The Strategic Euro Laggards*

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Abstract

Cross-country variations in the entry to the EMU, in the presence of significant macroeconomic benefits of membership, raise an issue whether timing of the entry might not be a strategic instrument. Specifically, a late entry might be motivated by attempt to curb investments of the private sector that undermine the government's position via-a-vis the EMU members (hold-up problem). We identify sufficient conditions under which acting as a laggard and thereby harming domestic firms is an equilibrium strategy that is motivated by improving bargaining terms of the EMU entry. Strategic delay is more likely if an applicant government is relatively weak, patient, and considered by the firms to be not too optimistic about the entry.

Keywords: EMU, club enlargement, international unions

JEL Classification: D74, E42, F31, F50

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1 Introduction

It is widely recognized that normative policy making cannot be interchanged with positive policy making, and vice versa (Dixit 1996; Persson, Tabellini 2000). Consequently, in the realm of monetary policy, prescriptions of the optimal currency area literature are not necessarily indicative of the emergence of actual monetary unions. Reduction in transaction costs, nominal stability and—on the cost side—policy uniformity need not fully explain the entrance decision into a monetary union. A host of extra strategic considerations of policy makers may also play a decisive role.

This paper focuses on strategic determinants of entry related to bargaining on entry conditions. In a bargaining process, timing of entry may be strategically used either directly or indirectly. A *direct* benefit relates purely to the effects of interactions between the governments of the existing members and the entering countries. A typical, albeit controversial study in this line is Fahrholz (2007) where additional side payments to the new member states (e.g., by means of structural funds) can be raised by crisis behavior in the ERM-II. In contrast, *indirect* benefits result from additional relationships with extra decision-makers, especially the private sector.

In this paper, we focus on indirect benefits cashed in by addressing a hold-up problem with domestic firms. The hold-up problem has been introduced into the club enlargement literature by Wallner (2003). In this pioneering paper, Wallner shows that anticipation of enlargement leads firms to make investment decisions that undermine negotiation power of the entering government. Specifically, their structure of investments imply that the value of remaining outside the club falls, which lowers the applicant's bargaining position. The drop in the threatpoint allows the club to charge a higher entrance fee. An important effect is that if total benefits of enlargement are sufficiently small, *immiserization* occurs: the country is worse-off with the enlargement than it would be outside the club with the initial level of investments.

Unlike Wallner (2003), we focus on whether the applicant government can tamper the hold-up problem and avoid immiserization. One way is to impose a strong commitment power. Section 2 illustrates the effect of commitment in a single period. If commitment is not realistic, one may generalize the setup in such a way that the strategy set of the government includes not only single entry decision. A natural extension is to consider at least two entry decisions; hence, a government can play a trigger strategy in delaying the entry and harming firms that made incorrect investments. This is the core of Section 3, where the main strategic tool is to defer entry in a two-period setting. A delay in the announcement and entry to the EMU is a way to reap extra benefits in bargaining, at the cost incurred by domestic firms and the old EMU members.

Two equilibrium features deserve a remark. A government which strategically delays finally enters the EMU; we don't require a threat of an ultimate no-entry of this type of government. Moreover, taken bargaining aside, our government would very much like the firms strictly prefer the EMU membership. The optimization of government differs from optimization of firms only due to the fact that the firms do not consume or internalize benefits of stronger (or, put in reverse, costs of weaker) position of the domestic government in the bargaining.

At last, Section 4 briefly discusses an alternative bargaining setup with currency crisis threats, and Section 5 concludes.

2 Hold-up problem

2.1 Assumptions

Consider three players: a monetary club (EMU), a government of an applicant country (G), and a representative firm in the country (F). The government decides whether to ask for entry or not, $e \in [0,1]$. The entry increases productivity of the firm, with (purely for simplicity)[1] zero effect on the productivity in the former club members.

The firm determines the amount of capital k on the domestic capital market, where the interest rate corresponding to the supply of savings at amount k is $r(k)$, with $r_k > 0$ (all subscripts refer to partial derivatives).[2] The production function $f(a,k)$ is increasing and concave in capital k and linear in productivity a, $f_k, f_a > 0$, and $f_{kk} < 0, f_{aa} = 0$. Productivity is low but positive in the case of no entry, $\underline{a} > 0$, and high in the case of entry, $\bar{a} > \underline{a}$. From $f_{aa} = 0$,

$$\frac{f_k(k,\bar{a})}{\bar{a}} = \frac{f_k(k,\underline{a})}{\underline{a}}. \tag{1}$$

The firms' profits are taxed by an exogenous, source-based corporate tax with rate $\tau \in [0,1]$. Hence, if entry is expected with probability ξ, the optimal investment is

$$K(\xi) = \arg\max(1-\tau)\left[\xi f(k,\bar{a}) + (1-\xi) f(k,\underline{a})\right] - \int_0^k r(k). \tag{2}$$

Introducing $\mathbb{E}(f_k(k)) \equiv \xi f_k(k,\bar{a}) + (1-\xi) f_k(k,\underline{a})$, we explicitly have

$$(1-\tau)\mathbb{E}(f_k(K(\xi))) = r\left(K(\xi)\right). \tag{3}$$

[1] This assumption is only to avoid unnecessary notation when expressing the bargaining prize; a positive gain in the club would not affect the results.

[2] Hereby, we differ from Wallner (2003) in the basic treatment of investment decisions by considering that club-specific investments are not of different quality, but of different quantity; this has definitely better macroeconomic interpretation and moreover gives rise to the hold-up problem in a very clear manner.

Clearly, $K_\xi > 0$. It is also convenient at this point to denote $\underline{k} \equiv K(0)$ and $\bar{k} \equiv K(1)$.

Benefits of the entry for the firm are twofold. The standard part is the producer's surplus above the interest rate (extra profits), $s(k)$. In addition, entry implies that a loss implied by overinvesting in the case of no-entry, $l(k)$, is avoided.

$$s(k) = (1-\tau)f(k,\bar{a}) - \int_0^k r(k) \tag{4}$$

$$l(k) = \int_0^k r(k) - (1-\tau)f(k,\underline{a}) \tag{5}$$

In total, $s(k) + l(k) = (1-\tau)[f(k,\bar{a}) - f(k,\underline{a})]$. Notice that for $k \in [\underline{k},\bar{k}]$, the surplus is increasing and concave, $s_k > 0, s_{kk} < 0$, and the loss is increasing and convex, $l_k > 0, l_{kk} > 0$, where $s(\underline{k}) > 0$ and $l(\underline{k}) = 0$.

The gross (pre-tax) extra profits are $s(k)/(1-\tau)$, hence the extra tax revenue for the government in the case of entry (and the value of the lost tax revenue due to overinvestment in the case of no entry) are

$$S(k) = \frac{\tau}{1-\tau} \cdot s(k), \qquad L(k) = \frac{\tau}{1-\tau} \cdot l(k). \tag{6}$$

This shows that absent of other consideration, interests of the revenue-oriented government and the firm to enter and maximize the amount of capital are aligned. The problem is however that upon entry, benefits of the membership (productivity increase in the applicant country) are subject to bargaining between the club and the applicant.

Specifically, assume axiomatic Nash bargaining with bargaining power of the government $\alpha \in [0,1]$ and of the club $\beta \in [0,1]$. Total prize is $S(k)+L(k)$, and disagreement payoffs are zero for the club and $-L(k)$ for the government. The outcome is derived by maximizing the Nash product over the disagreement point,

$$(\pi^G, \pi^{EMU}) = \arg\max(\pi^G + L(k))^\alpha(\pi^{EMU} - 0)^\beta, \tag{7}$$

subject to $\pi^{EMU} + \pi^G = S(k)$, $\pi^{EMU} \geq 0$, and $\pi^G \geq -L(k)$. The solution writes

$$\pi^G = \frac{\alpha[S(k) + L(k)]}{\alpha + \beta} - L(k) = \frac{\alpha S(k) - \beta L(k)}{\alpha + \beta}, \pi^{EMU} = \frac{\beta[S(k) + L(k)]}{\alpha + \beta}. \tag{8}$$

Lemma 1 *Under bargaining, the maximal feasible payoff for the government,* $\max \pi^G$*, is realized for* $k = k^*$*, where* $k^* < \bar{k}$*, and*

$$\frac{S_k(k^*)}{L_k(k^*)} = \frac{\beta}{\alpha}. \tag{9}$$

Proof. We use that due to concavity of $s(k)$ and convexity of $l(k)$, we have also concave $S(k)$ and convex $L(k)$, $S_{kk} < 0, L_{kk} > 0$. Examine the second order condition for the payoff π^G:

$$\frac{d(\pi^G)^2}{d^2k} = \frac{\alpha S_{kk}(k) - \beta L_{kk}(k)}{\alpha + \beta} < 0$$

This reveals that the extremum characterized by the respective first order condition, $\alpha S_k(k) - \beta L_k(k) = 0$, or equivalently $S_k(k)/L_k(k) = \beta/\alpha$, is a unique maximum. To show that it is indeed an interior solution, notice that for $k = \underline{k}$, $L_k = 0$, and for $k = \bar{k}$, $S_k = 0$. As a result, the function $S_k(k)/L_k(k)$ on the domain $k \in [\underline{k}, \bar{k}]$ runs from $+\infty$ to zero. To yield a positive real value β/α, the maximizing amount of capital must satisfy $\underline{k} < k^* < \bar{k}$. $\square$

Lemma 1 illustrates the essence of the *hold-up* problem: if entry is expected to be very likely, hence ξ is large, the domestic investments are large, $k > k^*$, which affects outside option of the government in the international bargaining so much that it consequently decreases payoff of the government. Lemma 1 particularly establishes that in a general specification, hold-up problem emerges always above some level of investment, so in the case of a very large ξ, there is a conflict of interests between the firm (willing to set $k \to \bar{k}$) and the government (optimizing under $k = k^* < \bar{k}$). In other words, too positive anticipations of the firm can harm the government. Figure 1 illustrates the problem for a pair of investments $(k', K(1))$, where $k^* \leq k' < K(1) = \bar{k}$.

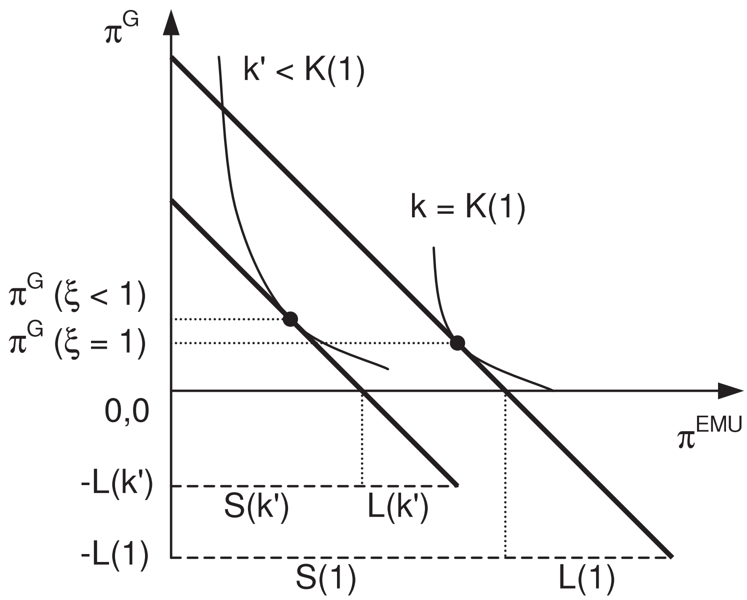

Figure 1: Hold-up problem

2.2 Analysis

The equilibrium in this simple game depends on timing and/or commitment. The hold-up manifests itself extremely if the firm is a *first-mover*. The government has two actions, no entry with payoff $-L(k)$, and entry with payoff $\alpha[S(k) + L(k)]/(\alpha + \beta) - L(k) > -L(k)$. This implies entry with probability one, and $\xi = 1$. By rational expectations, $k = K(1) = \bar{k}$. As a consequence, the government suffers from the stringiest version of the hold-up problem.

In contrast, if the firm is a *second-mover*, or if the government can precommit to entry policy, the government clearly imposes ξ^* such that $K(\xi^*) = k^*$. Proposition 1 explicitly derives the rate.

Proposition 1 *In a single period setup with the government moving first, the entry rate is* $\xi^* = \alpha/(\alpha + \beta)$, $0 < \xi^* < 1$.

Proof. From (4) and (5), we have $(1 - \tau)f_k(k, \bar{a}) = s_k(k) + r(k)$ and $(1 - \tau)f_k(k, \underline{a}) = -l_k(k) + r(k)$. Impose into $(1 - \tau)\mathbb{E}(f_k(k))$ to get $(1 - \tau)\mathbb{E}(f_k(k)) = \xi s_k(k) - (1 - \xi)l_k(k) + r$. From (3), we finally get $\xi s_k(K(\xi)) = (1-\xi)l_k(K(\xi))$. Now, apply (6) to get $\xi S_k(K(\xi)) = (1-\xi)L_k(K(\xi))$, or equivalently $S_k(K(\xi))/L_k(K(\xi)) = (1 - \xi)/\xi$. From Lemma 1, $S_k(k^*)/L_k(k^*) = \beta/\alpha = (1 - \xi^*)/\xi^*$. By rearranging, $\xi^* = \alpha/(\alpha + \beta)$. □

This section so far demonstrated that the conflict of interests between the firm and the government has been solved to the advantage of the first mover: either the firm imposes maximal investments and the government entered with certainty, or the government committed to a very lax (imperfect) entry ($\xi < 1$), which pushed the firms to decrease investments and remedied the hold-up problem.

The latter case might be interpreted as an explanation of the strategic unwillingness of a revenue-seeking government to enter the EMU. However, it suffers two drawbacks: (i) Policy commitments, unlike long-term investment decisions, are normally difficult to maintain. (ii) The model implies that there is a positive (albeit small) probability that a growth-promoting government *never* enters the club. The next section tackles both drawbacks: the firms have leadership, and the revenue-seeking government eventually enters the club with certainty. The model thus fits the case of the *strategic laggards*.

3 Strategic delay

Before outlining details, it might be of use to describe the mechanism of the model. The model is of two periods, where in each period, the firm makes and investment and then the government decides. As a result, in the second period, the revenue-seeking government always enters the club.

Nevertheless, the government also delays entry in period 1 by which it remedies hold-up problem in the next period. This can work only if delay implies that the anticipation of entry in period 2 drops. We know that the revenue-seeking government is entering with probability one in the second period, so to lower anticipation of entry in the second period means that an *extra force* must be at play. One case would be Nature: one might think of a currency crisis with a high likelihood in the future, prohibiting further enlargement. Yet this would incur several potentially damaging complications (e.g., continuation values in the bargaining of period 1).

A more direct way is to assume another type of the government (nationalistic) that is principally unwilling to enter. The revenue-seeking government may then pretend to be nationalist and thereby affect anticipations of entry in the coming period. Bluffing goes through strategic delay, which technically appears in a pooling signalling equilibrium in a game with incomplete and asymmetric information.

Notice that the strategic delay is related to the following tradeoff: If the government enters in period 1, it secures gains in period 1. If not, it affects beliefs of the firm in period 2, which remedies the hold-up problem. This section essentially shows all details of this logic, and most importantly, delivers sufficient conditions for solution to this tradeoff to be entry with probability less than one.

3.1 Extra assumptions

The economy lasts two periods ($t = 1, 2$). The government is either of two types: *opportunistic* (revenue-seeking) or *nationalistic* (autonomy-seeking). An opportunistic government maximizes net revenue to its budget, consisting of the corporate tax revenues net of a club fee. A nationalistic government puts a prohibitively large value on independence, i.e. never enters the club.[3] Type is private information of the government, and the firm's belief that the government is opportunistic in period t is $p^t \in [0, 1]$.

Entry is irreversible. In contrast, decision not to enter in period 1 may be reversed into entry in period 2, i.e. the government may behave as a strategic laggard. Discount factor common to all players is $\delta \in (0, 1)$. Rational expectations of the firm yield the expectation of entry to be $\xi^t = p^t e^t$.

The game starts by a random draw of Nature that assigns the government type, opportunistic with probability $p^1 \in [0, 1]$ and nationalistic otherwise. In each of the periods, timing is as follows: (i) The firm sets $k^t \geq 0$. (ii) If not in the club, the government decides on entry, $e^t \in [0, 1]$. (iii) In the case of entry, bargaining takes place. (iv) Production takes place, profits are taxed and in the case of entry, a club fee is paid.

Exogenous tax rate τ deserves a note here: in case of an endogenous tax rate, not only entry policy but also tax rate would serve as signals of type. We are not interested in the interplay of these two tools, albeit it constitutes an interesting theoretical possibility. The main reason why not to study it in this framework is that one would have to account for equalization of the domestic rate of return with the world rate, constituting additional constraint on the government.

[3] In this setup, motivations for autonomy could be modeled explicitly through ego-rents, reputation, or lobbying.

3.2 Analysis

In period 2, the situation when a country is in the club is equivalent to $p^2 = 1$ and $e^2 = 1$, hence $\xi^2 = 1$, and $k^2 = K(1) = \bar{k}$. If not in the club, the revenue-seeking government is known to set $e^2 = 1$, because no-entry brings only disagreement payoff $-L(k^2)$, whereas entry implies a bargaining share above this payoff. The firm anticipates $\xi^2 = p^2$, hence $k^2 = K(p^2)$. By Bayes rule,

$$p^2 = \frac{p^1(1-e^1)}{1-p^1+p^1(1-e^1)} = \frac{p^1 - e^1 p^1}{1-e^1 p^1} \leq p^1. \tag{10}$$

Hence, delay is stronger as a signal the *less likely* it takes place. If strategic delay is infrequent, the firm observing delay attributes it mainly to the nationalistic government, and therefore becomes pessimistic in investment prospects, i.e. p^2 falls. Specifically, $\partial p^2/\partial e^1 < 0$, where for $e^1 = 0$, $p^2 = p^1$ and for $e^1 = 1$, $p^2 = 0$.

Before we establish key results, we analyze several properties of the expected payoff of the government across both periods. First, derive the payoffs under either of actions:

$$\pi^{G,e} = \frac{1}{\alpha+\beta}\left\{\alpha S(k^1) - \beta L(k^1) + \delta\left[\alpha S(\bar{k}) - \beta L(\bar{k})\right]\right\} \tag{11}$$

$$\pi^{G,n} = \frac{1}{\alpha+\beta}\left\{-(\alpha+\beta)L(k^1) + \delta\left[\alpha S(K(\xi_2)) - \beta L(K(\xi_2))\right]\right\} \tag{12}$$

First and foremost, notice that $\pi^{G,e}$ is constant in e^1. Unlike that, $\pi^{G,n}$ grows in e^1 if $p^2 = \xi^2 \geq \xi^* = \alpha/(\alpha+\beta)$, because here k^2 declines towards k^*, i.e. hold-up is addressed. For $p^2 < \alpha/(\alpha+\beta)$, $\pi^{G,n}$ falls in e^1. The payoff has inverse u-shape if prior belief p^1 is sufficiently large, $p^1 > \alpha/(\alpha+\beta)$; otherwise, it is monotonically declining.

Lemma 2 *The necessary condition for* $e^1 < 1$ *to be the best response to* k^1 *is:* $\exists e^1 \in [0,1] : \pi^{G,n}(k^1, e^1) > \pi^{G,e}(k^1, e^1)$*. For such a best response,* $k^2 > k^*$*.*

Proof. Part 1: If there is no e^1 such that the no-entry action provides a larger payoff, then any mix $e^1 < 1$ is strictly dominated by playing only entry, $e^1 = 1$. If no-entry is played, it must be $\pi^{G,n}(k^1, e^1) \geq \pi^{G,e}(k^1, e^1)$.

Part 2: The expected payoff is $e^1\pi^{G,e} + (1 - e^1)\pi^{G,n}$. From the first order condition, in the interior equilibrium, $\pi^{G,e} - \pi^{G,n} + (1 - e^1)\partial\pi^{G,n}/\partial e^1 = 0$. We know that $\pi^{G,e} - \pi^{G,n} < 0$, so we need $\partial\pi^{G,n}/\partial e^1 > 0$. From the analysis of no-entry payoff $\pi^{G,n}$ above, it implies $p^2 > \xi^* = \alpha/(\alpha + \beta)$, i.e. $k^2 > k^*$. Figure 2 illustrates. □

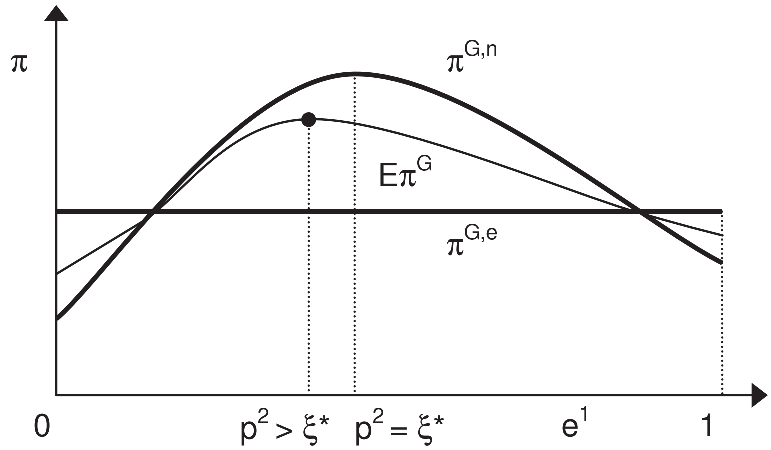

Figure 2: The expected payoff of the government

From Lemma 2, we shall concentrate on $\pi^{G,n} - \pi^{G,e} > 0$. This is captured by the following inequality:

$$\delta \left\{ \left[\underbrace{S(K(\xi^2)) - S(\bar{k})}_{-} \right] + \frac{\beta}{\alpha} \left[\underbrace{L(\bar{k}) - L(K(\xi^2))}_{+} \right] \right\} > S(K(\xi^1)) + L(K(\xi^1)) \tag{13}$$

The equation (13) provides comparative statics on the existence of the strategic delay. We may argue that a strategic delay is more likely with (i) patience (large δ); (ii) weakness in bargaining (large β/α); and (iii) relatively pessimistic initial prospects of entry, hence minor hold-up problems (low prior belief, p^1). Most importantly, since β/α spans an entire space of $\mathbb{R}^+$, the strategic delay is always available if a bargaining position of the government vis-a-vis the club is sufficiently weak, $\alpha \to 0$.

The final step is to examine optimization of the firm in the very first step, when installing the initial amount of capital, k^1. The expected payoff of the firm across both periods is a linear combination of payoffs for entry and no-entry in period 1, $\pi^{EMU,e}$ and $\pi^{EMU,n}$, with probabilities $\xi^1 = p^1e^1$ and $1-\xi^1 = 1-p^1e^1$.

$$\pi^{EMU,e} = s(k^1) + \delta s(\bar{k}) \tag{14}$$

$$\pi^{EMU,n} = -l(k^1) + \delta[\xi_2 s(k^2) - (1-\xi_2)l(k^2)] \tag{15}$$

Clearly, $\pi^{EMU,e} > \pi^{EMU,n}$. Next, notice that a larger investment now makes entry now more attractive,

$$\xi^1_k \equiv \frac{\partial \xi^1}{\partial k^1} = \frac{\partial e^1 p^1}{\partial k_1} = e^1_k p^1 > 0 \tag{16}$$

The inequality $e^1_k > 0$ is derived from the best response $e^1(k^1)$, described in Lemma 2. A larger k^1 increases $\pi^{e,G}$, which increases the marginal benefit of an increase in e^1 relative to the marginal cost, hence e^1 increases. This is beneficial to the firm since entry in period 1 is always better then no entry. However, it also happens that delay as a signal becomes stronger, hence $\xi^2 = p^2$ declines and approaches ξ^*, so the firm becomes more cautious in the next period and reduces k^2 toward k^*.

Analytically, it is tedious to specify the optimal k^1 for the firm, but we may at least use how the payoffs behave as a function of k^1.

$$\pi^{EMU,e}_k = s_k(k^1) \geq 0 \tag{17}$$

$$\pi^{EMU,e}_n = \underbrace{-l_k(k^1)}_{-} + \delta[\underbrace{\xi^2_k(k^2)}_{+}\underbrace{(s_k(k^2) + l_k(k^2))}_{+}\ \underbrace{-l_k(k^2)}_{-}]\underbrace{\frac{\partial k^2}{\partial k^1}}_{-} <> 0 \tag{18}$$

Thus, for $\mathbb{E}\pi^{EMU} = \xi^1 \pi^{EMU,e} + (1-\xi^1)\pi^{EMU,n}$,

$$\mathbb{E}\pi_k^{EMU} = \underbrace{\xi_k^1(\pi^{EMU,e} - \pi^{EMU,n})}_{+} + \underbrace{\xi^1 \pi_k^{EMU,e}}_{+} + \underbrace{(1-\xi^1)\pi_k^{EMU,n}}_{+/-} <> 0 \quad (19)$$

By the equation (19), we cannot reject the possibility that the firm reduces initial investments below the maximal level, $\bar{k}$. Proposition 2 summarizes.

Proposition 2 *The sufficient condition for a perfect Bayesian equilibrium with $k^1 \leq \bar{k}$, $e^1 < 1$, $k^* < k^2 < \bar{k}$ and $e^2 = 1$ is*

$$\delta \left\{ \left[S(k^*) - S(\bar{k})\right] + \frac{\beta}{\alpha}\left[L(\bar{k}) - L(k^*)\right] \right\} > S(\bar{k}) + L(\bar{k}). \quad (20)$$

Proof. Part 1 ($e^1 < 1, k^2 > k^*$). We know that the government's payoff from entry increases in k^1. Hence, the sufficient condition for strategic delay is that if even the maximal payoff $\pi^{G,e}$, given by $\max k^1 = \bar{k}$, is not enough to prevent the government from delaying strategically. The other parts are from Lemma 2.

Part 2 ($k^1 \leq \bar{k}$). In the term $\pi_k^{EMU,n}$, we may use that for a very large e^1 ($e^1 \to 1$), posterior belief is very small ($\xi^2 = p^2 \to 0$), hence k^2 is also very small ($k^2 \to \underline{k}$), and the marginal loss declines, $l_k \to 0$. As a result, above some e^1, $\pi^{EMU,n}$ must be falling in k^1. An increasing e^1 however also decreases $1 - \xi^1 = 1 - p^1 e^1$, so the effect of the falling $\pi^{EMU,n}$ is diminished.

Since $\pi^{EMU,e} > \pi^{EMU,n}$), and $\mathbb{E}\pi_k^{EMU} > 0$, the maximal expected payoff for the firm would be delivered if $\xi^1 = 1$. Thus, by continuity of $\mathbb{E}\pi^{EMU}$, we have for $\xi^1 \to 1$ that the expected payoff $\mathbb{E}\pi^{EMU}$ must grow. The anticipation of entry is however restricted by the prior, $\xi^1 \leq p^1 < 1$, which may not be sufficiently close to 1 to assure that the expected payoff is increasing with probability one. As a result, we may not rule out that a local maximum $k^1 < \bar{k}$ on the domain $\xi^1 \in [0, p^1]$ (yet not global, on the domain $\xi^1 \in [0, 1]$) exists, and dominates $k^1 = \bar{k}$. Figure 3 illustrates. □

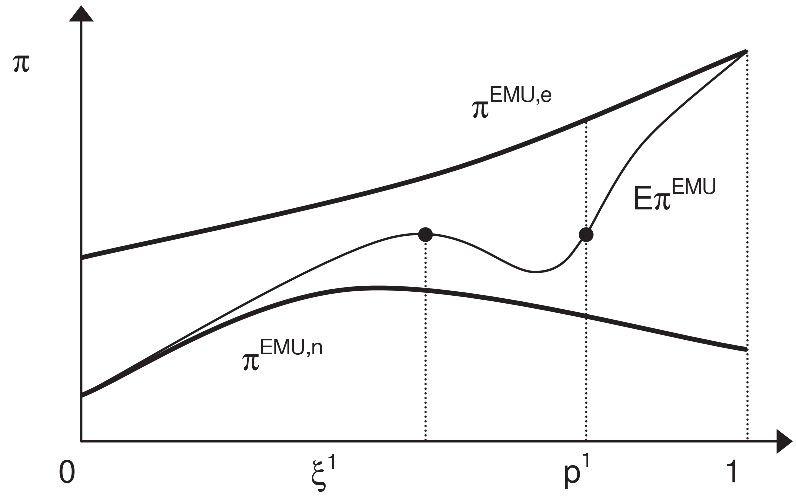

Figure 3: The expected payoff of the firm

The perfect Bayesian optimum is characterized by four interesting effects: (i) Bluffing in period 1 is *incomplete* in a sense that the firm is pushed to instal excessive $k^2 > k^*$, i.e. hold-up problem is *not fully eliminated* in the equilibrium. (ii) The opportunistic government eventually enters, $e^2 = 1$. (iii) In period 1, investments are large but the rate of entry is low, whereas in period 2, small investments come up with a large entry rate. (iv) The level of investment in period 1 may even exceed the amount optimal in the single period, $k^1 > K(\xi^1)$. This is due to the fact that the investment has other role than just balance the expected marginal benefit, $\xi^1 s_k$, and the expected marginal cost, $(1-\xi^1)l_k$; besides that, it also affects the entry level of the opportunistic government in period 1, and consequently, anticipation of entry in both periods, ξ^1 and ξ^2.

4 Currency crisis threats

An alternative in the international bargaining literature is to study only two parties, the country and the club. A prime example is Fahrholz (2007) who argues that the total benefits of the EMU membership can be redistributed by the strategic behavior of an applicant government prior to entry. The channel is a currency crisis threat in ERM-II.

The key problem in Fahrholz (2007) is that bargaining is not applied consistently throughout an entire game, and with consistent bargaining, crisis threats may don't provide any extra bargaining leverage to the entering countries. Even more importantly, one may qualify the core assumptions embedded in this game, such as that soft-peg is costly for an applicant country but a subsequent crisis and exit is costless.

Asymmetric treatment of default costs warrants further analysis. On one side, currency crisis is costly for the eurozone, but on the other side, it is costless for the entrant, if he opts out from the EMU. The literature on the default costs of the country under attack suggests that default cost is twofold; one is the cost of defense and the other is the cost of failure to defend (Leblang 2003). The cost of defense is not controversial: defended parity may require interest rate hikes and economic contraction, borrowing reserves with increasing debt service requirements, and/or damages to international investment under capital controls.

More controversial is the absence of the cost of failure to defend. If currency crisis is costless under exit, as Fahrholz (2007) argues, then we simply presume zero cost of failure to defend. Zero default cost is nevertheless at odds with empirical evidence. Eichengreen and Rose (2003) estimated the cost to approximately one year of economic growth or three percentage points of GNP. A loss is due to several effects; a failure to defend the peg undermines macroeconomic stability and signals low credibility, leads to an increase in exchange rate volatility (especially when forward markets are thin), affecting cross-border trade and financial transaction, and decreases domestic consumption and investment.

An extra qualification is commitment to crisis. The analysis in Fahrholz (2007) rests on the ability to commit to a mix of actions 'crisis' and 'no crisis'. The problem may be that the decision (or announcement) to enter ERM-II is made by one government, but the decision to invoke a crisis is likely to be made by another government, if a political shock replaces the incumbent executive. In this case, we have to incorporate domestic political economy into international bargaining.

Among others, incorporating electoral cycle further undermines viability of an ERM-II threat. Electoral cycle literature suggests that a new government is more likely to devalue because (i) immediate devaluation allows to blame it on predecessors (Edwards 1996), and (ii) devaluation shifts income from individuals with a high propensity to spend to individuals with a low propensity to spend, namely redistributes from a majority to a minority of population, hence is costly before elections (Frieden, Ghezzi and Stein 2001). In this setup, it means that the applicant government is more able to commit to crisis if an electoral loss of an incumbent government is expected (i.e. if the cost of the failure from the perspective of the incoming government can be blamed on the predecessors). The more an incumbent government is expected to lose elections, the more able it is to threat the EMU.

A problem to this inference is that a government facing electoral loss will probably focus more on the domestic policy issues then on launching a complex international bargaining with gains accruing to domestic opposition. Another problem is that the EU anticipates the change, hence its response may be to make the country fail EMU conditionality, veto entry into ERM-II, and strategically wait for a new government to come and play the enlargement game anew.

Finally, partisan explanations of economic policy-making stress that the left-wing parties prefer low unemployment and income redistribution, whereas the right-wing parties tend to prefer price stability and total output (Alesina 1989). In this respect, left-wing parties face a relatively low default cost, hence should be more likely to induce a crisis, and strategically use ERM-II to promote national interests (i.e. receive a compensation). But is higher willingness to exploit ERM-II also a higher willingness to enter EMU? Under partisanship, we have to disentangle two relative benefits of completing the EMU enlargement, exploitation of the ERM-II, and membership in the EMU. If the Left is more willing to exploit ERM-II, but also less willing to be in the EMU as such, we may have in total a lower willingness to enter the EMU. The overall willingness will be a matter of arbitrary parameters. Partisanship is therefore not helpful, and perhaps even undermining the hypothesis of using ERM-II as a bargaining leverage.

5 Conclusion

This paper argues that delay of an entry to a monetary union might be a bargaining leverage aimed at securing benefits from entry. A pro-EMU government tends to strategically delay the EMU entry in order to bluff domestic firms and pretend to be a government that is principally opposed to entry. This remedies the hold-up problem, yet also brings a social cost of the absence of entry in period 1 as well as an undercapitalized economy.

Our key comparative statics condition states that this effect is more likely if (i) the government puts large emphasis on the future (good electoral prospect), (ii) is relatively weak in bargaining (small country), and (iii) the government is initially expected to be relatively pessimistic about the prospects of entry (conservative government). In the perfect Bayesian equilibrium, we also find that the hold-up problem is not fully eliminated in the equilibrium, and that the pro-EMU (opportunistic) government eventually enters.

This model with a pooling equilibrium is a viable complement to the established political economy of exchange rate where exchange rate reflects of shares of interest groups in the economy; here, we obtain a delay even for a single representative firm. Our approach also enriches the literature on the allocation of the EU expenditures, where voting weights seem to play a key role for the old members (Kauppi, Widgren 2004), but much less indicate net gains of the new members (Widgren 2006); our model suggests that an entry bonus or fee should be included among determinants of the budget, which may capture the unexplained differential.

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