**Political Accountability and Taxes: A Research Memo to WGAPE**

Barak Hoffman and Clark Gibson
Political Science, UCSD

I.  **Question: What accounts for local taxation in poor agricultural countries?**

    a.  Why do we care?

        i.  Fiscal theories of governance links revenue and government policy; Hoffman and Gibson (2005) show this holds at the district level in Tanzania and Zambia.

        ii.  Works addressing taxes rather than exogenous sources of revenue (e.g., aid and oil) make structural (economic) and behavioral (political) claims:

            1.  Structural (e.g., Bates and Lien 1985): Greater capital mobility leads to more policy concessions for revenue; low mobility allows for predatory taxation.

            2.  Behavioral (e.g., Levi 1988): Governments create quasi-voluntary compliance through policy concessions.

        iii.  Theories have not been tested rigorously.  Impossible to know relative weight of structural factors and political factors.

    b.  Theoretical Premises

        i.  Revenue is a political constraint.

        ii.  Higher demand for services causes government to collect more taxes to provide services.

        iii.  Ability to tax is a function of structural and behavioral factors.

II.  **Argument**

    a.  Structural: Tax capacity different in rural and urban areas due to structure of economy.

    b.  Behavioral: Tax capacity in rural and urban areas the same due to citizen demand.

III.  **Hypotheses (ours and others)**

    a.  Population density makes tax collection easier.

    b.  Population density lowers the costs of collective action.

    c.  Citizen demand for services leads to higher taxes.

    d.  Population has negative effect on per capita taxes: government has fixed costs.

e. Effect of occupation on tax capacity:

    i. Professionals: Depend on government services and in cash economy, so higher tax capacity.
    ii. Farmers: Do not depend on government services and not in cash economy, so lower tax capacity.

## IV. Tests

a. Unit of Analysis: Districts in Tanzania

    i. Equivalent to counties in U.S.
    ii. About 200,000 people per district
    iii. Districts are divided into wards
        1. Wards have about 15,000 people
        2. Each ward elects one councilor

b. Dependent Variable: Per capita taxes (log)

c. Explanatory Variables:

    i. Share of the population employed in urban (rural) professions
    ii. Voter turnout (total turnout, ruling party share; opposition parties share)
    iii. Population (log)
    iv. Population density (log)

d. No need to account for institutions because all district governments have identical power (i.e., fixed effect across all districts).

e. Data: 2000 Census; 2000 voter results; 2004 district government budgets

## V. Results

a. Pooled Sample:

    i. Profession is a stronger predictor of tax capacity than population density; removing population density increases coefficient on profession but leaves others unchanged.
    ii. Voter turnout strong predictor (total, opposition, and ruling party).
    iii. Population has negative effect.

b. High Population Density

    i. Profession is strong predictor: urban governments tax transactions not people.

  ii. Voter turnout and ruling party voters are strong predictors but not opposition.

  iii. Population no longer significant except for opposition voters.

  iv. Issues to consider:
    1. In Tanzania the central government (i.e., the ruling party), not locally elected officials, appoints local-government officials
    2. Only two districts have opposition parties as majority.

  v. Questions on politics:
    1. Is there a tension between opposition parties (where strong) and local government officials that leads to more coercive taxation?
    2. Are voters in districts with strong opposition parties trying to evade taxes so government is more coercive?
    3. Do ruling party supporters pay more taxes because they are more satisfied with government or does the government find it easier to collect taxes where there is no viable opposition?

 c. Low Population Density:

  i. Profession remains strong predictor.

  ii. Results on voter behavior same as in pooled sample but the results are somewhat weaker.

  iii. Population strongly significant: cash economy is small in rural areas so governments are not able to tax transactions instead they tax people.

## VI. Conclusions:

 a. Occupations, voter involvement, and population determine tax base.

  i. Support for Levi:
    1. Voter involvement is important for tax capacity.
    2. Total turnout is strongest predictor.
     a. Rural Areas: Effect of ruling party votes and opposition votes is the same.
     b. Urban Areas: Ruling party effects are strong; no effect for opposition parties.
    3. Possible that ruling party can tax its supporters more (especially if there is no viable opposition) but this does not explain why effect of voter turnout dominates effect of party voting.

  ii. Support for Bates and Lien:
    1. In cash economy, governments tax transactions.
    2. In non-cash economy, governments tax people.

 b. Population density does not affect tax collection; potential for collective action is not enough.

## Table 1: Pooled Sample; Dependent Variable: Per Capita Taxes

| | | | | | | |
|---|---|---|---|---|---|---|
| **Urban Professions** | 0.029 | 0.027 | 0.032 | | | |
| | (6.12)*** | (5.19)*** | (6.61)*** | | | |
| **Farming** | | | | -0.023 | -0.020 | -0.025 |
| | | | | (6.81)*** | (5.36)*** | (6.72)*** |
| **Voter Turnout** | 3.048 | | | 3.821 | | |
| | (2.98)*** | | | (3.73)*** | | |
| **Opposition Parties Turnout** | | 4.278 | | | 5.185 | |
| | | (2.47)** | | | (2.94)*** | |
| **Ruling Party Turnout** | | | 3.449 | | | 4.493 |
| | | | (2.12)** | | | (2.71)*** |
| **Log Population** | -0.342 | -0.404 | -0.348 | -0.301 | -0.385 | -0.305 |
| | (3.47)*** | (4.30)*** | (3.36)*** | (2.91)*** | (3.91)*** | (2.82)*** |
| **Log Population Density** | -0.085 | -0.046 | -0.071 | -0.031 | 0.020 | -0.004 |
| | (1.31) | (0.73) | (1.07) | (0.52) | (0.36) | (0.07) |
| **Constant** | 3.306 | 4.275 | 3.431 | 4.782 | 5.810 | 5.047 |
| | (2.66)*** | (3.64)*** | (2.62)** | (3.82)*** | (4.71)*** | (3.86)*** |
| **Observations** | **85** | **85** | **85** | **85** | **85** | **85** |
| **R-squared** | **0.62** | **0.60** | **0.60** | **0.62** | **0.59** | **0.60** |

Robust t statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

## Table 2: Split Sample; Dependent Variable: Per Capita Taxes

| | Urban Only | | | Rural Only | | |
|---|---|---|---|---|---|---|
| **Urban Professions** | 0.019 | 0.019 | 0.024 | | | |
| | (3.10)*** | (2.35)** | (4.30)*** | | | |
| **Farming** | | | | -0.019 | -0.015 | -0.020 |
| | | | | (3.79)*** | (2.90)*** | (3.50)*** |
| **Voter Turnout** | 4.341 | | | 3.728 | | |
| | (2.77)*** | | | (2.41)** | | |
| **Opposition Parties Turnout** | | 4.716 | | | 4.749 | |
| | | (1.63) | | | (1.76)* | |
| **Ruling Party Turnout** | | | 5.133 | | | 4.763 |
| | | | (2.30)** | | | (1.87)* |
| **Log Population** | -0.137 | -0.264 | -0.121 | -0.496 | -0.550 | -0.531 |
| | (1.25) | (2.49)** | (0.94) | (2.73)*** | (3.43)*** | (2.97)*** |
| **Log Population Density** | 0.072 | 0.088 | 0.042 | -0.203 | -0.148 | -0.186 |
| | (0.68) | (0.72) | (0.39) | (1.84)* | (1.22) | (1.66) |
| **Constant** | -0.024 | 2.057 | 0.023 | 7.405 | 7.957 | 7.884 |
| | (0.01) | (1.41) | (0.01) | (3.52)*** | (4.19)*** | (3.87)*** |
| **Observations** | **44** | **44** | **44** | **41** | **41** | **41** |
| **R-squared** | **0.71** | **0.68** | **0.69** | **0.49** | **0.45** | **0.48** |

Robust t statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%