Political Consolidation and Corporate Tax Burden *

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Abstract

I investigate the impact of political consolidation on the corporate tax burden, leveraging the variation from a nationwide reform in China that shifted governance autonomy from annexed to annexing political units. Using administrative firm-level tax payment data from 2008 to 2015 and a heterogeneous difference-in-differences approach, I find divergent shifts in the effective corporate income tax rate among affected areas following the annexation. On average, annexing areas experienced a 1.8% decrease in the effective tax rate, contrasted with a 1.4% increase in annexed areas. These changes worked to make corporate tax rates more uniform across annexed and annexing areas. Also, I find the observed effects are largely attributed to the adjustment in less transparent tax break programs, over which local governments possess greater discretion, underscoring the pivotal role of local taxation rearrangement along with the annexation. Heterogeneity analysis suggests political favoritism and tax competition are additional mechanisms contributing to these findings.

Keywords: Political Consolidation; Effective Corporate Tax Rate; Local Taxation Autonomy

1 Introduction

In recent decades, urbanization has progressed rapidly, with urban centers emerging as the primary living environment for most of the world's population.[1] As cities accommodate growing numbers of immigrants and capitalize on the agglomeration economy, urban sprawl often entails the expansion of jurisdictional boundaries to expand into neighboring areas (Duranton 2015; Dingel, Miscio, and Davis

*For providing helpful comments and feedback, I thank Manuela Angelucci, Jori Barash, Peter Bergman, Marika Cabral, Eric Chyn, Mike Geruso, Zijin He, Leigh Linden, Mu Yang Shin, Jinyeong Son, Stephen Trejo, Cody Tuttle, and seminar participants at the University of Texas at Austin. I thank Yizhen Gu for providing the data for this project.

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[1] According to the UN Population Division, the share of people living in urban areas increased from 43% to 56% between 1990 and 2020.

2021). To adapt to this trend and minimize institution-induced frictions (Loumeau 2020), numerous cities and municipalities have opted to enlarge their boundaries through the incorporation of adjacent lands or by merging with other cities or municipalities. This phenomenon of political consolidation has become a global trend, observed in both high-income regions such as Western Europe and North America (Blom-Hansen et al. 2016) and in the developing world, including nations such as China, India, and South Africa (Goto, Sekgetle, and Kuramoto 2021). For example, the US experienced over 60,000 municipal annexations between 1990 and 2005 (Edwards 2011), whereas South Africa had a reduction in the number of municipalities from 1,262 in 1996 to 257 in 2016 (Goto, Sekgetle, and Kuramoto 2021).

Corporate taxation significantly influences a range of economic outcomes, such as economic growth (Arnold et al. 2011; Gechert and Heimberger 2022), investment (Goolsbee 1998; House and Shapiro 2008; Djankov et al. 2010; Ohrn 2018), firm location choices (Giroud and Rauh 2019), employment and wages (Ljungqvist and Smolyansky 2014; Suárez Serrato and Zidar 2016; Fuest, Peichl, and Siegloch 2018; Kaymak and Schott 2023), executive compensation (Ohrn 2023), and leverage intensity (Heider and Ljungqvist 2015). Subnational governments often possess discretion to influence corporate tax burdens, either through adjusting local tax rates or by offering various tax breaks (Mast 2020), including deductions, credits, exemptions, and deferrals. Political consolidation, which entails the rearrangement of local taxation autonomy among involved jurisdictions, thus has the potential to impact local corporate tax rates and their downstream outcomes. Existing related research predominantly examines the overall fiscal effect of political consolidation — tax revenues or government expenditures (Sancton 1996; Hinnerich 2009; Reingewertz 2012; Miljan and Spicer 2015; Blesse and Baskaran 2016; Allers and Geertsema 2016; Li, Guo, and Zhang 2023). By contrast, studies about the impact of political consolidation on corporate tax burdens remain limited in the literature.

In an effort to fill this knowledge gap, this paper evaluates a large-scale political consolidation reform in China known as "prefecture annexation." This reform transferred governance autonomy from annexed counties to annexing prefectures. Several institutional features make China an ideal setting for studying the effects of political annexations on local taxation. First, China has experienced a massive wave of urbanization over the past 40 years, with the urban population share increasing from under 18% in 1978 to around 64% in 2020. [2] This rapid urbanization has prompted local governments to implement prefecture annexations throughout the country, providing rich variation to identify the impact of these events. Second, as one of the most economically decentralized nations, China's subnational governments hold significant discretion in local economic involvement (Xu 2011). This discretion forms a basis for local governments to exert influence on taxation alongside political consolidation. Third, whereas prior related research concentrates on developed economies, the study on China can

[2] Source: http://www.stats.gov.cn/xxgk/jd/sjjd2020/202105/t20210512_1817342.html.

provide insights into the dynamics of political consolidation in the developing-world context.

This paper uses administrative firm tax payment data encompassing around 700,000 firms annually from 2008 to 2015 and leverages variations in prefecture annexation across regions and over time. I estimate the effects of prefecture annexation on two types of affected areas: counties converted to new districts and thus annexed by prefectures (hereafter "annexed counties") and pre-existing districts under the direct control of prefectures before annexation (hereafter "host districts"), with the varied effects allowed between them.[3] The control group consists of regions not carrying out prefecture annexation. My identification strategy is a heterogeneous difference-in-differences (DID) model. This approach hinges on the fundamental assumption that absent prefecture annexation, firms in both treatment and control groups would have exhibited parallel trajectories over time. I present event-study evidence that supports this identification assumption. Moreover, I demonstrate the results are robust in a wide range of specifications with various sets of controls.

The empirical analysis uncovers disparate impacts on the corporate tax burden between annexed counties and host districts following the prefecture annexation. Taking the results from the preferred specification with a richer set of controls as the benchmark, I find that, on average, firms in annexed counties experienced an increase in the effective corporate income tax (CIT) rate of 0.32%, whereas firms in host districts had a decrease of 0.39% compared with firms from unaffected areas. These estimates imply impacts of 1.4% and -1.8%, respectively, relative to the mean effective CIT rate of 22%. In particular, these effects were achieved by adjustments of -11% and 13.6% in the overall CIT break intensity. Moreover, considering the initial-level differences, the observed shifts contribute to a more uniform corporate tax burden across the impacted regions post annexation. Additional robustness checks show these results are resilient against possible biases arising from spatial spillover effects, sample selection, and varying firm sizes.

I investigate the adjustments in various tax break policies that underpin the shifts in effective CIT rates. Notably, four well-defined types of corporate tax breaks are specified: those targeting small-size firms, those targeting firms with high R&D intensity, those targeting firms in ethnic minority areas, and tax credits for designated investments. Beyond these policies, firms report a substantial portion of uncategorized tax breaks, over which local governments exercise greater discretion due to lower transparency. The results indicate changes in effective CIT rates are largely driven by variations from the uncategorized CIT break intensity. This finding highlights the pivotal role of the rearrangement of local taxation autonomy, shifting from annexed counties to annexing prefectures, in shaping the divergent impacts of corporate tax burden following annexation.

[3] County and district denote two distinct forms of county-level jurisdiction within China's hierarchical government structure, with prefectures being the next political tier above them. Further elaboration is provided in section 2.1.

Furthermore, I explore additional mechanisms through two dimensions of heterogeneity analysis. The data are partitioned based on firms' ownership types and capital mobility. The result reveals state-owned and more capital-mobile firms, irrespective of their location in annexed counties or host districts, disproportionately benefit from the divergent shifts in effective CIT rates post annexation. This evidence suggests factors such as political favoritism and tax competition contributed to shaping the baseline results.

This paper contributes to several strands of literature. First and foremost, this paper contributes to a growing literature investigating the impacts of political consolidations. Although much of this literature focuses on impacts on economic outcomes such as GDP growth, productivity, and market integration (Hammond and Tosun 2011; Tang and Hewings 2017; Bo 2020; Han and Wu 2024), this paper is closer to studies about the fiscal effects of political consolidation (Sancton 1996; Hinnerich 2009; Reingewertz 2012; Miljan and Spicer 2015; Blesse and Baskaran 2016; Allers and Geertsema 2016; Li, Guo, and Zhang 2023). The majority of these studies investigate the potential of political consolidation to reduce government expenditures or enhance fiscal health through economies of scale. Notably, their analyses are centered on the overall fiscal impacts, leaving the domain of corporate taxation largely unexplored.

Building on this literature, my contributions are twofold. First, to the best of my knowledge, this paper is the first to provide large-scale causal evidence on the effect of political consolidation on corporate tax burdens across both acquiring and acquired areas. Second, this paper uses administrative firm-level data, encompassing detailed tax payment and operational information that spans all sectors and covers nearly 38% of total tax revenues in China. Leveraging these rich data, I can decompose the corporate taxation effect into various tax break categories. I also provide evidence of heterogeneity in impacts by firm characteristics, such as firm ownership and capital mobility.

More generally, this paper engages with the enduring debate between centralization and decentralization in governance, which can be traced back to Tiebout (1956) and Oates et al. (1972). A primary argument against decentralization is that it may lead to spatial externalities due to insufficient inter-jurisdictional coordination (Wildasin 1991; Saavedra 2000; Fredriksson and Millimet 2002; Loumeau 2020). My paper contributes to this literature by providing quasi-experimental evidence to show centralization reforms such as prefecture annexation can mitigate this inter-jurisdictional misalignment in corporate tax burden.

Third, this paper contributes to the vast literature regarding the determinants of effective corporate tax rates. On the institutional side, explanations encompass factors such as inter-jurisdictional competition (Felix and Hines Jr 2013; Mast 2020), balanced budget provisions (Poterba 1994), and the quality of governance (Dharmapala and Hines Jr 2009). Also, many studies have examined corporate-side factors,

including political spending by corporations (Slattery, Tazhitdinova, and Robinson 2023), capital mobility (Gordon and Bovenberg 1994; Langenmayr and Simmler 2021), and behaviors associated with manipulation or non-compliance (Chen et al. 2021). This paper expands the previous work by introducing a novel channel—political consolidation—and suggests its impact on effective corporate tax rates could be divergent across affected regions.

The remainder of this paper is organized as follows. Section 2 provides an overview of the relevant institutional background. Section 3 introduces the data sources, conducts some descriptive statistics, and outlines the empirical strategy employed in the study. Section 4 reports results and robustness checks. Section 5 presents supplementary analyses discussing mechanisms. Finally, section 6 concludes and highlights the main findings of the paper.

2 Institutional Background

2.1 Subnational Government Structure and Prefecture Annexation

As shown in panel (a) of Figure 1, four tiers of political units exist beneath the central government in China: province, prefecture, county, and township. This political hierarchy is marked by salient political centralization, wherein higher-level governments maintain control over lower levels. This control is primarily exercised through hierarchical personnel management, including the authority to promote and demote bureaucrats. Meanwhile, China exhibits a high degree of fiscal decentralization (Xu 2011). In 2014, subnational governments accounted for 60% of total tax revenues and 85% of total fiscal expenditures (Wingender 2018), a proportion exceeding the one observed in OECD countries. For context, the share of tax revenue and fiscal expenditures of non-federal governments in the US was around 34% and 48%, respectively. [4] As a result, the majority of government economic functions are executed at the subnational level, predominantly by prefectural and county governments. [5]

China has 333 prefectural level units with several different categories *dijishi, diqu, zizhizhou, meng*. This paper pins down the analysis to the 293 dijishi (prefectural-level cities), the major category at this level. To simplify, I use the term "prefecture" hereafter to refer to any prefectural-level unit, unless otherwise specified. Among 2,855 county-level units, two primary but distinct categories exist: counties and districts. [6] Established over 2,000 years ago, counties have been a remarkably stable

[4] Source: `https://www.oecd.org/tax/federalism/fiscal-decentralisation-database/`.

[5] Provincial governments are generally more involved in supervisory roles over prefectures and counties, rather than direct economic engagement. Township governments, limited by their minimal setup of functional departments, essentially act as agencies of their county-level counterparts.

[6] A third major type of county-level unit, "county-level cities," closely mirrors the county with respect to governance autonomy. I consolidate "county-level cities" with counties for simplicity.

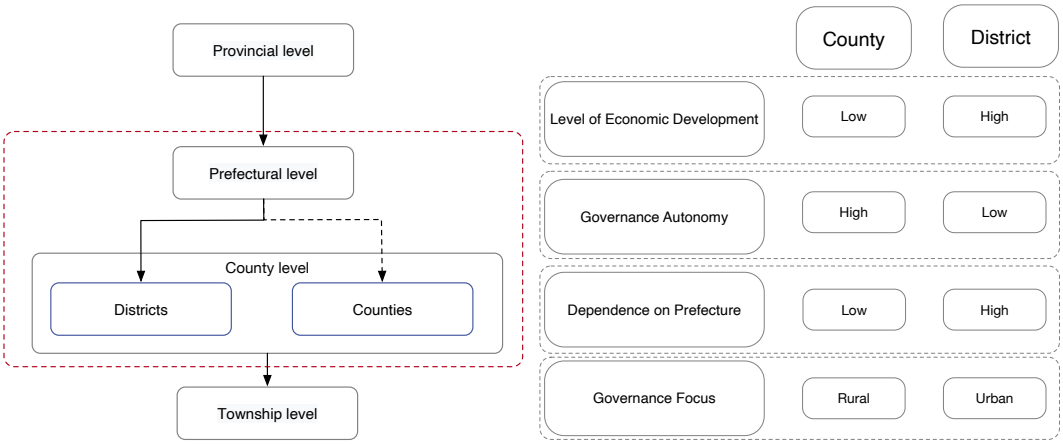
administrative unit, playing pivotal roles in local governance throughout China's history (Cartier 2015). As the foundational layer of the administrative system, counties have been deeply involved in local governance issues, including taxation, judiciary, and public security. Historically, due to asymmetric information and widespread economic activities in an agricultural era, counties were granted significant governance autonomy. This pattern largely persists to the present day, particularly in rural areas. Each county, equipped with a full array of functional departments catered to a range of governance issues, operates somewhat as an "independent country," except for domains such as diplomacy and national defense.

Districts—a relatively recent concept—first emerged in metropolitan areas such as Beijing and Shanghai at the onset of the industrialization era. Initially, each district corresponded to a specific built-up area within a city. Subsequent districts were established adjacent to these original ones, extending beyond built-up areas yet generally maintaining an urban focus. In China, a "prefecture" typically denotes a city (Chen, Gu, and Zou 2022), often comprising an urban core formed by one or more contiguous districts and surrounding rural territories constituted by counties. As illustrated in panel (b) of Figure 1, districts differ from counties not only in economic development levels and urbanization rates but also in the degree of governance autonomy they possess. Driven by the principles of agglomeration economies in urban regions, district governments are structured more like branches of their respective prefecture governments, with major policy decisions made at the prefecture level and implementation delegated to districts. Also, districts exhibit a substantial fiscal reliance on the prefectures, because a majority of the prefecture-level expenditures flow into districts. Hence, an entire group of districts within a prefecture, rather than individual districts, present a more apt and analogous comparison to counties in terms of governance independence.

Since the rapid economic growth that began in the 1980s, China has experienced a significant wave of urbanization, challenging the capacities of existing districts and progressively encroaching into surrounding rural areas. In response to this trend, a number of counties have been reclassified as districts. Specifically, in 1979, 413 districts and 2,137 counties existed, but by 2021, these figures had shifted to 977 and 1,866, respectively. [7] From a governance perspective, this political reform essentially transfers governance autonomy from the annexed counties (now new districts) to their overseeing prefectures, a process referred to as prefecture annexation. Previous literature has also described this reform as "city-county merger" or "incorporating counties into prefectures reform" (Tang and Hewings 2017; Han and Wu 2024). Panel (a) of Figure 2 illustrates an instance of prefecture annexation in *Baoding*, a prefecture near Beijing. In 2015, three counties, *Mancheng, Qingyuan,* and *Xushui* (shown as green polygons), bordering the pre-existing districts (shown as red polygons), were

[7]The transformation of counties into districts does not adhere to a strict one-to-one pattern. Moreover, other types of political reforms also influence the number of districts and counties.

Figure 1: Subnational Government Structure in China



(a) Subnational Government Hierarchy (b) Comparison between Counties and Districts

Note: Panel (a) gives the four-tiered subnational government hierarchy in China. Panel (b) illustrates the differences between counties and districts.

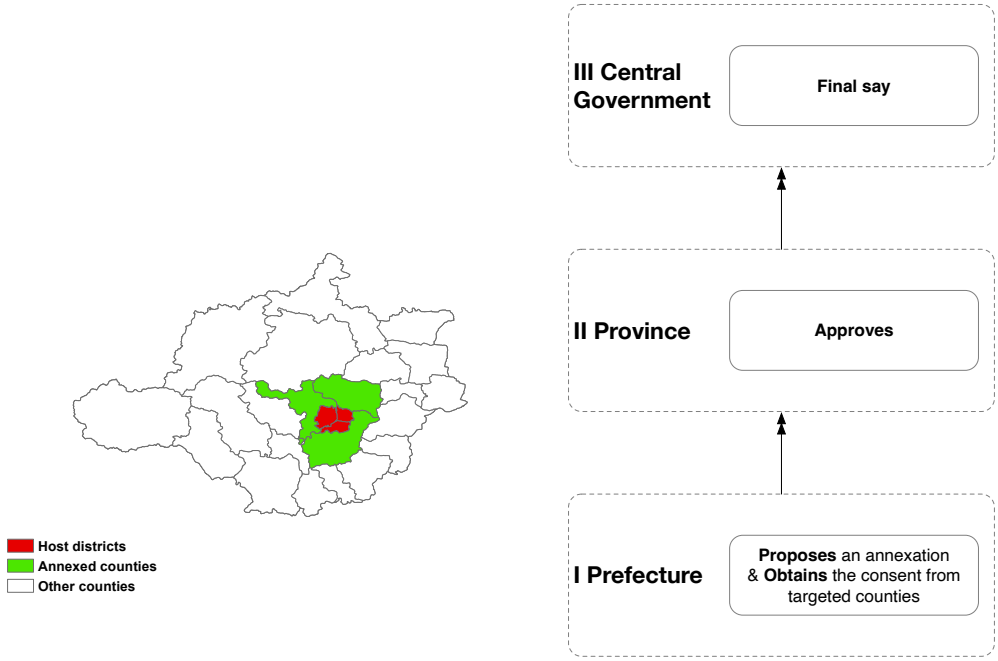
converted to new districts. Through this annexation, the prefecture of *Baoding* significantly expanded its directly governed territorial extent.

The process of prefecture annexation in China occurs without direct voter approval, similar to the involuntary-style municipal annexation observed in the Sunbelt region of the US (Bell 2019). As illustrated in panel (b) of Figure 2, the procedure of prefecture annexation is initiated by prefectures, which submit a proposal, including a roster of counties for annexation, to the provincial government. In practice, before submitting the proposal, the prefecture usually needs to inform the county governments to seek their consent. If the provincial government approves the request, the plan will proceed to the central government, which has the final say.

This procedure is subject to many political and economic factors. Generally, candidate counties for annexation are those geographically contiguous to existing districts and exhibiting superior economic performance relative to other counties. These attributes form the incentives for prefectures to initiate the annexation proposal. To obtain consent from targeted counties beyond the political leverage, prefectures may provide additional benefits, such as fiscal subsidies or support in local bureaucrats' promotion. Moreover, provincial and central governments weigh their own considerations in this process. For example, provincial governments might resist prefecture annexation requests, because the share of tax revenues they can extract from counties would go down once counties are converting to districts. Also, the central government is cautious of an overly rapid rate of prefecture annexation, particularly if it risks exacerbating overurbanization. In such instances, annexation applications might face rejection or postponement.

Although prefecture annexation is not a random experiment, this procedure offers some mitigation of selection bias concerns. The reason is that individual firms, the primary unit of analysis in this paper, are not participants in the annexation process. Their exclusion ensures the observed effects on firms are more likely attributable to the annexation itself rather than the firms' own strategic actions or unobservable characteristics.

Figure 2: Illustrations of Prefecture Annexation



(a) The Annexation Occurred in Prefecture *Baoding* (b) The Procedure of Prefecture Annexation

Note: Panel (a) refers to the annexation that occurred in 2015 in Prefecture *Baoding*. Panel (b) demonstrates the political procedure of prefecture annexation.

2.2 Corporate Tax Break Policies

Tax collection is a fundamental function of governments. The National Bureau of Statistics in China (NBS) classifies taxes into three broad categories: goods and services tax (GST), income tax, and property and behavior tax (PBT). GST includes subcategories such as the value-added tax (VAT), business tax, and excise tax.[8] Income tax is sourced from both corporations and individuals. Meanwhile, PBT comprises property tax, resources or land-related taxes, stamp taxes, and so on. The bulk of tax revenue stems from three corporate taxes: VAT, corporate income tax (CIT), and business tax. According to the NBS, these three taxes alone contributed to 62% of total tax revenue—divided into 26%, 21%, and 15% shares, respectively, in 2011.

[8]The business tax, which primarily targets service-providing firms, operates as a service pricing sales tax.

This paper concentrates on CIT for two reasons: First, the VAT and business tax belong to the indirect tax, which means they can be passed onto the consumers as part of the good or service price. Hence, they are not a good measure of the actual corporate tax burden. Second, in 2012, China initiated a progressive tax reform integrating business tax into VAT, and this reform was fully implemented by 2016. This timeframe coincides with the period analyzed in this paper, potentially confounding the effects on these taxes.

An important feature of China's tax system is that the central government sets statutory rates and bases for all major taxes (Wingender 2018), with no exception for CIT. Previously, CIT operated under a dual-track system differentiated by ownership type. Foreign firms were typically taxed at lower rates of 15% or 24%, whereas domestic firms faced a higher 33% rate. This changed with the implementation of the Enterprise Income Tax Law in January 2008, which unified the statutory CIT rate to 25% for all firms.

In practice, governments often circumvent tax code restrictions by employing tax breaks such as deductions, credits, exemptions, and deferrals, to impact firms' effective CIT rates. To promote economic growth, equality, and technological advancement, the central government offers preferential tax policies to small-sized firms, high-tech or R&D-focused firms, businesses in ethnic minority or underdeveloped regions, and those investing in advanced equipment. Local governments, as policy implementers, have significant influence over these programs, from determining eligibility to disseminating policy information (Cui, Hicks, and Xing 2022). Beyond these categories, local governments can provide additional tax incentives to firms under their jurisdictions. A prevalent approach is offering favorable effective tax rates to businesses entering local Economic and Technology Development Zones (ETDZ). Additionally, motivated by local protectionism, many governments prioritize tax incentives for local businesses in competition with outsiders. Compared with those national tax break programs, local governments have greater discretion over the locally crafted categories, due to reduced transparency and less oversight from the central government.

In addition, firms also have flexibility in manipulation to gain tax incentives. One method is through tax evasion and engaging in corrupt practices (Chalendard et al. 2023). Another example is the bunching behaviors in which firms may reclassify unrelated expenses as R&D investments, enabling them to surpass policy-based thresholds and secure larger tax reductions (Chen et al. 2021).

3 Data and Methodology

3.1 Data

Firm-level tax payment data. The data used in this paper come from the National Tax Survey Database (NTSD), which is jointly collected by the State Administration of Tax (SAT) and the Ministry of Finance (MOF). The NTSD draws its sample from the entire population of corporate taxpayers, employing a stratified approach that takes into account firms' total sales, industry, and types of taxes payable (Liu and Mao 2019). This large tax database covers approximately 700,000 firms annually, which represents approximately 20% of China's total output and 38% of total tax revenues (Cao and Mao 2022). The NTSD stands out due to its broad coverage of various sectors and regions, as well as its inclusion of numerous small and young firms that typically receive limited representation in other firm-level datasets in China. [9] As a result, recent research on tax-related topics has increasingly used the NTSD (Liu and Mao 2019; Chen et al. 2021; Chen et al. 2023).

The NTSD provides detailed information on the characteristics and operational conditions of each firm. Crucially, it includes comprehensive variables related to firms' tax payments, such as the amounts of payable tax, tax deductions, exemptions, credits, and deferrals for various types of taxes. The majority of a firm's tax burden stems from VAT, CIT, and business tax. As discussed in section 2.2, this paper focuses on the CIT in the empirical analysis.

I exclude data for 2007, the earliest year available in the NTSD, from the analysis due to the existence of the ownership-based dual-track CIT system, which had not yet been abolished. In addition, data after 2015 are not available, so the sample period is defined as 2008–2015. I exclude firms from the four provincial-level prefectures—Beijing, Shanghai, Tianjin, and Chongqing—from the dataset, due to the analogous level of autonomy of districts and counties within these prefectures, which suggests annexations may not have a comparable impact as in other areas. Finally, to avoid the potential influence of previous annexations, I exclude districts that changed status from counties between 1999 and 2007.

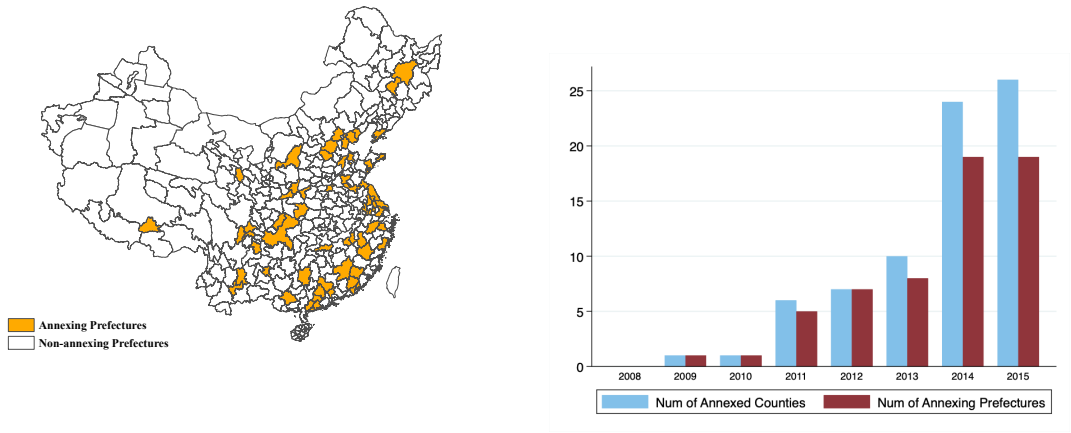
I clean the data by dropping firms with reporting issues, such as non-positive employee numbers, negative total or fixed assets, and negative sales or outputs. The sample is further refined by excluding self-employed firms or those with sales below 50,000 RMB (approximately 8,000 USD) to ensure data quality, because such firms are more likely to report their operational information inaccurately. I adopt 2-digit CIC (Chinese Industrial Classification) codes to classify industries, which broadly correspond

[9] For instance, the widely used Annual Survey of Industrial Firms (ASIF) encompasses only large firms with annual sales no less than 5 million RMB (about $650,000) in the manufacturing and mining sectors.

to 3-digit NAICS (North American Industry Classification System) codes. [10] Importantly, I drop from analysis firms that switched locations (reporting different region codes) during the sample period. Lastly, I winsorize the distribution of variables at the upper and lower 1st percentile to alleviate the influence of outliers in the data.

Information of prefecture annexation roll-out. I extract the name and timing of each prefecture annexation from the administration information platform operated by the Ministry of Civil Affairs (MCA) in China. This platform comprehensively records all approved administrative changes over time. [11] I focus on annexations between 2008 and 2015, aligning with the timeframe covered by the NTSD. In this interval, 75 counties were transformed into districts across 60 prefectures. Figure 3 depicts the spatial and temporal distribution of these annexations. I note they occurred nationwide and exhibited a faster pace since 2013.

Figure 3: Prefecture Annexation Roll-out: 2008–2015



(a) Geographical Distribution (b) Annual Number of Cases

Note: Panel (a) depicts the spatial distribution of prefectures with annexation during 2008–2015. Panel (b) plots the annual number of prefecture annexations during 2008–2015. Data source: China's Ministry of Civil Affairs (MCA).

3.2 Descriptive Analysis

The working sample is categorized into three groups for descriptive statistical analysis based on firm locations: annexed counties, host districts, and areas unaffected by prefecture annexation. In addition to the effective CIT rate, I also construct the measure of CIT break intensity as below:

$$\text{CIT break rate} = \frac{\text{total tax break}}{\text{taxable income}} = \text{statutory CIT rate} - \text{effective CIT rate}, \tag{1}$$

[10] In 2011, the industry classification code system was updated. To maintain comparability across the entire sample period, I align newer industry codes with their older counterparts.

[11] Link: `http://xzqh.mca.gov.cn/map`.

where the statutory CIT rate is uniformly 25% for all firms in China since 2008. Digging into the composition of CIT breaks, four types are available in the NTSD—small-sized, high-tech, ethnic minority, and tax credits—with criteria set by the central government. Small-sized breaks apply to firms below certain thresholds in taxable income, employment, and assets. High-tech breaks are for firms with substantial investment in R&D or those involved in strategic industries such as software and integrated circuits. Ethnic-minority tax breaks target firms in underdeveloped areas, predominantly in China's western regions. Tax credits are granted to firms investing in specific equipment, notably for environmental protection and energy efficiency. Discrepancies between these specified categories and total tax breaks are classified as "other" or "uncategorized." Note firms reporting overall CIT breaks may opt to skip filling out associated break categories, causing missing values in these categories.

Table 1 represents the summary statistics of the major variables used in the empirical analysis. To reflect level differences at the jurisdiction level, I collapse these corporate tax-burden variables using taxable income as the weight. The average effective CIT rate is around 21.5% across the three groups, aligning with a 3.5% tax break rate. This significant disparity between the statutory and effective CIT rate is similar to the trends seen in the US (Dyreng et al. 2017). The composition of tax breaks primarily consists of high-tech and uncategorized programs, whereas other categories play a minimal role. Moreover, prior to annexation, annexed counties exhibited a lower average effective CIT rate than host districts. I also plot the trends of average effective CIT rates, situating them relative to the timing of annexations for the two treatment groups. As depicted in Figure 4, the pre-existing gap diminishes following the prefecture annexation. In addition, the significant heterogeneity among annexed counties and host districts provides a rationale for differentiating the two treatment groups in my identification strategy.

3.3 Empirical Strategy

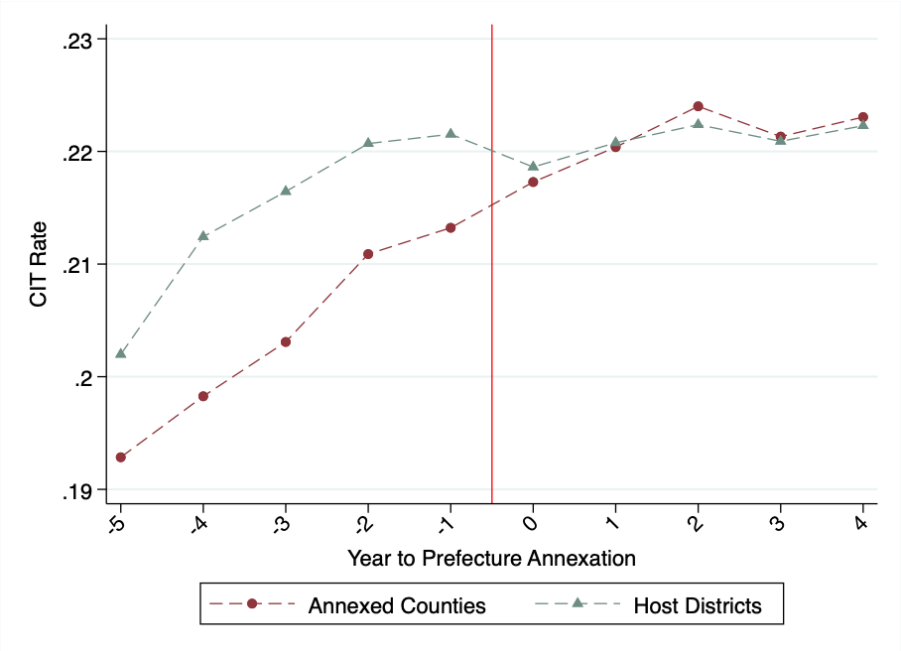
My research design uses two sources of variation arising from prefecture annexation: geographic variation, determined by whether a county is transformed into a district and annexed by a prefecture; and timing variation, based on the comparison between pre-reform and post-reform periods. I investigate whether changes in effective CIT rates following prefecture annexation differ between firms affected by the reform and those that remain unaffected. More importantly, to examine the potential heterogeneous effects among the affected areas, firms in host districts and annexed counties are considered separate treatment groups, enabling the capture of differential impacts between them.

Table 1: Summary Statistics

Variables	(1) Treatment 1: annexed county (Pre-annexation)			(2) Treatment 2: host district (Pre-annexation)			(3) Control Group		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
Corporate Tax Rate and Tax Break Intensity									
Effective CIT rate	0.206	0.064	36,111	0.215	0.057	239,165	0.215	0.058	1,329,176
CIT Break Rate									
Overall	0.044	0.064	36,111	0.035	0.057	239,165	0.035	0.058	1,329,176
Small Size	0.00	0.01	29,843	0.00	0.01	204,893	0.00	0.01	1,102,694
High-Tech	0.02	0.04	29,820	0.02	0.04	204,029	0.02	0.04	1,101,016
Ethnic Minority	0.001	0.012	29,636	0.000	0.006	203,407	0.001	0.007	1,096,655
Tax Credit	0.003	0.019	34,450	0.001	0.011	226,978	0.002	0.015	1,262,549
Uncategorized	0.02	0.05	30,156	0.02	0.05	206,749	0.02	0.04	1,113,782
Firm Characteristics (million RMB)									
Employee	179.568	313.682	36,111	122.490	285.459	239,165	145.330	297.321	1,329,176
Taxable Income	8.68	24.41	36,111	8.66	26.75	239,165	8.40	26.92	1,329,176
Total Sale	145.81	340.98	36,111	161.06	416.62	239,165	139.22	378.72	1,329,176
Total Asset	184.363	598.000	35,931	189.648	672.016	238,533	191.690	712.581	1,326,650
Capital Mobility	0.773	0.211	35,531	0.861	0.184	234,169	0.809	0.214	1,295,148

Note: The table presents summary statistics of effective CIT rate, CIT break rate over different categories, and other firm characteristics from the NTSD. The effective CIT rate is defined as the ratio of actually paid tax to taxable income. The CIT break rate is defined as the ratio of tax breaks to the taxable income. All monetary variables are deflated by the GDP price deflator and reported in million RMB in 2008. Variables are winsorized at the 1% level.

Figure 4: Average Effective CIT Rates in Annexed Counties and Host Districts over Time



Note: This figure depicts the trends of effective CIT rates for annexed counties and host districts. The timeline ranges from -5 to 4, corresponding to years relative to the occurrence of prefecture annexation. The statistics provided represent the yearly average for the two groups weighted by firms' taxable incomes.

To this end, I employ a heterogeneous DID approach and estimate the following model:

$$\begin{aligned} Y_{isjpt} =& \beta_1 Annex_j * Post_t + \beta_2 Annex_j * Post_t * Host_j + \mathbf{X}'_{it}\beta_{\mathbf{3}} \\ &+ \gamma_i + \alpha_{st} + \delta_{pt} + \epsilon_{isjpt}, \end{aligned} \tag{2}$$

where Y_{isjpt} denotes firm i's effective CIT rate in industry s, county/district j, province p, and year t. $Annex_j$ is an indicator that equals 1 for firms situated in annexed counties or host districts, and 0 otherwise, and $Post_t$ is an indicator that equals 1 in the years following annexation, and 0 otherwise. The variable $Host_j$ is an indicator that equals 1 for firms in host districts, and 0 otherwise. The coefficients of interest are β_1 and β_2. β_1 measures the effect of annexation on firms in annexed counties, while β_2 represents the "additional" impact on firms in host districts compared with those in annexed counties. The net effect on firms in host districts is the sum of β_1 and β_2.

I include a comprehensive array of fixed effects in this specification. Firm-level fixed effects γ_i account for constant mean differences in outcomes across firms over time, enabling the estimates to be interpreted as within-firm effects. Industry-year fixed effects α_{st} control for industry-specific shocks, whereas province-year fixed effects δ_{pt} control for province-specific shocks. $\mathbf{X}_{it}$ denotes a set of time-varying controls at the firm level. Standard errors are clustered at the prefecture level throughout the analysis.

My identification assumption relies on the fact that, in the absence of prefectural annexation, treated firms would have exhibited similar trends in tax burdens to firms in the control group. To explore the validity of this assumption, I replace the treatment indicators $Annex_j * Post_t$ and $Annex_j * Post_t * Host_j$ in the baseline model with a thorough set of dummies, ranging from five years before the annexation to four years after:

$$Y_{isjpt} = \sum_{k=-5}^{4} \beta_{1k} T_{jt}^k + \sum_{k=-5}^{4} \beta_{2k} T_{jt}^k * Host_j + \mathbf{X}'_{it}\beta_{\mathbf{3}} + \gamma_i + \alpha_{lt} + \delta_{pt} + \epsilon_{isjpt}. \tag{3}$$

Here, T_{jt}^k denotes the event-study dummy variables, which equal 1 if the prefecture annexation is k years away for a firm, and 0 otherwise. The omitted year category is $k = -1$, so the estimated effects β_{1k} and β_{2k} are relative to the year preceding the initiation of the prefecture annexation. I expect β_{1k} and β_{2k} to be 0 for $k < 0$, providing evidence that no pre-trends exist. Additionally, the lags of annexation ($k > 0$) contribute to identifying dynamic effects.

4 Results

4.1 Baseline Results

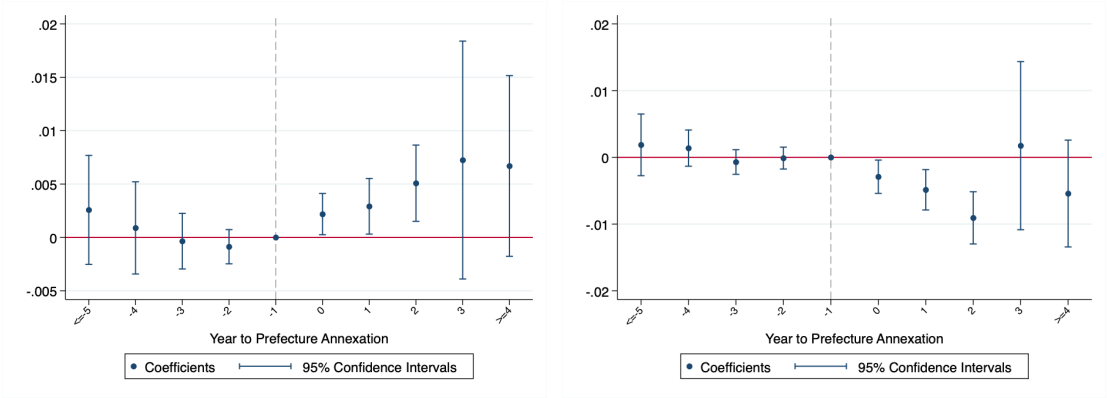
I now proceed to the primary analysis that examines the effects of prefecture annexation on effective CIT rates. First, I visually analyze the dynamic effects using equation 3, plotting the coefficients along with the 95% confidence intervals in Figure 5. The estimates of the dynamic effects on annexed counties (β_{1k}) and host districts ($\beta_{1k} + \beta_{2k}$) are reported respectively. The event-study results reveal that coefficients before annexations do not statistically differ from zero, supporting the validity of the parallel-trends assumption.

In light of the staggered implementation of prefecture annexation, counties or districts are incorporated into the treatment group at various times. As a result, areas experiencing annexation later may not be identifiable at event times 3 or 4, with a similar scenario applying to early consolidated areas. To make the coefficients comparable across event times, I conduct a robustness check by using a balanced sample with respect to the observed event time and appropriately report a shorter time window. Specifically, I refine the treatment groups to exclude counties or districts where the prefecture annexation occurred before 2011 or after 2013. This approach ensures the effects can be identified throughout a narrowed event-time window, ranging from -3 to 2. The results of the adjusted event study are presented in panels (a) and (b) of Figure 6. I also present the results of event studies using the method proposed by Sun and Abraham (2021) in panels (c) and (d) of Figure 6. Overall, the results from these alternative methods exhibit patterns similar to the unadjusted estimators based on equation 3.

The analysis of post-annexation coefficients in the event studies reveals significant heterogeneous effects between annexed counties and host districts. Specifically, firms in annexed counties experienced higher effective CIT rates following annexation, while firms in host districts observed the opposite pattern. These divergent dynamics after the annexations highlight the importance of examining the effects separately on firms in both areas to gain a comprehensive understanding of the implications of prefecture annexations. Evaluations that focus solely on overall or unilateral effects may fail to capture the complete picture. Furthermore, as the majority of prefecture annexations occurred after 2013, robust estimates are primarily observed for event times from 0 to 2. The standard errors for coefficients after event time 3 increase significantly, indicating reduced estimation accuracy in the later post-annexation periods.

Moving on to the regression analysis, I first present the results of estimating equation 2 for the effective CIT rate in Table 2. My estimates are consistent with the event study indicating divergent shifts between

Figure 5: Event Studies: Prefecture Annexation and Effective CIT Rates



(a) Effect on Annexed Counties (β_{1k})

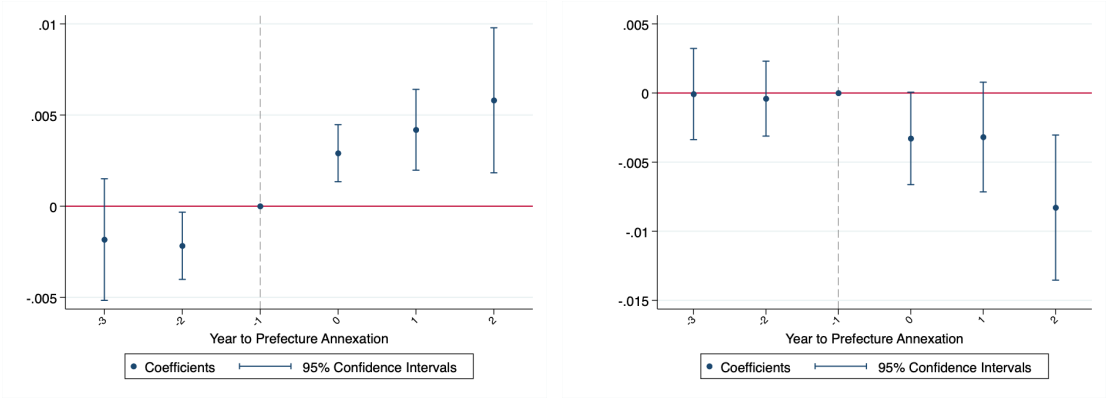
(b) Effect on Host Districts ($\beta_{1k} + \beta_{2k}$)

Note: This figure plots event-study coefficients for effective CIT rates following prefecture annexation, based on equation 3. Panel (a) refers to the effect on annexed counties (β_{1k}), and panel (b) depicts the effect on host districts ($\beta_{1k} + \beta_{2k}$). Firm fixed effects, province-year fixed effects, industry-year fixed effects, and firm-specific control variables are included in the specification. The coefficient for the relative year -1 is omitted, allowing all estimates to be interpreted relative to the first year prior to prefecture annexation. The standard errors are clustered at the prefecture level, and 95% confidence intervals are also presented.

the affected regions. Column (1) includes firm and year fixed effects to establish a DID framework. I gradually introduce more flexible fixed effects and firm-level control variables from column (2) to column (5). The coefficients remain stable across these specifications, although their magnitudes attenuate as including more flexible controls. Using column (5), the highly saturated specification, as the baseline, I find the effective CIT rate increased by 0.32% for firms from annexed counties (β_1), whereas firms in host districts experienced a 0.71% reduction relative to their counterparts in annexed counties (β_2), implying that the effective CIT rate in host districts decreased by 0.39% ($\beta_1 + \beta_2$). Relative to the average effective CIT rate of 22%, these shifts represent a 1.4% increase in annexed counties and a 1.8% decrease in host districts.

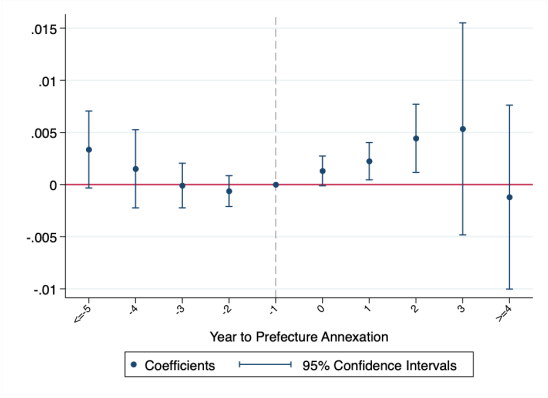
Although the pre-annexation estimates from event studies find no evidence of pre-trends, note the treatment assignment was not random but influenced by a combination of political and economic factors across different governmental levels. When focusing specifically on estimating β_2, namely, the "effect gap" between the two treatment groups, employing more nuanced controls to account for these factors becomes feasible. This can be achieved by refining province-year fixed effects into jurisdiction-year fixed effects, where a jurisdiction refers to a county or a set of districts within the same prefecture, defined by their level of governance independence. This method would absorb the coefficient β_1 and convert equation 2 into a triple-difference model. I present the refined estimate of β_2 in column (6), which is consistent with DID estimates and implies a 3% reduction relative to the mean effective CIT rate.

Figure 6: Adjusted Event Studies: Results from Alternative Approaches

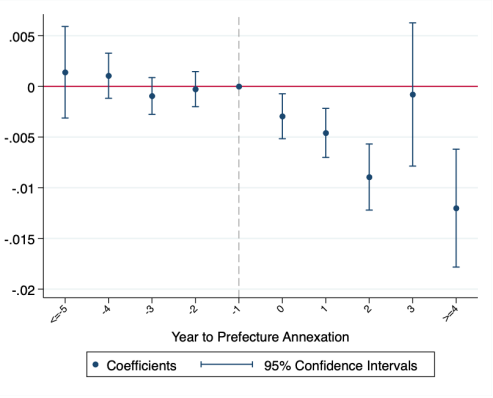


(a) Effect on Annexed Counties (β_{1k})

(b) Effect on Host Districts ($\beta_{1k} + \beta_{2k}$)



(c) Effect on Annexed Counties (β_{1k})



(d) Effect on Host Districts ($\beta_{1k} + \beta_{2k}$)

Note: This figure plots adjusted event-study coefficients for effective CIT rates following prefecture annexation using alternative methods. Panels (a) and (b) refer to the method of the balanced sample with respect to the event times. Panels (c) and (d) apply the approach proposed by Sun and Abraham (2021). Panels (a) and (c) refer to the effect on annexed counties (β_{1k}), and panels (b) and (d) depict the effect on host districts ($\beta_{1k} + \beta_{2k}$). Firm fixed effects, province-year fixed effects, industry-year fixed effects, and firm-specific control variables are included in the specification. For Panels (a) and (b), the reported event-time window is restricted to -3 to 2. The coefficient for the relative year -1 is omitted, allowing all estimates to be interpreted relative to the first year prior to prefecture annexation. The standard errors are clustered at the prefecture level, and 95% confidence intervals are also presented.

To fully understand the implications of changes in effective CIT rates following prefecture annexation, taking into account the level differences between the treatment groups is essential. Table 1 and Figure 4 demonstrate host districts maintain a higher effective CIT rate on average than annexed counties before prefecture annexation. Combined with the significantly negative estimates of β_2 in Table 2, I find prefecture annexation has contributed to harmonizing the effective CIT rate across the affected areas.

Table 2: Baseline Results: Prefecture Annexation and Effective CIT Rates

	Effective CIT Rate					
	(1)	(2)	(3)	(4)	(5)	(6)
Annex_post (β_1)	0.0067***	0.0040***	0.0043**	0.0032**	0.0032**	
	(0.0025)	(0.0014)	(0.0021)	(0.0014)	(0.0014)	
Annex_post_host (β_2)	-0.0155***	-0.0103***	-0.0103***	-0.0070***	-0.0071***	-0.0066***
	(0.0037)	(0.0018)	(0.0032)	(0.0017)	(0.0017)	(0.0002)
$\beta_1 + \beta_2$	-0.0088**	-0.0063***	-0.0060*	-0.0038***	-0.0039***	
	(0.0034)	(0.0012)	(0.0031)	(0.0011)	(0.0011)	
Mean of Outcome	0.2214	0.2214	0.2214	0.2214	0.2214	0.2214
Implied % impacts (β_1)	3.0	1.8	1.9	1.4	1.4	
Implied % impacts ($\beta_1 + \beta_2$)	-4.0	-2.8	-2.7	-1.7	-1.8	
Implied % impacts (β_2)						-3.0
Observations	1,521,754	1,521,754	1,521,754	1,521,754	1,518,050	1,517,422
R-Squared	0.6421	0.6516	0.6493	0.6570	0.6570	0.6708
Firm FE	X	X	X	X	X	X
Year FE	X					
Province-Year FE		X		X	X	
Industry-Year FE			X	X	X	X
Districts/County-Year FE						X
Firm Characteristics					X	X

Note: This table reports the estimated effects of prefecture annexation on the effective CIT rate, based on equation 2. Column (1) begins the estimation by controlling for firm and year fixed effects. Column (2) adds province-year fixed effects. Column (3) incorporates industry-year fixed effects. Column (4) includes both of these supplementary fixed effects. Column (5) further adds firm-specific control variables. Column (6) replaces the province-year fixed effects with the jurisdiction-year fixed effects, and thus converts the specification into a triple-difference model. β_1 refers to the effect on annexed counties. β_2 measures the "additional" effect on host districts relative to annexed counties. $\beta_1 + \beta_2$ captures the effect on host districts. The standard errors are in parentheses and clustered at the prefecture level. * significant at 10%; ** significant at 5%; *** significant at 1%.

4.2 Robustness Checks

Beyond the primary robustness analysis across different sets of controls reported in Table 2, I conduct additional robustness checks to validate my findings:

Refining the control group. Given the prevalent competition among local governments, it is natural to doubt that the observed changes in the effective CIT rate among affected areas may induce nearby local governments to strategically adjust their corporate tax policies, potentially leading to spillover effects in the surrounding areas. To address this concern, I identify a "nearby group" comprising counties within annexing prefectures that were not annexed. These counties, due to their proximal geographical and political ties to the annexation entities, are presumed to be more susceptible to spillover impacts than counties and districts in other prefectures. I thus refine the control group by excluding firms located in the nearby group. As shown in column (1) of Table 3, the estimates do not deviate from the baseline ones. Moreover, to capture the possible spillover effect, I substitute the original two treatment groups with the nearby group and collapse the specification to a canonical DID model. The estimate on the

nearby group, reported in column (2), is neither statistically nor economically significant. Overall, the evidence does not support the presence of spillover effects, corroborating the validity of the baseline specification.

Checking endogenous sampling. The baseline sample is composed of an unbalanced panel, notable for the frequent entries and exits of firms. The dataset's generation through stratified random drawing, along with the control for major stratified factors in the specification, ensures selection bias is unlikely to undermine the credibility of my findings. To further validate it, I refine the sample to include only firms consistently present throughout the sample period. The number of observations shrinks from around 1.5 million to 0.16 million. Column (3) of Table 3 shows the estimates from the balanced panel align with the baseline ones, albeit with a larger magnitude for the effect on annexed counties (β_1). Considering that larger firms are more likely to remain in the balanced panel, the greater magnitude suggests that larger firms from annexed counties experienced a more pronounced increase in effective CIT rates compared with smaller firms. Additionally, a large proportion of firms in the NTSD reported either missing or zero taxable income, contributing to a high missing rate (around 50%) for the CIT-rate measure in the refined sample. The estimates could be biased if firms respond to prefecture annexation by strategically reporting a zero or missing taxable income. I thus run regressions by using the proportions of firms with zero or missing taxable incomes as dependent variables. The non-significant estimates, presented in Table A1, do not support this hypothesis, further alleviating the concern of sample selection bias.

Accounting for firms' size: The baseline analysis reflects average effects on effective CIT rates, assigning equal weight to each observation. This approach may obscure the estimates' interpretation at the aggregate level, especially if the variation in effective CIT rates is predominantly attributed to either smaller or larger firms. [12] I thus run a weighted regression using each firm's taxable income as the weight and report the results in column (4) of Table 3. Note the firms in the treatment groups are weighted by the taxable incomes from their initial pre-annexation period to mitigate the risk of the endogenous weighting factor. Compared with the results from unweighted regression, the increased coefficient magnitude in annexed counties indicates that the variation in effective CIT rates in these areas is more driven by larger firms, echoing the finding from the balanced panel regression. Moreover, column (5) presents analogous results derived from the county-level regression, generated by aggregating the sample into county level, weighted by firms' taxable incomes.

[12] Figure A1 shows the histograms of firms' effective CIT rates and taxable incomes

Table 3: Robustness Checks

	Effective CIT Rate				
	(1) Removing the Nearby Group	(2) Replacing the Treatment Group	(3) Balanced Panel	(4) Weighted Regression	(5) County-Level Regression
Annex_post (β_1)	0.0037**		0.0073**	0.0060*	0.0073*
	(0.0016)		(0.0036)	-0.0031	(0.0041)
Annex_post_host (β_2)	-0.0075***		-0.0106**	-0.0088***	-0.0116**
	(0.0017)		(0.0042)	-0.0031	(0.0048)
$\beta_1 + \beta_2$	-0.0038***		-0.0033*	-0.0029***	-0.0043*
	(0.0012)		(0.0018)	(0.0010)	(0.0023)
Nearby_post		0.0010			
		(0.0014)			
Mean of Outcome	0.2209	0.2223	0.2143	0.2133	0.2117
Observations	1,356,530	1,180,006	166,175	1,483,486	20,968
R-Squared	0.6587	0.6538	0.6076	0.7393	0.4833
Firm FE	X	X	X	X	
County FE					X
Province-Xear FE	X	X	X	X	X
Industry-Xear FE	X	X	X	X	
Firm Characteristics	X	X	X	X	

Note: This table reports robustness checks to the baseline results. The applied specification is based on equation 2 except for column (5). Column (1) removes from the control group the counties within annexing prefectures that are not being annexed ("nearby group"). Column (2) replaces the initial treatment group with the "nearby group." Column (3) restricts the sample to a balanced panel that includes only firms that consistently show up throughout the sample period. Column (4) uses firms' taxable incomes as the weight. Column (5) aggregates the sample at the the county level. β_1 refers to the effect on annexed counties. β_2 measures the "additional" effect on host districts relative to annexed counties. $\beta_1 + \beta_2$ captures the effect on host districts. The standard errors are in parentheses and clustered at the prefecture level. * significant at 10%; ** significant at 5%; *** significant at 1%.

5 Supplementary Analyses

5.1 Adjustments in Corporate Tax Break Intensity

In this section, I examine the effects of prefecture annexation on different CIT break categories and explore the main driving force behind the changes in the effective CIT rate. Regressions are based on equation 2, using various CIT break rates as dependent variables. Consistent with the preferred specification with a richer set of controls, I add firm fixed effects, province-year fixed effects, and industry-year fixed effects into regressions. [13]

Column (1) of Table 4 reports the estimated effect of prefecture annexation on the overall CIT break rate, which exactly inversely mirrors the changes in the effective CIT rate, consistent with their relation as defined in equation 1. Relative to the mean CIT break rate of 2.9%, these coefficients imply larger percent impacts than those observed from effective CIT rates. On average, firms from annexed counties experienced an 11% decrease in the CIT break rates, whereas firms from host districts had an increase of 13.6%.

[13] Figure A2 plots event-study results for these CIT break rates.

Columns (2)–(5) of Table 4 offer estimates for impacts on CIT break rates of the four well-defined programs, including small-sized, high-tech, ethnic minority, and tax credits. I first detect no significant effects for firms in annexed counties in either of these categories. Moving toward the impacts on host districts, I observe a substantial increase in the small-sized CIT break program, suggesting a shift toward a more small-business-friendly environment in these areas following annexation. However, if I take into account firms' scale of taxable income, this category's share in overall CIT breaks is quite minimal (around 1%). Hence, this increase exerts a limited impact on the average effective CIT rate. This observation is confirmed by the weighted regression estimates presented in Table A2. Moreover, in contrast to the movement of the overall CIT break rate in host districts, the high-tech CIT break rate declined significantly, with an implied 15.7% impact. I find no significant effects in categories of ethnic minorities and tax credits.

Column (6) presents the estimated impact on the uncategorized CIT break rate. Distinct from the results above, the effects on this category demonstrate a pattern analogous to the overall CIT break rate, whether in annexed counties or host districts. Specifically, I find implied percent impacts of -35.2% and 14.5% on the uncategorized CIT break rate among annexed counties and host districts, respectively. As discussed in section 2.2, compared with these four well-defined CIT break programs, local governments possess greater discretion over those programs grouped into the uncategorized category due to reduced transparency. Consequently, the observed divergent shifts in the uncategorized CIT break rate echo the conjecture that the effect of prefecture annexation on effective CIT rates is primarily driven by the rearrangement of local taxation autonomy or discretion, shifting from annexed counties to annexing prefectures.

5.2 Heterogeneity by Firms' Ownership and Capital Mobility

In this section, I shed more light on the underlying mechanisms by performing heterogeneity analyses across firms' ownership and capital mobility. In China, state-owned enterprises (SOEs) operate under the oversight of governments at multiple levels, ranging from the central government to county-level governments. The majority of SOEs are overseen at the levels of prefectures and counties where the prefecture annexation unfolds. These SOEs inherently maintain closer relationships with governmental bodies than do private firms. This political favoritism affords them a spectrum of additional benefits, including bank loans with reduced interest rates, lower entry barriers, and favorable fiscal supports (Song, Storesletten, and Zilibotti 2011; Huang et al. 2017). I thus evaluate the impacts of prefecture annexation on private firms and SOEs separately and present the results in columns (1) and (2) of Table 5. In contrast to the regular divergent shifts among private firms, SOEs, whether in host districts or annexed counties, enjoyed decreased effective CIT rates post annexation.

Table 4: More Results: Prefecture Annexation and Adjustments in CIT Break Intensity

	CIT Break Rate					
	(1) Overall	(2) Small Size	(3) High-Tech	(4) Ethnic Minority	(5) Tax Credit	(6) Uncategorized
Annex_post (β_1)	-0.0032**	0.0002	-0.0003	-0.0000	0.0001	-0.0026**
	(0.0014)	(0.0007)	(0.0005)	(0.0001)	(0.0004)	(0.0011)
Annex_post_host (β_2)	0.0071***	0.0027**	-0.0005	0.0000	0.0001	0.0037***
	(0.0017)	(0.0011)	(0.0004)	(0.0001)	(0.0004)	(0.0012)
$\beta_1 + \beta_2$	0.0039***	0.0029**	-0.0008***	-0.0000	0.0002*	0.0011**
	(0.0011)	(0.0013)	(0.0003)	(0.0000)	(0.0001)	(0.0005)
Mean of outcome	0.0286	0.0159	0.0049	0.0002	0.0008	0.0074
Implied % impacts (β_1)	-11.0	1.2	-6.3	-4.6	16.6	-35.2
Implied % impacts ($\beta_1 + \beta_2$)	13.6	18.2	-15.7	-4.0	26.5	14.5
Observations	1,518,050	1,228,157	1,228,535	1,222,591	1,422,990	1,243,217
R-Squared	0.6570	0.7075	0.7727	0.5039	0.4109	0.6576
Firm FE	X	X	X	X	X	X
Province-Year FE	X	X	X	X	X	X
Industry-Year FE	X	X	X	X	X	X
Firm Characteristics	X	X	X	X	X	X

Note: This table reports the estimated effects of prefecture annexation on CIT break rates, based on equation 2. Categories of CIT breaks from Column (1)–(6) refer to overall, small-sized, high-tech, ethnic minority, tax credit, and uncategorized, respectively. All regressions include firm fixed effects, province-year fixed effects, industry fixed effects, and firm-specific control variables. β_1 refers to the effect on annexed counties. β_2 measures the "additional" effect on host districts relative to annexed counties. $\beta_1 + \beta_2$ captures the effect on host districts. The standard errors in parentheses are clustered at the prefecture level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Furthermore, local governments, in the context of tax competition under a decentralized economic structure, tend to favor firms with higher capital mobility (Grubert and Mutti 2000; Melitz and Ottaviano 2008; Bernard, Redding, and Schott 2011; Brülhart, Jametti, and Schmidheiny 2012). This preference stems from the ability of firms to "vote with their feet" by relocating their business to places with lower tax rates. To explore whether such preferential treatment was manifest in the process of prefecture annexation, I first construct a proxy for capital mobility for each firm, defined as the ratio of non-fixed assets to total assets. The underlying assumption is that firms with a smaller proportion of fixed assets can relocate their business more easily. I then divide the sample by whether a firm's capital mobility ranks in the top 50% or bottom 50% of the distribution. The estimated results, shown in columns (3) and (4) of Table 5, reveal the increase in effective CIT rates in annexed counties was mainly captured by firms with lower mobility. By contrast, more mobile firms in host districts experience a slightly greater reduction in tax burdens than their less mobile peers.

Collectively, SOEs and more mobile firms experienced favorable adjustments in their effective CIT rates following prefecture annexation. Beyond obtaining comparable tax reductions in host districts compared with private firms and less mobile firms, SOEs and more mobile firms were shielded from heightened corporate tax liabilities in annexed counties. This pattern suggests that along with the centralization of local taxation autonomy from annexed counties to annexing prefectures, political

favoritism and tax competition also play roles in shaping the observed effects of prefecture annexation on effective CIT rates.

Table 5: Heterogeneity Analysis by Firm Ownership and Capital Mobility

	Effective CIT Rate			
	(1) Private	(2) SOE	(3) Less Mobile	(4) More Mobile
Annex_post (β_1)	0.0038**	-0.0022	0.0041**	-0.0005
	(0.0016)	(0.0029)	(0.0019)	(0.0017)
Annex_post_host (β_2)	-0.0072***	-0.0013	-0.0077***	-0.0036*
	(0.0019)	(0.0032)	(0.0021)	(0.0022)
$\beta_1 + \beta_2$	-0.0034***	-0.0035**	-0.0036***	-0.0041***
	(0.0012)	(0.0014)	(0.0012)	(0.0010)
Mean of Outcome	0.2211	0.2190	0.2211	0.2231
Implied % impacts (β_1)	1.7	-1.0	1.9	-0.2
Implied % impacts ($\beta_1 + \beta_2$)	-1.6	-1.7	-1.6	-1.8
Observations	1,275,876	141,361	689,658	668,316
R-Squared	0.6557	0.7127	0.6580	0.6751
Firm FE	X	X	X	X
Province-Year FE	X	X	X	X
Industry-Year FE	X	X	X	X
Firm Characteristics	X	X	X	X

Note: This table reports the heterogeneity analysis for the baseline results regarding prefecture annexation and effective CIT rates. The results are derived by estimating 2, splitting the sample by firms' ownership or capital mobility. Columns (1)–4) refer to the subsample of private firms, SOEs, less mobile firms, and more mobile firms, respectively. All regressions include firm fixed effects, province-year fixed effects, industry-fixed effects, and firm-specific control variables. β_1 refers to the effect on annexed counties. β_2 measures the "additional" effect on host districts relative to annexed counties. $\beta_1 + \beta_2$ captures the effect on host districts. The standard errors clustered at the prefecture level are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

6 Conclusion

This paper contributes to the literature on the impact of political consolidation on the corporate tax burden, exploiting the roll-out of prefecture annexation in China. This consolidation reform converts independent counties into prefecture-controlled districts. Leveraging administrative firm-level data with detailed tax payment information from 2008 to 2015, I employ a heterogenous DID model as the identification strategy.

My empirical results reveal distinct shifts in the effective CIT rates following prefecture annexation through adjustments in CIT break policies. On average, annexed areas exhibited a 1.8% increase in effective CIT rates, whereas annexing areas experienced a 1.4% decrease relative to the mean effective CIT rates. These changes led to a more uniform corporate tax burden across affected areas when considering their pre-annexation level differences. Supplementary analysis of the adjustments in CIT

break intensity shows the observed effects are predominantly linked to the "uncategorized" tax break category. This category consists mainly of locally crafted and less transparent tax break programs, over which local governments have greater discretion, underscoring the key role of shifting local taxation autonomy from annexed areas to annexing areas following annexation. Furthermore, I show SOEs and more capital-mobile firms, whether situated in annexed counties or host districts, generally reaped greater benefits (or incurred fewer losses) from the shifts of effective CIT rates.

This paper has important policy implications. First, political consolidation is a prevalent phenomenon in the global trend of urbanization. Second, the debate over the optimal corporate tax rate remains a critical topic among policymakers, due to its substantial influence on a variety of economic outcomes and overall social welfare (Goolsbee 1998; Djankov et al. 2010; Arnold et al. 2011; Suárez Serrato and Zidar 2016; Kaymak and Schott 2023). Hence, in economies where subnational governments possess corporate taxation autonomy, particularly through adjusting local corporate tax break policies, the impacts of political consolidation on the effective corporate tax rate should be taken into account in pursuing the goal of the optimal corporate tax rate.

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Appendix A Supplementary Tables and Figures

Table A1: Sensitivity Test: Firms Reporting Zero or Missing Taxable Income

	% firms with missing taxable income	% firms with zero taxable income
	(1)	(2)
Annex_post (β_1)	0.0087	-0.0039
	(0.0055)	(0.0068)
Annex_post_host (β_2)	-0.0066	0.0037
	(0.0048)	(0.0087)
$\beta_1 + \beta_2$	0.0021	-0.0002
	(0.0035)	(0.0062)
Mean of Outcome	0.1093	0.3985
Observations	3,459,603	3,459,603
R-Squared	0.5913	0.6176
Firm FE	X	X
Province-Year FE	X	X
Industry-Year FE	X	X
Control Variables	X	X

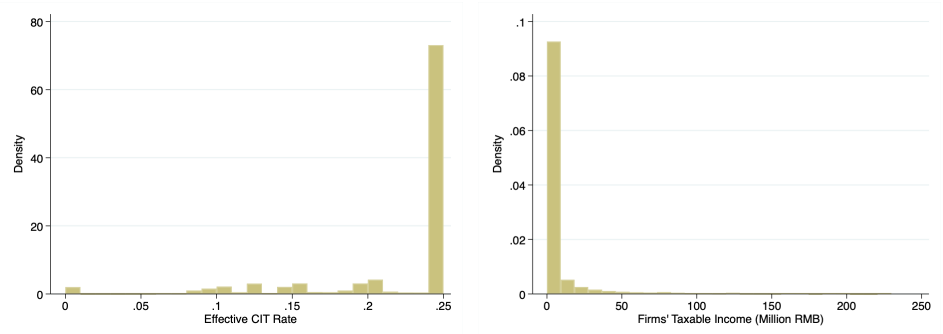
Note: This table reports additional robustness checks to test possible firms' strategic behavior of reporting non-positive taxable incomes. The estimation is based on equation 2. Dependent variables in columns (1) and (2) are the proportion of firms with missing taxable income and zero taxable income, respectively. β_1 refers to the effect on annexed counties. β_2 measures the "additional" effect on host districts relative to annexed counties. $\beta_1 + \beta_2$ captures the effect on host districts. The standard errors are in parentheses and clustered at the prefecture level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A2: Weighted Regressions: Prefecture Annexation and Adjustments in CIT Break Intensity

	CIT Break Rate					
	(1) Overall	(2) Small Size	(3) High-Tech	(4) Ethnic Minority	(5) Tax Credit	(6) Uncategorized
Annex_post (β_1)	-0.0060*	0.0001	-0.0007	0.0002	-0.0008	-0.0037*
	(0.0031)	(0.0002)	(0.0010)	(0.0002)	(0.0014)	(0.0021)
Annex_post_host (β_2)	0.0088***	0.0003	-0.0018**	-0.0002	0.0014	0.0060***
	(0.0031)	(0.0003)	(0.0009)	(0.0002)	(0.0014)	(0.0022)
$\beta_1 + \beta_2$	0.0029***	0.0004**	-0.0025***	0.0000	0.0006**	0.0023***
	(0.0010)	(0.0002)	(0.0005)	(0.0001)	(0.0003)	(0.0009)
Mean of outcome	0.0347	0.0004	0.0161	0.0005	0.0016	0.0156
Observations	1,483,486	1,200,189	1,201,225	1,195,464	1,388,543	1,214,869
R-Squared	0.7393	0.4847	0.8135	0.5189	0.4189	0.6875
Firm FE	X	X	X	X	X	X
Province-Year FE	X	X	X	X	X	X
Industry-Year FE	X	X	X	X	X	X
Firm Characteristics	X	X	X	X	X	X
Weighted	X	X	X	X	X	X

Note: This table reports the estimated effects of prefecture annexation on CIT break rates, based on equation 2. The regressions are weighted by firms' taxable incomes. Categories of CIT breaks from column (1)–(6) are overall, small-sized, high-tech, ethnic minority, tax credit, and uncategorized, respectively. All regressions include firm fixed effects, province-year fixed effects, industry fixed effects, and firm-specific control variables. β_1 refers to the effect on annexed counties. β_2 measures the "additional" effect on host districts relative to annexed counties. $\beta_1 + \beta_2$ captures the effect on host districts. The standard errors in parentheses are clustered at the prefecture level. * significant at 10%; ** significant at 5%; *** significant at 1%.

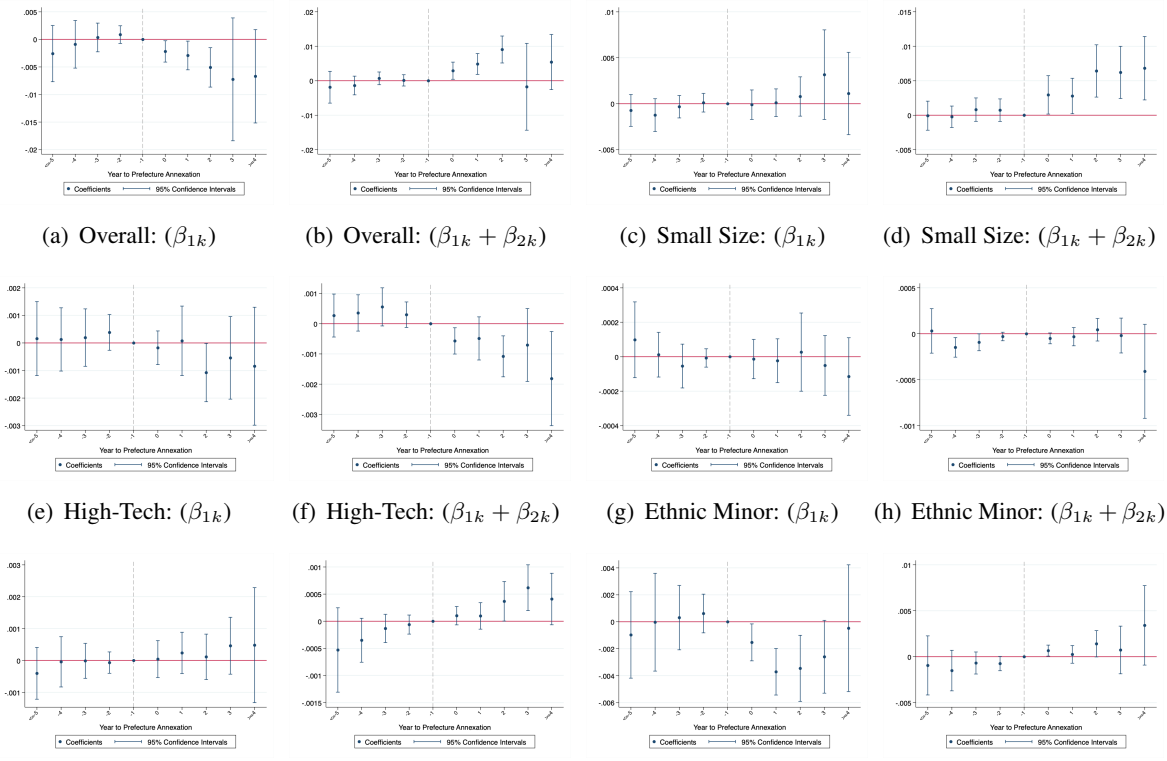
Figure A1: Histograms of Effective CIT Rates and Firms' Taxable Incomes



(a) Effective CIT Rate (b) Firms' Taxable Income

Note: This figure plots the histograms of effective CIT rates and firms' taxable incomes in the working sample. Firms' taxable incomes are deflated by the GDP price deflator and reported in million RMB in 2008. Variables are winsorized at the 1% level.

Figure A2: Supplementary Event Studies: Prefecture Annexation and Adjustments in CIT Break Intensity



(a) Overall: (β_{1k}) (b) Overall: $(\beta_{1k} + \beta_{2k})$ (c) Small Size: (β_{1k}) (d) Small Size: $(\beta_{1k} + \beta_{2k})$

(e) High-Tech: (β_{1k}) (f) High-Tech: $(\beta_{1k} + \beta_{2k})$ (g) Ethnic Minor: (β_{1k}) (h) Ethnic Minor: $(\beta_{1k} + \beta_{2k})$

(i) Tax Credit: (β_{1k}) (j) Tax Credit: $(\beta_{1k} + \beta_{2k})$ (k) Uncategorized: (β_{1k}) (l) Uncategorized: $(\beta_{1k} + \beta_{2k})$

Note: This figure plots event-study coefficients for various CIT break rates following prefecture annexation, based on equation 3. The included CIT break categories are overall, small-sized, high-tech, ethnic minority, tax credit, and uncategorized, respectively. Panels (a), (c), (e), (g), (i), and (k) refer to the effects on annexed counties (β_{1k}), whereas panels (b), (d), (f), (h), (j), and (l) depict the effects on host districts $(\beta_{1k} + \beta_{2k})$. Firm fixed effects, province-year fixed effects, industry-year fixed effects, and firm-specific control variables are included in the specification. The coefficient for the relative year -1 is omitted, allowing all estimates to be interpreted relative to the first year prior to prefecture annexation. The standard errors are clustered at the prefecture level, and 95% confidence intervals are also presented.