

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

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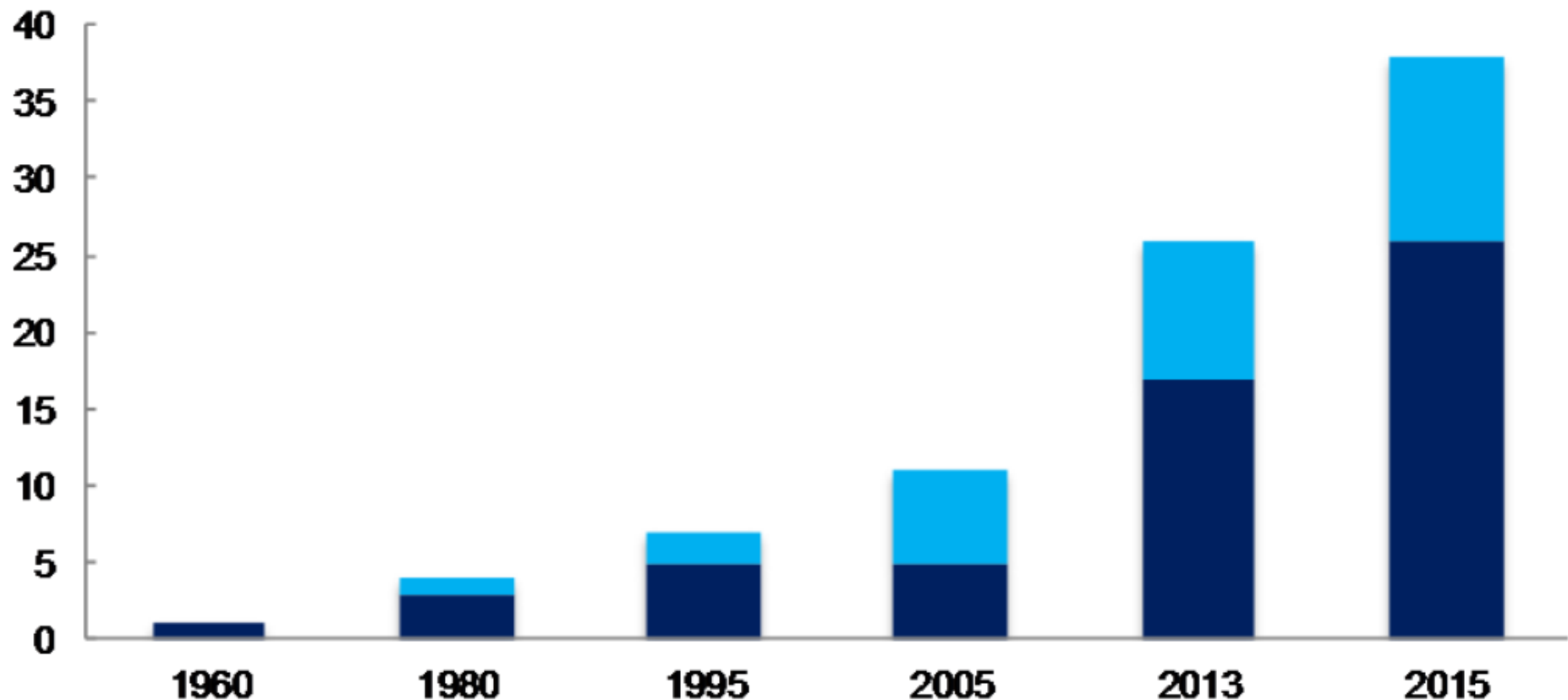
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# Introduction

- 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

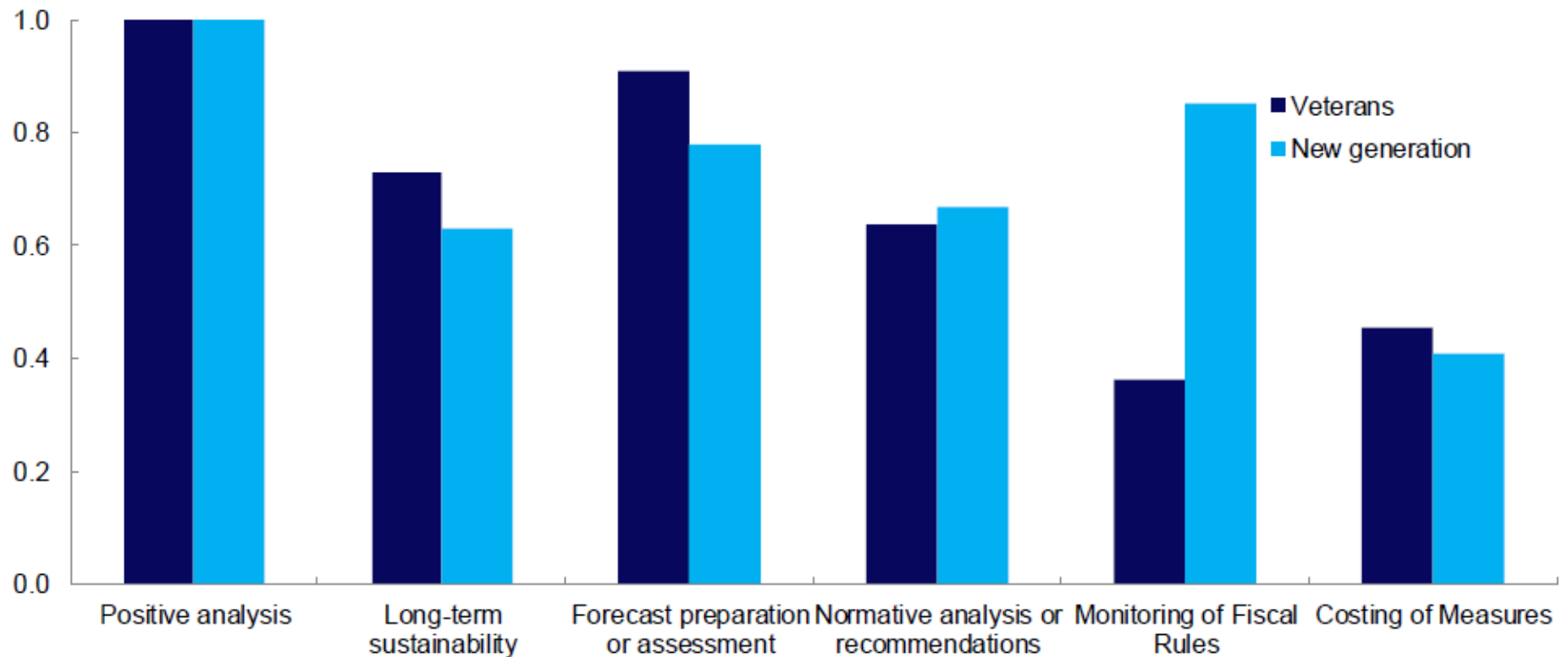
# Updated data IFCs by Debrun, Zhang & Beetsma

Figure 2. Number of Independent Fiscal Councils in the World



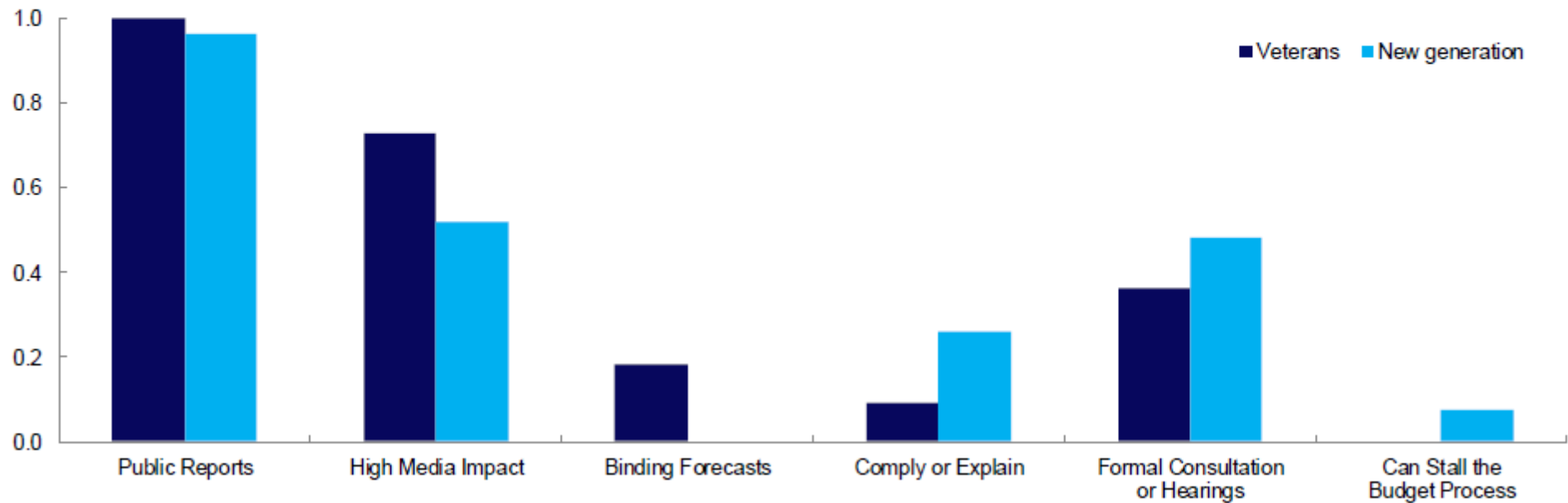
# Updated data IFCs by Debrun, Zhang & Beetsma

Figure 3. The remit of Fiscal Councils  
(Relative frequencies in the sample)



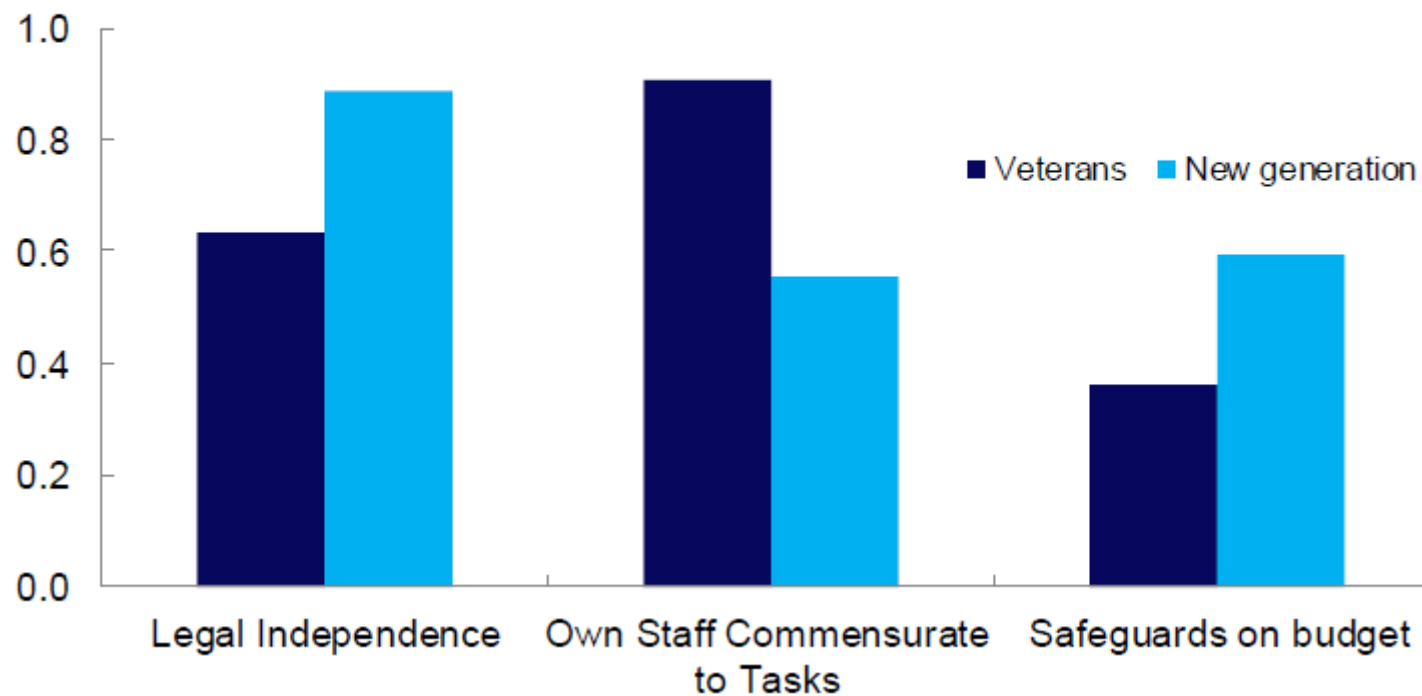
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Figure 4. Channels of influence on the Budget Process  
(Relative frequencies in the sample)



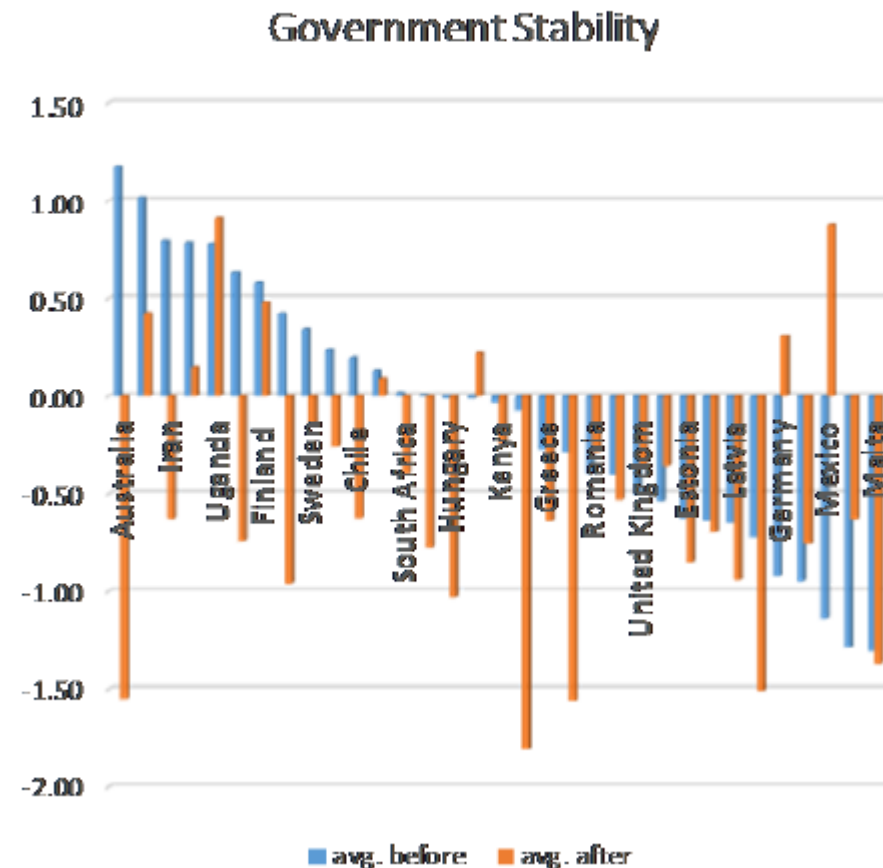
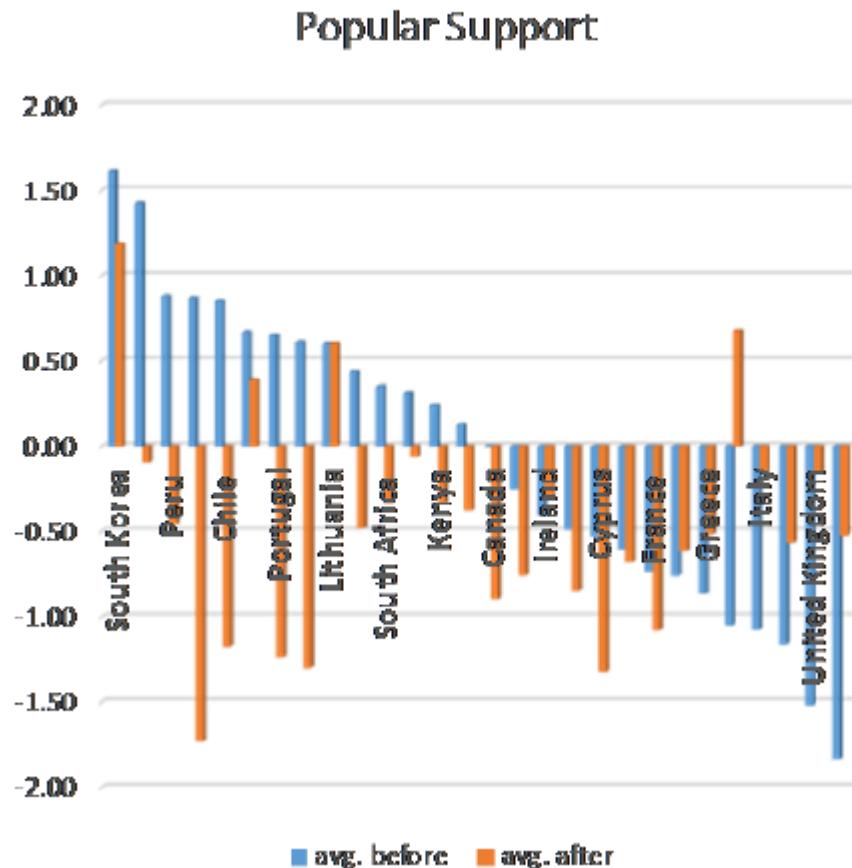
# Updated data IFCs by Debrun, Zhang & Beetsma

Figure 5. Guarantees of Independence  
(Relative frequencies in the sample)



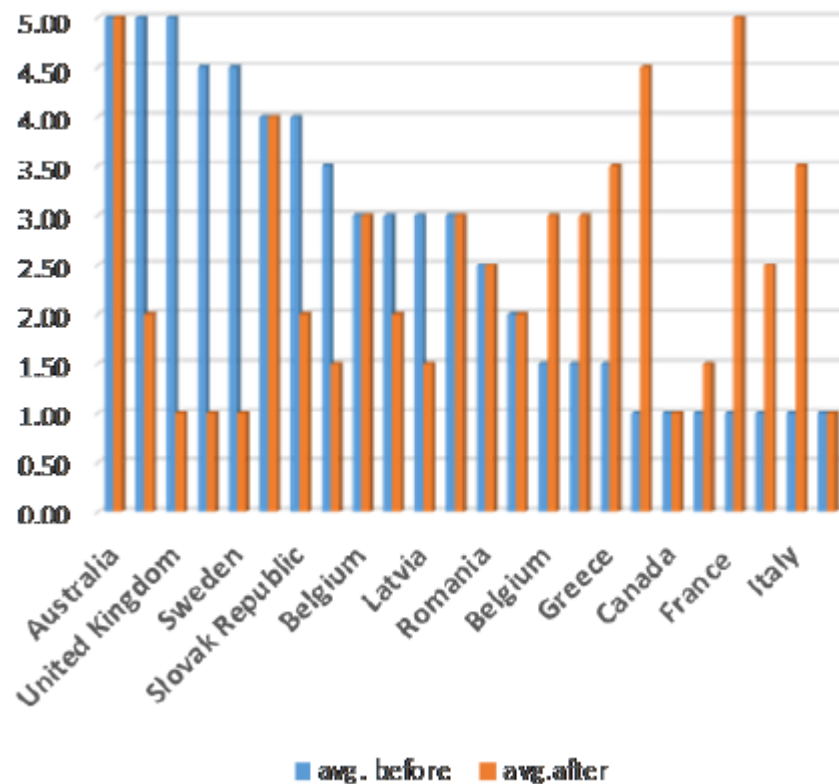
# Updated data IFCs by Debrun, Zhang & Beetsma

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

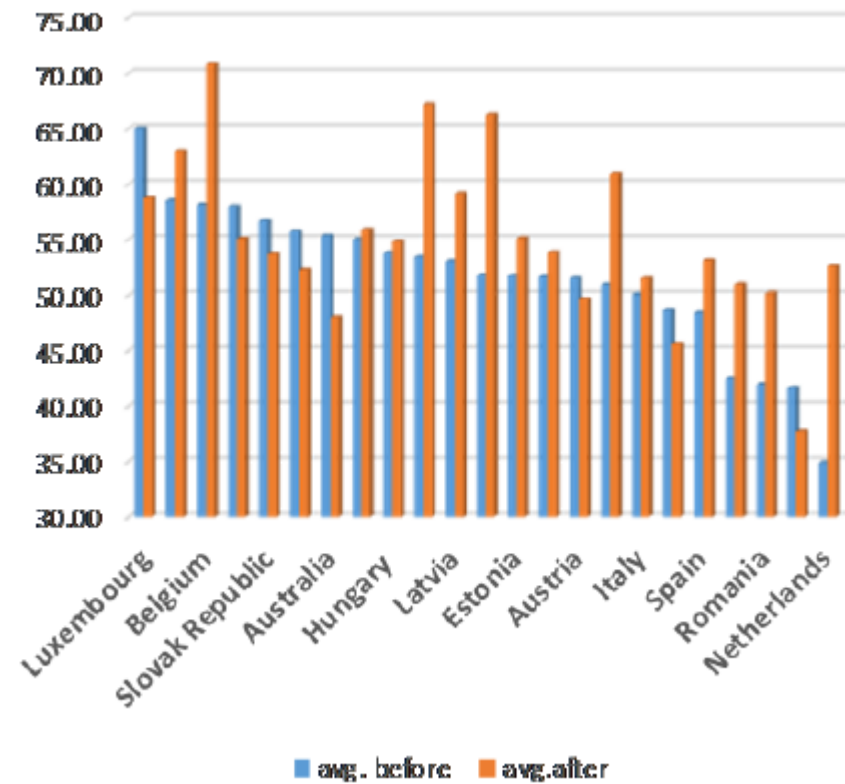


# Updated data IFCs by Debrun, Zhang & Beetsma

## Cabinet ideology (1=right, 5=left)



## Support in Parliament





# 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 the 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:

$$\begin{cases} g_1 = \eta_1 + \varepsilon_1 + d \\ g_2 = \eta_2 + \varepsilon_2 - d \end{cases}$$

- Competence:  $\eta_P, \eta_Q \sim N(\bar{\eta}, \sigma_\eta^2)$
- Independent of  $\varepsilon_t \sim N(0, \sigma_\varepsilon^2)$
- Debt is subject to upperbound  $d \leq D$

## The model – II

- Utility:  $E[u(g_1)] + \Pr(R) \cdot (g_2) + (1 - \Pr(R)) \cdot (-K)$

- Utility loss from not being re-elected:  $K > D - \bar{\eta}$

- Voters care about competence and political color,

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

- Challenger (incumbent) favored if  $\Delta > 0$  ( $\Delta < 0$ )

- Voters receive signal about competence:

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

# 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  $\varepsilon_1$
  - 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  $\eta_1 \geq \bar{\eta} + \Delta$
- Planner maximizes

$$\begin{aligned} & \mathbb{E}[u(g_1)] + \Pr(\eta_1 \geq \bar{\eta} + \Delta) \cdot (\mathbb{E}[\eta_1 | \eta_1 \geq \bar{\eta} + \Delta] - d) + (1 - \Pr(\eta_1 \geq \bar{\eta} + \Delta)) \cdot (\bar{\eta} - d + \Delta) = \\ & \mathbb{E}[u(\eta_1 + \varepsilon_1 + d)] + (\bar{\eta} - d) + \sigma_\eta \cdot \phi(\Delta / \sigma_\eta) + \Delta \cdot \Phi(\Delta / \sigma_\eta) \end{aligned}$$

## 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:

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

# Debt in political game – I

- Incumbent's posterior expectation:

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

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

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

- 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

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

- Incumbent's re-election probability

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

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

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



# Debt in political game – III

- Incumbent's objective:

$$\begin{aligned} & \mathbb{E}[u(g_1)] + p \cdot (\mathbb{E}[\hat{\eta}_l | \hat{\eta}_v \geq \bar{\eta} + \Delta] - d) + (1-p) \cdot (-K) = \\ & \mathbb{E}[u(\eta_1 + \varepsilon_1 + d)] + \left[1 - \Phi\left(\Gamma(d, \hat{d}_v)\right)\right] \cdot (K + \bar{\eta} - d) + \sigma_h \cdot \phi\left(\Gamma(d, \hat{d}_v)\right) - K \end{aligned}$$

- First-order condition:

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

- Where

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

## Debt in political game – IV

- In equilibrium  $\hat{d}_V = d$ , hence  $\Gamma(d, d) = \Delta / \sigma_h$
- Hence:  $E\left[u'(\eta_1 + \varepsilon_1 + d^e)\right] = \left[1 - \Phi(\Delta / \sigma_h)\right] - q_h \cdot \phi(\Delta / \sigma_h) \cdot (K + \bar{\eta} - d^e + \Delta)$
- 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 shrinks to zero

# Effect of IFC on equilibrium debt – I

- IFC reduces increases precision signal, i.e.  $h_\mu$
- Differentiate f.o.c. for debt to  $h_\mu$ :

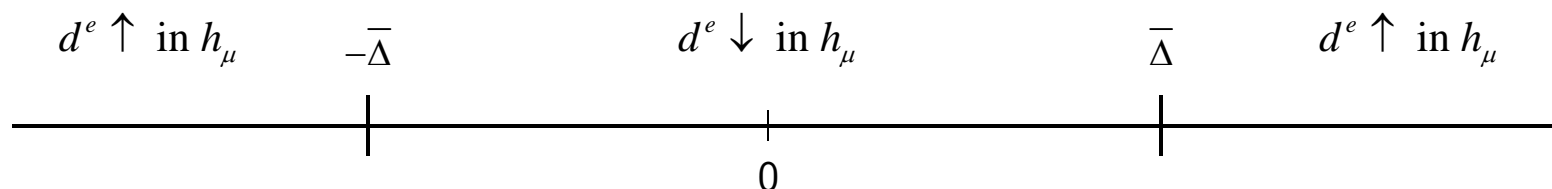
$$\left\{ \frac{\mathbb{E} \left[ u''(\eta_1 + \varepsilon_1 + d^e) \right] - q_h \cdot \phi(\Delta / \sigma_h)}{\partial \sigma_h / \partial h_\mu} \right\} \cdot \frac{\partial d^e}{\partial h_\mu} = H(\Delta)$$

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

- Proposition 1: if  $h_\varepsilon \rightarrow 0$ , 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

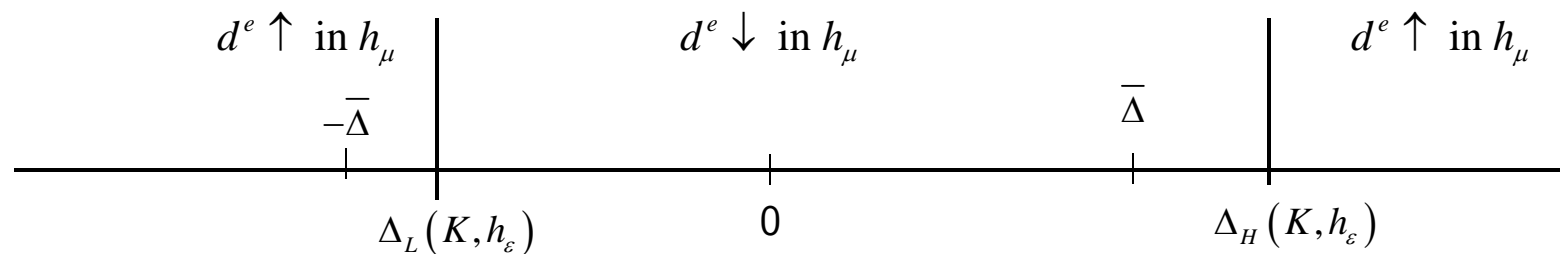
## Effect of IFC on equilibrium debt – II

- Proposition 2: consider opportunistic debt motive in isolation. Installing an IFC lowers equilibrium debt if  $|\Delta| < \bar{\Delta}$ , while it raises equilibrium debt if  $|\Delta| > \bar{\Delta}$ 
  - Here,  $\bar{\Delta}$  is the  $\Delta$  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  $\Delta / \sigma_h$  towards zero, strengthening incentive to raise debt
  - First effect dominates if political colour of relatively minor importance ( $\Delta$  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  $-\bar{\Delta} < \Delta_L(K, h_\varepsilon) < 0 < \bar{\Delta} < \Delta_H(K, h_\varepsilon)$  such that
  - If  $\Delta < \Delta_L(K, h_\varepsilon)$  or  $\Delta > \Delta_H(K, h_\varepsilon)$  equil. debt increases with IFC
  - If  $\Delta_L(K, h_\varepsilon) < \Delta < \Delta_H(K, h_\varepsilon)$  equil. debt decreases with IFC



# Would incumbent want to install an IFC? – I

- Incumbent's equilibrium utility is:

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

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

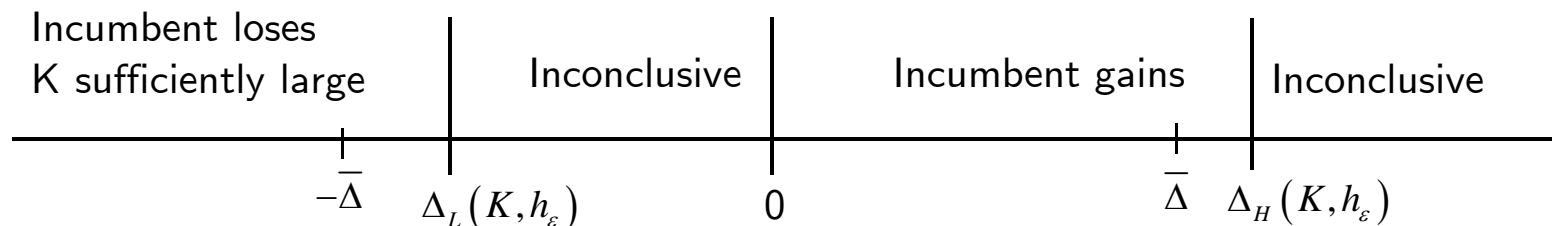
$$\begin{aligned} \frac{\partial U^P}{\partial h_\mu} = & -q_h \cdot \phi(\Delta / \sigma_h) \cdot (K + \bar{\eta} - d^e + \Delta) \cdot \left(\frac{\partial d^e}{\partial h_\mu}\right) + \\ & \frac{\Delta}{\sigma_h^2} \cdot (K + \bar{\eta} - d^e) \cdot \phi(\Delta / \sigma_h) \cdot \left(\frac{\partial \sigma_h}{\partial h_\mu}\right) + \left(1 + \frac{\Delta^2}{\sigma_h^2}\right) \cdot \phi(\Delta / \sigma_h) \cdot \left(\frac{\partial \sigma_h}{\partial h_\mu}\right) \end{aligned}$$

- 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

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

- 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

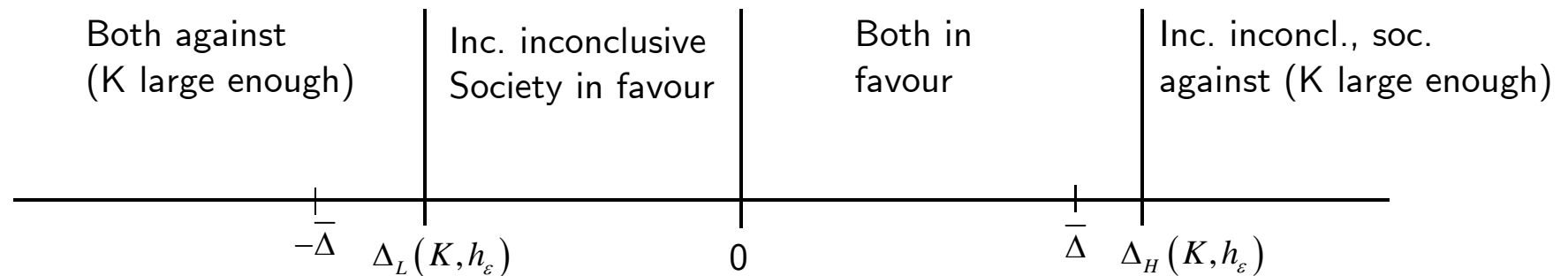


## Would society want to install an IFC? – II

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



# Alternative improvements in transparency – I

- Three alternatives:
  - Additional signal  $s_2 = d + \tau$  with  $\tau \sim N(0, \sigma_\tau^2)$
  - Actual debt  $d$  observed perfectly with probability  $\rho$
  - Incumbent's actual competence observed perfectly with prob.  $\gamma$
- Prop. 6: Increase in precision of  $\tau$  has no effect on debt, nor on equilibrium welfare of incumbent or society.
- Prop. 7: Increase in  $\rho$  lowers debt and raises welfare incumbent and society

## Alternative improvements in transparency – II

- Proposition 8:
  - If  $\Delta > 0$ , increase in  $\gamma$  lowers debt and raises  $U^P$  and  $U^S$
  - If  $\Delta < 0$ , increase in  $\gamma$  has ambiguous effects on debt and  $U^P$  and  $U^S$
  - In that case, if  $\rho$  is sufficiently close to 1 (opportunism motive vanishes), debt is increasing in  $\gamma$ , while  $U^P$  is decreasing in  $\gamma$  for  $K$  sufficiently large and  $U^S$  is decreasing in  $\gamma$  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



**THANK YOU!**