Political uncertainty and monetary unions

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Abstract

The purpose of this article is to provide a political economy rationale that helps explain why some non-central European economies, featuring highly idiosyncratic disturbances and apparently low inflation bias inefficiencies, seem so eager to enter the European Monetary Union (EMU). The main message from the paper is that because these economies normally display a high degree of domestic political uncertainty, the "economic costs" arising from the decision to surrender monetary policy may in fact be less severe than the "political costs" of opting out of EMU and then possibly facing undesired inflation upsurges in the future.

Resumo

O objetivo deste artigo é sugerir um argumento de economia política que ajude a explicar porque alguns países periféricos da Europa, que apresentam choques econômicos altamente idiossincráticos, e que conseguiram controlar o problema do viés inflacionário recentemente, apresentam elevado desejo de ingressar na União Monetária Européia. A principal mensagem do artigo é que, devido ao elevado grau de incerteza e polaridade política presentes nestas economias, os "custos econômicos" de se delegar hoje a política monetária a um agente externo, podem se mostrar menores que os "custos políticos" de não adesão caso um governo com preferências inflacionárias mais amenas venha a vencer as eleições futuras.

Key Words: Monetary Union, Monetary Policy, Political Polarization.

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1. Introduction.

The official launch of the Euro in 1999 was surrounded by a great deal of controversy and skepticism — amid both academic economists and policymakers — regarding the future of the fledgling European Monetary Union (EMU). Many doubts were raised about the alleged economic and political benefits stemming from such a broad monetary arrangement (see for instance Feldstein (1997) and Alesina et al (2000)).

The academic literature on this subject, dating at least from Mundell’s (1961) seminal article, entails many different and broad sub-areas of economic research. The current paper, however, focuses solely on the so-called monetary aspect of the debate. More precisely, it presents a coherent political economy rationale for understanding the reasons why some countries prefer to give up their monetary sovereignty, delegating its management to a supra-national agent who maximizes the welfare of a distinct jurisdiction: the union.

Since Kydland and Prescott’s (1977) remarkable contribution, which became popular amongst macroeconomists after Barro and Gordon (1983) and Rogoff (1985) papers, the debate over optimal monetary policy has become quite inseparable from the rules versus discretion dichotomy.

Rogoff (1985) contributes significantly to this debate by demonstrating that a second-best equilibrium may also be attained under discretion (where the economy normally attains only a third-best). The necessary condition for this result to hold is that the appointed central banker be more inflation-averse than society, one paying little attention to the output gap\(^1\). Nevertheless, if one considers a stochastic environment where an economy featuring non-contingent

\(^1\)However, Canzoneri (1985) shows that Rogoff’s solution may break down if the Central Bank has private information about the shocks hitting the economy.
nominal contracts à la Fisher (1977) is hit by important shocks unan-
ticipated by the private sector, counter-cyclical monetary policy can
actually play an important role in improving social welfare. In other
words, a superior outcome can be achieved by adjusting the rate
of inflation (central bank’s choice variable) in accordance with the
nature and magnitude of the mentioned shock.

Alesina and Grilli (1992) combine Barro and Gordon’s struc-
ture with Rogoff’s idea to analyze in what circumstances it would
be optimal for a country to surrender monetary autonomy by en-
tering a monetary union. Broadly speaking, their model rests on a
cost-benefit analysis directly linked to the output stabilization - in-
flation bias tradeoff. The two very intuitive conclusions drawn from
their paper are: (a) countries with difficulties to develop credible
institutions that effectively cope with acute inflation bias inefficien-
cies would profit from “importing” ECB’s anti-inflationary credibil-
ity and; (b) If the shocks hitting both jurisdictions (country and
union) are not highly correlated and/or differ significantly in their
variances, joining the union will clearly entail an important stabi-
lization cost for the country.

Although ingenious, Alesina and Grilli’s model does not seem
suitable to explain two important stylized facts in the EMU context.
First, what are the advantages for a country with respectable anti-
inflationary credibility, like Germany for instance, to take part in a
Monetary Union? Second, why should economies featuring business
cycles fluctuations completely unsynchronized with the union’s cy-
cles and that, in addition, managed to minimize the inflation bias
problem more recently, be so eager to join in?

It is now amply recognized that many European countries with
poor inflation records improved their monetary performance consid-
erably during the nineties, being Portugal, Italy and Spain three
striking examples. Moreover, some important empirical articles
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(Eichengreen (1990) and (1991); Eichengreen and Bayomi (1993)) have reached almost unanimously the conclusion that the shocks hitting these and other non-central economies are highly idiosyncratic and therefore uncorrelated to the union's disturbances.

The purpose of this paper is hence to lay down a model that, taking this empirical evidence into consideration, provides a reasonable justification for the decision of some peripheral European countries to enter the EMU. Therefore, the endeavor is to provide a satisfactory answer to the second query listed above.

The core idea of this paper is that, when faced with politically uncertain domestic environments, countries that wouldn't normally surrender monetary policy following Alesina and Grilli's "criterion", might otherwise choose to do so in order to lock in recent inflation gains for good. More precisely, it will be shown that a conservative incumbent (yet to be defined) may rationally decide to give up its monetary sovereignty if the degree of domestic political uncertainty and polarization are excessively high.

The intuition behind this result is simply that the net "economic cost", stemming from the loss of the stabilization role of monetary autonomy today, is possibly less pronounced than the future expected "political cost" of opting out initially should the conservative incumbent be replaced by a less inflation averse government after elections\(^2\). I thus follow the partisan approach put forward by Alesina (1987) and consider the existence of two different types of government, conservative and non-conservative (or right-wing and left-wing). To put the intuition differently: if a conservative incumbent were sure to be re-elected for a second term in office, it would

\(^{2}\)I assume throughout that the decision to enter the Monetary Union has to be made initially and that, due to a high fixed exit cost, is irreversible. Of course, if exiting were not too costly, the mechanism here suggested would not work as a credible commitment because any future left-wing government could easily renege and drop out of the union.
be pointless from its perspective to delegate monetary policy to the European Central Bank (ECB). This follows from the fact that there are few credibility gains and large output stabilization losses inherent to the delegation of monetary policy when the inflation-averse type is likely to remain in office. However, because an opposition party would implement a very distinct and undesirable policy from its perspective, the incumbent would not be willing to say no to an EMU invitation if it reckons a high probability of losing future elections.

In a sense, the model resembles the intuition found in Persson and Svensson (1989), Alesina and Tabellini (1990) and Cukierman, Edwards and Tabellini (1992) contributions. These authors highlight the notion that it may be optimal for an incumbent to set its fiscal policy in a fashion that constrains future governments' abilities to implement their most preferred choices. It is worth noting that the present paper bears the same type of political economy argument: even if it is costly for some countries to adhere to the Monetary Union on purely economic grounds, this may be the unique commitment technology available which guarantees that even worse outcomes do not materialize in an uncertain political future.

The rest of the paper is organized as follows: section 2 lays down a simple model of Monetary Unions à la Alesina and Grilli; in section 3, I extend this framework by introducing political uncertainty in a two-period model, and section 4 concludes with some final remarks.

2. A simple model.

In this section I lay down a simple framework à la Alesina and Grilli (1992) that will be used as a starting point for the extended model with political uncertainty later discussed in the paper.

3For a closely related article, see Alesina and Gatti (1995).
2.1 Preferences.

Following the tradition in this literature, government’s preferences are represented by the quadratic loss function:

\[ L = (\pi)^2 + b (y - \bar{y})^2. \]  

(1)

where:

The inflation target has been normalized to zero to simplify algebra.

\( y \): is the rate of economic growth that follows directly from an expectation-augmented Phillips curve,

\[ y = \pi - \pi^E + \xi; \]  

(2)

\( \pi \): is the rate of inflation chosen by the government;

\( \pi^E \): represents the rationally formed private sector’s inflation expectation;

\( b \): is the relative weight attributed to output stability \( \text{vis-à-vis} \) the inflation term;

\( \bar{y} > 0 \): is the abnormally high rate of economic growth pursued by the government;

\( \xi \): represents a white-noise disturbance hitting the Phillips Curve, \( \xi \sim N(0, \sigma^2) \).

The union displays a similar loss function:

\[ L_u = (\pi_u)^2 + b_u (y_u - \bar{y})^2. \]  

(1')

Where:

\( b_u \) is the relative importance the union ascribes to output stability;
The rate of economic growth is again given by a Phillips Curve:

\[ y_u = \pi_u - \pi_u^E + \eta. \]  

(2')

\( \eta \) is a normally distributed shock with zero mean and the same constant variance, \( \sigma^2 \).

I assume throughout that both the country’s and the Union’s monetary authorities minimize (1) and (1'), respectively. Hence there is no relevant distinction between the terms “government” and “monetary authority” in this article.

In this kind of model it is commonplace to assume that some type of friction – presence of strong unions, distorting taxes, etc – renders the rate of potential economic growth suboptimally low. This is the underlying reason behind government’s motivation to pursue \( \bar{y} \) instead of zero (the normalized natural rate of economic growth).

2.2 Solution.

The solution concept used is backwards induction, which ensures subgame-perfection and rules out noncredible promises. The country and the union thus minimize (1) and (1'), subject to (2) and (2') and to the fact that expectations are rationally formed before shocks take place.

The timing of events can be sketched as follows:

\[ \pi^E \quad \text{shocks:} \xi \quad \pi \]

The first-order conditions for both minimization problems are:

\[ \pi = b\bar{y} - \frac{b\xi}{1 + b} \]  

(3) and  

\[ \pi_u = b_u\bar{y} - \frac{b_u\eta}{1 + b_u} \]  

(3')
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Note that both \( \pi \) and \( \pi_u \) are comprised of two distinct terms: the inflation bias term and the stabilization one. It is also easy to see that the public's inflation expectations are expressed by:

\[
\pi^E_u = b_u \bar{y} \quad (4') \quad \text{and} \quad \pi^E = b \bar{y} \quad (4)
\]

I assume the optimal inflation contingent rules \( \pi = -\frac{b \xi}{(1+b)} \) and \( \pi_u = -\frac{b_u \eta}{(1+b_u)} \) are unfeasible in these economies although they clearly generate a second-best equilibrium in both economies (the latter is true because the inflation bias is suppressed and the stabilization role of monetary policy is not hindered).

The output stabilization-inflation bias tradeoff emerges visibly after substituting (3) in (2) and computing the variance of output, \( \sigma^2_{\text{output}} = \frac{\sigma^2}{(1+b)^2} \). Clearly, as \( b \to 0 \), the inflation bias problem is eliminated only at the cost of higher output variance.

2.3 Welfare analysis.

I now proceed to the fundamental welfare implications related to the delegation of monetary policy to a "tougher" external agent when there is no domestic political uncertainty. Assuming the Country has to decide whether or not to delegate monetary policy before the realization of shocks, the formula expressing the expected loss from maintaining monetary sovereignty is:

\[
E (L) = b^2 \bar{y}^2 + b \bar{y}^2 + \left( \frac{b}{1+b} \right)^2 \sigma^2 + b \left[ \left( \frac{b}{1+b} \right)^2 \sigma^2 + \sigma^2 - \frac{2b}{1+b} \sigma^2 \right] (5)
\]

This expression is obtained after substituting (3) in (2) and then (3) and (2) in (1). Now, if the Country instead decides to join in, its expected loss function is given by:
\[ E(L_u) = b_u^2\bar{y}^2 + b\bar{y}^2 \]
\[ + \left( \frac{b_u}{1 + b_u} \right)^2 \sigma^2 + b \left[ \left( \frac{b_u}{1 + b_u} \right)^2 \sigma^2 + \sigma^2 - \frac{2b_uE(\eta\xi)}{1 + b_u} \sigma^2 \right] \]

(5')

In the adherence case, it is necessary to substitute (3') into (2) and then both of them in (1). Obviously, a country will opt to adhere if and only if \( E(L) - E_u(L) > 0 \). Subtracting (5) from (5') and manipulating, one readily reaches:

\[ E(L) - E(L_u) = (b^2 - b_u^2)\bar{y}^2 + (1 + b) \]
\[ \left[ \left( \frac{b}{1 + b} \right) - \left( \frac{b_u}{1 + b_u} \right)^2 \right] \sigma^2 - \left( \frac{2b^2}{1 + b} - \frac{2bb_u \rho}{1 + b_u} \right) \sigma^2 . \]

(6)

Where \( \rho \) is the correlation coefficient between \( \xi \) and \( \eta \) and can assume any value in the interval [-1;1] because there is a possibility that cycles are negatively correlated (therefore we do not use absolute value).

In the interesting case, where \( b > b_u \), the first term on the right-hand side of (6) represents the benefit from "importing" ECB’s anti-inflationary credibility. The second (positive) and the third (negative) terms both refer to the stabilization role of monetary policy.

The benefit implicit in the second positive term derives from the fact that, \textit{given variances are assumed to be equal}; a lower \( b \) translates into a lower inflation variance, which, \textit{ceteris paribus}, leads to an increase in welfare. Clearly, this alleged benefit has to be balanced against the more intuitive stabilization cost embodied in the third term of (6). This cost stems from two separate sources:
first, $\rho$ a smaller than one means disturbances probably hit the two jurisdictions (country and union) at different moments in time. It follows that even if these shocks have identical mean and variance, the ECB’s stabilization policy will certainly be carried out at an undesired moment from a country’s perspective. Secondly, even if $\rho = 1$, the magnitude of the desired stabilization policy still varies across different preference parameters $b$. In practice, this means the ECB will never be stabilizing enough from a country’s viewpoint.

Now, in order to pave the way for next section’s extension of this basic framework, let’s assume that a so-called “conservative” has initially been appointed to preside over the country’s monetary authority. More specifically, let the country’s conservative government preference parameter be as low as the union’s ($b = b_u$). Would there be, in this case, any concrete advantage for the country in delegating its monetary policy to the ECB? A slightly modified equation (6) provides an unambiguously negative answer to this question. Substituting $b = b_u$, we have:

$$E(L) - E(L_u) = -\left(\frac{2b^2}{1+b} - \frac{2b^2}{1+b}\rho\right)\sigma^2 = -\frac{2b^2}{1+b} (1 - \rho) \sigma^2 \leq 0$$

(6')

The intuition of (5') is straightforward: when the gains from a reduced inflation bias in monetary policy are absent, delegating it to the ECB entails solely the stabilization cost due to the lack of perfect correlation ($\rho < 1$).

Evidently, the analysis so far lacks an important real world component, namely, that a conservative’s future in office is never guaranteed in a democratic regime. Moreover, its successor may very well be of a less inflation-averse type, a quite realistic assumption for non-central European countries. I thus pose the following fundamental question: what if the conservative incumbent estimates a
high probability of being replaced by a government with little distaste for inflation, one that surely would pursue more inflationary policies during its own term in office? Should this influence the decision of whether or not to tie its own (as well as the future government’s) hands by joining the Monetary Union up-front? In the next section I show this may indeed be its best “long term” strategy even for low values of $\rho$.

3. Political uncertainty.

Here I extend last section’s model to cope with the possibility that today’s incumbent is replaced (in a second period) by a less inflation averse government.

3.1 Preferences.

As has already been mentioned, there are two types of potential incumbents, differing simply in the relative importance attributed to the output stabilization term. More specifically, let’s assume the first period incumbent is a conservative, and let $b_c = b_u = 1 < b_{nc}$.4

Definition: The degree of political polarization is given by the ratio $\frac{b_{nc}}{b_c}$, which due to the previous normalization is equal to $b_{nc}$.

3.2 Uncertainty.

Since $b_c$, $b_{nc}$ and $b_u$ are common knowledge parameters, the unique source of uncertainty in this model is the distribution of voters’ preferences. Drawing on Alesina (1987), it is assumed the conservative incumbent is re-elected for a new mandate with an exogenous probability $q$.

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4The subscripts nc and c stand for non-conservative and conservative, respectively. The normalization made aims to simplify algebra; none of the results are altered if the parameters $b_c$ and $b_u$ are different from one.
3.3 Timing.

The sequence of events is as follows: at the beginning of the first period, the Country is called upon to decide whether or not to surrender monetary policy. At the end of this same period, elections are held and the incumbent remains in office during the last period with probability $q$. Based on this information, on the correlation of shocks and on the degree of political polarization, the conservative incumbent will balance the "economic costs" of adherence (due to imperfect monetary stabilization) against the second-period expected "political cost" of autonomy.

3.4 Solution.

Clearly, a conservative will choose for the Monetary Union whenever the present value of the loss function associated with adherence is smaller than the present value of the loss function associated with autonomy. Algebraically:

$$E (L_u) + \beta E (L_u) \leq E (L_c) + \beta \{q E (L_c) + (1 - q) E (L_{nc}) \} \quad (7)$$

Where $\beta$ is the intertemporal discount rate.

Manipulating (7) one gets to:

$$(1 + \beta) \cdot \{E (L_u) - E (L_c)\} \leq \beta(1 - q) \cdot \{E (L_{nc}) - E (L_c)\}. \quad (8)$$

After substituting $b_c = b_u = 1$ in (6), the left-hand side of (8) becomes: $\sigma^2 (1 - \rho)(1 + \beta)$.

Similarly, an expression for the right-hand side can be reached using equation (5) twice. First one replaces $b$ in that equation for
$b_c = 1$ to get to $E(L_c)$, and then the same operation is made replacing $b$ for $b_{nc}$ to yield $E(L_{nc})$.

After this tedious but simple algebra, the right-hand side of (8) can be written as: $\beta. (1 - q) \left[ (b_{nc}^2 + b_{nc} - 2) \bar{y}^2 + \left( \frac{b_{nc}}{1+b_{nc}} - \frac{1}{2} \right) \sigma^2 \right]$. It is worth noting that since $b_{nc} > 1$, this expression is unequivocally positive.

Plugging the above expressions back in (8), one sees that an optimizing conservative will prefer to incur the “economic cost” of losing monetary autonomy whenever:

$$\sigma^2 \leq \frac{\beta. (1 - q) \cdot (b_{nc}^2 + b_{nc} - 2) \cdot \bar{y}^2}{(1 - \rho) \cdot (1 + \beta) - \beta. (1 - q) \cdot \left( \frac{b_{nc} - 1}{2 \cdot (1+b_{nc})} \right)}. \quad (8')$$

Moreover, because this inequality comes directly from (7), it is simply a restatement that the expected present value of the adherence loss function is smaller than the expected present value of the autonomy loss function. To put it differently, the “economic” cost of adherence is smaller than the expected “political” cost of autonomy if (8) holds.

Fortunately, this inequality certainly holds for some finite value of the political polarization parameter, $b_{nc}$. To prove this, note first that because $\sigma^2$ is positive, the right-hand side of (8) has also to be positive. But, given that $b_{nc} > 1$, the numerator is undoubt­edly positive. Furthermore, we assume the denominator is positive based on the evidence that $\rho$ is not too high. To see why, note also that because $\left( \frac{b_{nc} - 1}{2 \cdot (1+b_{nc})} \right) < 1$, the denominator is surely positive if $(1 - \rho) \cdot (1 + \beta) > \beta. (1 - q)$. Since the right-hand side of this last inequality is smaller than 1, and $(1 + \beta) > 1$, this will be true if $\rho$ is not too high (a reasonable assumption according to the empirical findings reported in the introduction).
Finally, it is easy to see that if the right-hand side of (8') is positive, it is increasing in $b_{nc}$ and, therefore, there exists a finite $b_{nc}$ that renders it greater than $\sigma^2$.

It is also worth noting that higher values of $\rho$ render it more likely that a country will opt for the union. The intuition is trivial: a higher shock correlation moderates the economic costs of delegating monetary policy.

For concreteness, define $b_{nc} = b_{lim}$ the level of political polarization for which (8') is binding. In notation:

$$\sigma^2 = \frac{\beta \cdot (1 - q) \cdot (b_{lim}^2 + b_{lim} - 2) \cdot \bar{y}^2}{(1 - \rho) \cdot (1 + \beta) - \beta \cdot (1 - q) \cdot \left( \frac{b_{lim} - 1}{2 \cdot (1 + b_{lim})} \right)}.$$  \hspace{1cm} (9)

Based upon (9), and assuming that in a "tie" the government opts for the Monetary Union, I now establish the two main propositions of the paper:

*Proposition 1:* The worse re-election prospects are, the smaller the degree of political polarization needed for a conservative to opt for the Monetary Union.

$$\delta \left\{ \frac{\beta \cdot (1 - q) \cdot (b_{lim}^2 + b_{lim} - 2) \cdot \bar{y}^2}{(1 - \rho) \cdot (1 + \beta) - \beta \cdot (1 - q) \cdot \left( \frac{b_{lim} - 1}{2 \cdot (1 + b_{lim})} \right)} \right\} < 0 \quad \text{and}$$

$$\delta \left\{ \frac{\beta \cdot (1 - q) \cdot (b_{lim}^2 + b_{lim} - 2) \cdot \bar{y}^2}{(1 - \rho) \cdot (1 + \beta) - \beta \cdot (1 - q) \cdot \left( \frac{b_{lim} - 1}{2 \cdot (1 + b_{lim})} \right)} \right\} > 0 \quad \Box$$

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The flip side of the above proposition is that, for a given value of $b_{lim}$, if a conservative has a high probability of remaining in office, a pro-EMU stance is very unlikely to prevail. In the limit, when $q = 1$, a conservative will never delegate monetary policy (the right-hand side of (8) becomes zero).

**Proposition 2:** In a less polarized political spectrum, only when shocks are more correlated, a conservative will decide to adhere to the Monetary Union. In the limit, when $b_{nc}$ equals 1, it will always be optimal to remain out of the Union (the right-hand side of (8') becomes zero).

\[
\begin{align*}
\delta & \left\{ \frac{\beta.(1-q).(b_{lim}^2+b_{lim}-2).\bar{y}^2}{(1-\rho).(1+\beta)-\beta.(1-q).\frac{b_{lim}-1}{2.(1+b_{lim})}} \right\} < 0 \quad \text{and} \\
\delta & \left\{ \frac{\beta.(1-q).(b_{lim}^2+b_{lim}-2).\bar{y}^2}{(1-\rho).(1+\beta)-\beta.(1-q).\frac{b_{lim}-1}{2.(1+b_{lim})}} \right\} > 0
\end{align*}
\]

More generally, as the degree of political polarization withers away, it gets harder for the decision to take part in the Monetary Union to be optimal. In other words, the combination of the remaining model parameters has to be too "favorable" if one is to understand a country willingness to join the EMU.

4. Conclusion.

The present model is a contribution to a more thorough understanding of why some non-central European countries seem so eager
to enter the EMU. In order to explain their decision to adhere even when their shocks are highly unsynchronized with the union's, this paper proposes an extension of Alesina and Grilli's (1992) model, one that relies on the presence of domestic political uncertainty and polarization. By resorting to the rationale suggested here, it is possible to enlarge the set of countries that would profitably join the EMU.

In sum, the general message from the model should be read as follows: countries where political preferences towards inflation are "tough" and do not vary substantially across the political spectrum have few incentives to enter the EMU; whereas conservative governments in countries where distaste for inflation is not much widespread through the political realm, may opt to become EMU members in a deliberate attempt to lock in recent inflation gains.

A possible extension of this model would be to treat the probability of re-election, \( q \), as an endogenous parameter. This modification would make more sense in a setting where politicians are office-motivated instead of partisan. In this modified framework, it may be interesting to analyze how the decision to join the EMU might affect the prospects of succeeding in forthcoming elections.


References


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