

The Strategic Euro Laggards

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Introduction

Entry into a monetary union involves also non-macroeconomic determinants.

- » domestic policy conflicts
 - exchange rate policy (Broz and Frieden, 2001; Frieden, Ghezzi and Stein, 2001; Frieden, 2002)
 - financial regulation and openness (large banks against small banks, Grüner, Hefeker, 1996)
 - public sector reforms, using the EMU conditionality (Dyson, 2006; Donnelly, 2005)
- » intergovernmental bargaining
 - currency crisis threat (Fahrholz 2007)
 - delay to address hold-up problem in bargaining over distribution of benefits from entry (this paper)

The logic of this paper

1. The government strategically delays entry.
2. Delay serves as a signal of unwillingness to enter in the future.
3. Anticipatory investments of the private sector decrease.
4. The option value of no entry ('membership with derogation') increases.
5. The expected government's payoff in bargaining with the club increases.
6. This increase wipes out losses of no entry in the current period.
7. The government eventually enters and bargains with the club.

Bargaining on the club entry

Upon entry, net benefits are pooled and redistributed.

- irrelevant for monetary policy
 - ... [T]he future EMU member states have already accepted immutable entry conditions formed on the basis of preceding intergovernmental bargaining. (Eichengreen and Frieden, 2000)
- relevant for other policies
 - = an entrant is pressed to make concessions in other policies (policy linkage)
 - » linkages maintained by the EU institutions (Slapin, 2008)
 - » linkages also through strategic delegation of a high-level representative (Harstad 2007, 2008)
 - » candidate EU linkages: Treaty negotiations, transfer payments, CAP reform, common security and defense

Further motivation: puzzle in the literature on the allocation of the EU expenditures via voting weights (Kauppi and Widgren, 2004, 2007)

Hold-up problem

Hold-up: Anticipation of entry by private sector leads to investments that decrease the option value of no-entry, hence worsen the bargaining position of the entrant.

A simple approach

- a single firm
- positive productivity shock of club entry
- revenue-seeking government
- different valuation of EMU membership in *non-monetary* policies
 - $v < 0$: entry is believed to escalate integration, implying net loss
 - $v = 0$: entry is believed not to have any further consequences
 - $v > 0$: entry is believed to escalate integration, implying net benefit
- a small open economy
- constant corporate profit tax

Benchmark: Wallner (2003, J Pub E)

	Wallner (2003)	Gregor (2008)
periods	1	2
government types	1	2
information	complete	incomplete
bargaining	take-or-leave offer of the club	fixed shares
investments	heterogenous	homogenous
productivity shock	asymmetric	symmetric

Assumptions

3 players	C (club), G (gov't), F (firm)
entry (G)	$e \in [0, 1]$
investment (F)	$k \geq 0$
production function	$af(k), f_k > 0, f_{kk} < 0$
exogenous interest rate	r
entry increases productivity	$0 < \underline{a} < \bar{a}$
the firm's expectation of entry	$\xi \in [0, 1]$
constant corporate profit tax	$\tau \in (0, 1)$

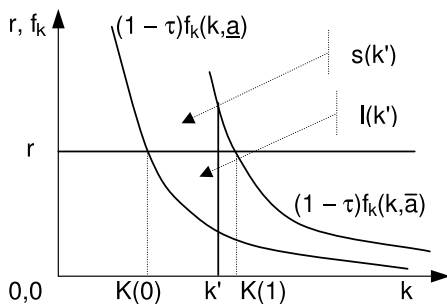
The firm

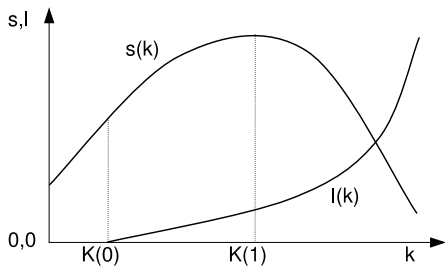
optimal investment $K(\xi), K_\xi > 0$
 minimum $\underline{k} \equiv K(0)$
 maximum $\bar{k} \equiv K(1)$

total entry benefits $(1 - \tau)(\bar{a} - \underline{a})f(k)$
 i) surplus $s(k) = (1 - \tau)\bar{a}f(k) - rk$
 ii) loss avoided $l(k) = rk - (1 - \tau)\underline{a}f(k)$

The government

surplus equivalent $S(k) = s(k) \frac{\tau}{1-\tau}$
 loss avoided equivalent $L(k) = l(k) \frac{\tau}{1-\tau}$

Surplus $s(k)$ and loss avoided $l(k)$ 

Surplus $s(k)$ and loss avoided $l(k)$ 

Entry bargaining

Fixed prize shares in bargaining with alternating offers and a constant risk of breakdown, $q \in (0, 1)$, where the club starts first.

power of the government	$\alpha = (1 - q)/(2 - q) \in (0, 1/2)$
power of the club	$1 - \alpha \in (0, 1)$
entry prize	$S(k) + L(k) + v$
disagreement points (G,C)	$-L(k), 0$

$$\pi^G = \alpha(S(k) + v) - (1 - \alpha)L(k) \geq 0$$

$$\pi^C = (1 - \alpha)(S(k) + L(k) + v) \geq 0$$

Obviously, for negative prize, $v < -S(k) - L(k)$, there is no bargaining.

Hold-up problem

The conflict of interests between the firm and the government occurs for any $k \in [k^*, \bar{k}] = [K(\alpha), K(1)]$.

Proposition

Upon entry, the maximal payoff for the government, $\max_k \pi^G$, is attained for $k^ := K(\alpha) < \bar{k}$.*

Single period, single type

The equilibrium here depends only on commitment devices of the government.

1. Time-consistent policy (no commitment): $k = k^*$, $e = \alpha$.
2. Time-inconsistent policy (commitment): $k = \bar{k}$, $e = 1$.

Can strategic no-entry be only due to a commitment of the government?

- ! We lack the dimension of time; *eventually*, a pro-entry government should *always* enter, even if it disposes with commitment devices.
- ! At least for the long-term investments, policy commitment is normally not as strong as durability of the physical investments.

Two periods, two types

A dynamic game of asymmetric incomplete information.

2 periods	$t = 1, 2$
common discount factor	$\delta \in (0, 1)$
2 gov't types	neutral, $v = 0$ autonomist, $v < -S(1) - L(1)$
belief on the neutral type	$p_t := \text{Prob}(v = 0 t)$
entry (4 variables)	$\bar{e}_t, \underline{e}_t \in [0, 1]$

To be solved by perfect Bayesian equilibrium. Each information set is reached with non-zero probability, hence out-of-equilibrium beliefs are not an issue.

Period 2

Autonomist: $\underline{e}_2 = 0$

Neutral: $\bar{e}_2 = 1$

If no-entry in period 2: $\xi_2 = p_2, k_2 = K(\xi_2)$

If entry in period 2: $\xi_2 = 1, k_2 = \bar{k}$

Lemma

The autonomist government never enters, $\underline{e}_1 = \underline{e}_2 = 0$.

Simplify notation, $e_t := \bar{e}_t$, and study the remaining e_1 . By Bayes rule:

$$p_2 = \frac{p_1 - e_1 p_1}{1 - e_1 p_1} \leq p_1.$$

Period 1

- The firm acts as in a single period setting (no strategic effect of investments): $k_1 = K(\xi_1) = K(e_1 p_1) \leq K(p_1)$
- The neutral government acts *not* as in a single period setting (strategic effect of no entry):

$$E(k_1) := \arg \max_{e_1} \left\{ e_1 \pi_E^G(e_1, k_1) + (1 - e_1) \pi_N^G(e_1, k_1) \right\}$$

$$\pi_E^G(e_1, k_1) = \alpha S(k_1) - (1 - \alpha)L(k_1) + \delta [\alpha S(\bar{k}) - (1 - \alpha)L(\bar{k})]$$

$$\pi_N^G(e_1, k_1) = -L(k_1) + \delta [\alpha S \circ K(p_2) - (1 - \alpha)L \circ K(p_2)]$$

Best response of the neutral government

Lemma

The necessary condition for $E(k_1) < 1$ is $\exists e_1 \in [0, 1] : \pi_N^G(e_1, k_1) \geq \pi_E^G(e_1, k_1)$.
Specifically:

$$p_1 \geq \alpha : E(k_1) < 1 \implies \pi_N^G(E^*(p_1), k_1) \geq \pi_E^G(E^*(p_1), k_1)$$

$$p_1 < \alpha : E(k_1) < 1 \implies \pi_N^G(0, k_1) \geq \pi_E^G(0, k_1)$$

$E^*(p_1)$: a rate of entry maximizing payoff of no-entry

$$E^*(p_1) := \arg \max_{e_1} \{ \pi_N^G | k_1 = \text{const} \}$$

\tilde{k} : a critical amount of investment, for which the government is indifferent between full entry and delay

$$p_1 \geq \alpha : \pi_E^G(E^*(p_1), \tilde{k}) = \pi_N^G(E^*(p_1), \tilde{k})$$

$$p_1 < \alpha : \pi_E^G(0, \tilde{k}) = \pi_N^G(0, \tilde{k})$$

The best response is step-wise

Lemma (Best response of the government)

For $k < \tilde{k}$, the best response is increasing in k_1 , $E_{k_1} > 0$. For $k \in (\tilde{k}, \tilde{k} + \epsilon)$, $E_{k_1} = 0$. The best response is step-wise increasing at $k = \tilde{k}$,

$$\lim_{k_1 \rightarrow \tilde{k}^-} E(k_1) = \max\{0, E^*(p_1)\} < 1 = \lim_{k_1 \rightarrow \tilde{k}^+} E(k_1).$$

The best response is step-wise

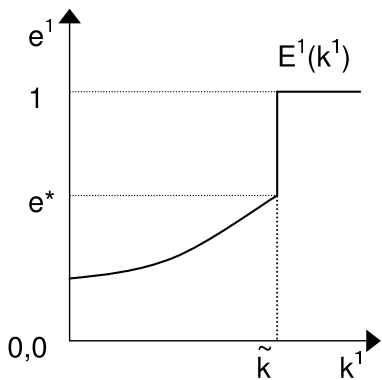


Figure: The best response of the government, $E^1(k^1)$

Perfect Bayesian equilibrium

Proposition (Uniqueness)

The necessary condition for the existence of a unique equilibrium with strategic delay, $e_1 < 1$, is

$$\delta \underbrace{\{S(k^*) - S(\bar{k})\}}_{-} + \frac{1-\alpha}{\alpha} \underbrace{[L(\bar{k}) - L(k^*)]}_{+} \geq S \circ K(p_1) + L \circ K(p_1). \quad (1)$$

The condition is more likely satisfied, if

1. the future is relatively important (large discount rate, δ),
2. the firm is initially pessimistic about the entry (low p_1), and
3. the government is weak (low relative bargaining power, α).

Perfect Bayesian equilibrium

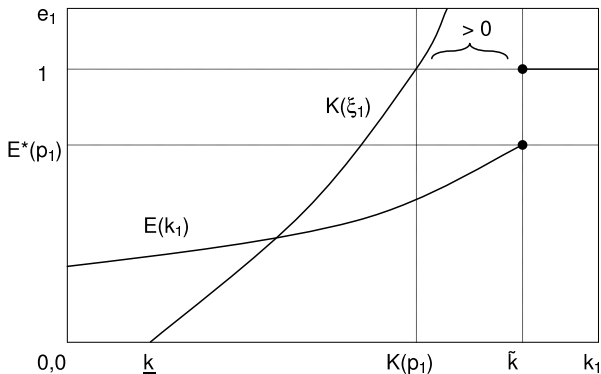


Figure: Necessary condition for a unique equilibrium with strategic delay

Incomplete bluffing

Proposition (Non-eliminated hold-up)

If strategic delay is in the equilibrium profile, $e_1 < 1$, then $k_2 > k^$, and $e_1 < E^*(p_1)$.*

Normative reading

If anticipatory investments affect threatpoint in intergovernmental bargaining, and there is uncertainty over the government type, then

- strategic delay is an attractive option,
- policy surprise may be preferable to pre-announcement.

Positive reading

Model assumptions

- multiple types of the government, differ in valuation of integration
 - $\underline{v} < 0$: 'European monetary unification is the Trojan horse for overall harmonization of economic rules, policies and laws in EU.' (Klaus, 2003)
- non-binding constraint on the government
 - opinion polls: polarized opinion, not extreme in NMS-9 comparison
 - = median voter is a fragile heuristic
 - = probabilistic voting models yield flat distributions

Prediction

Even if entry surely involved *positive* net macroeconomic benefits, and even if the CZ government does *not* believe that EMU entry has any consequences on further integration ($v = 0$), a strategic delay could be a rational policy.

Multiple types: content analysis

Table: Distribution of messages per groups

Group/Message content	--	-	+	++	Obs.
President, Advisors	4 (80 %)	1 (20 %)	-	-	5
National Central Bank	10 (45 %)	11 (50 %)	1 (5 %)	-	22
Ministers, Senior Officials	9 (40 %)	7 (30 %)	7 (30 %)	-	23
Financial/Bank Analysts	6 (43 %)	-	3 (21 %)	5 (36 %)	14
Commercial Unions	-	1 (10 %)	4 (49 %)	5 (50 %)	10
Opposition	-	-	4 (21 %)	15 (79 %)	19
Total	29	20	19	25	93

Notes: -- Strong conditionality. An explicit precondition to the entry is either real convergence, or major reforms towards public finance sustainability. - Delay. Entry is not topic of the day. Only implicit about conditionality. Leave the issue to experts. + Weak pro-entry. Only minor fiscal adjustments desirable, no explicit link to the long-term sustainability. Commit to timing or maintain commitment of the previous cabinet. ++ Strong pro-entry. No extra conditions beyond Maastricht criteria. Entry on 2011–2012. Data: Signed articles, interviews, or direct quotes in *Hospodářské noviny* (www.ihned.cz). Period: 9 January 2007 to 9 August 2008. Keywords: euro adoption, Eurozone entry, EMU entry, euro acceptance. Accessed 10–28 August 2008.

Non-binding public opinion

Table: Consequences of the euro for one's own country and for oneself in NMS-9

Country (%)	++	+	all +	-	--	all -
CZ	6.5	38.4	44.9	33.7	9.8	43.5
min	2.4	20.3	30.9			
max				43.7	11.2	51.4
NMS9	13.1	36.8	49.9	27.7	8.5	36.2
Rank of CZ optimism	(7.)	(5.)	(5.)	(6.)	(7.)	(7.)
Oneself (%)	++	+	all +	-	--	all -
CZ	6.8	34.7	41.5	36.2	11.4	47.6
min	3.4	20.3	37.6			
max				37.5	12.7	48
NMS9	14.2	33	47.2	28.9	10	38.9
Rank of CZ optimism	(5.)	(4.)	(5.)	(8.)	(6.)	(8.)

Note: ++ very positive; + positive; - negative; -- very negative

Source: Flash Eurobarometer Series #237, The Gallup Organization, July 2008, p. 36, 38, 86, 87 (Q13: Do you think the introduction of the euro would have positive or negative consequences for your country/yourself?, Q14: And for you personally, do you think that it would be positive or negative if the euro would be introduced?). Sample size: $N = 1000-1020$.

Non-binding public opinion

1. CZ scores exactly median values for total positive attitudes (ranks 5th), but also large values for total negative attitudes (ranks 7th/8th) = polarization.
2. CZ is much above bottomline in 2 out of 4 variables: by 14 percentage points total positive, and by 7.9 percentage points for total negative attitudes.
3. Latvia, Lithuania score consistently below.

Further evidence on polarization

Table: When do you prefer the Czech Republic to adopt euro?

	before 2011	2011–2012	after 2012	never	Total
Votes	860	209	316	743	2128
Share	40 %	10 %	15 %	35 %	100 %

Data source: Online poll of the daily *Hospodářské noviny* (<http://www.ihned.cz>), 28/07/2008–28/08/2008. Accessed 28 August, 2008. Sample size: $N = 2128$.

Conclusions

1. We may observe a strategic delay even if a neutral government can only use time-consistent policies and *eventually* enters with certainty.
2. The government selects the entry rate e_1 *strategically* to balance losses of no-entry in period 1 with gains of an improved position in period 2.
3. Such bluffing in period 1 is *incomplete*.
4. The firm does not behave strategically (the assumption of a single firm can be changes into a continuum of small firms).

Necessary conditions

1. a good electoral prospect of the government (the future matters, a large δ)
2. an internationally weak country (low relative bargaining power α).
3. initial pessimism about the entry (low p_1)