

MAKING THE CITY
BUILDING STATE CAPACITY IN LOW-INCOME COUNTRIES

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Highway in the US



Highway in the DR Congo



Rain

Operating Room in the US



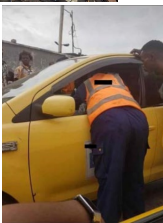
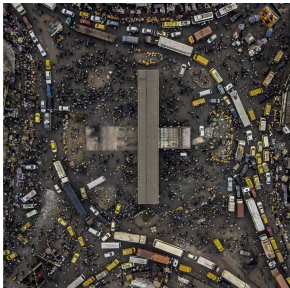
Operating Room in the DR Congo



Police and Traffic Enforcement in the US



Police and Traffic Enforcement in the DR Congo



Conflict Resolution in the US



Conflict Resolution in the DR Congo



Social Assistance in the US



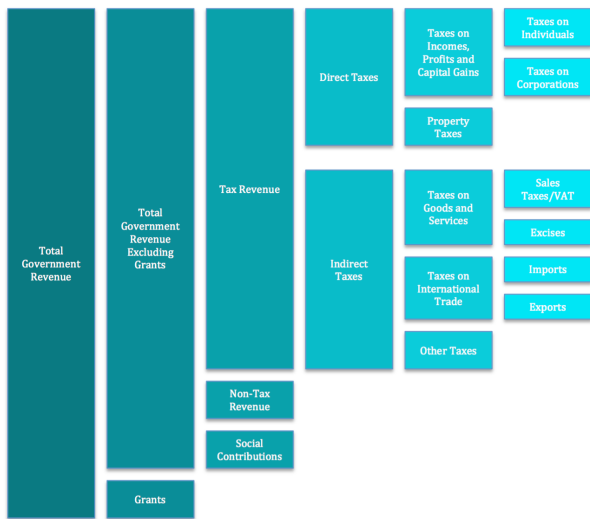
Social Assistance in the DR Congo



Financing Public Goods and Social Assistance Programs

1. Tax Revenue
2. Social Contributions
3. Non-Tax Revenue
 - i. Natural resources
 - ii. Investment income
 - iii. Borrowing
4. Grants

Financing Public Goods and Social Assistance Programs

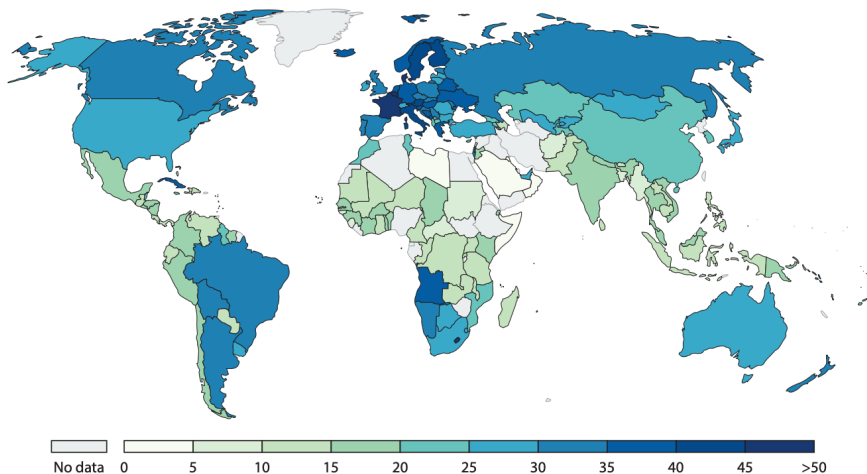


Source: Prichard et al. (2014) "The ICTD Government Revenue Dataset", ICTD Working Paper 19

Taxes Fund Most Public Goods and Social Programs

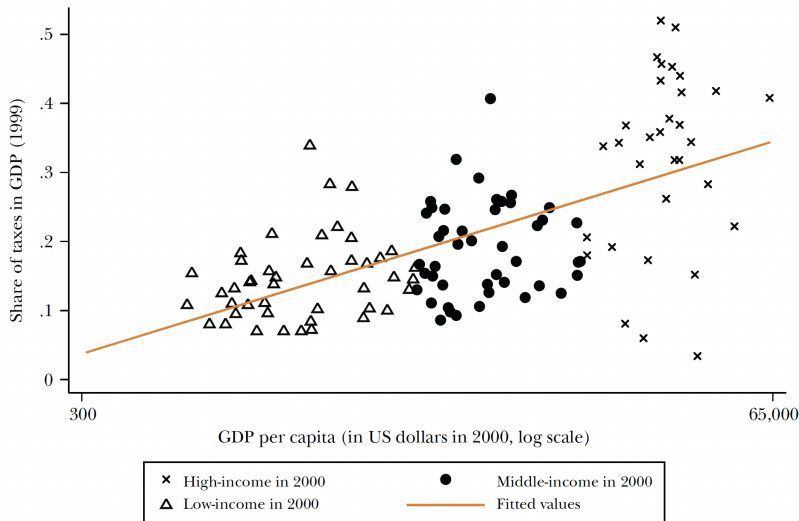
1. Tax Revenue = **82%** of revenue in LICs (Prichard et al. 2014)
2. Social Contributions
3. Non-Tax Revenue
 - i. Natural resources
 - ii. Investment income
 - iii. Borrowing
4. Grants

Tax Revenue in % of GDP Across Countries



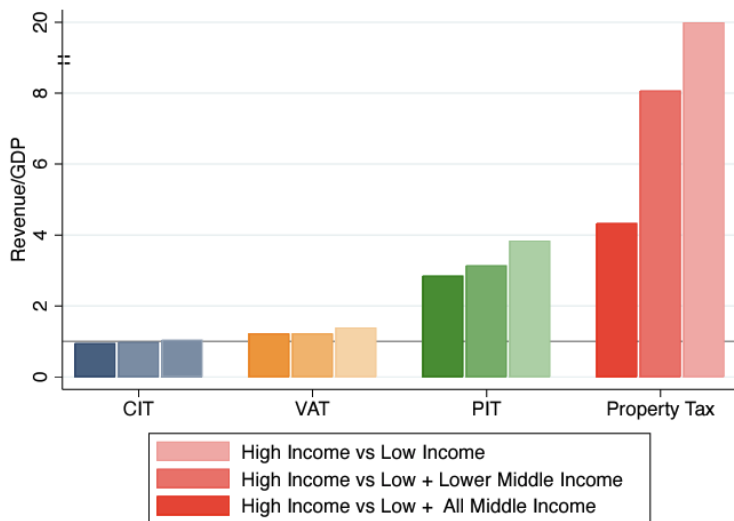
Source: Pomeranz and Vila-Belda (2019) "Taking State-Capacity Research to the Field: Insights from Collaborations with Tax Authorities", Annual Review of Economics, 11(1)

Challenge: Low Tax Revenue in Low-Income Countries



Source: Besley and Persson (2014) "Why Do Developing Countries Tax so Little?", Journal of Economic Perspectives, 28(4)

Even More of an Issue for Local Taxes



Outline

Diagnostic

Questions & Methods

1. Information

2. Tax Rates and Enforcement

3. Tax Personnel

Conclusion

Why do Low-Income Countries Tax so Little?

1. Information:

- ▶ Lack of information about individuals/firms?

2. Tax Rates and Enforcement:

- ▶ Tax rates are too low? Or too high?
- ▶ States do not enforce taxes?

3. Tax Personnel:

- ▶ Poorly recruited, allocated, or incentivized tax personnel?

* Non-exhaustive list! Other determinants include individuals' **tax morale** which can be affected by many factors, including governance (e.g., political alignment, public goods provision) or the transparency and fairness of the tax system.

Evaluating Tax Policies

How can we study the causal effect of these tax policies?

1. **Natural experiments** resulting from tax changes combined with administrative tax data (e.g., Best et al. 2015, Carillo et al. 2017, Naritomi 2019, Bachas and Soto 2021, Basri et al. 2021, Gadenne et al. 2022, Jensen 2022, Okunogbe and Pouliquen 2022, Bachas et al. 2023, Brockmeyer and Somarriba 2023)
2. **Randomized Controlled Trials (RCTs)** conducted in partnership with tax authorities (e.g., Pomeranz 2015, Khan et al. 2016, 2019, Brockmeyer et al. 2019, Balan et al. 2022, Bergeron et al. 2024, Kapon et al. 2024)
 - ⇒ The economist as a 'plumber' collaborates with governments to identify and fix 'leakages' in tax systems (Duflo 2017)
 - Today: highlight findings from this approach

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Information is King: Historical Perspective

- ▶ To impose any tax, the state needs information about the taxable transactions taking place in the economy
- ▶ Historical perspective:
 - ▶ Historically, governments focused on activities that were easier to observe, such as tariffs or tolls
- ▶ Example :
 - ▶ Danish Sound Dues tolls collected from ships passing through the strait connecting the Baltic Sea to the North Sea
 - ▶ Represented 50% of Danish state income in 16th and 17th century.

The Sound Straight in 1617

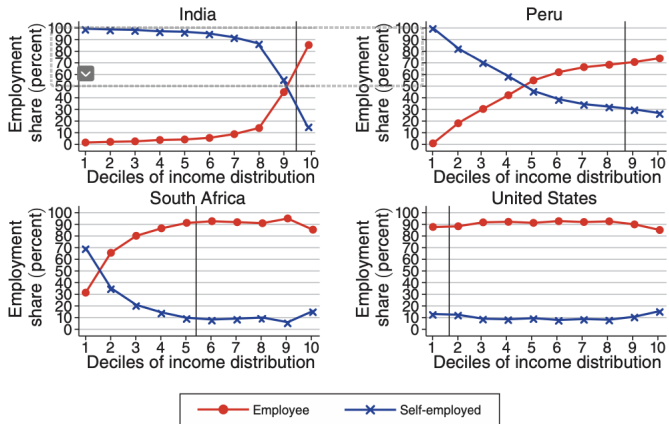


Third-Party Reporting: Wages

- ▶ Key source of information: **third-party reporting**
 - ▶ Agents have an incentive to report information to the government that includes evidence of tax obligations of other agents
 - ▶ Third-party reporting creates a **paper trail**
- ▶ Well-known example: **wages**
 - ▶ Employers file wage forms with the government and deduct wages from profit tax, creating a paper trail of employee incomes

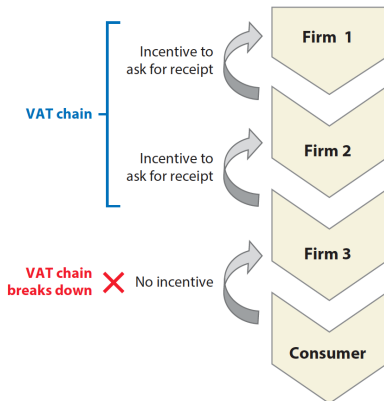
Wage Labor and the Rise of the Modern Tax System

- Rise in employee share drives emergence of modern tax system (Jensen 2022)



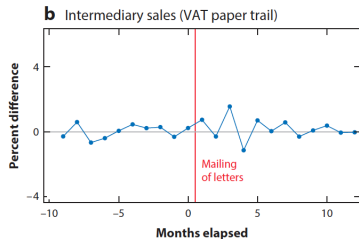
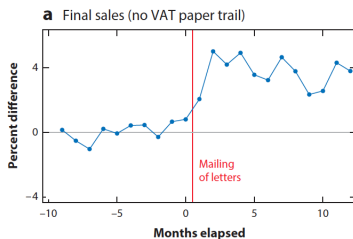
Third-Party Reporting: VAT

- ▶ Another source of third-party information: [the VAT](#)
- ▶ Client firms have an incentive to ask suppliers for a receipt
 - ▶ Why? To deduct input costs from the VAT
- ▶ Self-enforcement breaks down at the end of the production chain
 - ▶ Why? Consumers don't have incentives to ask for a receipt



Self-Enforcement in the VAT

- ▶ Pomeranz (2015) studies the self-enforcement of the VAT in Chile
- ▶ **RCT**: Randomized letters informing 100,000 firms that they have been selected for special scrutiny and might be audited
- ▶ **Confirms self-enforcement**: increase in reported sales to consumers (no paper trail), no impact for intermediary sales (paper trail)



Delegating Tax Collection when Information is Limited

- ▶ Governments with limited formal information therefore struggle to collect taxes effectively
- ▶ Potential solution: [delegating tax collection to informal leaders](#) who have local knowledge
- ▶ Evidence from Balan et al. (2022): Local chiefs, assigned to collect taxes, leveraged local knowledge to target high payment propensity households, increasing tax revenue by 44%

Other Tax Policy Tools

- ▶ Next: Explore **other tax policy tools** available to LICs governments
 - ▶ Tax Rates and Enforcement
 - ▶ Tax Personnel
- ▶ **Method:** Analyze results from a series of RCTs conducted with the provincial government of Kasai-Central, DRC, to understand the impact of these policy tools (Bergeron et al. 2024a, 2024b)

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- ▶ **Context:** Door-to-door property tax campaign in Kananga, DRC
- ▶ **RCT:** Random assignment of tax liability written on tax letter
 - ▶ Status quo vs. 17%, 33%, or 50% reduction



REPUBLIQUE DEMOCRATIQUE DU CONGO
PROVINCE DU KASAÏ OCCIDENTAL
DIRECTION GENERALE DES RECETTES DU KASAÏ OCCIDENTAL
DGRKOC



Pour la campagne de collecte de l'Impôt Foncier 2018 :

La parcelle, No. 595047,

appartenant à _____,

est assujettie à un taux de : 3000 FC*

à payer au percepteur de la DGRKOC une fois par année.

Comme preuve de paiement, vous recevrez un reçu imprimé sur place (voir l'exemple du reçu à droite).

Il est important de payer l'impôt foncier.


DIRECTION GÉNÉRALE DES
RECETTES DU RÉGIME CENTRAL

**RÉPUBLIQUE DÉMOCRATIQUE
DU CONGO
KINSHASA**

**IMPOT SUR LA SUPERFICIE DES
PROPRIÉTÉS FONCIÈRES
BÂTIES ET NON BÂTIES**

Première Cote
Date et Heures : 22-FEB-2010 11:54:35
N° : KG42H002000000000014000034

Nom du contribuable / Matricule
Dilombo Jean-Jacques
Licence d'Exploitation : 2020085

Type de taxe :	Pourcentage
Unité :	Taux 0
Quantité/Basse :	1
Taxe :	1,5
Montant (CDE) :	3600
Nom du Payeur : Kabeya Kabuya Jean	
(KN24H0000000000000)	

* D'autres moments d'application si vous habitez dans une maison en matériaux durables.

Si vous avez des questions ou des plaintes, veuillez contacter 097 4982998 ou 081 1439515. Ce sont les coordonnées téléphoniques d'Harvard-KIR, une organisation indépendante de chercheurs scientifiques réalisant une évaluation de la campagne de l'implant fondée. Il gardera votre identité confidentielle.

Status quo rate



REPUBLIQUE DEMOCRATIQUE DU CONGO
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DIRECTION GENERALE DES RECETTES DU KASAÏ OCCIDENTAL
DGRKOC



Pour la campagne de collecte de l'Impôt Foncier 2018 :

La parcelle, No. 595071,

appartenant à _____

est assujettie à un taux de : 1500 FC*

à payer au percepteur de la DGRKOC une fois par année.

Comme preuve de paiement, vous recevrez un reçu imprimé sur place (voir l'exemple du reçu à droite).

Il est important de payer l'impôt foncier.


DIRECTION GÉNÉRALE DES
RECETTES DU RASAIL CENTRAL

**RÉPUBLIQUE DÉMOCRATIQUE
DU CONGO
KANANGA**

**IMPOT SUR LA SUPERFICIE DES
PROPRIÉTÉS FONCIÈRES
BATIES ET NON BATIES**

Première Copie

Date et Heure : 22-FEB-2009 11:54:35
No : KGZAN2009000000000000000000

Nom du contribuable : Mutsombo

Dikombo Jean-Jacques 202005

Licence d'Exploitation :

Type de taxe :	Pref's 20000
Unité :	Terrain
Quantité/Basé :	1
Taux :	0.75
Montant (CDF) :	1500
Nom de l'agent :	Kahuya Kahuya Jean
(KJN2110000000000000)	

* D'autres montants s'appliquent si vous habitez dans une maison en matériaux doubles.

Si vous avez des questions ou des plaintes, veuillez contacter 097-4982998 ou 0811439515. Ce sont les coordonnées téléphoniques d'Harvard-RH, une organisation indépendante de chercheurs scientifiques réalisant une évaluation de la caméuse de l'impôt foncier. Ils garderont votre identité confidentielle.

50% reduction in rate

What are the Effects of Higher Taxes?

What happened as the amount of tax due increased?

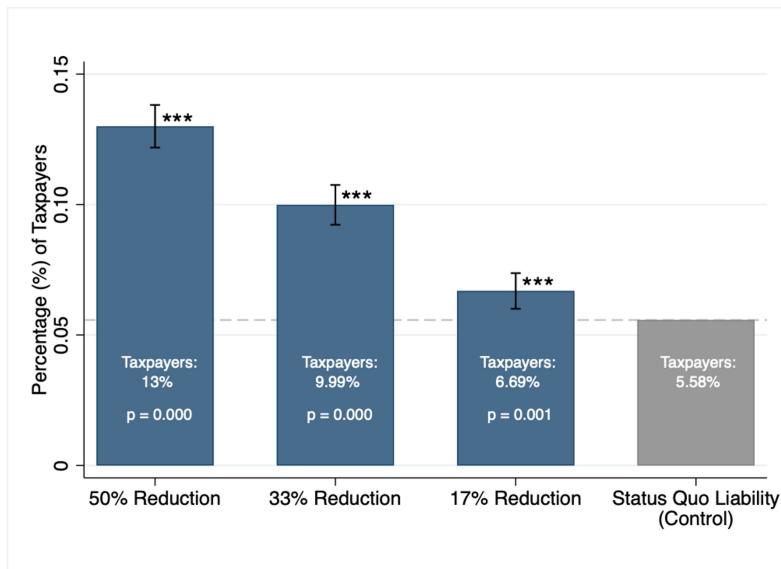
1. To tax compliance?

► Tax compliance = % of owners who paid the tax

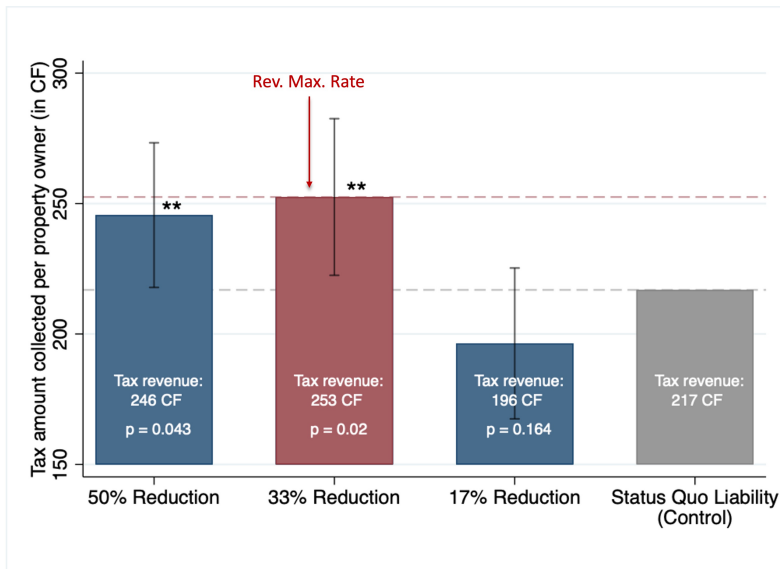
2. To tax revenue?

► Tax revenue = tax amount \times number of taxpayers
= tax amount \times % of owners who paid \times nb of owners

Tax Compliance Decreased as Taxes Increased



Tax Revenue Decreased as Taxes Increased!



What's Going On?

▶ Tax increases lead to two effects:

▶ Revenue effect (+): Taxpayers pay more

▶ Compliance effect (-): Fewer taxpayers (more tax delinquents)

⇒ Tax revenue decreases because the compliance effect dominates!

▶ Low tax enforcement might play a role

▶ I.e., people just refuse to pay when tax amounts increase

⇒ What if the government threatens sanctions for tax delinquents?

How to Enforce Taxes?

- ▶ **RCT:** Randomly assigned messages on tax letters
- ▶ **Control Message:** “Paying the property tax is important”
- ▶ **Enforcement Message:** “If you refuse to pay the property tax, you could be summoned to the tax ministry for investigation and audit”



REPUBLIQUE DEMOCRATIQUE DU CONGO
PROVINCE DU KASAÏ OCCIDENTAL
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DGRKOC



Pour la campagne de collecte de l'Impôt Foncier 2018 :

La parcelle, No. 595047,

appartenant à _____,

est assujettie à un taux de : **3000 FC***

à payer au percepteur de la DGRKOC une fois par année.

Comme preuve de paiement, vous recevrez un reçu imprimé sur place (voir l'exemple du reçu à droite).

Il est important de payer l'impôt foncier.

RÉPUBLIQUE DÉMOCRATIQUE DU CONGO PROVINCE DU KASAÏ OCCIDENTAL DIRECTION GÉNÉRALE DES RECETTES DU KASAÏ OCCIDENTAL DGRKOC	
IMPÔT SUR LA SUPERFICIE DES PROPRIÉTÉS FONCIÈRES BÂTIES ET NON BÂTIES	
Données Copie	
Date et Heure :	22-FEB-2018 11:54:05
N° :	KGA2018022000000001-000016
Nom du contribuable : Matsombo	
Détenteur : Jean Jacques	
Licence d'Exploitation : 202005	
Type de taxe :	Paid 3.000
Unité :	Terrain
Quantité/Rate :	1
Taux :	1.5
Montant (CHF) :	3000
Nom de l'agent : Kabeya Kabeya Jean	
(DZ2018022000000001)	

* D'autres montants s'appliquent si vous habitez dans une maison en matériaux durables.

Si vous avez des questions ou des plaintes, veuillez contacter 097-496299 ou 081-143915. Ce sont les coordonnées téléphoniques d'Harvard-RED, une organisation indépendante de chercheurs scientifiques réalisant une évaluation de la campagne de l'impôt foncier. Ils gardent votre identité confidentielle.

Control Message



REPUBLIQUE DEMOCRATIQUE DU CONGO
PROVINCE DU KASAÏ OCCIDENTAL
DIRECTION GENERALE DES RECETTES DU KASAÏ OCCIDENTAL
DGRKOC



Pour la campagne de collecte de l'Impôt Foncier 2018 :

La parcelle, No. 595013,

appartenant à _____,

est assujettie à un taux de : **3000 FC***

à payer au percepteur de la DGRKOC une fois par année.

Comme preuve de paiement, vous recevrez un reçu imprimé sur place (voir l'exemple du reçu à droite).

Si vous refusez de payer l'impôt foncier vous pourriez être interpellé à la DGRKOC pour le suivi et le contrôle

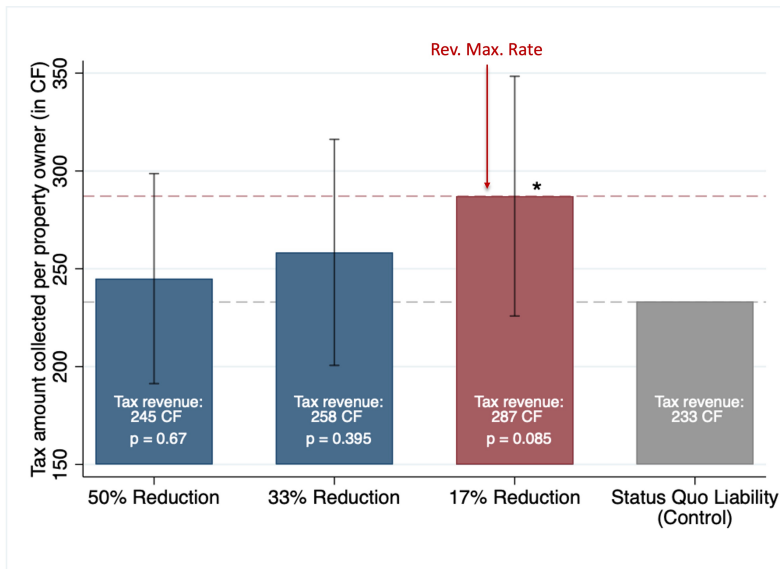
RÉPUBLIQUE DÉMOCRATIQUE DU CONGO PROVINCE DU KASAÏ OCCIDENTAL DIRECTION GÉNÉRALE DES RECETTES DU KASAÏ OCCIDENTAL DGRKOC	
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Données Copie	
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N° :	KGA2018022000000001-000016
Nom du contribuable : Matsombo	
Détenteur : Jean Jacques	
Licence d'Exploitation : 202005	
Type de taxe :	Paid 3.000
Unité :	Terrain
Quantité/Rate :	1
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Enforcement Message

Higher Revenue at Higher Rates with Threats of Sanctions



Policy Lessons and Implications

1. Low tax enforcement imposes a ceiling on tax rates
 - ▶ When enforcement is low, increasing tax rates can lower tax revenue
 2. Enforcement threats allow higher revenue at higher rates
- ⇒ Tax rates should be increased **jointly** with tax enforcement

Improving Tax Enforcement

What can governments in LICs do to improve tax enforcement?

- ▶ Increase the number of audits (Kleven et al, 2011)
- ▶ Increase the number of collectors and auditors (Basri et al, 2021)
- ▶ Next: Improve [tax personnel](#)
 - ▶ Better allocation of current tax collectors
 - ▶ Hiring better collectors
 - ▶ Increasing collector wages

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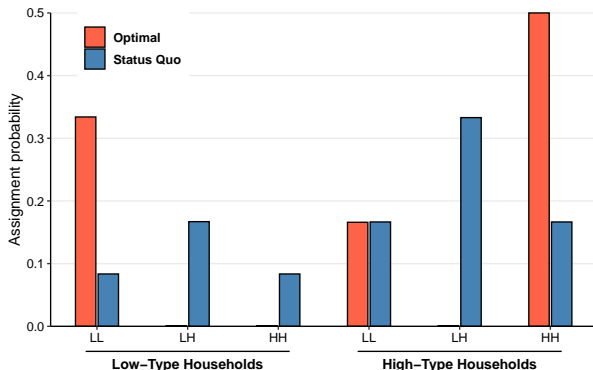
Improving the Assignment of Tax Collectors

- ▶ **Context:** Same door-to-door property tax campaign in Kananga DRC
- ▶ **RCT:** random assignment of state tax collector to teammates and neighborhoods to identify their optimal assignment

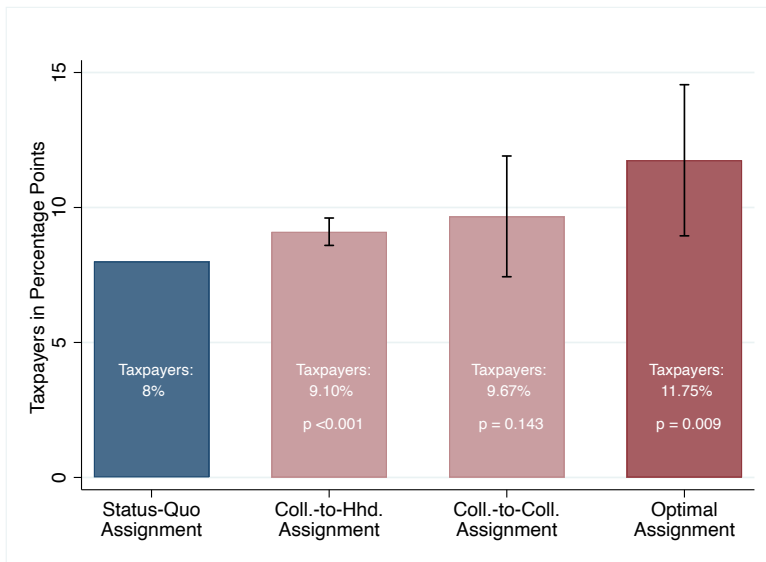


Optimal: Positive Assortative Matching

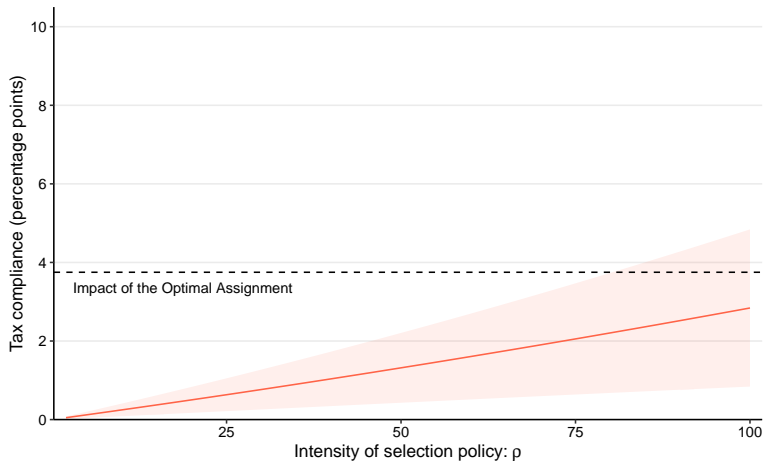
- **Optimal:** Maximizes tax compliance while (i) sending two collectors to each neighborhood (ii) keeping the collectors' workload the same
- **Results:** Collectors with high (low) ability are matched and assigned to nbhd with high (low) ability to pay (positive assortative matching)



Tax Compliance Increases by 47% and Revenue by 38%

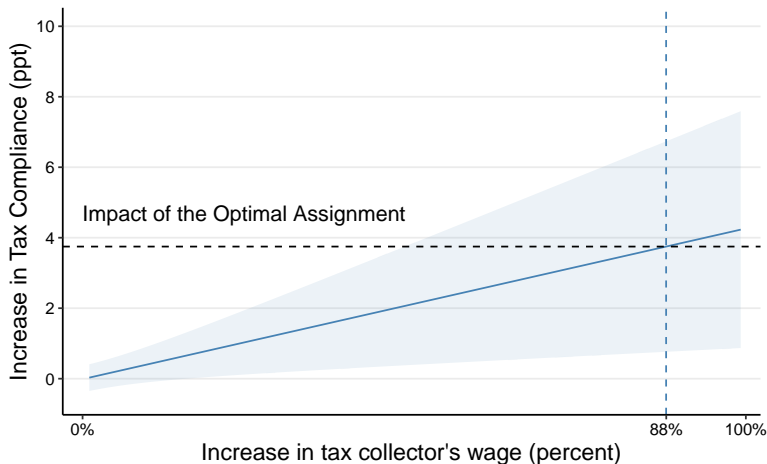


Hiring Better Collectors



- ▶ Replacing low-type collectors with new ones results in a lower compliance increase than f^*

Increasing Collector Wages



- Increasing collectors' wages by 88% would yield the same compliance increase as f^* but would reduce tax revenue net of wage by 13%

Other Collector-Level Interventions

- ▶ Khan et al. (2016)
 - ▶ Performance pay increases tax revenue growth by 64%
 - ▶ Additionally, higher reported bribes in incentivized areas:
 - ▶ Suggests higher bargaining power of collectors over taxpayers

- ▶ Khan et al. (2019)
 - ▶ Examine incentive effects of assigning collectors to preferred locations based on performance (*performance-ranked serial dictatorship mechanism*)
 - ▶ Results show 30-41% increase in annual tax revenue growth

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Taking Stock: Building Fiscal Capacity in Fragile States

1. **Information:** (third-party) information is crucial for tax collection
2. **Tax Rates and Enforcement:** Strengthening enforcement capacity enables a higher revenue-maximizing tax rate
3. **Tax personnel:** Assignment, selection, and wage have large impacts

Large scope for **collaborations between researchers and tax authorities**

What Happens When it Rains?

[Back](#)