



Regime switches under policy uncertainty in monetary unions



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ABSTRACT

This paper analyzes the effects of policy uncertainty on the stability of a monetary union. Focusing on peripheral countries, we study how uncertainty over the consequences of a possible exit affects regime switches. Applying game theory and a cost-benefit analysis, we model a regime switch as the endogenous result of a two-stage policy game. We find that the effects of uncertainty are not trivial. Unilateral exits are less probable, but contagion is more likely to be observed. Our results are driven by two opposite forces: a traditional conservative effect induced by policy uncertainty in a single policymaker framework, which calls for more stability, and a strategic effect, arising from the strategic interaction, which may undermine the monetary union's foundation and strengthen incentives for contagion.

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1. Introduction

The European crisis is the focus of a growing body of literature. A relevant portion of these studies has been devoted to explaining the stability of exchange rate agreements and the contagion phenomena across countries belonging to the European Economic and Monetary Union (EMU). Our paper aims to contribute to this literature by concentrating on the effects that policy uncertainty have on the monetary union's stability.

There is much uncertainty regarding the economic consequences stemming from the exit of one country from a monetary union. The costs and benefits of a unilateral return to a national currency are not easily predictable since the shift and resulting devaluation represent a regime change.¹ Therefore, focusing on peripheral countries, we aim to study how this uncertainty could affect the potential decision to abandon the common currency by a member hit with a specific shock, as well as the effects of this uncertainty on the probability of contagion to other countries.

We use the exit/contagion simple policy game, developed by Canofari et al. (2015a). This model focuses on peripheral countries in a monetary union and highlights the forces supporting exit and contagion. It considers both shocks and strategic interactions as determinants of exit and contagion. Canofari et al. (2014b) apply the model to the specific case of the EMU. They assume heterogeneous countries and compute the contagion probability of Greek exit to other peripheral countries (i.e., Spain, and Italy). Both Canofari et al. (2014b) and Canofari et al. (2015a) assume that policymakers can precisely predict the effects of their choices.

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¹ E.g., the outcome of a devaluation is subject to uncertainty because of the response of domestic interest rate to relevant fluctuations in exchange rate (Delli Gatti et al., 2007). See also Beckmann and Czudaj (2016).

Our paper extends [Canofari et al. \(2015a\)](#) to account for policy uncertainty. Following [Canofari et al. \(2014b, 2015a\)](#), we model the choices of staying or exiting the monetary union as a two-stage policy game.² In the first stage, which we define as “political,” governments should decide the regime to which it aims to belong. In the second stage, which we define as “macroeconomic,” governments set their devaluation rates based on their first stage decision. By deciding to exit or not, the government needs to weigh the costs associated with membership in the EMU with the costs of leaving the common currency. Their cost-benefit analysis should take into account their expectations regarding how other governments might react. The novelty of our contribution is that we introduce uncertainty over the effects of devaluation policies in the second stage. In other words, governments should decide to exit or stay in the monetary union while facing uncertainty over the cost of exit.

After the Greek crisis, the stability of a monetary union, has in fact become an “hot topic.” Therefore, there are many papers related to our work. There is also a lot of literature on policy uncertainty. However, few studies apply this literature to the specific case of monetary union stability. As such, we aim to fill the gap in our understanding of the topic.

Related to our work, there exists a good amount of literature about crises of fixed-exchange rate regimes, which emphasizes the role of credibility, expectations, strategic interactions, and policy trade-offs.³ Recent works attempt to adapt and extend the insights of this literature to monetary unions. For instance, [De Grauwe and Ji \(2012\)](#) present a model of the EMU sovereign crisis inspired by the [Obstfeld \(1994, 1997\)](#) model for self-fulfilling speculative attacks. The idea is based on the policy trade-off governments face between output falls and devaluation. The incentive to break the peg increases with falling output and the rising unemployment. As speculators are aware of this trade-off, after a negative shock, they demand higher interest rates to offset the emerging devaluation risk. However, higher interest rates often lead to falls in output and self-fulfillment of the regime’s collapse.

Drawing from the sizable literature on exchange rate crises, [Arghyrou and Tsoukalas \(2011\)](#) argue that the Greek crisis can be interpreted as the result of a deterioration of Greek macroeconomic fundamentals between 2001 and 2009 to levels inconsistent with long-term EMU participation. They also emphasize the vulnerability of the EMU, arguing that the risk of contagion to other peripheral EMU countries is relevant. [Alessandrini et al. \(2014\)](#) arrived at similar results. In a strategic setting, the already mentioned works of [Canofari et al. \(2014b, 2015a\)](#) show how a country-specific shock can spread from one country to others. They consider international trade as a channel through which contagion can arise. In these frameworks, the incentive to leave the monetary union is connected to the possibility of achieving output gains by devaluing the exchange rate.

The above studies assume the effects of exit policies are known. For instance, agents (e.g., countries or governments) know the exact effects of exchange rate devaluations that can result from leaving a monetary union. Notwithstanding, current debate often emphasizes the significant uncertainty over the effects of leaving a monetary union such as the EMU, and little attention has been devoted to this issue in the context of monetary unions and strategic interactions among its members.

Common wisdom is that policy uncertainty tends to make policymakers more cautious since more aggressive policies inject more variance into macroeconomic outputs (Brainard’s conservative principle).⁴ Therefore, one could expect uncertainty over effects of a unilateral exit to strengthen the monetary union’s stability, dissuading unilateral regime changes. However, the moderation result is not generalized ([Reinhart, 2003](#)). For instance, in a strategic context, uncertainty may lead to different outcomes, as moderation by one player may induce others to become more aggressive (e.g., [Di Bartolomeo and Giuli, 2011](#)).⁵ Hence, the effects of policy uncertainty on a monetary union’s stability are not trivial and deserve investigation.⁶

Our main findings are that the introduction of policy uncertainty leads to two opposite effects: a traditional conservative effect supporting regime stability and a strategic effect that may undermine the monetary union’s foundations, strengthening the incentives for contagion. Uncertainty makes it less likely to observe a unilateral exit from the monetary union. However, under reasonable circumstances, it increases the likelihood of contagion (unless uncertainty is very large or the central bank is very populist). The rationale rests in the fact that uncertainty implies less policy aggressiveness for the country hit by the shock (for which the traditional conservative effect dominates), but it makes the other countries more aggressive if the currency devaluates because of the strategic effect (which is not observed in the single decision-maker’s context). These effects are neglected when the outcomes of the exit are assumed to be perfectly forecastable.

The rest of the paper is organized as follows. [Section 2](#) briefly illustrates our setup. [Section 3](#) considers a monetary union and discusses the unilateral exit of a country after a specific shock and the possibility of contagion to other peripheral countries. [Section 4](#) extrapolates the effects of policy uncertainty on the probability of a country’s exit from the monetary

² A similar approach has been proposed by [Kohler \(2002\)](#) and van [Aarle et al. \(2004\)](#) for the creation of a monetary union and the formation of a policy coalition in the EMU, respectively.

³ A comprehensive and detailed analytical discussion of the existing theoretical literature on currency and financial crises can be found in [Piersanti \(2012\)](#).

⁴ [Brainard’s \(1967\)](#) argument represents an important milestone for understanding the behavior of monetary authorities. See, e.g., [Blinder \(1997\)](#), [Cecchetti \(1998\)](#), [Vickers \(1998\)](#), and [Goodhart \(1999\)](#).

⁵ Other counter-examples are provided by [Giannoni \(2002\)](#), [Söderström \(2002\)](#), and [Di Bartolomeo et al. \(2009\)](#).

⁶ The effects of different kinds of uncertainty on macroeconomic volatility are also emphasized by [Klomp and de Haan \(2009\)](#). See also [De Grauwe and SÉNégas \(2006\)](#).

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