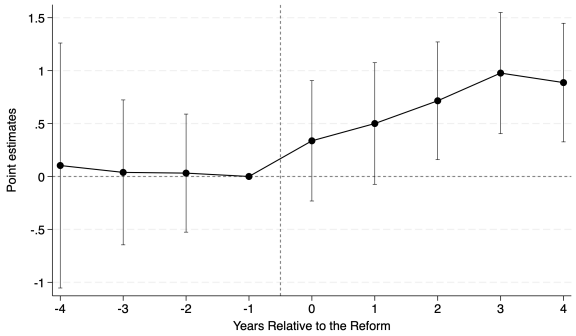
(a) Log Total Sales



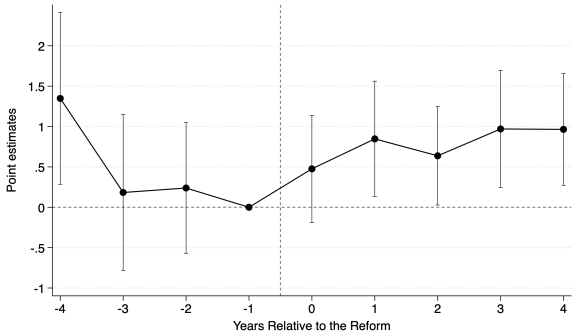
(b) Log Total Exports



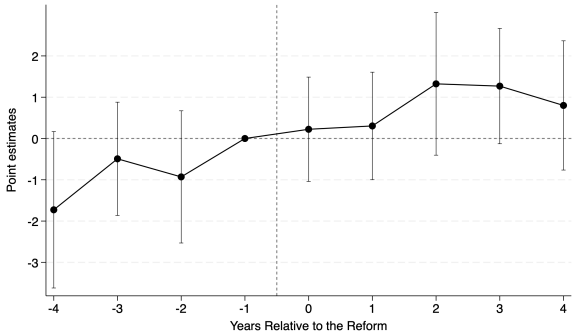
(c) Log Local Sales in China



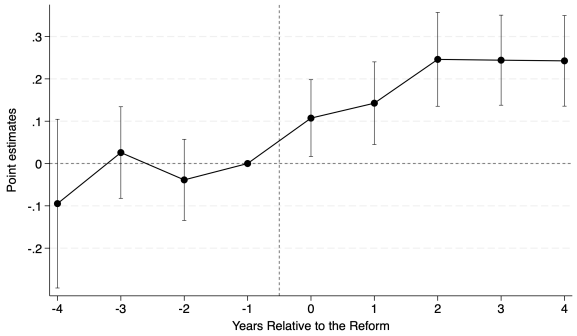
(d) Log Arm's-length Local Sales in China



(e) Log Intra-firm Local Sales in China

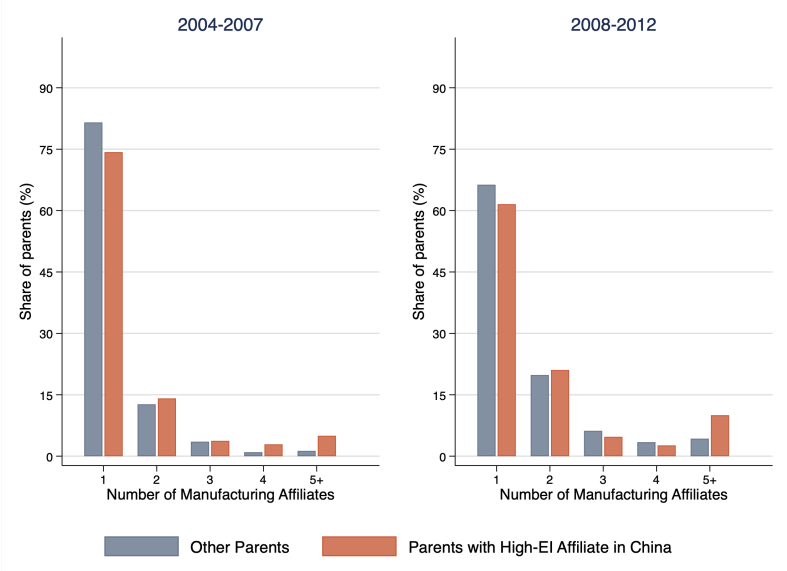


(f) $\mathbb{1}\{\text{Local Sales in China} > 0\}$



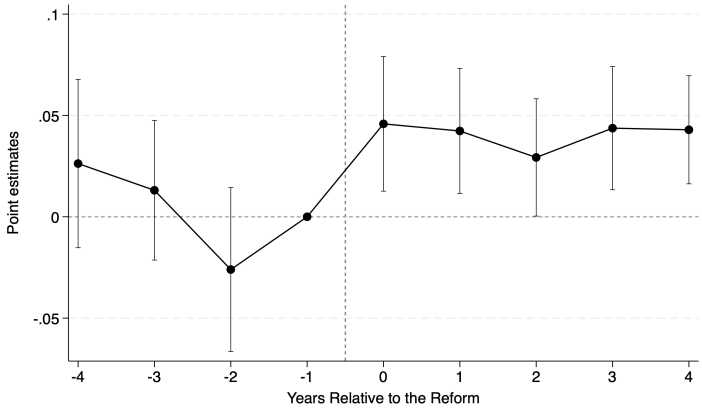
Notes: Figure B.6 plots the estimated β_k coefficients from equation (3), where alternative treatment definition is used. Control groups are affiliates whose maximum export share between 2004 and 2007 is less than 70 percent, while treated groups are affiliates whose minimum export share through the pre-reform periods were larger than 70 percent. The dependent variables is, in turn, log total sales (panel a), log total exports (panel b), log local sales in China (panel c), log arm's-length local sales in China (panel d), log intra-firm local sales in China (panel e), and indicators for positive local sales in China (panel f). Standard errors are clustered at the parent level, and each bar represents 95% confidence intervals.

Figure B.7: Distribution of the Number of Manufacturing Affiliates per Parent Firms



Notes: Figure B.7 shows the distribution of the number of distinct Korean manufacturing affiliates observed for each parent during 2004–2007 and 2008–2012. The sample includes parents with at least one manufacturing affiliate observed during 2004–2007. Parents with high-EI affiliates in China are those with at least one affiliate in China whose average export intensity over its observed pre-reform years is at least 70 percent. Other parents comprise all remaining parents in the sample. The classification of parent firms is based on pre-reform information and remains fixed throughout the sample period. Within each period, the distribution is calculated separately for each group and includes only parents with at least one observed manufacturing affiliate. Each affiliate is counted once within a period, irrespective of the number of years observed, and "5+" denotes five or more affiliates.

Figure B.8: Manufacturing Affiliate Entry in Southeast Asia: Industry-year FE



Notes: Figure B.8 plots the estimated β_k coefficients from equation (5) for Southeast Asia that includes parent fixed effects and industry-year fixed effects. Each parent's industry is assigned as the modal KSIC two-digit industry among its distinct manufacturing affiliates observed during 2004–2007 and is held fixed throughout the analysis. Standard errors are clustered at the parent level, and each bar represents 90% confidence intervals.

Appendix C. Additional Tables

Table C.1: Estimated Coefficients of Tax Preference Removal on Affiliate Export Share and Sales

Dependent variable:	Share of Total Exports	Log Total Sales	Log Total Exports	Log Local Sales in China	Log Arm's-length Local Sales in China	Log Intra-firm Local Sales in China
	(1)	(2)	(3)	(4)	(5)	(6)
4 years before reform	-0.017	0.004	0.044	0.320	1.156***	-0.617
	(0.052)	(0.246)	(0.328)	(0.483)	(0.390)	(1.449)
3 years before reform	0.010	0.020	0.080	-0.169	-0.113	-0.328
	(0.045)	(0.146)	(0.225)	(0.351)	(0.425)	(0.868)
2 years before reform	-0.036	-0.016	-0.079	0.195	0.276	-0.149
	(0.031)	(0.130)	(0.171)	(0.241)	(0.321)	(0.658)
Year of reform	-0.113***	0.089	0.071	0.324	0.311	0.245
	(0.031)	(0.092)	(0.160)	(0.242)	(0.265)	(0.483)
1 year after reform	-0.144***	-0.087	-0.098	0.461*	0.686**	0.001
	(0.031)	(0.111)	(0.185)	(0.245)	(0.299)	(0.787)
2 years after reform	-0.229***	-0.094	-0.266	0.720***	0.674**	0.428
	(0.038)	(0.116)	(0.173)	(0.228)	(0.287)	(0.817)
3 years after reform	-0.220***	-0.022	-0.117	0.924***	0.843***	-0.179
	(0.035)	(0.132)	(0.191)	(0.247)	(0.303)	(0.776)
4 years after reform	-0.225***	-0.069	-0.151	0.856***	0.860***	-0.356
	(0.035)	(0.139)	(0.203)	(0.250)	(0.299)	(0.742)
Affiliate FE	✓	✓	✓	✓	✓	✓
Industry × Year FE	✓	✓	✓	✓	✓	✓
Observations	3,904	3,904	2,759	3,137	2,730	740
R^2	0.831	0.888	0.848	0.848	0.820	0.819

Notes: Table C.1 reports the difference-in-differences event-study estimates in equation (3) for the effect of the removal of the tax incentive. The omitted category is one year before the reform. Standard errors are clustered at the parent level and reported in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table C.2: Estimated Coefficients of Tax Preference Removal on Affiliate Local-market Participation

Dependent variable:	$\mathbb{1}\{\text{Local Sales in China} > 0\}$	$\mathbb{1}\{\text{Arm's-length Local Sales in China} > 0\}$	$\mathbb{1}\{\text{Intra-firm Local Sales in China} > 0\}$
	(1)	(2)	(3)
4 years before reform	-0.069	-0.045	-0.027
	(0.088)	(0.110)	(0.080)
3 years before reform	0.055	0.084	0.032
	(0.056)	(0.068)	(0.065)
2 years before reform	-0.023	-0.014	-0.008
	(0.045)	(0.050)	(0.043)
Year of reform	0.110^{**}	0.068	0.037
	(0.044)	(0.050)	(0.038)
1 year after reform	0.130^{***}	0.102^{*}	0.014
	(0.046)	(0.052)	(0.047)
2 years after reform	0.203^{***}	0.167^{***}	0.083
	(0.051)	(0.061)	(0.053)
3 years after reform	0.206^{***}	0.155^{***}	0.057
	(0.049)	(0.057)	(0.052)
4 years after reform	0.213^{***}	0.154^{**}	0.071
	(0.049)	(0.061)	(0.054)
Affiliate FE	✓	✓	✓
Industry × Year FE	✓	✓	✓
Observations	3,904	3,904	3,904
R^2	0.705	0.626	0.571

Notes: Table C.2 reports the difference-in-differences event-study estimates in equation (3) for the effect of the removal of the tax incentive. The omitted category is one year before the reform. Standard errors are clustered at the parent level and reported in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table C.3: Estimated Coefficients of Tax Preference Removal on Affiliate Entry into Southeast Asia

Dependent variable:	Entry into Southeast Asia (1)	Low-Tech Entry into Southeast Asia (2)	High-Tech Entry into Southeast Asia (3)
4 years before reform	0.018	0.016	0.002
	(0.024)	(0.019)	(0.015)
3 years before reform	0.009	0.019	-0.010
	(0.019)	(0.014)	(0.012)
2 years before reform	-0.020	-0.007	-0.013
	(0.021)	(0.017)	(0.013)
Year of reform	0.034*	0.032**	0.002
	(0.018)	(0.015)	(0.011)
1 year after reform	0.029	0.022*	0.007
	(0.018)	(0.014)	(0.012)
2 years after reform	0.019	0.023*	-0.004
	(0.017)	(0.013)	(0.011)
3 years after reform	0.031*	0.033**	-0.002
	(0.017)	(0.014)	(0.011)
4 years after reform	0.040**	0.040***	0.000
	(0.015)	(0.012)	(0.009)
Parent FE	✓	✓	✓
Year FE	✓	✓	✓
Observations	7,254	7,254	7,254
Within R^2	0.022	0.017	0.006

Notes: Table C.3 reports the difference-in-differences event-study estimates for entry into Southeast Asia. Column (1) considers all manufacturing entry into Southeast Asia, while Columns (2) and (3) consider entry associated with low-tech and high-tech industries, respectively. The omitted category is one year before the reform. All regressions include parent fixed effects and year fixed effects. Standard errors are clustered at the parent level and reported in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table C.4: Estimated Coefficients of Tax Preference Removal on Affiliate Entry into Other Regions

Dependent variable:	East Asia (Except China)	Other Asia	North America	Latin America	Europe	Rest of the World
	(1)	(2)	(3)	(4)	(5)	(6)
4 years before reform	0.006	0.009	0.015	0.002	-0.002	0.005
	(0.007)	(0.009)	(0.013)	(0.009)	(0.012)	(0.008)
3 years before reform	0.014*	0.013*	0.024**	0.006	0.003	0.008
	(0.008)	(0.007)	(0.011)	(0.009)	(0.009)	(0.006)
2 years before reform	0.000	0.004	0.027**	-0.004	-0.004	0.005
	(0.010)	(0.008)	(0.014)	(0.008)	(0.013)	(0.008)
Year of reform	0.008	0.009	0.026***	0.003	0.009	0.005*
	(0.007)	(0.009)	(0.007)	(0.008)	(0.010)	(0.003)
1 year after reform	0.008	0.009	0.036***	0.001	0.001	0.003
	(0.007)	(0.009)	(0.010)	(0.008)	(0.009)	(0.003)
2 years after reform	0.009	0.006	0.027***	0.006	0.003	0.005*
	(0.007)	(0.007)	(0.009)	(0.009)	(0.009)	(0.003)
3 years after reform	0.011	0.018**	0.027***	-0.000	0.017	0.008
	(0.007)	(0.007)	(0.007)	(0.008)	(0.011)	(0.006)
4 years after reform	0.015*	0.008	0.039***	-0.002	0.001	0.003
	(0.008)	(0.008)	(0.011)	(0.008)	(0.009)	(0.003)
Parent FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Observations	7,254	7,254	7,254	7,254	7,254	7,254
Within R^2	0.007	0.003	0.010	0.003	0.007	0.004

Notes: Table C.4 reports the difference-in-differences event-study estimates for entry indicators into each region. The omitted category is one year before the reform. Standard errors are clustered at the parent level and reported in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table C.5: Average Post-reform Effect on Export Share and Sales Components of Affiliates

Dependent variable:	Share of Total Exports (1)	Log Total Sales (2)	Log Total Exports (3)	Log Local Sales (4)	Log Arm's-length Local Sales (5)	Log Intra-firm Local Sales (6)
Post Average Effect	-0.173***	-0.029	-0.095	0.598***	0.527**	0.221
	(0.024)	(0.105)	(0.140)	(0.183)	(0.212)	(0.672)
Affiliate FE	✓	✓	✓	✓	✓	✓
Industry × Year FE	✓	✓	✓	✓	✓	✓
Observations	3,904	3,904	2,759	3,137	2,730	740
R^2	0.830	0.887	0.848	0.847	0.818	0.817

Notes: Table C.5 reports the average post-reform effect of the removal of the tax preference on the share of total exports, log total sales, log total exports, log local sales, log arm's-length local sales, and log intra-firm local sales using log-OLS regressions. Standard errors are clustered at the parent level and reported in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table C.6: Average Post-reform Effect on Local-market Participation of Affiliates

Dependent variable:	$\mathbb{1}\{\text{Local Sales in China} > 0\}$ (1)	$\mathbb{1}\{\text{Arm's-length Local Sales in China} > 0\}$ (2)	$\mathbb{1}\{\text{Intra-firm Local Sales in China} > 0\}$ (3)
Post Average Effect	0.176***	0.124***	0.052
	(0.033)	(0.039)	(0.034)
Affiliate FE	✓	✓	✓
Industry × Year FE	✓	✓	✓
Observations	3,904	3,904	3,904
R^2	0.703	0.625	0.571

Notes: Table C.6 reports the average post-reform effect of the removal of the tax preference on affiliates' local-market participation. The dependent variables are indicators for positive local sales, positive arm's-length local sales, and positive intra-firm local sales in China, respectively. Standard errors are clustered at the parent level and reported in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table C.7: Average Post-reform PPML Coefficients on Sales Components

Dependent variable:	Total Sales	Total Exports	Local Sales	Arm's-length Local Sales	Intra-firm Local Sales
	(1)	(2)	(3)	(4)	(5)
Post Average PPML Coefficient	0.269	0.330	0.749***	0.855***	-0.160
	(0.220)	(0.284)	(0.148)	(0.190)	(0.919)
Affiliate FE	✓	✓	✓	✓	✓
Industry × Year FE	✓	✓	✓	✓	✓
Observations	3,904	3,325	3,602	3,433	1,947
Pseudo R^2	0.950	0.945	0.938	0.954	0.798

Notes: Table C.7 reports the average post-reform PPML coefficient of the removal of the tax preference on total sales, total exports, local sales, arm's-length local sales, and intra-firm local sales using PPML regressions. Standard errors are clustered at the parent level and reported in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table C.8: Average Post-reform OLS Coefficients on Sales Components: Alternative Treatment Definition

Dependent variable:	Log Total Sales	Log Total Exports	Log Local Sales	Log Arm's-length Local Sales	Log Intra-firm Local Sales
	(1)	(2)	(3)	(4)	(5)
Average Post-reform Coefficient	-0.061	-0.241	0.664***	0.626**	1.141*
	(0.117)	(0.169)	(0.228)	(0.250)	(0.591)
Affiliate FE	✓	✓	✓	✓	✓
Industry × Year FE	✓	✓	✓	✓	✓
Observations	3,323	2,260	2,656	2,306	605
R^2	0.878	0.831	0.851	0.825	0.827

Notes: Table C.8 reports the average post-reform effect of the removal of the tax preference on log total sales, log total exports, log local sales, log arm's-length local sales, and log intra-firm local sales under the alternative treatment definition. Standard errors are clustered at the parent level and reported in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table C.9: Regions and List of Host Countries

Region	Countries
China	China
Southeast Asia	Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand, Vietnam
East Asia	Hong Kong, Japan, Taiwan
Other Asia	Bangladesh, India, Pakistan
North America	Canada, United States of America
Latin America	Brazil, Chile, Guatemala, Honduras, Mexico, Nicaragua
Europe	Austria, Belgium, Bulgaria, Czech Republic, France, Germany, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Romania, Russia, Slovakia, Spain, United Kingdom
Rest of the World	Australia, Brunei, Kazakhstan, New Zealand, Saudi Arabia, Senegal, Singapore, South Africa, Sri Lanka, Tajikistan, Turkey, United Arab Emirates, Uzbekistan

Notes: Table C.9 reports the list of 53 countries hosting Korean manufacturing affiliates in each region.