The Political Cost of Reforms

Alessandra Bonfiglioli    Gino Gancia

IAE/CREI/CEPR

May 2012
Motivation

- why do governments often fail to adopt welfare-improving reforms?
- economists’ popular answers:
  - interest groups may lobby against reforms (e.g., Grossman & Helpman, 2001)
  - uncertainty about gains and losses → status quo bias (Fernandez & Rodrik, 1991)
  - war of attrition (Alesina & Drazen, 1991)
- a politician’s answer:
  
  “We all know what to do, but we don’t know how to get reelected once we have done it.” Jean-Claude Junker

- yet, ever since Peltzman (1992), no evidence that reforms are punished by voters
The Political Cost of Reforms

- a puzzle: if reforms are not punished by voters, why are they so politically difficult?

- this paper:
  1. rationalizes the "political cost" of reforms and reconciles it with the evidence
  2. new insights on the role of uncertainty (e.g., economic shocks) on the viability of reforms

- no need to refer to distributional conflict
agency model between an office-motivated politician and voters

key assumptions:

1. reforms have current costs and future returns
2. investment in reforms is not directly observable
3. political ability is ex-ante unknown and imperfectly observed (noise)

implications:

- politicians underinvest in reforms in an attempt to signal high ability and increase their reelection probability
- yet, voters anticipate this strategy so that equilibrium reforms do not affect reelection prospects
Main Results

1. too little reforms are implemented

2. uncertainty promotes reforms
   - if uncertainty is high, reelection probability depends more on luck, less on policy → more "freedom" to do reforms

3. uncertainty may be welfare-improving
   - more reforms, but worse accountability and selection of politicians

4. some normative applications:
   - desirability of a one-term limit
   - optimal political reward
Related Literature

- **electoral accountability and political selection**

- **political business cycle**

- **reforms and uncertainty**

- **information in agency models**
Motivating Evidence: Crisis, Reforms and Reelection

- **reelection depends positively on economic performance**

- **reelection does NOT depend on reforms**

- **reforms and politicians’ time-horizon**
  - Alesina et al. (2006), Conconi et al. (2011): electoral proximity lowers the probability of reforms

- **crises lead to reforms**

- **economic volatility and reforms?**
Graphical Evidence: Deficit Stabilization and Volatility

Economic Volatility and Deficit Stabilization
OECD countries, 1975-2000

Deficit Stabilization = delta(deficit/GDP) < -1.17

Deficit Stabilizations Fitted values: slope 0.95, t-stat 2.6
Model Setting

- two-period citizen-candidate model

- period one:
  - an incumbent politician of unknown ability makes an *effort* choice and invests in *reforms* with a current cost and future returns
  - current economic outcomes materialize

- elections:
  - upon observing economic outcome, citizens may replace the incumbent with a new random draw
  - voters would like too keep good politicians, but only observe a noisy signal of ability

- period two:
  - reforms pay out
Preferences

- expected utility of citizens:

\[ W = \mathbb{E} [y_t + \beta y_{t+1}] \]

  - \( y_t, y_{t+1} = \) economic performance
  - \( \beta = \) discount factor

- expected utility of incumbent politician:

\[ U = W + \gamma - \frac{a^2}{2} + \beta p \gamma \]

  - \( \gamma = \) reward from office
  - \( a^2/2 = \) cost of effort \( a \)
  - \( p = \) perceived reelection probability
Role of Politicians

- economic performance depends on political ability ($\theta$), effort ($a$) and reforms ($r$):

$$y_t = \theta_t + \kappa a - r + \epsilon_t$$
$$y_{t+1} = \theta_{t+1} + f(r) + \epsilon_{t+1}$$

- $\theta \sim N(\overline{\theta}, \sigma_\theta^2)$, persistent and unknown to all
- $\epsilon \sim N(0, \sigma_\epsilon^2)$ is an i.i.d. shock
- $f' > 0, f'' < 0, \lim_{r \to 0} f' = \infty$

- voters want to keep good politicians
Optimal Voting Rule

- voters’ information:
  - know \( \bar{\theta}, \sigma_\theta^2, \sigma_\epsilon^2 \) and observe \( y_t \)
  - have rational expectations on reforms and effort, \( r^e \) and \( a^e \)
  - given \( y_t \), form posterior belief on political ability

\[
\hat{\theta}_t = \mathbb{E} [\theta \mid y_t] = \frac{\sigma_\epsilon^2}{\sigma_\theta^2 + \sigma_\epsilon^2} \bar{\theta} + \frac{\sigma_\theta^2}{\sigma_\theta^2 + \sigma_\epsilon^2} (y_t - \kappa a^e + r^e)
\]

- optimal voting rule:
  - reelect the incumbent if \( \hat{\theta}_t \geq \bar{\theta} \), i.e. if \( y_t \geq \bar{y} = \bar{\theta} + \kappa a^e - r^e \)
Incumbent Politician

- chooses $r$ and $a$ so as to solve:

$$\max_{r,a} \left\{ \mathbb{E}_t \theta - r + \kappa a - \frac{a^2}{2} + \gamma + \beta [\mathbb{E}_{t+1} + f(r) + p\gamma] \right\}$$

s.t.: $p = \Pr (y_t \geq \bar{y}) = \Pr (\theta + \epsilon_t + \kappa a - r \geq \bar{y})$

- FOC for reforms:

$$\beta f'(r) = 1 - \beta \gamma \frac{\partial p}{\partial r}$$

  $- \beta \gamma \frac{\partial p}{\partial r} = \beta g(\bar{y} + r - \kappa a) > 0$: "political cost" of reforms

- FOC for effort:

$$a = \kappa + \beta \gamma \frac{\partial p}{\partial a}$$

  $\beta \gamma \frac{\partial p}{\partial a} = \beta \kappa g(\bar{y} + r - \kappa a) > 0$: "disciplining" role of elections

  $g = \text{density of } \theta + \epsilon_t$
Equilibrium: Reforms and Uncertainty

- rational expectations \((r = r^e \text{ and } a = a^e)\):

\[-\frac{\partial p}{\partial r} = g(\bar{\theta}) \equiv \bar{g} = [2\pi(\sigma^2_\theta + \sigma^2_\epsilon)]^{-1/2}\]

- reforms and effort solve:

\[\beta f'(r) = 1 + \beta \bar{g} \gamma \quad \text{and} \quad a = \kappa (1 + \beta \bar{g} \gamma)\]

- comparative statics:

\[
\begin{align*}
\frac{\partial r}{\partial \sigma^2_\epsilon} & > 0; \quad \frac{\partial r}{\partial \sigma^2_\theta} > 0; \quad \frac{\partial r}{\partial \gamma} < 0 \\
\frac{\partial a}{\partial \sigma^2_\epsilon} & < 0; \quad \frac{\partial a}{\partial \sigma^2_\theta} < 0; \quad \frac{\partial a}{\partial \gamma} > 0
\end{align*}
\]

- by making \(p\) less sensitive to \(r\), higher uncertainty reduces the political cost of reforms
Equilibrium: Reelection and Political Selection

- imposing $r = r^e$ and $a = a^e$, reelection probability

\[ p = \frac{1}{2} \]

*independent of the reform choice*

- benefit of selection:
  - reelected politicians tend to have high ability

\[ \mathbb{E}\theta_{t+1} = \bar{\theta} + \frac{\delta}{2}, \quad \text{with} \quad \delta = \frac{\sigma^2_{\theta}}{\sqrt{\pi \left( \sigma^2_{\varepsilon} + \sigma^2_{\theta} \right)}} \]

  - $\delta =$ "selection premium" increases with heterogeneity, decreases with noise
Uncertainty and Welfare

- more heterogeneity ($\sigma_\theta^2 \uparrow$):
  - more reforms ($r \uparrow$) + better selection ($\delta \uparrow$) + less effort ($a \downarrow$)

$$\frac{\partial W}{\partial \sigma_\theta^2} > 0 \iff \sigma_\theta^2 + 2\sigma_\varepsilon^2 - \frac{\gamma^2 \bar{g}}{f'' (r)} > \kappa^2 \gamma$$

- higher noise ($\sigma_\varepsilon^2 \uparrow$):
  - more reforms ($r \uparrow$) + worse selection ($\delta \downarrow$) + less effort ($a \downarrow$)

$$\frac{\partial W}{\partial \sigma_\varepsilon^2} > 0 \iff -\frac{\bar{g} \gamma^2}{f'' (r)} > \sigma_\theta^2 + \kappa^2 \gamma$$

- uncertainty may be welfare-improving when reforms are important
Uncertainty and Welfare: Examples

Bonfiglioli and Gancia (IAE/CREI/CEPR)
Political Cost of Reforms
May 2012
Political Reward and Welfare

- political compensation ($\gamma$) has contrasting effects on social welfare:
  - it induces more effort ($W \uparrow$)
  - but less reforms ($W \downarrow$)

- under mild conditions, there is an interior optimal level of political reward:
  \[ \gamma^* = \frac{-\kappa^2 f''(r)}{\bar{g}} \]

- comparative statics:
  \[ \frac{\partial \gamma^*}{\partial \sigma^2_\varepsilon} > 0; \quad \frac{\partial \gamma^*}{\partial \sigma^2_\theta} > 0; \quad \frac{\partial \gamma^*}{\partial \kappa} > 0 \]

1. more uncertainty $\rightarrow$ less severe underinvestment in $r$ $\rightarrow$ higher $\gamma^*$
2. higher value of effort, $\kappa$, $\rightarrow$ higher $\gamma^*$
imposing *ex-ante* $p = 0$ has costs and benefits

1. removes the political cost of reforms restoring the optimal investment, $r \rightarrow r^{FB}$
2. gives up the benefit of selection ($\delta$) and reduces effort ($a$)

- a one-term limit is socially optimal for:
  1. low heterogeneity in ability
  2. intermediate levels of noise
Some Extensions

- if reforms are discrete, $r \in \{0, R\}$, with $f(r)$ stochastic and observable:
  1. too few reforms are implemented
  2. bigger reforms (high $R$) are harder to implement

- if the cost of reforms is stochastic and known to the politician only:
  1. positive correlation between $p$ and $r$ in equilibrium
Conclusions

- we have shown how:
  1. governments perceive a political cost of reforms even if reforms are not punished by voters
  2. uncertainty makes reform more politically viable
  3. the political cost of reforms depends on political rewards and term limits

- limitations/extensions:
  1. repeated game? richer dynamics
  2. some reforms may affect uncertainty
  3. add redistributitional conflict
  4. test more predictions of the theory
### Table 1. Economic Volatility and the Number of Reforms
OECD Countries, 1975-2000 - Cross Section

<table>
<thead>
<tr>
<th>SD</th>
<th>0.946**</th>
<th>1.023**</th>
<th>0.930***</th>
<th>0.929**</th>
<th>0.993***</th>
<th>0.814**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[0.371]</td>
<td>[0.455]</td>
<td>[0.332]</td>
<td>[0.384]</td>
<td>[0.334]</td>
<td>[0.332]</td>
</tr>
<tr>
<td>log(GDP_75)</td>
<td>0.453</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[2.386]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEFICIT</td>
<td>-0.022</td>
<td></td>
<td></td>
<td></td>
<td>0.158</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.163]</td>
<td></td>
<td></td>
<td></td>
<td>[0.140]</td>
<td></td>
</tr>
<tr>
<td>#_CRISIS_DEF</td>
<td>0.022</td>
<td>0.084</td>
<td>0.091</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.071]</td>
<td>[0.098]</td>
<td>[0.071]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#_left</td>
<td>0.139**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.063]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#_younggov</td>
<td>-0.136</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.063]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>parliamentar</td>
<td>-0.162</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.694]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>0.148</td>
<td>0.150</td>
<td>0.149</td>
<td>0.153</td>
<td>0.216</td>
<td>0.489</td>
</tr>
<tr>
<td>Observations</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>
### Table 2. Economic Volatility and the Likelihood of Reforms
**OECD Countries, 1975-2000 - Panel**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SD_1</td>
<td>0.346**</td>
<td>0.320**</td>
<td>0.346**</td>
<td>0.260***</td>
<td>0.348***</td>
<td>0.320**</td>
</tr>
<tr>
<td></td>
<td>[0.164]</td>
<td>[0.163]</td>
<td>[0.164]</td>
<td>[0.070]</td>
<td>[0.161]</td>
<td>[0.164]</td>
</tr>
<tr>
<td>DEFICIT_1</td>
<td>0.231***</td>
<td>0.114**</td>
<td>0.300*</td>
<td>0.317***</td>
<td>0.321***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.058]</td>
<td>[0.052]</td>
<td>[0.157]</td>
<td>[0.076]</td>
<td>[0.078]</td>
<td></td>
</tr>
<tr>
<td>OUTPUTGAP_1</td>
<td>0.093</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.060]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>log(GDP_1)</td>
<td>-4.288***</td>
<td>-3.934***</td>
<td>-3.925***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[1.471]</td>
<td>[1.480]</td>
<td>[1.510]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRISIS_DEF_1</td>
<td>1.502**</td>
<td>1.502**</td>
<td>1.270*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.675]</td>
<td>[0.675]</td>
<td>[0.693]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>election_1</td>
<td></td>
<td></td>
<td>-0.238</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[0.334]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>left_1</td>
<td></td>
<td></td>
<td>-0.330</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[0.364]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>younggov_1</td>
<td></td>
<td></td>
<td>-0.511</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[0.372]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>| Observations | 342 | 342 | 342 | 342 | 342 | 342 | 342 |
| Countries     | 19  | 19  | 19  | 19  | 19  | 19  | 19  |
| Country-FE    | Yes | Yes | Yes | Yes | Yes | Yes | Yes |</p>
<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient 1</th>
<th>Coefficient 2</th>
<th>Coefficient 3</th>
<th>Coefficient 4</th>
<th>Coefficient 5</th>
<th>Coefficient 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD_1</td>
<td>-0.332**</td>
<td>-0.344**</td>
<td>-0.352**</td>
<td>-0.351**</td>
<td>-0.369***</td>
<td>-0.334**</td>
</tr>
<tr>
<td></td>
<td>[0.148]</td>
<td>[0.152]</td>
<td>[0.146]</td>
<td>[0.148]</td>
<td>[0.145]</td>
<td>[0.149]</td>
</tr>
<tr>
<td>DEFICIT_1</td>
<td>0.843***</td>
<td>0.852***</td>
<td>0.775***</td>
<td>0.725***</td>
<td>0.682***</td>
<td>0.687***</td>
</tr>
<tr>
<td></td>
<td>[0.047]</td>
<td>[0.047]</td>
<td>[0.047]</td>
<td>[0.047]</td>
<td>[0.047]</td>
<td>[0.047]</td>
</tr>
<tr>
<td>OUTPUTGAP_1</td>
<td>-0.024</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.048]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>log(GDP_1)</td>
<td></td>
<td>0.0001***</td>
<td></td>
<td>0.0001***</td>
<td>0.0001***</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[0.00005]</td>
<td></td>
<td>[0.00005]</td>
<td>[0.00005]</td>
<td></td>
</tr>
<tr>
<td>CRISIS_DEF_1</td>
<td></td>
<td></td>
<td>-1.317***</td>
<td>-1.151***</td>
<td>-1.099***</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[0.434]</td>
<td>[0.428]</td>
<td>[0.431]</td>
<td></td>
</tr>
<tr>
<td>election_1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.269</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>[0.263]</td>
</tr>
<tr>
<td>left_1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.353</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>[0.286]</td>
</tr>
<tr>
<td>younggov_1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.518*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>[0.290]</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.743</td>
<td>0.745</td>
<td>0.732</td>
<td>0.743</td>
<td>0.739</td>
<td>0.742</td>
</tr>
<tr>
<td>Observations</td>
<td>346</td>
<td>346</td>
<td>346</td>
<td>346</td>
<td>346</td>
<td>346</td>
</tr>
<tr>
<td>Countries</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>