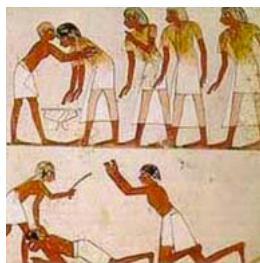


**Final presentation on
“The Quality of Governance and Tax Effort: Evidence
from Developed and Developing Countries”**

**Research Report prepared for
Case Study 5140143: International Political Economy**

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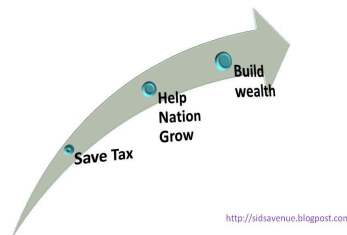
Taxes are inevitable



Paying taxes was a major part of an Egyptian's life.

Tax and Development

- For the government to offer Services, for it to carry out development, for it to carry on the governance; its needs money. Taxes are one of the sources for ...
- The primary purpose- to finance government expenditure and to redistribute the wealth, which increases the development of the country (Ola, 2001, Jhingan, 2004, Musgrave and Musgrave, 2004, Bhartia, 2009).
- Musgrave and Musgrave (2004) taxation has two effects:
 - reduce income inequality and ensure the efficient use of the resources
 - the effects on the level of capacity output, employment, prices, and growth



Tax and Development (Contd.)

Figure 1.1: Tax efforts and HDI 2012 of 105 countries

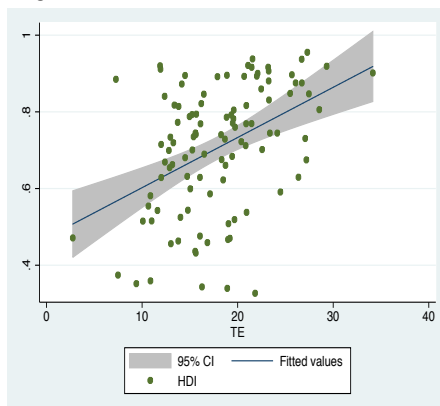
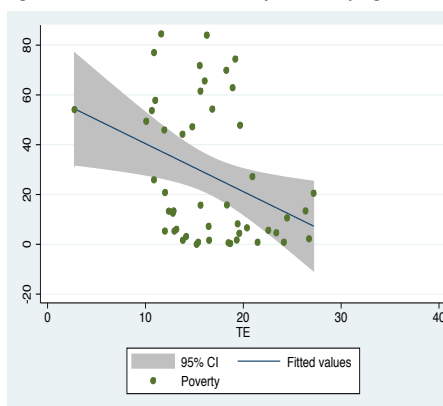


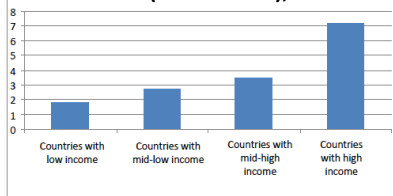
Figure 1.2: Tax efforts and Poverty of developing countries



Possible path: infrastructure development, poverty reduction strategy etc.

Low Tax Efforts

Figure 1.2: Revenues from personal income taxes (as % of GDP), 2008-09



- As noted by IMF (cited in TJN, 2012): *“Developing countries must be able to raise the revenues required to finance the services demanded by their citizens and the infrastructure (physical and social) that will enable them to move out of poverty. Taxation will play the key role in this revenue mobilization”*

- The general perceptions for low Tax-GDP ratio:
 - First: narrow tax base
 - Second, revenue losses due to trade liberalization
 - Third, low potential of tax administration and growing practice of tax evasion and corruption.
- This makes it difficult for the developing country to reduce poverty through the insufficient development activities

Determinants of Tax Efforts in Literature

- Tax effort = f(demand side factors, supply side factors)
- Supply side factors: per capita income, trade openness, broad money, urbanization, agricultural share, manufacturing share, government expenditure, debt, inflation etc.
- Demand side factors: government quality, corruption, voice and accountability, democracy etc.
- Begum, L. (2007) found that developing countries having low tax effort (less than unity) are not utilizing their full capacity of tax revenue, and they can reduce the budgetary imbalance through raising tax revenue.
- When the tax evasion and corruption of public officials is a general perception, it negatively affects tax revenue and as well as economic growth and development (Ajaz and Ahmed 2010).

Determinants of Tax Efforts in Literature (Contd.)

- For poor countries tax rate raises are not efficient to increase tax revenue, more feasible solution for them to improve their governing institutions (Bird, R. M., Jorge M. V., and B. Torgler, 2008).
- Benno (2003) showed direct democratic rights, local autonomy, trust in government and courts and legal system has a positive and significant effect on tax morale.
- Lack of institutional capacity and exercise public power for private gain i.e. corruption are main culprit of demand factor for this low tax effort.

Objective: Governance and Tax Effort

- The main purpose of this paper is to justify whether the quality of governance leads to a higher tax efforts. The first hypothesis focuses on better institutions, while the second one will lead explore the impact of corruption.

Country	Institutional Capacity	Control of Corruption	Tax efforts
A	high	strong	high
B	low	weak	low

Methodology: Governance and Tax Effort

- To test whether the quality of the governance fosters tax efforts of the developed and developing countries, the following model will be used:

$$TE_{it} = \alpha + \beta_1 GOV_{it} + \beta_2 exp_{it} + \beta_3 Open_{it} + \beta_4 M2_{it} + \beta_5 Urban_{it} + \mu_i + \epsilon_{itj}$$

$$TE_{it} = \alpha + \beta_1 Instit + \beta_2 Corrit + \beta_3 exp_{it} + \beta_4 Open_{it} + \beta_5 M2_{it} + \beta_6 Urban_{it} + \mu_i + \epsilon_{itj}$$

- where i indexes the countries in the sample, t refers to a year;
- TE_{it} indicates the country's level of tax effort measured as the tax revenue to GDP ratio;
- GOV_{it} are indicators for institution capacity and corruption;
- Expe represents the annual govt. expenditure GDP,
- M2 represents the amount of broad money in the economy (% of GDP)
- $Open_{it}$ define as export plus import as ratio of GDP;
- $Urban_{it}$ represents share of population live in urban areas;
- μ_i stands for country effect and ϵ_{itj} is an error term.

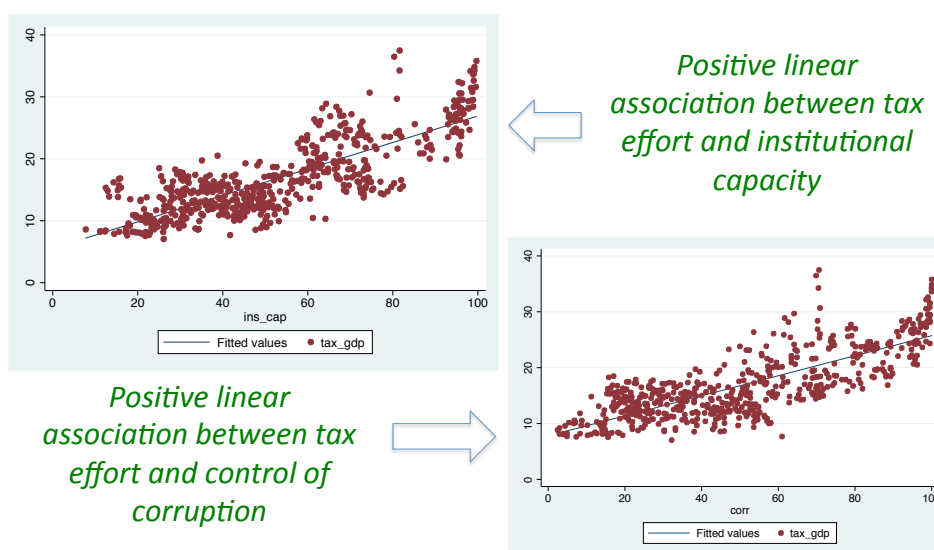
Data and Estimation Procedure

- Dependent variable** is tax effort (tax revenue ratio to GDP): as an adequate volume of government revenue is essential for public expenditure and economic growth, the ratio of tax revenue to GDP has been used to measure and judge the success of a country's fiscal management.
- Independent variable (main):** the quality of governance, which divided two parts institutional capacity; and control of corruption
- Control variable:** The economic variables including
 - ✓ Government expenditure (% of GDP)
 - ✓ Openness (trade as % of GDP)
 - ✓ Broad money in the economy (% of GDP)
 - ✓ Industry sector (% of GDP)
 - ✓ Proportion of urban population

Data and Estimation Procedure (cont.)

- **Governance data:** The World Bank Research Institute forms the Worldwide Governance Indicators (WGI), which consists of six aggregate indicators of governance covering 200 countries, with cross-country data from 30 organizations.
- WGI measuring six dimensions of governance starting in 1996: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption.
- The aggregate indicators are based on several hundred underlying variables taken from a wide variety of existing data source. The data reflects the views on governance of survey respondents and public, private, and NGO sector experts worldwide
- **Institutional capacity**
 $= 1/3(\text{government effectiveness} + \text{rule of law} + \text{regulatory quality})$
 = higher value represent strong institutional capacity
- **Control of corruption:** higher the value the country has lower corruption in the economy

Summary Findings: Data Analysis



Summary Statistics

Variable	Variation	Mean	Std. Dev.	Min	Max
id	overall	28.2	16.0	1	55
	between		16.1	1	55
	within		0.0	28.2	28.2
t	overall	2007	3.2	2002	2012
	between		3.3	2002	2012
	within		0.0	2007	2007
tax_gdp	overall	16.9	6.1	7.0	37.5
	between		0.9	15.2	18.0
	within		6.0	7.2	36.7
exp_gdp	overall	22.6	8.7	7.6	53.7
	between		1.2	21.2	24.5
	within		8.6	7.3	52.6
m2_gdp	overall	61.9	40.0	11.9	247.8
	between		4.1	55.6	67.1
	within		39.8	15.2	243.5
openness	overall	81.1	35.6	29.0	256.0
	between		3.6	74.9	85.9
	within		35.5	28.6	259.1
urban	overall	53.5	22.5	12.5	100.0
	between		1.0	52.1	55.1
	within		22.5	13.7	101.4
ins_cap	overall	53.3	23.1	7.8	99.7
	between		0.5	52.4	53.9
	within		23.1	8.7	99.5
Cont_corr	overall	50.9	26.8	2.4	100.0
	between		26.4	10.1	99.7
	within		5.9	12.5	71.0

Table1.2: Comparing estimators for panel data model: Equation 1

Tax effort	Pooled OLS	Within or Fixed effect	Random effect
Govt. Expenditure	0.146** (0.0284)	0.188** (0.0285)	0.187** (0.285)
M2_gdp	-0.0100** (0.0031)	-0.038** (0.0092)	-0.025** (0.007)
Openness	0.0134** (0.0049)	0.029** (0.006)	0.028** (0.005)
Urban pop	0.0285** (0.0093)	0.215** (0.055)	0.062** (0.019)
Institutional Capacity	0.169** (0.0077)	0.138** (0.018)	0.140** (0.014)
Constant	2.599** (0.477)	-6.27* (3.06)	1.164 (1.17)
R-sq (within)		0.24	0.23
R-sq (between)		0.62	0.72
R-sq (overall)	0.70	0.58	0.67
Sigma u		4.855	3.037
Sigma e		1.705	1.705
Rho		0.890	0.760
Observation	583	583	583

Notes: Significance levels: * 0.01 < p < 0.05, ** p < 0.01.

Table 1.3: Comparing estimators for panel data model: Equation 2

Tax effort	Pooled OLS	Within or Fixed effect	Random effect
Govt. Expenditure	0.173** (0.027)	0.2097** (0.029)	0.210** (0.0264)
M2_gdp	0.0007 (0.003)	-0.0355** (0.0094)	-0.0184* (0.0075)
Openness	0.0186** (0.0049)	0.028** (0.006)	0.028** (0.005)
Urban pop	0.0354** (0.0099)	0.212** (0.057)	0.084** (0.0194)
Control of corruption	0.131** (0.0053)	0.0585** (0.018)	0.078** (0.0106)
Constant	2.950** (0.487)	-2.195 (3.149)	2.632* (1.149)
R-sq (within)		0.19	0.17
R-sq (between)		0.55	0.69
R-sq (overall)	0.70	0.51	0.65
Sigma u		4.548	2.960
Sigma e		1.764	1.764
Rho		0.869	0.738
Observation	583	583	583

Notes: Significance levels: *0.01 < p < 0.05, ** p < 0.01.

Which Models are Appropriate?

- **Hausman test:** To test whether Random or Fixed effect model are appropriate.
Null: Random effect model is appropriate
Alt: Fixed effect model is appropriate
- **Equation 1: Institutional capacity**
b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
 $\chi^2(5) = (b-B)'[(V_b - V_B)^{-1}](b-B) = 15.20$
Prob>chi2 = 0.0095
➤ We reject the null and we can accept that fixed effect model will be efficient for panel regression.
- **Equation 2: Control of corruption**
 $\chi^2(5) = (b-B)'[(V_b - V_B)^{-1}](b-B) = 26.72$
Prob>chi2 = 0.0001
➤ We reject the null and we can accept that fixed effect model will be efficient for panel regression.

Table 1.4: Fixed effect model estimation: the Impact of governance (institutional capacity and control of corruption) in developed and developing countries

Tax effort	Equation 1	Equation 2
Govt. Expenditure	0.1878** (0.0812)	0.2097** (0.1008)
M2_gdp	-0.0377 (0.0094)	-0.0355 (0.0448)
Openness	0.0298*** (0.009)	0.0281*** (0.1002)
Urban pop	0.215** (0.0904)	0.2125** (0.0853)
Institutional Capacity	0.0138** (0.0623)	
Control of corruption		0.0584* (0.0334)
Constant	-6.270 (5.721)	-2.195 (4.583)
R-sq (within)	0.24	0.19
R-sq (between)	0.62	0.55
R-sq (overall)	0.58	0.51
Sigma u	4.855	4.548
Sigma e	1.705	1.764
Rho	0.890	0.869
Observation	583	583

Notes: Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Conclusion

- The ultimate conclusion of this paper is that a more capable institution and less corrupt administration is likely an important precondition for more adequate level of tax efforts in the developing and also in developed countries.
- The main contribution of this paper is to show the quality of governance matter for tax revenue collection.
- The study results suggest that institutional capacity and control of corruption has positive and significant effect on tax effort i.e. good governance has a positive effect on tax system and revenue collection.

Policy Implications

- The fixed effect model (robust) show that institutional capacity variables have significant effect on tax effort.
- The results suggest that developing countries can improve their tax performance through improving their institutional structure. In particular, an improvement in institutional capacity will lead to higher tax efforts.
- The control of corruption coefficient is positive and so we can say if a country takes measures to control corruption, which will enhance their tax effort.
- Efforts need to be made by the government to make improvement to institutional capacity (effectiveness of administration, regulatory quality, rule of law and control the corruption in all level especially in public service).

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Control of Corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5. |
| 2. Government Effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5. |
| 3. Political Stability and Absence of Violence/Terrorism captures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5. |
| 4. Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5. |
| 5. Regulatory Quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5. |
| 6. Voice and Accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5. |

Annex Table 3: Sample countries

Antigua and Barbuda	Egypt, Arab Rep.	Maldives	St. Lucia
Armenia	El Salvador	Mali	St. Vincent and the Grenadines
Australia	Georgia	Nepal	Thailand
Bangladesh	Grenada	New Zealand	Togo
Benin	Guatemala	Nicaragua	Uganda
Botswana	Honduras	Norway	Ukraine
Bulgaria	Iceland	Pakistan	United Kingdom
Burkina Faso	India	Paraguay	Uruguay
Cambodia	Indonesia	Peru	Zambia
Caribbean small states	Korea, Rep.	Philippines	
Colombia	Lebanon	Poland	
Croatia	Macao SAR, China	Romania	
Denmark	Macedonia, FYR	Sierra Leone	
Dominica	Madagascar	South Africa	
Dominican Republic	Malaysia	Sri Lanka	

Thank you
for your attention

