Place-Based Policies, Creation and Reallocation Effects on City Exports: Insights from China's Cross-Border E-Commerce Comprehensive Pilot Zones

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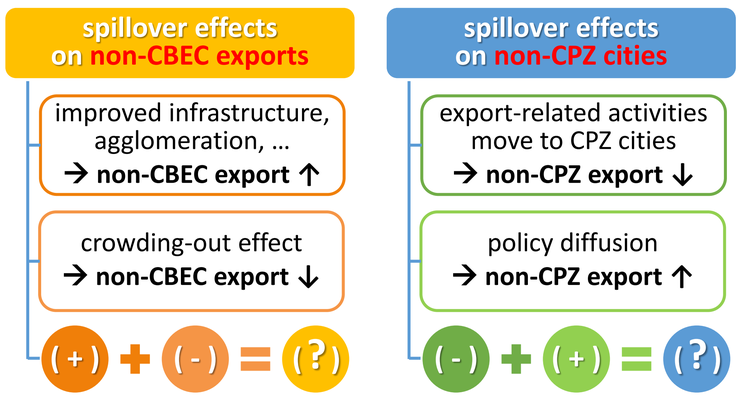
Abstract

This study explores the impact of a significant **export-oriented place-based policy**, **China's Cross-Border E-commerce Comprehensive Pilot Zones (CPZs),** on city exports. Employing a generalized **difference-in-differences** approach, we find that the CPZ program substantially **enhances exports** in both the **host cities and their neighboring non-CPZ cities**. The promotional effects are more pronounced for **exporters** than for **producers**. Further analysis reveals that initiatives promoting **offline** agglomeration positively affect both exporters and producers within the export industry. However, efforts aimed at enhancing **online** trade facilitation predominantly benefit exporters alone. **This paper provides new insights into how place-based policies reshape the spatial layout of the export industry, highlighting the heterogeneous effects of specific policy measures on different participants along the industrial chain and the spillover effects across regions.**

Introduction

- **Cross-border e-commerce (CBEC) exports** in China are **growing rapidly** at about 30% annually but still account for a **small share** of total exports, around 6%.
- The CPZ program is a **place-based policy** aimed at **strengthening the CBEC industry** and **ultimately stabilizing foreign trade** (including CBEC and non-CBEC trade).
- Although studies show CPZs boost CBEC exports in CPZ cities (Ma & Guo, 2022), **their impact on total exports and nearby cities remains unclear**:



- **The ambiguity in theoretical predictions necessitates detailed empirical analysis.**

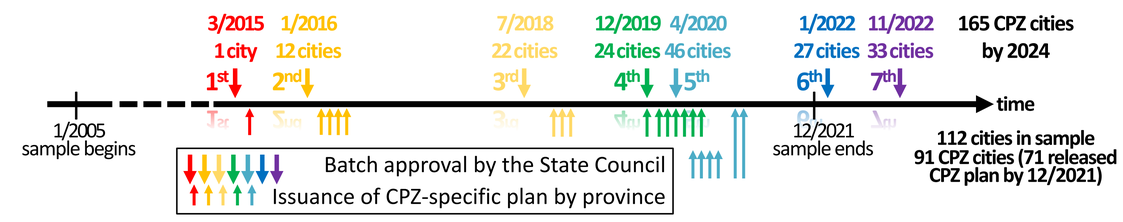


Figure 3. Treatment timing

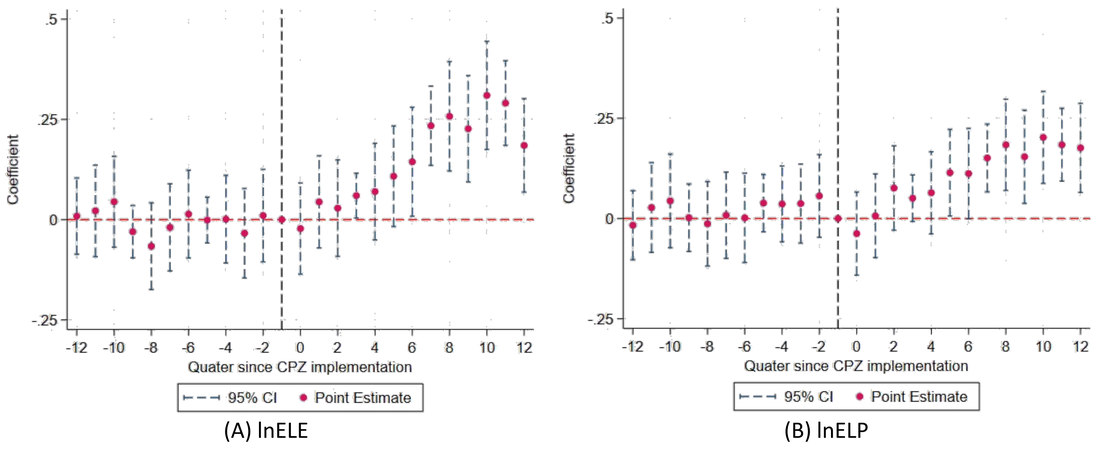
Method

DID strategy: Cities that established a CPZ during the sample period are included in the **treatment group**, while cities without CPZs form the **comparison group**. **Treatment timing** is set at **the month that the province announces the CPZ-specific plan**.

$$\ln y_{ct} = \alpha + \boldsymbol{\beta} CPZ_{ct-1} + \varphi \boldsymbol{S_c \times f(t)} + \theta X_{ct} + \lambda_c + \rho_t + \varepsilon_{ct} \quad (1)$$

$$\ln y_{ct} = \alpha + \boldsymbol{\gamma} CPZ_{ct-1} + \boldsymbol{\delta Neighbor_{ct-1}} + \varphi \boldsymbol{S_c \times f(t)} + \theta X_{ct} + \lambda_c + \rho_t + \varepsilon_{ct} \quad (2)$$

where $\boldsymbol{c}$ denotes the city, $\boldsymbol{t}$ denotes time (year-month). $\boldsymbol{S_c \times f(t)}$ is added to correct the **non-random selection into the CPZ program**. $\boldsymbol{S_c}$ includes **7 key selection variables** and $\boldsymbol{f(t)}$ is a **function of time**. $\boldsymbol{Neighbor_{ct-1}}$ is the indicator of **neighboring cities**, defined as **non-CPZ cities in provinces hosting a national-level CPZ.**



(A) lnELE — *log exports by the **location of exporters***

(B) lnELP — *log exports by the **location of domestic producers***

Figure 4. Test for parallel trends

Result Highlights

Main Result:

- **CPZs boost city exports**, positively affecting **both host and neighboring cities**.
- **Exports by the location of exporters** show **greater increases** under CPZ influence compared to **exports by the location of domestic producers.**

Table 1. The overall effects of the CPZ implementation.

	(1) ln Export	(2) ln Export	(3) ln Export	(4) ln Export	(5) ln Export
Panel A. Dep. var.: log exports by the location of exporters (**lnELE**)					
CPZ_{ct-1}	0.122***	**0.096*** **	0.093***	0.160***	0.162***
	(0.022)	**(0.020)**	(0.023)	(0.058)	(0.059)
Panel B. Dep. var.: log exports by the location of domestic producers (**lnELP**)					
CPZ_{ct-1}	0.072***	**0.063*** **	0.081***	0.078	
	(0.020)	**(0.018)**	(0.020)	(0.055)	
Selection Correction	NO	Selection $\times f$(Year)	Selection × Year FE	Selection $\times f$(Year)	Selection $\times f$(Year)

Notes: Col. (1) - (3) use monthly sample of 17,480 obs., controlling city-month FEs and year-month FEs; Col. (4), (5) use yearly sample of 1,460 obs., controlling city FEs and year FEs. SE are clustered at the city-month level for Col. (1)-(3) and at the city level for Col. (4)-(5). Export values in Col. (1) - (4) are from custom statistics, that in Col. (5) is from statistical yearbooks. All specifications include a set of control variables. f(Year) is the 3rd-order poly. function of year.

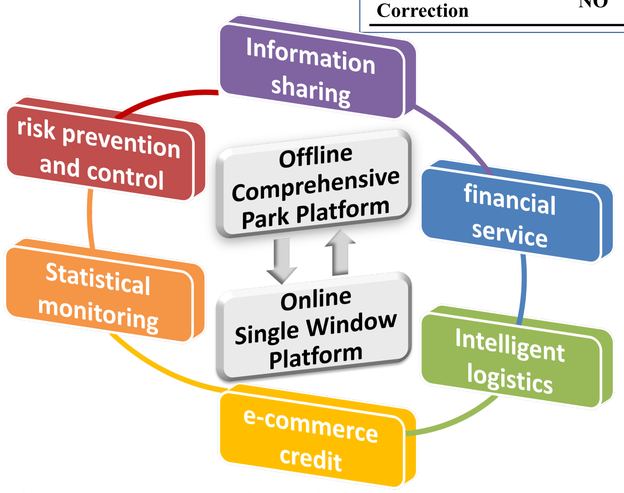


Figure 1. Six Systems and Two Platforms: the institutional innovation of the CPZ program

Figure 2. Selection into the CPZ program

Table 2. Spillover effects within provinces.

	(1) lnELE	(2) lnELE	(3) lnELP	(4) lnELP
CPZ_{pt-1}	**0.188*** **		**0.165*** **	
	(0.019)		**(0.018)**	
CPZ_{ct-1}		0.130***		0.077***
		(0.020)		(0.017)
$Neighbor_{ct-1}$		**0.118*** **		**0.047***
		(0.035)		**(0.026)**

Notes: Monthly sample is used. SE are clustered at the city-month level. Control variables and selection correction terms align with those in Table 1, Col. (2). $\boldsymbol{CPZ_{pt-1}}$ takes the value of 1 if a province has established its first CPZ in the period $t-1$, and 0 otherwise.

Effectiveness of the offline comprehensive park platform:

- CPZs **increase new export-related firm registration**, particularly in **retail and wholesale sectors (mainly exporters)** within host cities, and in **manufacturing sectors (mainly producers)** within neighboring non-CPZ cities.

Table 3. Effects on the number of export-related new firms.

# of new firms	(1) All	(2) Manuf.	(3) Ret. & Whls	(4) Transp. & Wareh.	(5) Other Serv.
CPZ_{ct-1}	**2.354*** **	0.075	**2.191*** **	-0.040	0.107
	(0.597)	(0.163)	**(0.493)**	(0.031)	(0.142)
$Neighbor_{ct-1}$	**0.680** **	**0.353*** **	0.058	**0.043*** **	**0.193*** **
	(0.344)	**(0.117)**	(0.306)	**(0.016)**	**(0.067)**
City-monthly avg.	12.438	1.046	9.935	0.155	0.840
Std. dev.	23.893	3.830	20.465	0.061	2.276

Effectiveness of the online Single Window Platform:

- Initiatives aimed at enhancing **digital trade infrastructures** like the **Single Window platform primarily benefit exporters**.

Table 4. Heterogeneous effects by Single Window emphasis

	(1) lnELE	(2) lnELP
CPZ_{pt-1}	0.094***	0.075***
	(0.027)	(0.024)
$CPZ_{ct-1} \times SW$	**0.076** **	**0.003**
	(0.034)	**(0.029)**
$Neighbor_{ct-1}$	0.121***	0.048*
	(0.036)	(0.027)

Notes: The sample, control variables and selection correction terms align with those in Table 1, Col. (2). $\boldsymbol{SW}$ takes the value of 1 if the CPZ-specific plan includes mention of constructing the *Single Window* platform, and 0 otherwise.

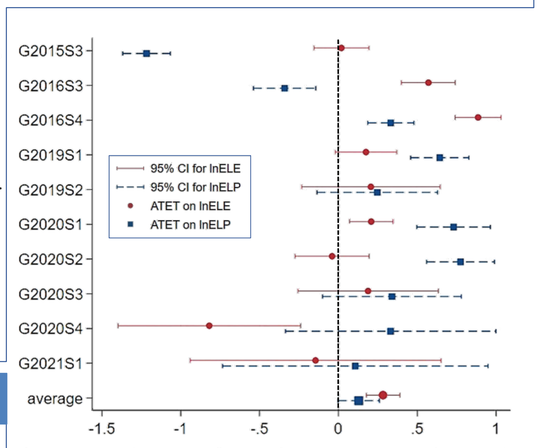


Figure 5. Estimates of ATET by treatment cohort using Callaway and Sant'Anna (2021)'s method

What's more?

- **Cities with better business environments** report **greater increases** in exports after CPZ designation.
- ATETs over time vary across different cohorts, categorized by the distinct release times of CPZ-specific plans. **Most cohorts demonstrate positive treatment effects.**

Conclusions

- CPZ programs raise exports beyond their primary CBEC development goal.
- Digital infrastructure (e.g., *Single Window* platforms) primarily benefits exporters.
- Good business environments amplify benefits for both exporters and producers.
- Export-oriented place-based policies may reshape export industry geography.

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