The Socio-economic Impact of Special Economic Zones: Evidence from Cambodia

Mariya Brussevich
International Monetary Fund

1. Introduction

Objective Examine the socio-economic impact of Special Economic Zones (SEZs) at a local level in a low-income country.

Contributions

- Use novel district-level data on SEZ entry and household data to examine causal effects of SEZs on employment and incomes.
- Use information on future and cancelled SEZs as part of the identification strategy.
- Examine spillover effects of SEZs on neighboring districts.

2. Context

SEZ Program in Cambodia:

- Legal framework established in 2005;
- 23 SEZs operating in 2019, each hosting 1-100 firms and employing 125,000 workers (mostly Khmer);
- 2020-onwards: 7 SEZs authorized for operation, 13 locations under consideration.
- Major sectors: manufacturing of garments, footwear, travel goods, electronics;
- Most SEZ firms are foreign-owned and 70% of them export (accounted for 15% of all exports).

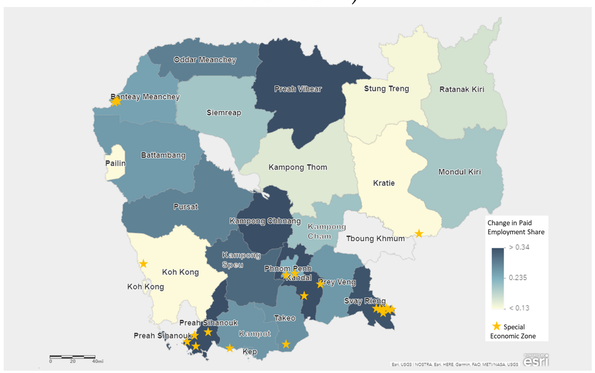
Existing studies: World Bank & ADB (2014), Warr & Menon (2016).

3. Identification strategy

Data sources: Cambodia Socio-Economic Survey (2007-2017); information on SEZs in 180 districts Council for Development of Cambodia (2005-2020).

Outcomes of interest: paid, manufacturing, and female employment shares; wages, household incomes, income inequality (Gini coefficient); land values; school drop-out rate.

Figure 1. Share of paid employment (Δ% 2007-2017)



Non-random location of SEZs across districts: treated districts are more likely to be located in the capital region, have lower female employment, lower wages.

Event study specification:

$$y_{dt} = \alpha + \beta D_{dt} + \lambda T_{dt} + \delta_d + \gamma_{pt} + \epsilon_{dt},$$

where $D_{dt} = 1$ if an SEZ is present in a district d; T_{dt} – post-SEZ entry time trend; δ_d – district FE; γ_{pt} – province p and year t FE.

Weighting strategy: propensity score weights (location, initial wages, manufacturing employment share, average educational attainment, and land values).

Adjacent and future SEZ controls:

- discontinuity design: neighboring non-treated districts;
- districts (i) approved to host an SEZ after 2017; or (ii) rejected or pending districts for hosting an SEZ.

4. Employment results

Table 1: Local effects of SEZ entry on employment

	Paid empl.	Mnf. empl.	Female empl.
Panel A. Propensity Score Weights			
SEZ	-0.011	0.009	0.053***
	(0.011)	(0.009)	(0.014)
Post-SEZ Trend	0.004	0.008	-0.009**
	(0.007)	(0.009)	(0.004)
Panel B. Adjacent & Future SEZ Controls			
SEZ	-0.003	-0.005	0.050***
	(0.014)	(0.005)	(0.013)
Post-SEZ Trend	0.002	0.003	-0.002
	(0.008)	(0.007)	(0.003)
Observations (A)	1,555	1,555	1,555
Observations (B)	354	354	354

- Limited effect on paid employment share and manufacturing employment share;
- Entry of SEZ boosts female employment;
- SEZs tend to attract firms in female labor-intensive industries.

5. Incomes & other results

Table 2: Local effects of SEZ entry on wages, incomes, land values, and education

	Wages	HH Income	Gini coef.	Land value	Drop-out rate
Panel A. Propensity Score Weights					
SEZ	-0.018	0.011	-0.046***	0.105**	-0.011
	(0.144)	(0.076)	(0.012)	(0.042)	(0.035)
Post-SEZ Trend	0.057	0.061*	0.007	0.033	0.001
	(0.043)	(0.035)	(0.005)	(0.023)	(0.008)
Panel B. Adjacent & Future SEZ Controls					
SEZ	-0.137	0.042	-0.047***	-0.043	0.004
	(0.177)	(0.073)	(0.007)	(0.142)	(0.042)
Post-SEZ Trend	0.015	0.021	0.009***	-0.021	0.002
	(0.046)	(0.042)	(0.002)	(0.028)	(0.006)
Observations (A)	1,555	1,555	1,555	1,555	1,555
Observations (B)	354	354	354	354	354

- No evidence of a wage premium offered by firms in SEZs;
- Entry of SEZs is associated with an almost 5% decline in income inequality;
- Weak evidence of land price inflation after entry of SEZs;
- No effect on school drop-out rates.

6. Spillover results

Table 3: The SEZ Spillover Effects on Neighboring Districts

	(1) Female empl.	(2) Drop-out rate
SEZ	0.058***	-0.037*
	(0.014)	(0.021)
Post-SEZ Trend	-0.011***	0.009
	(0.004)	(0.008)
SEZ in Neighboring District	0.018*	-0.045***
	(0.010)	(0.014)
Post-SEZ Trend in Neighboring District	0.000	0.015***
	(0.002)	(0.002)
Observations	1,555	1,555

Spillover results

- Small positive impact on female employment in neighboring district (spillovers from commuting).
- School drop-out rates increase by 1.5% (assuming average SEZ age is 4 years).

Robustness checks

- Limited effect of multiple SEZs on employment and incomes in a given location.
- Applying alternative control groups and propensity scores simultaneously.
- Lagged specification.
- Robust results on female employment and income inequality.

7. Main takeaways

- SEZs attract firms in low-skilled manufacturing that offer limited wage premium to local workers.
- Entry of SEZs boosts female employment (owing to the sectoral mix) and reduces income inequality but has limited impact on paid employment.
- Entry of SEZs reduces local income inequality.
- SEZs have small positive spillovers on female employment and increase school drop-out rates in neighboring districts.
- Little evidence of positive agglomeration effects in districts with multiple SEZs.

8. References

Warr, Peter and Jayant Menon (2016). "Cambodia's Special Economic Zones." Journal of Southeast Asian Economies, 33(3), 273-90.

World Bank and the Asian Development Bank (2014). "The Investment Climate Assessment, 2014. Creating Opportunities for Firms in Cambodia." World Bank, Phnom Penh, Cambodia.