The "Boundary" of Place-based Policy: Evidence from China's Economic Development Zones

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Abstract

Using a newly assembled geocoded dataset of the universe of Economic Development Zones (EDZs) in China, linked to universal administrative firm microdata and firm-to-firm VAT transactions, we estimate the local effects of zone approval on firm entry, firm performance, and productivity. We document three main findings. First, EDZ approval generates substantial net firm entry and improves incumbent performance, with positive spillovers that extend up to 4 km beyond the official boundary. Second, these gains are driven primarily by the formation of local input-output linkages. Following approval, firms shorten transaction distances and increase local transactions, and firms with stronger buyer-supplier ties to zone firms experience larger Total Factor Productivity (TFP) gains. Patent-citation-based measures suggest a more limited role for knowledge spillovers. Third, the marginal effects of new zones decline sharply over time. Early cohorts (pre-2006) fostered deep local supply chains and robust productivity growth, whereas later cohorts exhibit weaker agglomeration effects and more duplicative entry with limited TFP gains.

Keywords: Place-based policy; agglomeration; production networks

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1 Introduction

Understanding whether governments can foster agglomeration economies is central to the design of industrial policy and to long-standing debates about the limits of state intervention. While the productivity benefits of spatial clustering are well documented (Ellison, Glaeser, and Kerr 2010; Alder, Shao, and Zilibotti 2016), two issues remain unsettled. First, we have limited micro evidence on the mechanisms that generate agglomeration within policy-created clusters. Second, the literature remains divided on whether place-based policies replicate productive externalities or primarily reallocate activity across space. These questions are particularly salient given the recent resurgence of industrial strategy, where policymakers increasingly attempt to reproduce successful clusters in lagging regions.

China's Economic Development Zones (EDZs) provide a useful setting to study both questions. As of 2018, China had established more than 2,500 zones. Although they occupy roughly 4% of urban land, they account for nearly 10% of registered capital and 21% of corporate patent applications. These aggregates, however, leave open basic questions about what drives the gains—and about how far the effects extend beyond the official boundary as the program scales up.

We assemble a geocoded database of EDZ boundaries and link it to administrative microdata on the universe of firm registrations, firm annual reports, patent applications, and VAT invoice transactions. By digitizing provincial planning materials, we map the precise footprint of 1,698 zones across 20 provinces. The linked data allow us to observe firm location, entry dynamics, performance, innovation, and buyer–seller relationships at fine spatial resolution, and to measure outcomes both inside zones and in concentric buffers around their boundaries.

To causally identify the effects of development zone establishment, we employ a staggered difference-in-differences approach (Busso, Gregory, and Kline 2013). Our identification strategy exploits the staggered rollout of zone policies across regions and over time, comparing outcomes in earlier-treated zones to those treated later. This design offers two key advantages over comparing zones to non-zone areas. First, since all zones require approval from provincial or central governments, treated units share similar unobservable economic potential, mitigating selection bias. Second, the geographic dispersion of zones helps satisfy the Stable Unit Treatment Value Assumption (SUTVA) by minimizing direct spillover effects between treatment and control groups.

In Section 4, we first document significant effects of EDZ establishment on firm entry. We find that zone establishment generates substantial net firm entry, boosting the number of registered firms by approximately 10%, particularly within designated target industries. These effects are not confined to the zones themselves but generate positive spillovers extending up to 4 km beyond administrative boundaries, with entry in these buffer areas increasing by 5–10%. Crucially, we find that these effects represent net economic creation rather than zero-sum reallocation: we observe no corresponding decline in entry or increase in exit in nearby non-zone areas. Furthermore, an analysis of equity capital flows reveals that new investment originates primarily from outside the province rather than cannibalizing local sources.

In Section 5, we turn to firm performance. We find that zone establishment drives significant improvements in the real outcomes of incumbent firms. Specifically, firms operating within zones experience robust growth in total assets, revenue, and profits, with these gains proving most pronounced for firms in designated target industries. Crucially, these benefits are not confined to the zones themselves; we document positive performance spillovers for incumbent firms located in the surrounding 1-4 km buffer areas, suggesting that the agglomeration externalities generated by the zones extend beyond their administrative boundaries.

Second, leveraging granular firm-to-firm transaction records, in Section 6, we decompose the sources of agglomeration economies. We find that productivity gains are driven primarily by the densification of local input–output linkages. Following zone establishment, firms significantly reduce their trade distances and increase local procurement, with stronger buyer-supplier matches predicting higher Total Factor Productivity (TFP). In contrast, we find limited evidence that knowledge spillovers (proxied by patent citations) drive these gains. This result challenges the traditional view of high-tech clusters as engines of pure knowledge diffusion, highlighting instead the critical role of physical supply chain integration.

Third, we uncover the limits of this place-based policy by examining the heterogeneous effects of zone establishment across different waves of expansion. In Section 7, we find that while the aggregate effects of development zone policies are positive, they mask a sharp divergence between early and late adopters. Zones established in the initial waves (pre-2006) successfully fostered deep local supply chains and robust productivity growth. In contrast, later zones—often located in peripheral regions—exhibit significantly weaker agglomeration effects. Specifically, the expansion of the zone network has resulted in

duplicative firm entry without corresponding gains in Total Factor Productivity (TFP), suggesting that the uncoordinated replication of place-based policies risks generating industrial overcapacity.

We subject these findings to a battery of robustness checks to rule out alternative explanations. First, we address the concern that local governments may selectively admit high-growth firms ("picking winners"). Using a triple-difference design that compares entrants to incumbents, we find that selection effects are limited and emerge only after zones are upgraded to provincial status; in contrast, positive spillovers to the surrounding buffer zones appear immediately upon establishment. Second, we investigate whether clustering is driven merely by fiscal incentives rather than agglomeration. We show that while firms inside zones receive temporary subsidies (typically lasting three years), firms in the 1–4 km buffer zones do not, yet they still exhibit strong performance gains. Finally, we control for concurrent infrastructure improvements, demonstrating that our results are robust to time-varying proximity to highways and high-speed rail.

This study advances the literature on place-based policies and agglomeration in three ways. First, we provide the first precise estimates of the spatial decay of place-based policy effects in a developing economy. By mapping 1,698 zones to their exact administrative footprints in China, we move beyond the geographic units used in prior work (Wang 2013; Lu, Wang, and Zhu 2019; Lu, Sun, and Wu 2023). This allows us to document that positive spillovers are highly localized—extending only 4 km beyond zone boundaries—and to rigorously verify that these effects represent net entry rather than the cannibalization of nearby activity, resolving a central debate in the literature.

Second, our study also contributes to research on quantifying the sources of agglomeration. Since Marshall (1890) theoretically proposed that agglomeration benefits arise from three channels: input-output linkages, labor market pooling, and knowledge spillovers. However, due to data limitations, existing research has relied on industry-level data and constructed proxies for these channels at aggregated levels (Ellison, Glaeser, and Kerr 2010; Jofre-Monseny, Marín-López, and Viladecans-Marsal 2011; Ehrl 2013). Building on a novel dataset of firm-level transaction records, our study is, to the best of our knowledge, the first to quantify the input-output linkage channel directly at the firm level. This approach enables us to capture granular inter-firm supply chain relationships within agglomerated areas, providing more precise evidence on how such linkages contribute to productivity growth. Contrary to literature emphasizing labor pooling or knowledge flows (Diodato, Neffke, and O'Clery 2018; Steijn, Koster, and Van Oort 2022), we show that

input-output linkages are the dominant driver of TFP growth, consistent with theories emphasizing the cost-saving benefits of vertical integration.

Third, we provide a cautionary tale regarding the scalability of industrial policy. By documenting the diminishing returns to zone establishment, we contribute to the debate on the "boundary" of state intervention. Our findings suggest that while governments can successfully engineer clusters through supply chain coordination, the uncoordinated replication of this policy experiment leads to diminishing marginal returns (Wang and Yang 2025). This insight is particularly relevant for policymakers in other developing economies considering similar place-based industrial policies (Gallé et al. 2024; Garg 2025).

The remainder of the paper is organized as follows. Section 2 describes the institutional background. Section 3 introduces our data construction. Section 4 reports the effects on firm entry, followed by performance results in Section 5. Section 6 quantifies the sources of agglomeration economies and Section 7 distinguishes the heterogeneous effects between early and late adopters, and Section 8 concludes.

2 China's Economic Development Zone Program

Economic Development Zones (EDZs) are a central instrument of China's place-based industrial policy. They are designed to attract foreign and domestic investment, promote trade, and facilitate technological upgrading within designated locations. Unlike many place-based initiatives in advanced economies that target distressed areas, EDZs are typically positioned as engines of regional growth. This section defines EDZs, describes their institutional features, and summarizes how their spatial distribution has evolved over time.

2.1 EDZ as a Spatial Unit

Throughout the paper, an EDZ refers to a geographically delimited area designated by the government within its jurisdiction for industrial production or non-real-estate commercial use.[1] The average planned area of EDZs in China is 7.15 km^2, which is much smaller than the average area of a Chinese county (3,400 km^2).

[1] In China, the term EDZ sometimes refers to four cities—Shenzhen, Zhuhai, Shantou, and Xiamen—which were designated as the first pilot zones during the market-oriented reforms that began in 1978. In this paper, however, we adopt a broader definition. Specifically, EDZs refer to all provincial- and national-level development zones listed in the "China Development Zone Audit Announcement Catalog (2018 Edition)", published by the central government.

EDZs are created through a "top-down" approval process and are owned and administered by government entities. This contrasts with settings such as India, where zones can be developed and operated by private developers (Gallé et al. 2024). Each zone is governed by an *Administrative Committee* appointed by the local government. The committee is responsible for project approval, land-use management, fiscal oversight, personnel administration, environmental regulation, and public security.

2.2 Hierarchy and Types

EDZs are not a single homogeneous entity but a mix of different types and administrative levels. China's EDZs are ranked in two categories: national-level and provincial-level economic zones. The former have been approved by the central government and are more privileged, while the latter are provincial government initiatives. Generally, national and provincial EDZs are mutually geographically exclusive—a location cannot be both a provincial and a national EDZ at the same time.

In addition to administrative hierarchy, China's EDZs are further categorized by type, each designed with specific policy orientations to fulfill distinct economic objectives. Among these, Economic and Technological Development Zones (ETDZs) adopt an inclusive approach, catering to a diverse range of industries and investors. In contrast, High-Tech Industrial Development Zones (HIDZs) specifically target advanced technology sectors—such as software development, semiconductor manufacturing, telecommunications equipment production, and biotech R&D—with the goal of accelerating innovation-driven industrialization. While HIDZs and ETDZs share overlapping functions, making their classification somewhat ambiguous, Specialized Industrial Zones (SIZs) adopt a more focused model by concentrating on niche industries that align with regional competitive advantages. Meanwhile, Bonded Zones operate under unique customs arrangements, functioning as extraterritorial enclaves within China's borders to facilitate export processing, international trade, and logistics through bonded warehousing. A closely related variant, Border Economic Cooperation Zones (BECZ), shares similarities with Bonded Zones but is exclusively dedicated to export-oriented manufacturing activities. In addition, there are a small number of other types of national-level EDZs, most of which are designated for tourism development and service industries.

2.3 Target Industry

A distinctive feature of China's EDZs is that each zone designates at least one target industry as a priority for development. This characteristic differentiates EDZ policy from market-oriented reforms aimed at lowering entry barriers and instead aligns it more closely with industrial policy. Most target industries are specified at the 2-digit level, with each EDZ selecting an average of 3 industries as its focus.[2] Table 1 shows that 95% of these target industries are in the manufacturing sector, which clearly dominates. The next most common category is Information Transmission, Software, and IT Services, reflecting an ambition to promote the development of high-tech industries.

Differences across EDZ types are also reflected in the variation of their target industries. Appendix Tables F.2 and F.3 present the top five targeted industries at the 2-digit level for different types of EDZs. We find that ETDZs exhibit a strong tendency toward manufacturing concentration. Among them, national-level ETDZs have a higher proportion of high-end manufacturing industries, such as pharmaceutical manufacturing, whereas provincial-level ETDZs are more concentrated in lower-end manufacturing sectors, including food processing and mineral products manufacturing. HIDZs, in contrast, show a clear focus on high-tech industries, such as software development and telecommunications. Bonded zones and BECZs tend to prioritize target industries related to bulk commodity manufacturing and logistics, reflecting their roles in facilitating trade and supply chain activities.

Firms in target industries enjoy greater access to policy incentives. Local governments use these preferential measures to attract more firms from the designated target industries into EDZs. As illustrated in Appendix C.2, we provide a case study of Guangdong Huizhou Industrial Park, which details the extensive preferential policies offered to firms in the flat-panel display industry. Moreover, as shown in Section 4.6.2, our regression results confirm that firms in target industries receive significantly more government subsidy income than their counterparts in non-target industries.

[2]The original data on each EDZ's target industries are sourced from the "China Development Zone Audit Announcement Catalog (2018 Edition)". However, the descriptions of target industries in the list are not standardized and contain noise. Therefore, we recode the target industries into a uniform 2-digit level. Our data processing involved two main steps. First, we removed ambiguous or overly generic industry descriptions, such as "*jiagong*" (processing) and "*cailiao*" (materials), which could not be reliably mapped to any unique 2-digit or even 1-digit industry classification. Second, for condensed but identifiable industry names, we disaggregated them to the 2-digit level. For example, "pifalingshou" (wholesale and retail) was split into two corresponding 2-digit industries: "Wholesale" and "Retail". This second step of disaggregation explains why the number of target industries in our processed dataset exceeds the number reported in the original list.

The final question concerns the basis on which local governments select target industries. In Appendix B, we examine the economic rationale behind these choices. Our analysis reveals that EDZs' selection of target industries is positively correlated with both their capital-based revealed comparative advantage (RCA) and absolute advantage (AA). This suggests that local governments tend to prioritize industries in which their region already demonstrates a certain industrial foundation.

[Table 1 about here.]

2.4 Expansion Pattern

EDZ creation proceeded in several distinct waves. Figure 1 plots the annual number of newly approved zones, and Appendix Table F.4 decomposes each wave by zone type and region. Three patterns are salient.

From the coastline to inland regions. The first official EDZs were approved in 1984, six years after the market-oriented reforms initiated in 1978. That year, 11 zones were established in coastal port cities. During 1984–1991, the program remained experimental and concentrated along the coast; most newly approved zones were national-level, reflecting tighter central oversight. After Deng Xiaoping's southern tour in 1992, zone creation accelerated and provincial-level EDZs expanded rapidly, particularly Economic and Technological Development Zones (ETDZs), which accounted for 368 new zones during this wave. Beginning in the mid-2000s, the central government increasingly approved EDZs in central and western provinces as part of a broader effort to reduce regional development disparities. In the latest wave (2013–2018), the pace of new approvals slowed substantially, consistent with saturation in zone coverage.

From "one-city-one-EDZ" to "one-county-one-EDZ". The central government has implemented relatively strict controls on the total number of EDZs. As the program scaled up, its administrative coverage shifted from a "one-city-one-EDZ" model to a "one-county-one-EDZ" configuration.[3] Appendix Figure F.5 shows that during 1992–2005, the rapid expansion of EDZs enabled nearly every prefecture-level city to host at least one zone: by 2005, over 80% of cities had established an EDZ. In contrast, the post-2006 expansion focused on broader coverage at the county level. By 2018, approximately 70% of counties in China had at least one EDZ. Appendix Figure F.6, based on prefecture-level

[3]The "one-county-one-EDZ" policy originates from the 2005 guidelines issued by the National Development and Reform Commission: *Audit Principles and Standards for the Cleanup and Rectification of Development Zones* (NDRC [2005] No. 1521), which explicitly stipulate that each county is allowed to establish at most one provincial-level EDZ.

maps for 2005 and county-level maps for 2018, provides illustrative examples from four provinces and offers a more intuitive view of this administrative shift. Taken together, the evidence suggests that, with the total number of EDZs nearing saturation, further large-scale expansion is unlikely in the near term.

[Figure 1 about here.]

3 Data and Methodology

Our analysis links newly digitized, geocoded boundaries for China's Economic Development Zones (EDZs) to universal administrative firm microdata and firm-to-firm transactions. The key advantage of this construction is that it defines treatment at the *exact spatial footprint* of each zone—rather than at coarse administrative units—so we can (i) measure outcomes inside the same geographic area *before* and *after* zone approval, (ii) quantify spatial spillovers in concentric buffers around the boundary, and (iii) implement identification strategies that compare *early-* and *late-established* zones using consistent treatment units. The formal estimating equations are presented in Sections 4 and 5.

3.1 EDZ boundaries and policy attributes

Our core treatment data cover 1,698 EDZs across 20 provinces, including 395 national-level zones and 1,303 provincial-level zones. These zones account for 96.15% of all zones in the 20-province sample and 66.77% of all zones nationwide. From the *China Development Zone Audit Announcement Catalog (2018 Edition)* (the "list"), we observe each EDZ's name, administrative level, year of official approval, and designated target industries.

We obtain the *exact* geographic boundaries of these 1,698 EDZs directly from provincial government planning materials and digitize them into geocoded polygons. Using polygons rather than administrative codes is essential for identification: EDZs are typically small subareas within counties/cities, and their boundaries rarely coincide with standard statistical units. The boundary data therefore allow us to (i) construct a stable, zone-specific spatial unit that exists in all years (including pre-approval years), and (ii) differentiate outcomes *inside* the zone from outcomes in nearby areas that may experience spillovers. Appendix A documents the collection process, digitization procedures, and spatial coverage.

3.2 Administrative firm microdata and firm-to-firm transactions

We merge EDZ boundary polygons to four administrative datasets:

Business Registry Database. This dataset covers the universe of all registered firms in China and reports a firm's registered address, establishment year (and exit, if any), registered capital, and industry classification. We use it to construct measures of firm entry (and related extensive-margin outcomes) from 2000–2017. The sample ends in 2017 because the last EDZ in our data was established in that year.

Firm Annual Report Database. This dataset contains annual firm balance-sheet and operating outcomes (assets, revenue, main business income, profit, equity, etc.) for more than 45 million firms. Its universal coverage is particularly important in our setting because EDZ-induced entry is concentrated among small firms that are often missing from standard industrial surveys. The long time span also supports pre-trend diagnostics and event-time analyses around EDZ approval.

VAT Invoice Data. This dataset records all VAT invoices issued in mainland China in 2014—approximately 763 million transactions among about 4 million entities—reporting buyer and seller identifiers and transaction values. VAT invoicing is required for claiming input tax credits and is tightly enforced, making these records a high-coverage measure of production linkages. The VAT invoice data allow us to directly measure buyer–seller linkages and how they reorganize spatially after EDZ approval. This micro link structure is central to our mechanism tests because it permits firm-level measurement of input–output linkages, rather than proxies based on aggregate input–output tables.

Enterprise Income Tax Records. We also use administrative corporate income tax records for a stratified sample of over one million firms. These data provide additional performance and accounting measures (e.g., sales, inputs, employment) that complement the annual reports and facilitate robustness checks for performance and productivity outcomes.

Across datasets, we use consistent firm identifiers (and validated crosswalks where necessary) to construct a unified panel of firm location, entry/exit, performance, and production linkages.

3.3 Geocoding firms and outcome construction

To map firms into space, we geocode registered firm addresses using Amap (Gaode)'s geocoding API, extract latitude/longitude, and spatially join firm points to EDZ polygons. This procedure generates two objects that are central to the research design:

1. **Inside-zone treatment status:** whether a firm lies within an EDZ boundary.
2. **Distance-to-boundary and buffer rings:** whether a firm lies in concentric distance bins outside the EDZ (e.g., 0–1 km and 1–4 km buffers).

These spatial measures are not ancillary: they enable us to implement a cleaner identification strategy than is possible with administrative-unit treatment indicators. In particular, they allow us to compare outcomes within the *same geographic footprint* before versus after approval, and to test whether impacts are confined to the zone or spill over into nearby areas. They also support design choices that mitigate contamination: for example, we can exclude or separately analyze firms in close proximity when defining control groups in alternative strategies.

With the geocoded data, we construct outcome variables at both extensive and intensive margin. First, using the Business Registry Database, we measure new firm registrations at the EDZ-year level and (when exploiting industry variation) at the EDZ-industry-year level. The geocoded boundaries allow us to construct these measures both inside zones and in surrounding buffers, which is essential for distinguishing localized effects from spillovers and for assessing whether entry effects reflect net creation rather than mere relocation across administrative borders. Second, using annual reports and tax records, we study incumbent-firm outcomes within EDZs and nearby buffers. A key sample choice is to focus on *incumbent* firms—those operating in the zone footprint prior to approval—so that estimated changes in performance are not mechanically driven by compositional shifts from selective entry. This is particularly important in place-based policies, where entry responses can be large.

Before turning to causal estimates, we document the concentration of economic activity in EDZs. Table 2 reports that EDZ firms comprise a small share of total firms but account for disproportionately large shares of registered capital and patent applications, consistent with EDZs serving as focal points for investment and innovation activity.

[Table 2 about here.]

3.4 Empirical design: three complementary comparison groups

Estimating the causal impacts of EDZ establishment requires counterfactual outcomes for the same locations absent zone approval. Because EDZ placement is not random, the central empirical challenge is choosing control groups that are comparable yet minimally exposed to spillovers. We therefore implement three complementary designs that rely on different sources of variation; our core results are robust across them.

1) Staggered timing within EDZs (early vs. later zones). Our primary design restricts the comparison set to EDZ areas themselves and uses staggered approval timing: earlier-approved zones serve as treated units while later-approved zones serve as not-yet-treated controls. This approach is feasible only because the boundary dataset lets us measure outcomes within each zone's footprint in all years, including years prior to its approval. It is also institutionally motivated: EDZs require approval by provincial (or central) governments, which applies relatively standardized criteria and helps align baseline characteristics across zones. In implementation, we exclude zones approved before 2000 to avoid always-treated units and related weighting problems in staggered designs; we present formal specifications and modern aggregation procedures in later sections.

2) EDZs vs. remote never-treated counties (matched controls). To further address concerns about spillovers and to benchmark against never-treated areas, we construct a comparison group of counties that never hosted an EDZ by 2018. We then select comparable control firms/areas using propensity-score-based nearest-neighbor matching on pre-approval characteristics (e.g., age, registered capital, ownership and export indicators, and other baseline firm observables). The boundary data remain important here because they prevent misclassification of treated firms (a common issue when treatment is assigned at coarse administrative levels) and because they allow us to define geographic distance from treated zones when restricting the donor pool.

3) Triple-difference using targeted industries. EDZs explicitly designate target industries. We exploit this institutional feature by comparing outcomes for firms in targeted industries versus non-targeted industries, before versus after EDZ approval, and inside EDZs versus outside areas. This design helps absorb unobserved local shocks that affect all industries in a place and strengthens identification by using within-place industry variation. For analyses of production networks, we also classify upstream and downstream industries using input–output relationships following Atalay, Hortaçsu, and Syverson (2014).

4 EDZs and Firm Entry Dynamics

This section estimates how EDZ establishment reshapes local firm formation. We study (i) entry inside zones, (ii) industry composition—especially targeted industries and their upstream/downstream counterparts, (iii) dynamic responses and identification checks, (iv) spatial spillovers into surrounding buffers, and (v) whether the observed entry reflects net expansion rather than spatial reallocation. We close by assessing three alternative explanations that could mechanically generate entry patterns: selective admission, government subsidies, and coincident infrastructure upgrades.

4.1 Empirical specifications

Our baseline identification exploits staggered EDZ approval and compares earlier- to later-established zones (Approach 1). The unit of observation is the EDZ-year, and the outcome is the log number of newly registered firms (using a $\log(1+x)$ transformation to accommodate zeros). We estimate:

$$\log(\#\text{ new entry})_{st} = \beta Post_{st} + \alpha_s + \gamma_t + \epsilon_{st}, \tag{1}$$

where $Post_{st}$ equals one in years after EDZ s is officially approved and zero otherwise; α_s and γ_t denote EDZ and year fixed effects. Standard errors are clustered at the EDZ level. To avoid always-treated units and issues from staggered designs with treatment effect heterogeneity (e.g., negative weights / forbidden comparisons), we restrict to EDZs established after 2000 (Goodman-Bacon 2021; Borusyak, Jaravel, and Spiess 2024).

As a complementary design (Approach 2), we add never-treated counties (counties that never hosted an EDZ by 2018) as an additional control group and estimate:

$$\log(\#\text{ new entry})_{it} = \beta(EDZ_i \times Post_{it}) + \alpha_i + \gamma_t + \epsilon_{it}, \tag{2}$$

where i indexes either an EDZ or a never-treated county. Standard errors are clustered at the county level.

To assess industry reallocation along production networks (Approach 3), we construct

an EDZ–industry–year panel and estimate a triple-difference specification:

$$\begin{aligned}\log(\#\text{ new entry})_{sjt} =& \beta_1(Post_{st} \times Target_{sj}) + \beta_2(Post_{st} \times Up_{sj}) + \beta_3(Post_{st} \times Down_{sj}) \\ &+ \iota Post_{st} + \alpha_{sj} + \gamma_{jt} + \epsilon_{sjt},\end{aligned} \tag{3}$$

where α_{sj} are EDZ–industry fixed effects and γ_{jt} are industry–year fixed effects. $Target_{sj}$ indicates whether industry j is a designated target industry of EDZ s. Up_{sj} and $Down_{sj}$ indicate upstream and downstream industries relative to the target, defined using China's 2007 Input–Output Table following Atalay, Hortaçsu, and Syverson (2014): an industry is upstream (downstream) if it supplies more than 5% of inputs to (uses more than 5% of outputs from) the target industry.

To examine dynamics and validate identification, we implement an event-study version of (1):

$$\log(\#\text{ new entry})_{st} = \sum_{\substack{k=-5 \\ k\neq -1}}^{8} \beta_k D_{st}^k + \alpha_s + \gamma_t + \epsilon_{st}, \tag{4}$$

where D_{st}^k are event-time indicators (grouping $k \leq -5$ and $k \geq 8$) and $k = -1$ is the omitted baseline year. In addition to TWFE OLS, we report heterogeneous-treatment-robust estimates using Sun and Abraham (2021), Callaway and Sant'Anna (2021), and De Chaisemartin and d'Haultfoeuille (2024).

Finally, to quantify spatial spillovers, we partition space into an EDZ polygon and concentric 1-km rings up to 10 km and estimate:

$$Y_{ist} = \beta_0(Post_{st} \times EDZ_i) + \sum_{k=1}^{9} \beta_k(Post_{st} \times Buffer_i^k) + \alpha_i + \gamma_t + \epsilon_{ist}, \tag{5}$$

where Y_{ist} is the log number of new registrations in plot i (the EDZ interior or a ring) in year t, and the 10 km ring is the reference category. Plot fixed effects α_i absorb time-invariant differences across rings; standard errors are clustered at the EDZ level.

4.2 Entry responses inside zones and along production networks

Table 3 reports baseline estimates from (1) and (2). Across specifications and control groups, EDZ establishment raises firm entry significantly. In our preferred within-EDZ timing design (Approach 1), Column (1) implies an entry increase of about 18.4%. The smaller magnitude relative to the 29% reported by Lu, Wang, and Zhu (2019) is consistent with our longer panel (2000–2017) and broader treatment cohort that includes later-wave

zones, for which marginal entry effects are plausibly weaker on average.

We next ask whether the entry response is concentrated in EDZ-designated industries and whether it propagates along production networks. Table 4 reports the triple-difference results from (3). EDZs disproportionately attract firms in targeted industries: entry in target industries rises significantly more than in non-target industries. Importantly, we also detect increases in upstream and downstream entry, indicating that EDZs reshape the local industrial composition beyond the focal sectors and are consistent with the formation of localized supply chains. Columns (3)–(4), using the log registered capital of new entrants, show parallel patterns, with capital responses typically larger than the extensive-margin response in firm counts.

We further explore heterogeneity in Appendix Table F.6. National-level zones exhibit modestly larger entry and capital effects than provincial zones, consistent with stronger policy capacity and/or screening documented in prior work (Alder, Shao, and Zilibotti 2016). Entry effects also decline with distance to city or provincial centers, aligning with evidence that place-based policies are more effective where baseline agglomeration elasticities are higher (Glaeser and Gottlieb 2008; Neumark and Simpson 2015; OECD 2025).

[Table 3 about here.]

[Table 4 about here.]

4.3 Dynamic entry effects

Figure 2 plots event-study estimates from (4). The pre-treatment coefficients are small and statistically indistinguishable from zero, supporting the absence of differential pre-trends in entry between earlier- and later-approved zones. After approval, entry rises sharply and remains elevated for roughly five years in the within-EDZ timing design (Panel a). Panel (b), which incorporates never-treated counties, delivers a similar pattern with a somewhat more persistent response (around seven years). These dynamic results reinforce the validity of both comparison strategies.

We also examine whether dynamics differ across industries along the production network. Using the same event-study framework but redefining the dependent variable as entry in targeted, upstream, and downstream industries, Figure 3 shows post-approval increases across all three groups, with comparatively more persistent responses for downstream industries.

[Figure 2 about here.]

[Figure 3 about here.]

4.4 Spatial spillovers beyond EDZ boundaries

We next quantify how far the entry response extends beyond formal EDZ borders. Figure 4 plots coefficients from the concentric-ring specification (5). Entry increases sharply inside EDZs and remains positive in surrounding rings, declining with distance and becoming negligible beyond approximately 4 km. This pattern indicates that EDZs generate spatial spillovers in the extensive margin of firm formation, consistent with local agglomeration forces that are not confined to administrative boundaries.

We obtain similar spillover patterns when focusing on entry in upstream and downstream industries. Given that entrants inside EDZs are concentrated in targeted sectors, the presence of upstream/downstream entry in adjacent buffers is consistent with the emergence of localized input–output linkages between zone firms and nearby suppliers/customers.

[Figure 4 about here.]

4.5 Interpretation: net entry versus spatial reallocation

A central concern in place-based policy evaluations is whether observed entry reflects net expansion or merely re-sorting across nearby locations. While difference-in-differences estimates capture relative changes between treated and control units, they do not by themselves rule out the possibility that entry rises in EDZs because it falls in nearby, "untreated" areas.

We therefore examine entry and exit dynamics in two plausibly unimpacted comparison areas: (i) buffer zones 5–10 km from the EDZ boundary, and (ii) non-EDZ areas within the same EDZ-hosting counties (excluding the 0–4 km spillover region). We re-estimate the event-study specification (4) using these regions as the comparison group. Figure 5 shows no evidence of a post-approval decline in entry or increase in exit in these unimpacted areas, inconsistent with a simple reallocation story.

We also examine whether EDZ entrants are financed by re-directed local equity rather than new capital. Using shareholder links from the registry, we construct measures of equity investment by investor origin. Appendix Table F.7 shows that the post-approval

increase in equity investment comes primarily from outside the province, with no corresponding rise from nearby areas—further supporting the interpretation that EDZs stimulate net new activity rather than cannibalizing local investment.

[Figure 5 about here.]

4.6 Alternative explanations and validation

Although the preceding evidence indicates a robust entry response to EDZ establishment, three alternative explanations could mechanically contribute to these patterns: selective admission of high-potential firms, direct fiscal subsidies that induce registration, and coincident infrastructure improvements that increase market access. We evaluate each in turn.

4.6.1 Selective admission of entrants

Because EDZs are administered by local governments, a concern is that administrative committees may selectively admit larger or higher-growth firms, creating the appearance of an entry- and performance-enhancing policy even absent agglomeration forces. We test for selective admission by examining whether post-approval entrants are systematically larger than incumbents, and whether such selection changes after an EDZ is administratively upgraded.

Following Barwick et al. (2025), we estimate:

$$\begin{aligned} Y_{ist} =& \beta_1 Entrant_{it} + \beta_2(Entrant_{it} \times Post_{st}) + \beta_3(Entrant_{it} \times Post_Prov_{st}) \\ &+ \xi \mathbf{X}_{it} + \eta_{sm} + \eta_{st} + \eta_{mt} + \epsilon_{ist}, \end{aligned} \tag{6}$$

where Y_{ist} is a firm size measure (log revenue), $Entrant_{it}$ equals one for age-one firms, and $Post_Prov_{st}$ equals one after EDZ s is upgraded to provincial-level or above. We include firm controls and rich fixed effects (η_{sm} EDZ–industry, η_{st} EDZ–year, and η_{mt} industry–year); standard errors are clustered at the EDZ–industry level.

Table 5 shows that selection is limited: within EDZ boundaries, evidence of selectively larger entrants emerges primarily after administrative upgrading, while buffer zones persistently attract smaller entrants. Using profit as an alternative outcome yields no evidence that post-approval entrants are systematically more profitable than incumbents (Appendix Table F.9). Overall, these patterns suggest that selective admission cannot

account for the broad entry increase—especially in the 1–4 km spillover region where entry rises but selection into larger firms is absent.

[Table 5 about here.]

4.6.2 Are entry effects mechanically driven by subsidies?

EDZs often provide time-limited subsidies to attract firms. If subsidies are the primary driver, we would expect elevated subsidy receipts not only inside EDZs but also in nearby buffers where we observe substantial entry spillovers. Using the National Tax Survey Database (2008–2020), we estimate:

$$\log\left(Subsidy\right)_{ijct} = \beta_0 EDZ_i + \sum_{k=1}^{10} \beta_k Buffer_i^k + \xi \mathbf{X}_{it} + \eta_{ct} + \eta_{jt} + \eta_{jc} + \epsilon_{ijct}, \quad (7)$$

where EDZ_i indicates firms inside EDZ boundaries and $Buffer_i^k$ indicates the k-km ring around the EDZ. The reference group is firms located more than 10 km from any EDZ. We include firm controls and a saturated set of fixed effects (county–year, industry–year, and county–industry), clustering standard errors at the county level.

Figure 6 shows that subsidy receipts are meaningfully higher inside EDZs (around 10%) but are not systematically higher in the 1–10 km buffer zones. This sharp spatial discontinuity is difficult to reconcile with the sizable entry spillovers observed out to 4 km, and suggests that subsidies alone are unlikely to explain the broader geography of entry responses.

[Figure 6 about here.]

4.6.3 Infrastructure improvements and market access

Finally, EDZ establishment could coincide with transport investments that independently attract firms. Using GIS transportation nodes from Davis, Qian, and Zeng (2025), we test whether EDZ approval is associated with changes in accessibility by re-estimating (1) with the dependent variable defined as log distance to the nearest motorway access, regular railway station, and high-speed rail station.

Table 6 shows that EDZ establishment is associated with improved motorway access (a roughly 15.5% reduction in distance) but no statistically detectable changes in rail access. Importantly, controlling for these transport measures in the entry regressions leaves the estimated entry effects largely unchanged (Appendix Table F.11), indicating

that transportation upgrades are unlikely to be the primary driver of the firm entry response.

[Table 6 about here.]

5 Firm Performance and Productivity

The entry results in Section 4 show that EDZ approval triggers sustained firm formation both inside zones and in nearby areas. This section asks whether these entry responses translate into *incumbent* firm performance and productivity gains, and whether such gains extend beyond the zone boundary. Throughout, we emphasize outcomes in the surrounding 1–4 km buffer, which we refer to as the EDZ **impact region**. Firms in the impact region are especially informative because they experience the same thickening of local markets and production networks but do not receive the direct within-zone policy bundle documented in Section 4 (e.g., subsidies). As a result, performance changes in the impact region more cleanly isolate agglomeration forces from administrative transfers.

5.1 Empirical specifications

We focus on **incumbent firms**, defined as firms operating in a given location prior to EDZ approval. This restriction limits composition bias from post-approval entry and allows us to interpret performance changes as within-firm responses to local clustering.

Our main firm-level difference-in-differences specification is:

$$Y_{ist} = \beta(EDZ_i \times Post_{st}) + \xi \mathbf{X}_{it} + \alpha_i + \gamma_t + \epsilon_{it}, \tag{8}$$

where Y_{ist} denotes firm outcomes for firm i linked to EDZ s in year t. Specifically, we measure firm performance with a vector of variables including revenue, profit, ROA and TFP; Appendix E provides details. EDZ_i indicates exposure to the EDZ treatment area; in Panel A we set $EDZ_i = 1$ for firms inside EDZ boundaries, while in Panel B we set $EDZ_i = 1$ for firms located in the 1–4 km buffer (impact region). $Post_{st}$ equals one after EDZ s is approved. α_i are firm fixed effects, γ_t are year fixed effects, and $\mathbf{X}_{it}$ includes a firm-specific time trend based on registered capital and a quadratic in firm age. Standard errors are clustered at the county–industry level.

To sharpen identification, our baseline estimates use a matched control group of incumbent firms located in counties that never hosted an EDZ by 2018 (Approach 2).

Matching is performed on rich pre-treatment firm characteristics (age, registered capital, and indicators for manufacturing, foreign and state ownership, export status, and branch status), retaining observations on the common support.

We also implement a triple-difference design exploiting EDZ-designated target industries:

$$Y_{ijst} = \beta_1(EDZ_i \times Post_{st} \times Target_{sj}) + \beta_2(EDZ_i \times Post_{st}) + \xi \mathbf{X}_{it} + \alpha_i + \gamma_{jt} + \epsilon_{ijst}, \quad (9)$$

where $Target_{sj}$ indicates that industry j is a designated target industry of EDZ s, and γ_{jt} are industry–year fixed effects.

5.2 Performance gains inside EDZs and in the impact region

Table 7 reports matched-sample estimates of (8). EDZ establishment significantly improves incumbent firm outcomes not only inside EDZ boundaries (Panel A) but also in the 1–4 km impact region (Panel B). In particular, we observe positive and statistically significant gains in TFP, consistent with productivity-enhancing agglomeration economies rather than a pure transfer of rents to zone incumbents.

Table 8 reports triple-difference estimates from (9). The gains are systematically larger in EDZ target industries, especially for revenue and profits. This industry pattern aligns with the entry results in Section 4: EDZs disproportionately attract targeted industries and related upstream/downstream sectors, suggesting that productivity gains may operate through the reorganization of local production networks.

Interpretation. Two features of the results support an agglomeration interpretation. First, focusing on incumbents minimizes mechanical changes from post-approval entry and selection. Second, productivity improvements appear in the impact region, where firms are exposed to thicker local input markets and denser economic interactions but do not receive the direct within-zone subsidy advantage. This spatial pattern is difficult to reconcile with policy transfers alone and motivates a closer look at the channels through which EDZ-induced clustering raises productivity.

[Table 7 about here.]

[Table 8 about here.]

6 Decomposing Sources of Agglomeration

We now investigate *why* EDZs raise productivity. Following Marshall (1890), agglomeration economies can arise through (i) input–output linkages, (ii) labor market pooling, and (iii) knowledge spillovers. Our data uniquely enable firm-level measurement of two of these channels: production networks (using VAT invoice transactions) and knowledge flows (using patents and citations). We therefore quantify how EDZs reshape these linkages and assess which channel best accounts for the TFP gains in Section 5.

6.1 Input–output linkages

We use the 2014 VAT invoice dataset (763 million transactions among 4 million entities) to observe firm-to-firm buyer–seller relationships. The limitation is that VAT transactions are available in a single year, so we cannot implement the same within-firm before/after design as in Sections 4–5. Instead, we use the EDZ timing structure to form a cross-sectional comparison: firms located in EDZ areas that were approved *before* 2014 versus firms located in EDZ areas that would be approved *after* 2014 (later adopters). Because our boundary dataset identifies the precise EDZ footprints even for zones approved after 2014, we can assign firms to the same spatial treatment units and use later-approved zones as not-yet-treated controls within the 2014 snapshot.

We estimate:

$$\begin{aligned} Y_{ijsc} =& \beta_1 Post14_s + \beta_2 Post14_s \times Target_{ij} + \beta_3 Post14_s \times Up_{ij} + \beta_4 Post14_s \times Down_{ij} \\ &+ \xi \mathbf{X}_i + \eta_j + \eta_{level(s)} + \eta_c + \epsilon_{ijsc}, \end{aligned} \tag{10}$$

where $Post14_s$ equals one if EDZ s was approved before 2014, η_c are city fixed effects, η_j are industry fixed effects, and $\eta_{level(s)}$ controls for national versus provincial EDZ status. $\mathbf{X}_i$ includes firm age (and its square) and transaction scale controls. Standard errors are clustered at the EDZ–industry level. We estimate (10) separately for firms inside EDZs and for firms in the 1–4 km impact region.

Localization of supply chains: trade distance

A direct implication of stronger local input markets is shorter supplier distances. Table 9 uses the (log) transaction-weighted average distance to suppliers and clients as outcomes. We find evidence of reduced supplier distances, concentrated in targeted industries, con-

sistent with EDZs anchoring localized supplier networks. Interestingly, firms in targeted industries appear to sell to more distant clients, suggesting that EDZ clustering may simultaneously support local sourcing while expanding market reach on the sales side.

[Table 9 about here.]

Direct connections to EDZ firms

We next examine whether EDZ exposure increases the propensity to transact with EDZ-based firms. Table 10 shows that firms in targeted industries are more likely to purchase from (and, in some specifications, sell to) EDZ firms, indicating denser within-cluster production linkages. The purchase-side effects are particularly robust, consistent with the view that the primary network externality operates through input access.

[Table 10 about here.]

Do production linkages explain TFP gains?

To link these network patterns back to productivity, we test whether EDZ-induced TFP gains are concentrated among firms that are more integrated into local EDZ supply chains. Specifically, we augment the firm-level performance specification by interacting treatment with a time-invariant measure of EDZ linkage constructed from 2014 VAT transactions:

$$TFP_{ist} = \beta(EDZ_i \times Post_{st}) + \theta(EDZ_i \times Post_{st} \times Link_i) + \xi \mathbf{X}_{it} + \alpha_i + \gamma_t + \epsilon_{it}, \quad (11)$$

where $Link_i$ is measured in 2014 (e.g., an indicator for purchasing from local EDZ firms, or the corresponding purchase share). This design is best interpreted as a mechanism test for heterogeneity: it asks whether the productivity response to EDZ establishment is stronger precisely among firms embedded in EDZ-centered production networks.

Table 11 reports that firms with stronger input–output linkages to local EDZ firms—especially on the *input* (purchase) side—experience significantly larger TFP gains. The pattern holds both for firms inside EDZs and for firms in the impact region, consistent with spillovers operating through supply-chain connections that cross administrative boundaries.

[Table 11 about here.]

6.2 Knowledge spillovers

We next examine knowledge spillovers using patent applications and inter-firm patent citations. EDZ firms account for a disproportionate share of patenting activity (Section **??**), but innovation capacity varies sharply across EDZ types—especially for High-tech Industrial Development Zones (HIDZ). We therefore allow effects to differ by EDZ type.

Patenting quantity and quality

Using the EDZ-year DID specification in Equation (1), we estimate the impact of EDZ establishment on (i) the number of patent applications, (ii) claim length, and (iii) forward citations, interacting treatment with EDZ-type indicators. Table 12 shows that HIDZs exhibit the clearest improvements in patent quality, consistent with their explicit innovation mandate.

[Table 12 about here.]

Localized citation networks

We then measure localized knowledge flows by counting citations between EDZ firms and firms in nearby buffers. Table 13 shows substantially larger post-establishment increases in localized citations for HIDZs than for other EDZ types, suggesting that knowledge networks respond most strongly where policy explicitly targets high-tech activity.

[Table 13 about here.]

Do citations explain TFP gains?

Finally, we test whether knowledge spillovers account for TFP growth by interacting EDZ treatment with firm-level citation-based measures:

$$TFP_{ist} = \beta(EDZ_i \times Post_{st}) + \kappa(EDZ_i \times Post_{st} \times Know_i) + \xi \mathbf{X}_{it} + \alpha_i + \gamma_t + \epsilon_{it}, \quad (12)$$

where $Know_i$ includes indicators for whether the firm cites EDZ/buffer patents and citation counts (defined in Table 14). Table 14 provides weak and economically modest evidence that citation-based knowledge flows amplify TFP gains. While patent citations are a standard proxy (Jaffe, Trajtenberg, and Henderson 1993; Ellison, Glaeser, and Kerr 2010), they capture formal knowledge exchange and may miss tacit diffusion. Moreover, part of knowledge transmission may be embedded in supplier–client relationships,

implying that some learning effects are already captured by the input–output linkage channel.

[Table 14 about here.]

Summary. Taken together, the mechanism evidence points to production networks as the primary driver of EDZ-induced productivity gains: EDZs localize supplier relationships and the TFP response is strongest among firms that source inputs from local EDZ firms. Knowledge spillovers, while present—especially in HIDZs—appear to account for a smaller share of the observed productivity gains in the broader EDZ program.

7 Heterogeneity in Policy Effects across Different Waves

While our baseline results establish the average efficacy of development zones, these aggregate estimates mask significant heterogeneity across the policy's lifecycle. To investigate the limits of such state-led policy diffusion, we decompose our sample into cohorts defined by their establishment year and estimate dynamic treatment effects using the Callaway and Sant'Anna (2021) estimator.

Figure 7 plots the estimated effects on firm performance (Profit, ROA, Revenue, and TFP) separately for zones established in different waves. The results reveal a striking pattern of diminishing returns. The robust positive effects documented in Section 5 are driven almost entirely by early cohorts-specifically, zones established in or before 2006. For these early movers, we observe sustained growth in profit (Panel A), Return on Equity (Panel B), revenue (Panel C), and total factor productivity (Panel D). In sharp contrast, zones established in later waves (post-2006) exhibit significantly weaker treatment effects. Most notably, for the most recent cohorts (post-2012), the impact on TFP is statistically indistinguishable from zero (Panel D), despite continued firm entry. This divergence—continued entry without productivity gains—suggests that the uncoordinated expansion of the zone network has begun to generate allocative inefficiencies and industrial overcapacity.

We identify two structural mechanisms driving this decline in marginal effectiveness.

First, the exhaustion of high-potential locations. As the EDZ program expanded from a "one-city-one-zone" to a "one-county-one-zone" model, new zones were increasingly sited in peripheral regions with weaker latent economic fundamentals. Consistent with this interpretation, Appendix Table F.17 shows that post-2006 zones are located significantly farther from provincial and city centers compared to their predecessors.

Crucially, we find no evidence that this remoteness was offset by better infrastructure connectivity (e.g., proximity to highways or rail), limiting their ability to integrate into broader production networks.

Second, the degradation of industrial targeting. Early zones benefitted from "first-mover advantages" (Chen, Huang, and Xie 2025), allowing them to capture industries most aligned with local comparative advantage. As the number of zones proliferated, local governments faced stiffer competition for the same pool of target industries. Appendix Table F.18 confirms that post-2006 zones exhibit significantly weaker alignment between their designated target industries and local revealed comparative advantage (RCA). This suggests that later adopters often engaged in "policy mimicry"—targeting fashionable high-tech sectors regardless of local suitability—rather than the strategic coordination seen in earlier waves (Wang and Yang 2025).

Taken together, these findings highlight the boundary of place-based policy. While the initial establishment of zones successfully catalyzed agglomeration through supply chain densification, the indiscriminate replication of this model has yielded diminishing returns, likely due to both spatial saturation and the misalignment of industrial targeting.

[Figure 7 about here.]

8 Conclusion

This paper provides new micro-evidence on the mechanics and limits of place-based industrial policy. Leveraging a novel geocoded dataset of 1,698 development zones in China linked to administrative firm-to-firm transaction records, we quantify and decompose the sources of agglomeration to distinguish between net value creation and spatial reallocation.

We document three main findings that reshape our understanding of state-led clustering. First, zone establishment generates substantial net firm entry and performance gains, with positive spillovers extending up to 4 km beyond administrative boundaries. Crucially, these effects represent net economic creation: we find no evidence of displacement from nearby regions, and new equity capital is drawn primarily from out-of-province investors. Second, regarding mechanisms, we find that productivity gains are driven by the densification of input-output linkages rather than knowledge spillovers. Firms with stronger transactional ties to local zone-based suppliers achieve significantly higher TFP, highlighting the role of physical supply chain integration over pure knowledge diffusion.

Third, and perhaps most critically, we identify the boundary of this state-led model. While early-established zones successfully fostered deep local supply chains and robust growth, the indiscriminate replication of this policy in later years has yielded diminishing returns. Later adopters, particularly in peripheral regions, exhibit significantly weaker agglomeration effects, resulting in duplicative firm entry without corresponding gains in TFP. This divergence suggests that while governments can successfully engineer clusters through supply chain coordination, the uncoordinated expansion of such programs risks generating industrial overcapacity and allocative inefficiency.

These findings carry two key policy implications. First, the success of China's program underscores the value of production network externalities in development strategy. For policymakers in other developing economies, the lesson is not merely to offer tax breaks, but to actively facilitate the formation of local buyer-supplier ecosystems. Second, the sharp decline in marginal gains for later zones serves as a cautionary tale. It suggests that the success of place-based policies is contingent on latent economic fundamentals that cannot be easily replicated in every jurisdiction. The "one-county-one-zone" model, while politically appealing, likely faces a natural ceiling imposed by market saturation.

Our study serves as a first step toward a more granular understanding of the industrial policy "lifecycle". Future research should further investigate the coordination failures that arise when local governments compete for the same target industries, potentially cannibalizing national welfare. Understanding the optimal design of place-based policies—balancing local specialization with aggregate efficiency—remains a frontier for both empirical work and structural modeling.

References

Alder, Simon, Lin Shao, and Fabrizio Zilibotti. 2016. "Economic reforms and industrial policy in a panel of Chinese cities." *Journal of Economic Growth* 21: 305–349.

Atalay, Enghin, Ali Hortaçsu, and Chad Syverson. 2014. "Vertical integration and input flows." *American Economic Review* 104 (4): 1120–1148.

Barwick, Panle Jia, Luming Chen, Shanjun Li, and Xiaobo Zhang. 2025. "Entry deregulation, market turnover, and efficiency: China's business registration reform." *Review of Economics and Statistics* : 1–46.

Borusyak, Kirill, Xavier Jaravel, and Jann Spiess. 2024. "Revisiting event-study designs: robust and efficient estimation." *Review of Economic Studies* : rdae007.

Brandt, Loren, Ruochen Dai, Gueorgui Kambourov, Kjetil Storesletten, and Xiaobo Zhang. 2022. "Serial Entrepreneurship in China." *Working Paper* .

Busso, Matias, Jesse Gregory, and Patrick Kline. 2013. "Assessing the incidence and efficiency of a prominent place based policy." *American Economic Review* 103 (2): 897–947.

Callaway, Brantly and Pedro HC Sant'Anna. 2021. "Difference-in-differences with multiple time periods." *Journal of Econometrics* 225 (2): 200–230.

Chen, Ying, Teng Huang, and Xiaochen Xie. 2025. "Place-based policies: first-mover advantage and persistence." *Journal of Economic Geography* : lbaf001.

Davis, Steven J, Meijun Qian, and Wen Zeng. 2025. "A Comprehensive GIS Database for China's Surface Transport Network with Implications for Transport and Socioeconomics Research." National Bureau of Economic Research.

De Chaisemartin, Clément and Xavier d'Haultfoeuille. 2024. "Difference-in-differences estimators of intertemporal treatment effects." *Review of Economics and Statistics* : 1–45.

Diodato, Dario, Frank Neffke, and Neave O'Clery. 2018. "Why do industries coagglomerate? How Marshallian externalities differ by industry and have evolved over time." *Journal of Urban Economics* 106: 1–26.

Ehrl, Philipp. 2013. "Agglomeration economies with consistent productivity estimates." *Regional Science and Urban Economics* 43 (5): 751–763.

Ellison, Glenn, Edward L Glaeser, and William R Kerr. 2010. "What causes industry agglomeration? Evidence from coagglomeration patterns." *American Economic Review* 100 (3): 1195–1213.

Fang, Hanming, Ming Li, and Guangli Lu. 2025. "Decoding China's Industrial Policies." National Bureau of Economic Research.

Gallé, Johannes, Daniel Overbeck, Nadine Riedel, and Tobias Seidel. 2024. "Place-based policies, structural change and female labor: Evidence from India's Special Economic Zones." *Journal of Public Economics* 240: 105259.

Garg, Tishara. 2025. "Can industrial policy overcome coordination failures? Theory and evidence." *Unpublished manuscript* .

Glaeser, Edward L and Joshua D Gottlieb. 2008. "The economics of place-making policies." National Bureau of Economic Research.

Goodman-Bacon, Andrew. 2021. "Difference-in-differences with variation in treatment timing." *Journal of Econometrics* 225 (2): 254–277.

Jaffe, Adam B, Manuel Trajtenberg, and Rebecca Henderson. 1993. "Geographic localization of knowledge spillovers as evidenced by patent citations." *The Quarterly Journal of Economics* 108 (3): 577–598.

Jofre-Monseny, Jordi, Raquel Marín-López, and Elisabet Viladecans-Marsal. 2011. "The mechanisms of agglomeration: Evidence from the effect of inter-industry relations on the location of new firms." *Journal of Urban Economics* 70 (2-3): 61–74.

Levinsohn, James and Amil Petrin. 2003. "Estimating production functions using inputs to control for unobservables." *The review of economic studies* 70 (2): 317–341.

Lu, Fangwen, Weizeng Sun, and Jianfeng Wu. 2023. "Special economic zones and human capital investment: 30 years of evidence from China." *American Economic Journal: Economic Policy* 15 (3): 35–64.

Lu, Yi, Jin Wang, and Lianming Zhu. 2019. "Place-based policies, creation, and agglomeration economies: Evidence from China's economic zone program." *American Economic Journal: Economic Policy* 11 (3): 325–360.

Marshall, Alfred. 1890. *Principles of Economics*. London: MacMillan.

Neumark, David and Helen Simpson. 2015. "Place-based policies." In *Handbook of regional and urban economics*, vol. 5. Elsevier, 1197–1287.

OECD. 2025. *Place-Based Policies for the Future*. OECD Regional Development Studies. Paris: OECD Publishing.

Olley, Steven and Ariel Pakes. 1992. "The dynamics of productivity in the telecommunications equipment industry."

Steijn, Mathieu PA, Hans RA Koster, and Frank G Van Oort. 2022. "The dynamics of industry agglomeration: Evidence from 44 years of coagglomeration patterns." *Journal of Urban Economics* 130: 103456.

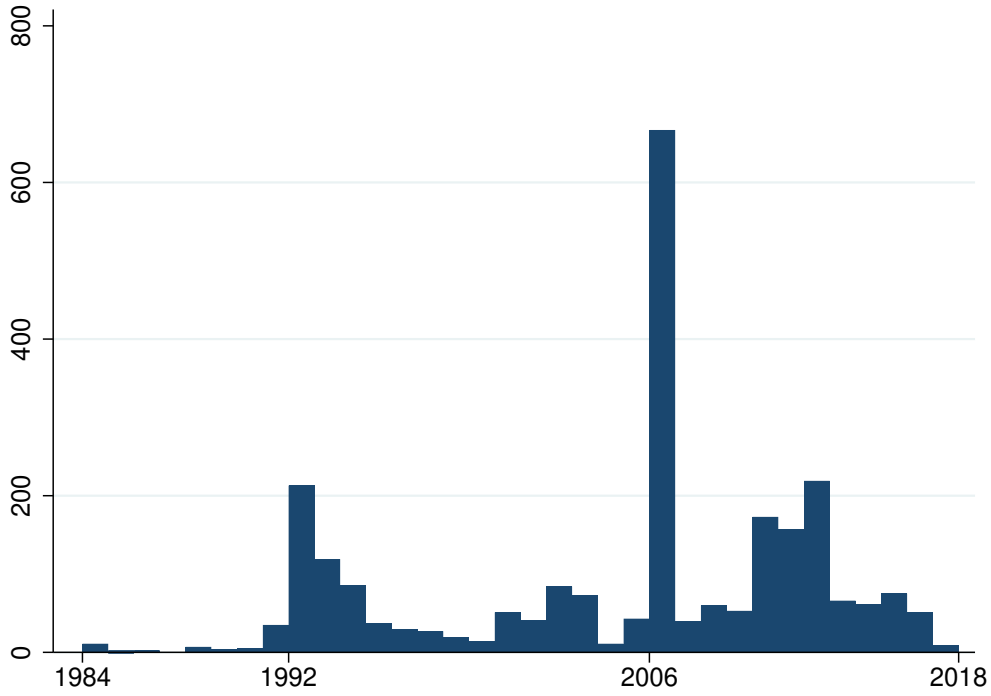
Sun, Liyang and Sarah Abraham. 2021. "Estimating dynamic treatment effects in event studies with heterogeneous treatment effects." *Journal of Econometrics* 225 (2): 175–199.

Wang, Jin. 2013. "The economic impact of special economic zones: Evidence from Chinese municipalities." *Journal of Development Economics* 101: 133–147.

Wang, Shaoda and David Y Yang. 2025. "Policy experimentation in China: The political economy of policy learning." *Journal of Political Economy* 133 (7): 000–000.

Zheng, Siqi, Weizeng Sun, Jianfeng Wu, and Matthew E Kahn. 2017. "The birth of edge cities in China: Measuring the effects of industrial parks policy." *Journal of Urban Economics* 100: 80–103.

Figure 1: The Number of Newly Established EDZs by Year

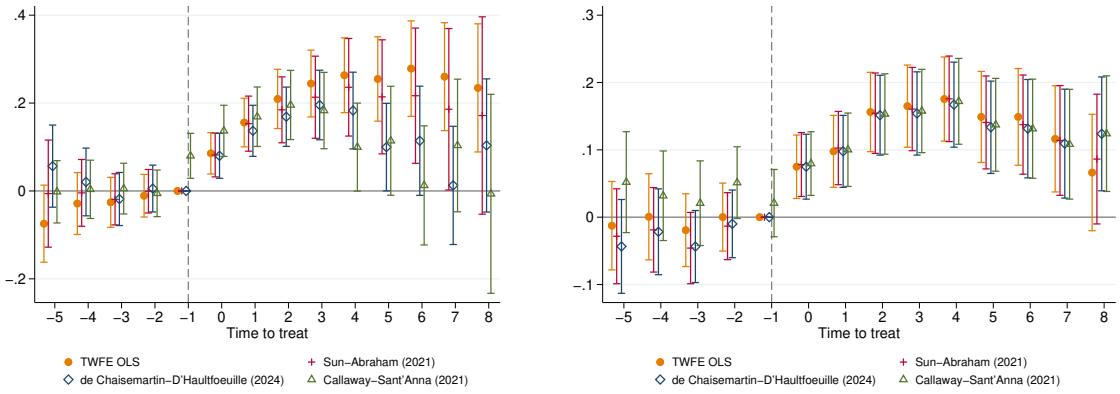


Notes: This figure provides the number of newly established EDZs by year. The sample includes all EDZs (2,543) in China.

Figure 2: The Effect of EDZ Establishment on Firm Entry: Event Study

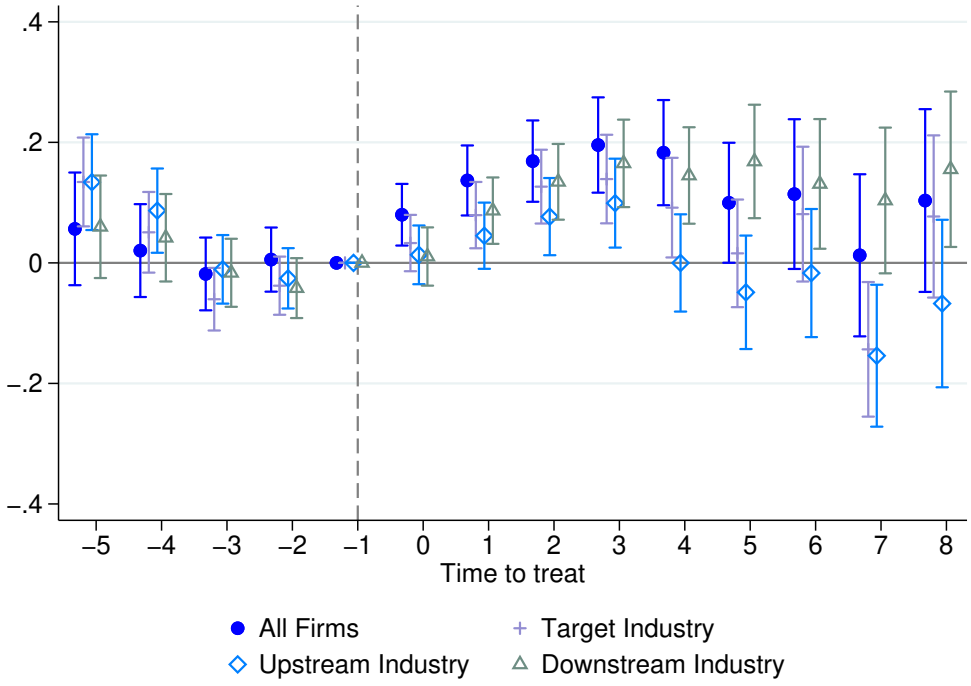
(a) log(# New Entry)

(b) log(# New Entry)



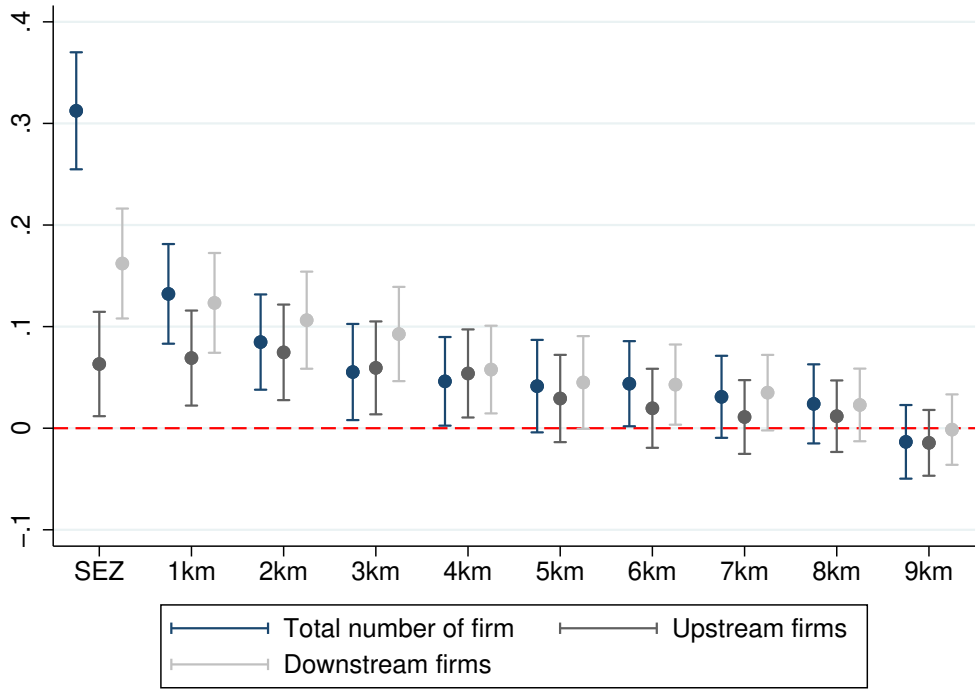
Notes: This figure reports event-study estimates from Equation (4). Panel (a) uses the EDZ-year sample; Panel (b) adds never-treated counties. We plot 95% confidence intervals based on clustered standard errors (EDZ in Panel (a), county in Panel (b)). Estimates are shown for TWFE OLS and heterogeneous-treatment-robust estimators (Sun and Abraham 2021; Callaway and Sant'Anna 2021; De Chaisemartin and d'Haultfoeuille 2024). The sample period is 2000–2017.

Figure 3: The Effect of EDZ Establishment on Firm Entry: Industry Heterogeneity



Notes: This figure reports event-study estimates from Equation (4) with the dependent variable defined as entry in all industries, target industries, upstream industries, or downstream industries. Estimates are based on De Chaisemartin and d'Haultfoeuille (2024). The unit is EDZ-year and the sample period is 2000–2017; 95% confidence intervals use EDZ-clustered standard errors.

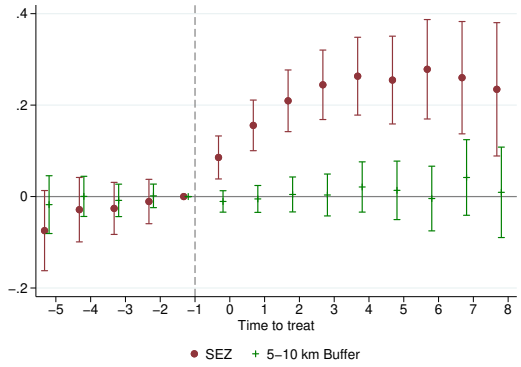
Figure 4: Entry Spillovers Around EDZs



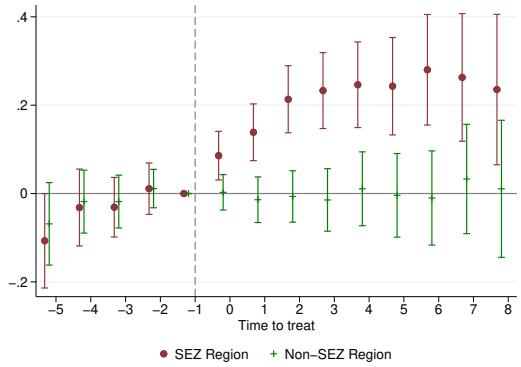
Notes: This figure plots estimates from Equation (5) using plot-year data for EDZ interiors and 1-km rings around EDZ boundaries. The omitted category is the 10 km ring. The sample period is 2000–2017; 95% confidence intervals use EDZ-clustered standard errors. "Upstream" and "Downstream" refer to entry in upstream/downstream industries relative to the EDZ's targeted industries.

Figure 5: Entry and Exit Dynamics in Nearby Unimpacted Regions

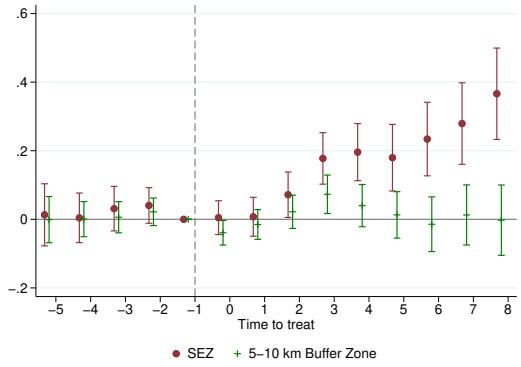
(a) Entry: EDZ vs 5–10 km region



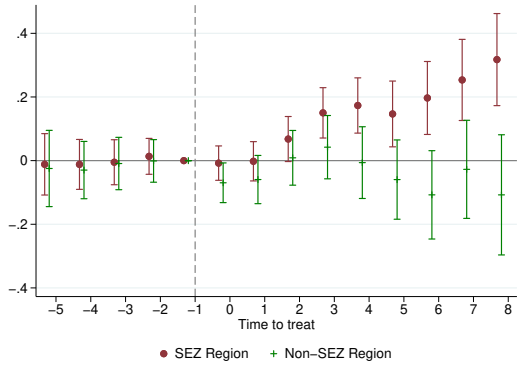
(b) Entry: EDZ vs non-EDZ areas within the EDZ county



(c) Exit: EDZ vs 5–10 km region

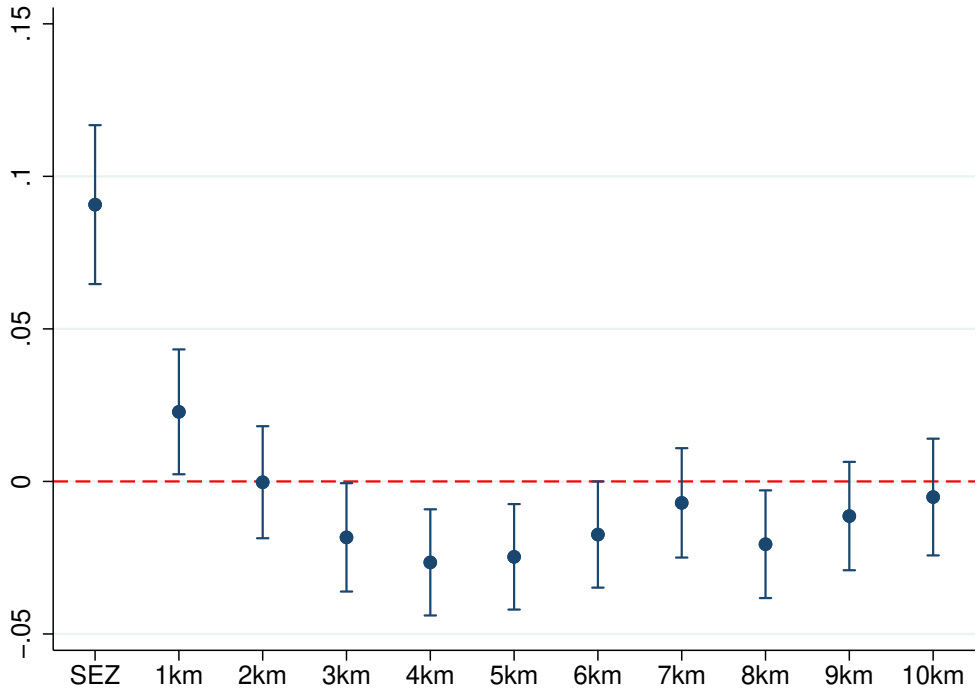


(d) Exit: EDZ vs non-EDZ areas within the EDZ county



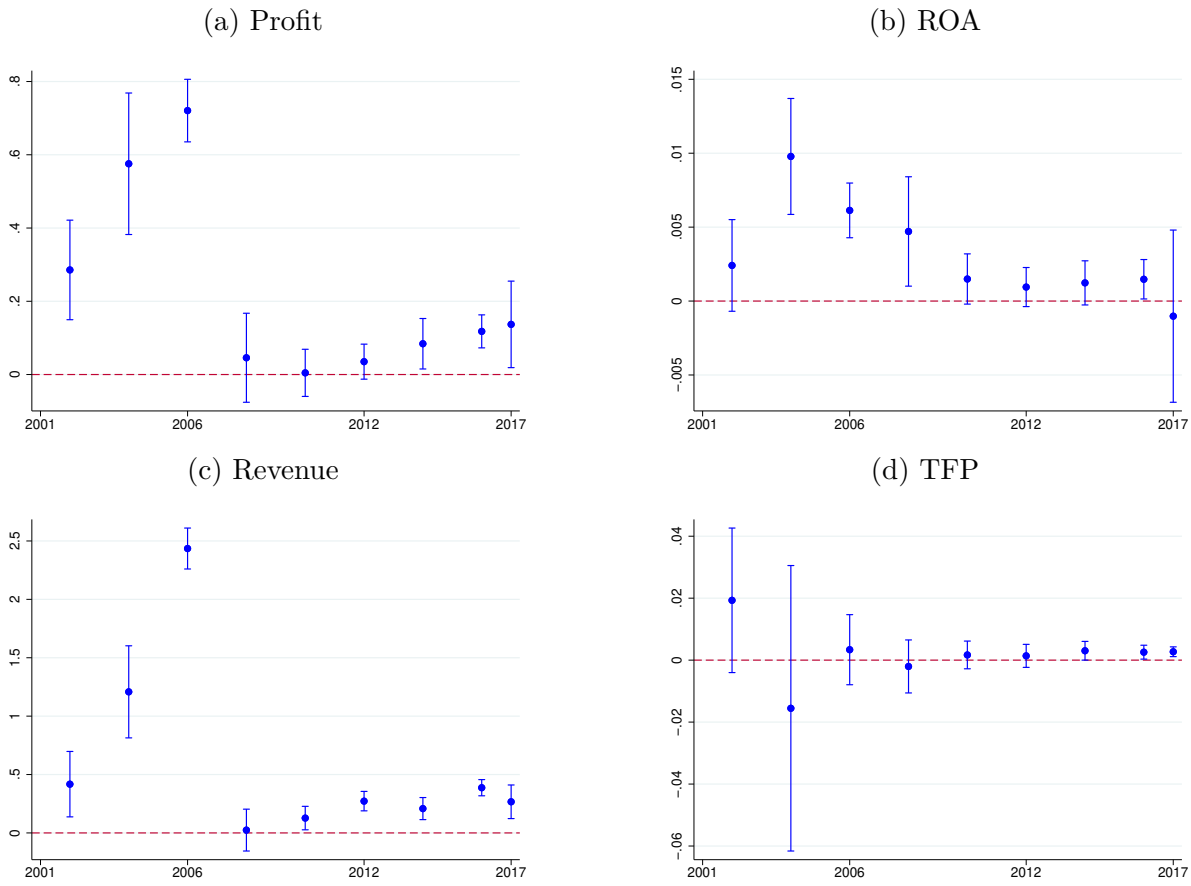
Notes: This figure reports event-study estimates based on Equation (4), applied to EDZs and two comparison areas: 5–10 km buffers and non-EDZ areas within EDZ-hosting counties (excluding 0–4 km). We plot 95% confidence intervals using EDZ-clustered standard errors.

Figure 6: EDZ Status and Government Subsidy Income



Notes: This figure plots coefficients from Equation (7) using firm-year data (2008–2020) from the National Tax Survey Database. The dependent variable is $\log(1 + \text{subsidy income})$. "EDZ" indicates firms inside EDZs; "#km" indicates firms in the #-km buffer ring. The omitted category is firms located more than 10 km from any EDZ. 95% confidence intervals use county-clustered standard errors.

Figure 7: The Treatment Effect Heterogeneity by Establishment Cohort



Notes: This figure reports the treatment effects of EDZs established in different periods, grouped by the year of establishment, using the estimator proposed by Callaway and Sant'Anna (2021). The sample is the same as Table 7. The 95% confidence intervals constructed from the county-industry level clustered standard errors are present in all sub-figures.

Table 1: EDZs' Targeted Industries Breakdown (1-digit Level)

Industry Name	EDZs Targeting the Industry	
	Number	Proportion
1. Agriculture, Forestry, Animal Husbandry & Fishery	9	0.36%
2. Mining	44	1.74%
3. **Manufacture**	**2396**	**95.00%**
4. **Production/Supply of Electricity, Heat, Gas & Water**	**291**	**11.54%**
5. Construction	4	0.16%
6. Wholesale & Retail Trade	60	2.38%
7. **Transportation, Storage & Postal Services**	**116**	**4.60%**
8. Accommodation & Food Services	16	0.63%
9. **Information Transmission, Software & IT Services**	**360**	**14.27%**
10. Finance	9	0.36%
11. **Leasing & Business Services**	**63**	**2.50%**
12. Scientific Research & Technical Services	15	0.59%
13. Water, Environmental & Public Facilities Management	15	0.59%
14. Health & Social Work	7	0.28%
15. Culture, Sports & Entertainment	22	0.87%
Total number of EDZs	2522	

Notes: This table summarizes the number and proportion of EDZs targeting each 1-digit industry. The EDZ sample includes all EDZs in China. The top five target industries are highlighted in bold.

Table 2: Distribution of Firms Number, Registered Capital, and Patent Applications by EDZ Status

EDZ Status	Number of Firm	Proportion of Firms Number	Proportion of Registered Capital	Proportion of Patent Application
EDZ	2,009,366	6.75%	9.97%	20.94%
Buffer Zone 1km	2,648,582	8.89%	10.38%	12.60%
Buffer Zone 2km	2,777,927	9.33%	10.07%	10.42%
Buffer Zone 3km	2,962,515	9.95%	11.74%	9.15%
Buffer Zone 4km	2,567,337	8.62%	8.46%	6.49%
Buffer Zone 5km	2,303,489	7.74%	7.40%	6.48%
Buffer Zone 6km	1,901,426	6.39%	6.28%	4.82%
Buffer Zone 7km	1,545,678	5.19%	5.21%	3.67%
Buffer Zone 8km	1,254,594	4.21%	4.22%	3.07%
Buffer Zone 9km	879,333	2.95%	2.78%	2.66%
Buffer Zone 10km	730,352	2.45%	2.32%	1.99%
Others	8,195,822	27.52%	21.16%	17.69%
Total	29,776,421	100.00%	100.00%	100.00%

Notes: "Buffer Zone #km" denotes the #km buffer zone of EDZ. The firm information comes from the Business Registry Database from 2000 to 2017, covering all registered firms in 18 provinces (excluding Beijing and Tianjin). The patent application information is based on all invention patents filed by firms as applicants in 18 provinces (excluding Beijing and Tianjin) from 2000 to 2017.

Table 3: The Effect of EDZ Establishment on Firm Entry

	(1)	(2)	(3)	(4)
Dep Var.	log(# New Entry)	# New Entry	log(# New Entry)	# New Entry
Control	later EDZ	later EDZ	no EDZ county	no EDZ county
Method	ols	ppml	ols	ppml
Post	0.184***	0.259***		
	(0.018)	(0.051)		
EDZ × Post			0.133***	0.340***
			(0.026)	(0.126)
Entity (EDZ) FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	14,346	14,346	26,316	26,316

Notes: This table reports baseline estimates of the impact of EDZ establishment on firm entry using Equations (1) and (2). "Post" equals one after EDZ approval. "EDZ" equals one for EDZ entities and zero for never-treated counties. Standard errors are clustered at the EDZ level in columns (1)–(2) and at the county level in columns (3)–(4). ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table 4: The Effect of EDZ Establishment on Entry in Target, Upstream, and Downstream Industries

	(1)	(2)	(3)	(4)
	log(# New Entry)	log(# New Entry)	log(Value New Cap.)	log(Value New Cap.)
Post	0.006***	−0.002*	0.016***	0.001
	(0.001)	(0.001)	(0.002)	(0.002)
Post × Target		0.105***		0.192***
		(0.008)		(0.015)
Post × Up		0.015***		0.030***
		(0.003)		(0.006)
Post × Down		0.011***		0.023***
		0.002		0.004
EDZ-Industry FE	YES	YES	YES	YES
Industry-Year FE	YES	YES	YES	YES
Observations	1,276,794	1,276,794	1,276,794	1,276,794

Notes: This table reports estimates from Equation (3) using the EDZ–(2-digit)industry–year panel (2000–2017). Columns (1)–(2) use the log number of new firms; columns (3)–(4) use the log registered capital of entrants. "Target", "Up", and "Down" indicate whether an industry is the EDZ's target industry or an upstream/downstream industry relative to the target. Standard errors clustered at the EDZ–industry level are in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table 5: Firm Selection

	(1) log(revenue)	(2) log(revenue)	(3) log(revenue)
Panel A. Firms in EDZ			
Entrant	−0.281***	−0.319***	−0.281***
	(0.040)	(0.032)	(0.040)
Entrant × Post	0.012		−0.084*
	(0.044)		(0.050)
Entrant × Post_Prov		0.053	0.099**
		(0.037)	(0.045)
Observations	1,846,452	1,846,452	1,846,452
Panel B. Firms in 1-4km Buffer Zone			
Entrant	−0.187***	−0.211***	−0.187***
	(0.021)	(0.016)	(0.021)
Entrant × Post	−0.095***		−0.053*
	(0.023)		(0.028)
Entrant × Post_Prov		−0.073***	−0.043*
		(0.019)	(0.024)
Observations	11,939,557	11,939,557	11,939,557
Control	YES	YES	YES
EDZ-Industry	YES	YES	YES
EDZ-Year	YES	YES	YES
Industry-Year	YES	YES	YES

Notes: This table reports estimates from Equation (6) using firm-year data (2000–2017). The dependent variable is log revenue. "Entrant" equals one for age-one firms. "Post" equals one after EDZ approval; "Post_Prov" equals one after EDZ upgrade to provincial-level. Panel A uses firms inside EDZs; Panel B uses firms in the 1–4 km buffer. The specification includes firm controls and EDZ–industry, EDZ–year, and industry–year fixed effects. Standard errors clustered at the EDZ–industry level are in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table 6: EDZ Establishment and Transportation Accessibility

	(1) log(dist. motorway)	(2) log(dist. railway)	(3) log(dist. HSR)
Post	−0.155***	−0.010	0.063
	(0.039)	(0.019)	(0.040)
EDZ FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	14,346	14,346	14,346

Notes: This table estimates Equation (1) with the dependent variable defined as log distance from an EDZ to the nearest motorway access (col. 1), regular railway station (col. 2), and high-speed railway station (col. 3). The unit is EDZ-year (2000–2017). "Post" equals one after EDZ approval. Standard errors clustered at the EDZ level are in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table 7: Firm Performance: Matched Sample

	(1) log(Profit)	(2) TFP	(3) ROA	(4) log(Revenue)
Panel A. Firms in EDZ				
EDZ × Post	0.168***	0.004***	0.003***	0.561***
	(0.019)	(0.001)	(0.000)	(0.045)
Observations	186,722	184,882	248,089	269,701
Panel B. Firms in 1-4km Buffer Zone				
EDZ × Post	0.123***	0.001***	0.003***	0.348***
	(0.012)	(0.000)	(0.000)	(0.031)
Control	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	1,059,073	939,470	1,292,868	1,461,235

Notes: This table reports estimates of Equation (8) using the firm-year panel (2000–2017). Panel A defines treated firms as incumbent firms inside EDZ boundaries; Panel B defines treated firms as incumbent firms in the 1–4 km impact region. Matched controls are incumbent firms in counties without any EDZs. "Post" equals one after EDZ approval. Controls include a firm-specific time trend based on registered capital and a quadratic in firm age. Standard errors clustered at the county–industry level are in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table 8: Firm Performance: Triple Difference

	(1) log(Profit)	(2) TFP	(3) ROA	(4) log(Revenue)
Panel A. Firms in EDZ				
EDZ × Post	0.130***	0.003***	0.002***	0.455***
	(0.018)	(0.001)	(0.000)	(0.038)
EDZ × Post × Target	0.095**	-0.000	-0.001	0.172*
	(0.044)	(0.002)	(0.001)	(0.098)
Observations	186,652	184,828	248,018	269,648
Panel B. Firms in 1-4km Buffer Zone				
EDZ × Post	0.097***	0.001***	0.002***	0.305***
	(0.011)	(0.000)	(0.000)	(0.024)
EDZ × Post × Target	0.076***	0.000	0.002***	0.049
	(0.023)	(0.001)	(0.000)	(0.059)
Observations	1,059,058	939,448	1,292,857	1,461,226
Control	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Industry × Year FE	YES	YES	YES	YES

Notes: This table reports estimates of Equation (9) using the matched firm-year panel (2000–2017). "Target" equals one if the firm operates in a designated target industry of the EDZ. Panel A defines treated firms as incumbent firms inside EDZ boundaries; Panel B defines treated firms as incumbent firms in the 1–4 km impact region. Controls include a firm-specific time trend based on registered capital and a quadratic in firm age. Standard errors clustered at the county–industry level are in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table 9: The Effect of EDZ Establishment on Trade Distance

	(1) log(dist. suppliers)	(2) log(dist. suppliers)	(3) log(dist. clients)	(4) log(dist. clients)
Panel A. Firms in EDZ				
Post14	−0.018	−0.002	−0.045	−0.021
	(0.035)	(0.039)	(0.050)	(0.053)
Post14 × Target		−0.122***		0.062*
		(0.026)		(0.034)
Post14 × Up		0.015		−0.065*
		(0.036)		(0.034)
Post14 × Down		0.018		−0.043
		(0.033)		(0.037)
Observations	47,701	47,701	34,058	34,058
Panel B. Firms in 1-4km Buffer Zone				
Post14	−0.088***	−0.061*	−0.128***	−0.122***
	(0.034)	(0.034)	(0.044)	(0.046)
Post14 × Target		−0.054***		0.152***
		(0.017)		(0.025)
Post14 × Up		−0.049***		−0.073***
		(0.019)		(0.025)
Post14 × Down		0.002		−0.020
		(0.019)		(0.028)
Observations	249,786	249,786	174,697	174,697
Control	YES	YES	YES	YES
City FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
EDZ Level FE	YES	YES	YES	YES

Notes: This table reports estimates of Equation (10) using firm-level 2014 VAT data. Dependent variables in columns (1)–(2) are the log transaction-weighted average distance to suppliers; columns (3)–(4) use the distance to clients. "Post14" indicates EDZs approved before 2014. "Target", "Up", and "Down" classify industries relative to EDZ targets. Panel A uses firms inside EDZs; Panel B uses firms in the 1–4 km impact region. Standard errors clustered at the EDZ–industry level are in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table 10: EDZ Establishment and Transaction Relationships with EDZ Firms

	(1) I(Buy from EDZ)	(2) Share(Buy from EDZ)	(3) I(Sell to EDZ)	(4) Share(Sell to EDZ)
Panel A. Firms in EDZ				
Post14	0.029*	0.005	−0.013	−0.005
	(0.016)	(0.006)	(0.015)	(0.006)
Post14 × Target	0.047***	0.010***	0.022**	−0.003
	(0.011)	(0.003)	(0.010)	(0.004)
Post14 × Up	0.001	−0.002	0.002	0.002
	(0.012)	(0.004)	(0.012)	(0.004)
Post14 × Down	−0.013	−0.003	0.006	−0.003
	(0.011)	(0.003)	(0.011)	(0.004)
Observations	47,701	47,701	34,058	34,058
Panel B. Firms in 1-4km Buffer Zone				
Post14	−0.008	−0.001	−0.004	−0.001
	(0.007)	(0.001)	(0.008)	(0.001)
Post14 × Target	0.029***	0.003***	0.004	0.000
	(0.006)	(0.001)	(0.005)	(0.001)
Post14 × Up	−0.000	−0.000	−0.002	−0.000
	(0.006)	(0.001)	(0.006)	(0.001)
Post14 × Down	−0.003	0.000	−0.001	0.002
	(0.006)	(0.001)	(0.006)	(0.001)
Observations	249,786	249,786	174,697	174,697
Control	YES	YES	YES	YES
City FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
EDZ Level FE	YES	YES	YES	YES

Notes: This table reports estimates of Equation (10) using firm-level 2014 VAT data. Outcomes include: an indicator for purchasing from any EDZ firm; the purchase share from EDZ firms; an indicator for selling to any EDZ firm; and the sales share to EDZ firms. "Post14" indicates EDZs approved before 2014. "Target", "Up", and "Down" classify industries relative to EDZ targets. Panel A uses firms inside EDZs; Panel B uses firms in the 1–4 km impact region. Standard errors clustered at the EDZ–industry level are in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table 11: The Source of TFP: Input–Output Linkages

	(1) TFP	(2) TFP	(3) TFP	(4) TFP
Panel A. Firms in EDZ				
EDZ × Post	0.003***	0.003***	0.003***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
EDZ × Post × I(Buy from Local EDZ Firms)	0.004**			
	(0.002)			
EDZ × Post × Share(Buy from Local EDZ Firms)		0.013**		
		(0.006)		
EDZ × Post × I(Sell to Local EDZ Firms)			0.001	
			(0.002)	
EDZ × Post × Share(Sell to Local EDZ Firms)				0.008
				(0.006)
Observations	184,882	184,882	184,882	184,882
Panel B. Firms in 1-4km Buffer Zone				
EDZ × Post	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
EDZ × Post × I(Buy from Local EDZ Firms)	0.003***			
	(0.001)			
EDZ × Post × Share(Buy from Local EDZ Firms)		-0.000		
		(0.004)		
EDZ × Post × I(Sell to Local EDZ Firms)			0.000	
			(0.001)	
EDZ × Post × Share(Sell to Local EDZ Firms)				-0.001
				(0.005)
Observations	939,470	939,470	939,470	939,470
Control	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Notes: This table reports estimates of Equation (11) using the firm-year panel (2000–2017). The dependent variable is firm TFP. "I(Buy from Local EDZ Firms)" and "Share(Buy from Local EDZ Firms)" are constructed from 2014 VAT transactions; analogous variables are defined for sales. Panel A uses treated firms inside EDZs; Panel B uses treated firms in the 1–4 km impact region. Matched controls are firms in counties without EDZs. Controls include a firm-specific time trend based on registered capital and a quadratic in firm age. Standard errors clustered at the county–industry level are in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table 12: EDZ Establishment and Patent Applications and Quality

	(1) log(# patent)	(2) log(claim length)	(3) log(# citation)
Post	−0.249	−0.671	−0.217
	(0.316)	(0.629)	(0.200)
Post × ETDZ	0.388	0.991	0.242
	(0.408)	(0.845)	(0.243)
Post × HIDZ	0.574	1.515**	0.360*
	(0.373)	(0.724)	(0.216)
Post × Bonded Zone	−0.100	−0.033	−0.007
	(0.328)	(0.678)	(0.213)
Post × BECZ	−0.366	−0.960	−0.190
	(0.316)	(0.629)	(0.201)
Post × ETDZ_p	−0.020	0.258	0.081
	(0.319)	(0.639)	(0.203)
Post × HIDZ_p	0.442	1.060	0.343
	(0.336)	(0.675)	(0.212)
Post × SIZ_p	0.030	0.297	0.091
	(0.319)	(0.637)	(0.203)
EDZ FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	14,346	14,346	14,346

Notes: This table reports EDZ-year estimates based on Equation (1) for patent outcomes (2000–2017). Dependent variables: log patents, log average claim length, and log average citations. Effects are allowed to vary by EDZ type. Standard errors clustered at the EDZ level are in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table 13: EDZ Establishment and Local Patent Citations

	(1) EDZ citation	(2) EDZ-EDZ citation	(3) EDZ-Buffer citation	(4) Buffer citation	(5) Buffer-EDZ citation	(6) Buffer-Buffer citation
Post	−0.077***	−0.051***	−0.032***	−0.160***	−0.032***	−0.143***
	(0.010)	(0.008)	(0.005)	(0.042)	(0.006)	(0.042)
Post × ETDZ	0.112**	0.076**	0.056	0.151**	0.042**	0.123*
	(0.053)	(0.033)	(0.036)	(0.073)	(0.021)	(0.070)
Post × HIDZ	0.119***	0.070***	0.057**	0.302**	0.082***	0.249**
	(0.038)	(0.024)	(0.024)	(0.121)	(0.031)	(0.119)
Post × Bonded Zone	0.026***	0.010**	0.017**	0.207***	0.012**	0.201***
	(0.010)	(0.004)	(0.008)	(0.074)	(0.005)	(0.075)
Post × BECZ	0.027***	0.018***	0.012***	0.020	0.012***	0.013
	(0.005)	(0.004)	(0.003)	(0.037)	(0.003)	(0.038)
Post × ETDZ_p	0.033***	0.024***	0.011***	0.044	0.011***	0.038
	(0.007)	(0.006)	(0.003)	(0.038)	(0.003)	(0.039)
Post × HIDZ_p	0.089***	0.039***	0.056***	0.174***	0.029**	0.161***
	(0.024)	(0.013)	(0.020)	(0.059)	(0.011)	(0.058)
Post × SIZ_p	0.051***	0.035***	0.020***	0.066*	0.023***	0.051
	(0.010)	(0.008)	(0.005)	(0.040)	(0.008)	(0.040)
EDZ FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	14,346	14,346	14,346	14,346	14,346	14,346

Notes: This table reports EDZ-year estimates based on Equation (1) for citation flows (2000–2017). Outcomes count citations between EDZ firms and firms in the EDZ and/or 1–4 km buffer. Effects are allowed to vary by EDZ type. Standard errors clustered at the EDZ level are in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table 14: The Source of TFP: Knowledge Spillovers

	(1) TFP	(2) TFP	(3) TFP	(4) TFP
Panel A. Firms in EDZ				
EDZ × Post	0.004***	0.004***	0.004***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)
EDZ × Post × I(Cite)	0.002			
	(0.011)			
EDZ × Post × log(# Cite EDZ)		0.013*		
		(0.008)		
EDZ × Post × log(# Cite Buffer)			-0.010	
			(0.012)	
EDZ × Post × log(# Cite EDZ+Buffer)				-0.001
				(0.008)
Observations	184,882	184,882	184,882	184,882
Panel B. Firms in 1-4km Buffer Zone				
EDZ × Post	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
EDZ × Post × I(Cite)	-0.008			
	(0.010)			
EDZ × Post × log(# Cite EDZ)		0.004		
		(0.005)		
EDZ × Post × log(# Cite Buffer)			-0.010	
			(0.014)	
EDZ × Post × log(# Cite EDZ+Buffer)				-0.010
				(0.013)
Observations	939,470	939,470	939,470	939,470
Control	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Notes: This table reports estimates of Equation (12) using the firm-year panel (2000–2017). The dependent variable is firm TFP. Knowledge measures include an indicator for citing EDZ/buffer patents and citation counts to EDZ, buffer, and EDZ+buffer patents (defined in the text). Panel A uses treated firms inside EDZs; Panel B uses treated firms in the 1–4 km impact region. Matched controls are firms in counties without EDZs. Controls include a firm-specific time trend based on registered capital and a quadratic in firm age. Standard errors clustered at the county–industry level are in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Appendix A. Details of the Geocoded EDZ Dataset

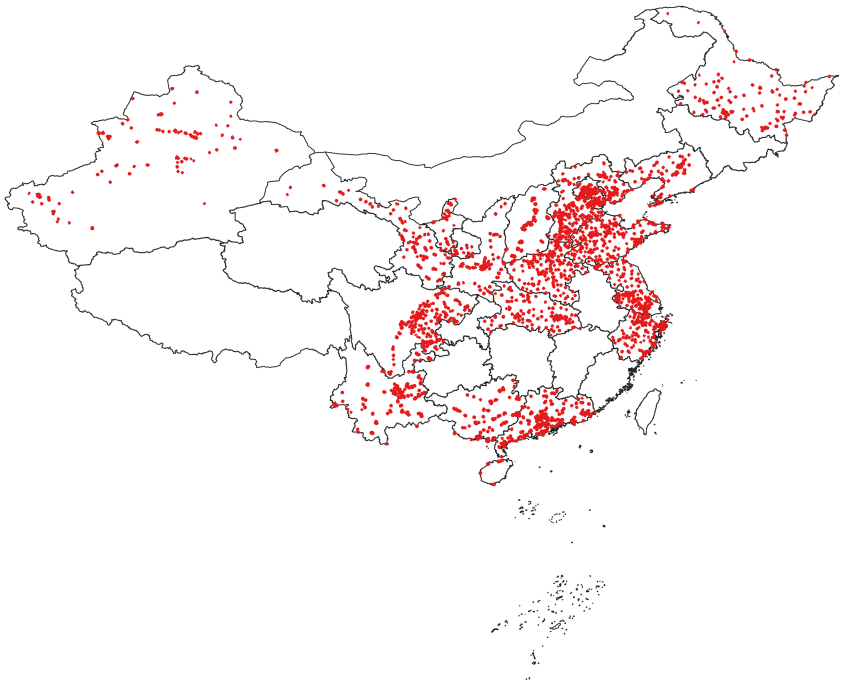
We collect EDZs' exact geographical boundary information in the following ways. First, all textual descriptions of boundary for *national level* EDZs comes from "Bulletin List for the Official Boundaries of Chinese Industrial Parks" (2018 version) published by the Ministry of Natural Resources of China.[4] Second, we submitted requests to the Departments of Natural Resources in all Chinese provinces for boundary information on *provincial-level* EDZs under their jurisdiction. Ultimately, we received successful responses from 20 provinces, collecting exact boundary data for 1,698 EDZs. Figure A.1 shows the distribution of EDZs with available boundary data. These 20 provinces include economically developed areas such as Beijing, Zhejiang Province, and Jiangsu Province, as well as less developed inland provinces such as Gansu and Ningxia Province, so the distribution is representative. Although we are not able to collect the universal data, to the best of our knowledge, the number of EDZs in our database is the largest in the existing literature.[5]

Except for a few provinces, such as Heilongjiang Province and Xinjiang Province, which provided us with sample maps of EDZ, most boundary information for EDZs we obtain is in text format. To be specific, the government tells us the boundaries of the EDZ in four directions: east, south, west, and north. Take "Shenzhen High-Tech Industrial Park" as an example, it is bounded by "Shahe West Road" in the east, "Binhai Avenue" in the south, "Qilin Road" and "Nanyou Avenue" in the west, and "Guangzhou-Shenzhen Expressway" in the north. With the text-based boundary information in hand, we find the corresponding landmarks in the Amap, and draw the boundary for EDZ using the GIS technique. Figure A.2 shows an example of the boundary for "Shenzhen High-tech Industrial Park" that we drew in GIS.

[4] https://www.gov.cn/zhengce/zhengceku/2019-10/14/content_5439616.htm.

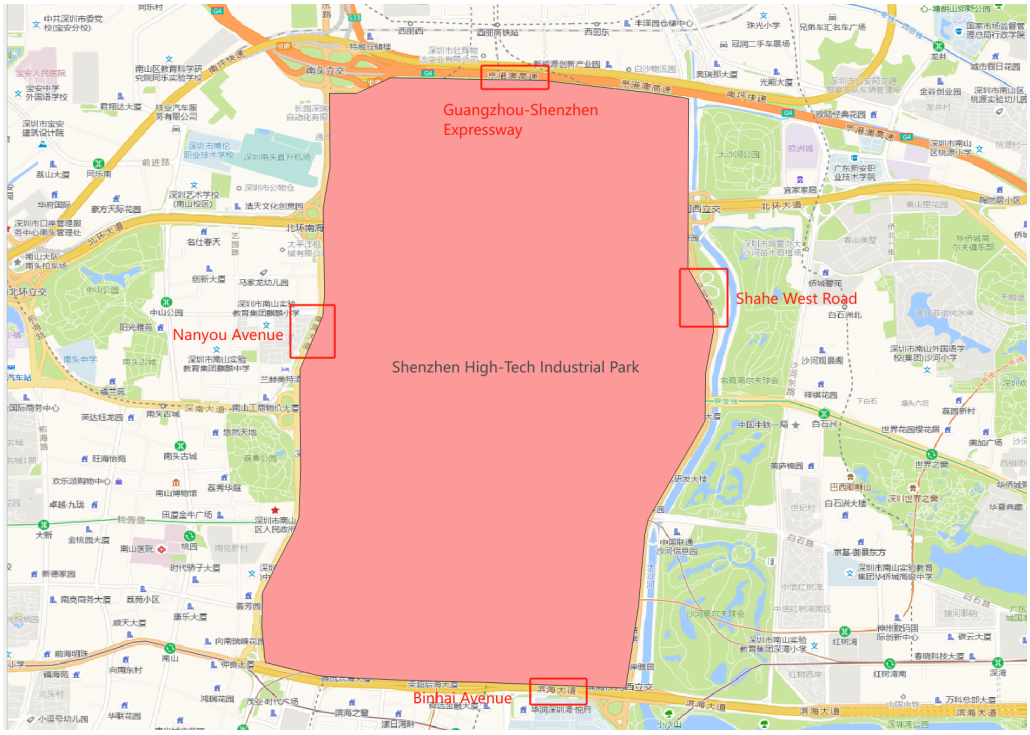
[5] In fact, only Zheng et al. (2017) also use exact EDZ boundary data, though their sample includes 110 zones.

Figure A.1: The Spatial Distribution of EDZs in Our Dataset



Notes: This figure illustrates the spatial distribution of EDZs in our dataset, which covers 20 provinces in China. Each red dot represents one EDZ.

Figure A.2: The Boundary for "Shenzhen High-Tech Industrial Park"



Appendix B. Choice of Target Industry

This section examines whether the choice of target industry of EDZ aligns with the host county's revealed comparative advantage. We begin by collapsing the EDZ data into EDZ-(2-digit) industry level. Following Fang, Li, and Lu (2025), we model the choice of target industry as follows

$$Target_{scj} = \lambda_1 RCA^p_{cj} + \lambda_2 RCA^n_{cj} + \lambda_3 AA_{cj} + \delta_s + \gamma_j + \eta_{y(s)} + \epsilon_{scj} \tag{B.1}$$

This binary variable $Target_{sjc}$ serves as the dependent variable, which is coded as one if EDZ s in county c targets the specific industry j, and zero otherwise. RCA^p_{cj} is the revealed comparative advantage (RCA) at the within-province level, while RCA^n_{cj} is the national level, and AA_{cj} is the absolute advantage. For these three variables, we use the values of **one year before** the EDZ was established to avoid mechanical correlation. δ_s represents EDZ fixed effects to capture time-invariant EDZ characteristics, γ_j is the industry fixed effects to control for industry-specific shocks, and $\eta_{y(s)}$ is the establishment year fixed effect, where $y(s)$ denotes the establishment year of EDZ s, this controls for unobserved time-specific factors shared by EDZs established in the same year. ϵ_{sjc} is the error term, and we cluster the standard error at the county level. The EDZs sample covers all EDZs in China established after 2000. The unit of observation is the EDZ-(2-digit) industry level, and the final sample consists of 1,863 EDZs by 89 (2-digit) industries.

Table B.1 reports the regression results when we measure RCA by calculating the stock number of firms in the county-industry cell. It shows that all measures of regional revealed advantage significantly predict the choice of target industry of EDZs.

Table B.1: Target Industry Choice and Regional Revealed Advantage

	(1) Target	(2) Target	(3) Target	(4) Target
RCA^p	0.003***			0.001***
	(0.000)			(0.000)
RCA^n		0.002***		0.001***
		(0.000)		(0.000)
AA			0.602***	0.509***
			(0.033)	(0.033)
EDZ FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Establishment Year FE	Yes	Yes	Yes	Yes
R^2	0.156	0.156	0.158	0.159
Observations	165,629	165,629	165,629	165,629

Notes: This table reports the results from Equation (B.1). The unit of observation is the EDZ-(2-digit) industry level. Standard errors clustered at the county level are reported in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Appendix C. Case Studies of Two EDZs

C.1 Kunming Economic and Technological Development Zone

Location. Kunming Economic and Technological Development Zone (Kunming ETDZ) is located in the eastern part of Kunming, the capital city of Yunnan Province in Southwest China. It lies within Kunming's Guandu District, about 15 km from the city center. The zone's strategic position offers excellent transportation connectivity. Kunming ETDZ is only about 18 minutes by car from Kunming's International Airport and 15 minutes from Kunming South Railway Station, the city's high-speed rail hub. Three major high-speed rail lines (Shanghai–Kunming, Nanning–Kunming, and Chongqing–Kunming) intersect near the zone, making it a convenient node for passenger travel and logistics.

Development Timeline. In 1992, the Kunming Municipal Government decided to establish the Kunming ETDZ in Niujiezhuang, the eastern suburbs of Kunming. Initial development focused on a 2 km^2 pilot area, with basic infrastructure laid out in the early 1990s. In 1993, with the approval of the Yunnan Provincial Government, it became a *provincial-level* EDZ. In 2000,[6] the State Council approved elevating Kunming ETDZ to a *national-level* Economic and Technological Development Zone (ETDZ), as part of the Western Development strategy. This milestone granted KETDZ eligibility for national policies and greater autonomy, firmly establishing it as a key national-level EDZ in Yunnan. The approved plan at that time covered 9.8 km^2 at the zone's core.

Throughout its development, Kunming ETDZ has been shaped by these administrative decisions and strategic initiatives. The Administrative Committee of Kunming ETDZ is a dispatched agency of the Kunming Municipal Government. It exercises municipal-level economic and social management authority as well as corresponding administrative approval powers over the zone.

Preferential Policies. Kunming ETDZ offers an array of incentives to investors, in the form of government subsidies.

For firms not occupying land within EDZ but with registered capital of at least RMB 1 million or annual VAT, business tax, and corporate income tax payments of at least RMB 0.1 million, the zone uses the taxes (the portion retained by local governments) paid by firms to subsidize them. This policy applies for three years from the date of firm registration. The specific refund rates are as follows: 30% for real estate projects; 40% for commercial and service projects; and 50% for industrial production projects.

For non-public industrial firms that purchase land within the zone and make fixed-

[6] In "China Development Zone Audit Announcement Catalog" (2018 Edition), the approval year for Kunming ETDZ is listed as 2000. However, as we describe here, 2000 does not represent the year of Kunming ETDZ's establishment but rather the year it was approved as a national-level zone. This distinction underscores why we manually collected and differentiated between each EDZ's original establishment year and its subsequent upgrade year.

asset investments exceeding RMB 5 million, the zone provides tax refunds or government subsidies based on taxes paid. Specifically, these incentives include: (1) For value-added tax (vat), the portion of VAT retained in the zone is fully refunded for the first two years and refunded at 50% for the subsequent three years; (2) For corporate income tax (CIT), the retained portion of CIT is fully refunded for the first five years and refunded at 50% for the following five years; and (3) a business tax incentive, whereby the business tax retained in the zone—calculated relative to the previous year—is refunded at 50% in the first year, 60% in the second year, and 70% in the third year in the form of firm development funds. This business tax incentive applies for three years from the date of firm registration.

In addition, the park also provides living allowances for senior executives, housing purchase subsidies, and talent recruitment subsidy policies.

Data Source: Baike_Kunming ETDZ.

C.2 Guangdong Huizhou Industrial Park

Location. Huizhou Industrial Park is a provincial-level industrial park located in Huizhou City, Guangdong Province, a southern coastal province of China. Unlike Kunming ETDZ, which is situated in a provincial capital, Huizhou is a prefecture-level city and lies at a considerable distance from Guangzhou, the provincial capital of Guangdong.

Development Timeline. The predecessor of Huizhou Industrial Park was Huizhou Digital Industrial Park. In January, 2002, the Huizhou Municipal Government has set up a team to prepare for the construction of the park. Construction officially began in May, 2002, with a groundbreaking ceremony. In 2006, the State Council approved its designation as a provincial-level development zone, and it was renamed "Guangdong Huizhou Industrial Park". It should be noted that in the "China Development Zone Audit Announcement Catalog" (2018 Edition), the approval year for Huizhou Industrial Park is listed as 2006. However, as we clarify here, 2006 does not mark the year of the park's establishment but rather the year it was approved as a provincial-level zone.

Preferential Policies. The preferential policies of Huizhou Industrial Park reveal a strong emphasis on supporting firms in high-tech industries. The park identifies several strategic emerging industries as priorities, including LED, flat-panel displays, next-generation mobile communications, and digital equipment manufacturing. Importantly, eligibility for these policies requires firms to be registered, and maintain their tax registration within the zone.

Take the policy incentive for the flat-panel display industry as an example:

- First, this policy targets R&D and production projects in backlight modules, with investment exceeding USD 100 million. These include backlight sources, cold cathode lamps, light guides, IC driver circuits, polarizers, ITO glass, glass substrates,

color filters, photoresists, and auxiliary chemicals. Starting from the first year of tax contribution, 30% of the local tax retained by the park is allocated to subsidize firms during the first two years. In the third year, the subsidy rate decreases to 15%.

- Second, this policy applies to the top ten domestic and international firms in LCD driver ICs, LCD backlight modules, LCD color filters, and LCD/OLED panel production. Eligible firms must achieve annual output exceeding RMB 500 million after commencing operations. Over a three-year period, 20–30% of the retained local tax will be allocated to support these firms.

- Third, this policy supports firms producing 8.5-generation and above panels, 42-inch and larger PDP displays, driver circuits, and modules. It encourages mass production of next-generation display devices such as PDP TVs and OLEDs. Firms with annual output exceeding RMB 500 million are eligible. Starting from the first year of tax contribution, 20% of the retained local tax is allocated for subsidies in the first year, and 10% in the second year.

Data Sources: Baike_Huizhou Industrial Park.

Appendix D. Identify the Policy Time

China's EDZ program exhibits top-down characteristics, as the designation of provincial- or national-level EDZs must be approved by the central government. However, in practice, the establishment of most EDZs follows a bottom-up exploratory process. Local governments—typically at the county or municipal level—first initiate the construction of EDZs and begin actively attracting firms and investment. Only after an EDZ has reached a certain scale of development is it officially granted provincial or national level status by higher authorities, thereby qualifying for more preferential policies.

The case of Kunming Economic and Technological Development Zone (ETDZ) in Section C.1, clearly illustrates how a EDZ initially proposed by local authorities, and then gained the upper government's recognition. In 1992, the Kunming Municipal Government decided to establish the Kunming (ETDZ) in Niujiezhuang, the eastern suburbs of Kunming. In 1993, with the approval of the Yunnan Provincial Government, it became a provincial-level EDZ. In 2000, upon approval by the Central Government, the Kunming ETDZ was promoted to a national-level ETDZ. However, in the "China Development Zone Audit Announcement Catalog (2018 Edition)" (hereafter referred to as the list), the approval year for Kunming ETDZ is recorded as 2000. A similar discrepancy arises with the Guangdong Huizhou Industrial Park, which was already established in 2002, yet its listed approval year is 2006—marking the point when it was officially promoted to a provincial-level EDZ. These two examples illustrate that the approval year recorded in the list does not necessarily reflect the actual establishment year of the zone. This highlights the importance of distinguishing between the **establishment year**—when operations begin—and the **promotion year**, when the EDZ attains provincial- or national-level status.

We manually collect the establishment year of EDZs in our database from various public sources, such as the official website of EDZ, the local government website, and Baidu Encyclopedia. Our data reveals an average temporal gap of approximately 3.12 years between an EDZ's establishment year and promotion year, which means it requires about three years for a zone to be qualified as a provincial- or national-level EDZ. This gap is different for the expansion stage of China's EDZ exercise and the type of EDZ. Figure D.3 shows that early-established EDZs (before 2000) experienced significantly shorter approval lags compared to those founded post-2006. In terms of EDZ types, Figure D.4 presents that Bonded Zones and Border Economic Cooperation Zones (BECZ) exhibit almost no such time gap due to their unique operational requirements - these zones, which enjoy tariff exemptions, must obtain central government approval prior to construction.

Figure D.3: The Gap between Establishment Year and Promotion Year of EDZ Grouped by Establishment Year

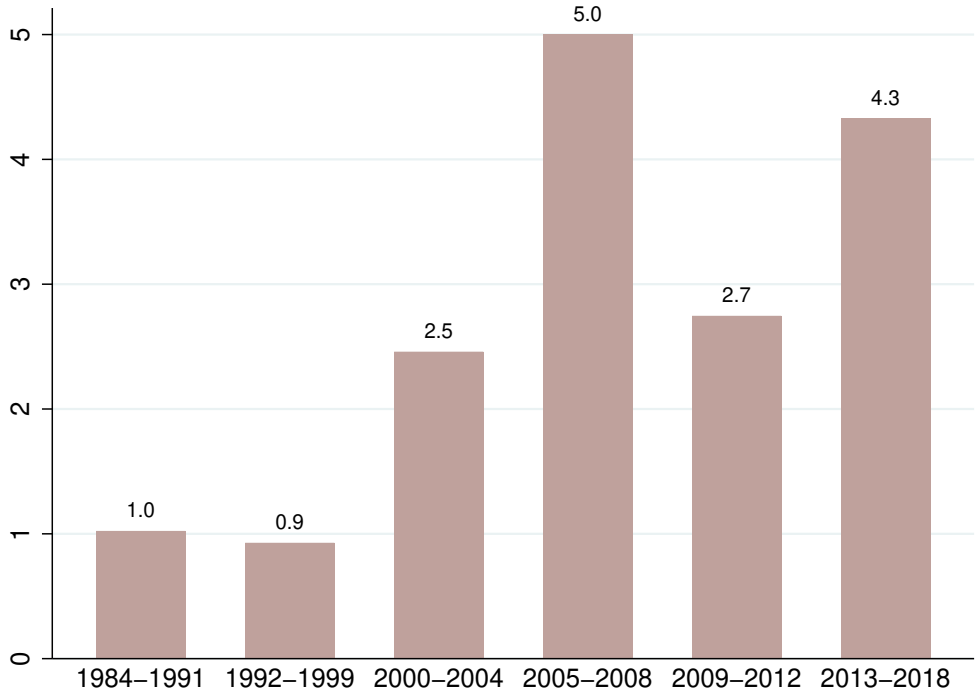
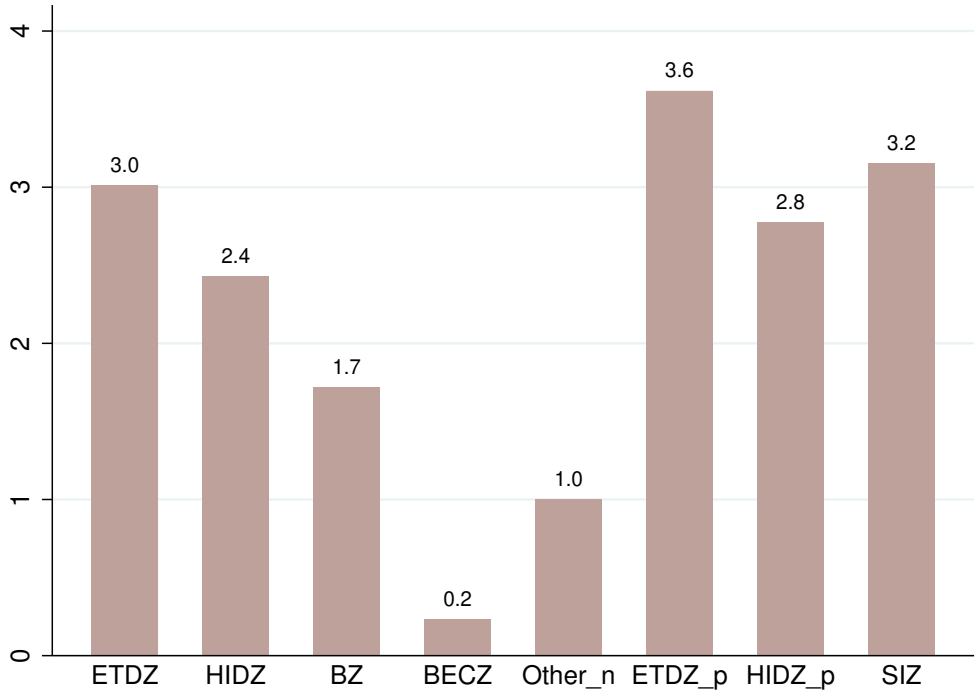


Figure D.4: The Gap between Establishment Year and Promotion Year of EDZ Grouped by EDZ Type



Appendix E. Firm TFP Measurement

A key limitation of the Firm Annual Report data is the absence of information on labor inputs, which makes it challenging to apply popular methods for estimating TFP, such as those proposed by Olley and Pakes (1992) and Levinsohn and Petrin (2003). To address this, we follow Brandt et al. (2022) in measuring firm TFP relative to other firms operating in the same 2-digit industry, city, and year. This approach assumes that all firms within a given 2-digit industry, city, and year cell pay workers the same wage rate w. Under the assumption of competitive labor markets, firm optimization implies that the marginal product of labor is equalized across firms within each cell.

Assume the production function is

$$y_i = z_i^{1-\eta}(k_i^{1-\alpha} n_i^{\alpha})^{\eta}$$

where y_i is the firm's output, k_i is the firm's capital stock, n_i is the firm's labor input, and z_i is the firm's total factor productivity. $\eta \in (0,1)$ and $\alpha \in (0,1)$.

As firm i is faced with wage w, combining the first order condition with respect to labor, and the production function, we could derive

$$y_i = z_i^{1-\eta} \left[k_i^{1-\alpha} \left(\frac{y_i \alpha \eta}{w} \right)^{\alpha} \right]^{\eta}$$

Furthermore, we could express firm productivity z_i as a function of firm output, capital, and wage

$$z_i = y_i^{\frac{1-\alpha\eta}{1-\eta}} \, k_i^{\frac{-\eta(1-\alpha)}{1-\eta}} \left(\frac{w}{\alpha\eta} \right)^{\frac{\alpha\eta}{1-\eta}}$$

Under the assumption that the labor market is local, such that wage w is identical within a city-industry-year cell c, we can get the mean productivity for each cell, $\bar{z}_c$, is averaged across firms in c weighted by the revenue share λ_i

$$\bar{z}_c = \sum_{i \in I_c} \lambda_i \, y_i^{\frac{1-\alpha\eta}{1-\eta}} \, k_i^{\frac{-\eta(1-\alpha)}{1-\eta}} \left(\frac{w}{\alpha\eta} \right)^{\frac{\alpha\eta}{1-\eta}}$$

where I_c denotes all firms in the city-industry-year cell c.

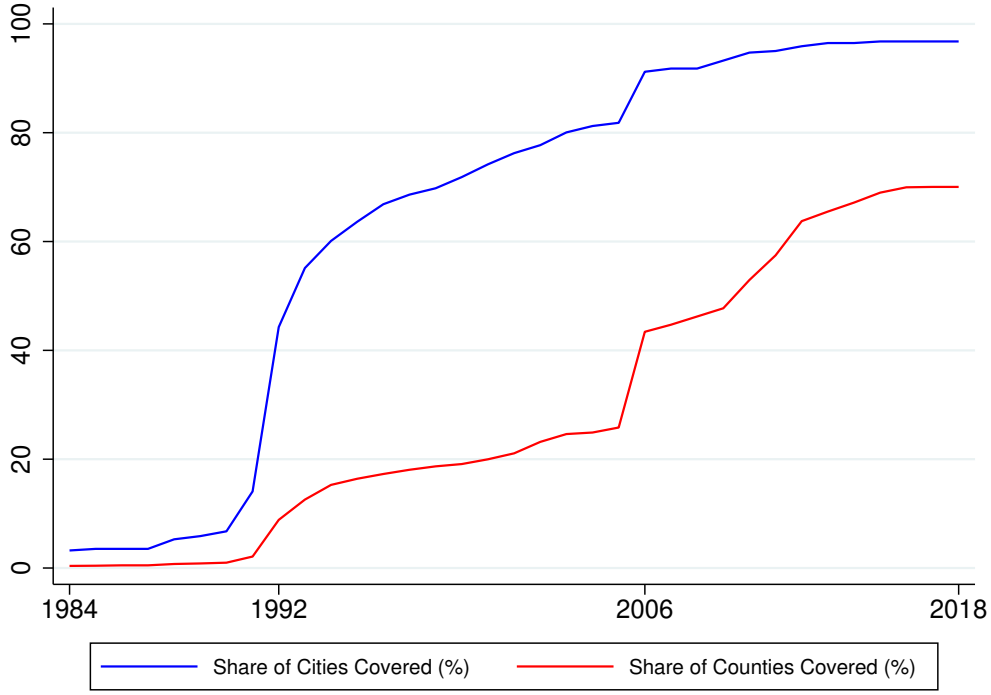
Finally, the relative productivity of firm i with respect to the average productivity in cell c is

$$\frac{z_i}{\bar{z}_c} = \frac{y_i^{\frac{1-\alpha\eta}{1-\eta}} \, k_i^{\frac{-\eta(1-\alpha)}{1-\eta}}}{\sum_{i \in I_c} \lambda_i \, y_i^{\frac{1-\alpha\eta}{1-\eta}} \, k_i^{\frac{-\eta(1-\alpha)}{1-\eta}}}$$

We use firm revenue and firm assets from the Inspection Data as measures of output and capital, respectively. We set a return to scale of $\eta = 0.85$, and obtain the industry-specific labor income share $\alpha\eta$ from China's 2007 IO Table.

Appendix F. Supplementary Tables and Figures

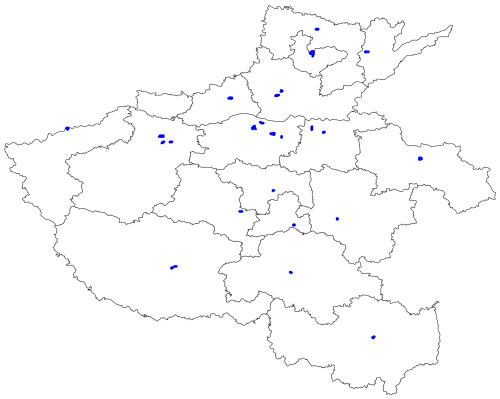
Figure F.5: Share of Counties (Cities) Hosting at Least One EDZ by Year



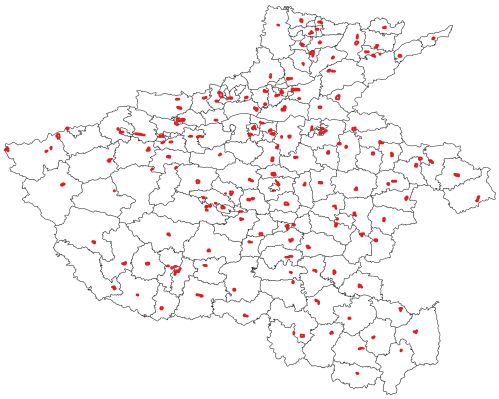
Notes: This figure shows the annual percentage of counties (cities) that host at least one EDZ, relative to the total number of counties (cities) in China.

Figure F.6: Distribution of EDZs in Four Provinces: 2005 vs. 2018

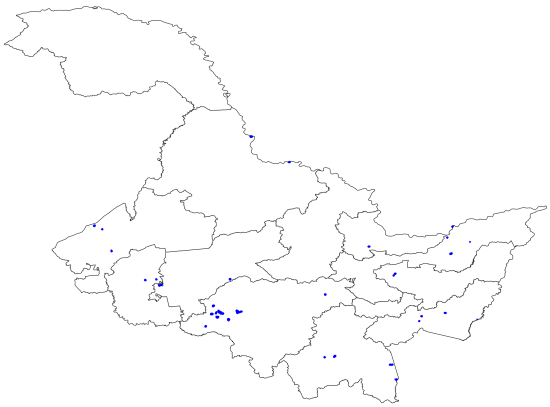
(a) Henan 2005



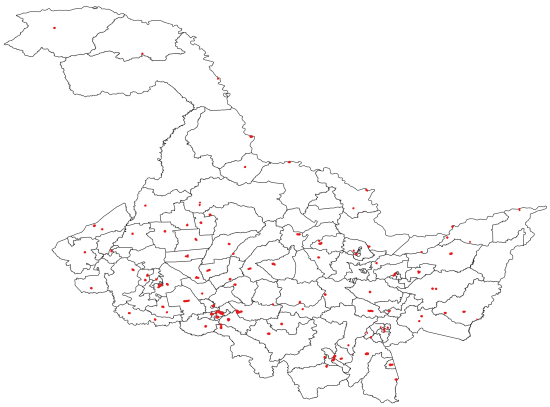
(b) Henan 2018



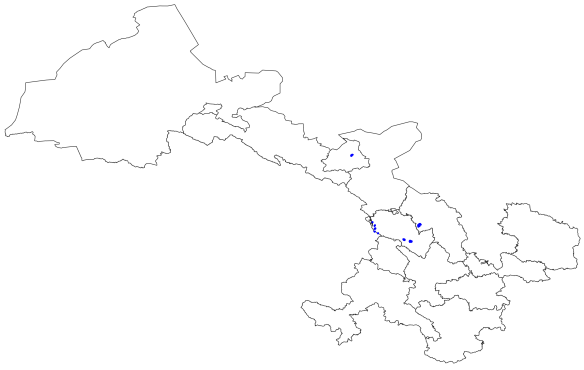
(c) Heilongjiang 2005



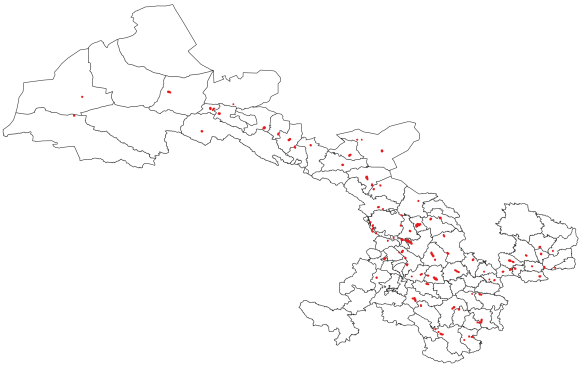
(d) Heilongjiang 2018



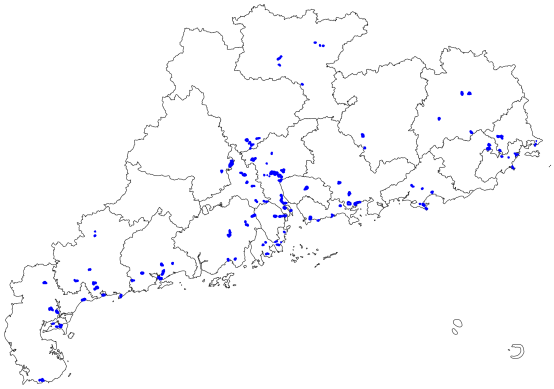
(e) Gansu 2005



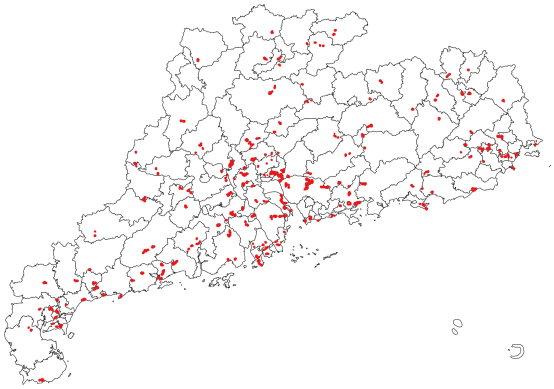
(f) Gansu 2018



(g) Guangdong 2005

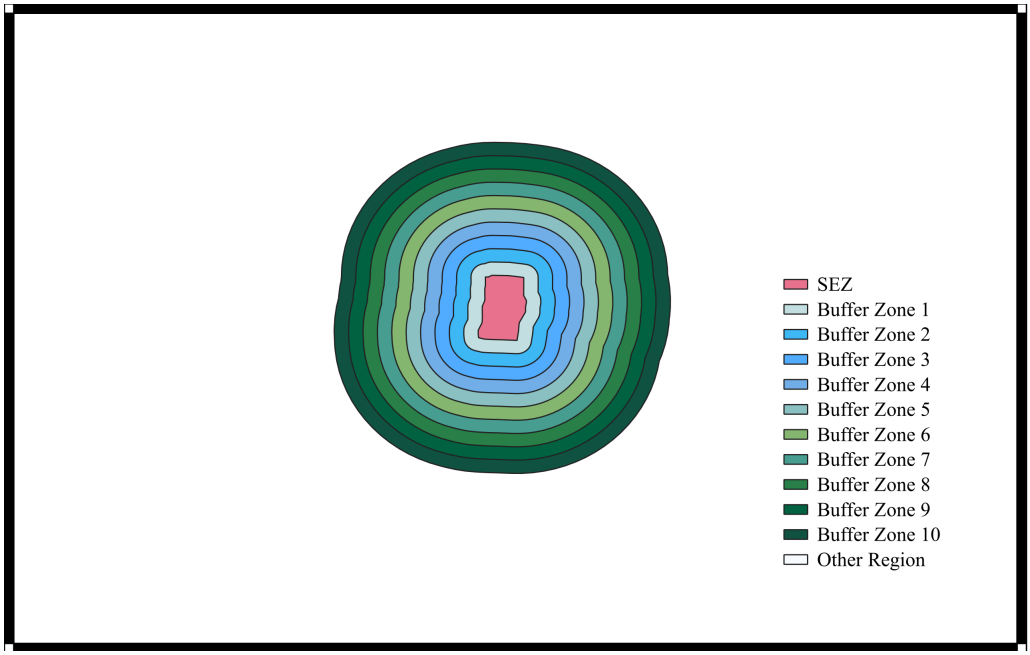


(h) Guangdong 2018



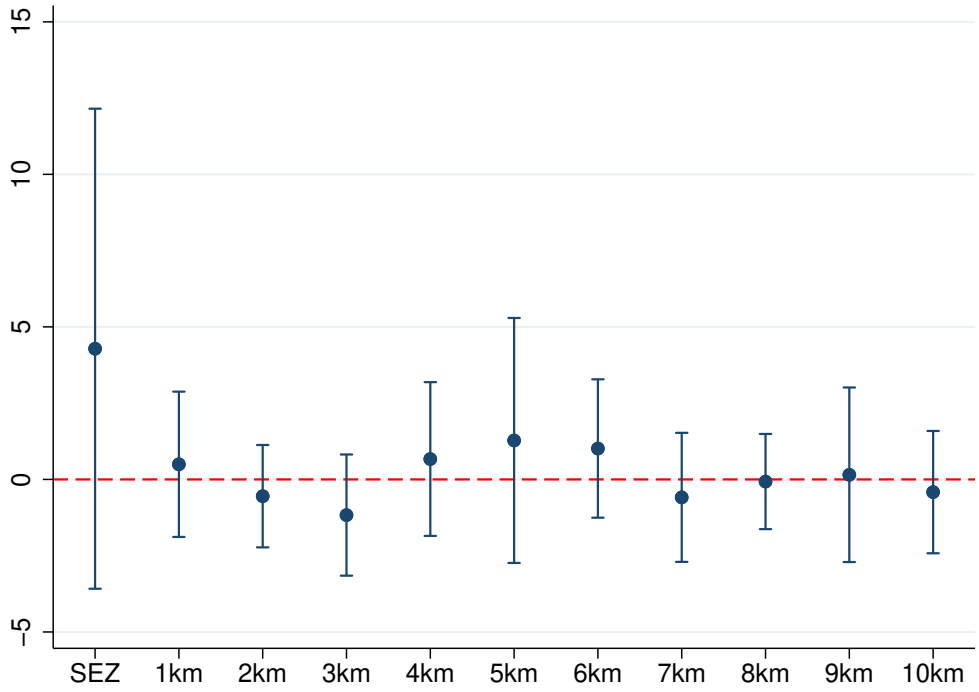
Notes: This figure illustrates the distribution of EDZs in four provinces in 2005 and 2018. The 2005 map is based on prefecture-level administrative boundaries, while the 2018 map uses county-level boundaries.

Figure F.7: The Graphical Illustration of EDZ Region and 1-10km Buffer Zones



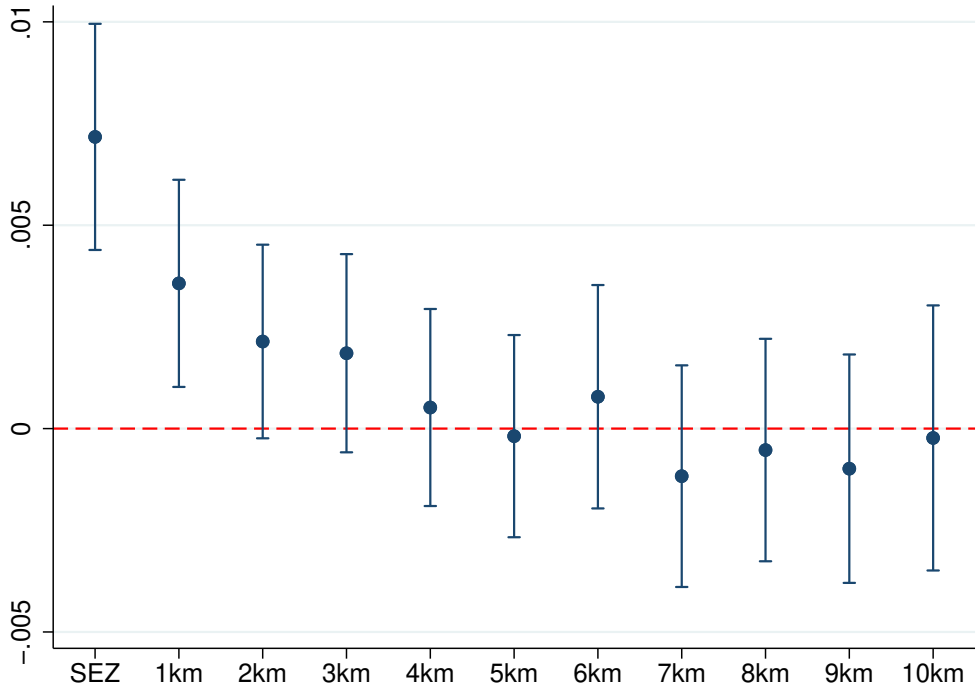
Notes: This figure presents a graphical illustration of a EDZ and its 1-10 km buffer zones. For example, the "Buffer Zone 2" denotes the area located 1–2 km from the EDZ boundary.

Figure F.8: EDZ Status and Tax Burden



Notes: This figure presents the estimated coefficient for Equation (7). The unit of observation is the firm-year level, with the sample period from 2008 to 2020, based on the National Tax Survey Database. The dependent variable is the value-added tax paid over the revenue. "EDZ" denotes whether the firm is located in the EDZ. "#km" denotes whether the firm is located in the #km buffer zone. The 95% confidence intervals are constructed from clustered standard errors at the county level.

Figure F.9: EDZ Status and Long-term Loan Availability



Notes: This figure presents the estimated coefficient for Equation 7. The unit of observation is the firm-year level, with the sample period from 2008 to 2020, based on the National Tax Survey Database. The dependent variable is a dummy variable which takes the value one if the firm receives any long-term loan. "EDZ" denotes whether the firm is located in the EDZ. "#km" denotes whether the firm is located in the #km buffer zone. The 95% confidence intervals are constructed from clustered standard errors at the county level.

Table F.2: EDZs' TOP 5 Targeted Industries (2-digit Industry)

	National level				
EDZ type	ETDZ	HIDZ	Bonded Area	BECZ	Other
Top 5 targeted industries	General Purpose Equipment Manuf. (49.77%)	Pharmaceutical Manuf. (48.72%)	Warehousing Ind. (39.17%)	Wholesale Ind. (47.37%)	Business Services Ind. (65.22%)
	Pharmaceutical Manuf. (44.29%)	Specialized Equipment Manuf. (48.72%)	Wholesale Ind. (36.67%)	Business Services Ind. (42.11%)	Accommodation Ind. (47.83%)
	Specialized Equipment Manuf. (44.29%)	General Purpose Equipment Manuf. (48.72%)	Software & Information Technology Svc. (34.17%)	Wood & Bamboo Products Manuf. (31.58%)	Food & Beverage Svc. (47.83%)
	Automobile Manuf. (24.66%)	Software & Information Technology Svc. (44.23%)	Telecommunications & Broadcasting Svc. (33.33%)	Agricultural & Sideline Food Processing Ind (26.32%)	Culture & Arts Ind. (34.78%)
	Food Manuf. (21.46%)	Telecommunications & Broadcasting Svc. (25.90%)	Loading/Unloading & Freight Forwarding Svc. (28.33%)	Warehousing Ind. (26.32%)	Computers, Communication & Other Electronic Equipment Manuf. (21.74%)
Number of EDZs	219	156	120	19	23

Notes: The percentages of each type of EDZs targeted at the industry are in the parentheses. "Manuf." denotes manufacturing. "Svc." denotes services. "Ind." denotes industry.

Table F.3: EDZs' TOP 5 Targeted Industries (2-digit Industry)

	Provinicial level		
EDZ type	ETDZ	HIDZ	SPI
Top 5 targeted industries	General Purpose Equipment Manuf. (43.39%)	Specialized Equipment Manuf. (52.23%)	Raw Chemical Materials & Chemical Products Manuf. (34.36%)
	Pharmaceutical Manuf. (35.98%)	General Purpose Equipment Manuf. (51.59%)	General Purpose Equipment Manuf. (30.81%)
	Specialized Equipment Manuf. (28.66%)	Raw Chemical Materials & Chemical Products Manuf. (41.40%)	Agricultural & Sideline Food Processing Ind (24.53%)
	Food Manuf. (26.12%)	Software & Information Technology Svc. (28.66%)	Food Manuf. (19.67%)
	Non-metallic Mineral Manuf. (19.00%)	Telecommunications & Broadcasting Svc. (21.02%)	Non-metallic Mineral Manuf. (18.96%)
Number of EDZs	984	157	844

Notes: The percentages of each type of EDZs targeted at the industry are in the parentheses. "Manuf." denotes manufacturing. "Svc." denotes services. "Ind." denotes industry.

Table F.4: EDZ Wave Decomposition

Wave	1984–1991	1992–1999	2000–2004	2005–2008	2009–2012	2013–2016	2017–2018
Number of zones newly established	65	544	260	810	602	253	9
National-level EDZs	**48**	**86**	**59**	**32**	**36**	**38**	**7**
By type							
1. ETDZ	15	21	18	0	11	3	0
2. HIDZ	27	26	0	0	1	6	1
3. Bonded Zone	3	8	41	31	21	25	0
4. BECZ	0	14	0	1	1	3	6
6. Other	3	17	0	0	2	1	0
By region							
1. Coastal region	38	52	36	25	12	15	2
2. Central region	6	19	11	2	11	15	2
3. Western region	4	16	12	5	13	8	3
Province-level EDZs	**17**	**458**	**201**	**778**	**566**	**215**	**2**
By type							
1. ETDZ	10	368	112	376	193	77	0
2. HIDZ	5	58	34	67	54	34	0
3. SIZ	2	32	55	335	319	104	2
By region							
1. Coastal region	5	267	75	344	169	75	2
2. Central region	7	140	69	297	213	66	0
3. Western region	5	51	57	137	184	74	0

Notes: The coastal region includes Liaoning, Beijing, Tianjin, Hebei, Shandong, Jiangsu, Shanghai, Zhejiang, Fujian, Guangdong, Guangxi, and Hainan. The central region includes Heilongjiang, Jilin, Inner Mongolia, Shanxi, Henan, Anhui, Hubei, Hunan, and Jiangxi. The western region includes Shaanxi, Gansu, Ningxia, Qinghai, Xinjiang, Guizhou, Yunnan, Chongqing, Sichuan, and Tibet.

Table F.5: The Proportion of Firm Number and Registered Capital in EDZs for 1-digit Industries

1-digit Industry	Proportion of Firms in EDZ	Proportion of Capital in EDZ
Agriculture, Forestry, Pastoralism, and Fishery	1.40%	3.71%
Mining	1.94%	3.17%
Manufacturing	5.53%	10.41%
Production of Electricity, Heat, Gas, and Water	5.80%	9.39%
Construction	7.90%	8.95%
Wholesale and Retail Trade	6.51%	9.66%
Transportation, Storage, and Postal Services	6.92%	9.62%
Accommodation and Catering Services	5.82%	7.53%
Information Transmission, Software, and IT	10.80%	14.41%
Finance	5.86%	6.98%
Real Estate	7.56%	8.67%
Leasing and Business Services	8.39%	10.70%
Scientific Research and Technical Services	11.68%	13.70%
Water & Environment & Public Facilities Management	7.21%	8.43%
Residential Services, Repair, and Other Services	6.25%	7.73%
Education	6.49%	8.26%
Health and Social Work	6.01%	7.84%
Culture, Sports, and Entertainment	7.86%	10.46%

Notes: This table shows the proportion of firm numbers and registered capital in EDZs for all 1-digit industries in 18 provinces (excluding Beijing and Tianjin) from 2000 to 2017. The firm information comes from the Business Registry Database.

Table F.6: The Effect of EDZ Establishment on Firm Entry: EDZ Heterogeneity

	(1) log(# New Entry)	(2) log(# New Entry)	(3) log(Value New Cap.)	(4) log(Value New Cap.)
Post	0.006***	0.138***	0.016***	0.217***
	(0.001)	(0.008)	(0.002)	(0.013)
Post × National-level EDZ		0.019***		0.051***
		(0.004)		(0.007)
Post × log(dist. city center)		−0.012***		−0.019***
		(0.001)		(0.002)
Post × log(dist. province center)		−0.019***		−0.029***
		(0.002)		(0.002)
EDZ-Industry FE	YES	YES	YES	YES
Industry-Year FE	YES	YES	YES	YES
Observations	1,276,794	1,276,794	1,276,794	1,276,794

Notes: This table shows the heterogeneous effect of EDZ Establishment on firm entry. The unit of observation is the EDZ-(2-digit)industry-year level, with the sample period from 2000 to 2017. The dependent variable of columns (1)-(2) is the log number of new registered firms, while the dependent variable of columns (3)-(4) is the log number of registered capital of new entrants. "National-level EDZ" is an indicator that takes the value one for national-level EDZ and zero for province-level EDZ. "log (dist. city center)" is the log distance to the government of the city where the EDZ is located, while "log (dist. province center)" is to the province government. Standard errors clustered at the EDZ-industry level are reported in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table F.7: The Effect of EDZ Establishment on Firm-to-firm Equity Investments

	(1)	(2)	(3)	(4)
	log(equity investment)			
Source	within county	other counties	other cities	other provinces
EDZ × Post	-1.095***	-0.424***	-0.585***	0.245***
	(0.059)	(0.067)	(0.072)	(0.093)
Entity FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	26,298	26,298	26,298	26,298

Notes: This table shows the baseline results for the impact of EDZ Establishment on firm-to-firm equity investments following Equation (2). The dependent variables in Columns (1)–(4) are the log of total equity investment originating from the same county, other counties within the same city, other cities within the same province, and locations outside the province, respectively. "Post" is binary and takes the value one after EDZ has been established and zero otherwise. "EDZ" is an indicator that equals one if the entity is an EDZ and zero if it is a non-EDZ county. Standard errors clustered at the county level are reported in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table F.8: Firm Performance: Early vs Later

	(1) log(Profit)	(2) TFP	(3) ROA	(4) log(Revenue)
Panel A. Firms in EDZ				
Post	0.074***	0.002*	0.002***	0.282***
	(0.018)	(0.001)	(0.000)	(0.040)
Observations	113,530	109,743	147,519	163,846
Panel B. Firms in 1-4km Buffer Zone				
Post	0.069***	0.000	0.002***	0.153***
	(0.012)	(0.000)	(0.000)	(0.029)
Observations	937,321	805,513	1,109,136	1,295,932
Control	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Notes: This table reports the results for the effect of EDZ establishment on firm performance following Equation (**??**). The unit of observation is the firm-year level, with the sample period from 2000 to 2017. "Post" is a binary indicator that equals one in years after the EDZ has been established and zero otherwise. Control variables include a firm-specific time trend based on registered capital and the square of firm age. Panel A uses a sample of incumbent firms located in EDZs. Panel B uses a sample of incumbent firms located in the 1–4 km buffer zones of EDZs. Standard errors clustered at the EDZ level are reported in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table F.9: Firm Selection: Firm Profit as Outcome

	(1) log(profit)	(2) log(profit)	(3) log(profit)
Panel A. Firms in EDZ			
Entrant	−0.197***	−0.198***	−0.197***
	(0.025)	(0.021)	(0.025)
Entrant × Post	−0.013		−0.003
	(0.027)		(0.037)
Entrant × Post_Prov		−0.012	−0.011
		(0.024)	(0.033)
Observations	1,314,481	1,314,481	1,314,481
Panel B. Firms in 1-4km Buffer Zone			
Entrant	−0.142***	−0.149***	−0.142***
	(0.011)	(0.010)	(0.011)
Entrant × Post	−0.060***		−0.015
	(0.013)		(0.019)
Entrant × Post_Prov		−0.055***	−0.046***
		(0.012)	(0.017)
Observations	8,896,232	8,896,232	8,896,232
Control	YES	YES	YES
EDZ-Industry	YES	YES	YES
EDZ-Year	YES	YES	YES
Industry-Year	YES	YES	YES

Notes: This table reports the results from Equation (6). The unit of observation is the firm-year level, with the sample period from 2000 to 2017. The dependent variable is the log of firms' profit. The binary variable "Entrant" equals one if the firm is age one. "Post" is binary and takes the value one post the year that EDZ has been established and zero otherwise. "Post_Prov" is a dummy, which equals one after EDZ is upgraded to provincial-level. Panel A uses the sample that firms located in EDZs. Panel B uses the sample that firms located in 1-4km buffer zones of EDZs. We control for the firm type, EDZ–industry fixed effect, EDZ–year fixed effect, and industry–year fixed effect for each column. Standard errors clustered at the EDZ-industry level are reported in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table F.10: EDZ Status and Policy Dividends

	(1) log(subsidy)	(2) subsidy/revenue	(3) I(long term debt)
EDZ	0.092***	0.014***	0.005***
	(0.012)	(0.004)	(0.001)
EDZ × Target	0.046*	0.010	0.006***
	(0.027)	(0.008)	(0.002)
EDZ × Up	−0.002	−0.008*	0.002
	(0.014)	(0.005)	(0.002)
EDZ × Down	−0.015	−0.002	−0.002
	(0.013)	(0.004)	(0.002)
Control	YES	YES	YES
Industry-Year FE	YES	YES	YES
County-Year FE	YES	YES	YES
Industry-County	YES	YES	YES
R squared	0.149	0.106	0.176
Observations	4,954,136	4,813,859	4,999,789

Notes: The unit of observation is the firm-year level, with the sample period from 2008 to 2020, based on the National Tax Survey Database. The dependent variables for columns (1)-(3) are log one plus government subsidy income, government subsidy income over revenue, and a dummy variable which takes the value one if the firm receives any long-term loan. "EDZ" denotes whether the firm is located in the EDZ. "Target", "Up", and "Down" indicate whether the firm is in the EDZ's target industry, an upstream industry, or a downstream industry relative to the target industry. Standard errors clustered at the county level are reported in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table F.11: The Effect of EDZ Establishment on Firm Entry: Control for Transport Condition

	(1) log(# firm)	(2) log(# firm)	(3) log(# capital)	(4) log(# capital)
Post	0.006***	−0.001	0.017***	0.002
	(0.001)	(0.001)	(0.002)	(0.002)
Post × Target		0.105***		0.192***
		(0.008)		(0.015)
Post × Up		0.015***		0.030***
		(0.003)		(0.006)
Post × Down		0.011***		0.023***
		(0.002)		(0.004)
EDZ-Industry FE	YES	YES	YES	YES
Industry-Year FE	YES	YES	YES	YES
Transportation Condition	YES	YES	YES	YES
Observations	1,276,794	1,276,794	1,276,794	1,276,794

Notes: This table re-estimates the results for Table 4, after controlling for the log EDZs' nearest distance to motorway access, regular railway, and high-speed railway station. The unit of observation is the EDZ-(2-digit)industry-year level, with the sample period from 2000 to 2017. The dependent variable of columns (1)-(2) is the log number of new registered firms, while the dependent variable of columns (3)-(4) is the log number of registered capital of new entrants. "Post" is a binary variable that equals one after the EDZ has been established and zero otherwise. "Target", "Up", and "Down" are industry dummy variables indicating, respectively, whether an industry is the EDZ's target industry, an upstream industry, or a downstream industry relative to the target industry. Standard errors clustered at the EDZ-industry level are reported in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table F.12: The Effect of EDZ Establishment on Firms' Procurement Structure

	(1) Share (within county)	(2) Share (within city)	(3) Share (within province)	(4) Share (out province)
Panel A. Firms in EDZ				
Post14	−0.026**	0.019*	0.005	0.002
	(0.011)	(0.011)	(0.007)	(0.010)
Post14 × Target	0.033***	−0.004	−0.000	−0.029***
	(0.007)	(0.007)	(0.005)	(0.007)
Post14 × Up	−0.004	−0.004	−0.008*	0.016*
	(0.009)	(0.008)	(0.005)	(0.009)
Post14 × Down	−0.000	−0.013	0.003	0.010
	(0.008)	(0.008)	(0.004)	(0.008)
Observations	47,701	47,701	34,058	34,058
Panel B. Firms in 1-4km Buffer Zone				
Post14	−0.028***	0.042***	−0.005	−0.009
	(0.007)	(0.007)	(0.005)	(0.010)
Post14 × Target	0.017***	−0.002	−0.016***	0.001
	(0.005)	(0.005)	(0.003)	(0.005)
Post14 × Up	−0.008	0.013**	−0.004	−0.001
	(0.006)	(0.005)	(0.003)	(0.005)
Post14 × Down	−0.001	−0.001	0.002	0.001
	(0.005)	(0.005)	(0.003)	(0.006)
Observations	249,786	249,786	174,697	174,697
Control	YES	YES	YES	YES
City FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
EDZ Level FE	YES	YES	YES	YES

Notes: This table reports the effects of EDZ establishment on procurement structure following Equation (10). The unit of observation is the firm, based on 2014 VAT data. The dependent variables for columns (1)-(4) are: the proportion of each firm's purchases that occur within the county, within the city (excluding the home county), within the province (excluding the home city), and outside the province. "Post14" denotes whether the firm is located in the EDZ that was established before 2014. "Target", "Up", and "Down" indicate whether the firm is in the EDZ's target industry, an upstream industry, or a downstream industry relative to the target industry. Panel A uses the sample that firms located in EDZs. Panel B uses the sample that firms located in 1-4km buffer zones of EDZs. Standard errors clustered at the EDZ-industry level are reported in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table F.13: The Effect of EDZ Establishment on Firms' Selling Structure

	(1) Share (within county)	(2) Share (within city)	(3) Share (within province)	(4) Share (out province)
Panel A. Firms in EDZ				
Post14	−0.051***	0.044***	0.000	0.007
	(0.011)	(0.012)	(0.008)	(0.013)
Post14 × Target	−0.004	−0.018***	−0.007	0.029***
	(0.007)	(0.006)	(0.005)	(0.008)
Post14 × Up	0.018**	−0.008	0.003	−0.013
	(0.009)	(0.008)	(0.006)	(0.009)
Post14 × Down	0.005	−0.005	0.016***	−0.015*
	(0.008)	(0.008)	(0.005)	(0.008)
Observations	47,701	47,701	34,058	34,058
Panel B. Firms in 1-4km Buffer Zone				
Post14	−0.027***	0.057***	−0.009	−0.021*
	(0.010)	(0.009)	(0.006)	(0.011)
Post14 × Target	−0.013***	−0.033***	−0.006**	0.052***
	(0.005)	(0.005)	(0.003)	(0.007)
Post14 × Up	−0.000	0.013	−0.004	−0.009
	(0.008)	(0.008)	(0.003)	(0.008)
Post14 × Down	−0.003	0.006	0.007**	−0.011
	(0.007)	(0.007)	(0.004)	(0.008)
Observations	249,786	249,786	174,697	174,697
Control	YES	YES	YES	YES
City FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
EDZ Level FE	YES	YES	YES	YES

Notes: This table reports the effects of EDZ establishment on selling structure following Equation (10). The unit of observation is the firm, based on 2014 VAT data. The dependent variables for columns (1)-(4) are: the proportion of each firm's sales that occur within the county, within the city (excluding the home county), within the province (excluding the home city), and outside the province. "Post14" denotes whether the firm is located in the EDZ that was established before 2014. "Target", "Up", and "Down" indicate whether the firm is in the EDZ's target industry, an upstream industry, or a downstream industry relative to the target industry. Panel A uses the sample that firms located in EDZs. Panel B uses the sample that firms located in 1-4km buffer zones of EDZs. Standard errors clustered at the EDZ-industry level are reported in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table F.14: The Source of TFP: Input-Output Linkage (Early vs Later)

	(1) TFP	(2) TFP	(3) TFP	(4) TFP
Panel A. Firms in EDZ				
Post	0.001	0.001	0.002	0.002
	(0.001)	(0.001)	(0.001)	(0.001)
Post × I(Buy from Local EDZ Firms)	0.004**			
	(0.002)			
Post × Share(Buy from Local EDZ Firms)		0.013**		
		(0.006)		
Post × I(Sell to Local EDZ Firms)			0.001	
			(0.002)	
Post × Share(Sell to Local EDZ Firms)				0.007
				(0.006)
Observations	109,743	109,744	109,745	109,746
Panel B. Firms in 1-4km Buffer Zone				
Post	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Post × I(Buy from Local EDZ Firms)	0.003***			
	(0.001)			
Post × Share(Buy from Local EDZ Firms)		-0.000		
		(0.004)		EDZ
Post × I(Sell to Local EDZ Firms)			0.000	
			(0.001)	
Post × Share(Sell to Local EDZ Firms)				-0.001
				(0.005)
Observations	805,513	805,514	805,515	805,516
Control	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Notes: This table reports the results for the effect of EDZ establishment on firm performance following Equation (**??**). The unit of observation is the firm-year level, with the sample period from 2000 to 2017. "Post" is a binary indicator that equals one in years after the EDZ has been established and zero otherwise. "I (Buy from Local EDZ Firms)" is an indicator for whether purchases from local EDZ firms in 2014, and "Share (Buy from Local EDZ Firms)" is the corresponding share over total purchases. "I (Sell to Local EDZ Firms)" is an indicator for whether to sell to local EDZ firms in 2014, and "Share (Sell to Local EDZ Firms)" is the corresponding share over the total sales. Control variables include a firm-specific time trend based on registered capital and the square of firm age. Panel A uses a sample of incumbent firms located in EDZs. Panel B uses a sample of incumbent firms located in the 1–4 km buffer zones of EDZs. Standard errors clustered at the EDZ level are reported in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table F.15: The Source of TFP: Knowledge Spillover (Early vs Later)

	(1) TFP	(2) TFP	(3) TFP	(4) TFP
Panel A. Firms in EDZ				
Post	0.002*	0.002*	0.002*	0.002*
	(0.001)	(0.001)	(0.001)	(0.001)
Post × I(Cite)	0.001			
	(0.011)			
Post × log(# Cite EDZ)		0.012		
		(0.008)		
Post × log(# Cite Buffer)			-0.010	
			(0.012)	
Post × log(# Cite EDZ+Buffer)				-0.001
				(0.008)
Observations	109,743	109,744	109,745	109,746
Panel B. Firms in 1-4km Buffer Zone				
Post	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Post × I(Cite)	-0.008			
	(0.010)			
Post × log(# Cite EDZ)		0.005		
		(0.005)		
Post × log(# Cite Buffer)			-0.010	
			(0.014)	
Post × log(# Cite EDZ+Buffer)				-0.010
				(0.013)
Observations	805,513	805,514	805,515	805,516
Control	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Notes: This table reports the results for the effect of EDZ establishment on firm performance following Equation (**??**). The unit of observation is the firm-year level, with the sample period from 2000 to 2017. "Post" is a binary indicator that equals one in years after the EDZ has been established and zero otherwise. "I(Cite)" is a dummy variable which equals one if the firm cites any patents held by firms within the EDZ or buffer zone; "log (# Cite EDZ)" is the log number of citations by EDZ firms to patents held by firms located within the EDZ; "log (# Cite Buffer)" is the log number of citations by EDZ firms to patents held by firms in the 1–4 km buffer zone; "log (# Cite EDZ+Buffer)" the log number of citations by EDZ firms to patents held by firms located within the EDZ and its 1–4 km buffer zone. Control variables include a firm-specific time trend based on registered capital and the square of firm age. Panel A uses a sample of incumbent firms located in EDZs. Panel B uses a sample of incumbent firms located in the 1–4 km buffer zones of EDZs. Standard errors clustered at the EDZ level are reported in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table F.16: Mean Values of Patent Applications, Patent Quality, and Patent Citations for Different Types of EDZs

	ETDZ	HIDZ	Bonded Zone	BECZ	Other_n	ETDZ_p	HIDZ_p	SIZ_p
EDZ Number	22	19	51	1	3	297	77	327
Patent application number	9.571	9.822	1.869	0.056	3.074	2.435	4.627	3.489
Patent claim length	284.208	294.217	177.496	26.889	217.901	174.542	247.426	177.339
Patent citation number	1.333	1.520	0.856	0.167	1.181	0.907	1.293	0.956
EDZ citation	0.199	0.260	0.017	0	0	0.037	0.097	0.081
EDZ-EDZ citation	0.111	0.193	0.008	0	0	0.027	0.032	0.058
EDZ-Buffer citation	0.088	0.067	0.010	0	0	0.010	0.064	0.024
Buffer citation	0.427	1.026	0.612	0	0.019	0.171	0.594	0.234
Buffer-EDZ citation	0.086	0.167	0.003	0	0	0.008	0.024	0.049
Buffer-Buffer citation	0.341	0.860	0.609	0	0.019	0.163	0.570	0.185

Notes: This table presents the summary statistics (mean) for Table 12 and Table 13. "ETDZ" refers to Economic and Technological Development Zones, "HIDZ" refers to High-tech Industrial Development Zones, "BECZ" refers to Border Economic Cooperation Zones, "Other_n" refers to other types of national-level EDZ, "ETDZ_p" refers to provincial-level Economic and Technological Development Zones, "HIDZ_p" refers to provincial-level High-Tech Industrial Development Zones, "SIZ" refers to provincial-level Specialized Industrial Zones.

Table F.17: Comparison of EDZ Local Characteristics Before and After 2006

	(1) log (Dist. City Center)	(2) log (Dist. Motorway)	(3) log (Dist. Railway)	(4) log (Area)
I(after 2006 wave)	0.357***	-0.129	-0.036	-0.225***
	(0.112)	(0.161)	(0.220)	(0.079)
Province FE	YES	YES	YES	YES
Type FE	YES	YES	YES	YES
Observations	446	446	446	446

Notes: The unit of observation is the EDZ level. The dependent variables in columns (1)–(4) are the logarithms of the distance to the city center, distance to motorway access, distance to railway access, and the planned area of each EDZ, respectively. "I(after 2006 wave)" is an indicator that equals one if the EDZ was established after 2006. All regressions control for province fixed effects and EDZ type fixed effects. Standard errors clustered at the EDZ level are reported in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

Table F.18: Target Industry Choice and Regional Revealed Advantage: Before and After 2006

	(1)	(2)	(3)
Dep.var	Target	Target	Target
Wave	2001-2006	>2006	whole
RCA^p	0.042	0.172***	0.120***
	(0.030)	(0.030)	(0.027)
RCA^n	0.047***	-0.044*	0.002
	(0.015)	(0.024)	(0.016)
AA	4.761**	5.330**	3.911***
	(1.858)	(2.415)	(1.379)
EDZ FE	YES	YES	YES
Cohort FE	YES	YES	YES
Industry×Province FE	YES	YES	YES
Observations	3,132	6,751	11,746

Notes: This table reports the results from Equation (B.1), estimated by PPML. The unit of observation is the EDZ-(2-digit) industry level. In column (1), we keep EDZs established between 2001 and 2006, column (2) includes those established after 2006, and column (3) uses the full sample. Standard errors clustered at the EDZ level are reported in parentheses. ***, ** and * denote significance at 1%, 5% and 10%, respectively.