CASE – Center for Social and Economic Research

The Political-Economy of Place-Based Policies
with a Focus on Special Economic Zones

Bringing the Benefits of David to Goliath: Special Economic Zones and Institutional Improvement

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Warsaw | April 23-24, 2015

Partners: Szkoła Główna Handlowa w Warszawie; Invest in Poland – Polish Information and Foreign Investment Agency

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Overview

- The Theory Behind SEZs
- The Institutional Link
- Three Hypotheses
- Data and Methodology
- Results
- Thoughts for the Future

The Theory Behind SEZs

SEZs are meant to overcome broader policy failings in a country by

- creating an oasis that will help to attract FDI (Graham 2004),
- serve as a laboratory for policy experimentation (Heilmann 2008),
- support broader policy reform efforts (Ge 1999), and
- be a "pressure-release valve" to alleviate large-scale unemployment (FIAS 2008).

Institutions and SEZs

What would the channels for these improvements be? That is, how would an SEZ overcome failings?

- Implicit understanding that there are institutional failures that require SEZs
    - If a system worked, there would be no need for a "carve-out" that was exempt from the rules
    - Easier to change a small, sub-national unit than all of the rules at the federal/central level
- Thus, SEZs are a way to increase institutional experimentation and transfer knowledge back to the "host" country

Institutions and SEZs (II)

Which institutions can SEZs help to experiment with?

- Property rights/business environment
    - Most countries using SEZs have poor business environments, lack of security of property rights, SEZs designed to take care of that
- Trade institutions
    - SEZs are a way to get around trade restrictions that are politically popular elsewhere in the country
- Labor markets
    - SEZs may also help avoid overly-stringent labor legislation

The Research Question(s)

Purpose of this paper is to examine two separate empirical issues:

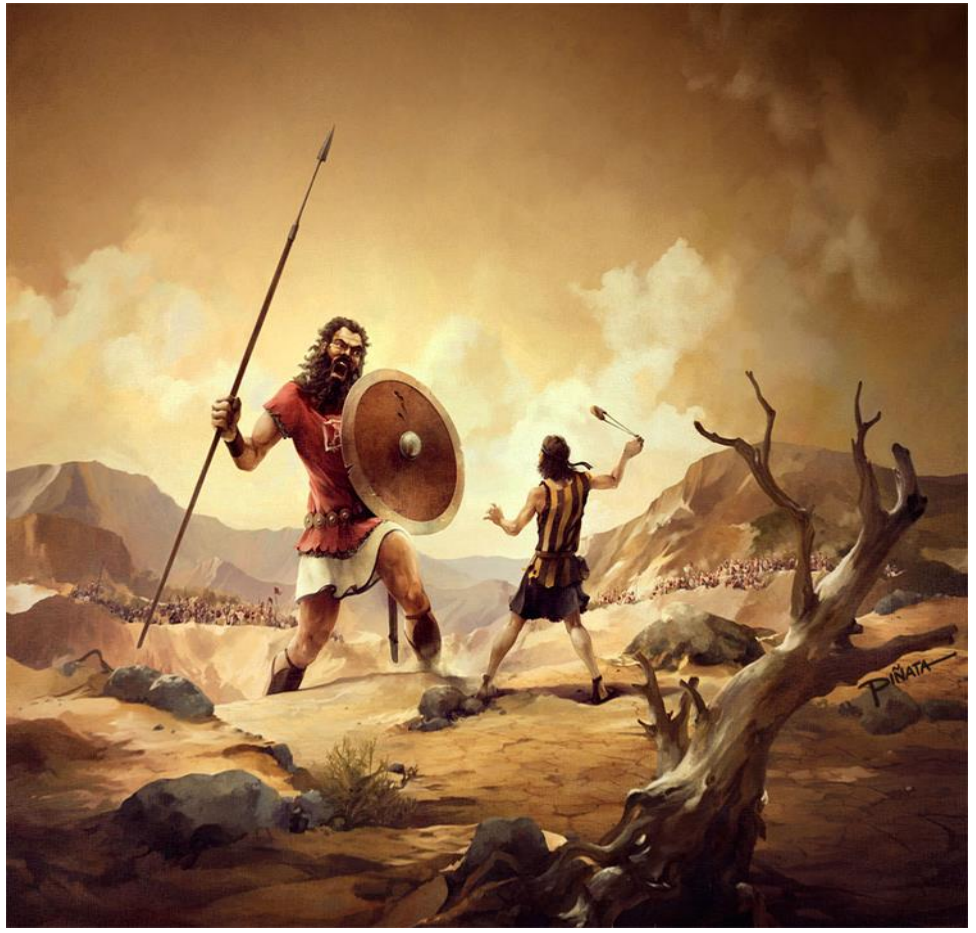
- Does the size of a country really does matter for its institutional structure?
- Have SEZs have actually been able to spur on institutional improvement in large countries and, if so, in what magnitude?

Three Main Hypotheses

- *H1: Small countries have better institutions than larger ones*
  - If we discount the United States, a potentially huge outlier, there may be a clear correlation between country size and institutional development
- *H2: SEZs act as small countries*
  - SEZs are meant to redress the coordination and transaction cost failures that come with large countries. Ergo…
- *H3: SEZs may create better institutions in their home countries*
  - Acting as small countries, SEZs can diffuse institutional improvement back to the host

Thus…

- The benefits of David (the small country) can be brought by SEZs to Goliath (a big country)… without slaying either one!



The Data

New dataset encompassing 100+ countries for approximately 20 years

- Macroeconomic data from the World Bank and the IMF
- Institutional data from the International Country Risk Guide (ICRG) and IMF
- Country attributes from World Bank
- SEZ data from CASE's own work

Methodology

H1 – Smaller is Better

- Time invariance of country size means time-series data is of little use
  - Cross-sectional data of average size, institutional ranking, growth, and US dummy used instead

$$y = \alpha Size_i + \gamma Initial\ Level_i + \delta Initial\ GDP_i + \beta US + \varepsilon_i$$

Where y_i is the average institutional score over 1983/1995-2012, Initial Level is the earliest recorded score of the relevant institutional metric, and Initial GDP is same for GDP

Methodology (II)

H2 – SEZs are small countries

- Recourse to the theory and previous case studies
    - What are the attributes of small countries?
    - Do SEZs meet these attributes?

H3 – Do SEZs -> Better Institutions?

- Time-series cross-section panel data on institutional change
    - Allows us to see incremental changes in institutions due to the presence of SEZs
- Endogeneity of SEZ choice calls for an IV-GMM approach

Methodology (III)

H3 – Do SEZs -> Better Institutions?

Endogeneity of SEZs

- What determines decision to start an SEZ?
  - Initial level of income
  - Population (country size)
  - Initial level of institutions
- Thus, we fashion a regression that instruments the presence of an SEZ with these three factors

$$y_{it} = \alpha SEZ + \beta X_{it} + \varepsilon_{it}$$

Where

$$SEZ = \theta InitialGDP_i + \mu Population_{it} + Initial\ Institutions_i + \epsilon_i$$

Methodology (IV)

H3 – Do SEZs -> Better Institutions?

$$y_{it} = \alpha SEZ_{it} + \beta X_{it} + \varepsilon_{it}$$

Where

- SEZ = either presence or number of SEZs in a country
- X_{it} is a matrix of controls that can influence institutional development, including
  - Growth
  - Trade Openness
  - Financial Openness
  - GDP per capita
  - Inflation

H1: Smaller is Better?

"It is in the nature of a republic that it should have a small territory; without that, it could scarcely exist.

In a large republic, there are large fortunes, and consequently little moderation of spirit… In a large republic, the common good is sacrificed to a thousand considerations; it is subordinated to various exceptions; it depends on accidents. In a small republic, the public good is more strongly felt, better known, and closer to each citizen."

-C.L. Montesquieu, "From The Spirit of Laws," Book VIII, 1750)

H1: Smaller is Better? (II)

Why would a smaller country have better institutions?

- Administration and congestion costs (Alesina et al. 2005)
    - As a country gets bigger, more difficult and costly to administer rules
    - Subsidiarity principle applies: most effective rules done at the lowest levels
- Less heterogeneity/more homogeneity in the population
    - Ethnolinguistic fractionalization more prevalent in big countries
    - Rules are increasingly less applicable to all voters in big countries
- Small countries tend to be more open (Rose 2006)
    - Easier to trade as distances to ports/borders are smaller
    - With openness comes competition and better institutions (Al-Marhubi 2005; Bhattacharyya 2012)

Institutions in Small Countries

Evidence exists already regarding institutional quality in small countries

- Olsson and Hansen (2011) note that "institutional quality often has the character of a local public good that is imperfectly spread across space from the core of the country to the hinterland"
- Also show that a large territory usually is accompanied by valuable rents and a lack of openness that both tend to distort property rights institutions
- Empirically, size is negatively related to rule of law

Smaller is Better? Empirical Evidence

- Eyeballing the evidence shows a clear correlation between size and business environment

Economy	Ease of Doing Business Rank	Population
Singapore	1	5,469,700
New Zealand	2	4,554,680
Hong Kong	3	7,234,800
Denmark	4	5,655,750
Korea, Rep.	5	50,423,955
Norway	6	5,156,450
United States	7	320,186,000
United Kingdom	8	64,105,654
Finland	9	5,472,421
Australia	10	23,710,000
Sweden	11	9,743,087
Iceland	12	328,170
Ireland	13	4,609,600
Germany	14	80,783,000
Georgia	15	4,490,500
Canada	16	35,675,834
Estonia	17	1,315,819
Malaysia	18	30,460,700
Taiwan, China	19	23,433,753
Switzerland	20	8,211,700

Smaller is Better? Empirical Evidence (II)

- Results of a simple fixed-effects regression relating institutional metrics to population show that smaller *is* better!

Property Rights	Coef.	t	P>t
Population (in millions)	-0.001	2.59	0.011
Growth (%)	0.890	0.60	0.551
Initial level of property rights	-0.10	0.82	0.412
Initial GDP	-0.21	1.03	0.304
United States dummy	2.240	12.36	0.00
constant	8.160	32.46	0.00
N	102		
r-squared	0.08		

Control of Corruption	Coef.	t	P>t
Population (in millions)	-0.0003	-2.70	0.008
Growth (%)	0.0003	0.00	0.999
Initial level of control of corruption	0.90	33.16	0.00
Initial GDP	0.007	0.18	0.861
United States dummy	1.506	2.91	0.004
constant	0.040	0.7	0.487
N	107		
r-squared	0.88		

Regulatory Quality	Coef.	t	P>t
Population (in millions)	-0.001	2.79	0.006
Growth (%)	-0.300	0.42	0.67
Initial level of regulatory quality	2.14	3.96	0.00
Initial GDP	-0.10	0.96	0.34
United States dummy	1.44	15.14	0.00
constant	0.450	3.25	0.00
N	107		
r-squared	0.11		

H2: SEZs are small countries

Return to the theory, SEZs should:

- create an oasis that will help to attract FDI (Graham 2004),
  - Small countries tend to be more open and have better business climates ✓

- serve as a laboratory for policy experimentation (Heilmann 2008),
  - Rule-making is easier in a small country ✓

H2: SEZs are small countries (II)

Example: Guangdong, China

- World's largest country creates a small SEZ in Guangdong in 1979, followed by others
- Political decentralization leads to SEZs given more autonomy, central government rules are retracted for firms in the SEZ (Crane 1990)
- Still dependent upon political forces in the region (liberalization could not move too quickly)
- Local leaders eventually see benefit of SEZs, agitate for their continuation (Weingast, Montinola, and Qian 1995).

H3: Do SEZs -> Better Institutions?

	Property Rights		Regulatory Quality	
	IV-GMM	IV-GMM	IV-GMM	IV-GMM
	1	2	3	4
SEZ Presence	1.46		0.85	
	*3.99***		*5.50***	
Number of SEZs		0.02		0.01
		*2.30**		*3.73***
Openness	1.43	1.27	0.39	0.33
	*10.14***	*9.85***	*5.04***	*6.63***
GDP per capita	-0.07	-0.14	-0.04	-0.13
	0.71	*1.36*	*0.82*	*3.61***
Growth	-0.02	-0.03	0.06	0.05
	0.26	*0.27*	*1.17*	*1.37*
Financial openness	0.49	0.38	0.28	0.22
	*10.73***	*7.32***	*13.17***	*11.32***
Inflation	-0.0003	-0.00003	0.00002	-0.000002
	*1.67**	*1.83**	*2.26**	*5.07***
C	-21.74	-17.77	-8.36	-6.69
	*7.36***	*6.97***	*5.20***	*6.63***
n	808	704	485	407
R-squared	0.94	0.94	0.22	0.42
Underidentification (Kleibergen-Paap) test (p)	0.000	0.000	0.000	0.000
Stock-Yogo weak identification (F-stat)	822.217	46.490	576.342	29.152
Hansen test (p)	0.5383	0.789	0.426	0.566
instruments	population, initial income	population, initial income	population, initial income	population, initial income

H3: Do SEZs -> Better Institutions? (II)

	Property Rights	Regulatory Quality	Time to Export (Days)	Time to Import (Days)
	IV-GMM	IV-GMM	IV-GMM	IV-GMM
	1	2	3	4
SEZ Presence	0.83	1.42	-56.16	-110.66
	*2.98***	*4.24***	*4.66***	*2.82***
Openness	1.34	0.44	-7.32	-12.26
	*10.42***	*5.13***	*1.88**	*1.43*
Population	0.0003	-0.0003	0.01	0.03
	1.49	*1.48*	*2.27**	*1.97**
GDP per capita	-0.16	0.07	-9.50	-22.89
	1.61	*0.77*	*2.20**	*2.05**
Growth	-0.01	0.08	0.26	0.94
	0.11	*1.07*	*0.05*	*0.09*
Financial openness	0.51	0.28	-0.58	-0.05
	*10.54***	*10.26***	*0.52*	*0.02*
Inflation	-0.0003	0.00002	0.00001	0.00001
	*2.18**	*1.54*	*0.22*	*0.86*
C	-19.58	-9.98	224.36	385.96
	*7.38***	*5.55***	*2.80***	*2.06**
n	808	485	265	265
R-squared	0.95	0.29	0.26	0.25
Underidentification (Kleibergen-Paap) test (p)	0.000	0.000	0.000	0.000
Stock-Yogo weak identification (F-stat)	1740.588	204.079	158.395	191.053
Hansen test (p)	0.5338	0.972	0.470	0.641
instruments	initial income, initial level of property rights	initial income, initial level of property rights	initial income, initial time to export	initial income, initial time to import

H3: Do SEZs -> Better Institutions? (III)

- If we instrument SEZ presence by size of country and initial GDP (first slide), yes, both SEZs and the number of SEZs seem to improve regulatory quality and property rights
  - Effect is stronger in property rights but more significant in regulatory quality

- If we instrument SEZs by previous institutional levels (second slide), SEZ presence improves regulatory quality and property rights
  - Magnitude of the effect is larger for regulatory quality in this set of regressions

Future research

- Addition of more institutional variables to this analysis
  - Labor market variables missing from this analysis
  - Difficulty in finding economic and econometrically appropriate instruments

- Inclusion of additional controls (suggestions encouraged)
  - What also might influence institutional development in a country besides co-variates mentioned here?
  - Incorporate fiscal and decentralization variables as in Moberg's (2014) work in progress

DZIĘKUJĘ!

and

THANK YOU!