Place-Based Policies and Long-Term Consequences:  
A Re-Evaluation of Special Economic Zones in China∗

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Abstract

This paper investigates the causal effects of special economic zones (SEZS) on local economies in China using an instrumental variable (IV) approach, leveraging cultural ties between mainland China and Hong Kong as instruments. By examining data from the 2000s, the study reveals that SEZ status significantly increases GDP and GDP per capita, primarily through enhanced productivity and investment rather than mass labor influx. Unlike traditional OLS estimates, the IV method highlights the nuanced impact of SEZs on various economic factors, providing fresh insights into their long-term effectiveness and policy implications.

Keywords: Placed-based policies, special economic zones, economic reform, marketization

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1 Introduction

Special Economic Zones (SEZs) in China have long been regarded as one of the flagship policies of the Reform and Opening Up era in the 1980s and 1990s. These place-based policies transformed selected locations into special zones dedicated to economic development under a new economic system. Given their significant role in the transformation of the Chinese economy, this paper aims to identify the effects of being granted SEZ status on the local economy.

The SEZs in China have attracted considerable attention in the literature, with numerous empirical studies examining their impact on both the local and broader economy. The challenge in identifying the effects of SEZs primarily arises from the non-random selection of their locations. Early SEZs, being experimental in nature, were likely established in locations with higher chances of success, making their selection endogenous to growth potentials. This complicates comparisons of the long-term effects between SEZs and non-SEZs and hence makes their effects difficult to identify.

Unlike previous studies that use difference-in-differences (DiD) and event study (ES) methods, which attempt to match SEZs in a given period with the most similar non-SEZs to identify the effects of these place-based policies, this paper employs an instrumental variable (IV) approach. This method is motivated by insights from the historical literature on this period, providing a means to identify the causal impact of the SEZs.

The historical literature on the Deng Xiaoping-era reforms, such as Vogel (2011) and Leung (2008), provides detailed accounts of the origins of the SEZ policies. Specifically, the SEZs were initiated to attract foreign investment, which at the time came overwhelmingly from Hong Kong businesspeople, particularly ethnic Chinese. These Hongkongers, many of whom were emigrants or descendants of emigrants from mainland China, were interested in investing in mainland China, especially in areas near their ancestral hometowns. It is therefore likely that to cater to this preference, the central government considered the cultural connections between mainland regions and the Hongkongers when selecting the locations for the SEZs.

Given that mass emigration from mainland China to Hong Kong occurred many years before the Reform and Opening Up, the emigration pattern appeared quasi-random to policymakers in the late 1970s, thereby introducing an element of randomness into the selection of SEZs. Leveraging the IV method, I estimate the effects of SEZs using the cultural connection between a given prefecture in mainland China and Hong Kong as the instrument, based on the assumption that places with closer ties to Hong Kong were more likely to be selected as SEZs.
To find a suitable proxy for the cultural distance to Hong Kong, I use the dialects spoken in mainland China and Hong Kong to construct a cultural distance metric between a given prefecture and Hong Kong. Specifically, I utilize the Language Atlas of China, which contains detailed information on the dialects spoken in each mainland county in the 1980s, and the 1961 Hong Kong Census, which provides data on the dialects spoken in Hong Kong by population. By computing the cultural distance between counties in mainland China and Hong Kong and then aggregating this distance to the prefecture level, I can quantify the cultural ties. The coding scheme of cultural distance follows prior literature that uses Chinese dialects to measure cultural distance between regions within China.

A natural concern that arises with this IV approach is that the cultural connection to Hong Kong may largely reflect geographical proximity to Hong Kong, which is associated with other factors affecting growth potential. To address this concern, I include geographical distance to Hong Kong as a control variable, along with other pre-determined controls. Results indicate that cultural distance to Hong Kong remains a strong and significant predictor of SEZ status even after controlling for geographical distance to Hong Kong. Furthermore, using provincial-level data, I demonstrate that being culturally closer to Hong Kong is not associated with positive pre-reform outcomes, thereby further validating the instrument.

I run the main IV regressions on economic outcomes using data from selected years in the 2000s. The results reflect positive effects of SEZ status on GDP and GDP per capita, with the effects becoming stronger over time and statistically significant at the 5% level in some years. Compared to the OLS estimates, the effects from the IV results are generally smaller for total GDP but larger for GDP per capita. This suggests that the OLS estimates overstate the SEZ effects on GDP and understate them for GDP per capita.

To further understand the factors driving the differential outcomes of the SEZs, I break down the SEZ effects into labor, capital, productivity, and foreign-related outcomes. Unlike the OLS estimations, the IV approach identifies very small effects on population, employment, and total wage. Additionally, OLS underestimates the effects on capital-related outcomes such as investment and foreign direct investment (FDI). The biggest difference lies in productivity measures. While OLS results show no significant difference in productivity between SEZs and non-SEZs, the IV results reveal that SEZs are, in fact, much more productive. Using firm-level data, IV regressions also show that SEZs have a higher degree of marketization, reflected by a consistently higher share of private output and a greater increase in private firm entry. Finally, I run the IV regressions with slightly different specifications tailored to address various concerns about the robustness of the results and find similar outcomes.

To sum up the main results, the IV estimates present a different narrative from the
OLS regarding the success of SEZs. Rather than relying primarily on mass labor and high investment, the SEZs perform better in economic outcomes due to higher productivity in addition to increased investment. Furthermore, the comparison of results on employment and total wages suggests that SEZs may actually suppress wages, although there are signs of improvement over time. Despite the differences from the OLS results, the SEZ story aligns with familiar themes in the broader context of the Chinese economy. With a stalling or even decreasing population, SEZs (and arguably the entire Chinese economy) rely on high levels of investment to drive higher output. Despite increased productivity (perhaps a result of marketization), they still resort to wage suppression to maintain competitiveness (Klein & Pettis, 2020).

This paper contributes to a long line of empirical research on the effectiveness of China’s SEZ policies, with recent advances made by Wang (2013), Alder et al. (2016), and Lu et al. (2019). Wang (2013) finds that SEZs generate higher FDI and productivity and do not crowd out domestic investment, with later SEZs causing greater distortions in FDI locations compared to earlier zones. Alder et al. (2016) also finds that SEZs lead to higher GDP and productivity growth, as well as significant spillover effects across neighboring regions. Lu et al. (2019) uses firm-level data to examine the short-term effects of SEZs, finding positive impacts on capital investment, employment, output, productivity, and wages, along with an increased net entry of firms.

While this paper finds broadly similar results to these prior studies, it differs in three main aspects. First, I use an instrumental variable approach to identify the effects of SEZs, differing from the DiD and ES frameworks used in previous research. Second, instead of examining SEZs at all levels, I focus on zones established by central government policies with 1994 as the cutoff date. This ensures that the SEZs in the sample were set up with consistent rationales and are less subject to local political interventions. These SEZs also cover entire prefectures rather than smaller areas within a prefecture, reducing the likelihood of crowding-out effects within the same prefecture. Finally, by focusing on the long-term effects of SEZs, I can break down and analyze the factors driving the differential aggregate effects of SEZs in the long run, offering fresh perspectives to the discussion.

This paper also relates to studies on place-based policies and special economic zones (SEZs) both within and outside China. Zheng et al. (2017) examines China’s investment in industrial parks aimed at boosting economic growth, finding that the parks’ impact on productivity, wages, and employment depends on their human capital, FDI share, and synergy with nearby firms. These parks also stimulate housing and retail growth, leading to the development of suburban consumer cities. Similarly, Schminke & Van Biesebroeck (2013) investigates two types of preferential regional policies in China’s manufacturing sector, find-
ing that firms in Economic and Technological Development Zones (ETDZs) achieve higher export values through increased trade volumes and destinations, while firms in Science and Technology Industrial Parks (STIPs) excel in quality, fetching higher export prices and succeeding in high-income markets. These two types of policies are considered by some as subsets of SEZs. In the context of developing countries, Chaurey (2017) studies a location-based tax incentive scheme in India, finding significant increases in employment, output, fixed capital, and the number of firms, driven by both firm growth and new entries. There is no evidence of firm relocation or spillover effects, suggesting that the policy improves welfare and is cost-effective. In developed countries, Grant (2020) shows that SEZs in the US allow policymakers to selectively lower tariffs for certain manufacturers, driven by a desire to discriminate across buyers to raise seller prices.

Methodologically, this paper is closely related to Faber & Gaubert (2019), which studies the effects of tourism on the Mexican economy. By constructing a measure of beach quality based on specific local natural and cultural characteristics along the Mexican coastline, Faber & Gaubert (2019) instruments for local tourism revenue and finds that tourism causes significant local economic gains, partly driven by positive spillovers on manufacturing. In terms of constructing cultural distance between prefectures in China and Hong Kong, this paper closely follows the methodologies used in Gao & Long (2014) and Liu et al. (2015), both of which utilize the Language Atlas of China to compute measures of cultural connections between Chinese regions.

This paper also draws on a body of historical literature on the Deng Xiaoping-era reforms and China’s transition to a market economy, such as Vogel (2011) and Coase & Wang (2016). These works provide insights into the political maneuvering during this crucial period in China’s economic transition and motivate the instrumental variable approach used in this study.

## 2 Policy Background

This section describes the historical background of the SEZ reforms, focusing on how the SEZs were partially designed to attract investment and how this objective, when put into practice, provides an opportunity to identify the causal effects of SEZ policies.

### 2.1 Historical Context

In the late 1970s, the Chinese economy was in a dire state. The country lacked economic opportunities for young people, leading many to flee to Hong Kong via Guangdong, which
became a serious security issue (Vogel, 2011). Additionally, China lacked the foreign currency necessary to import capital goods to restart the economy after a decade of the Cultural Revolution. While numerous significant events occurred between 1977 and 1980 that led to various reformist policies, what is particularly important for this paper is the government’s shift toward welcoming overseas businesspeople of Chinese ancestry.

Deng Xiaoping, China’s paramount leader in the late 1970s, was particularly interested in inviting ethnic Chinese people overseas to come back and invest in China. As explained in the seminal work on the Deng-era reform by Vogel (2011):

Beijing sought investments from “overseas Chines” who lived in Southeast Asia, the United States, and elsewhere, but even more from “brethren” (tongbao, literally, those from the same womb), those living in territories claimed by China—Taiwan, Macao, and Hong Kong. At the time, not counting Taiwan, officials estimated that some 8.2 million descendants of Guangdong natives and some 5 million descendants of Fujian natives lived outside mainland China. As the two provinces sought investment funds, these descendants would be the primary targets of money-raising efforts, although investments from elsewhere would also be welcome. Those returning to China to visit in the years after 1978 overwhelmingly came through the “southern gate” to their ancestral homes in Guangdong and Fujian.¹

The roles that overseas ethnic Chinese played in China’s development are explored in Leung (2008), while examples of overseas Chinese returning to their hometowns to invest are provided in Sawada (1998). Overall, businesspeople in Hong Kong and other parts of Southeast Asia were keen on investing in their ancestral hometowns or nearby areas, likely due to their attachment to ancestors and living relatives. However, at the time, completely opening up to foreign investment was out of the question, as many conservative officials were not ready to abandon their prejudices against the capitalist system and free market economy (Vogel, 2011). The reformist wing of the Communist Party found a way to welcome foreign investment while keeping dissent from conservatives manageable—they selected specific locations to use as trial grounds for policy experiments. This approach ensured that successes could lead to further opening up, while failures would have limited impact on the rest of the country. Through this method, the special economic zones were established and tasked with attracting foreign investment, primarily from the Hong Kong business community.

For reformist policymakers, balancing multiple considerations was crucial when selecting the locations of SEZs. They needed to ensure a decent chance of success, make the areas

attractive to investors, and prevent failures from leading to uncontrollable consequences. Therefore, the choices were clearly non-random. However, given the historical context, being attractive to foreign investors implied that the locations would likely have certain connections to overseas ethnic Chinese. This suggests that the quasi-randomness of Hong Kong businesspeople’s ancestry played a partial role in determining the locations of the SEZs.⁴

After the initial wave of SEZs, the flow between mainland and Hong Kong extended to other parts of China (Vogel, 2011). As part of efforts to deepen reforms, more cities and regions were opened up to become SEZ-style “open areas.” Although policymakers’ considerations might have evolved, attracting overseas investment remained a major goal of establishing SEZs. Consequently, a prefecture’s connection to overseas Chinese communities likely remained a factor, whether explicit or implicit, in selecting new SEZ locations.

2.2 SEZ Policy

Preferential treatments given to the special economic zones (SEZs) are well-known and mostly consistent across all SEZs considered in this paper. Since the SEZs were created to attract investment from overseas investors, the specific policies accompanying their establishment were designed to benefit foreign investors, representing a significant departure from non-SEZ policies. Based on the summary in Wang (2013), these policies primarily encompass three areas: property rights enforcement, tax incentives, and special land use policies.

In the pre-reform era, the Chinese economic system did not recognize private property. Since the SEZs aimed to promote overseas-invested enterprises and joint ventures, ensuring that investors’ assets, profits, and other rights were protected from appropriation and misuse was a high priority. The commitment by the Chinese government to protect private property within the SEZs is significant, considering that private property rights were not constitutionally protected outside the SEZs until the 2004 amendment.

Tax incentives were also established to encourage investment. In the SEZs, foreign investors benefit from a corporate tax rate of 15–24%, depending on the technological advancement of their products, compared to the 33% rate for domestic firms. They also enjoy minimal customs duties, duty-free allowances for production materials, and income tax exemptions for foreign expat employees.

As part of the pre-reform era legacy, all land in China is technically state-owned. However, within the SEZs, foreign investors can lawfully acquire rights to land for industrial and commercial use. They are also permitted to transfer, lease, or mortgage these rights for specified purposes and terms. For state-encouraged projects operating for more than 15

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⁴Discussed in more depth in Section 3.3.
years, investors are exempt from land use fees for the first five years and pay only 50% of the usual fees for the subsequent five years. Guaranteed land use rights are provided for projects with an investment of at least USD 10 million or those considered technologically advanced with substantial local economic influence.

While these policies are already special compared to non-SEZ areas, what makes the SEZs even more unique is the autonomy they obtained from the central government (Alder et al., 2016). The SEZs were established at the beginning of a drastic economic transition period in China. Most policymakers at the time had no experience managing a market economy, so their choices involved much more than just adjusting tax rates. Many of the policies enacted faced pushback from the conservative wing of the government and other vested interests. As a result, local officials in charge of the SEZs had to be entrepreneurial in policymaking (Xu, 2011) and adept at dealing with both superiors in government and investors from overseas.

The autonomy granted to local leaders was crucial in allowing the SEZs to experiment with deeper structural reforms, setting them apart from non-SEZ areas. This level of autonomy enabled SEZs to implement innovative policies and respond flexibly to challenges, which was essential for their chances of success during China’s economic transformation. Therefore, it is appropriate to study the effects of SEZ policies as a whole, rather than just treating them as a combination of tax cuts and reduced capital costs.

3 Data

This section describes the data and sources used for the empirical analysis. Additionally, I construct the main instrumental variable that will be used in the later sections.

3.1 Special Economic Zones

The term “special economic zone” initially referred to four coastal cities—Shantou, Shenzhen, and Zhuhai in Guangdong, and Xiamen in Fujian—that were opened up around 1980 to attract foreign investment and served as a trial run for broader economic reforms. Since then, it has been used to denote various geographical areas granted special status or treatment as part of the government’s place-based policies.

In this paper, I focus on prefectures that received special status from the central government between 1980 and 1994, using the term ”special economic zones” (SEZs) to refer to them. These SEZs were established with similar objectives, such as attracting foreign investment and increasing international trade, and they encompass entire prefectures. They also

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3While foreign investment might be concentrated in specific parts of these cities, the cities themselves
precede most provincial-level special zones and national-level zones with specific purposes (e.g., high-tech zones).

Although interesting in their own right, I do not estimate the effects of the provincial-level SEZs and other special zones with specific purposes for two reasons. First, these zones are not comprehensive reform experiments like the national-level SEZs I consider. Instead, they focus on specific areas of the prefecture, which raises the question of whether they divert economic activities from other parts of the prefecture. Second, their establishment is less likely to follow the same rationale as the national-level SEZs. Locally designated SEZs are more prone to local favoritism and other political objectives of local leaders, whereas national-level SEZs enjoy more autonomy. Consequently, I do not consider the provincial-level special zones and the SEZs I study to be comparable.\textsuperscript{4}

According to the seminal work on SEZs by Wang (2013), the SEZs considered in this paper are classified as Open Economic Areas (OEA). I provide the full list of SEZs studied in this paper, along with the relevant policies announcing their establishments, in Section A.1 in the Appendix.

[Insert Figure 1 here]

Figure 1 shows the geographical distribution of SEZs by the end of 1980, 1985, 1991, and 1994. By the end of 1980 (Panel A), there were only four SEZs (mentioned above), located in the southern coastal areas of China. The number of SEZs then gradually increased to 110 by the end of 1994. Although many SEZs were established in inland areas, the vast majority were concentrated in coastal regions and a few key land border areas. Therefore, I include dummies for whether a prefecture is coastal and whether it is located on the land border as additional controls.

Although the main regression is run with the full set of SEZs identified by the end of 1994, I also use 1985 and 1991 as additional cutoff years to define SEZs, to determine whether earlier SEZs differ substantially from the later ones. These cutoff years are chosen because approximately the same number of incremental SEZs were identified by these dates—30 SEZs by the end of 1985, 70 by the end of 1991, and 110 by the end of 1994. These periods were usually followed by significant waves of new SEZs—38 SEZs were added in 1988 and 33 in 1992. Hence, I believe these two cutoff years are appropriate for dividing the SEZs into different waves and will apply them to conduct robustness checks.

\textsuperscript{4}Relevant research including provincial SEZs can be found in Alder \textit{et al.} (2016) and Lu \textit{et al.} (2019).
3.2 Outcome and Control Variables

The main outcome and control variables at the prefecture and province levels, including GDP, population, employment, other measures of economic activities and geographical features such as coordinates, are obtained from a collection of official statistical yearbooks at the national, provincial, and some prefecture levels. To ensure consistent data quality and to study the long-term effects of the SEZs, I collect data only for the years between 1998 and 2019. I match all prefecture-level administrative units to those of 2019, resulting in 297 consistent prefecture-level observations (including the four provincial level municipalities directly administered by the central government). However, some prefectures have missing data for certain years, leading to a slightly lower number of observations in the regression results.\(^5\)

I also collect firm-level data from the Annual Survey of Industrial Firms (ASIF), a dataset on industrial firms published and maintained by the National Bureau of Statistics in China. The ASIF is the primary panel dataset used for studying firm- and aggregate-level questions about the Chinese economy, covering all SOEs and non-SOEs with annual revenue greater than 5 million RMB. I use data from 1998 to 2007, as these years are considered to have better quality. I clean the data following the methodology outlined by Brandt et al. (2014).

Finally, to complement the official statistics, the quality of which is often subject to debate, I collect night-light data as an alternative measure of economic activity from the Prolonged Artificial Nighttime-light Dataset of China (Zhang et al., 2024). This newly developed dataset covers night-light data in China from 1984 to 2020 with reportedly high accuracy. Night-light intensity is matched to the prefecture level to study economic development.

3.3 Construction of Instrument

3.3.1 Data Sources for Matching Dialects

The main instrument used in this paper is constructed using two main sources: the Language Atlas of China (China Academy of Social Science, 2012) and the Hong Kong 1961 Census Report published by the Census and Statistics Department of Hong Kong Government.

The Language Atlas of China (henceforth the Atlas) is a collective effort by the Chinese Academy of Social Science and the Australian Academy of the Humanities to map out

\(^5\)Prefectures with missing data are generally less developed and therefore have fewer capabilities and resources to maintain high-quality statistics. Consequently, given the close association between SEZ status and economic development, any impact this may have on the results of SEZ effects in this paper is more likely to represent a lower bound of the true effects.
Chinese language dialects (for both Han Chinese and ethnic minorities) in the 1980s and first published in 1987. For this paper, I focus only on the Sinitic dialects.

The Atlas codes the dialects in a hierarchy of groupings: supergroup, group, subgroup, clusters and locals. Two supergroups are identified in the Atlas, namely Mandarin and Min, along with eight distinct groups (e.g., Cantonese, or Yue) that do not belong to the above supergroups. A total of 109 subgroups are identified. For the purpose of constructing the instrument, I use only the first three layers (supergroup to subgroup) to match with the dialects mentioned in the Hong Kong census. At the county level (one level below prefecture), each is assigned a subgroup, with the corresponding group and supergroup attached. I match the Hong Kong census data with each county in mainland China.

[Insert Table 1 here]

The Hong Kong 1961 Census Report (henceforth the Census) records the dialects spoken by the population, categorized by age and gender groups. An excerpt of the page on dialects is shown in Figure B.1 in the Appendix. I summed the total number of people speaking each Sinitic dialect and then matched these dialects with the groupings in the Atlas. The results are presented in Table 1, with details of the matching process for each dialect provided in Section A.2 of the Appendix. For groups without a corresponding supergroup, I assigned a supergroup with the same name for presentation purposes.\(^6\)

In 1961, Hong Kong was predominantly Cantonese-speaking, but five out of the ten distinct supergroups and groups had speakers in Hong Kong, indicating a decent level of variation within the population. I exploit this variation for the construction of the instrument, as discussed in the next section.

### 3.3.2 Coding Cultural Distance to Hong Kong

Given that the SEZs were established in part to attract investment from Hong Kong, the home bias of Hong Kong businesspeople played an important role in the location choices of the SEZs, and it is important the instrument captures this home bias. Therefore, I compute a measure of cultural distance between a given mainland prefecture and Hong Kong using the dialects spoken in both places, with the idea being that speaking similar dialects are indicative of closer cultural ties and a higher probably of shared ancestral roots.

To compute the measure of cultural distance, I start with county-level data on dialects. Let \( d(c) \in D_m \) denote the dialect (subgroup) \( d \) spoken in county \( c \), and \( D_m \) is the set of all dialects spoken in mainland China. Then, for each county \( c \), I compute the distance between

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\(^6\)This does not affect the coding of cultural distance.
its dialect, \( d(c) \), and a given dialect \( d \in D_{HK} \) recorded in the Census, where \( D_{HK} \) is the collection of all dialects spoken in Hong Kong in 1961, as follows:

\[
\text{CulturalDistance}(d(c), d) = \begin{cases} 
0 & \text{if } (d(c), d) \text{ are in the same subgroup}, \\
1 & \text{if } (d(c), d) \text{ are in different subgroups but same group}, \\
2 & \text{if } (d(c), d) \text{ are in different groups but same supergroup}, \\
3 & \text{if } (d(c), d) \text{ are in different supergroups}.
\end{cases}
\]

This coding scheme follows the literature that uses the Atlas to construct cultural distances between different Chinese regions, such as Gao & Long (2014) and Liu et al. (2015). It leverages the hierarchical structure of dialect groupings in the Atlas, reflecting the fact that some dialects are closer to each other than others.

To compute the cultural distance between county \( c \) and Hong Kong, I take the average of the distances between \( d(c) \) and all dialects \( d \) spoken in Hong Kong, weighted by the share of the population speaking dialect \( d \) in Hong Kong in 1961. Formally, let \( \theta_d \) be the share of Hong Kong population speaking \( d \), I calculate:

\[
\text{CulturalDistance}_{c,HK} = \frac{1}{D_{HK}} \sum_{d \in D_{HK}} \theta_d \text{CulturalDistance}(d(c), d).
\]

Given that SEZ status is assigned at the prefecture level, I aggregate the county-level cultural distance to Hong Kong to the prefecture level using the population share of county \( c \) in prefecture \( p \) as the weight. I use the 1982 population census to obtain county-level population shares since it coincides with the period when linguistic research leading to the compilation of the Atlas was conducted. Additionally, it is close enough to the beginning of the reform era that migration patterns had not yet significantly affected the population distribution. Formally, let \( \omega_c \) be the population share of county \( c \) in prefecture \( p \), I calculate:

\[
\text{CulturalDistance}_{p,HK} = \sum_{c \in C_p} \omega_c \text{CulturalDistance}_{c,HK},
\]

where \( C_p \) is the set of all counties in prefecture \( p \). For prefectures with missing data on cultural distance, I replace it with the within-province average. Details of the matching quality is discussed in Section A.3 in the Appendix.

In Figure 2, the distribution of cultural distances to Hong Kong is plotted. Panel A shows the full sample, with the sample mean indicated by the red dashed line. Despite the majority
of prefectures having a cultural distance greater than 2.9, there are significant variations in the lower part of the distribution. To highlight this variation more clearly, Panel B presents the distribution for a subgroup of prefectures with a cultural distance smaller than that of Beijing. Beijing is chosen as a reference because only Mandarin is spoken there, and thus the cultural distance between Beijing and Hong Kong represents the weighted-average distance between Mandarin and the dialects spoken in Hong Kong. To put the distribution into a geographical context, Figure 3 plots the cultural distance to Hong Kong on the map of China. I observe that, although the pattern of cultural distance broadly aligns with geographical distance, it is not a perfectly linear relationship. The variations in cultural distances follow their own unique patterns.

[Insert Figure 3 here]

To sum up, cultural distances to Hong Kong are constructed by leveraging the variations in dialects spoken in both Hong Kong and mainland China to capture the likelihood of shared cultural identities and ancestral roots between Hong Kong and each Chinese prefecture. The distribution of cultural distances follows a unique pattern that is not entirely explained by geographical distance alone. Nevertheless, geographical distance to Hong Kong will be controlled for in all subsequent analyses to ensure robustness of the results.

4 Empirical Strategy and Results

In this section I use the instrumental variable approach to estimate the long-term effect of gaining the SEZ status by 1994. I estimate the effects on measures of economic output, and then break down the findings into different components in order to see what factors are driving the effects from SEZs.

4.1 Reduced-Form Estimation

Given that cultural distance to Hong Kong is an important determinant in the SEZ policymaking process, to motivate the instrumental variable approach, I first run the reduced form regression between cultural distance to Hong Kong and economic outcomes in log.\footnote{For consistency, both the reduced-form and IV regressions are run with dependent variables in current prices (where applicable). Alder et al. (2016) finds that in a limited sample with city-level inflation data between 1996 and 2010, cities with SEZs have an average yearly inflation rate of 1.8% compared to 2.3% for cities without SEZs. This difference is not statistically significant. Although the definition of SEZs in Alder et al. (2016) slightly differs from mine, their results suggest that SEZs do not systematically trigger higher prices.}
Specifically, I test the following specification:

\[
\log \left( y_p \right) = \alpha_s + \beta \text{CulturalDistanceHK}_p + \gamma' X_p + \epsilon_p,
\]

(1)

where \( \alpha_s \) is the province fixed effects and \( X_p \) are the pre-determined controls at the prefecture level. In particular, I control for the geographical distance to Hong Kong to address the concern that cultural and geographical distance to Hong Kong could be highly correlated. Therefore, without controlling for the geographical distance, any effects from cultural distance might simply be picking up the effects from geographical distance. I additionally control for the geographical distance to Beijing as a proxy for the influence from the central government, whether the city is coastal or inland, whether the city is a border city on land, and the longitude and latitude of the prefecture to proxy for fundamental climate conditions. To alleviate the concern that standard errors are auto-correlated within a given province, I cluster the standard errors at the province level. Due to data availability and the focus on long-term effects, I run the reduced form regressions separately for four years (2001, 2006, 2011 and 2016). The results are presented in Table 2.

The coefficients are negative on GDP and GDP per capita across all years, although the results are only statistically significant at 5% level for GDP per capita in 2011 and 2016. The sign of the coefficients point to the fact that having a closer cultural distance to Hong Kong results in a higher average level of GDP and (significantly) GDP per capita. Using the GDP per capita of 2016 as an example, a one standard deviation decrease in cultural distance to Hong Kong (about 0.4) is associated with a roughly 10% higher GDP per capita. Furthermore, looking at the coefficients by year, the magnitudes of the effect from cultural distance are gradually increasing in later years. For GDP per capita in particular, this increase is occurring against the backdrop of a decrease in the effects of geographical distance to Hong Kong. Overall, the implication of the reduced-form results is that (a) the effects from cultural distance are magnified in later periods, and (b) cultural distance to Hong Kong is picking up effects on economic outcomes that are not captured by the geographical distance.

### 4.2 IV Estimation

#### 4.2.1 First-Stage Results

I now turn to the instrumental variable approach in order to identify the effect of being an SEZ on economic and other related outcomes. As the first stage, I run the following regression
to show the relationship between cultural distance to Hong Kong and the status as an SEZ:

$$SEZ_p = \alpha + \beta \text{CulturalDistanceHK}_p + \gamma' X_p + \epsilon_p,$$

where $SEZ_p$ is an indicator equal to one if prefecture $p$ is a national level SEZ (defined as in Section 3.1). To avoid running the “forbidden regression”, I run OLS in the first stage and control for province fixed effects in addition to the other control variables that are also appear in Equation 1, although the results without control variables are included for reference. The first stage results are presented in Figure 4.

I run the above regression with multiple SEZ cutoff dates (each representing the cumulative total number of SEZs by that time) to check if the results vary based on the establishment year of the SEZs. Specifically, I choose 1985, 1991, and 1994, as these years include roughly similar numbers of incremental SEZs. Cultural distance to Hong Kong exhibits negative and significant effects (at the 5% level) on the SEZ indicator for all three waves, even after controlling for geographical distance to Hong Kong. The effect of geographical distance to Hong Kong turns positive for later waves, suggesting that closer to 1994, places that are geographically further from Hong Kong are more likely to become SEZs. In contrast, the coefficients for cultural distance remain negative and significant. The first stage results without control variables (except province fixed effects) are included for reference. The regression output table is provided in Table C.1 in the Appendix.

4.2.2 Instrument Validity

In my empirical strategy, the validity of the IV approach is based on the assumption that cultural closeness to Hong Kong affects economic outcomes only through the establishment of SEZs. There are a few ways this assumption may be threatened.

First, home bias among Hongkongers may affect a prefecture’s outcome not only through their influence on SEZ status, but also through a higher level of import from regions of their ancestral home. This problem is likely to be more severe in the initial year of China’s opening up, as the country is slowly returning to the global trade network and export to Hong Kong is particularly important. I partially this concern by using the outcome variables from later years (post-2000), a period in which the export to Hong Kong purely for local consumption (and not for re-export) is likely to be small compared to the overall size of the economy. Moreover, the inclusion of the geographical distance to Hong Kong also addresses this issue.
Motivated by the gravity model in trade, the geographical distance is a good proxy for home bias while being a pre-determined variable.\(^8\)

Second, the instrument’s validity is threatened if cultural closeness to Hong Kong is related to other unobserved determinants of economic growth. Note that this unobserved determinant has to be orthogonal to the added pre-determined controls. I attempt to minimize this problem by using the earliest census data from Hong Kong available. The 1961 census likely contains migrants who moved to Hong Kong before or shortly after 1949, the year after which it became much more difficult to leave the country. Given that the country went through an overhaul of the economic system after the Communist Party’s takeover, whatever element that is driving the migration pattern before 1949 is unlikely to be affecting the growth potential under the new economic system, after controlling for pre-determined geographical features.

Nevertheless, I examine whether cultural distance affects pre-SEZ era outcomes. Due to the absence of prefecture-level data before the reform era, I replicate the reduced form analysis regression (Equation 1) using provincial data. Given that the dataset includes only 30 provinces, running OLS by year results in an insufficient number of observations per year for proper estimation. Consequently, I pool observations across years, dividing them into pre-reform (1952-1976) and post-reform (1995-2019) periods, each covering 25 years.

I compute the population-weighted average cultural distance to Hong Kong for each province using the 1982 population census data. Province fixed effects are replaced with region and time fixed effects, and standard errors are clustered at the provincial level to account for autocorrelation across years within a province. Regions (diqu) refer to six officially defined geographical areas in China, often cited in economic development discussions, though they usually hold no political significance.

Additionally, I replace the coastal region dummy variable with the log value of the provincial average distance to the coastline, acknowledging the geographical diversity within provinces. Some prefectures within a province may be significantly further from the coastline than the average of some non-coastal provinces. The results are presented in Figure 5, with the regression output table available in Table C.2 in the Appendix.

For both GDP and GDP per capita, the coefficients are positive for the pre-reform era and negative for the post-reform era. Given that aggregating cultural distance to the provincial

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\(^8\)Controlling for prefecture-level export to Hong Kong would not address this concern properly since there is no way to separate goods sold purely for home bias and goods sold due to competitiveness, with the latter being endogenous to the SEZ status.
level loses valuable information, these results can only provide broad guidance. Although not statistically significant at the 5% level, the signs of the coefficients suggest that closer cultural distance to Hong Kong does not influence growth in the pre-reform era but is beneficial in the post-reform periods. Thus, if cultural distance captures other elements of growth potential, they are not evident in the pre-reform period.

I acknowledge that certain determinants of growth potential may vary depending on the economic system. However, for such a determinant to pose a significant issue, it would need to be correlated with cultural distance, influence future economic output through channels other than SEZs, and persist after accounting for geographical distance to Hong Kong and other controls. If such a condition exists, the overlap of the SEZ reform with the economic transition could render it unidentifiable, at least with the current dataset.

4.2.3 IV Results

4.2.3.1 Baseline IV results on GDP and GDP per capita

Having discussed the relevance (first stage) and validity of the instrument, I now proceed to estimate the IV regressions. The regression specification is as follows:

$$\log (y_p) = \alpha_s + \beta \text{SEZ}_{p} + \gamma' X_p + \epsilon_p,$$

where the left-hand side represents the outcome variables in logarithmic form. The right-hand side includes an indicator variable for SEZ status and additional controls, including geographical distance to Hong Kong. The SEZ$_{p}$ variable can be replaced with SEZ dummy variables from various cutoff dates, such as 1985 or 1991. For the main specification, I include all SEZs in the sample, using 1994 as the cutoff year, and leave other cutoff years for robustness checks.

[Insert Table 3 here]

The main results on GDP and GDP per capita are presented in Table 3. Similar to the reduced-form analysis, I conducted the regression separately for four different years. For IV coefficients on GDP (Panel A), the effects of SEZs are smaller than the OLS estimates and are not statistically significant at the 5% level for all years. However, all IV coefficients are positive, suggesting that SEZs still have a positive impact on total economic output, albeit with a lower magnitude and higher variability than what OLS estimates show.

For GDP per capita (Panel B), the IV coefficients are consistently positive across all years, with the 2016 coefficient being statistically significant at the 10% level. Unlike the
results for total GDP, the IV estimates show greater magnitudes than the OLS coefficients for all years except 2001. Additionally, the IV coefficients increase steadily over the years, contrasting with the OLS coefficients, which exhibit a slightly downward trend. Overall, the results suggest that the difference in per capita output between SEZs and non-SEZs is growing over time, and this increase is more pronounced for GDP per capita than for total GDP.

The first stage F-statistics reported in Table 3 likely raise the question of weak IV. However, this concern is mitigated because the IV regression in Equation 3 is just identified, making it approximately median-unbiased (Angrist & Pischke, 2009). In the just-identified case, weak instruments would be problematic only if the first stage were extremely weak. Results from the reduced-form and first-stage analyses indicate that this is not the case, affirming that weak instrument is not a threat to the identification strategy.

Having established the baseline results that being assigned the SEZ status is associated with higher GDP and even GDP per capita, I now move on to study the economic forces driving this difference. Specifically, I explore the impact of SEZs on labor-, capital-, productivity- and foreign-related outcomes at the prefecture level.

### 4.2.3.2 IV results on labor-related outcomes

[Insert Table 4 here]

Table 4 presents the results of the IV regressions on various labor-related outcomes, including population, employment, and the total wage bill. While all control variables are included in the regressions, they are omitted from the table to focus on the variable of interest. The results are mixed.

The coefficients on population are negative across all years, contrasting with the positive coefficients from the OLS results. Due to data limitations, the population figures here only include individuals registered under the local *hukou* (household registration) system, excluding seasonal migrant workers. Two potential explanations for this are as follows. First, the *hukou* system imposes significant barriers to internal migration (Ngai *et al.*, 2019), with more developed cities imposing stricter controls to prevent population surges. Consequently, SEZs that thrive may struggle to attract long-term residents due to these barriers. Second, a combination of reduced fertility rates resulting from economic development and the stringent enforcement of the *one-child policy* suggests that wealthier, urban areas are likely to experience lower population growth or greater declines (Whyte *et al.*, 2015). This would be reflected in the registered population figures.

The effects of SEZs on total employment, a variable less affected by the *hukou* system,
are positive for three out of the four years examined (Panel B). However, the IV coefficients are much smaller than the OLS counterparts and the corresponding differences in total GDP, indicating that SEZs do not attract as many workers as the GDP differences would suggest. Finally, the coefficients on the total wage bill are negative for the first two years tested and turn positive in the later years (Panel C). Once again, the IV estimates are much smaller than the OLS estimates and even lower than the coefficients on total employment. This suggests relative wage suppression might be happening in SEZs that is not captured by simple OLS.

4.2.3.3 IV results on capital-related outcomes

[Insert Table 5 here]

Moving on to capital-related outcomes, Table 5 presents the IV results for these variables. The coefficients on investment are positive across all years (Panel A). Although they are smaller in magnitude than the OLS estimates, the difference is less pronounced compared to the differences observed for employment. Similar patterns are observed for real estate investment and residential property investment (a sub-category of real estate), with coefficients that are larger in magnitude compared to overall investment (Panels B and C). For capital-related outcomes, the effects of SEZ status are much larger than those on labor-related outcomes and even surpass the effects on total GDP. Therefore, it is much more likely that the positive SEZ effect on total GDP is driven by investment than by employment, and by extension consumption (as reflected by the total wage bill).

4.2.3.4 IV results on productivity-related outcomes

[Insert Table 6 here]

The results on productivity-related outcomes are shown in Table 6. Panel A presents the results on total industrial output, with coefficients that are positive for all years and increase in the later years (2011 and 2016). These coefficients are higher than the OLS counterparts and also surpass the effects on total GDP in the later years, suggesting that over time, the superior GDP associated with SEZs is increasingly driven by higher industrial output.

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9 For example, the IV results in 2016 suggest gaining the SEZ status by 1994 increases the GDP in 2016 by around 62.9%, while the corresponding increase in employment is only 22.4%.

10 For example, in 2016, the OLS coefficients for both employment and investment are around 0.9, but the IV coefficient for employment is 0.22, much smaller than the corresponding number for investment, which is 0.76.

11 The coefficients on investment are larger than the corresponding coefficients on total GDP for all four years.
Panels B and C provide actual measures of productivity. Panel B shows the results for output per labor, where positive and increasing (over time) coefficients are observed, with the effect in 2016 being statistically significant at the 5% level. The coefficients on output per labor align with earlier observations regarding employment and total output—SEZs do not hire more labor compared to non-SEZs but produce more output. In contrast, the OLS estimates show coefficients with much smaller magnitude for 2011 and 2016, both in comparison to the IV estimates and to the OLS estimates earlier.

Finally, Panel C presents the OLS residuals, computed by regressing the log value of total output on the log values of total wage and capital stock, using the residuals as a proxy for productivity. The effects are positive across all years and significant in the later years. For both output per labor and the OLS residuals, the IV coefficients are larger in magnitude than the OLS counterparts for 2011 and 2016. Combining with earlier results on labor and capital outcomes, this result reflects that the OLS estimates would attribute much of the differential increase in SEZ total output to higher capital and labor, and not much from increase in productivity, whereas the IV results suggest that the SEZ effects are more likely driven by higher investment and productivity, with limited contribution from labor input.

4.2.3.5 IV results on foreign-related outcomes

Table 7 presents the results on foreign-related outcomes. Due to issues with data quality (particularly missing values), I do not include results on import-export and instead focus on foreign direct investment (FDI) and related measures.\textsuperscript{12}

In Panel A, the effects on FDI from the IV regression are positive across all years and statistically significant for 2006 and 2011. Except for 2001, the IV coefficients are consistently larger than the OLS estimates. Panels B and C show the results on total output from firms owned by foreign and Hong Kong, Macao, and Taiwan (HMT) owners, two mutually exclusive groups in China’s economic statistics. For both measures, the coefficients are positive across all years and statistically significant for HMT-owned output for all years except 2001. The IV coefficients shown in all three panels are much larger in magnitude than the effects on GDP and total investment, suggesting that the heavy use of foreign capital contributes significantly to the superior performance of SEZs.

\textsuperscript{12}Insufficient observations exist in my dataset to provide results on exports across the four years as in other analyses. For the year 2017, where export data are more complete, running the IV regression shows positive effects of SEZs with a magnitude greater than 1. These results are omitted here.
4.2.3.6 IV results on marketization

Given that a major component of SEZs’ preferential policies is marketization, i.e., the gradual transition to a market economy, I test whether SEZs perform differently in terms of private versus state economy. To obtain ownership information, I use the Annual Survey of Industrial Firms (ASIF) dataset for the period from 1998 to 2007 to construct three measures of marketization at the prefecture-year level.

First, I aggregate private-firm and state-firm revenues at the prefecture level and compute the share of private revenue to total revenue in the given prefecture. I refer to this measure as “Private Share.”

Second, for each firm, I compute the ratio of its private contributed capital (also called paid-in capital) to total capital, and then aggregate these ratios to the prefecture level using each firm’s assets as weights. I call this measure “Private Capital Ratio.”

Finally, for each prefecture, I compute the number of private firm entries. I define firm $i$ as a private entrant in year $t$ if year $t$ is the first year that firm $i$ appears in a given prefecture and the firm is private. I then sum the total number of private entrants in a given year by prefecture. This way, I am able to capture not only entrants but also firms that have relocated to prefecture $i$. For the year 1998 (the first year of the data), I define a firm as an entrant if its registered age is equal to 1.

One caveat of using the ASIF data is that not all private firms are included in this dataset. From 1998 to 2007, private firms needed to have a revenue threshold of 5 million RMB to be eligible for inclusion. Therefore, the marketization measures constructed are likely to be a lower bound of the true values. I again run the regression at four years (1998, 2001, 2004, 2007)

The results on marketization are presented in Table 8. In Panel A, the IV regression coefficients on private share are consistently positive. In Panel B, the results are more mixed; IV coefficients decline across the years and turn negative in 2007. Finally, in Panel C, the effects on private entry are positive for all years except 1998. This finding is consistent with Lu et al. (2019). Overall, the results suggest that SEZs generally have a higher degree of marketization. However, signs of state advancement or mixed ownership reforms are evident, as shown by the declining average private capital ratio in SEZs.

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13 I use the firm’s registered ownership (state or non-state) to aggregate the revenues.

14 See Brandt et al. (2014) for a detailed discussion.

15 A detailed discussion on mixed ownership reform is beyond the scope of this paper. Allen et al. (2022) provides an overview of this issue.
5  Robustness Checks

In this section I conduct a number of robustness checks.

5.1  Alternative Measure of Output

The quality of Chinese economic data is often subject to debate, and it has become standard in the literature to use some objective, alternative measures of output. Following this trend, I use night-light data from the Prolonged Artificial Nighttime-light Dataset of China (Zhang et al., 2024) to test the robustness of the IV regressions on GDP and GDP per capita. Table 9, Panel A presents the results using the of average yearly night-light as calculated in Zhang et al. (2024) as a proxy for economic output. The IV regressions yield positive coefficients across all years, which are slightly higher than the OLS estimates. In Panel B, I normalize the night-light values by the registered population (those with hukou in the prefecture) and use it as a proxy for per capita output. The IV regressions again show positive coefficients for all years, with statistically significant results for 2006, 2011, and 2016. I also include the reduced-form regressions using night-light data as the dependent variable and find negative and significant effects from cultural distance to Hong Kong. The regression output is presented in Table C.3 in the Appendix. These findings suggest that the main IV results are robust to alternative measures of economic activity.

5.2  Alternative Cutoff Dates for SEZs

In the main IV results, I use 1994 as the cutoff to define SEZs, as there are far fewer national-level special economic zones established after that, and those that were established had vastly different rationales. However, the SEZ experiment began much earlier than 1994, and it is plausible that the earlier SEZs may have different outcomes in the 2000s compared to the later ones. For instance, looking back from the year 2000, an SEZ established in 1980 has had 10 more years, or 50% more time, to benefit from SEZ status compared to an SEZ set up in 1990. Moreover, the logic of using cultural distances to Hong Kong as an instrument still applies to earlier waves, and the first stage results are already reported in Figure 4.\footnote{For example, Alder et al. (2016) uses night-light data to study the effects of SEZs.}\footnote{As long as no prefecture delayed obtaining its SEZ status precisely because it is culturally close to Hong Kong, the instrument remains valid.}
Therefore, I rerun the main IV specification using 1991 and 1985 as alternative cutoff dates for defining SEZs.\textsuperscript{18}

Table 10 presents the results on GDP and GDP per capita, with the main variable of interest being whether a prefecture is an SEZ by 1991. The coefficients on GDP and GDP per capita are very similar to the main IV results using 1994 as the cutoff date, with the effects on GDP per capita now being statistically significant at the 5% level for 2011 and 2016.\textsuperscript{19} The reduced standard errors of the IV coefficients suggest that even with quantitatively similar effects, the pre-1991 SEZs likely have less variability in their output in the 2000s.

Table 11 shows the results with 1985 as the cutoff date for defining an SEZ. In contrast to both the main results and those in Table 10, the effects of gaining SEZ status pre-1985 are larger for both GDP and GDP per capita, especially in and after 2006. The standard errors are reduced even further, with statistically significant effects observed in 2016 for total GDP and in 2006, 2011, and 2016 for GDP per capita. These differences may be attributed to having SEZ status longer or that the reform policies in the earlier zones are better suited to drive economic growth. In any case, the results show that earlier waves of SEZs have higher total and per capita output with significant effects.

I also re-ran the estimations on measures of labor, capital, productivity, foreign exposure, and marketization using the different cutoff dates. The results are similar to the findings on GDP and GDP per capita, with the 1991 cutoff producing nearly identical effects and the 1985 cutoff yielding larger effects with generally smaller standard errors. These results collectively reaffirm the robustness of the main findings and support the interpretation that the superior performance of SEZs is driven by higher investment (a lot of which is foreign-originated) and productivity, and not by the combination of higher investment and labor as OLS results would suggest. The regression output tables are provided in Section C.3 of the Appendix.

### 5.3 Additional Controls

[Insert Table 12 here]

In Table 12, I control for two additional variables: the log values of the 1982 population and the first available land area. These controls are added to determine whether the IV results are robust when considering agglomeration potentials. The land area is taken from the first

\textsuperscript{18}As aforementioned, these dates are chose because they roughly the same number of SEZs are added by each cutoff.

\textsuperscript{19}Given that SEZs established between 1991 and 1994 are now grouped with prefectures that never became SEZs, the difference between pre-1991 SEZs and post-1994 non-SEZs is likely larger than shown here. The same logic applies to the regressions with 1985 as the cutoff date.
available data due to the fact that prefectures can change in size over time as administrative borders are redrawn. Since changes in land area are likely endogenous, I fix it with the first available observation for each prefecture.

The effects on both GDP and GDP per capita remain positive, with the magnitude generally being slightly smaller for GDP and slightly larger for GDP per capita. These results suggest that the IV regressions are robust to the inclusion of controls for growth potential.

5.4 Alternative Years of Observation

The main specifications are performed on data from 2001, 2006, 2011, and 2016. Although there is no particular reason for choosing these years, I rerun the IV regressions on a different set of years-2003, 2008, 2013, and 2018-to ensure that the main results are not driven by the choice of years. The results are presented in Table 13.

The coefficients from the IV regressions are positive for all years for both GDP and GDP per capita, with the effects on GDP per capita being greater than those on GDP in each corresponding year. Compared to the original results in Table 3, the IV coefficients on GDP per capita are no longer increasing linearly over time. Nevertheless, these effects are similar in magnitude and remain larger than the OLS counterparts.

5.5 Removing Prefecture with Maximum Cultural Distance

Given that cultural distances to Hong Kong are coded from 0 to 3, prefectures with a cultural distance of exactly 3 cannot be further differentiated. To address the potential issue where the coding scheme fails to capture the true cultural distance, I ran the regression on a subset of the sample, excluding prefectures with the maximum distance. Depending on the year, around 27 to 29 prefectures were excluded. The results from the IV regression on this sub-sample are provided in Table 14. Compared to Table 3, there are no discernible quantitative or qualitative differences.

6 Conclusion

This paper examines the effectiveness of China’s SEZ policies, highlighting their significant impact on the Chinese economy since the 1980s. Utilizing an instrumental variable (IV)
approach inspired by historical literature on China’s Reform and Opening Up, this study addresses the challenge of non-random SEZ location selection, providing a clearer understanding of their causal effects. The findings reveal that SEZ status leads to higher GDP levels and even greater increases in GDP per capita compared to non-SEZs in the 2000s. This contrasts with OLS estimates, which tend to overstate the effects on total GDP while understating the impact on GDP per capita.

Further analysis uncovers that the differential outcomes of SEZs are driven by various factors, including labor, capital, and productivity outcomes. The IV approach identifies small effects on population, employment, and total wage, but highlights substantial impacts on investment and productivity. Additionally, the study shows that SEZs exhibit a higher degree of marketization, reflected by a greater share of private output and increased private firm entry.

These findings are found to be robust to alternative regression specifications and measures of dependent variables. Notably, the SEZ effects remain consistent when using night-light data as an alternative output measure. Furthermore, SEZs established in earlier years, particularly before 1985, demonstrate larger effects with less variability.

Overall, this paper provides fresh insights into the long-term effectiveness of SEZs and their role in China’s economic transformation. The results suggest that the superior performance of SEZs is primarily driven by higher productivity and investment rather than by mass labor influx. This aligns with broader trends in China’s economic growth, where higher investment (much of it initially from abroad) and increased productivity (likely due to marketization) drive economic growth against the backdrop of stalling population and wage growth.
References


Figure 1: Distribution of SEZs by Year

Panel A: SEZs by 1980

Panel B: SEZs by 1985

Panel C: SEZs by 1991

Panel D: SEZs by 1994

Notes: This figure presents geographical distributions of SEZs at the prefecture level by the end of 1980, 1985, 1991 and 1994. SEZs are marked by dark blue and non-SEZ areas are marked by light blue.
Notes: This figure presents the frequency distribution of cultural distances between Hong Kong and prefectures in China, computed as in Section 3.3. Prefectures with missing values receive the within-province average. Panel A presents the distribution with the full sample. Panel B presents the distribution after trimming the prefectures with a cultural distance smaller or equal to that of Beijing. The red dashed line in Panel A represents the mean.
Figure 3: Cultural Distance to Hong Kong by Prefecture

Note: This figure presents the geographical distribution of cultural distances between Hong Kong and prefectures in China, computed as in Section 3.3. Prefectures with missing values receive the within-province average.
Figure 4: First Stage Results, by Cutoff Date

Note: SEZs by year show the accumulative totals of SEZs by the end of 1985, 1991, and 1994. Cultural distance to Hong Kong is coded as in Section 3.3. Results with the “No Controls” label refer to first stage results of SEZ status on cultural distance with only province fixed effects and no additional controls. Province fixed effects are included for all results. Standard errors are clustered at the province level. The 95% confidence intervals are provided.
Figure 5: Effect of Cultural Distance on Pre- and Post-Reform Outcomes, Provincial Data

Note: Cultural distance to Hong Kong is computed by taking the population-weighted average cultural distance at the prefecture level. Pre-1976 refers to coefficients from running the regression on the period 1952 to 1976, while post 1995 refers to the period 1995 to 2019. Region and time fixed effects are included for all results. Standard errors are clustered at the province level. The 95% confidence intervals are provided.
Table 1: Population of Each Dialect Spoken in Hong Kong and Matching Results with the Language Atlas of China

<table>
<thead>
<tr>
<th>HK Dialect</th>
<th>Population</th>
<th>Supergroup</th>
<th>Group</th>
<th>Subgroup</th>
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</thead>
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<td>2,076,210</td>
<td>Yue</td>
<td>Yue</td>
<td>Guangfu</td>
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<tr>
<td>Hakka</td>
<td>128,432</td>
<td>Hakka</td>
<td>Hakka</td>
<td>Yuetai</td>
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<td>Hoklo</td>
<td>164,537</td>
<td>Min</td>
<td>Minnan</td>
<td>Chaoshan</td>
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<tr>
<td>Sze Yap</td>
<td>114,484</td>
<td>Yue</td>
<td>Yue</td>
<td>Siyi</td>
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<td>Shanghai</td>
<td>69,523</td>
<td>Wu</td>
<td>Wu</td>
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<td>Kuo Yu</td>
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<td>Total</td>
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Note: Detailed matching process can be found in Section A.2. For groups without a corresponding supergroup, I assign a supergroup with the same name. Source: *Language Atlas of China and Hong Kong 1961 Census Report.*
Table 2: Reduced Form Results on GDP

<table>
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<th>Cultural Distance to HK</th>
<th>log(Distance to HK)</th>
<th>log(Distance to Beijing)</th>
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<th>Border</th>
<th>Longitude</th>
<th>Latitude</th>
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<td>log(GDP)</td>
<td>log(GDP Per Capita)</td>
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<tr>
<td>Adj. R-Squared</td>
<td>0.425</td>
<td>0.472</td>
<td>0.451</td>
<td>0.473</td>
<td>0.380</td>
<td>0.345</td>
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<tr>
<td>Prov FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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Note: Cultural distance to Hong Kong is coded as in Section 3.3. Standard errors are clustered at the province level. *** for p < 0.01, ** for p < 0.05, and * for p < 0.1.
Table 3: IV Estimates of the Effects of SEZs on Output

Panel A: Effects on log(GDP)

<table>
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<td>(4) IV</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEZ by 1994</td>
<td>0.913*** (0.0875)</td>
<td>0.337 (1.268)</td>
<td>0.940*** (0.0911)</td>
<td>0.157 (0.735)</td>
</tr>
<tr>
<td>log(Distance to HK)</td>
<td>-0.633*** (0.0746)</td>
<td>-0.603*** (0.123)</td>
<td>-0.859*** (0.198)</td>
<td>-0.832*** (0.198)</td>
</tr>
<tr>
<td>log(Distance to Beijing)</td>
<td>-0.0686 (0.211)</td>
<td>-0.0226 (0.294)</td>
<td>0.0363 (0.199)</td>
<td>0.115 (0.185)</td>
</tr>
<tr>
<td>Coastal</td>
<td>-0.212* (0.124)</td>
<td>-0.0242 (0.409)</td>
<td>-0.247 (0.151)</td>
<td>0.0374 (0.264)</td>
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<tr>
<td>Border</td>
<td>-0.614*** (0.214)</td>
<td>-0.666** (0.282)</td>
<td>-0.775** (0.143)</td>
<td>-0.480*** (0.185)</td>
</tr>
<tr>
<td>Longitude</td>
<td>0.0119 (0.0261)</td>
<td>0.0232 (0.0380)</td>
<td>0.0316 (0.0187)</td>
<td>-0.0157 (0.0258)</td>
</tr>
<tr>
<td>Latitude</td>
<td>-0.0369 (0.0394)</td>
<td>-0.0296 (0.0431)</td>
<td>0.0195 (0.0202)</td>
<td>0.0320 (0.0293)</td>
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<td>Observations</td>
<td>264</td>
<td>264</td>
<td>282</td>
<td>282</td>
</tr>
<tr>
<td>Adj. R-Squared</td>
<td>0.579</td>
<td>0.518</td>
<td>0.622</td>
<td>0.517</td>
</tr>
<tr>
<td>First Stage F-stat</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Prov FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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Panel B: Effects on log(GDP Per Capita)

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<tr>
<td></td>
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<tr>
<td>SEZ by 1994</td>
<td>0.662*** (0.0715)</td>
<td>0.383 (0.822)</td>
<td>0.663*** (0.0792)</td>
<td>0.738 (0.778)</td>
</tr>
<tr>
<td>log(Distance to HK)</td>
<td>-0.572*** (0.329)</td>
<td>-0.266*** -0.599* (0.325)</td>
<td>-0.602** (0.296)</td>
<td>-0.962** (0.288)</td>
</tr>
<tr>
<td>log(Distance to Beijing)</td>
<td>0.142 (0.319)</td>
<td>0.164 (0.287)</td>
<td>0.314 (0.300)</td>
<td>0.307 (0.283)</td>
</tr>
<tr>
<td>Coastal</td>
<td>0.193 (0.139)</td>
<td>0.284 (0.280)</td>
<td>0.0496 (0.147)</td>
<td>0.0226 (0.292)</td>
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<td>Border</td>
<td>-0.0708 (0.132)</td>
<td>-0.0960 (0.126)</td>
<td>-0.0906 (0.138)</td>
<td>-0.0806 (0.142)</td>
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<td>Longitude</td>
<td>-0.0478 (0.0331)</td>
<td>-0.0423 (0.0328)</td>
<td>-0.6062** (0.0320)</td>
<td>-0.0642** (0.0338)</td>
</tr>
<tr>
<td>Latitude</td>
<td>0.0284 (0.0478)</td>
<td>0.0320 (0.0437)</td>
<td>0.0588 (0.0627)</td>
<td>0.0576 (0.0569)</td>
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<td>Observations</td>
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<td>282</td>
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<tr>
<td>Adj. R-Squared</td>
<td>0.579</td>
<td>0.518</td>
<td>0.622</td>
<td>0.517</td>
</tr>
<tr>
<td>First Stage F-stat</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Prov FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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Note: SEZ by 1994 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1994. IV results contain the output of instrumenting SEZ by 1994 with the cultural distance to Hong Kong. Standard errors are clustered at the provincial level. *** for p < 0.01, ** for p < 0.05, and * for p < 0.1.
Table 4: IV Estimates of the Effects of SEZs on Labor-Related Outcomes

Panel A: Effects on log(Population)

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<tbody>
<tr>
<td>SEZ by 1994</td>
<td>0.250*** -0.147</td>
<td>0.264*** -0.311</td>
<td>0.286*** -0.363</td>
<td>0.293*** -0.445**</td>
</tr>
<tr>
<td></td>
<td>(0.0897) (0.604)</td>
<td>(0.0836) (0.282)</td>
<td>(0.0874) (0.222)</td>
<td>(0.0904) (0.200)</td>
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<td>Observations</td>
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<td>264</td>
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<td>283</td>
</tr>
<tr>
<td>Adj. R-Squared</td>
<td>0.364</td>
<td>0.317</td>
<td>0.356</td>
<td>0.258</td>
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<tr>
<td>First Stage F-stat</td>
<td>11.23</td>
<td>6.133</td>
<td>6.147</td>
<td>5.969</td>
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<td>Controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Prov FE</td>
<td>Yes</td>
<td>Yes</td>
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Panel B: Effects on log(Employment)

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<tbody>
<tr>
<td>SEZ by 1994</td>
<td>0.680*** 0.300</td>
<td>0.794*** -0.0563</td>
<td>0.889*** 0.167</td>
<td>0.871*** 0.224</td>
</tr>
<tr>
<td></td>
<td>(0.0974) (1.356)</td>
<td>(0.0979) (0.503)</td>
<td>(0.102) (0.541)</td>
<td>(0.118) (0.596)</td>
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<td>Observations</td>
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<tr>
<td>Adj. R-Squared</td>
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<td>0.360</td>
<td>0.507</td>
<td>0.329</td>
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<td>First Stage F-stat</td>
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<td>6.133</td>
<td>6.147</td>
<td>6.148</td>
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<tr>
<td>Controls</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Prov FE</td>
<td>Yes</td>
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Panel C: Effects on log(Total Wage)

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<tbody>
<tr>
<td>SEZ by 1994</td>
<td>0.910*** -0.497</td>
<td>0.994*** -0.150</td>
<td>1.012*** 0.158</td>
<td>1.050*** 0.164</td>
</tr>
<tr>
<td></td>
<td>(0.101) (1.264)</td>
<td>(0.115) (0.759)</td>
<td>(0.112) (0.691)</td>
<td>(0.122) (0.720)</td>
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<tr>
<td>Adj. R-Squared</td>
<td>0.498</td>
<td>0.0570</td>
<td>0.521</td>
<td>0.289</td>
</tr>
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<td>First Stage F-stat</td>
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<td>6.147</td>
<td>6.148</td>
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<tr>
<td>Controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Prov FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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</table>

Note: SEZ by 1994 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1994. IV results contain the output of instrumenting SEZ by 1994 with the cultural distance to Hong Kong. Population data contain locally registered people only and can therefore exclude seasonal migrant workers. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level. *** for p < 0.01, ** for p < 0.05, and * for p < 0.1.
Table 5: IV Estimates of the Effects of SEZs on Capital-Related Outcomes

Panel A: Effects on log(Investment)

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<td>(1) OLS</td>
<td>(2) IV</td>
<td>(3) OLS</td>
<td>(4) IV</td>
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<tr>
<td>SEZ by 1994</td>
<td>1.074***</td>
<td>0.965</td>
<td>0.949***</td>
<td>0.419</td>
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<tr>
<td></td>
<td>(0.110)</td>
<td>(1.210)</td>
<td>(0.114)</td>
<td>(0.937)</td>
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<tr>
<td>Observations</td>
<td>264</td>
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<td>283</td>
<td>283</td>
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<tr>
<td>Adj. R-Squared</td>
<td>0.558</td>
<td>0.556</td>
<td>0.618</td>
<td>0.572</td>
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<tr>
<td>Controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Prov FE</td>
<td>Yes</td>
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</table>

Panel B: Effects on log(Real Estate Investment)

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<td>(1) OLS</td>
<td>(2) IV</td>
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<td>(4) IV</td>
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<tr>
<td>SEZ by 1994</td>
<td>1.611***</td>
<td>1.445</td>
<td>1.468***</td>
<td>1.179</td>
</tr>
<tr>
<td></td>
<td>(0.204)</td>
<td>(2.338)</td>
<td>(0.182)</td>
<td>(1.477)</td>
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<td>Observations</td>
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<td>263</td>
<td>283</td>
<td>283</td>
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<tr>
<td>Adj. R-Squared</td>
<td>0.528</td>
<td>0.526</td>
<td>0.558</td>
<td>0.551</td>
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<tr>
<td>Controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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Panel C: Effects on log(Residential Properties Investment)

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<td>(4) IV</td>
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<td>SEZ by 1994</td>
<td>1.225***</td>
<td>0.512</td>
<td>1.452***</td>
<td>1.326</td>
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<td>(0.183)</td>
<td>(1.879)</td>
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<td>(1.618)</td>
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<tr>
<td>Adj. R-Squared</td>
<td>0.438</td>
<td>0.383</td>
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Note: SEZ by 1994 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1994. IV results contain the output of instrumenting SEZ by 1994 with the cultural distance to Hong Kong. Residential properties investment is a sub-category of real estate investment. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level. *** for p < 0.01, ** for p < 0.05, and * for p < 0.1.
Table 6: IV Estimates of the Effects of SEZs on Productivity-Related Outcomes

Panel A: Effects on log(Industrial Output)

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<td>1.137***</td>
<td>0.425</td>
<td>1.117***</td>
<td>0.144</td>
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<tr>
<td>IV</td>
<td>(0.124)</td>
<td>(2.513)</td>
<td>(0.130)</td>
<td>(1.084)</td>
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<td>OLS</td>
<td>0.956***</td>
<td>1.084</td>
<td>0.984***</td>
<td>1.392*</td>
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<td>IV</td>
<td>(0.119)</td>
<td>(1.134)</td>
<td>(0.107)</td>
<td>(0.796)</td>
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<td>Adj. R-Squared</td>
<td>0.551</td>
<td>0.499</td>
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<td>Yes</td>
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Panel B: Effects on log(Output Per Labor)

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<tr>
<td>OLS</td>
<td>0.457***</td>
<td>0.124</td>
<td>0.323***</td>
<td>0.201</td>
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<tr>
<td>IV</td>
<td>(0.101)</td>
<td>(1.208)</td>
<td>(0.0917)</td>
<td>(0.607)</td>
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<td>OLS</td>
<td>0.0655</td>
<td>0.918</td>
<td>0.0875</td>
<td>1.169***</td>
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<td>(0.0803)</td>
<td>(0.599)</td>
<td>(0.0808)</td>
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Panel C: Effects on log(OLS Residual)

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<td>OLS</td>
<td>-0.0594</td>
<td>0.732</td>
<td>-0.0719</td>
<td>0.639***</td>
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<td>IV</td>
<td>(0.0716)</td>
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<td>(0.0738)</td>
<td>(0.252)</td>
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<td>(8)</td>
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<tr>
<td>OLS</td>
<td>-0.0930</td>
<td>0.828***</td>
<td>-0.0400</td>
<td>0.709***</td>
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<td>(0.0635)</td>
<td>(0.136)</td>
<td>(0.0707)</td>
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<td>Adj. R-Squared</td>
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Note: SEZ by 1994 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1994. IV results contain the output of instrumenting SEZ by 1994 with the cultural distance to Hong Kong. OLS residuals are computed by regressing the log value of total output on the log values of total wage and capital stock for each year at the prefecture level, and taking the residuals. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level. *** for p < 0.01, ** for p < 0.05, and * for p < 0.1.
Table 7: IV Estimates of the Effects of SEZs on Foreign-Related Outcomes

Panel A: Effects on log(FDI)

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<td>OLS</td>
<td>IV</td>
<td>OLS</td>
<td>IV</td>
<td>OLS</td>
</tr>
<tr>
<td>SEZ by 1994</td>
<td>1.889***</td>
<td>1.429</td>
<td>2.141***</td>
<td>3.293***</td>
</tr>
<tr>
<td></td>
<td>(0.226)</td>
<td>(2.475)</td>
<td>(0.201)</td>
<td>(1.012)</td>
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<td>271</td>
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<tr>
<td>Adj. R-Squared</td>
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<td>0.637</td>
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<td>0.580</td>
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Panel B: Effects on log(Foreign-Owned Output)

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<td>OLS</td>
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<td>SEZ by 1994</td>
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<td>Adj. R-Squared</td>
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<td>0.475</td>
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<td>0.527</td>
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Panel C: Effects on log(HMT-Owned Output)

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<td>OLS</td>
<td>IV</td>
<td>OLS</td>
<td>IV</td>
<td>OLS</td>
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<td>Prov FE</td>
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<td>Yes</td>
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Note: SEZ by 1994 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1994. IV results contain the output of instrumenting SEZ by 1994 with the cultural distance to Hong Kong. Foreign- and HMT-owned output refer to total output from firms owned by foreign and Hong Kong, Macao and Taiwan owners, two mutually exclusive groups in China’s economic statistics. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level.

*** for p < 0.01, ** for p < 0.05, and * for p < 0.1.
Table 8: IV Estimates of the Effects of SEZs on Marketization

Panel A: Effects on Private Share

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<td>0.230</td>
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<td>(0.0360)</td>
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<td>-0.0484**</td>
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<td>(0.0764)</td>
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<td>301</td>
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<td>Adj. R-Squared</td>
<td>0.552</td>
<td>0.502</td>
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</tr>
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<td>10.16</td>
<td>10.46</td>
<td>6.146</td>
<td>6.177</td>
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<td>Controls</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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Panel B: Effects on Private Capital Ratio

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<td>(3)</td>
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<tr>
<td>OLS</td>
<td>0.101***</td>
<td>0.122</td>
<td>0.119***</td>
<td>0.194</td>
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<tr>
<td>IV</td>
<td>(0.0298)</td>
<td>(0.489)</td>
<td>(0.0416)</td>
<td>(0.343)</td>
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<td>-0.0333</td>
<td>-0.222***</td>
</tr>
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<td>(0.0303)</td>
<td>(0.0642)</td>
<td>(0.0225)</td>
<td>(0.0398)</td>
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<td>Observations</td>
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<td>291</td>
<td>301</td>
<td>301</td>
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<td>Adj. R-Squared</td>
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<td>0.506</td>
<td>0.364</td>
<td>0.350</td>
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<td>10.16</td>
<td>10.46</td>
<td>6.146</td>
<td>6.177</td>
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<tr>
<td>Controls</td>
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<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Prov FE</td>
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Panel C: Effects on log(No. of Private Entry)

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<td>(1)</td>
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<td>(3)</td>
<td>(4)</td>
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<td>OLS</td>
<td>0.931***</td>
<td>-0.228</td>
<td>0.931***</td>
<td>0.372</td>
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<td>0.200</td>
<td>0.749***</td>
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<td>302</td>
<td>302</td>
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<td>0.679</td>
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<td>10.40</td>
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<td>Controls</td>
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<td>Yes</td>
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<td>Prov FE</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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</table>

Note: SEZ by 1994 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1994. IV results contain the output of instrumenting SEZ by 1994 with the cultural distance to Hong Kong. Private share is computed by aggregating private-firm and state-firm revenues at the prefecture level and compute the share of private revenue to total revenue. Private capital ratio is computed by taking the ratio of private contributed capital (also called paid-in capital) to total capital, and then aggregate these ratios to the prefecture level using each firm’s assets as weights. Number of private entry is computed as follows: define firm i as a private entrant in year t if year t is the first year that firm i appears in a given prefecture and the firm is private. Then sum the total number of private entrants in a given year by prefecture. For the year 1998 (the first year of the data), define a firm as an entrant if its registered age is equal to 1. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level.

*** for p < 0.01, ** for p < 0.05, and * for p < 0.1.
Table 9: IV Estimates of the Effects of SEZs on Night-Light

### Panel A: Effects on log(Night-Light)

<table>
<thead>
<tr>
<th>Year</th>
<th>SEZ by 1994</th>
<th>log(Distance to HK)</th>
<th>log(Distance to Beijing)</th>
<th>Coastal</th>
<th>Border</th>
<th>Longitude</th>
<th>Latitude</th>
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<td>2001</td>
<td>0.690***</td>
<td>-1.153***</td>
<td>-0.502</td>
<td>0.383*</td>
<td>-1.066**</td>
<td>-0.0263</td>
<td>0.0248</td>
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<td></td>
<td>(0.138)</td>
<td>(0.261)</td>
<td>(0.295)</td>
<td>(0.222)</td>
<td>(0.414)</td>
<td>(0.0841)</td>
<td>(0.0894)</td>
</tr>
<tr>
<td>2006</td>
<td>0.671***</td>
<td>-1.096***</td>
<td>0.307</td>
<td>0.382*</td>
<td>-0.897***</td>
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<td>(0.314)</td>
<td>(0.0345)</td>
<td>(0.0826)</td>
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<tr>
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<td>-1.098***</td>
<td>-0.435</td>
<td>0.307</td>
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<td>0.243</td>
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### Panel B: Effects on log(Normalized Night-Light)

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<th>log(Distance to HK)</th>
<th>log(Distance to Beijing)</th>
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<th>Border</th>
<th>Longitude</th>
<th>Latitude</th>
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<td>0.371**</td>
<td>-2.190*</td>
<td>-0.166</td>
<td>0.777***</td>
<td>0.0819</td>
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<td>0.0288</td>
</tr>
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<td>(0.152)</td>
<td>(0.726)</td>
<td>(0.414)</td>
<td>(0.609)</td>
<td>(0.246)</td>
<td>(0.0841)</td>
<td>(0.0894)</td>
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<td>2006</td>
<td>0.376**</td>
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<td>0.104</td>
<td>-0.114*</td>
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<td>(0.584)</td>
<td>(0.464)</td>
<td>(0.347)</td>
<td>(0.0695)</td>
<td>(0.0960)</td>
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<tr>
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<td>1.327***</td>
<td>-0.971*</td>
<td>-0.148</td>
<td>0.300</td>
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Note: SEZ by 1994 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1994. IV results contain the output of instrumenting SEZ by 1994 with the cultural distance to Hong Kong. Night-light is obtained from the Prolonged Artificial Nighttime-light Dataset of China project and aggregated to the year level. Normalized night-light is computed by dividing the night-light data by registered population of the same year. Standard errors are clustered at the provincial level. *** for p < 0.01, ** for p < 0.05, and * for p < 0.1.
### Table 10: IV Estimates of the Effects of SEZs on Output, Using 1991 as Cutoff Date

#### Panel A: Effects on log(GDP)

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<tr>
<td>SEZ by 1991</td>
<td>0.715*** (0.138)</td>
<td>0.300 (0.994)</td>
<td>0.704*** (0.150)</td>
<td>0.165 (0.708)</td>
</tr>
<tr>
<td>log(Distance to HK)</td>
<td>-0.553*** (0.0877)</td>
<td>-0.572*** (0.0605)</td>
<td>-0.817*** (0.197)</td>
<td>-0.817*** (0.145)</td>
</tr>
<tr>
<td>log(Distance to Beijing)</td>
<td>-0.0123 (0.215)</td>
<td>-0.00264 (0.188)</td>
<td>0.0961 (0.182)</td>
<td>0.122 (0.174)</td>
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<tr>
<td>Coastal</td>
<td>-0.249*** (0.0963)</td>
<td>-0.0547 (0.461)</td>
<td>-0.256* (0.127)</td>
<td>0.0118 (0.346)</td>
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<td>-0.723** (0.266)</td>
<td>-0.708*** (0.244)</td>
<td>-0.502*** (0.179)</td>
<td>-0.502*** (0.168)</td>
</tr>
<tr>
<td>Longitude</td>
<td>0.0172 (0.0287)</td>
<td>0.0245 (0.0327)</td>
<td>-0.0231 (0.205)</td>
<td>-0.0150 (0.223)</td>
</tr>
<tr>
<td>Latitude</td>
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<td>-0.0210 (0.0419)</td>
<td>0.0411 (0.285)</td>
<td>0.0360 (0.308)</td>
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</table>

Observations: 264 264 282 282 288 288
Adj. R-Squared: 0.470 0.455 0.511 0.488 0.489 0.488 0.509 0.509
First Stage F-stat: 9.764 105.2 106.2 104.6
Prov FE: Yes Yes Yes Yes Yes Yes Yes Yes

Note: SEZ by 1991 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1991. IV results contain the output of instrumenting SEZ by 1991 with the cultural distance to Hong Kong. Standard errors are clustered at the provincial level. *** for p < 0.01, ** for p < 0.05, and * for p < 0.1.

#### Panel B: Effects on log(GDP Per Capita)

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</tr>
<tr>
<td>SEZ by 1991</td>
<td>0.600*** (0.141)</td>
<td>0.341 (0.592)</td>
<td>0.590*** (0.156)</td>
<td>0.776 (0.517)</td>
</tr>
<tr>
<td>log(Distance to HK)</td>
<td>-0.811** (0.338)</td>
<td>-0.823*** (0.307)</td>
<td>-0.541* (0.298)</td>
<td>-0.540** (0.258)</td>
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<tr>
<td>log(Distance to Beijing)</td>
<td>0.181 (0.286)</td>
<td>0.187 (0.262)</td>
<td>0.351 (0.275)</td>
<td>0.342 (0.250)</td>
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<tr>
<td>Coastal</td>
<td>0.128 (0.174)</td>
<td>0.249 (0.288)</td>
<td>-0.06532 (0.209)</td>
<td>-0.0975 (0.284)</td>
</tr>
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<td>Border</td>
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<td>-0.185 (0.134)</td>
<td>-0.187 (0.131)</td>
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<td>Longitude</td>
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<td>0.0748 (0.0585)</td>
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Observations: 264 264 282 282 288 288
Adj. R-Squared: 0.470 0.455 0.397 0.488 0.370 0.290 0.407 0.301
First Stage F-stat: 9.764 105.2 106.2 104.6
Prov FE: Yes Yes Yes Yes Yes Yes Yes Yes
Table 11: IV Estimates of the Effects of SEZs on Output, Using 1985 as Cutoff Date

Panel A: Effects on log(GDP)

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<td>(0.176)</td>
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<td>log(Distance to HK)</td>
<td>-0.340***</td>
<td>-0.494*</td>
<td>-0.565***</td>
<td>-0.750***</td>
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Panel B: Effects on log(GDP Per Capita)

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Note: SEZ by 1985 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1985. IV results contain the output of instrumenting SEZ by 1985 with the cultural distance to Hong Kong. Standard errors are clustered at the provincial level. *** for \( p < 0.01 \), ** for \( p < 0.05 \), and * for \( p < 0.1 \).
Table 12: IV Estimates of the Effects of SEZs on Output with Additional Controls

### Panel A: Effects on log(GDP)

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<td>(4)</td>
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<td>SEZ by 1994</td>
<td>0.791***</td>
<td>0.810***</td>
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<td>(0.305)</td>
<td>(0.305)</td>
</tr>
<tr>
<td>log(Distance to Beijing)</td>
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<td>(0.168)</td>
<td>(0.168)</td>
</tr>
<tr>
<td>log(Population in 1982)</td>
<td>0.314***</td>
<td>0.293***</td>
<td>0.281***</td>
<td>0.320***</td>
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<td>185</td>
<td>185</td>
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<tr>
<td>Adj. R-Squared</td>
<td>0.713</td>
<td>0.688</td>
<td>0.667</td>
<td>0.724</td>
</tr>
<tr>
<td>First Stage F-stat</td>
<td>2.726</td>
<td>2.771</td>
<td>2.771</td>
<td>2.771</td>
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<td>Prov FE</td>
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<td>Yes</td>
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<td>Yes</td>
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### Panel B: Effects on log(GDP Per Capita)

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<tr>
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<td>0.535***</td>
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<td>log(Distance to HK)</td>
<td>-0.708***</td>
<td>-0.501***</td>
<td>-0.439**</td>
<td>-0.461***</td>
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<td>(0.190)</td>
<td>(0.162)</td>
<td>(0.162)</td>
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<td>log(Distance to Beijing)</td>
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<td>0.212</td>
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<td>(0.331)</td>
<td>(0.325)</td>
<td>(0.325)</td>
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<td>0.121</td>
<td>-0.105</td>
<td>-0.0835</td>
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<tr>
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<td>(0.191)</td>
<td>(0.145)</td>
<td>(0.145)</td>
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<td>-0.318**</td>
<td>-0.229***</td>
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<td>(0.141)</td>
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<td>(0.076)</td>
<td>(0.076)</td>
<td>(0.076)</td>
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<tr>
<td>log(Population in 1982)</td>
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<td>(0.0594)</td>
</tr>
<tr>
<td>log(Initial Land Area)</td>
<td>-0.282***</td>
<td>-0.256**</td>
<td>-0.200***</td>
<td>-0.158***</td>
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<tr>
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<td>Adj. R-Squared</td>
<td>0.713</td>
<td>0.688</td>
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<td>First Stage F-stat</td>
<td>2.726</td>
<td>2.771</td>
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<tr>
<td>Prov FE</td>
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</table>

Note: SEZ by 1994 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1994. IV results contain the output of instrumenting SEZ by 1994 with the cultural distance to Hong Kong. Initial land area is the first available data on land area for the given prefecture. Standard errors are clustered at the provincial level. *** for p < 0.01, ** for p < 0.05, and * for p < 0.1.
### Table 13: IV Estimates of the Effects of SEZs on Output with Alternative Years

#### Panel A: Effects on log(GDP)

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2008</th>
<th>2013</th>
<th>2018</th>
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<td>(1) OLS</td>
<td>(2) IV</td>
<td>(3) OLS</td>
<td>(4) IV</td>
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<td>SEZ by 1994</td>
<td>0.908***</td>
<td>0.150</td>
<td>0.919***</td>
<td>0.323</td>
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<td>(0.0953)</td>
<td>(0.712)</td>
<td>(0.0898)</td>
<td>(0.728)</td>
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<td>log(Distance to HK)</td>
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<td>-0.647***</td>
<td>-0.843***</td>
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<tr>
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<td>(0.168)</td>
<td>(0.168)</td>
<td>(0.192)</td>
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<tr>
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<td>0.0509</td>
<td>-0.238</td>
<td>-0.0274</td>
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<td>(0.251)</td>
<td>(0.141)</td>
<td>(0.259)</td>
</tr>
<tr>
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<td>-0.496**</td>
<td>-0.422**</td>
<td>-0.475***</td>
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<td>(0.217)</td>
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<td>(0.164)</td>
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#### Panel B: Effects on log(GDP Per Capita)

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<th>2013</th>
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<td>(1) OLS</td>
<td>(2) IV</td>
<td>(3) OLS</td>
<td>(4) IV</td>
</tr>
<tr>
<td>SEZ by 1994</td>
<td>0.672***</td>
<td>0.925</td>
<td>0.604***</td>
<td>0.934</td>
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<td>(0.0886)</td>
<td>(0.880)</td>
<td>(0.0863)</td>
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<td>log(Distance to HK)</td>
<td>-0.767***</td>
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<td>(0.318)</td>
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<td>(0.131)</td>
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<td>(0.134)</td>
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<td>-0.0559*</td>
<td>-0.0600*</td>
<td>-0.0658**</td>
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<td>(0.0644)</td>
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Note: SEZ by 1994 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1994. IV results contain the output of instrumenting SEZ by 1994 with the cultural distance to Hong Kong. Standard errors are clustered at the provincial level. *** for $p < 0.01$, ** for $p < 0.05$, and * for $p < 0.1$. 

45
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<td>(3)</td>
<td>(4)</td>
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<td>IV</td>
<td>OLS</td>
<td>IV</td>
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<tr>
<td>SEZ by 1994</td>
<td>0.897***</td>
<td>0.116</td>
<td>0.926***</td>
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<td>-0.602***</td>
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<td>6.526</td>
<td>6.562</td>
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<tr>
<td>Prov FE</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td></td>
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<td>IV</td>
<td>OLS</td>
<td>IV</td>
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<tr>
<td>SEZ by 1994</td>
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<td>0.640***</td>
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<td>log(Distance to HK)</td>
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<td>-0.893***</td>
<td>-0.641**</td>
<td>-0.648**</td>
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<td>(0.304)</td>
<td>(0.272)</td>
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<td>(0.249)</td>
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<tr>
<td>log(Distance to Beijing)</td>
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<td>(0.444)</td>
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<td>237</td>
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<td>253</td>
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<td>Adj. R-Squared</td>
<td>0.515</td>
<td>0.484</td>
<td>0.484</td>
<td>0.477</td>
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<tr>
<td>First Stage F-stat</td>
<td>12.01</td>
<td>6.526</td>
<td>6.526</td>
<td>6.562</td>
</tr>
<tr>
<td>Prov FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Note: SEZ by 1994 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1994. IV results contain the output of instrumenting SEZ by 1994 with the cultural distance to Hong Kong. Prefectures with a cultural distance of 3 (the maximum value) are removed from the sample. Standard errors are clustered at the provincial level. *** for \( p < 0.01 \), ** for \( p < 0.05 \), and * for \( p < 0.1 \).
Appendices

Appendix A  Additional Notes

A.1 List of Special Economic Zones and Relevant Policies

Below is the list of all prefecture-level (by 2019 classification) SEZs considered in this study, organized by year of establishment, along with the relevant policies that announce their creation. Lists within each year are not in any particular order.

1. 1980 (4 in total)
   - Special Economic Zones (Jingji Tequ): Shenzhen, Shantou, Zhuhai, Xiamen.

2. 1984 (14 in total)
   - Coastal Open Cities (Yanhai Kaifang Chengshi): Dalian, Qinhuangdao, Tianjin, Yantai, Qingdao, Lianyungang, Nantong, Shanghai, Ningbo, Wenzhou, Fuzhou, Guangzhou, Zhanjiang, and Beihai.

3. 1985 (12 in total)
   - Minnan-Triangle Open Areas (Minnan Sanjiao Jingji Kaifangqu): Zhangzhou, Quanzhou;
   - Pearl River Delta Open Areas (Zhusanjiao Jingji Kaifangqu): Jiangmen, Zhongshan, Dongguan, Foshan;
   - Yangtze River Delta Open Areas (Changsanjiao Jingji Kaifangqu): Suzhou, Changzhou, Wuxi, Huzhou, Jiaxing;

4. 1988 (38 in total)
   - Enlargement of Coastal Open Cities, Hebei (Kuoda Yanhai Kaifang Chengshi, Hebei): Cangzhou, Tangshan;
   - Enlargement of Coastal Open Cities, Liaoning (Kuoda Yanhai Kaifang Chengshi, Liaoning): Dandong, Huludao, Jinzhou, Liaoyang, Panjin, Shenyang, Anshan, Yingkou;
   - Enlargement of Coastal Open Cities, Shandong (Kuoda Yanhai Kaifang Chengshi, Shandong): Zibo, Rizhao, Weifang, Weihai;
• Enlargement of Coastal Open Cities, Jiangsu (Kuoda Yanhai Kaifang Chengshi, Jiangsu): Yangzhou, Zhenjiang, Taizhou, Nanjing, Yancheng;

• Enlargement of Coastal Open Cities, Zhejiang (Kuoda Yanhai Kaifang Chengshi, Zhejiang): Hangzhou, Zhoushan, Shaoxing;

• Enlargement of Coastal Open Cities, Fujian (Kuoda Yanhai Kaifang Chengshi, Fujian): Putian, Ningde;

• Enlargement of Coastal Open Cities, Guangdong (Kuoda Yanhai Kaifang Chengshi, Guangdong): Yangjiang, Huizhou, Zhaoqing, Jieyang, Maoming, Qingyuan, Chaozhou, Shanwei;

• Enlargement of Coastal Open Cities, Guangxi (Kuoda Yanhai Kaifang Chengshi, Guangxi): Qinzhou, Wuzhou, Yulin, Fangchenggang;

• Special Economic Zones (Jingji Tequ): Haikou, Sanya.

5. 1990 (1 in total)

• Enlargement of Coastal Open Cities, Shandong (Kuoda Yanhai Kaifang Chengshi, Shandong): Jinan.

6. 1991 (1 in total)

• Enlargement of Coastal Open Cities, Guangxi (Kuoda Yanhai Kaifang Chengshi, Guangxi): Guilin.

7. 1992 (33 in total)

• Yangtze River Cities (Changjiang Yanan Chengshi): Wuhu, Jiujiang, Wuhan, Yueyang, Chongqing

• Provincial Capital Cities (Shenghui Chengshi): Hefei, Lanzhou, Guiyang, Shiijiazhuan, Changsha, Zhengzhou, Changchun, Hohhot, Nanchang, Yinchuan, Xining, Xi’an, Taiyuan, Chengdu, Harbin, Ürümqi, Beijing;

• Northern Border Open Areas (Beibu Kaifang Chengshi): Heihe, Hulunbuir, Xilingol;

• Southern Border Open Areas (Nanbu Kaifang Chengshi): Nanning, Kunming, Dehong Dai and Jingpo Autonomous Prefecture;

• Western Border Open Areas (Xibu Kaifang Chengshi): Tacheng, Ili Kazakh Autonomous Prefecture;
- Enlargement of Coastal Open Cities, Guangdong (Kuoda Yanhai Kaifang Chengshi, Guangdong): Heyuan, Meizhou, Shaoguan.

8. 1993 (5 in total)

- Enlargement of Coastal Open Cities, Shandong (Kuoda Yanhai Kaifang Chengshi, Shandong): Dongying;
- Enlargement of Coastal Open Cities, Fujian (Kuoda Yanhai Kaifang Chengshi, Fujian): Sanming, Longyan, Nanping;
- Yangtze River Cities (Changjiang Yanan Chengshi): Huangshi.

9. 1994 (2 in total)

- Yangtze River Sanxia Economic Areas (Changjiang Sanxia Jingji Kaifangqu): Enshi, Yichang.
A.2 Matching Hong Kong dialects with Language Atlas of China

The dialects spoken in Hong Kong, as recorded in the 1961 Census, are presented in Table 1. Each dialect is matched with a corresponding grouping in the Atlas as follows:

1. Cantonese: Almost synonymous with the Yue language group (supergroup), it is matched with the Yue group. For the subgroup, Cantonese is matched with the Guangfu subgroup, the dialect spoken predominantly in Guangzhou (Canton).

2. Hakka: A well-defined group (supergroup) in the Atlas with the same name. The Hakka spoken in Hong Kong is matched with the Yuetai subgroup, which is geographically closest to Hong Kong.

3. Hoklo: Refers to the Minnan dialect group under the Min supergroup. It is matched with the Chaoshan subgroup, the geographically closest subgroup to Hong Kong.

4. Sez Yap: Directly matches with the Siyi subgroup under the Yue group (supergroup).

5. Shanghai: Although it does not match any group in particular, the Shanghai dialect spoken in Hong Kong is matched with the Taihu subgroup under the Wu supergroup, as the whole of Shanghai city speaks this subgroup dialect.

6. Kuo Yue: Literally means the national language, i.e., Mandarin. Given that there are six groups within Mandarin, each with numerous subgroups, it is not matched to avoid unintentional bias. Hence, it is left with only the Mandarin supergroup.
A.3 Matching Quality of Prefecture-Level Data

The Language Atlas of China dataset contains 343 unique prefecture-level observations with no missing data for the 1980s. When matched with the 1982 population census data, certain prefecture-level administrative units are merged to align with administrative units in more modern statistical yearbooks. This merging process particularly applies to places that share the same name but are distinguished by an urban suffix (city, or *shi*) and a more suburban/rural suffix (region, or *diqu*).

The 1982 population census data include 272 unique prefecture-level units. After merging the two datasets to compute prefecture-level cultural distances, I obtain 244 unique prefectures across 30 provinces. The remaining units are lost due to changes in administrative borders, administrative rankings, and missing data. Additionally, five more prefectures are excluded when cultural distances are matched to the panels of economic data. Consequently, the final dataset comprises 239 prefectures, which form the basis of the regression analysis against a total of 297 prefectures in the panel data.

For prefectures with missing values in cultural distance, I use the within-province average. Provinces that have no data on dialects at all are excluded from the analysis.
Appendix B   Additional Figures

B.1   Additional Figures for Data Construction

Figure B.1: Population by Dialect, 1961, Hong Kong

<table>
<thead>
<tr>
<th>AGE GROUPS</th>
<th>S X</th>
<th>ENGLISH</th>
<th>CANTONSE</th>
<th>HAKKA</th>
<th>HOKLO</th>
<th>SIZE YAP</th>
<th>SHANGHAI</th>
<th>KUO YU</th>
<th>ALL OTHER E. ASIAN LANGUAGE</th>
<th>PORTUGUESE</th>
<th>ANY OTHER LANGUAGE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 - 9</td>
<td>M</td>
<td>1,585</td>
<td>181,513</td>
<td>10,536</td>
<td>13,733</td>
<td>6,727</td>
<td>3,777</td>
<td>1,464</td>
<td>388</td>
<td>33</td>
<td>324</td>
<td>220,678</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>1,629</td>
<td>170,691</td>
<td>9,376</td>
<td>11,275</td>
<td>6,078</td>
<td>3,404</td>
<td>1,394</td>
<td>301</td>
<td>31</td>
<td>320</td>
<td>204,499</td>
</tr>
<tr>
<td>6 - 10</td>
<td>M</td>
<td>3,214</td>
<td>352,205</td>
<td>19,912</td>
<td>25,008</td>
<td>12,805</td>
<td>7,181</td>
<td>2,858</td>
<td>689</td>
<td>64</td>
<td>644</td>
<td>396,577</td>
</tr>
<tr>
<td>11 - 14</td>
<td>M</td>
<td>1,142</td>
<td>149,281</td>
<td>8,277</td>
<td>13,008</td>
<td>7,180</td>
<td>4,619</td>
<td>1,487</td>
<td>312</td>
<td>36</td>
<td>393</td>
<td>185,705</td>
</tr>
<tr>
<td>11 - 14</td>
<td>F</td>
<td>1,251</td>
<td>134,902</td>
<td>7,027</td>
<td>9,826</td>
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<td>3,706</td>
<td>1,279</td>
<td>231</td>
<td>34</td>
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<td>15 - 19</td>
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<td>2,293</td>
<td>264,155</td>
<td>15,341</td>
<td>22,334</td>
<td>13,579</td>
<td>5,325</td>
<td>2,764</td>
<td>543</td>
<td>70</td>
<td>631</td>
<td>350,659</td>
</tr>
<tr>
<td>15 - 19</td>
<td>F</td>
<td>1,682</td>
<td>133,029</td>
<td>6,582</td>
<td>10,660</td>
<td>6,988</td>
<td>4,955</td>
<td>1,562</td>
<td>687</td>
<td>52</td>
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<td>4,492</td>
<td>87,070</td>
<td>4,988</td>
<td>6,516</td>
<td>4,236</td>
<td>1,874</td>
<td>621</td>
<td>1,008</td>
<td>108</td>
<td>294</td>
<td>111,207</td>
</tr>
<tr>
<td>20 - 24</td>
<td>F</td>
<td>1,429</td>
<td>72,721</td>
<td>4,118</td>
<td>5,250</td>
<td>4,515</td>
<td>1,992</td>
<td>652</td>
<td>477</td>
<td>43</td>
<td>263</td>
<td>91,460</td>
</tr>
<tr>
<td>25 - 29</td>
<td>M</td>
<td>5,921</td>
<td>159,791</td>
<td>9,106</td>
<td>11,766</td>
<td>8,751</td>
<td>3,866</td>
<td>1,273</td>
<td>1,485</td>
<td>151</td>
<td>557</td>
<td>202,667</td>
</tr>
<tr>
<td>25 - 29</td>
<td>F</td>
<td>2,142</td>
<td>111,999</td>
<td>6,002</td>
<td>7,069</td>
<td>5,562</td>
<td>2,378</td>
<td>804</td>
<td>782</td>
<td>45</td>
<td>395</td>
<td>137,178</td>
</tr>
<tr>
<td>30 - 34</td>
<td>M</td>
<td>1,969</td>
<td>111,393</td>
<td>6,633</td>
<td>8,991</td>
<td>6,771</td>
<td>3,838</td>
<td>1,441</td>
<td>485</td>
<td>43</td>
<td>463</td>
<td>116,730</td>
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<td>6,024</td>
<td>4,219</td>
<td>1,328</td>
<td>346</td>
<td>31</td>
<td>364</td>
<td>122,214</td>
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<tr>
<td>35 - 39</td>
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<td>8,848</td>
<td>6,895</td>
<td>3,603</td>
<td>1,864</td>
<td>452</td>
<td>29</td>
<td>368</td>
<td>123,307</td>
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<tr>
<td>35 - 39</td>
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<td>84,602</td>
<td>5,430</td>
<td>8,596</td>
<td>5,074</td>
<td>2,821</td>
<td>1,508</td>
<td>250</td>
<td>25</td>
<td>250</td>
<td>111,002</td>
</tr>
<tr>
<td>40 - 44</td>
<td>M</td>
<td>1,138</td>
<td>82,428</td>
<td>5,207</td>
<td>7,217</td>
<td>3,819</td>
<td>4,209</td>
<td>1,869</td>
<td>293</td>
<td>21</td>
<td>377</td>
<td>107,298</td>
</tr>
<tr>
<td>40 - 44</td>
<td>F</td>
<td>1,140</td>
<td>73,241</td>
<td>4,372</td>
<td>7,274</td>
<td>4,029</td>
<td>3,611</td>
<td>1,185</td>
<td>177</td>
<td>33</td>
<td>300</td>
<td>98,693</td>
</tr>
<tr>
<td>45 - 49</td>
<td>M</td>
<td>2,478</td>
<td>155,549</td>
<td>10,539</td>
<td>14,064</td>
<td>8,446</td>
<td>3,054</td>
<td>470</td>
<td>544</td>
<td>57</td>
<td>503</td>
<td>207,991</td>
</tr>
<tr>
<td>45 - 49</td>
<td>F</td>
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<td>129,209</td>
<td>9,541</td>
<td>10,428</td>
<td>7,620</td>
<td>3,054</td>
<td>470</td>
<td>544</td>
<td>57</td>
<td>503</td>
<td>167,210</td>
</tr>
<tr>
<td>50 - 54</td>
<td>M</td>
<td>782</td>
<td>45,693</td>
<td>3,879</td>
<td>3,552</td>
<td>1,965</td>
<td>2,650</td>
<td>1,144</td>
<td>175</td>
<td>37</td>
<td>220</td>
<td>69,667</td>
</tr>
<tr>
<td>50 - 54</td>
<td>F</td>
<td>567</td>
<td>49,034</td>
<td>3,424</td>
<td>3,842</td>
<td>3,445</td>
<td>1,799</td>
<td>524</td>
<td>254</td>
<td>37</td>
<td>225</td>
<td>63,785</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>1,379</td>
<td>94,777</td>
<td>7,303</td>
<td>7,094</td>
<td>6,370</td>
<td>4,449</td>
<td>1,668</td>
<td>276</td>
<td>74</td>
<td>445</td>
<td>123,855</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>531</td>
<td>27,991</td>
<td>2,497</td>
<td>2,206</td>
<td>1,281</td>
<td>1,689</td>
<td>730</td>
<td>107</td>
<td>19</td>
<td>150</td>
<td>37,210</td>
</tr>
</tbody>
</table>

Note: This is an excerpt from the Hong Kong 1961 Census Report, Volume II, containing the number of people speaking a particular language/dialect by age and gender groups.
### Appendix C  Additional Tables

#### C.1 Additional Tables for IV Estimations

Table C.1: First Stage Results, by Cutoff Date

<table>
<thead>
<tr>
<th></th>
<th>SEZ by 1985 (1)</th>
<th>SEZ by 1991 (2)</th>
<th>SEZ by 1994 (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Distance to HK</td>
<td>-0.203*** (0.0225)</td>
<td>-0.141** (0.0647)</td>
<td>-0.227*** (0.101)</td>
</tr>
<tr>
<td>log(Distance to HK)</td>
<td>-0.204*** (0.0684)</td>
<td>0.0223 (0.0560)</td>
<td>0.117** (0.0569)</td>
</tr>
<tr>
<td>log(Distance to Beijing)</td>
<td>0.113* (0.0586)</td>
<td>0.0863 (0.0949)</td>
<td>0.0577 (0.119)</td>
</tr>
<tr>
<td>Coastal</td>
<td>0.367*** (0.0662)</td>
<td>0.452*** (0.0700)</td>
<td>0.333*** (0.0763)</td>
</tr>
<tr>
<td>Border</td>
<td>0.0250 (0.0307)</td>
<td>0.0290 (0.0412)</td>
<td>0.0110 (0.0757)</td>
</tr>
<tr>
<td>Longitude</td>
<td>0.00172 (0.00537)</td>
<td>0.0133* (0.00740)</td>
<td>0.0157 (0.0101)</td>
</tr>
<tr>
<td>Latitude</td>
<td>0.00616 (0.00542)</td>
<td>-0.00714 (0.00789)</td>
<td>0.0122 (0.00871)</td>
</tr>
<tr>
<td>Observations</td>
<td>362</td>
<td>360</td>
<td>362</td>
</tr>
<tr>
<td>Adj. R-Squared</td>
<td>0.294</td>
<td>0.446</td>
<td>0.518</td>
</tr>
<tr>
<td>Controls</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Prov FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Note: SEZs by year show the accumulative totals of SEZs by the end of 1985, 1991, and 1994. Cultural distance to Hong Kong is coded as in Section 3.3. Standard errors are clustered at the province level. *** for \( p < 0.01 \), ** for \( p < 0.05 \), and * for \( p < 0.1 \).
Table C.2: Effect of Cultural Distance on Pre- and Post-Reform Outcomes, Provincial Data

<table>
<thead>
<tr>
<th></th>
<th>log(GDP)</th>
<th></th>
<th>log(GDP Per Capita)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Distance to HK</td>
<td>0.145</td>
<td>-0.671</td>
<td>0.0175</td>
<td>-0.223</td>
</tr>
<tr>
<td></td>
<td>(0.902)</td>
<td>(0.844)</td>
<td>(0.536)</td>
<td>(0.427)</td>
</tr>
<tr>
<td>log(Distance to HK)</td>
<td>-0.390</td>
<td>-0.519</td>
<td>0.122</td>
<td>-0.0725</td>
</tr>
<tr>
<td></td>
<td>(0.675)</td>
<td>(0.630)</td>
<td>(0.450)</td>
<td>(0.312)</td>
</tr>
<tr>
<td>log(Distance to Beijing)</td>
<td>-0.101</td>
<td>-0.367**</td>
<td>0.133</td>
<td>-0.0345</td>
</tr>
<tr>
<td></td>
<td>(0.161)</td>
<td>(0.175)</td>
<td>(0.291)</td>
<td>(0.163)</td>
</tr>
<tr>
<td>log(Distance to Coastline)</td>
<td>-0.169</td>
<td>-0.0128</td>
<td>-0.394**</td>
<td>-0.353***</td>
</tr>
<tr>
<td></td>
<td>(0.151)</td>
<td>(0.139)</td>
<td>(0.181)</td>
<td>(0.0781)</td>
</tr>
<tr>
<td>Border</td>
<td>0.173</td>
<td>0.289</td>
<td>-0.117</td>
<td>-0.0519</td>
</tr>
<tr>
<td></td>
<td>(0.383)</td>
<td>(0.308)</td>
<td>(0.134)</td>
<td>(0.152)</td>
</tr>
<tr>
<td>Longitude</td>
<td>0.00365</td>
<td>-0.000443</td>
<td>-0.00859</td>
<td>-0.00406</td>
</tr>
<tr>
<td></td>
<td>(0.0284)</td>
<td>(0.0292)</td>
<td>(0.0162)</td>
<td>(0.0105)</td>
</tr>
<tr>
<td>Latitude</td>
<td>0.105*</td>
<td>0.123**</td>
<td>0.0428</td>
<td>0.0692**</td>
</tr>
<tr>
<td></td>
<td>(0.0590)</td>
<td>(0.0545)</td>
<td>(0.0351)</td>
<td>(0.0289)</td>
</tr>
</tbody>
</table>

Observations 700 750 699 750
Adj. R-Squared 0.691 0.859 0.619 0.926
Region FE Yes Yes Yes Yes
Year FE Yes Yes Yes Yes

Note: Cultural distance to Hong Kong is computed by taking the population-weighted average cultural distance at the prefecture level. Pre-1976 refers to coefficients from running the regression on the period 1952 to 1976, while post 1995 refers to the period 1995 to 2019. Region and time fixed effects are included. Standard errors are clustered at the province level. *** for $p < 0.01$, ** for $p < 0.05$, and * for $p < 0.1$. 
### C.2 Additional Tables for Robustness Checks-Alternative Measure of Output

#### Table C.3: Reduced Form Results on Night-Light

<table>
<thead>
<tr>
<th></th>
<th>log(Night-Light)</th>
<th>log(Normalized Night-Light)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Cultural Distance to HK</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-0.165**</td>
<td>-0.175**</td>
</tr>
<tr>
<td></td>
<td>(0.0743)</td>
<td>(0.0698)</td>
</tr>
<tr>
<td>log(Distance to HK)</td>
<td>-1.067***</td>
<td>-1.006***</td>
</tr>
<tr>
<td></td>
<td>(0.262)</td>
<td>(0.263)</td>
</tr>
<tr>
<td>log(Distance to Beijing)</td>
<td>-0.439</td>
<td>-0.374</td>
</tr>
<tr>
<td></td>
<td>(0.387)</td>
<td>(0.344)</td>
</tr>
<tr>
<td>Coastal</td>
<td>0.611***</td>
<td>0.528***</td>
</tr>
<tr>
<td></td>
<td>(0.183)</td>
<td>(0.170)</td>
</tr>
<tr>
<td>Border</td>
<td>-1.041**</td>
<td>-0.873***</td>
</tr>
<tr>
<td></td>
<td>(0.388)</td>
<td>(0.291)</td>
</tr>
<tr>
<td>Longitude</td>
<td>0.0391</td>
<td>0.0261</td>
</tr>
<tr>
<td></td>
<td>(0.0386)</td>
<td>(0.0357)</td>
</tr>
<tr>
<td>Latitude</td>
<td>0.0341</td>
<td>0.0331</td>
</tr>
<tr>
<td></td>
<td>(0.0903)</td>
<td>(0.0850)</td>
</tr>
</tbody>
</table>

Observations: 359 360 360 360 264 283 285 290
Adj. R-Squared: 0.589 0.599 0.595 0.579 0.374 0.339 0.344 0.326
Prov FE: Yes Yes Yes Yes Yes Yes Yes Yes

Note: Cultural distance to Hong Kong is coded as in Section 3.3. Night-light is obtained from the Prolonged Artificial Nighttime-light Dataset of China project and aggregated to the year level. Normalized night-light is computed by dividing the night-light data by registered population of the same year. Standard errors are clustered at the province level. *** for \( p < 0.01 \), ** for \( p < 0.05 \), and * for \( p < 0.1 \).
## Additional Tables for Robustness Checks-Alternative Cutoff Dates for SEZs

Table C.4: IV Estimates of the Effects of SEZs on Labor-Related Outcomes, Using 1991 as Cutoff Date

### Panel A: Effects on log(Population)

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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SEZ by 1991</td>
<td>0.117 (0.139)</td>
<td>-0.131 (0.592)</td>
<td>0.0904 (0.124)</td>
<td>-0.328 (0.388)</td>
<td>0.0904 (0.124)</td>
<td>-0.383 (0.318)</td>
<td>0.0850 (0.121)</td>
<td>-0.470 (0.260)</td>
</tr>
<tr>
<td>Observations</td>
<td>264</td>
<td>264</td>
<td>283</td>
<td>283</td>
<td>285</td>
<td>285</td>
<td>290</td>
<td>290</td>
</tr>
<tr>
<td>Adj. R-Squared</td>
<td>0.347</td>
<td>0.339</td>
<td>0.336</td>
<td>0.312</td>
<td>0.334</td>
<td>0.303</td>
<td>0.386</td>
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<td>First Stage F-stat</td>
<td>9.764</td>
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<td>106.2</td>
<td>105.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Controls</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Prov FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Panel B: Effects on log(Employment)

<table>
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<tr>
<td>SEZ by 1991</td>
<td>0.450*** (0.163)</td>
<td>0.267 (1.076)</td>
<td>0.465*** (0.110)</td>
<td>-0.0594 (0.554)</td>
<td>0.524*** (0.115)</td>
<td>0.176 (0.503)</td>
<td>0.509*** (0.133)</td>
<td>0.236 (0.538)</td>
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<td>283</td>
<td>283</td>
<td>285</td>
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<td>288</td>
<td>288</td>
</tr>
<tr>
<td>Adj. R-Squared</td>
<td>0.305</td>
<td>0.301</td>
<td>0.377</td>
<td>0.345</td>
<td>0.392</td>
<td>0.380</td>
<td>0.421</td>
<td>0.414</td>
</tr>
<tr>
<td>First Stage F-stat</td>
<td>9.764</td>
<td>106.3</td>
<td>106.2</td>
<td>104.6</td>
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<td></td>
<td></td>
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<td>Yes</td>
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### Panel C: Effects on log(Total Wage)

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<td>SEZ by 1991</td>
<td>0.490*** (0.126)</td>
<td>-0.443 (1.538)</td>
<td>0.586*** (0.137)</td>
<td>-0.158 (0.863)</td>
<td>0.610*** (0.134)</td>
<td>0.167 (0.665)</td>
<td>0.665*** (0.161)</td>
<td>0.174 (0.693)</td>
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<tr>
<td>Adj. R-Squared</td>
<td>0.339</td>
<td>0.247</td>
<td>0.375</td>
<td>0.328</td>
<td>0.421</td>
<td>0.405</td>
<td>0.450</td>
<td>0.432</td>
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<td>106.2</td>
<td>104.6</td>
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<td>Yes</td>
<td>Yes</td>
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</table>

Note: SEZ by 1991 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1991. IV results contain the output of instrumenting SEZ by 1991 with the cultural distance to Hong Kong. Population data contain locally registered people only and can therefore exclude seasonal migrant workers. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level. *** for $p < 0.01$, ** for $p < 0.05$, and * for $p < 0.1$. 

---

56
Table C.5: IV Estimates of the Effects of SEZs on Capital-Related Outcomes, Using 1991 as Cutoff Date

Panel A: Effects on log(Investment)

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<tr>
<td>SEZ by 1991</td>
<td>0.450**</td>
<td>0.859</td>
<td>0.522***</td>
<td>0.443</td>
<td>0.564***</td>
<td>0.868</td>
<td>0.623***</td>
<td>0.802**</td>
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<tr>
<td></td>
<td>(0.173)</td>
<td>(0.660)</td>
<td>(0.129)</td>
<td>(0.814)</td>
<td>(0.106)</td>
<td>(0.696)</td>
<td>(0.125)</td>
<td>(0.339)</td>
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<td>285</td>
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<td>Adj. R-Squared</td>
<td>0.374</td>
<td>0.361</td>
<td>0.492</td>
<td>0.492</td>
<td>0.394</td>
<td>0.384</td>
<td>0.498</td>
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<td>First Stage F-stat</td>
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Panel B: Effects on log(Real Estate Investment)

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</thead>
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<tr>
<td>SEZ by 1991</td>
<td>0.807***</td>
<td>1.287</td>
<td>0.814***</td>
<td>1.244</td>
<td>0.849***</td>
<td>1.419</td>
<td>0.795***</td>
<td>1.107</td>
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<td></td>
<td>(0.243)</td>
<td>(1.452)</td>
<td>(0.208)</td>
<td>(1.064)</td>
<td>(0.195)</td>
<td>(1.326)</td>
<td>(0.171)</td>
<td>(0.700)</td>
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<td>Adj. R-Squared</td>
<td>0.368</td>
<td>0.360</td>
<td>0.404</td>
<td>0.397</td>
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<td>0.371</td>
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Panel C: Effects on log(Residential Properties Investment)

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<tr>
<td>SEZ by 1991</td>
<td>0.560**</td>
<td>0.456</td>
<td>0.803***</td>
<td>1.406</td>
<td>0.864***</td>
<td>2.003***</td>
<td>0.804***</td>
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<td>(0.246)</td>
<td>(1.452)</td>
<td>(0.201)</td>
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<td>(0.151)</td>
<td>(0.766)</td>
<td>(0.166)</td>
<td>(0.714)</td>
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<td>Adj. R-Squared</td>
<td>0.290</td>
<td>0.290</td>
<td>0.395</td>
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<td>First Stage F-stat</td>
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Note: SEZ by 1991 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1991. IV results contain the output of instrumenting SEZ by 1991 with the cultural distance to Hong Kong. Residential properties investment is a sub-category of real estate investment. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level. *** for $p < 0.01$, ** for $p < 0.05$, and * for $p < 0.1$. 

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Table C.6: IV Estimates of the Effects of SEZs on Productivity-Related Outcomes, Using 1991 as Cutoff Date

Panel A: Effects on log(Industrial Output)

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<td>(4) IV</td>
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<tr>
<td>SEZ by 1991</td>
<td>0.966***</td>
<td>0.379</td>
<td>0.925***</td>
<td>0.152</td>
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<tr>
<td></td>
<td>(0.209)</td>
<td>(2.058)</td>
<td>(0.217)</td>
<td>(1.085)</td>
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<td>Adj. R-Squared</td>
<td>0.464</td>
<td>0.447</td>
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Panel B: Effects on log(Output Per Labor)

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<td>SEZ by 1991</td>
<td>0.515***</td>
<td>0.111</td>
<td>0.460***</td>
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<td>(0.141)</td>
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<td>Adj. R-Squared</td>
<td>0.494</td>
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Panel C: Effects on log(OLS Residual)

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<td>SEZ by 1991</td>
<td>0.168***</td>
<td>0.653***</td>
<td>0.138***</td>
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<td>(0.0410)</td>
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<td>(0.0487)</td>
<td>(0.104)</td>
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Note: SEZ by 1991 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1991. IV results contain the output of instrumenting SEZ by 1991 with the cultural distance to Hong Kong. OLS residuals are computed by regressing the log value of total output on the log values of total wage and capital stock for each year at the prefecture level, and taking the residuals. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level. *** for p < 0.01, ** for p < 0.05, and * for p < 0.1.
Table C.7: IV Estimates of the Effects of SEZs on Foreign-Related Outcomes, Using 1991 as Cutoff Date

### Panel A: Effects on log(FDI)

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<td>(4) IV</td>
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<td>SEZ by 1991</td>
<td>1.729***</td>
<td>1.269</td>
<td>1.593***</td>
<td>3.484***</td>
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<td>(0.233)</td>
<td>(1.548)</td>
<td>(0.184)</td>
<td>(0.429)</td>
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<td>271</td>
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<td>Adj. R-Squared</td>
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<td>0.567</td>
<td>0.504</td>
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<td>First Stage F-stat</td>
<td>9.266</td>
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### Panel B: Effects on log(Foreign-Owned Output)

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<td>(4) IV</td>
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<td>SEZ by 1991</td>
<td>2.096***</td>
<td>2.453</td>
<td>1.628***</td>
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<td>(0.245)</td>
<td>(2.656)</td>
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<td>Adj. R-Squared</td>
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### Panel C: Effects on log(HMT-Owned Output)

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<td>(4) IV</td>
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<td>1.910</td>
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<td>(1.630)</td>
<td>(0.301)</td>
<td>(1.596)</td>
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<td>263</td>
<td>263</td>
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<td>Adj. R-Squared</td>
<td>0.540</td>
<td>0.540</td>
<td>0.540</td>
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</table>

Note: SEZ by 1991 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1991. IV results contain the output of instrumenting SEZ by 1991 with the cultural distance to Hong Kong. Foreign- and HMT-owned output refer to total output from firms owned by foreign and Hong Kong, Macao and Taiwan owners, two mutually exclusive groups in China’s economic statistics. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level. *** for \( p < 0.01 \), ** for \( p < 0.05 \), and * for \( p < 0.1 \).
### Table C.8: IV Estimates of the Effects of SEZs on Marketization, Using 1991 as Cutoff Date

#### Panel A: Effects on Private Share

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#### Panel B: Effects on Private Capital Ratio

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<td>SEZ by 1991</td>
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<td>0.170***</td>
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#### Panel C: Effects on log(No. of Private Entry)

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<td>SEZ by 1991</td>
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<td>(0.172)</td>
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<td>(1.704)</td>
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<td>Adj. R-Squared</td>
<td>0.650</td>
<td>0.597</td>
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Note: SEZ by 1991 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1991. IV results contain the output of instrumenting SEZ by 1991 with the cultural distance to Hong Kong. Private share is computed by aggregating private-firm and state-firm revenues at the prefecture level and compute the share of private revenue to total revenue. Private capital ratio is computed by taking the ratio of private contributed capital (also called paid-in capital) to total capital, and then aggregate these ratios to the prefecture level using each firm’s assets as weights. Number of private entry is computed as follows: define firm \(i\) as a private entrant in year \(t\) if year \(t\) is the first year that firm \(i\) appears in a given prefecture and the firm is private. Then sum the total number of private entrants in a given year by prefecture. For the year 1998 (the first year of the data), define a firm as an entrant if its registered age is equal to 1. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level. 

*** for \(p < 0.01\), ** for \(p < 0.05\), and * for \(p < 0.1\).
Table C.9: IV Estimates of the Effects of SEZs on Labor-Related Outcomes, Using 1985 as Cutoff Date

### Panel A: Effects on log(Population)

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<tr>
<td>OLS IV</td>
<td>0.195</td>
<td>-0.137</td>
<td>0.221</td>
<td>-0.539</td>
<td>0.219</td>
<td>-0.629</td>
<td>0.225</td>
<td>-0.770</td>
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<td></td>
<td>(0.169)</td>
<td>(0.619)</td>
<td>(0.157)</td>
<td>(0.841)</td>
<td>(0.156)</td>
<td>(0.755)</td>
<td>(0.154)</td>
<td>(0.695)</td>
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</tr>
<tr>
<td>Adj. R-Squared</td>
<td>0.350</td>
<td>0.337</td>
<td>0.340</td>
<td>0.279</td>
<td>0.338</td>
<td>0.262</td>
<td>0.390</td>
<td>0.294</td>
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### Panel B: Effects on log(Employment)

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<tr>
<td>OLS IV</td>
<td>0.619***</td>
<td>0.279</td>
<td>0.767***</td>
<td>-0.0976</td>
<td>0.796***</td>
<td>0.290</td>
<td>0.723***</td>
<td>0.388</td>
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<td>(0.164)</td>
<td>(0.953)</td>
<td>(0.168)</td>
<td>(0.697)</td>
<td>(0.207)</td>
<td>(0.711)</td>
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<tr>
<td>Adj. R-Squared</td>
<td>0.319</td>
<td>0.306</td>
<td>0.404</td>
<td>0.338</td>
<td>0.413</td>
<td>0.393</td>
<td>0.433</td>
<td>0.425</td>
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### Panel C: Effects on log(Total Wage)

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<tr>
<td>OLS IV</td>
<td>0.835***</td>
<td>-0.461</td>
<td>0.994***</td>
<td>-0.259</td>
<td>0.931***</td>
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<td>0.888***</td>
<td>0.284</td>
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<td>(1.405)</td>
<td>(0.184)</td>
<td>(1.535)</td>
<td>(0.180)</td>
<td>(0.971)</td>
<td>(0.197)</td>
<td>(1.009)</td>
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<td>283</td>
<td>283</td>
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<td>Adj. R-Squared</td>
<td>0.372</td>
<td>0.231</td>
<td>0.409</td>
<td>0.309</td>
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<td>Yes</td>
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Note: SEZ by 1985 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1985. IV results contain the output of instrumenting SEZ by 1985 with the cultural distance to Hong Kong. Population data contain locally registered people only and can therefore exclude seasonal migrant workers. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level. *** for p < 0.01, ** for p < 0.05, and * for p < 0.1.
Table C.10: IV Estimates of the Effects of SEZs on Capital-Related Outcomes, Using 1985 as Cutoff Date

Panel A: Effects on log(Investment)

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<td>SEZ by 1985</td>
<td>0.875***</td>
<td>0.895</td>
<td>0.848***</td>
<td>0.727</td>
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<td>(0.185)</td>
<td>(0.675)</td>
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<td>(1.012)</td>
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<td>Adj. R-Squared</td>
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<td>0.408</td>
<td>0.513</td>
<td>0.512</td>
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<td>3.211</td>
<td>3.218</td>
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<td>Yes</td>
<td>Yes</td>
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<td>Prov FE</td>
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Panel B: Effects on log(Real Estate Investment)

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<td>SEZ by 1985</td>
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<td>1.341</td>
<td>1.454***</td>
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<tr>
<td>Adj. R-Squared</td>
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<td>0.402</td>
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Panel C: Effects on log(Residential Properties Investment)

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<td>SEZ by 1985</td>
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<td>0.476</td>
<td>1.381***</td>
<td>2.234***</td>
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<td>Adj. R-Squared</td>
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<td>Yes</td>
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Note: SEZ by 1985 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1985. IV results contain the output of instrumenting SEZ by 1985 with the cultural distance to Hong Kong. Residential properties investment is a sub-category of real estate investment. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level. *** for p < 0.01, ** for p < 0.05, and * for p < 0.1.
Table C.11: IV Estimates of the Effects of SEZs on Productivity-Related Outcomes, Using 1985 as Cutoff Date

**Panel A: Effects on log(Industrial Output)**

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<td>SEZ by 1985</td>
<td>1.309***</td>
<td>0.395</td>
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<td>Adj. R-Squared</td>
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<td>8.067</td>
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<td>2.940</td>
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<td>Controls</td>
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<td>Yes</td>
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**Panel B: Effects on log(Output Per Labor)**

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<tr>
<td>SEZ by 1985</td>
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<td>0.115</td>
<td>0.494***</td>
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<td>2.940</td>
<td>3.222</td>
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<tr>
<td>Controls</td>
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<td>Yes</td>
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<tr>
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**Panel C: Effects on log(OLS Residual)**

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Note: SEZ by 1985 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1985. IV results contain the output of instrumenting SEZ by 1985 with the cultural distance to Hong Kong. OLS residuals are computed by regressing the log value of total output on the log values of total wage and capital stock for each year at the prefecture level, and taking the residuals. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level. *** for \( p < 0.01 \), ** for \( p < 0.05 \), and * for \( p < 0.1 \).
Table C.12: IV Estimates of the Effects of SEZs on Foreign-Related Outcomes, Using 1985 as Cutoff Date

Panel A: Effects on log(FDI)

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<tbody>
<tr>
<td>OLS IV</td>
<td>1.640*** (0.204)</td>
<td>1.323 (1.599)</td>
<td>1.687*** (0.313)</td>
<td>5.710* (3.236)</td>
<td>1.305*** (0.245)</td>
<td>3.879** (1.747)</td>
<td>1.649*** (0.281)</td>
<td>4.877*** (1.132)</td>
</tr>
<tr>
<td>SEZ by 1985</td>
<td>2001 (0.204)</td>
<td>2006 (1.599)</td>
<td>2011 (0.313)</td>
<td>2016 (3.236)</td>
<td>2001 (0.245)</td>
<td>2006 (1.747)</td>
<td>2011 (0.281)</td>
<td>2016 (1.132)</td>
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<tr>
<td>Adj. R-Squared</td>
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<td>0.533</td>
<td>0.497</td>
<td>0.270</td>
<td>0.497</td>
<td>0.365</td>
<td>0.510</td>
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Panel B: Effects on log(Foreign-Owned Output)

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<tr>
<td>OLS IV</td>
<td>2.132*** (0.380)</td>
<td>2.558 (2.740)</td>
<td>1.879*** (0.358)</td>
<td>1.095 (3.468)</td>
<td>1.723*** (0.294)</td>
<td>2.958 (1.884)</td>
<td>1.432*** (0.248)</td>
<td>6.050*** (1.647)</td>
</tr>
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<td>SEZ by 1985</td>
<td>2001 (0.380)</td>
<td>2006 (2.740)</td>
<td>2011 (0.358)</td>
<td>2016 (3.468)</td>
<td>2001 (0.294)</td>
<td>2006 (1.884)</td>
<td>2011 (0.248)</td>
<td>2016 (1.647)</td>
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<td>Adj. R-Squared</td>
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<td>7.814</td>
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Panel C: Effects on log(HMT-Owned Output)

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<tr>
<td>OLS IV</td>
<td>1.881*** (0.205)</td>
<td>2.002 (1.680)</td>
<td>1.888*** (0.181)</td>
<td>6.232 (5.301)</td>
<td>1.607*** (0.230)</td>
<td>5.316* (2.714)</td>
<td>1.501*** (0.287)</td>
<td>5.122 (3.287)</td>
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<tr>
<td>SEZ by 1985</td>
<td>2001 (0.205)</td>
<td>2006 (1.680)</td>
<td>2011 (0.181)</td>
<td>2016 (5.301)</td>
<td>2001 (0.230)</td>
<td>2006 (2.714)</td>
<td>2011 (0.287)</td>
<td>2016 (3.287)</td>
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<tr>
<td>Adj. R-Squared</td>
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<td>0.533</td>
<td>0.545</td>
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<td>0.385</td>
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Note: SEZ by 1985 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1985. IV results contain the output of instrumenting SEZ by 1985 with the cultural distance to Hong Kong. Foreign- and HMT-owned output refer to total output from firms owned by foreign and Hong Kong, Macao and Taiwan owners, two mutually exclusive groups in China’s economic statistics. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level. *** for \( p < 0.01 \), ** for \( p < 0.05 \), and * for \( p < 0.1 \).
Table C.13: IV Estimates of the Effects of SEZs on Marketization, Using 1985 as Cutoff Date

**Panel A: Effects on Private Share**

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<td>IV</td>
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<tr>
<td>SEZ by 1985</td>
<td>0.0914**</td>
<td>0.210</td>
<td>0.0695**</td>
<td>0.233</td>
<td>0.0500**</td>
<td>0.300*</td>
<td>0.0134</td>
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<td></td>
<td>(0.0390)</td>
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<td>(0.165)</td>
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<td>(0.0741)</td>
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<td>Adj. R-Squared</td>
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**Panel B: Effects on Private Capital Ratio**

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<tr>
<td>SEZ by 1985</td>
<td>0.126***</td>
<td>0.111</td>
<td>0.106***</td>
<td>0.176</td>
<td>0.0457*</td>
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<td>Adj. R-Squared</td>
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<td>0.496</td>
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**Panel C: Effects on log(No. of Private Entry)**

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<td>SEZ by 1985</td>
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<td></td>
<td>(0.171)</td>
<td>(1.646)</td>
<td>(0.195)</td>
<td>(1.737)</td>
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<td>Adj. R-Squared</td>
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Note: SEZ by 1985 is an indicator, equal to 1 if a prefecture has gained the SEZ status by 1985. IV results contain the output of instrumenting SEZ by 1985 with the cultural distance to Hong Kong. Private share is computed by aggregating private-firm and state-firm revenues at the prefecture level and compute the share of private revenue to total revenue. Private capital ratio is computed by taking the ratio of private contributed capital (also called paid-in capital) to total capital, and then aggregate these ratios to the prefecture level using each firm's assets as weights. Number of private entry is computed as follows: define firm i as a private entrant in year t if year t is the first year that firm i appears in a given prefecture and the firm is private. Then sum the total number of private entrants in a given year by prefecture. For the year 1998 (the first year of the data), define a firm as an entrant if its registered age is equal to 1. Controls are included in the regressions but results are omitted. Standard errors are clustered at the provincial level. *** for \( p < 0.01 \), ** for \( p < 0.05 \), and * for \( p < 0.1 \).