A Review of Critical Issues on Tax Design and Tax Administration in a Global Economy and Developing Countries

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Introduction

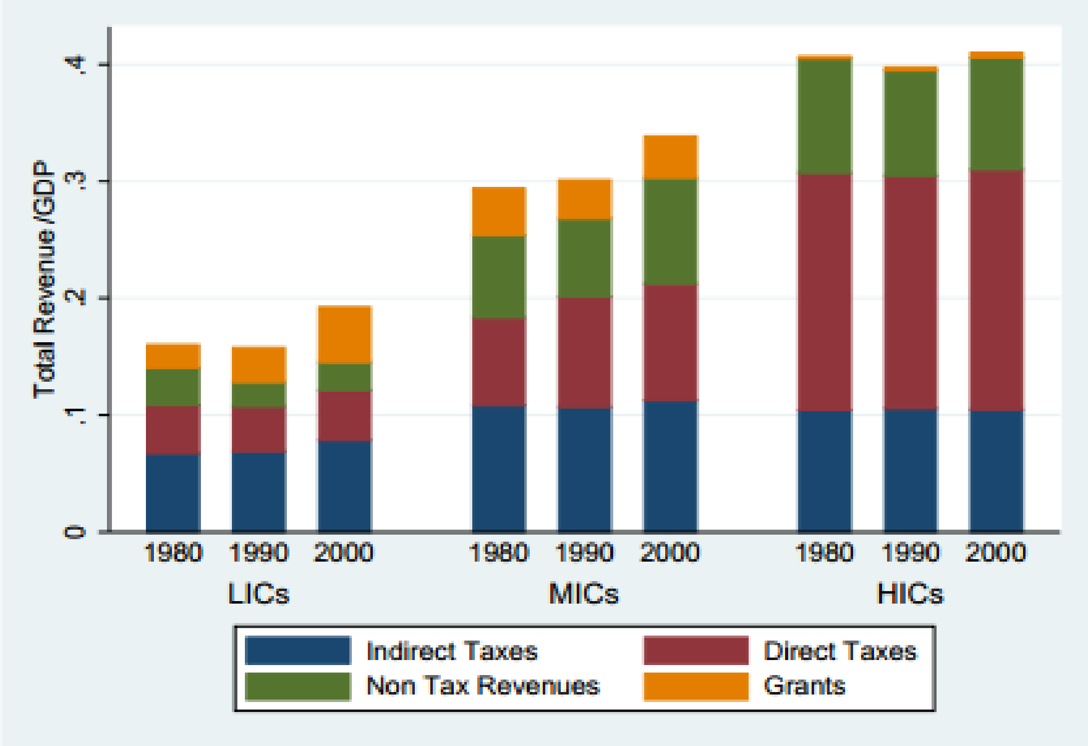
- From aid to domestic-resources mobilization (DRM)
- Resources mobilization: Why?
  - Directly
    - Finance development needs
  - Indirectly:
    - Enhance state building
    - Strengthen the state-citizen relationship
- Resources mobilization: How?
  - Principles of efficient tax design in a globalized economy

Summary

- Stylized facts (based on ICTD 1980-2010: 203 countries and 40 tax items)
- Corruption and compliance
- Tax collection efficiency (based on ICTD 1980-2010)
  - Determinants of tax collection
    - Two Novelties:
      - Spatial interdependence
      - Tax shift (Tax item-by-item analysis)
  - Tax effort and Tax gap
    - Special focus on DGD countries

Stylized facts (1): Non tax revenues and grants

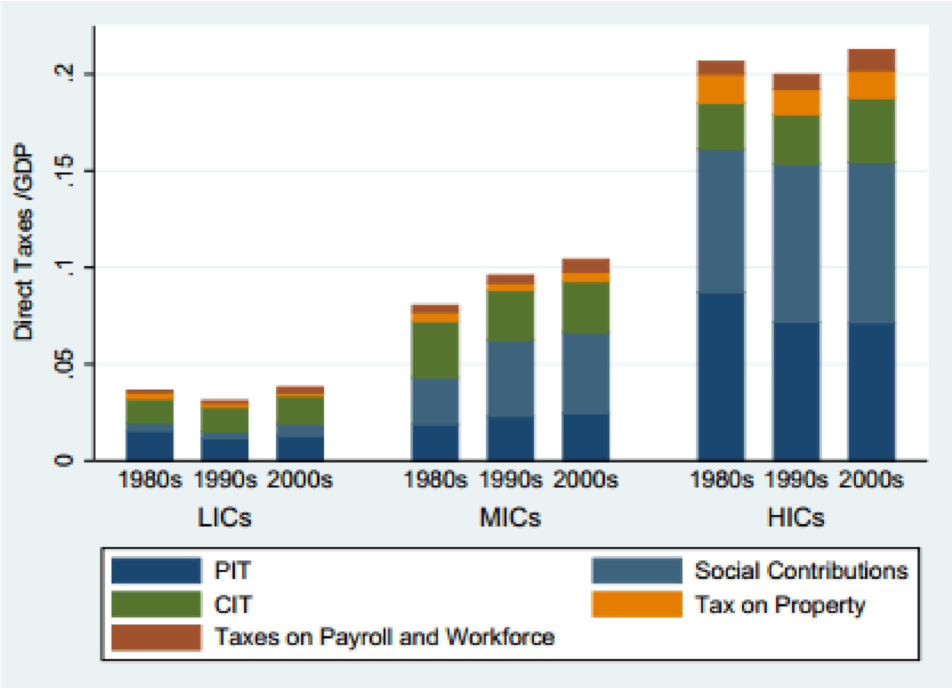
Total government revenue by country groups



- Non tax revenues and grants:
  - Grants in DGD countries:
    - Burundi = 22% of GDP
    - Mozambique, Rwanda, Tanzania and the Dem. Rep. of the Congo~=10% of GDP
  - Non tax revenues
    - Oil and gas revenue in Ecuador and Algeria above 50% of GDP on the whole period
      - Risk

Stylized facts (2): Direct tax revenues

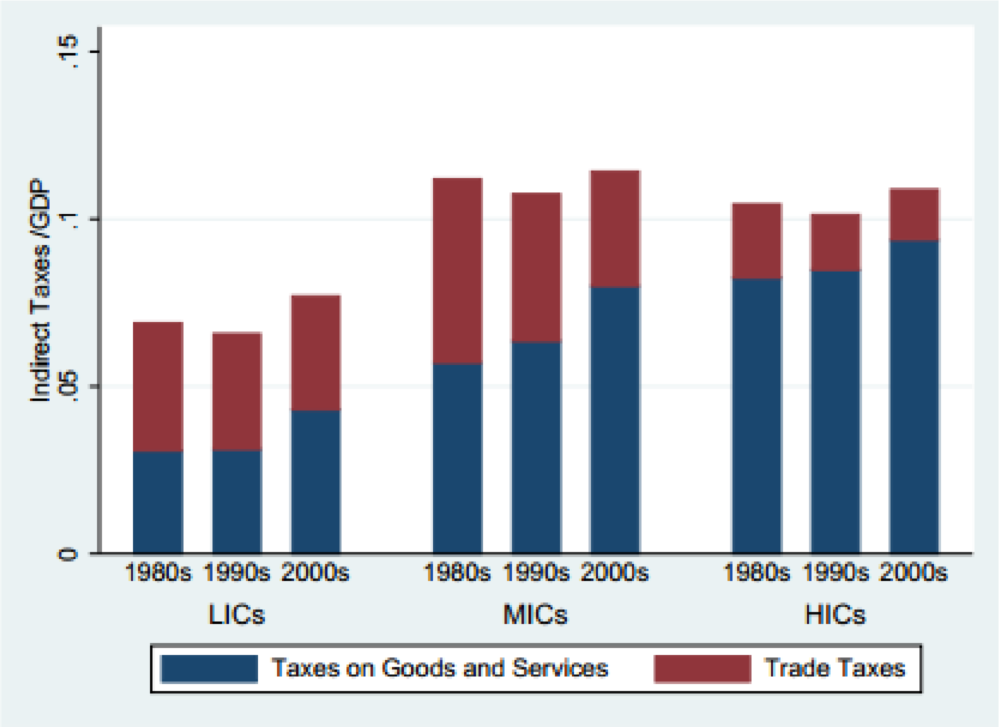
Direct tax revenue by country groups



- Key differences between country groups
  - Informal sector in developing countries
- Personnal income tax:
  - Globally increasing in DGD countries
    - Best students: Morocco and Mozambique
- Corporate income tax:
  - Increasing in most developing countries, counts for 1/5 of total revenue

Stylized facts (3): Indirect tax revenues

Indirect tax revenue by country groups



- Small differences between country groups
  - Import tax
- *Tax shift* among most of developing countries
- Under the impulsion of the IMF VAT is now present in 116 countries

Corruption and compliance (1)

- Corruption has a negative impact on investment and growth
  - Bribes are not tax deductible…
  - Barrier to innovation
  - Sudden growth may induce worst corruption before getting better
    - Importance of rapid increase of civil servants’ wages

Corruption and compliance (2)

- Effects of corruption on tax collection
  - Major losses in the extractive sector
    - Deals negotiated outside the tax system
- How to fight corruption
  - Eliminate excessive regulation (bureaucracy and red tapes)
  - Introduce competition with the private sector
  - Increase wage of officials (efficient wage)

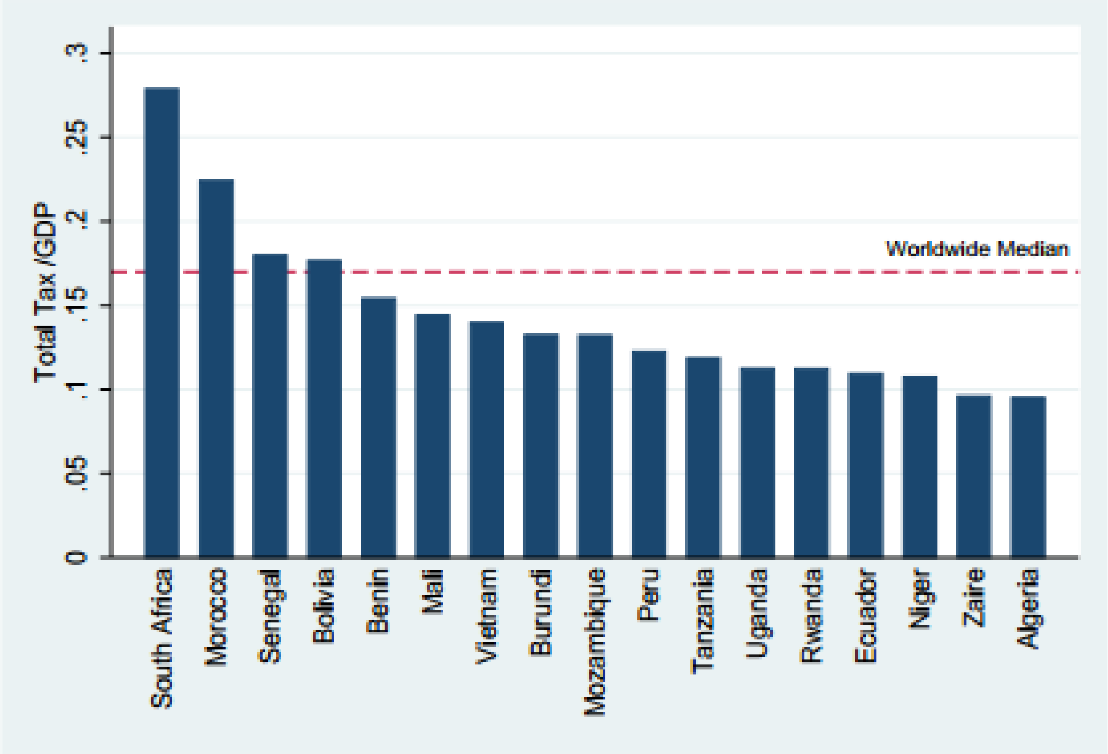
Tax collection efficiency (ICTD dataset)

- Tax collection efficiency= gap between *potential* tax and *actual* tax
  - Tax effort = actual tax/potential tax
- Estimation of the *tax potential* is based on the key determinants of tax revenue
  - Nominal GDP
  - GDP per capita
  - Spatial dependence (new!)
  - Non tax revenues
  - Government effectiveness

Estimation of the potential tax (1)

- **Nominal GDP**
  - Gives the size of the formal economy (market size)
  - Largely used in the literature to benchmark countries
    - BUT: lot of unknowns
  - VAT productivity efficiency indicator
    - Commonly accepted that VAT is less impacted by other factors

First ranking of DGD's partner countries



Estimation of the potential tax (2)

- **GDP per capita**
  - Wealthier agents are expected to contribute more
  - Proxy of population growth, fiscal capacity, size of the informal sector
    - Double edged arguments: source of confusion
  - Separately explains 1/3 of the tax revenues with respect to GDP

- **Spatial dependence (new!)**
  - Trade agreements
  - Mobility of production factors/ Cross border shopping
    - Tax convergence/tax mimicking with neighboring countries
  - Contagion of tax administration efficiency

Estimation of the potential tax (3)

- **Spatial dependence**

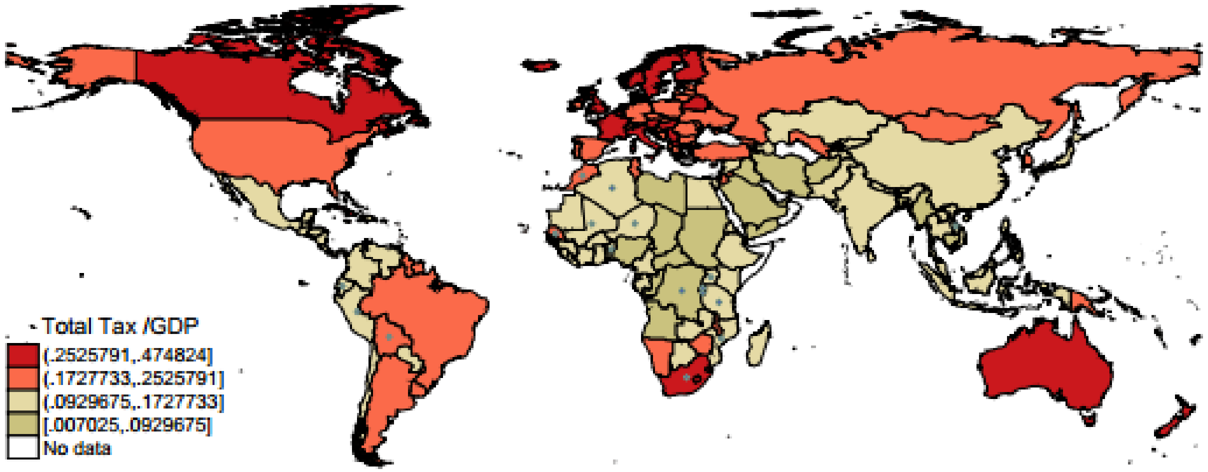


Figure 7: Tax Revenues Collected in the 2000s

Variable	I coefficient	Z score	p-value
Total Tax	0.444	11.243	0.000
PIT Tax	0.430	9.592	0.000
Trade Tax	0.292	7.833	0.000
Tax on Goods and Services	0.506	12.415	0.000

Table 11: Moran'I statistic

Estimation of the potential tax (4)

- **Non tax revenues**
  - Rentier states
    - State financing with little organizational /political effort
      - Risk of poor relations with domestic population
  - Grant/ Aid
    - Ambiguous impact of aid on tax effort
      - Democratization
    - Composition of aid matters
  - Natural resources
    - Discourages tax effort

Estimation of the potential tax (5)

- **Government effectiveness**
  - Human capital and infrastructure
  - Needs depend on the tax item

- **Other factors**
  - Trade openness
  - Production structure

Regression of potential tax: total tax (in % GDP)

- Potential revenue estimated from cross countries regressions (115 countries, average of 10 years (2000-2010))

$$\frac{TotTax_i}{Gdp_i} = \alpha_0 + \alpha_1 Gdpc_i + \alpha_2 W(dep)_i + \alpha_3 Open_i + \alpha_4 Agr_i + \alpha_5 Gov_i + \alpha_6 NonTax_i + \varepsilon_i$$

TotTax/Gdp= Total tax revenue in percentage of GDP
Gdpc= GDP per capita in PPP
W(dep)=Spatial dependence variable (new!)
Open= Measure of trade openness
Agr=Share of agriculture in total production
Gov=Measure of governance effectiveness
NonTax= Non-tax revenues (grants and other non tax revenues)

Regression of potential tax (Tax shift!) PIT, GS Tax and Trade Tax

- Disagregated approach

$$X_i = \beta_0 + \beta_1 Gdpc_i + \beta_2 W(dep)_i + \beta_3 Open_i + \beta_4 Agr_i + \beta_5 Gov_i + \beta_6 NonTax_i + \sum \beta OTax_i + \varepsilon_i$$

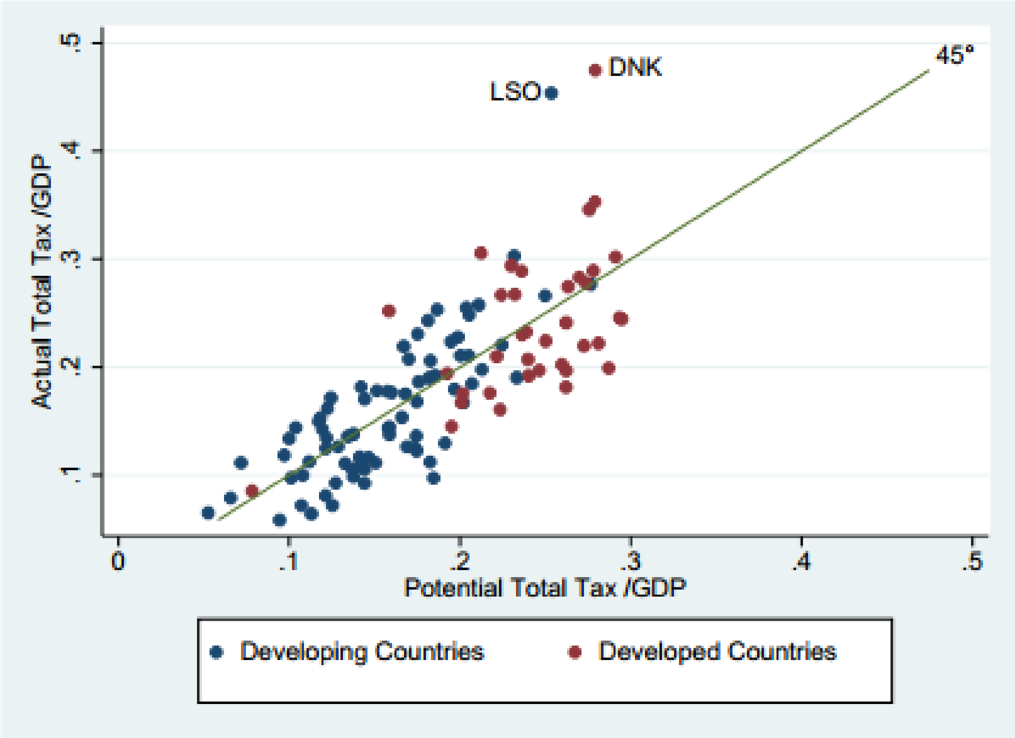
X= Specific tax components (PIT, GS tax and Trade Tax)
Gdpc= GDP per capita in PPP
W(dep)= Spatial dependence variable
Open= Measure of trade openness
Agr= Share of agriculture in total production
Gov= Measure of governance effectiveness
NonTax= Non-tax revenues (grants and other non tax revenues)
Otax=Other tax revenues

Regression results

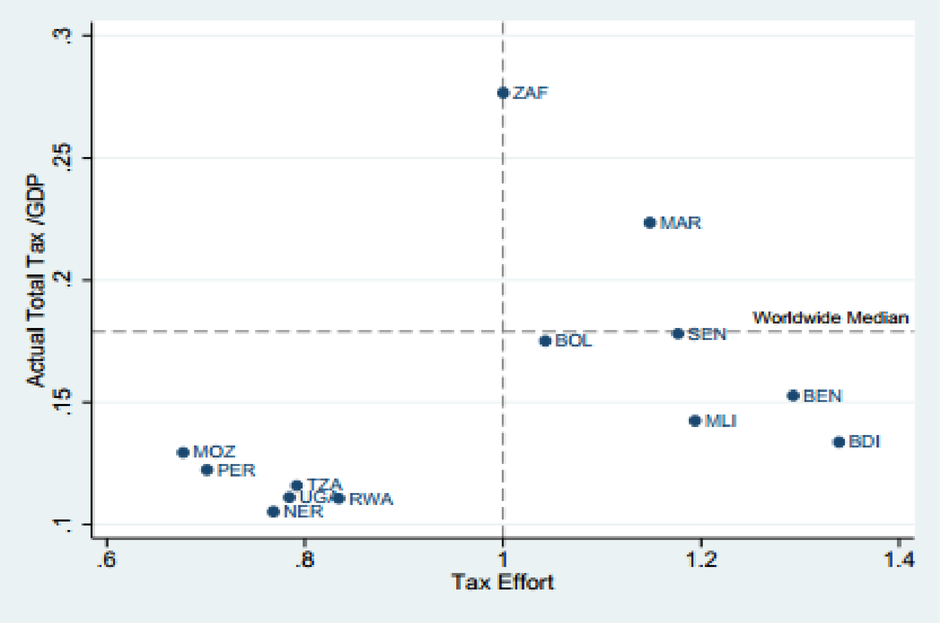
Dependent variable	Total tax	PIT	GS tax	Trade tax
Constant	0.206*	-0.014	0.131	-0.101
GDP per capita	-0.016	0.001	-0.009	-0.009
Spatial lag of dep.	0.736***	0.804***	0.490***	0.472***
Trade openness	0.018	-0.009	0.021*	0.033***
Non-Tax revenue	-0.151	0.061	-.0176**	-0.081
Governance efficiency	0.026***	0.017***	-0.000	-0.007
Agriculture value added	-0.002**	0.000	-0.001**	-0.001**
GS tax		0.158***		-0.173***
PIT			0.386***	-0.055*
SSC		-0.212***	0.218	-0.010
CIT		-0.201	0.736**	-0.055
Trade tax		0.099	-0.398***	
Observations	115	115	115	115
R-squared	0.60	0.67	0.71	0.44
*significant at 10%;** significant at 5%; *** significant at 1%				

Tax Gap & Tax effort
Total tax

Actual and potential tax collection

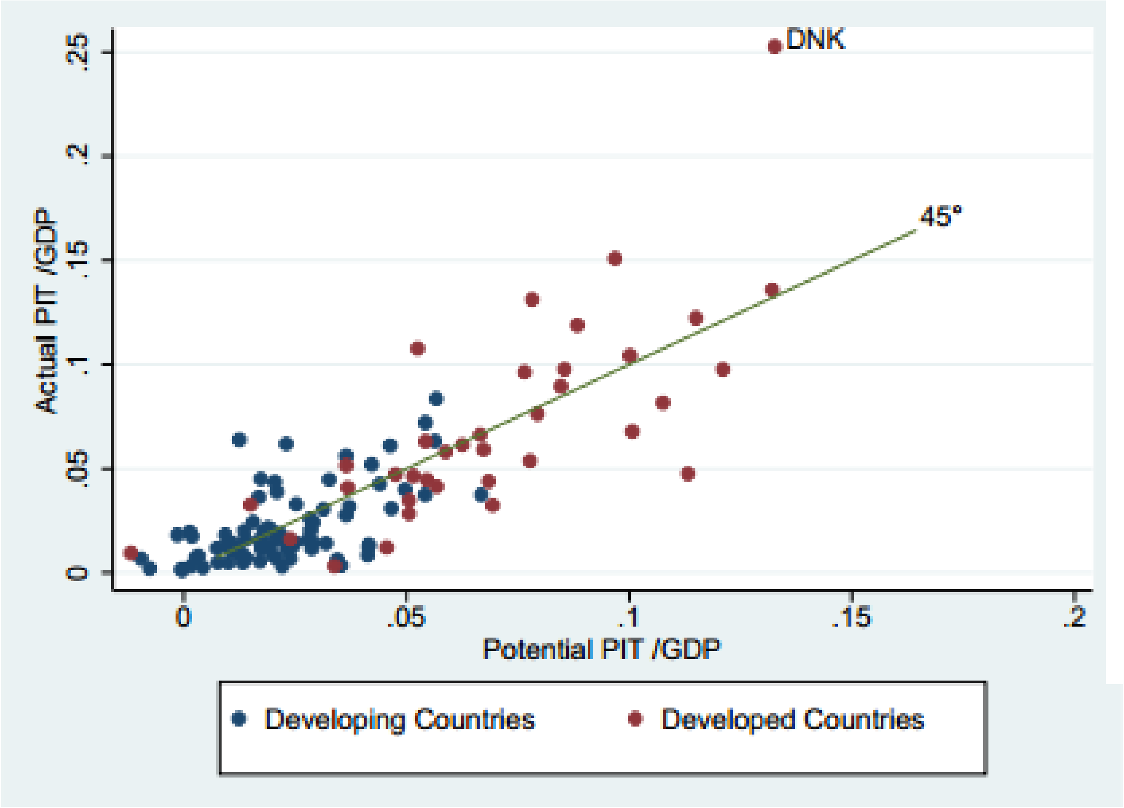


Tax effort in DGD's partner countries



Tax gap & Tax effort
PIT

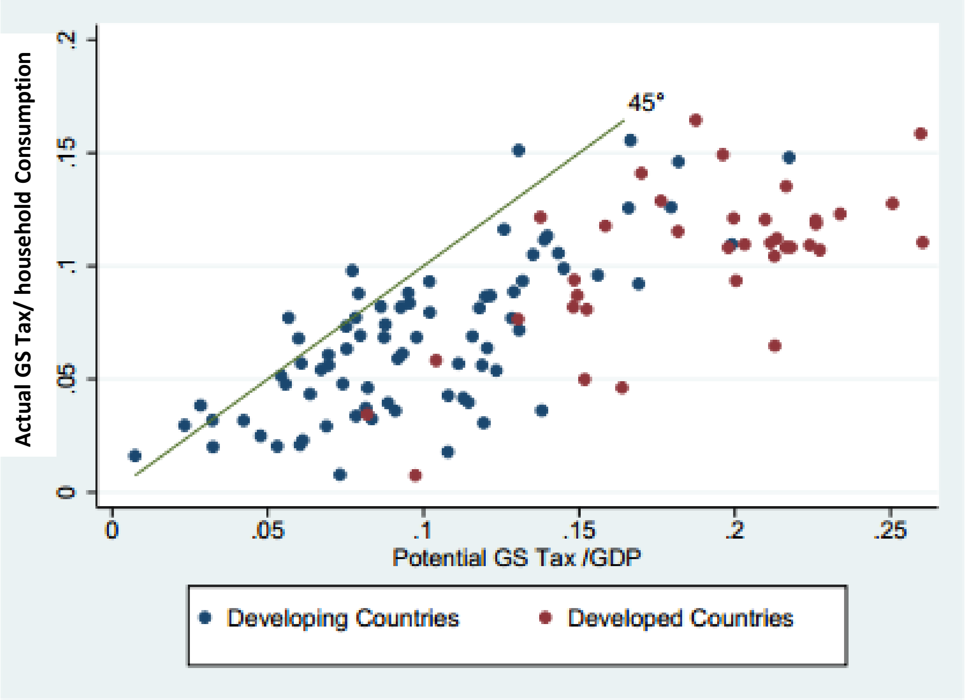
Actual and potential PIT tax collection



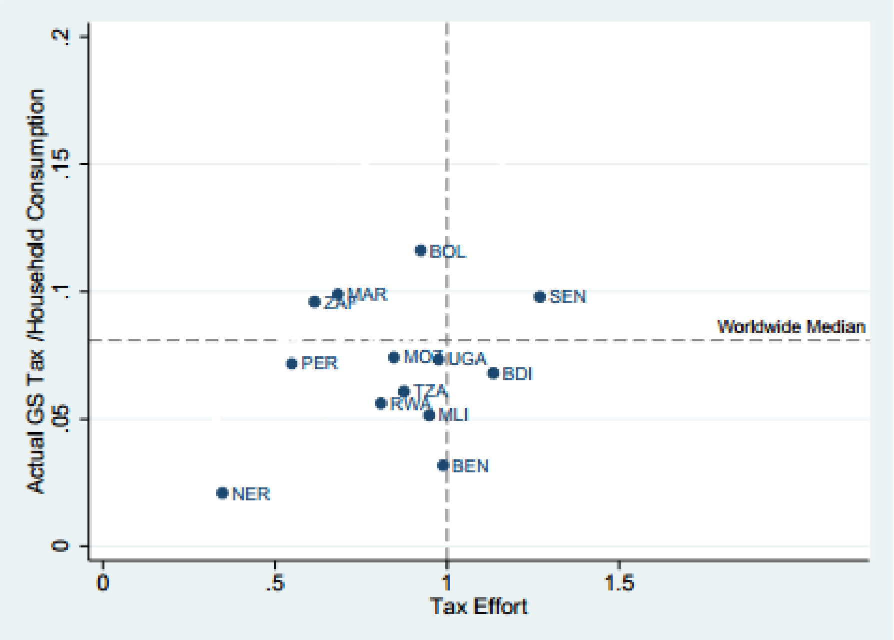
PIT tax effort in DGD's partner countries

Tax gap & Tax effort
GS tax

Actual and potential GS tax collection



GS tax effort in DGD's partner countries



Recommendations for DGD’s partners

- **Burundi**
  - Low tax revenue because of weak administration and large share of agriculture in GDP
  - High tax effort: high PIT regarding to the capacities of the administration

- **Benin**
  - Comparable to Burundi in terms of tax effort
  - Highly dependent on trade tax and PIT systems must be improved

- **Morocco**
  - High level of tax collection
  - Dependent to trade taxes, PIT and GS systems must be improved

Recommendations for DGD's partners

- **Mozambique**
  - Low tax collection and low tax effort
  - Trade and PIT systems must be reformed
- **Niger**
  - Low tax collection and low tax effort
  - PIT and GS systems must be reformed
- **Rwanda**
  - Low tax collection and quite low tax effort
  - Administration must be improved

Recommendations for DGD's partners

- **Senegal**
  - Most coherent tax system among DGD's partner countries
  - Badly impacted by neighbour's countries (regional harmonization important for Senegal)
- **Tanzania and Uganda**
  - Low tax collection and low tax effort
    - Urgent: reform of the PIT system

Conclusion

- Tax effort = universal scale that allows to rank countries and detect the incoherencies
- Improvements of the study:
  - New structural factors integrated to define the tax potential
  - Disaggregated approach that allows a precise analysis and to capture the tax shifts
- Limits:
  - Corporate income tax = black box

Questions?

Suggestions?