The Political Economy of Regulatory Risk

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Introduction

- **Regulatory Risk:** Uncertainty behind new or changing regulation over time.
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- **Ernst&Young 2008:** “The greatest strategic challenge facing leading global businesses in 2008”
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### Top 10 strategic risks

1. Regulatory and compliance risk
2. Global financial shocks
3. Aging consumers and workforce
4. Emerging markets
5. Industry consolidation/transition
6. Energy shocks
7. Execution of strategic transactions
8. Cost inflation
9. Intellectual property
10. Data protection

### The top 10

**Ranking from 2008 in brackets**

1. The credit crunch (2)
2. Regulation and compliance (1)
3. Deepening recession (New)
4. Radical greening (9)
5. Non-traditional entrants (16)
6. Cost cutting (8)
7. Managing talent (11)
8. Executing alliances and transactions (7)
9. Intellectual property (10)
10. Data protection (6)
Chart showing the political economy of regulatory risk. The graph compares various types of risk, with regulatory risk being the highest.

* % of survey respondents that say a category of risk is a significant threat to the business minus % of respondents that say a category of risk is a low threat to the business.

Source: Economist Intelligence Unit survey, June 2005
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This paper: Electoral uncertainty (political economy)
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- Monopoly regulation
- Uncertainty about governments’ objective function
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Regulatory setup:
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- Uncertainty about governments’ objective function
- Diverging political preferences
- Electoral uncertainty
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  • Monopoly regulation
  • Uncertainty about governments’ objective function
  • Diverging political preferences
  • Electoral uncertainty
  • Political incentives to mitigate regulatory risk?
Results

Left unchecked electoral uncertainty causes RR
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- Commitment problem explains independent regulatory agency.
Model: Baron & Myerson (1986)

Monopolist: \( \Pi = t - cx \)
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Firm privately informed about \( c \in \{ c_l, c_h \} \)
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- **Monopolist:** $\Pi = t - cx$
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- Two parties: $p \in \{l, r\}$ with $0 < \lambda_l < \lambda_r < 1$
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- **Political system:** \( (\alpha, \lambda_l, \lambda_r) \)
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  - Winning party offers schedule \( (t, x) \).
- **Political system:** \( (\alpha, \lambda_l, \lambda_r) \)
- **Political divergence:** \( \Delta \lambda \equiv \lambda_r - \lambda_l \)
Optimal Regulation of party $p$

Find optimal direct mechanism $(x_l, t_l, x_h, t_h)$.

$$\max_{x_l, t_l, x_h, t_h} \nu W_p(x_l, t_l, c_l) + (1 - \nu) W_p(x_h, t_h, c_h)$$

s.t.

$$t_h - c_h x_h \geq t_l - c_h x_l; \ t_l - c_l x_l \geq t_h - c_l x_h \ (ICs)$$

$$t_l \geq c_l x_l; \ t_h \geq c_h x_h \ (PCs)$$
Optimal Regulation of party $p$

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- Solution: $v'(\hat{x}_l) = c_l; \quad v'(\hat{x}_h(\lambda_p)) = c_h + (1 - \lambda_p)\psi\Delta c$
Optimal Regulation of party \( p \)

- Find optimal direct mechanism \((x_l, t_l, x_h, t_h)\).

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\max_{x_l, t_l, x_h, t_h} \nu W_p(x_l, t_l, c_l) + (1 - \nu) W_p(x_h, t_h, c_h)
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\[\text{s.t.} \quad t_h - c_h x_h \geq t_l - c_h x_l; \quad t_l - c_l x_l \geq t_h - c_l x_h \quad (ICs)\]
\[t_l \geq c_l x_l; \quad t_h \geq c_h x_h \quad (PCs)\]

- Solution: \( v'(\hat{x}_l) = c_l \); \( v'(\hat{x}_h(\lambda_p)) = c_h + (1 - \lambda_p) \psi \Delta c \)

- Payoff: \( \hat{W}_p(\lambda) \equiv \tilde{W}_p(\hat{x}_l, \hat{x}_h(\lambda)) \)
Regulatory risk:

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\[ \hat{x}_h(\lambda_r) \text{ with probability } \alpha; \]
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\[ \hat{x}_h(\lambda_r) \] with probability \( \alpha \);
\[ \hat{x}_h(\lambda_l) \] with probability \( 1 - \alpha \).
Regulatory risk

- Regulatory risk:
  - $\hat{x}_h(\lambda_r)$ with probability $\alpha$;
  - $\hat{x}_h(\lambda_l)$ with probability $1 - \alpha$.

- How do the parties evaluate this risk?
Regulatory risk

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  - $\hat{x}_h(\lambda_r)$ with probability $\alpha$;
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- How do the parties evaluate this risk?
  - Classical risk analysis.
Regulatory risk:

- \( \hat{x}_h(\lambda_r) \) with probability \( \alpha \);
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- Classical risk analysis.
- Preferences for deterministic \( \lambda \).
Regulatory risk

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  - $\hat{x}_h(\lambda_r)$ with probability $\alpha$;
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- How do the parties evaluate this risk?
  - Classical risk analysis.
  - Preferences for deterministic $\lambda$.
  - Preferences for stochastic $\lambda$. 
(\alpha, \lambda_l, \lambda_r) \text{ mean preserving spread of } \lambda^e = \alpha \lambda_r + (1 - \alpha) \lambda_l
Classical risk analysis

- $(\alpha, \lambda_l, \lambda_r)$ mean preserving spread of $\lambda^e = \alpha \lambda_r + (1 - \alpha) \lambda_l$

- Expected utility: $W^e_p(\alpha) \equiv \alpha \hat{W}_p(\lambda_r) + (1 - \alpha) \hat{W}_p(\lambda_l)$
Classical risk analysis

- $(\alpha, \lambda_l, \lambda_r)$ mean preserving spread of $\lambda^e = \alpha \lambda_r + (1 - \alpha) \lambda_l$
- Expected utility: $W^e_p(\alpha) \equiv \alpha \hat{W}_p(\lambda_r) + (1 - \alpha) \hat{W}_p(\lambda_l)$
- Party likes regulatory risk if $W^e_p(\alpha) > \hat{W}_p(\lambda^e)$. 
Classical risk analysis

- \((\alpha, \lambda_l, \lambda_r)\) mean preserving spread of \(\lambda^e = \alpha \lambda_r + (1 - \alpha) \lambda_l\)

- Expected utility: \(W_p^e(\alpha) \equiv \alpha \hat{W}_p(\lambda_r) + (1 - \alpha) \hat{W}_p(\lambda_l)\)

- Party likes regulatory risk if \(W_p^e(\alpha) > \hat{W}_p(\lambda^e)\).

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Classical risk analysis

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Party likes regulatory risk if \( W^e_p(\alpha) > \hat{W}_p(\lambda^e) \).

Party dislikes regulatory risk if \( W^e_p(\alpha) < \hat{W}_p(\lambda^e) \).

Curvature of \( \hat{W}_p(\lambda) \)?
Curvature

Result: $\hat{W}_p(\lambda)$ is concave around $\lambda$ when

$$(\lambda_p - \lambda)\psi \Delta cv'''(\hat{x}_h(\lambda)) < [v''(\hat{x}_h(\lambda))]^2.$$
Curvature

\[ \hat{W}_p(\lambda) \text{ is concave around } \lambda \text{ when} \]
\[ (\lambda_p - \lambda)\psi \Delta cv'''(\hat{x}_h(\lambda)) < [v''(\hat{x}_h(\lambda))]^2. \]

At least one party dislikes regulatory risk:

- Party \( r \) if \( v'''(\hat{x}_h(\lambda)) < 0 \)
- Party \( l \) if \( v'''(\hat{x}_h(\lambda)) > 0 \)
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- Demand is linear ($v''' = 0$)
Curvature

Result: \( \hat{W}_p(\lambda) \) is concave around \( \lambda \) when

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Both parties dislike regulatory risk when

- Demand is linear (\( v''' = 0 \))
- Political divergence (\( \Delta \lambda \)) is small.
Curvature

Result: \( \hat{W}_p(\lambda) \) is concave around \( \lambda \) when

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- Both parties dislike regulatory risk when
  - Demand is linear \( (v''' = 0) \)
  - Political divergence \( (\Delta \lambda) \) is small.
  - Winning probability of the risk averse party is small
Result: $\hat{W}_p(\lambda)$ is concave around $\lambda$ when

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Both parties dislike regulatory risk when

- Demand is linear ($v''' = 0$)
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$l$ dislikes risk
Concave demand $u''' < 0$

The diagram illustrates the behavior of $\hat{W}_l(\lambda)$ and $\hat{W}_r(\lambda)$, with $\lambda_l$ indicating a point where $l$ dislikes risk and $\lambda_r$ indicating a point where $l$ likes risk. The points $\lambda_l$ and $\lambda_r$ are marked on the x-axis, with $\hat{\lambda}$ representing a midpoint between the two.
From which deterministic $\lambda^b$ do parties benefit?
Bargaining for $\lambda^b$

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Bargaining for $\lambda^b$

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- Any other $\lambda^b$’s?
- Define: $\hat{W}_p(\lambda_p(\alpha)) = W^e_p$
Bargaining for $\lambda^b$

- From which deterministic $\lambda^b$ do parties benefit?
- If both parties dislike regulatory risk: $\lambda^e$.
- Any other $\lambda^b$’s?
- Define: $\hat{W}_p(\lambda_p(\alpha)) = W^e_p$
- Result: Pre–electoral agreement is potentially beneficial if and only if $\lambda_r(\alpha) < \lambda_l(\alpha)$.

In this case, it is beneficial for any $\lambda^b \in \Lambda(\alpha)$ with

$$\Lambda(\alpha) \equiv (\lambda_r(\alpha), \lambda_l(\alpha)) .$$
Illustration of $\Lambda(\alpha)$

Construction of $\Lambda(\alpha)$
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Reducing regulatory risk

What about conditional agreements: \((\lambda_l^b, \lambda_r^b)\) with 
\[\lambda_l < \lambda_l^b < \lambda_r^b < \lambda_r\]?
Reducing regulatory risk

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Result: There always exist conditional agreements from which both parties benefit.
Reducing regulatory risk

What about conditional agreements: $(\lambda_l^b, \lambda_r^b)$ with $\lambda_l < \lambda_l^b < \lambda_r^b < \lambda_r$?

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Reducing regulatory risk

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  \[\lambda_l < \lambda_l^b < \lambda_r^b < \lambda_r\]?
- Result: *There always exist conditional agreements from which both parties benefit.*

![Diagram showing the relationship between \(\lambda_l\), \(\lambda_r\), \(\lambda_l^b\), and \(\lambda_r^b\).*

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Reducing regulatory risk

- What about conditional agreements: \((\lambda_l^b, \lambda_r^b)\) with \(\lambda_l < \lambda_l^b < \lambda_r^b < \lambda_r\)?

- Result: There always exist conditional agreements from which both parties benefit.
Reducing regulatory risk

- What about conditional agreements: \((\lambda_l^b, \lambda_r^b)\) with 
  \(\lambda_l < \lambda_l^b < \lambda_r^b < \lambda_r\)\

- Result: **There always exist conditional agreements from which both parties benefit.**
Reducing regulatory risk

\[ \lambda_r, \lambda_l, \lambda_r^b, \lambda_l^b \]
Reducing regulatory risk
Reducing regulatory risk
Reducing regulatory risk

The diagram illustrates the relationship between different variables, possibly representing regulatory risk and related economic factors. The axes and curves are labeled with mathematical notations, indicating a complex economic model. The specific details and implications of the diagram would require a deeper analysis of the mathematical framework it represents.
Reducing regulatory risk
Commitment problems

Commitment problem: Once a party $p$ wins, it wants to change from $\lambda^b$ to $\lambda_p$
Commitment problems

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- Commitment problem undermines pre–electoral bargaining.
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- How to solve it?
Commitment problems

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- Commitment problem undermines pre–electoral bargaining.
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  - Repeated games: De Figueiredo (2002)
Commitment problems

Commitment problem: Once a party $p$ wins, it wants to change from $\lambda^b$ to $\lambda_p$.

Commitment problem undermines pre–electoral bargaining.

How to solve it?

- Repeated games: De Figueiredo (2002)
- Delegation: create independent regulatory agency with objective to regulate according to $\lambda^b$. 
Commitment problems

- Commitment problem: Once a party $p$ wins, it wants to change from $\lambda^b$ to $\lambda_p$.
- Commitment problem undermines pre–electoral bargaining.
- How to solve it?
  - Repeated games: De Figueiredo (2002)
  - Delegation: create independent regulatory agency with objective to regulate according to $\lambda^b$.
  - Delegation: create regulatory agency with partial independence to implement conditional agreement $(\lambda^b_l, \lambda^b_r)$. 

Conclusions

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- Parties have incentive to prevent regulatory risk if demand is linear ($v''' = 0$).
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- Parties have incentive to prevent regulatory risk if
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  - Political divergence ($\Delta \lambda$) is small.
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  - \( \Lambda(\alpha) \) is non-empty.
Conclusions

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- Always political incentives to reduce RR to some degree.
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  - Winning probability of the risk averse party is small.
  - \( \Lambda(\alpha) \) is non–empty.
- Always political incentives to reduce RR to some degree.
- Commitment problem explains prevalence of independent regulatory agency.