Measuring Corruption Using Governmental Audits: A New Framework and Dataset

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Motivation/Talk Outline

1. Perceptions data are problematic for theory and knowledge development

2. Audits irregularities vs. other objective measures

3. Overuse of Brazilian audit data
   - randomization $\neq$ audit independence/utility
   - lack of external validity (general knowledge)

4. Audit independence/utility framework

5. Objective audit data for everyone to use
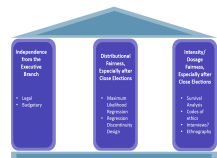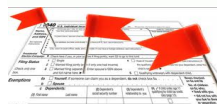
Why Not Perceptions Data?

1. Over time comparisons with TI CPI
   - Andersson *et al. 2009*; Stephenson 2017

2. Halo effects/information leakage
   - Kurtz & Schrank 2007

3. Content opacity
   - Hollyer 2018

4. Construct validity/discriminant validity
   - Langbein & Knack 2010; Thomas, 2010

5. Level-of-analysis problems
   - Gingerich 2013
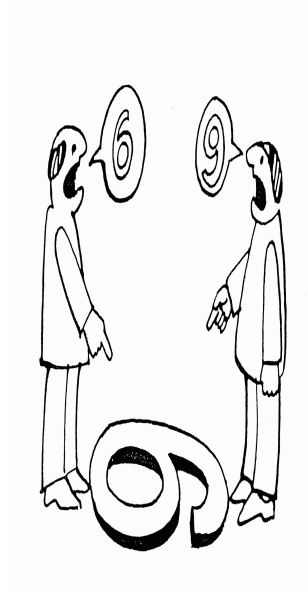
Audits Violations Vs. Other Objective Corruption Indicators

1. Other objective corruption indicators:
   - procurement red flags, asset abnormalities, taxes, smuggling, parking tickets, infrastructure quality, shell companies, stock market prices, etc.
     - Fazekas *et al.* 2018; Fisman *et al.* 2001, 2007, 2009, 2014; Olken, 2007; Findley *et al.* 2014, etc.

2. Audit content
   - ghost firms, overinvoicing, and...
   - **ALL OF THE ABOVE**

Audits—Current State of the Art

1. One-off studies/experiments
   - Di Tella & Schargrodsky 2004; Olken 2007; Lagunes forthcoming

2. Countries/territories besides Brazil:
   - Bobonis *et al.* 2016; Larreguy *et al.* forthcoming

3. Brazil
   - Ferraz & Finan 2008, 2011; Melo *et al.* 2009; Brollo *et al.* 2013, 2016; Avis, Ferraz & Finan 2018; Daniele *et al.* 2008; Hidalgo *et al.* 2016; Morelli *et al.* forthcoming
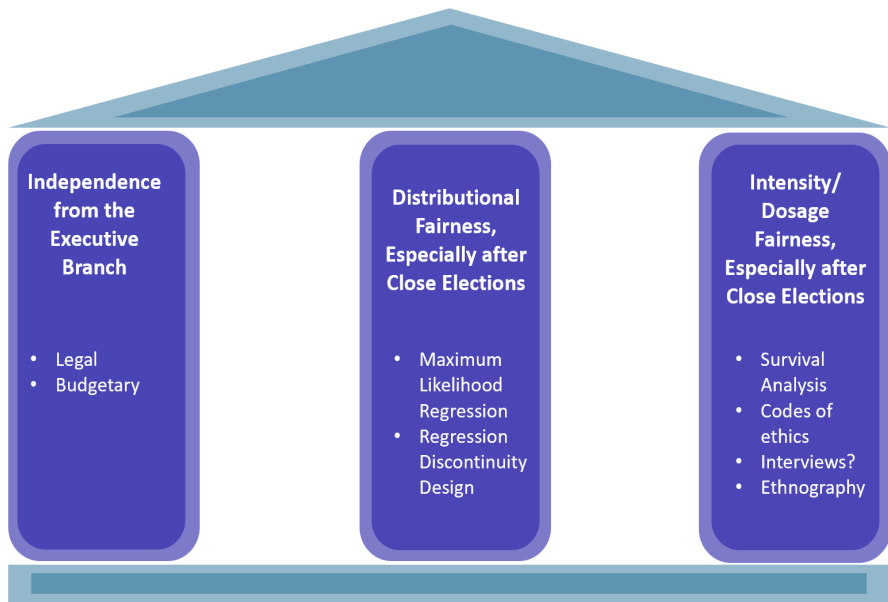
Why Not Only Brazil? (External Validity)

Table 1: External Validity Dimensions of the Brazil Studies

| Dimension	Sample(s)	Population(s)	Target(s)
Mechanism	Local media, election proximity, politician quality (education level)		
Settings	Comptroller General audit lotteries program on use of federal transfers	Regular municipal audits, audits of other programs, experiments, or other types designs	All countries in the world?
Treatment	Municipalities receiving an audit, mayor ability to run for reelection, being a female mayor	Subnational unit receiving an audit, politician ability to run for reelection, being a female politician in Brazil	Getting audited, reelection, being a female politician in any country
Outcome	Corrupt infractions or misappropriations in use of federal transfers	Subnational political corruption in Brazil	Subnational political corruption in all other countries?
Unit	Municipalities receiving an audit, municipalities with politicians seeking reelection or all municipalities in Brazil below certain populations	All municipalities in Brazil	All subnational political corruption in countries with reelection
Time	2004-a few years before the publication of each respective study	2004-present	All years?

A New Framework for All Audit Utility Data

Independence from the Executive Branch

- Legal
- Budgetary

Distributional Fairness, Especially after Close Elections

- Maximum Likelihood Regression
- Regression Discontinuity Design

Intensity/ Dosage Fairness, Especially after Close Elections

- Survival Analysis
- Codes of ethics
- Interviews?
- Ethnography

Table 2: Summary of Original Data Collected

	Honduras	**Guatemala**	**Mexico**	**India**
Administrative Level	Municipal	Municipal	Municipal	State
Years Covered	2002-2018	2004-2018	2000-2018	2004-2018
Number of Audits	900	3,500	2,300	1,100
Sector	No	No	Yes	Yes
Sub-sector	No	No	No	Yes
Infractions	Yes	Yes	Yes	Yes
Precise Details of Infractions	Yes	No	Yes	Partial
Money Stolen/Missing	No	Yes	Yes	Yes
Follow-up on Audit Recommendations	No	No	No	Yes
Whistleblower Complaints	No	Yes	No	No
Bureaucrat Sanctions	No	Yes	No	No
Money Audited	No	No	Yes	Yes
Money Outside Audit	No	No	Yes	No

Honduras' Audit Distribution [1]
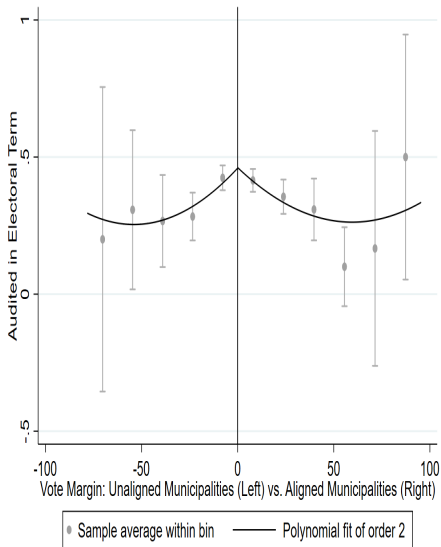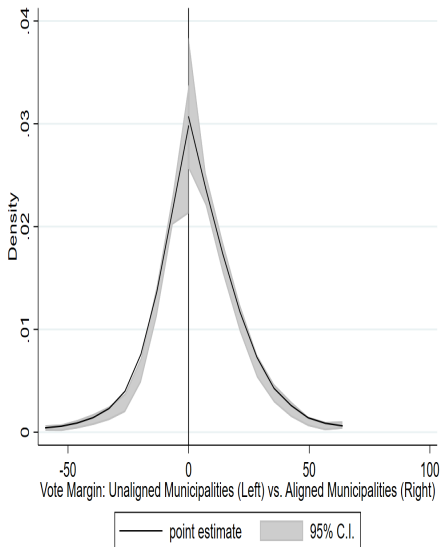

Annual Audits (2002-2017)
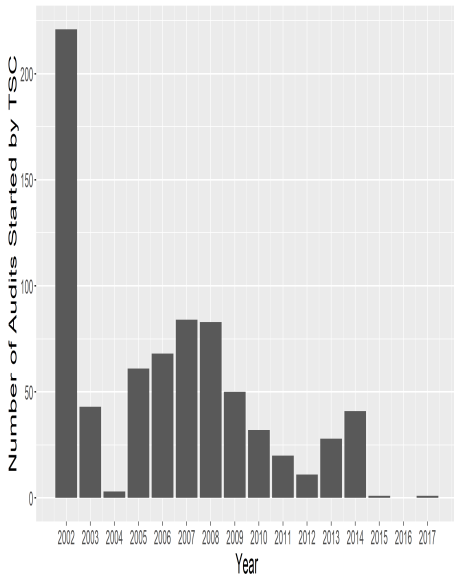
Logit Specification
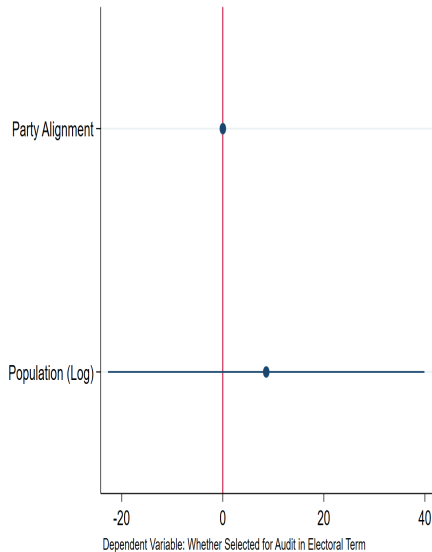
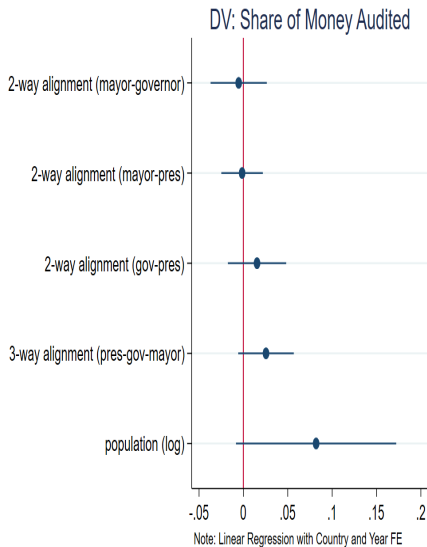# Honduras' Audit Distribution [2]

Regression Discontinuity Design

McCrary (2008) Density Test

Mexico's Audit Intensity/Dosage
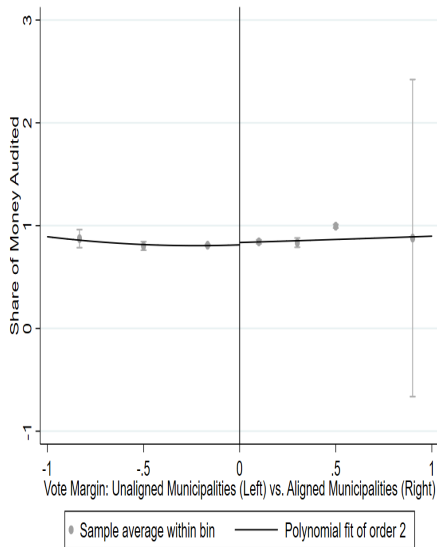

Linear Regression

DV: Share of Money Audited

Regression Discontinuity Design

Conclusion/Goals

- New audit data & framework $\Rightarrow$
  - Better inferences
  - More external validity

- Policy innovation and more SAIs complying with INTOSAI Mexico and Lima Declarations

Thank you!

Comments/feedback welcome: mdenly@utexas.edu