# Curses 1

# Plan for this 1h25

0. Brief recap from lecture 3 – 5’

1. Reviewing the assignments – 10’

2. Resource curse – introduction – 25’

3. Curses: research evidence – 50’

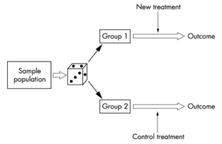
# Recap and main points from lecture 3: Impact Evaluation

1. Introducing impact evaluation.
2. An RCT in practice.

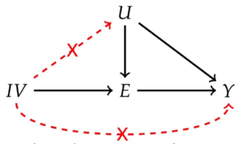


## Methodologies for causal inference

**1. Experiments – Lab and Field (RCTs):** the gold standard




2. Instrumental variables (**IV**)




References here and Mastering Metrics' chapter 3

3. Regression discontinuity designs (**RDD**)


4. Differences-in-differences (**DiD**)




## Randomization in the real world – Randomists

J-PAL ABDUL LATIF JAMEEL POVERTY ACTION LAB

Funded and headed by Esther Duflo and Abhijit Banerjee - MIT

ipa Innovations for Poverty Action

Funded by Dean Karlan – Northwestern University



## A new Market Information System: *n'kalô*

We partnered with the NGO Nitidæ, world-expert on cashew markets, the National Cashew Agency and the mobile operator MTN to provide a **voice-based version of the N'kalô service**.

*N'kalô* is a MIS providing information on agricultural markets in 13 countries.

One of the **best sources of information on the cashew market worldwide**.

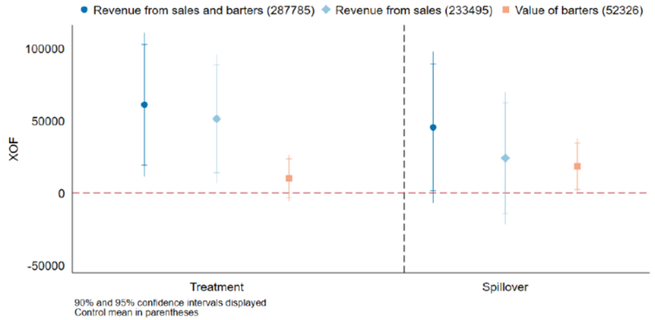

DIME DRIVING GLOBAL IMPACT

ment Impact Evaluation Department World Bank

NOVAFRICA

Funded and headed by Pedro Vicente and Cátia Batista – Nova SBE

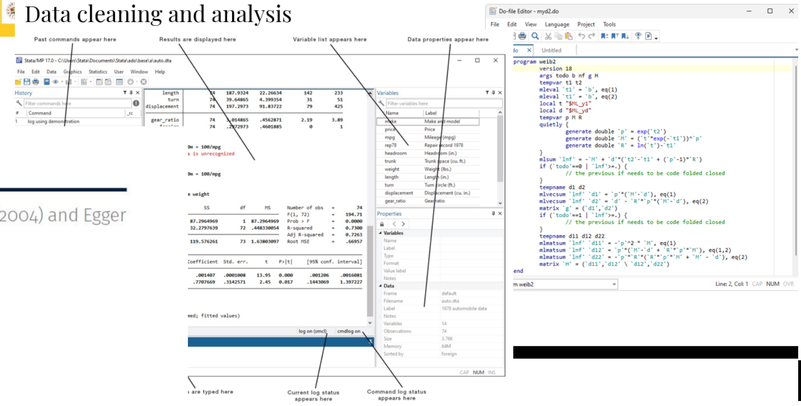
## ..treated producers make more revenue (+21%)




90% and 95% confidence intervals displayed
Control mean in parentheses

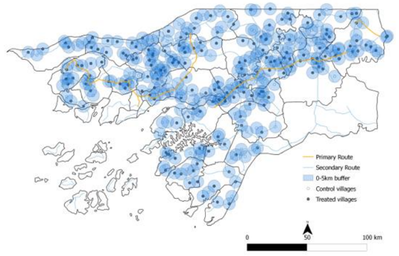


## Data cleaning and analysis




## Identifying spillovers across villages

We identify between-village spillovers in the style of Miguel and Kremer (2004) and Egger et al. (forthcoming).



# Topic 4.1: Resource curse - introduction

# Classical explanations: Dutch Disease

Assume three sectors: extractive (natural resources), tradable (manufacturing), non-tradable.

A boom of natural resources (a discovery) leads to higher demand of all goods, as the country becomes richer.

That includes non-tradables, which can only be produced internally to the country (supply constraints in the short run) => prices increase more in the non-tradable sector.

- Capital and labor drop in tradable (manufacturing), move to non-tradable.

- Demand/exports of natural resource (foreign currency inflows) and increase in price in non-tradables => Real exchange rate appreciates => **cheaper imports** and **more expensive exports** // **lower** competitiveness in **manufacturing**:
  - Less exports of manufactured goods.
  - Less internal consumption of internally produced manufactured goods.

Shrunk manufacturing = deindustrialization may be problematic for economic growth, due to technology and human capital externalities + resource booms are often temporary!

**Tradable goods:**
- Manufactured goods.
- Commodities.

**Non-tradable “goods”:**
- Real state
- Services.
- Public utilities.
- Local transportation.
- Care services.

**IMPORTANT**

# Classical explanations: Rent-seeking vs. Entrepreneurship

A resource boom distorts economic incentives, leading to misallocation of talent and capital:

1. Taxation and Informality:
- Powerful interest groups raise taxes on productive sectors to protect resource rents.
- Capital shifts to less productive, informal sectors to avoid taxation.

2. Shift to Rent-Seeking
- Entrepreneurs abandon productive activities to focus on capturing resource rents (e.g., lobbying, securing concessions).
- This diversion of talent reduces innovation and economic diversification.

3. Decentralized Mechanism (Caselli & Cunningham, 2009)
- High returns to rent-seeking divert resources from manufacturing & innovation.
- Reinforces Dutch disease by accelerating deindustrialization.

Key Consequences:
✓ Weaker manufacturing & tradable sector beyond exchange rate effects.
✓ Loss of long-term productivity & human capital.
✓ Economic volatility & fiscal instability if the resource boom is temporary.
➞ Resource wealth distorts taxation & investment, worsening economic decline.

# Another Explanation: The Political Curse

Political Resource Curse (Robinson, Torvik, and Verdier, 2006):

- Framework: Two-period economy with an election at the end of the first period.
  - Natural resource income accrues to the government.
  - Politicians decide how much to extract now vs. leave for the future.

- Resource Allocation, two possibilities:
  - Consumption: General public spending, or,
  - Patronage: Used to influence elections.

- Key Insights:
  - Politicians prioritize staying in power. They make decisions about resource extraction and allocation based on their chances of reelection, instead of long-term economic efficiency. .
  - Politicians over-extract resources relative to the socially efficient path because they only care about future resources if re-elected.
  - Resource booms increase patronage, leading to inefficient public sector employment and resource misallocation.
- Centralized Mechanism: Political incentives, not market forces, drive resource mismanagement.

➞ Institutions Matter: Strong political accountability is critical to avoid instability and inefficiency.

**Venezuela vs Norway**

# Dutch Disease & Conflict: Theoretical Link

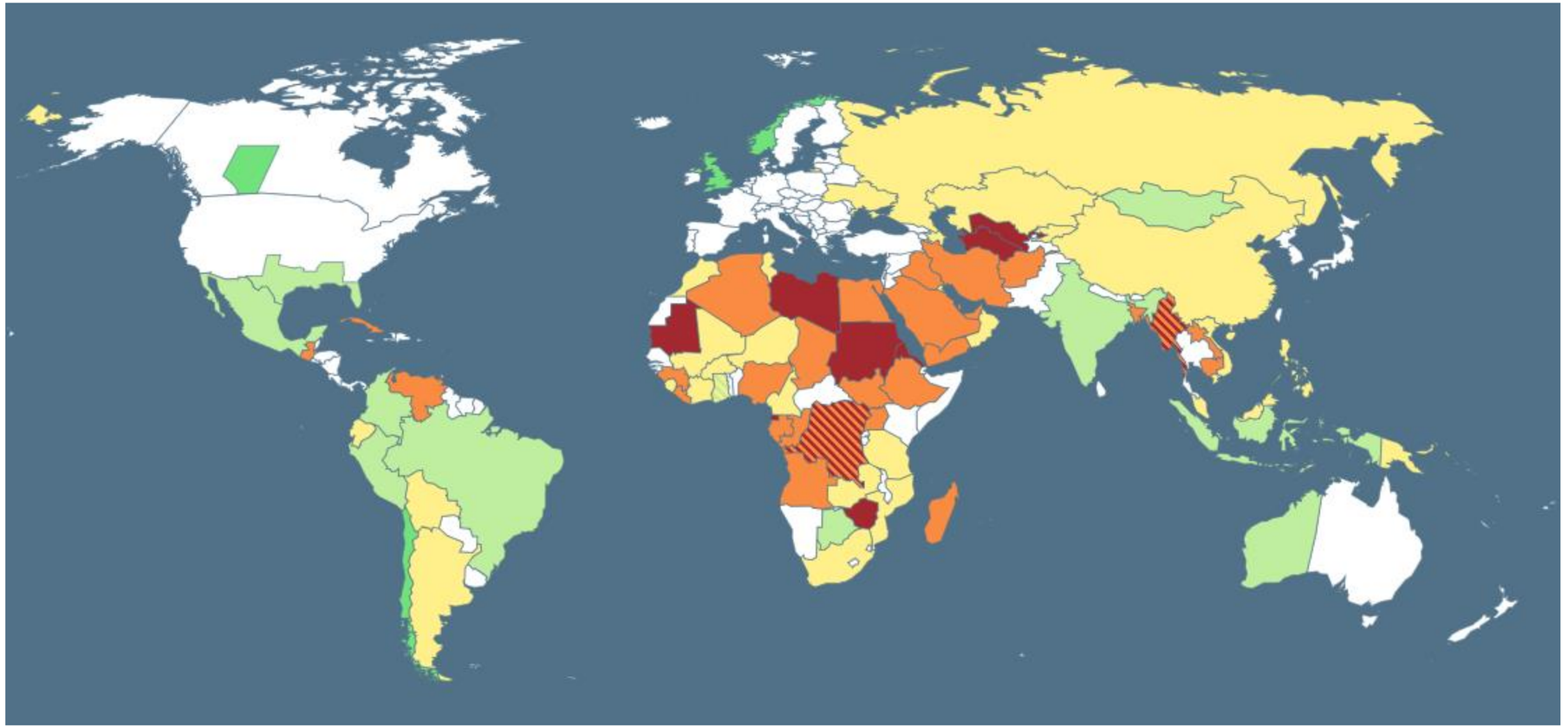
A resource discovery can increase conflict risk by distorting institutions and incentives:

- Competition Over Rents (Collier and Hoeffler 2004): Resource rents often create incentives for both state actors and non-state groups to engage in violent conflict to secure control over these valuable assets.
- Grievances and Inequality (Mehlum, Moene and Torvik 2006): Unequal distribution fuels social unrest and rebellion. Resource wealth often benefits elites disproportionately, deepening horizontal inequalities (e.g., ethnic or regional disparities).
- Funding for Armed Groups (Le Billon 2001, Ross 2004): Resources like diamonds or oil are easily "lootable," providing financial support for insurgencies and prolonging conflicts.

→ Without strong institutions, resource wealth can increase instability instead of development.

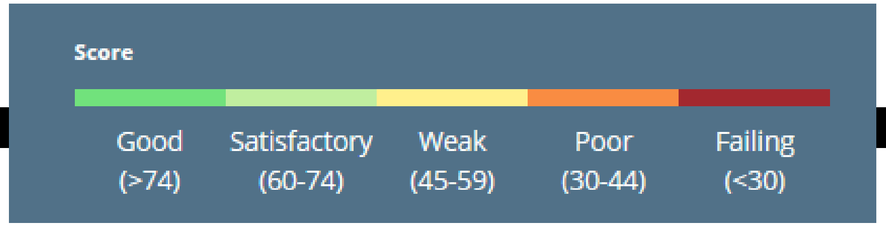
# Cross country evidence

NATURAL RESOURCE GOVERNANCE INSTITUTE, NRG INDEX, 2017



http://resourcegovernanceindex.org/

Q




The Resource Governance Index measures the quality of extractive sector governance in resource-producing countries around the world. It is a robust, evidence-based tool that allows stakeholders—such as governments, civil society actors, private companies and citizens—to understand how their countries perform in terms of resource governance.

# Topic 4.2: Curses – research evidence

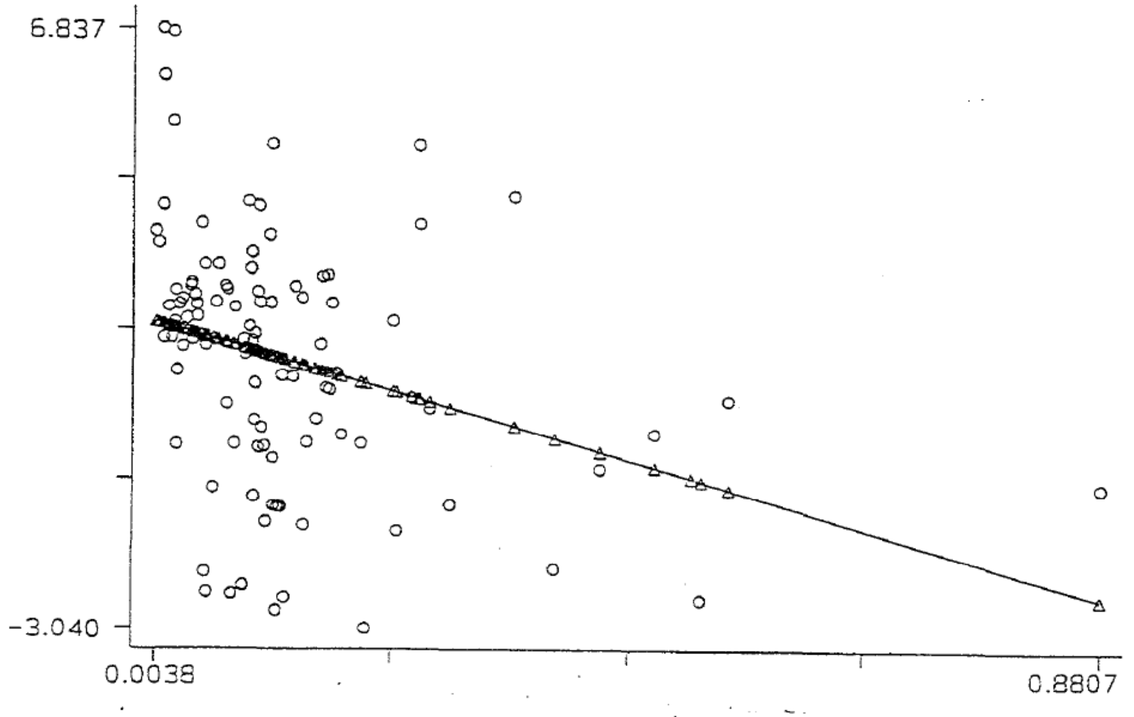



Figure 1. The simple association between growth per-capita between 1970 and 1989 (vertical axis) and the share of natural resource exports in GDP in 1971 (horizontal axis). The regression line has a slope of -5.2 and a t-ratio of -3.3.

**Sachs and Warner (1995)**

# Institutions and the resource curse

## INSTITUTIONS AND THE RESOURCE CURSE*

*Halvor Mehlum, Karl Moene and Ragnar Torvik*

Countries rich in natural resources constitute both growth losers and growth winners. We claim that the main reason for these diverging experiences is differences in the quality of institutions. More natural resources push aggregate income down, when institutions are grabber friendly, while more resources raise income, when institutions are producer friendly. We test this theory building on Sachs and Warner's influential works on the resource curse. Our main hypothesis – that institutions are decisive for the resource curse – is confirmed. Our results contrast the claims of Sachs and Warner that institutions do not play a role.

**Q: why the different finding wrt. Sachs and Warner?**

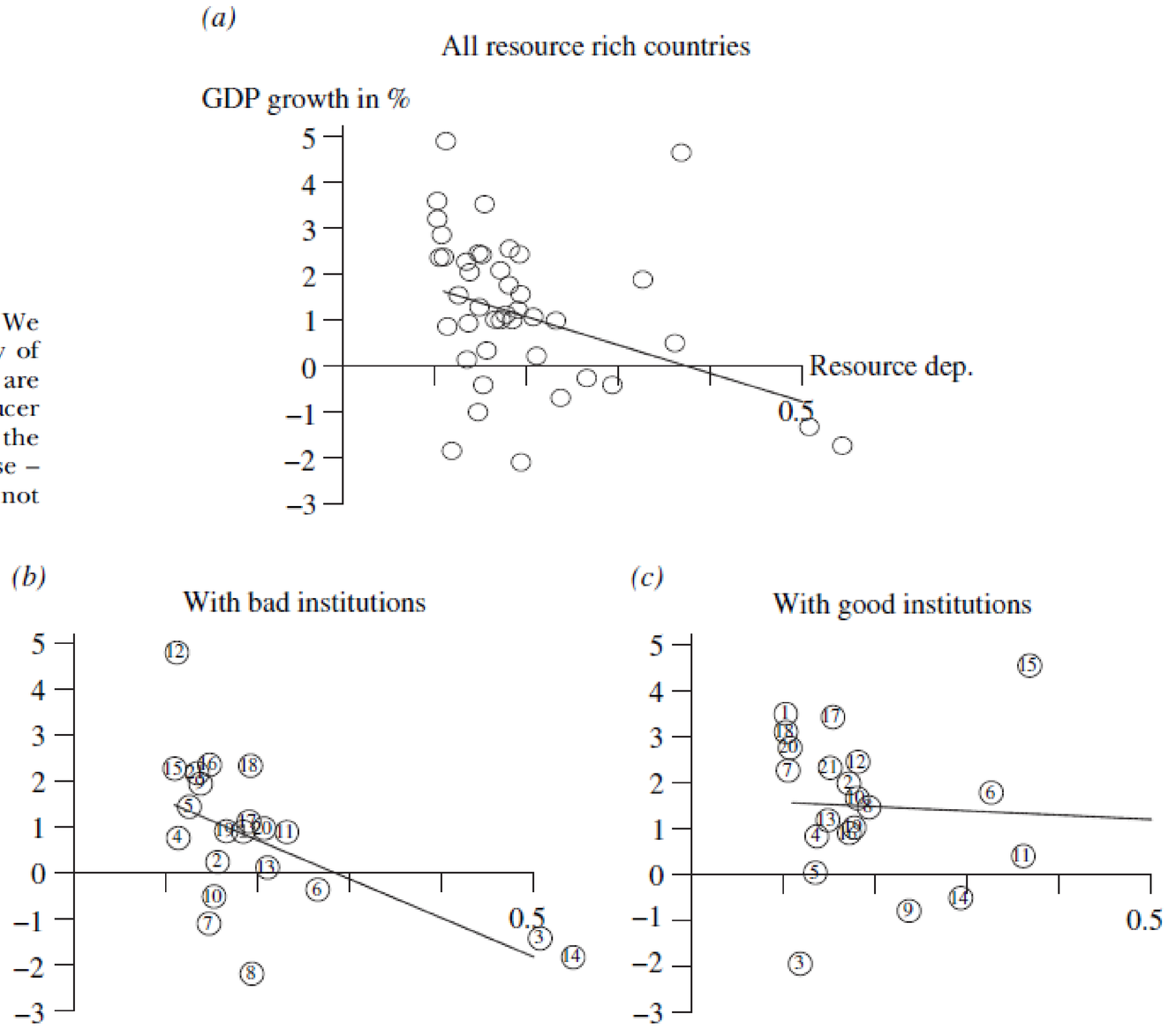



Fig. 1. *Resources and Institutions (a) all resource rich countries (b) with bad institutions (c) with good institutions*

# The Political Curse: Micro Mechanisms

## THE CASE OF SAO TOME AND PRINCIPE 1

# The Political Curse: Micro Mechanisms

## THE CASE OF SAO TOME AND PRINCIPE 2

Sao Tome and Principe (STP) discovered oil in the end of the 1990s.

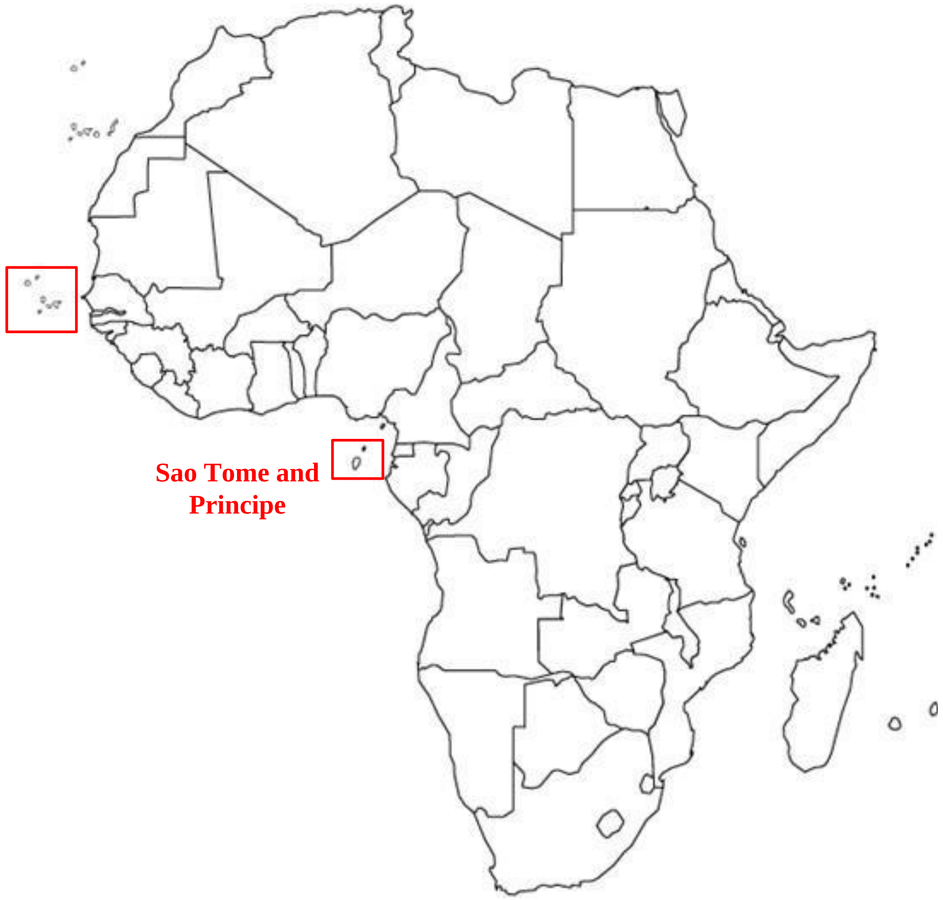
A series of announcements regarding the existence of offshore oil in STP took place in 1997-1999.

In 1999 a joint exploration deal was agreed with Nigeria (due to unclear maritime territory demarcation).

The first round of auctions for offshore oil blocks occurred in 2003: highest bids amounted to 237% of STP's GDP.

Concessions were allocated but oil is still to be explored.

# The Political Curse: a natural experiment (Vicente, 2010) - 1




## Does oil corrupt? Evidence from a natural experiment in West Africa ☆

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ABSTRACT

This paper explores the oil discovery announcements in Sao Tome and Principe (1997–1999) to assess the role of natural resources in determining corruption. For this purpose, we use a natural experiment framework which contrasts Sao Tome and Principe to Cape Verde, a control West African country sharing the same colonial past and important recent economic and political shocks. Our measurement is based on tailored household surveys we conducted in both island countries. The unique survey instrument was retrospective and used personal histories to elicit memories from the respondents. We analyze changes in perceived corruption across a wide range of public services and allocations. We find clearest increases on vote buying, education (namely in the allocation of scholarships) and customs, ranging from 31 to 40% of the subjective scale. We interpret these findings as symptoms of increased competition for core state resources.

# The Political Curse: a natural experiment (Vicente, 2010) – 2

We know the theory for the resource curse!
Empirics:
- Warner and Sachs 1995: resource-rich countries tend to grow more slowly.
- Specially when they have weak institutions.

**Causality? A natural experiment!**

**Q: can you think about an RCT for this topic?**

STP departs from being resource-free and from having weak institutions, i.e., a good candidate for the resource curse (*example of STP in Caselli and Cunningham 2009* - GDP per capita expected to double).

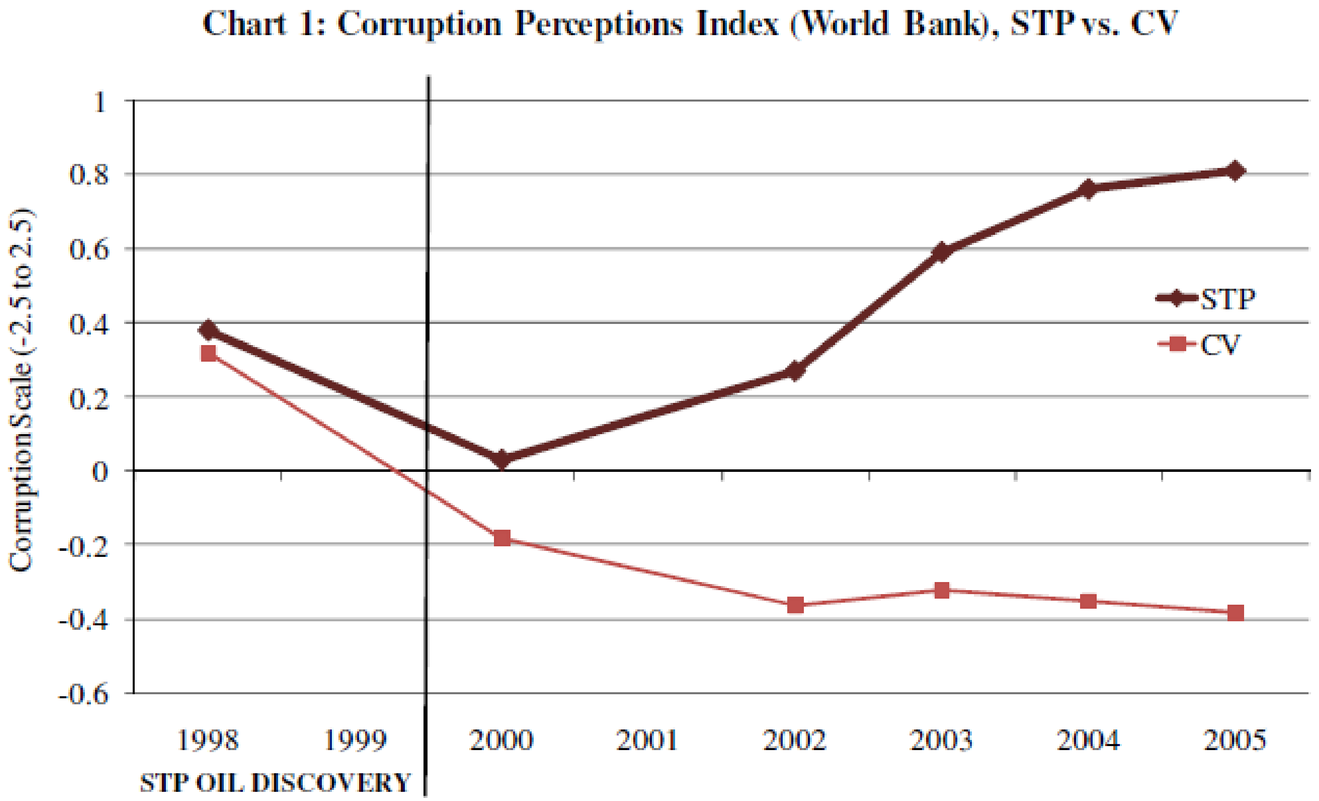
Cape Verde (CV) can be taken as an appropriate control group, since it shared the same colonial history until 1975 and very similar post-independence political cycles, as well as massive migration to STP in the 20th century.

The main hypothesis is: the STP political elite wants to increase corruption as a way to increase the likelihood of being in power when the oil revenues arrive (increased value of being in power, for politicians) => misallocation in public spending (rent seeking).

**Q: examples of rent-seeking?**

Research Questions:
Does oil corrupt?
Which are the sectors/allocations where corruption increases after oil?

# The Political Curse: a natural experiment (Vicente, 2010) - 3




Source: World Bank - WBI, Kaufmann et al (2008).

**Q: feasible methodology here?**

# The Political Curse: a natural experiment (Vicente, 2010) - 4

Tailored representative household surveys conducted in STP (841 interviews) and Cape Verde (1066 interviews).

Measure corruption in the following sectors/allocations:

Courts
Customs
Education – scholarships for higher education
Education – schools
Health
Infrastructure
Licenses
Police
State jobs
State subsidies/procurement
Vote-buying

Eg: 'In the Sao Tomean/Cape Verdean reality, when allocating scholarships for higher education abroad, what has been the need to know someone important?'
(Answers were on a 'Necessary/Not necessary' scale, with 7 different points).

Eg2: if the services were functioning according to the rules.

Descriptive statistics — pessimism, baseline (1991–1997) corruption levels, and information proxies.

| | Sao Tome and Principe | Cape Verde | Observations |
|---|---|---|---|
| Pessimism; placebo period (0–1) | 0.517 | 0.511 | 1786 |
| | 0.003 | 0.003 | |
| Pessimism: good old times (1–7) | 5.140 | 4.330 | 1889 |
| | 0.070 | 0.085 | |
| Pessimism: worsening future (1–7) | 3.603 | 2.482 | 1878 |
| | 0.065 | 0.049 | |
| Courts | 4.674 | 4.301 | 613 |
| | 0.067 | 0.118 | |
| Customs | 4.595 | 4.810 | 616 |
| | 0.098 | 0.135 | |
| Education — scholarships | 4.945 | 5.157 | 1339 |
| | 0.085 | 0.090 | |
| Education — schools | 3.417 | 1.805 | 1737 |
| | 0.069 | 0.053 | |
| Health care | 4.692 | 4.686 | 1793 |
| | 0.049 | 0.104 | |
| Infrastructures | 3.766 | 2.468 | 156 |

# The Political Curse: a natural experiment (Vicente, 2010) - 5

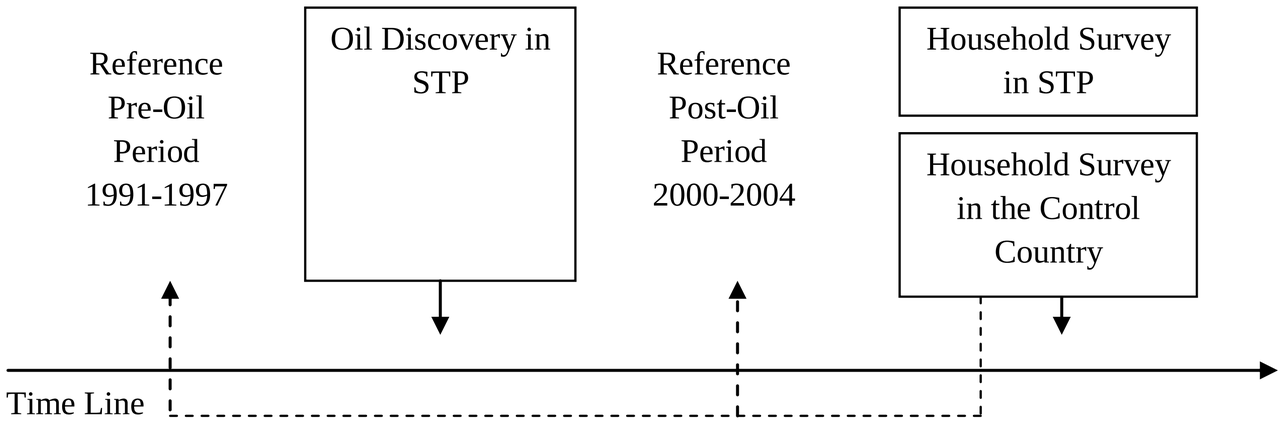
# The Political Curse: a natural experiment (Vicente, 2010) - 6

**Experimental Design: Vicente (2006)**

Archival Data (direct) ----------

Data on applicants and winners of scholarships 1995-2005

Survey-based Data (perceptions) ----------




Asking about the past using:

- Personal markings to recall memories
- Measures of ‘good old times’ bias

# The Political Curse: a natural experiment (Vicente, 2010) - 7

Difference-in-difference estimates — with controls.

| | | Courts | Customs | Education — scholarships | Education — schools | Health care | Infrastructures | Licenses | Police | State jobs | State subsidies/ procurement | Vote buying |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oil | Coef. | −1.645** | −1.584** | −1.824*** | −0.451 | −0.134 | −0.854 | −1.081* | −1.445** | −1.045*** | −0.952* | −0.247 |
| | St.err. | 0.689 | 0.660 | 0.448 | 0.296 | 0.371 | 0.917 | 0.657 | 0.566 | 0.379 | 0.575 | 0.350 |
| STP | Coef. | 1.734*** | −0.023 | −0.081 | 1.552*** | 0.466*** | −0.275 | −3.691*** | 2.637*** | 1.292*** | −0.430 | 2.367*** |
| | St.err. | 0.305 | 0.831 | 0.482 | 0.301 | 0.150 | 1.336 | 0.914 | 0.534 | 0.151 | 0.518 | 0.471 |
| Oil*STP | Coef. | 0.383** | 0.653*** | 0.220 | 0.413*** | 0.345*** | −0.672*** | 0.099 | 0.221 | 0.300** | 0.431*** | 0.543*** |
| | St.err. | 0.157 | 0.131 | 0.154 | 0.090 | 0.108 | 0.250 | 0.254 | 0.152 | 0.137 | 0.158 | 0.092 |
| Constant | Coef. | 6.165*** | 5.807*** | 6.612*** | 3.548*** | 2.348*** | 5.386** | 11.269*** | 4.307*** | 4.056*** | 5.532*** | 4.001*** |
| | St.err. | 0.991 | 1.378 | 0.886 | 0.476 | 0.582 | 2.484 | 1.529 | 1.279 | 0.562 | 1.323 | 0.836 |
| Controls | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Number of observations | | 983 | 942 | 2118 | 2702 | 2863 | 238 | 419 | 1185 | 1887 | 633 | 2841 |
| Adjusted $R^2$ | | 0.109 | 0.112 | 0.105 | 0.400 | 0.135 | 0.314 | 0.153 | 0.124 | 0.166 | 0.139 | 0.316 |

Notes: ***$p<0.01$, **$p<0.05$, *$p<0.1$. All regressions control for district fixed effects. Standard errors are clustered at the enumeration area level.
Controls are the same for all regressions (see Section 5.1 for all categories used).

# The Political Curse: a natural experiment (Vicente, 2010) – 8

Generalized increase in perceived corruption in STP vs. CV, ranging from 31% to 40% of the subjective scale used.

Highest and most significant effects on:

- Vote buying (consistently with the main hypothesis).
- Customs (consumption).
- State jobs and distribution of subsidies/state procurement.
- Education, and health.

**Q: limitations?**

# The Political Curse: another natural experiment (Caselli and Michaels 2013 – 1)

THE CASE OF BRAZIL

Over the problems with cross-country comparisons.

Do Oil Windfalls Improve Living Standards? Evidence from Brazil
Francesco Caselli and Guy Michaels
NBER Working Paper No. 15550
December 2009
JEL No. E02,E62,H11,H40,H71,H72,H75,H76,O11,O13,Q32,Q33

**ABSTRACT**

We use variation in oil output among Brazilian municipalities to investigate the effects of resource windfalls. We find muted effects of oil through market channels: offshore oil has no effect on municipal non-oil GDP or its composition, while onshore oil has only modest effects on non-oil GDP composition. However, oil abundance causes municipal revenues and reported spending on a range of budgetary items to increase, mainly as a result of royalties paid by Petrobras. Nevertheless, survey-based measures of social transfers, public good provision, infrastructure, and household income increase less (if at all) than one might expect given the increase in reported spending. To explain why oil windfalls contribute little to local living standards, we use data from the Brazilian media and federal police to document that very large oil output increases alleged instances of illegal activities associated with mayors.

# The Political Curse: another natural experiment (Caselli and Michaels 2013 – 2)

THE CASE OF BRAZIL

Study uses variation in oil output among Brazilian municipalities to investigate the effects of resource windfalls.

Assumes that conditional on a few geographical controls the variation in terms of oil endowments allows for the identification of causal effects.

Research questions:
1. Does oil have positive or negative spillovers on other market activities? (Is it really a curse?)
2. Oil-producing municipalities are entitled to royalties, so what are the consequences of the oil-related fiscal windfall?

# The Political Curse: another natural experiment (Caselli and Michaels 2013 – 3)

THE CASE OF BRAZIL: RESULTS

- Effects of oil through market spillovers are small.
- One unit of extra value added from oil translates into roughly one unit of aggregate GDP.
- Small sectoral changes, i.e., manufacturing shrinks and services expand, but not when oil is offshore.
- Fiscal windfall: study confirms that municipal revenues increase significantly with oil production.
- Municipalities that receive oil windfalls report significant increases in spending on a variety of public goods.
- However, while looking at measures of housing quality and quantity, supply of educational and health inputs, road infrastructure, and welfare receipts (including from oil revenue), little improvements are realized.

➡ Some suggestive evidence that some of the missing money is accounted for by corruption.

# The Political Curse: another natural experiment (Caselli and Michaels 2013 - 4)

THE CASE OF BRAZIL: RESULTS

**V. Where is the missing money going?**

Where is the missing money going? It is difficult to resist the suspicion that much of it is diverted to private use by government officers. One outcome variable that may speak to this issue, albeit very indirectly, is the relative size of houses enjoyed by municipal employees, which can be easily identified in Census data from the already-used quality of housing variables cross-checked against respondent's sector of employment. Table 9 reports the results. It seems clear that oil-related revenue increases the quality of housing for municipal workers – but, as we already know, not for everyone else. Whatever the mechanism, municipal workers seem to be able to obtain for themselves relatively more spacious accommodations in oil-rich municipalities.

+ municipalities more frequently in news talking about corruption.

**Q: limitations?**

Thanks for your attention and contributions!