The Political Economy of Fiscal Transparency and Independent Fiscal Councils: Theory and Evidence

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Introduction

- Independent fiscal councils on the rise
- Figures based on updated IMF dataset on IFCs
- Key questions addressed here:
  - How do they affect deficits/debt?
  - What settings are conducive to their emergence and design?
- Politico-economic model – 2 types of debt bias:
  - Short-termism: driven by chance to be voted out of office
  - Opportunism: more debt to appear more competent
- IFC makes competence signal more precise
- Welfare evaluation depends on
  - Intertemporal allocation resources
  - Average competence incumbent (if re-elected)
- Crucial role for competence versus congruence

Updated data IFCs by Debrun, Zhang & Beetsma

Figure 2. Number of Independent Fiscal Councils in the World

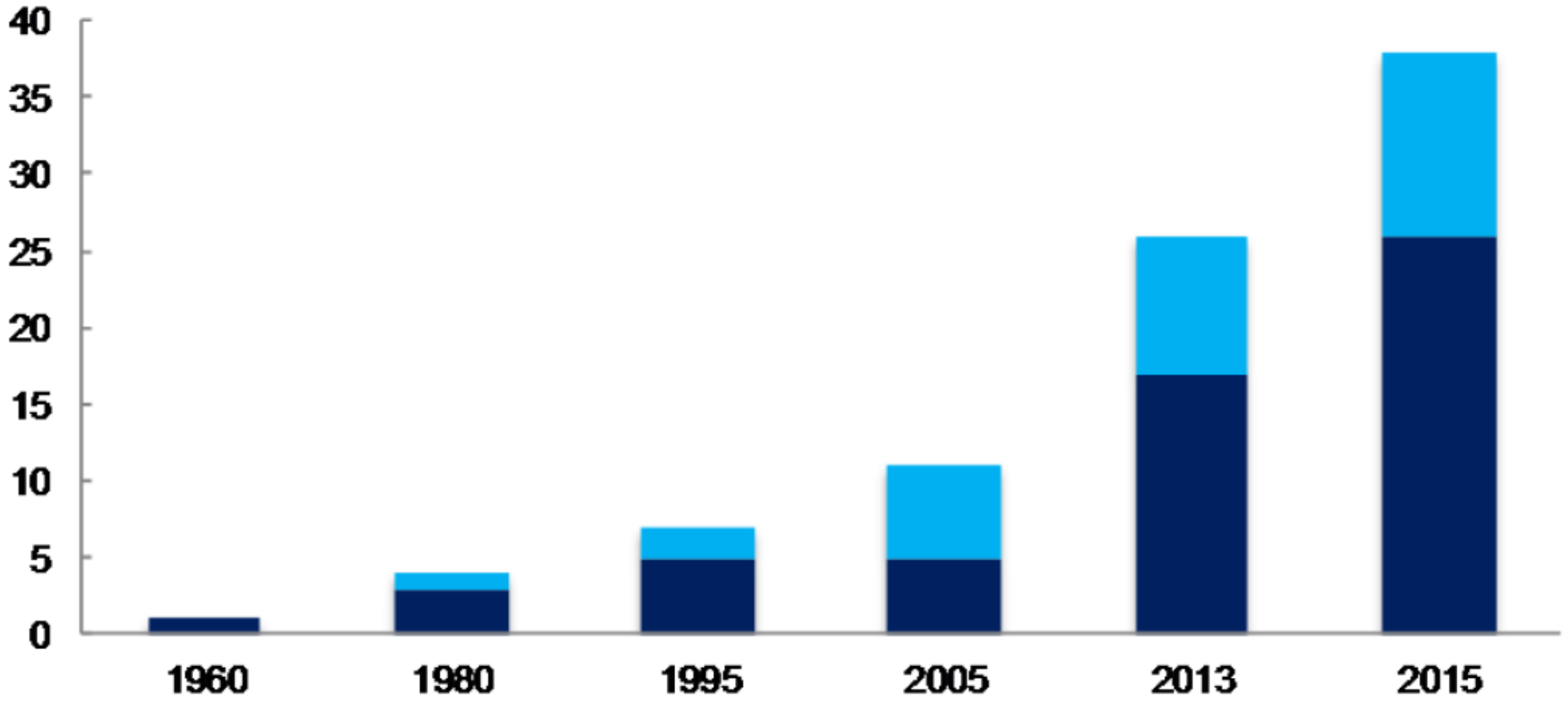

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Figure 3. The remit of Fiscal Councils

(Relative frequencies in the sample)

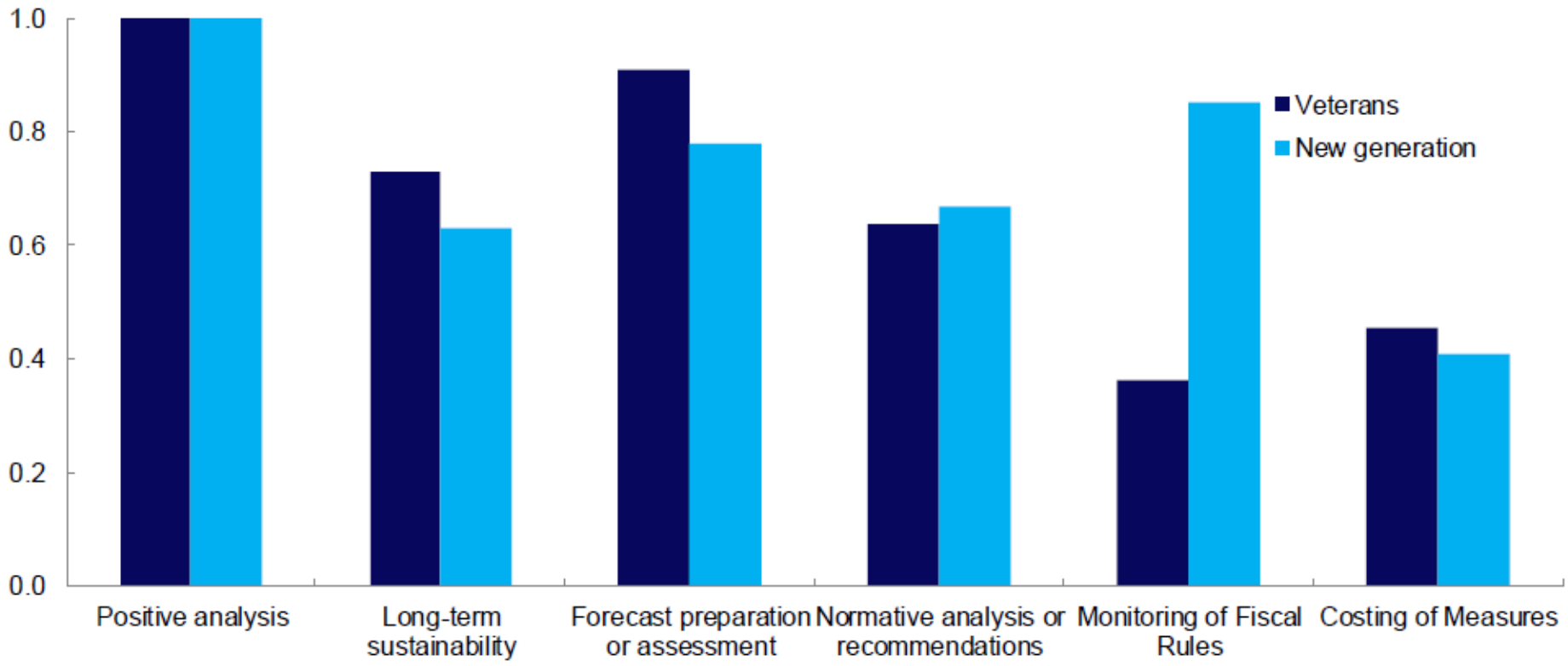

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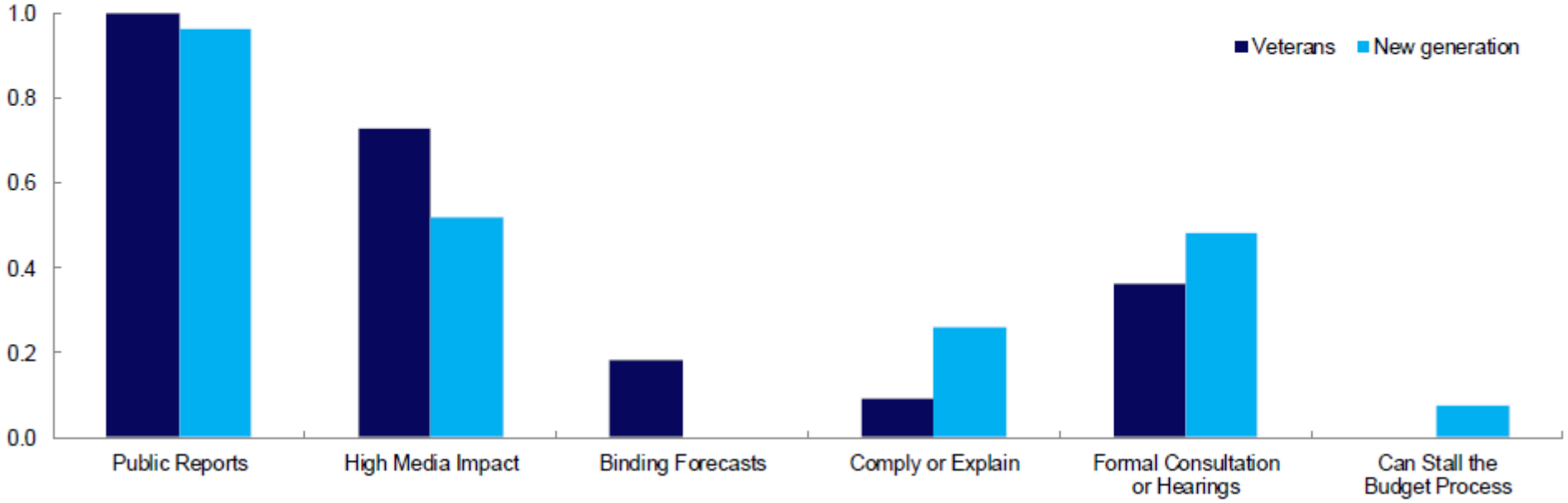
Figure 4. Channels of influence on the Budget Process

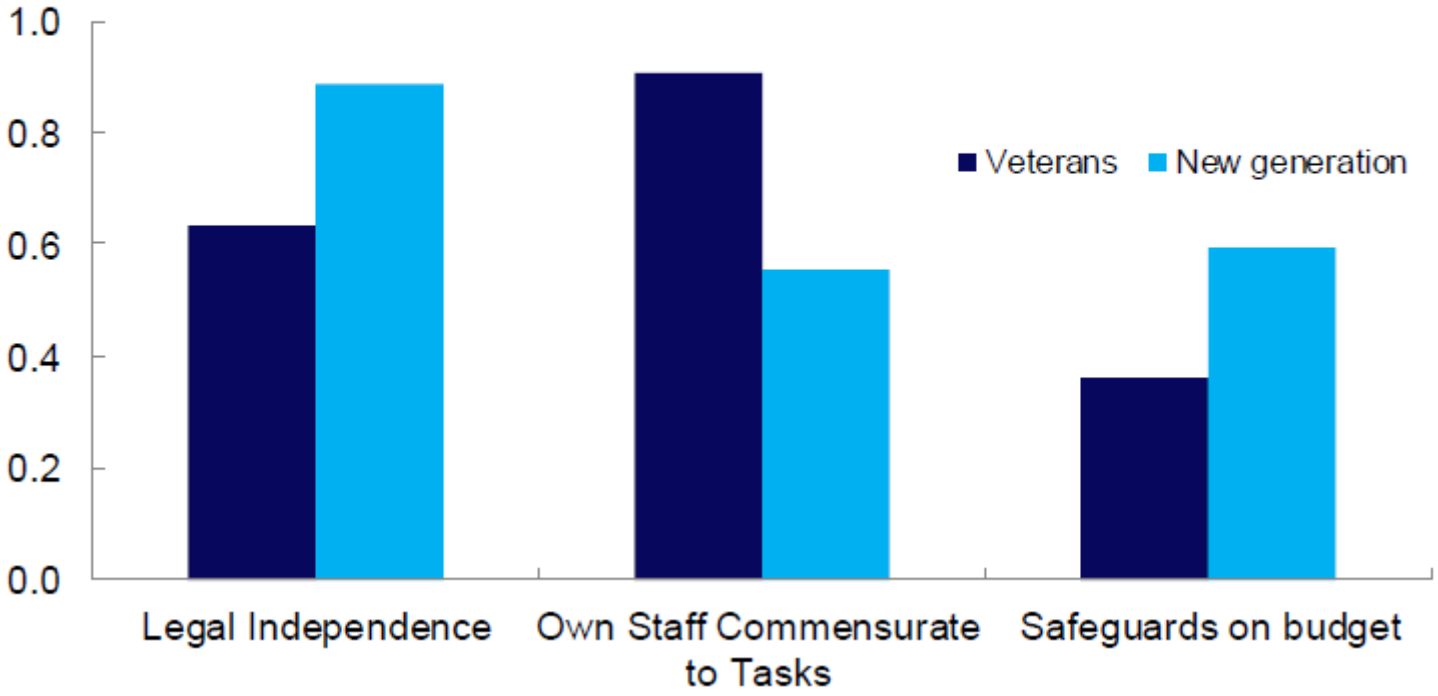
(Relative frequencies in the sample)



Updated data IFCs by Debrun, Zhang & Beetsma

Figure 5. Guarantees of Independence

(Relative frequencies in the sample)

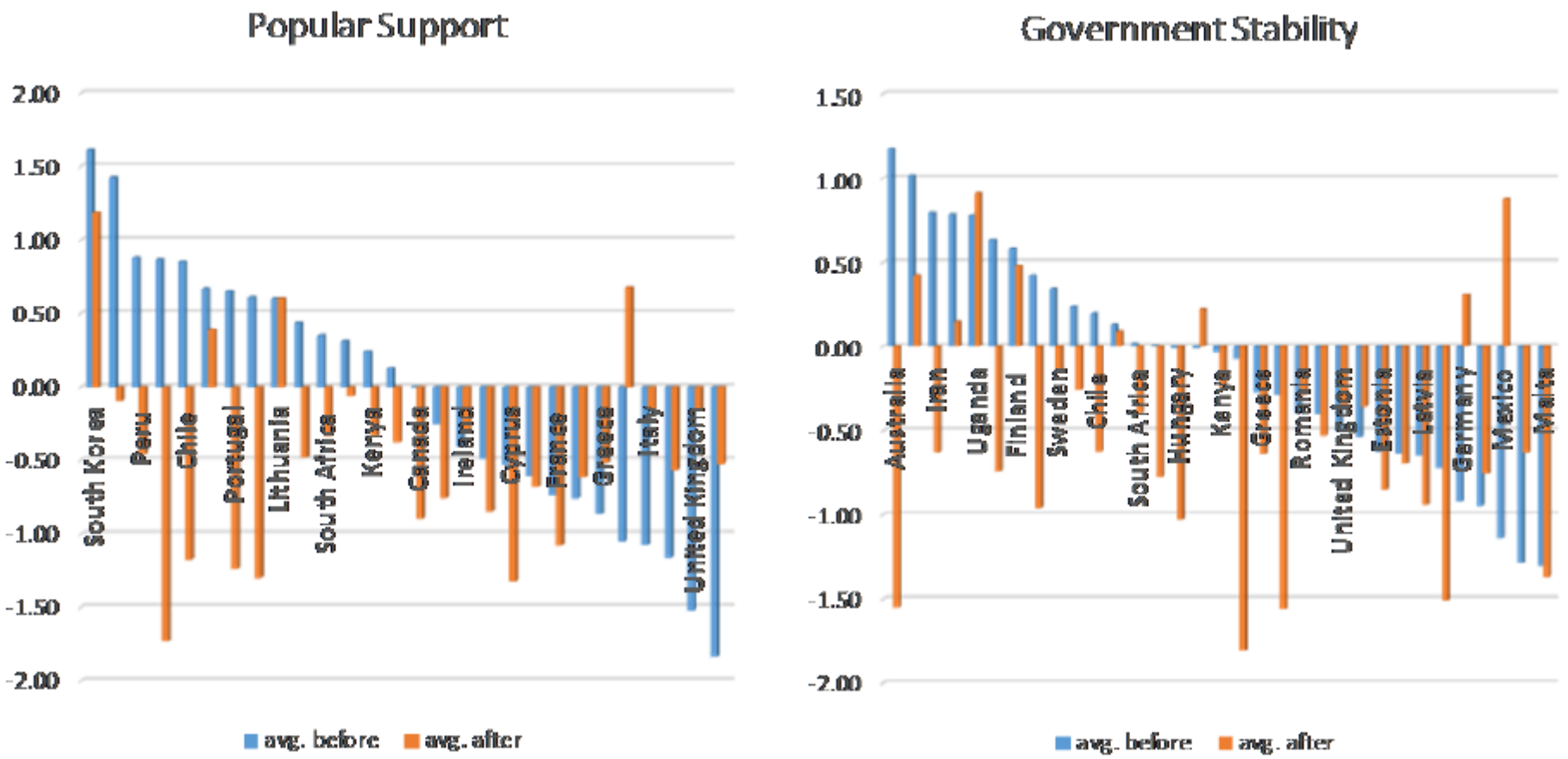


Updated data IFCs by Debrun, Zhang & Beetsma

	Primary Balance Absolute Forecast Error					
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Output gap (-1)	0.0177	0.0145	0.0159	0.0162	0.0140	0.0162
	(0.0426)	(0.0427)	(0.0428)	(0.0428)	(0.0427)	(0.0424)
Debt to gdp ratio (-1)	-0.00227	-0.00450	-0.00439	-0.00443	-0.00449	-0.00216
	(0.00330)	(0.00305)	(0.00307)	(0.00309)	(0.00306)	(0.00321)
Fiscal rule index (-1)	-0.0543	-0.0925	-0.0893	-0.0756	-0.0936	-0.0853
	(0.0844)	(0.0821)	(0.0829)	(0.0874)	(0.0825)	(0.0807)
Fiscal council (-1)	**-0.579*** **					
	(0.169)					
Legal independence (-1)		**-0.574*** **				
		(0.170)				
Safeguards on budget (-1)			**-0.499*** **			
			(0.182)			
High media impact (-1)				**-0.418** **		
				(0.177)		
Forecasts assess (-1)					**-0.535*** **	
					(0.169)	
Fiscal rules montioring (-1)						**-0.698*** **
						(0.162)
	0.553*	0.692**	0.680**	0.681**	0.694**	0.552*
	(0.302)	(0.289)	(0.291)	(0.292)	(0.289)	(0.294)
Observations	354	354	354	354	354	354
R-squared	0.204	0.201	0.198	0.196	0.199	0.209
Robust standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.10						

Updated data IFCs by Debrun, Zhang & Beetsma

Figure 6. Key Political Indicators around the Emergence of Fiscal Councils



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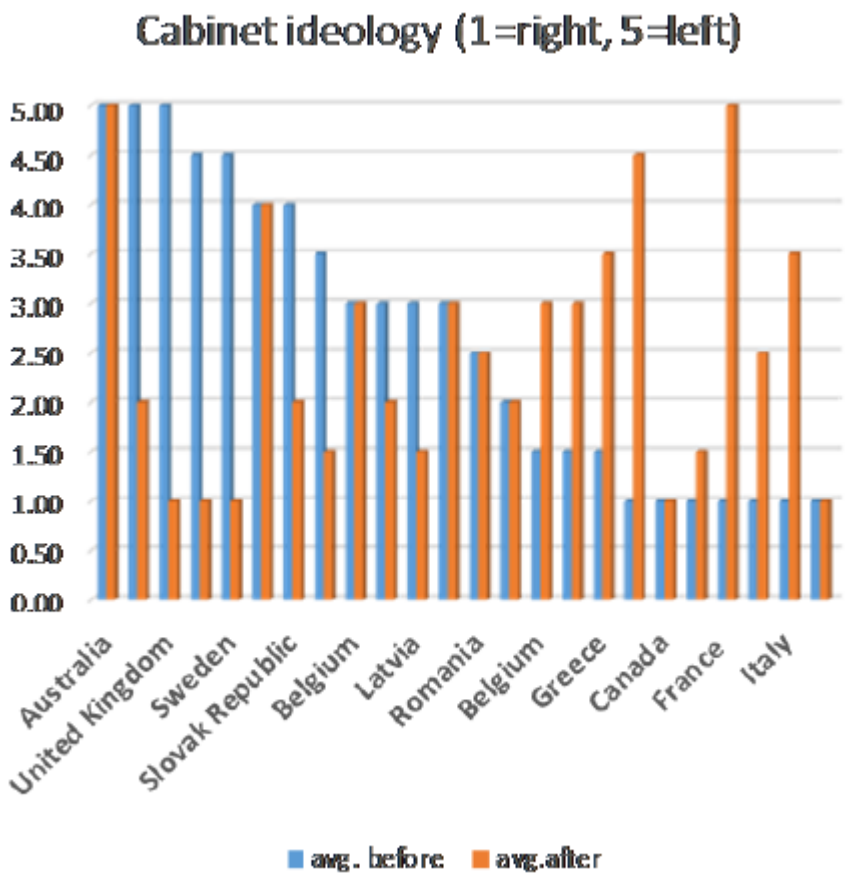
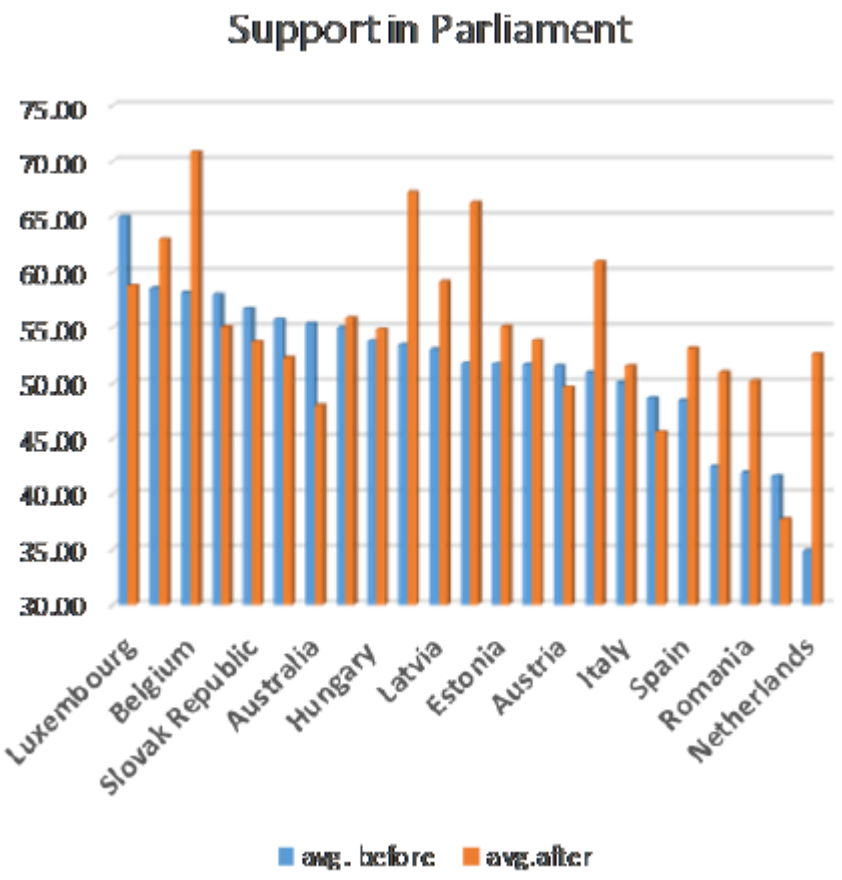




Motivation for model

- Most IFCs in our dataset enjoy some or substantial independence
- Their activities (positive and normative analysis, etc.) produce information on efficiency and legitimacy of allocation of public resources
- Information is disseminated through public reports and media
- Helps to enhance fiscal transparency towards general public
- Our results can help explain why "long-run sustainability" and "monitoring of fiscal rules" are part of the mandate of many IFCs

The model – I

- Two political parties, incumbent P and challenger Q compete for office

- Period-t resources for public consumption:

$$\begin{cases} g_1 = \eta_1 + \varepsilon_1 + d \\ g_2 = \eta_2 - d \end{cases}$$

- Competence: $\eta_P, \eta_Q \sim N\left(\overline{\eta}, \sigma_\eta^2\right)$

- Independent of $\varepsilon_1 \sim N\left(0, \sigma_\varepsilon^2\right)$

- Debt is subject to upperbound $d \leq D$

The model – II

- Utility: $\mathrm{E}\left[u\left(g_1\right)\right]+\Pr\left(R\right)\cdot\left(g_2\right)+\left(1-\Pr\left(R\right)\right)\cdot\left(-K\right)$
- Utility loss from not being re-elected: $K > D-\overline{\eta}$
- Voters care about competence and political color,

  prefer P over Q if: $\eta_P \geq \eta_Q + \Delta$

- Challenger (incumbent) favored if $\Delta > 0$ ($\Delta < 0$)
  ($\Delta =$ "handicap" in golf terms)
- Voters receive signal about competence:

$$s_1 = \eta_1 + \mu_1 \text{ with } \mu_1 \sim N\left(0, \sigma_\mu^2\right)$$

The model – III

- Timing:
  - Nature draws the unobserved competence levels
  - Society or incumbent chooses whether to install IFC or not
  - Start period 1: incumbent sets debt (unobserved to voters)
  - Nature draws the shock ε_1
  - Voters observe public consumption g_1 and receive signal s_1
  - Start period 2: elections

Benchmark: social planner – I

- Planner selects debt + appoints policymaker for remaining policies
- After this planner observes incumbent's competence
- Period 2: planner reappoints incumbent if $\eta_1 \geq \overline{\eta} + \Delta$
- Planner maximizes

$$\mathrm{E}\left[u\left(g_1\right)\right] + \Pr\left(\eta_1 \geq \overline{\eta} + \Delta\right) \cdot \left(\mathrm{E}\left[\eta_1 \mid \eta_1 \geq \overline{\eta} + \Delta\right] - d\right) + \left(1 - \Pr\left(\eta_1 \geq \overline{\eta} + \Delta\right)\right) \cdot \left(\overline{\eta} - d + \Delta\right) =$$
$$\mathrm{E}\left[u\left(\eta_1 + \varepsilon_1 + d\right)\right] + \left(\overline{\eta} - d\right) + \sigma_\eta \cdot \phi\left(\Delta / \sigma_\eta\right) + \Delta \cdot \Phi\left(\Delta / \sigma_\eta\right)$$

Benchmark: social planner – II

- Two selection effects:
  - Re-elected incumbent is more competent than average – effect largest when partisan preferences least important
    $(\Delta = 0)$
  - Selection effect due to better fit in terms of political color
- First-best debt level:

$$\mathrm{E}\left[u'\left(\eta_1 + \varepsilon_1 + d^{FB}\right)\right] = 1$$

Debt in political game – I

- Incumbent's posterior expectation:

$$\hat{\eta}_I = E\left(\eta_1 \mid g_1, s_1\right) = \frac{h_\eta \bar{\eta} + h_\varepsilon \left(g_1 - d\right) + h_\mu s_1}{h_\eta + h_\varepsilon + h_\mu} = \frac{h_\eta \bar{\eta} + h_\varepsilon \left(\eta_1 + \varepsilon_1\right) + h_\mu s_1}{h_\eta + h_\varepsilon + h_\mu}$$

- From an ex ante perspective: $\hat{\eta}_I \sim N\left(\bar{\eta}, \sigma_h^2\right)$

- Where $\sigma_h^2 = \frac{h_\varepsilon + h_\mu}{h_\eta + h_\varepsilon + h_\mu} \cdot \frac{1}{h_\eta} = \frac{h_\varepsilon + h_\mu}{h_\eta + h_\varepsilon + h_\mu} \cdot \sigma_\eta^2$

h is one over variance (precision)

- Measure of informativeness: higher means g_1 and s_1 have more discriminatory power in drawing conclusions about competence ex post

Debt in political game – II

- Voter forms beliefs $\hat{d}_V$ about debt

$$\hat{\eta}_V \equiv E\left(\eta_1 \mid g_1, s_1, \hat{d}_V\right) = \frac{h_\eta \overline{\eta} + h_\varepsilon\left(g_1 - d + \left(d - \hat{d}_V\right)\right) + h_\mu s_1}{h_\eta + h_\varepsilon + h_\mu} = \hat{\eta}_I + \frac{h_\varepsilon}{h_\eta + h_\varepsilon + h_\mu}\left(d - \hat{d}_V\right)$$

- Incumbent's re-election probability

$$p = \Pr\left(\hat{\eta}_V \geq \overline{\eta} + \Delta\right) = \Pr\left(\hat{\eta}_I \geq \overline{\eta} + \Delta - \frac{h_\varepsilon}{h_\eta + h_\varepsilon + h_\mu}\left(d - \hat{d}_V\right)\right) = 1 - \Phi\left(\Gamma\left(d, \hat{d}_V\right)\right)$$

- Where $\Gamma\left(d, \hat{d}_V\right) \equiv \frac{1}{\sigma_h} \cdot \left(\Delta - \frac{h_\varepsilon}{h_\eta + h_\varepsilon + h_\mu}\left(d - \hat{d}_V\right)\right)$

- Increase in debt lowers $\Gamma\left(d, \hat{d}_V\right)$ and raises re-election chance

Debt in political game – III

- Incumbent's objective:

$$\mathrm{E}\left[u\left(g_1\right)\right]+p\cdot\left(\mathrm{E}\left[\hat{\eta}_I \mid \hat{\eta}_V \ \geq \overline{\eta}+\Delta\right]-d\right)+\left(1-p\right)\cdot\left(-K\right)=$$
$$\mathrm{E}\left[u\left(\eta_1+\varepsilon_1+d\right)\right]+\left[1-\Phi\left(\Gamma\left(d,\hat{d}_V\right)\right)\right]\cdot\left(K+\overline{\eta}-d\right)+\sigma_h\cdot\phi\left(\Gamma\left(d,\hat{d}_V\right)\right)-K$$

- First-order condition:

$$\mathrm{E}\left[u'\left(\eta_1+\varepsilon_1+d\right)\right]=\left[1-\Phi\left(\Gamma\left(d,\hat{d}_V\right)\right)\right]-q_h\cdot\phi\left(\Gamma\left(d,\hat{d}_V\right)\right)\left(K+\overline{\eta}-d+\sigma_h\cdot\Gamma\left(d,\hat{d}_V\right)\right)$$

- Where

$$q_h\equiv-\frac{\partial\Gamma\left(d,\hat{d}_V\right)}{\partial d}=\frac{1}{\sigma_h}\cdot\frac{h_\varepsilon}{h_\eta+h_\varepsilon+h_\mu}$$

Debt in political game – IV

- In equilibrium $\hat{d}_V = d$, hence $\Gamma(d,d) = \Delta / \sigma_h$
- Hence: $\mathrm{E}\left[u'\left(\eta_1 + \varepsilon_1 + d^e\right)\right] = \left[1 - \Phi\left(\Delta / \sigma_h\right)\right] - q_h \cdot \phi\left(\Delta / \sigma_h\right) \cdot \left(K + \bar{\eta} - d^e + \Delta\right)$
- Two effects both pushing debt up
  - First term: "short-termism effect"
  - Second term: "opportunism effect" – choose higher debt to signal higher competence
    - In equilibrium futile
    - Disappears if noise in signal s_1 shrinks to zero

Effect of IFC on equilibrium debt – I

- IFC increases precision signal, i.e. h_μ
- Differentiate f.o.c. for debt to h_μ:

$$\left\{\frac{\mathrm{E}\left[u''\left(\eta_1+\varepsilon_1+d^e\right)\right]-q_h\cdot\phi\left(\Delta/\sigma_h\right)}{\partial\sigma_h/\partial h_\mu}\right\}\cdot\frac{\partial d^e}{\partial h_\mu}=H\left(\Delta\right)$$

$$\equiv\phi\left(\Delta/\sigma_h\right)\cdot\left[\frac{\Delta}{\sigma_h^2}\right]+\phi\left(\Delta/\sigma_h\right)\cdot\left\{\left(2h_\varepsilon+\frac{q_h}{\sigma_h}\right)-q_h\cdot\left[\frac{\Delta^2}{\sigma_h^3}\right]\right\}\cdot\left(K+\bar{\eta}-d^e+\Delta\right)$$

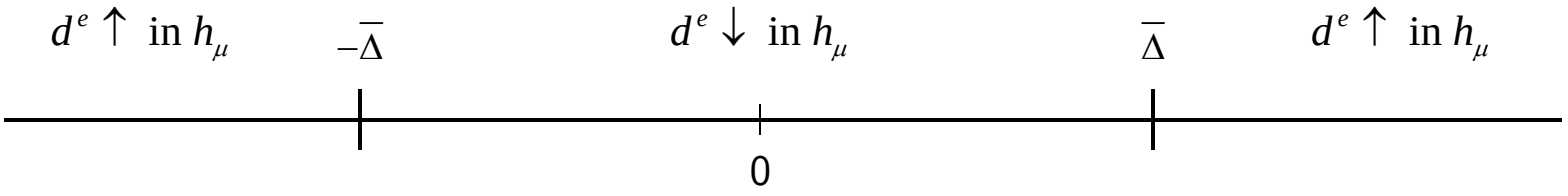
- Proposition 1: if $h_\varepsilon\to 0$, only short-termism effect is present, installing IFC raises (lowers) debt if $\Delta<0$ ($\Delta>0$)

  - Incumbent's electoral advantage in terms of political colour ($\Delta<0$) weakens when more precise signal allows better assessment of competence

Effect of IFC on equilibrium debt – II

- Proposition 2: consider opportunistic debt motive in isolation. Installing an IFC lowers equilibrium debt if $|\Delta| < \overline{\Delta}$, while it raises equilibrium debt if $|\Delta| > \overline{\Delta}$

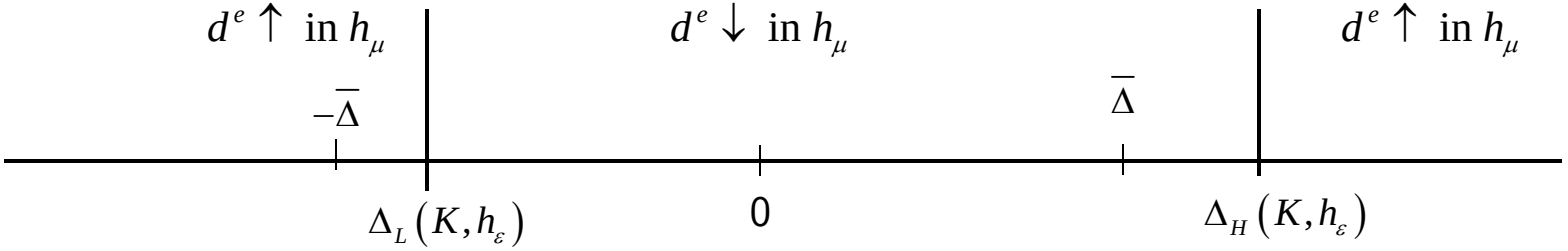
  - Here, $\overline{\Delta}$ is the Δ for which effect of IFC on equilibrium marginal re-election probability $q_h \cdot \phi(\Delta / \sigma_h)$ is zero
  - IFC lowers q_h, mitigating incentive to raise debt, and pushes Δ/σ_h towards zero, strengthening incentive to raise debt
  - First effect dominates if political colour of relatively minor importance (Δ not too far from zero).



Effect of IFC on equilibrium debt – III

- Overall effect of IFC on debt depends on combination of the two effects

- Proposition 3: there exist two cut-offs $\Delta_L(K, h_\varepsilon)$ and $\Delta_H(K, h_\varepsilon)$ with $-\overline{\Delta} < \Delta_L(K, h_\varepsilon) < 0 < \overline{\Delta} < \Delta_H(K, h_\varepsilon)$ such that
  - If $\Delta < \Delta_L(K, h_\varepsilon)$ or $\Delta > \Delta_H(K, h_\varepsilon)$ debt increases with IFC
  - If $\Delta_L(K, h_\varepsilon) < \Delta < \Delta_H(K, h_\varepsilon)$ debt decreases with IFC



Would incumbent want to install an IFC? – I

- Incumbent's equilibrium utility is:

$$U^P \equiv \mathrm{E}\left[u\left(\eta_1+\varepsilon_1+d^e\right)\right]+\left[1-\Phi\left(\Delta/\sigma_h\right)\right]\cdot\left(K+\overline{\eta}-d^e\right)+\sigma_h\cdot\phi\left(\Delta/\sigma_h\right)-K$$

- Differentiate and exploit f.o.c. of debt to give:

$$\frac{\partial U^P}{\partial h_\mu}=-q_h\cdot\phi\left(\Delta/\sigma_h\right)\cdot\left(K+\overline{\eta}-d^e+\Delta\right)\cdot\left(\frac{\partial d^e}{\partial h_\mu}\right)+$$

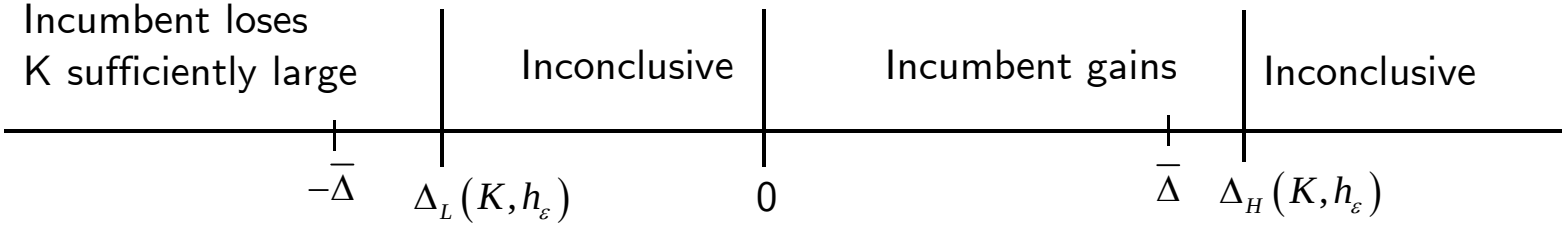
$$\frac{\Delta}{\sigma_h^2}\cdot\left(K+\overline{\eta}-d^e\right)\cdot\phi\left(\Delta/\sigma_h\right)\cdot\left(\frac{\partial\sigma_h}{\partial h_\mu}\right)+\left(1+\frac{\Delta^2}{\sigma_h^2}\right)\cdot\phi\left(\Delta/\sigma_h\right)\cdot\left(\frac{\partial\sigma_h}{\partial h_\mu}\right)$$

- First term is effect on inter-temporal allocation of resources; second term concerns effect on re-election chance times unconditional average amount of resources; third term concerns effect on selection effect

Would incumbent want to install an IFC? – II

- Proposition 4:
  - If $0 \leq \Delta \leq \Delta_H(K, h_\varepsilon)$, incumbent benefits from installing an IFC
  - If $\Delta \leq \Delta_L(K, h_\varepsilon)$ and benefit from holding office sufficiently large, incumbent loses from installing an IFC
  - When opportunistic motive absent and K sufficiently large, incumbent loses (benefits) when $\Delta<0$ ($\Delta>0$)

As regards first part, more precise info allows firmer conclusion about competence ex post, hence updated competence perception more likely outweighs worse fit in terms of political colour.



Would society want to install an IFC? – I

- Equilibrium social welfare

$$U^S \equiv \mathrm{E}\left[u\left(\eta_1+\varepsilon_1+d^e\right)\right]+\left[1-\Phi\left(\Delta/\sigma_h\right)\right]\cdot\left(\mathrm{E}\left(\hat{\eta}_I \mid \hat{\eta}_V \geq \overline{\eta}+\Delta\right)-d^e\right)+\Phi\left(\Delta/\sigma_h\right)\cdot\left(\overline{\eta}-d^e+\Delta\right)$$
$$=\mathrm{E}\left[u\left(\eta_1+\varepsilon_1+d^e\right)\right]+\left(\overline{\eta}-d^e\right)+\sigma_h\cdot\phi\left(\Delta/\sigma_h\right)+\Delta\cdot\Phi\left(\Delta/\sigma_h\right)$$

- Sum of last two terms is smaller than in expression for planner: selection effect is larger for planner who observes competence perfectly at end of period 1

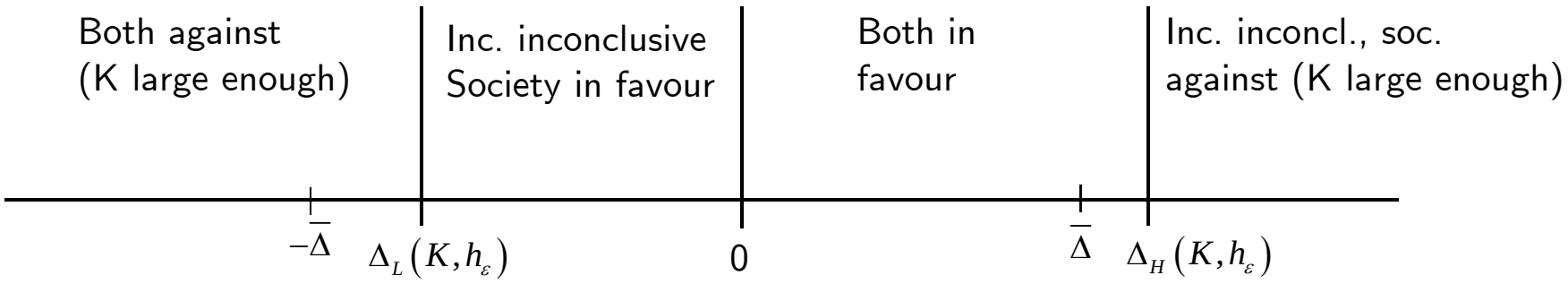
- Differentiate and use f.o.c. for debt

Would society want to install an IFC? – II

- Proposition 5
  - If $\Delta_L(K, h_\varepsilon) \leq \Delta \leq \Delta_H(K, h_\varepsilon)$ society benefits from installing an IFC
  - If $\Delta < \Delta_L(K, h_\varepsilon)$, an IFC lowers social welfare for K large enough
  - If $\Delta > \Delta_H(K, h_\varepsilon)$, an IFC lowers social welfare for K large enough
  - In absence of opportunistic motive and sufficiently concave utility society loses (gains) from installing an IFC if $\Delta<0$ ($\Delta>0$)

Comparison incumbent and society

- If $0 \leq \Delta \leq \Delta_H\left(K, h_\varepsilon\right)$ incumbent and society both in favour
- If $\Delta < \Delta_L\left(K, h_\varepsilon\right)$ and K sufficiently large, incumbent and society both against
- If $\Delta > \Delta_H\left(K, h_\varepsilon\right)$ and K sufficiently large, society against, incumbent inconclusive
- If $\Delta_L\left(K, h_\varepsilon\right) \leq \Delta < 0$, society is favour, while incumbent inconclusive



Alternative improvements in transparency – I

- Three alternatives:
  - Additional signal $s_2 = d + \tau$ with $\tau \sim N\left(0, \sigma_\tau^2\right)$
  - Actual debt d observed perfectly with probability ρ
  - Incumbent's actual competence observed perfectly with prob. γ

- Prop. 6: Increase in precision of τ has no effect on debt, nor on equilibrium welfare of incumbent or society.

- Prop. 7: Increase in ρ lowers debt and raises welfare incumbent and society

Alternative improvements in transparency – II

- Proposition 8:

  - If $\Delta>0$, increase in γ lowers debt and raises U^P and U^S
  - If $\Delta<0$, increase in γ has ambiguous effects on debt and U^P and U^S
  - In that case, if ρ is sufficiently close to 1 (opportunism motive vanishes), debt is increasing in γ, while U^P is decreasing in γ for K sufficiently large and U^S is decreasing in γ for concavity in first-period utility sufficiently weak.

Concluding remarks

- IFCs are on the rise
- Designs are highly heterogeneous
- We assume that well-designed IFCs raise fiscal transparency
- If competence is voters' only concern, both incumbent and society would prefer to install an IFC
- If incumbent has strong electoral advantage, an IFC boosts debt and may lower incumbent and social welfare
- If incumbent has strong electoral disadvantage, an IFC boosts debt and may lower social welfare
- If incumbent has a moderate electoral disadvantage, both the incumbent and society would benefit from an IFC
- If incumbent has moderate electoral advantage, society prefers IFC, while incumbent is inconclusive

THANK YOU!