

Widening the tax net when information is scarce: the role of agents' discretion

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Context and Research Question



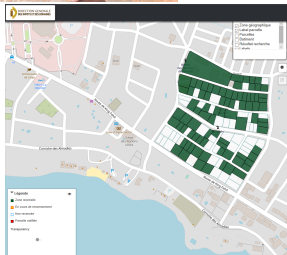
Large scale census operations to strengthen and modernize property taxation by Senegalese tax administration (DGID)

Collaboration with research team since 2017 for the development of the digital tool, the implementation and evaluation of the program

Tax base: market rental value of a property (property tax 5%, garbage tax 3.6%)

→ **How to determine property values when information and market data are scarce?**

→ **If agents in the field are given discretion, what are the implications for valuations and the tax profile?**

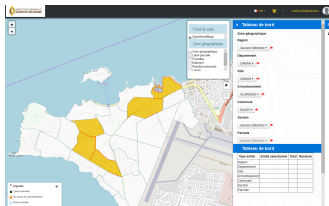


Comparing Rule and Discretion



Policy framework

- ▶ proper cadastral valuation is lengthy, expensive and intrusive
- ▶ information on rents and sales is scarce, address is imprecise
- ▶ legal context allows valuation by 'comparison'



250 short-term employees of the DGID carrying out the census (Dec. 2021-Nov. 2022)

We compare two valuation approaches - **Rule** and **Discretion**- experimental approach

Comparing Rule and Discretion

Discretion

- ▶ Method used in previous census operations by DGID
- ▶ Agents try to speak with owners and tenants to elicit rental values
- ▶ If answers are unavailable or unreliable they are supposed to use their own judgement to determine value

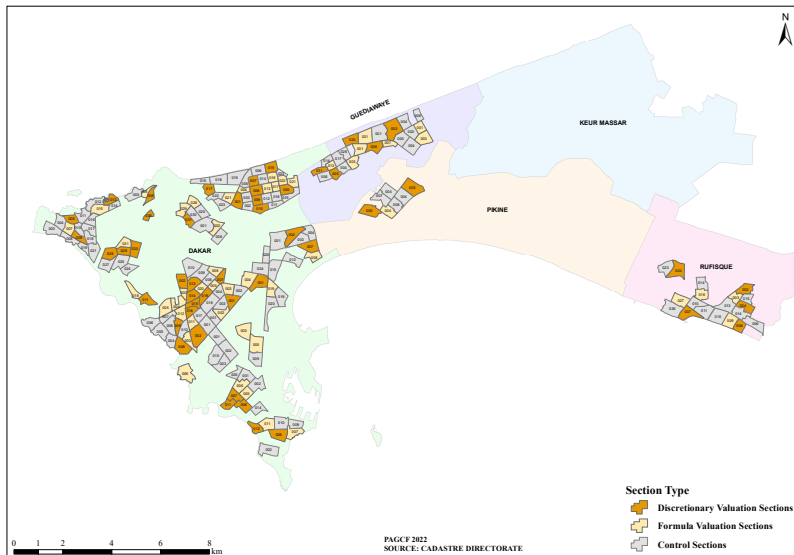
Comparing Rule and Discretion

Rule

- ▶ Formula predicting property value based on 18 observable characteristics and built area (satellite)
- ▶ In the spirit of CAMA (regression) and points-based systems
- ▶ Adapted to local context
- ▶ Learning sample: (1) survey of owners; (2) National Order of Real Estate Experts
- ▶ Performance: R^2 90%; MAPE 31%, estimated by cross-validation.

Comparing Rule and Discretion

Randomization at the section (neighborhood) level in Dakar region



Intermediary results

- ▶ 30,900 targeted properties. 89% surveyed, 77% eligible for tax, 64% Valued.
- ▶ Total tax liability in project sections: CFA 13.5 billion (USD 20.5 million)
- ▶ against *total* 2019 tax collections in whole region of CFA 6.3 billion (USD 9.5 million)

Intermediary results

- ▶ *Accuracy* can be computed on subset of 2,500 properties valued by experts
- ▶ Randomization allows to estimate unbiased effect of valuation method
- ▶ 36% of properties accurately valued under rule vs 19% under discretion
- ▶ 22% lower probability of being valued under discretion, driven by owner-occupied properties
- ▶ Discretion: *undervaluation* is prevalent, even more so at the *top* of the property value distribution
 - ▶ 51% properties undervalued in 1st quintile; 82% in 5th quintile

Intermediary results

- ▶ Individual agents explain 21% of variation in observed accuracy, suggesting there is a lot of heterogeneity
- ▶ High accuracy agents perform well and could be better than the formula
- ▶ But low accuracy agents *also* generate a more regressive tax profile
- ▶ Agents' performance is not well captured by observable characteristics (age, education, experience)

Next steps

Research (1):

- ▶ Finalize analysis of valuation and registration phase
 - ▶ Statistical work
 - ▶ Agent survey

Collaboration with tax admin. and treasury:

- ▶ Strategy for distribution
- ▶ Strategy for enforcement
- ▶ Strategy for appeals and acceptability

Research (2):

- ▶ Impact evaluation results:
 - ▶ Analysis of administrative data, survey with owners, tenants and neighborhood delegates

Thank you!

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