



ΑΡΕΤΗ  
ΚΕΡΑΣΟΥ

# **Cultures of Corruption: Macroeconomic Implications**

**Maksym Ivanyna (MSU)  
Alex Mourmouras (IMF)  
Peter Rangazas (IUPUI)**

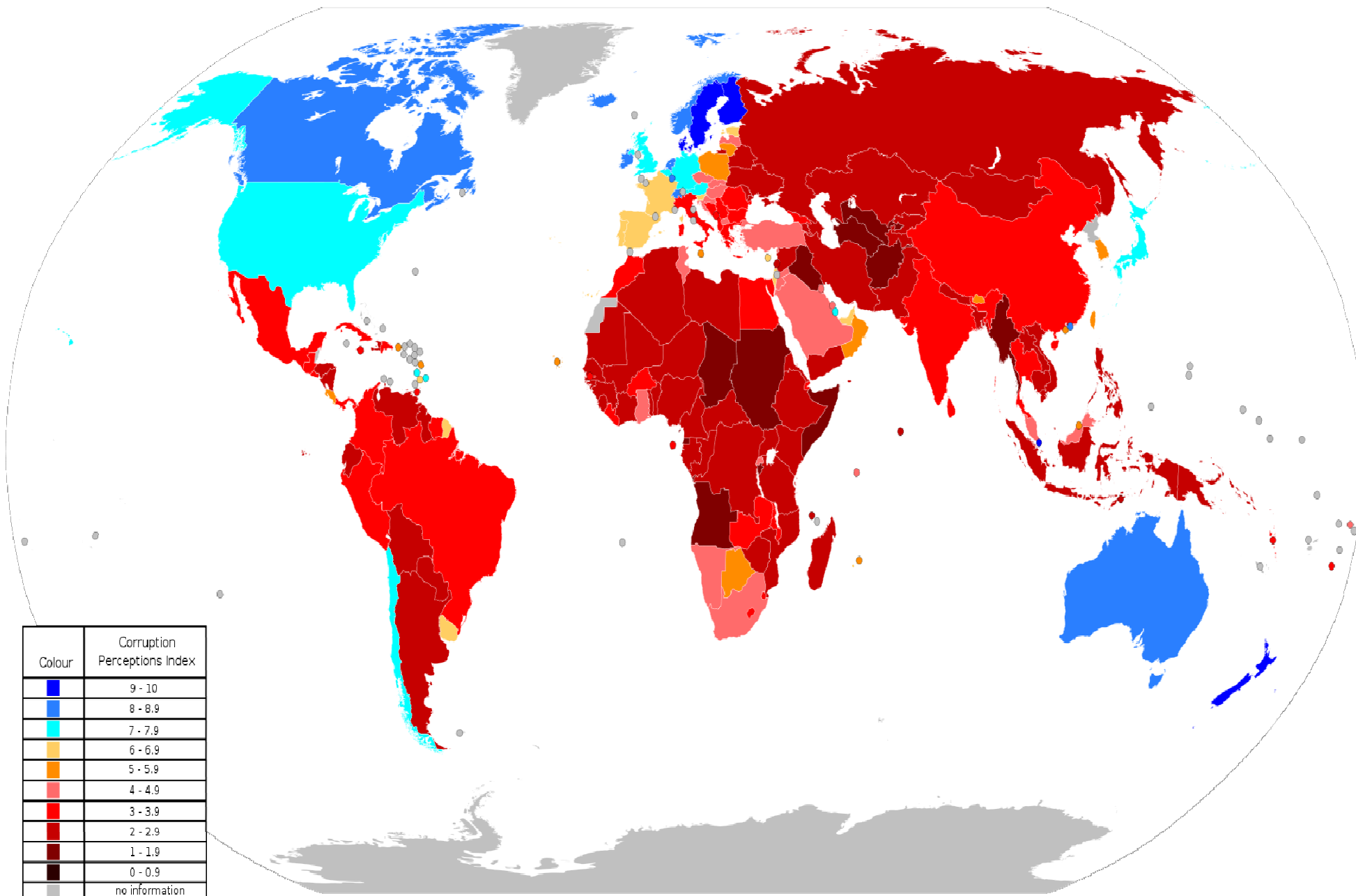
November 4, 2010

**The views in this presentation and the working paper on which it is based are strictly personal. They do not represent the views of the IMF.**

# Corruption: Overview

- **Corruption** comes from the Latin *rumpere*, or **broken**, as in broken **trust**.
- It occurs when public officials use their office for private benefit, to the detriment of general welfare (the public interest).
- **Administrative corruption**: (low or high level) officials abuse rules by taking bribes, diverting public funds,.....
- **Political corruption**: design policies to increase opportunities for bribe-taking (set import quotas, reduce independence of judiciary). Larger government facilitates this.
- **Asymmetric information, costly monitoring**, and **principal-agent** problems are important when thinking about the nature of corruption and how to fight it (Tirole, 1996).

# Corruption: The Global Map

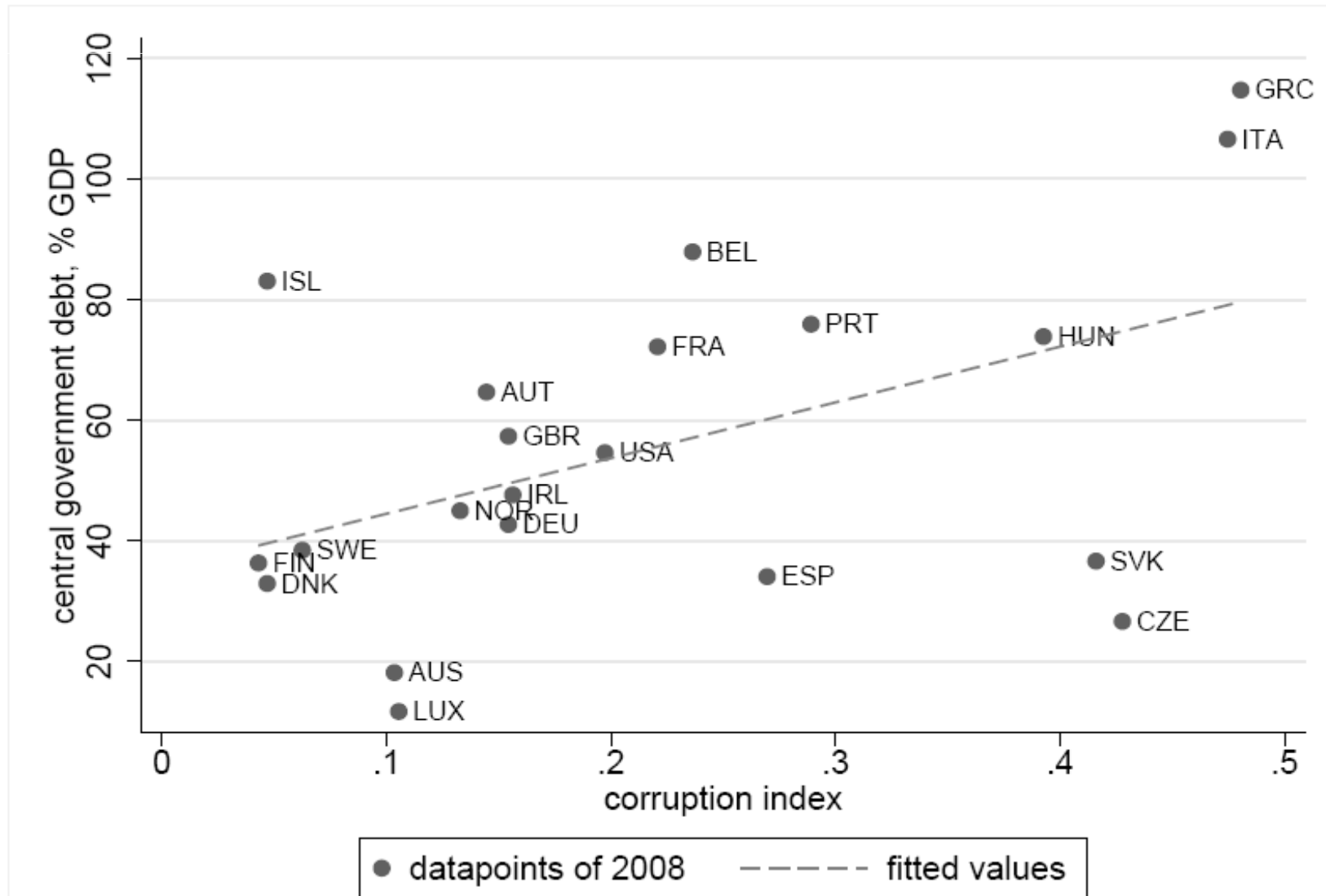


[http://upload.wikimedia.org/wikipedia/commons/thumb/f/f7/World\\_Map\\_Index\\_of\\_perception\\_of\\_corruption\\_2010.svg/2000px-World\\_Map\\_Index\\_of\\_perception\\_of\\_corruption\\_2010.svg.png](http://upload.wikimedia.org/wikipedia/commons/thumb/f/f7/World_Map_Index_of_perception_of_corruption_2010.svg/2000px-World_Map_Index_of_perception_of_corruption_2010.svg.png)

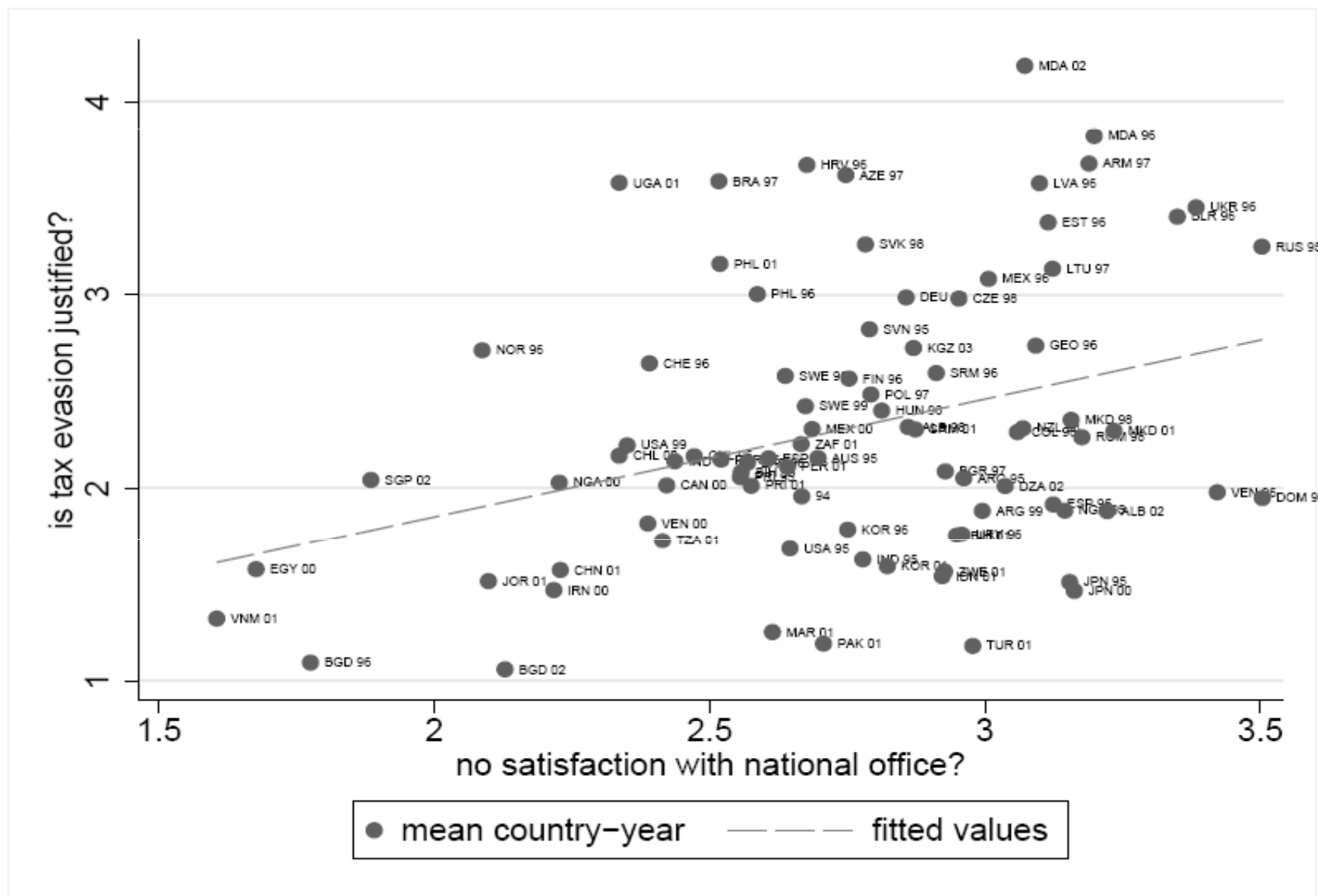
# Corruption: Economic Consequences

- ***Anti-growth effects***
  - ***crowds out investment*** by raising the cost of doing business and lowering returns on investment.
  - ***Lowers productivity of public capital and TFP.***
    - Half of public investment funds stolen (Tanzi and Davoodi 1997)
    - Up to 85 percent of public school funding do not reach schools (Reinikka and Svensson 2004)
- ***Increases the size of government.*** larger budget creates more opportunities for bribes
- ***Raises government borrowing and public debt***

# Corruption and Public Debt



# Corruption and Tax Evasion



# Corruption and Tax Evasion

- **Tax evasion:** misreporting of one's income for the purpose of lowering taxes assessed.
- **Standard theory** assumes people evade so as to equalize expected marginal costs and benefits.

$$\text{Max}_{y^R} \left\{ p \cdot u\left(y - ty - f \cdot (y - y^R)\right) + (1 - p) \cdot u\left(y - ty^R\right) \right\}$$

- Evasion is more extensive the higher the tax rate  $t$ , the lower the probability of audit  $p$  and the smaller the fine  $f$ .
- While useful, the view **of human nature** encapsulated in the standard theory may be unduly **pessimistic**: the probability of being audited is very low in many countries, yet many/most people pay their taxes (Slemrod).



# Tax Evasion, Corruption and Values

- People's **values** make them feel bad when they behave illegally and dishonestly.
- But the extent of **honesty** in people's dealings with government is affected by their trust in government and what economists call **culture**—*beliefs, social norms and various attributes of individual preferences that are influenced by their environment (Aghion-Howitt)*.
- **Surveys** show that people are more likely to justify evading taxes when they have less confidence in government.
- A **culture of corruption** will likely erode compliance and make the private sector less likely to report income truthfully.

# ***The four classic Western virtues***

***Virtue*** is a single thing (Plato)

- ***temperance*** (σωφροσύνη, *sōphrosynē*)
- ***prudence*** (φρόνησις, *phronēsis*)
- ***fortitude*** (ανδρεία, *andreia*)
- ***justice*** (δικαιοσύνη, *dikaiosynē*)

## ***Examples***

- ***Courage*** is the mean between ***cowardice*** and ***foolhardiness***
- ***Confidence*** is the mean between ***self-deprecation*** and ***vanity***
- ***Generosity*** is the mean between ***miserliness and extravagance***

德伴天地道冠古今  
相述六經垂志萬世



唐文選子筆

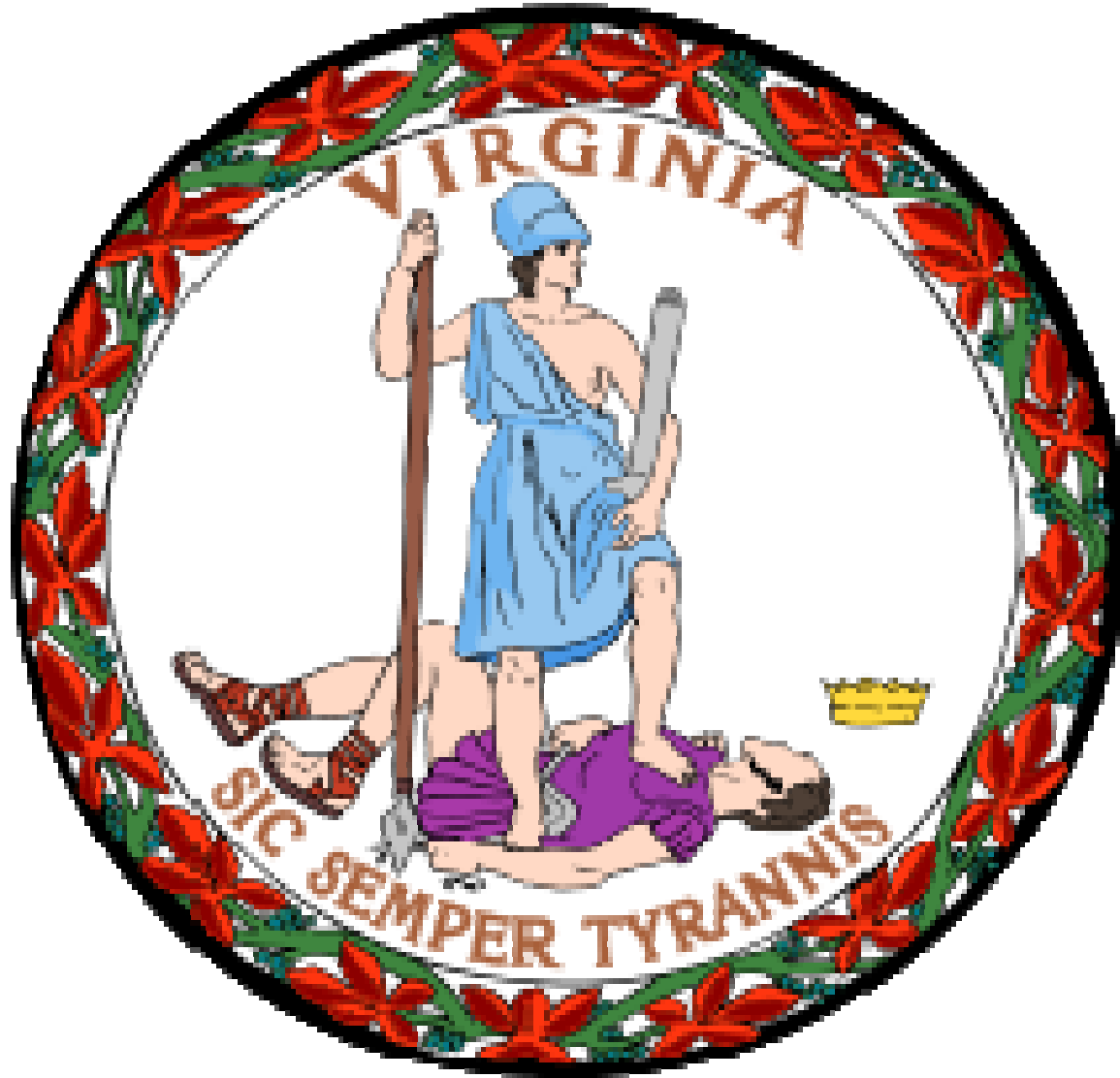


# What makes for good government?

- Good government rules not by physical force but through ***moral force***.
- The ***ideal ruler*** embodies virtue, which is expressed in his unfailingly benevolent treatment of the people.
- In turn, the people ***voluntarily***, even eagerly, choose to follow him.
- A government to be good requires a ***good ruler*** and ***good officials***.

**Source:** *Daniel Gardner*, "What **Confucius** says is useful to China's rulers," Chicago Tribune, October 1, 2010.

***Virtue, sword in hand, with her foot on  
Tyranny on the *Great Seal of Virginia****



# What makes for a morally good individual?

- A good person is someone who
  - possesses a love of learning
  - strives to achieve benevolence, righteousness, propriety and wisdom;
  - treats others as he would wish to be treated;
  - is trustworthy and loyal as a friend,
  - filial as a son and obedient as a subject;
  - and, reciprocally, is affectionate and caring as a parent or an official
- **Source:** *Daniel Gardner*, “What **Confucius** says is useful to China's rulers,” Chicago Tribune, October 1, 2010.

# Focus of this Study

- Examine **quantitatively** the macroeconomic effects of corruption
- Use a **calibrated** dynamic general equilibrium model of fiscal policy.
- We assess the effects of corruption on: **tax rates and revenues, the size and efficiency of government, economic growth, worker productivity and debt sustainability.**
- These are among the principal concerns in many indebted, slow-growing countries

# The Model

- Standard OLG growth model with private and public capital
- Households choose consumption, savings, and fraction of income to report. Distaste for tax evasion declines with an increase in corruption: “culture-of-corruption effect.”
- Government officials levy taxes and borrow (in paper 2) to finance their salaries and public investment projects. They may also divert public funds for their own use.
- Begin by calibrating threshold model without corruption
- Then introduce corruption and tax evasion using information from the literature to inform our calibration



# Political Economy

- Public officials ***have same preferences*** as private households
- Officials are ***randomly chosen*** each period: Each official has command over funds intended for public investment. Decides fraction to divert for private use
- ***Officials decide*** each period the labor income tax rate and amount of public debt (in paper 2)
- Then private households and public officials make ***decentralized*** decisions on corruption, tax evasion, consumption and savings

# Results

***Relative to threshold model*** without corruption and tax evasion,

- the chosen tax rate is 50 percent higher but revenues 16 percent
- worker productivity is 22 percent lower
- 58 percent of public funds are diverted
- tax evasion is 33 percent of GDP

# Results

In the **absence** of a culture of corruption, we would get counterfactual results:

- tax rates would be set way too high relative to the observed size of government.
- government revenues would rise with evasion.

***The culture-of-corruption effect*** helps bring down tax rates, generate a reasonable government size and replicate the observed negative correlations between evasion and tax revenues.

- How?

# Results

The private sector intensifies its evasion when public corruption increases.

Officials (who are Stackelberg leaders) take this response into account and set lower tax rates.

Despite this ***disciplining effect*** of intensified evasion, tax rates are higher than in the no-corruption model

- Tax rates are ***higher***.
- Government size ***is larger***.
- Tax revenues, public and private intensity, worker productivity and output are all ***lower***.

# Implications

<i>Parameter Changes</i>	$\% \Delta u$	$\% \Delta v$	$\% \Delta \tau$	$\% \Delta REV$	$\% \Delta y$
rise in $\eta$	-9.1	-6.9	0.8	4.9	4.0
fall in $\theta^g$	-7.6	-7.2	0.5	1.9	4.0
fall in $\theta^\tau$	11.1	-11.3	2.1	5.8	-4.5

*Notes:* The table gives the percentage in the variable associated with a 10 percent change in the parameter indicated.

# Calibration without Borrowing

Tax revenue and worker productivity plotted against institutional checks on corruption

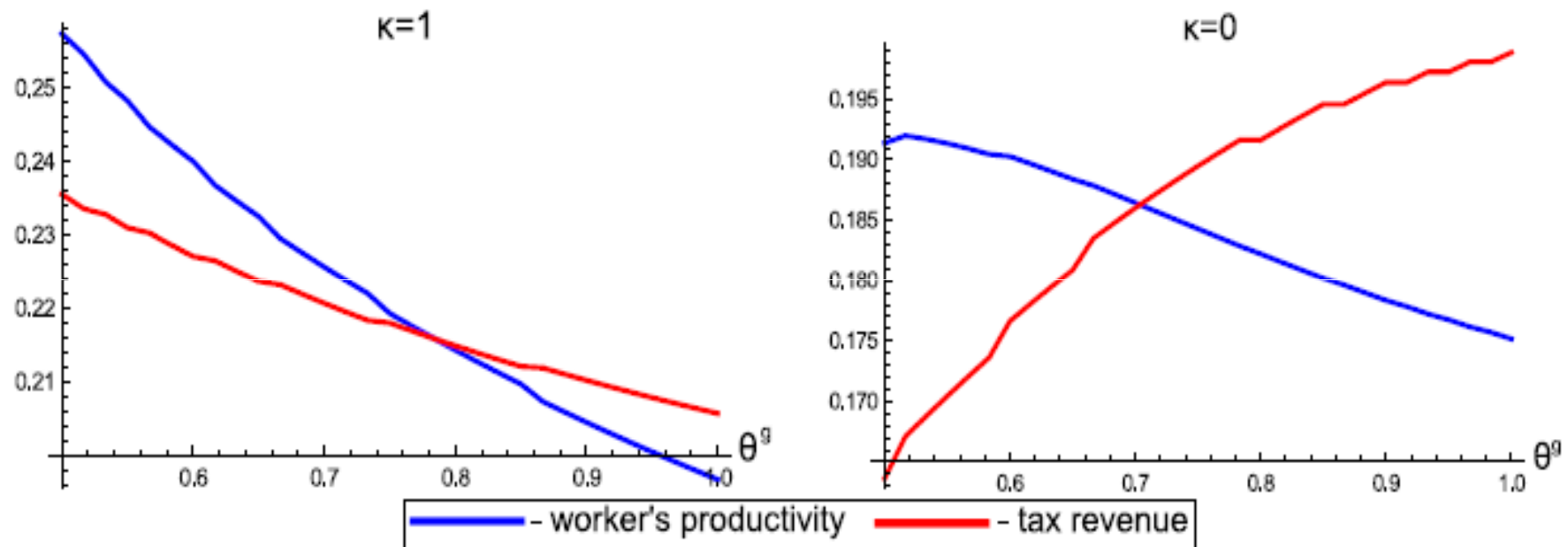


Figure 6: Change in institutional checks on corruption

# Implications

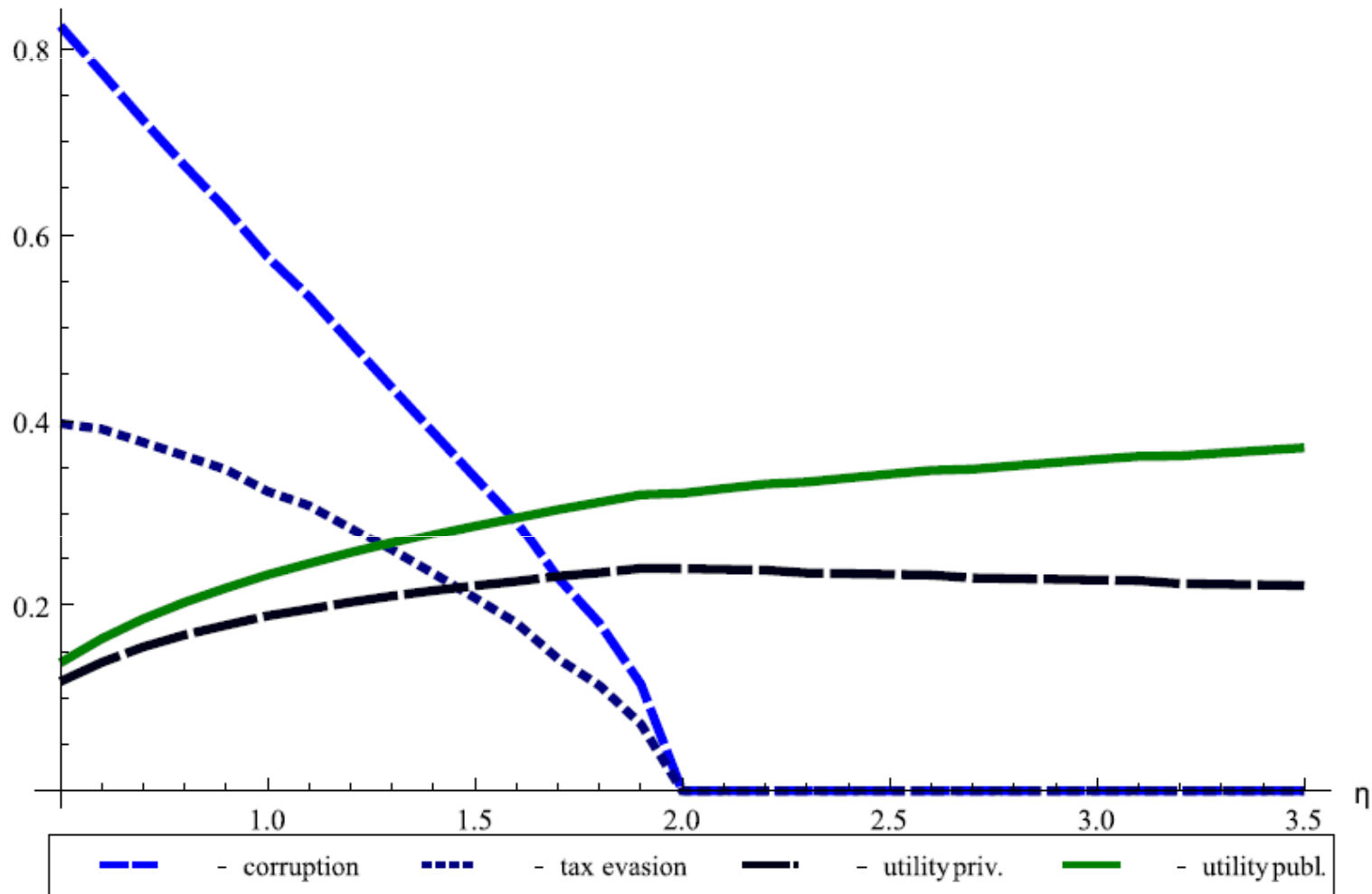


Figure 5: Changes in wage markup for public officials

# Calibration with Borrowing

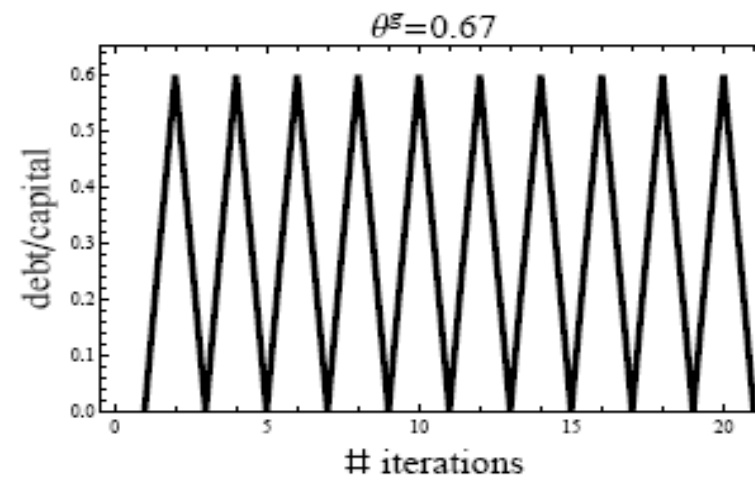
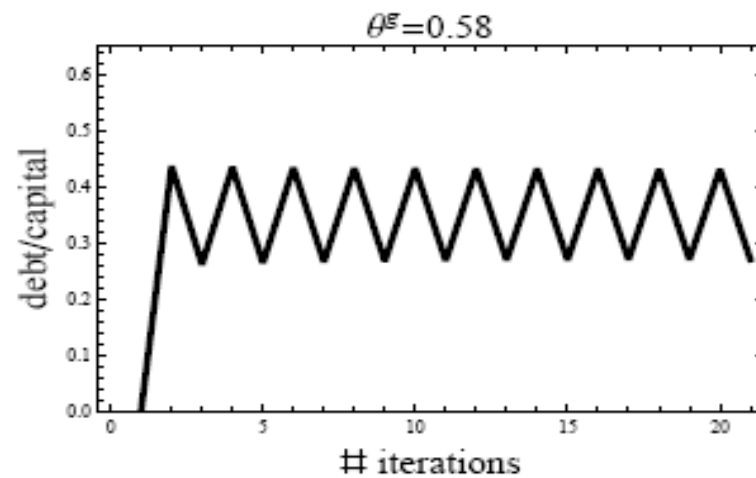
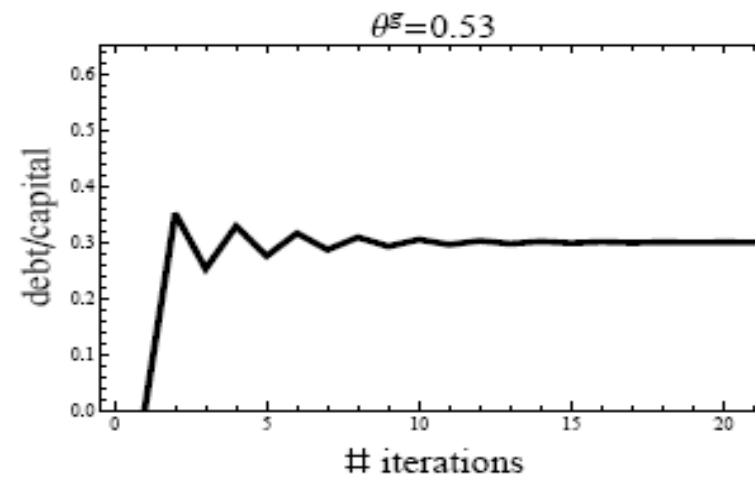
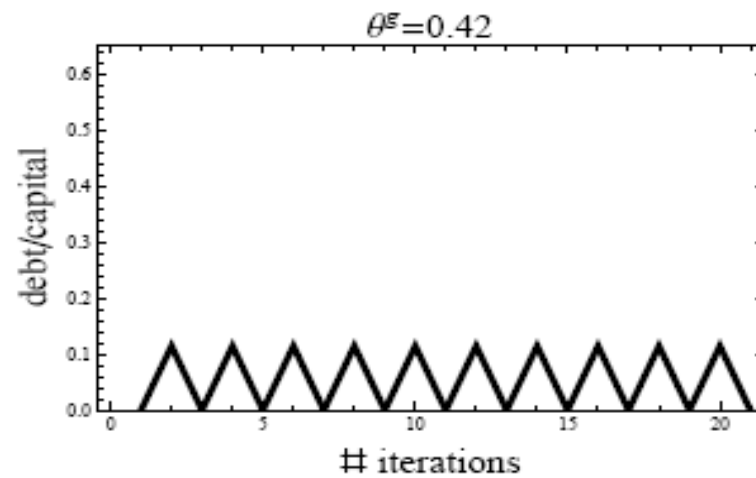
**Similar results:** higher tax rate, lower productivity

- Corrupt governments tend to borrow more
- Capital accumulation and growth suffer
- **Boom-bust cycles of indebtedness** can result
- Corruption **raises** government deficits and debts.
- Poor institutions make boom-bust debt cycles **easier**.



# Calibration with Borrowing

- Boom-bust debt cycles and other interesting dynamics



# Implications

- Tax evasion and corruption must be addressed **jointly**--half measures can be counterproductive.
- Tackling tax evasion **without** cleaning up corruption in public investment will result in higher taxes, more corruption, higher public debt and lower welfare.
- To reduce the temptation of evasion, officials must be paid **decent wages**.
- **Fiscal rules** – such as a **debt rule** – reduce corruption and **volatility** and improve welfare.
- Policy changes - fiscal rules, strengthening of **institutional checks** - are more likely to be enacted in difficult times, when opportunities for officials to appropriate economic resources are limited.

# Implications

- The **golden rule** of public finance (it is ok for governments to borrow to finance public investment) may not be applicable.
- Governments ought to **tackle corruption before they borrow** significant sums abroad or they risk increasing corruption and tax evasion while also putting debt sustainability at risk.
- It is useful, on efficiency grounds, to **limit the number of officials**. This allows the number of “productive” workers to increase, which raises public capital per person and, indirectly, private capital per person.
- But limiting the number of officials while keeping the public investment budget fixed **raises** officials’ incentives to engage in corruption. To limit these incentives, either official wages have to be raised or institutional checks on corruption strengthened (or both).

# Implications

- The corrosive effects of public corruption extends to its ***perceptions*** and ***signaling effects***.
- Because information is asymmetric and people don't know how clean their government is, officials must show ***leadership*** by being honest, by being seen as being honest, and by signaling that ***ethics*** are to be taken seriously.
- Parents and governments must invest in children's ***culture***.