THE ORIGIN OF FISCAL RULES

by

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Abstract

Austerity is one of the most controversial policies in Europe. Fiscal rules are a key political institution that entrench austerity as a permanent feature of government budgetary policy. These rules fix numerical targets to constrain government budgets under the assumption that, in the long run, this might help to prevent fiscal crisis. In the last 30 years, the number of countries using fiscal rules has exploded. This thesis studies the political process leading to the creation of fiscal rules. Contrary to previous research, this thesis considers explanations coming both from national and international politics. It is composed of three articles. The first uses time series analysis in a European panel to arbitrate between different mechanisms that could lead political actors to adopt fiscal rules. It finds that fiscal rules are strengthened when countries are facing fiscal stress over an extended period or when governments are in a position of relative weakness toward European institutions. The latter result suggests that fiscal rules might diffuse through coercive diplomacy. The second paper uses a process tracing approach to test the possibility that the creation of fiscal rules is driven by the coercive diplomacy of the IMF and the EU. Our conclusion is that the coercive diplomacy of these two actors explains a large proportion of all fiscal rules existing in the world today. The final paper takes this result and compares the impact of fiscal rules on debt and bond yields between those that are externally-coerced and those that are nationally-driven. The conclusion is that externally-coerced fiscal rules do not help to control government debt and favour fiscal gimmickry. The main conclusion of the thesis is that a large fraction of fiscal rules are the result of coercive diplomacy and that these rules are less efficient than those which result from national politics.
Lay Summary

There is an inherent tension between flexibility and rules in the government budget process. Stronger rules take budgetary power away from politics and reduce the risk that governments indebt their nations for partisan reasons. However stronger rules also imply that elected governments have less flexibility to react to unforeseen events, like economic or banking crises. In recent years the balance has been leaning toward less flexibility and more rules. This raises an interesting puzzle: why would politicians bind their own hand? This thesis studies a specific type of policy referred as fiscal rules that have spread rapidly in the last 30 years and that are used to bind the hands of politicians. Our work shows that these rules are often imposed on national government by international organisations and that they do not help to reduce government debt when imposed from the outside.
Preface

All the objectives, hypotheses, data collection, data analyses, statistical work and discussion of the results were solely done by Pascal Doray-Demers. The overall topic for this work stems from fruitful discussions with Martial Foucault. All chapters in this thesis are original work written by Pascal Doray-Demers, with Alan Jacobs providing manuscript edits.

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List of Abbreviations

EU: European Union
FR: Fiscal rule
IMF: International Monetary Fund
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Dedication

To Jacynthe

As long as we are together, no force in the universe can stop us.
Chapter 1: Introduction

Following the 2008-2009 financial crisis, questions regarding the origins and impacts of fiscal rules (FRs) have resurfaced. FRs can generally be recognized to encompass all policies that constrain governments’ budgets. The European answer to this crisis was to its FRs. The treaties that followed the crisis (namely the Six-Pack, the Fiscal Compact, and the Two-Pack) created new expenditure rules for EU members, semi-automatic sanctions for countries violating those rules, while forcing national governments to adopt FRs in their constitution or national laws. Broadly speaking, FRs have been promoted by international organizations as a way to control public spending and to limit politically induced deficit bias from governments. The International Monetary Fund (IMF) and the EU have been strong advocates of FR policies.

This thesis addresses two simple questions: (1) Why were Fiscal Rules (FRs) created? and (2) Did the process leading to the creation of FRs changed their impact? To answer the first question, we have opted to use European countries to test a large spectrum of hypotheses. We have tested different mechanisms addressed in the previous research on FRs and have innovated by including mechanisms from the diffusion literature. Chapter 2 applies a state-of-the-art time-series regression technique to arbitrate between plausible mechanisms. This chapter concludes that in the long run, fiscal stress may lead to more stringent FRs, and that FRs are often the result of a diffusion mechanism better known as coercion. Chapter 3 takes the coercion results and uses a process tracing approach to confirm the statistical results. This chapter also provides a look at the behaviour of two coercive agents, namely the EU and the IMF, and finds that coercion can explain the creation of a significantly large number of FRs. Building on these results, Chapter 4 compares FRs created in a coercive context to those driven by national politics. We conclude that
FRs created under coercion do not have the positive effects predicted by economic models, raising serious concerns about both European and IMF policies that impose FRs to national governments.

This thesis contributes to our understanding of FRs by going beyond the main results regarding FRs political origins and impact. To our knowledge, this is the first cross-method attempt to understand the origins and impact of FRs. Process tracings allowed us to confirm the important role played by the coercion mechanism, which would have been nearly impossible to demonstrate using regression techniques. An additional unexpected result that came out of our statistical analyses is the high level of bias resulting from the use of improper statistical tools. Classic panel estimators are known to behave improperly when applied to panels with a medium number of observations and time periods. In fact, when applied to EU FRs data, these techniques often provide biased estimates, often of the opposite sign. Undoubtedly, this raises significant questions about results obtained in previous research. By using newer estimators that are better adapted to the nature of the data, we believe that our analyses stand out from the current literature.

This thesis was developed as an iterative work, each step leading to the next. While there is a strong continuity between chapters 2 to 4, they were designed to be self-sustained papers. Chapter 2 is an exploratory step in which we arbitrate amongst alternative mechanisms, the most surprising conclusion being the key role played by coercion to explain FRs stringency. Chapter 3 uses a process tracing strategy to confirm this result. By extending the sample and using process tracing, chapter 3 provides strong evidence that the coercion results in chapter 2 are not driven
by a selection effect. Chapter 4 tests if FRs resulting from coercion behave differently to those originating from national politics.

This chapter positions our work in the existing literature and explains in specific what is the contribution of our work in the field. As mentioned previously, this thesis tries to answer two questions: (1) Why were Fiscal Rules (FRs) created? and (2) Did the process leading to the creation of FRs change their impact? Chapters 2 and 3 provide answer to the first question, while chapter 4 answers the second question.

1.1 Why are Fiscal Rules created?

While significant research has been done on FRs, most of this work focuses on their impacts—very little research exists regarding their origins. In general, the existing literature assumes that FRs have been created to solve government deficit bias. With this logic in mind, FRs should be created where and when deficit biases are the strongest. However, recent research seems to contradict this assumption. This section will first present the deficit bias argument and will then discuss some of its limitations. Second, using Debrun et al. (2008), we will present some of the key empirical results concerning the creation of FRs. Then, we will present key mechanisms from the diffusion literature that could explain the creation of FRs. Finally, we will present chapters 2 and 3 and show how they contribute to the existing literature.

1.1.1 The Deficit Bias Argument

The “deficit bias argument” is a misnomer. It would be more accurate to use the term deficit bias to describe a family of arguments. The reason for this is that many mechanisms have been
explored in the past to explain why governments tend to accumulate deficits. Early formulation of this argument can be traced back to Nordhaus and Buchanan’s work from the late 1970s. Since then, there has been a significant research agenda trying to identify the mechanisms that have driven the deficit bias. This research agenda has produced a significant number of theoretical formal models that could explain why political elites suffer from a deficit bias. However, many of those arguments have failed to be supported by data (Eslava 2011).

The early formulation of the deficit bias focused on the ideas that political elites would overspend to maximize their votes (Eslava 2011). The core assumption being that voters would reward an incumbent government who spends more. This argument has been contradicted by data on multiple occasions (Peltzman 1992, Eslava 2011). Moreover, this logic does not provide an explanation for the creation of FRs since governments have no incentive to bind their own hands.

A second formulation of the deficit bias focuses on the strategic interaction between political parties to explain why governments would overspend (Alesina and Tabellini 1990), the core idea being that incumbent governments will strategically manipulate national debt to influence the behaviour of the opposing party if they lose power. This formulation also failed to receive strong support from quantitative analyses. When it comes to FRs, this formulation also fails to provide a mechanism that could account for incentives to create FRs.

More recent formulations have been able to provide a rationale for the creation of FRs, by including a collective action dynamic to the model. While conserving the idea that individual
political actors tend to overspend, this formulation includes the idea that collectively, political elites have a vested interest in balancing the budget. This is often referred to as the common pool problem (Von Hagen and Hardan [1995]; Hallerberg and Von Hagen [1999]). The logic behind this argument is that government incomes constitute a common pool from which all policies are financed. Since there are a multitude of interest groups that promote an even more important number of projects in any given society, governments tend to overspend. Under the common pool formulation, FRs are one of the strategies that can be used to allow political actors to coordinate on a low deficit outcome. However, other strategies can be implemented. Hallerberg et al. (2009) proposes two forms of governance that can resolve the common pool problem. The delegation strategies consist in concentrating budgetary power in the hands of a single minister (either the minister of finance or the prime minister). In turn, this minister is responsible for coordinating all expenditures to ensure a balanced budget. The second type of governance, which consists of contracts, uses a negotiation process to fix a fiscal target to be respected by all members of the government. Numerical FRs, studied in this thesis, are a form of contract governance. Under this logic, FRs should be created when governments face a collective action problem. In the case of fiscal policy, the type of strategy used to resolve the collective action problem becomes highly dependent on the institutional settings and thus, FRs creation should be intrinsically linked to the institutional settings.

A second formulation that can explain why governments create FRs is anchored in the time inconsistency problem. The core idea is that governments have difficulties to commit to a balanced budget in the long run because their preferences change over time. This can be either the result of partisan politics (Alesina and Tabellini 1990) or the result of voters’ preferences
(Tabellini and Alesina 1990). In both cases, governments are unable to commit to long-term fiscal optimal strategy since any decisions taken at one point in time can be modified in subsequent periods. In both models, the optimal strategy in the absence of FRs is to use governments’ debt to bind the behaviour of future decision makers. In the first case, governments will use debt to bind the behaviour of future governments, and in the second case, voters overspend to constrain future voters. Under this logic, FRs allow to bind future political actors without having to increase the debt. Therefore, it is utility maximizing for governments to create FRs because they allow to commit to a long-term spending plan, which according to the design of the models, is the optimal solution.

Both sets of explanations provide an answer to explain why FRs are created. However, those mechanisms are centered on processes which are theoretically relatively stable overtime. As a result, those models do not provide clear indications about when FRs should be created. This question is of interest since the numbers of FRs have exploded in the past 30 years. A second issue is that there is a significant variation both in the form and in the stringency of FRs across countries. The common pool argument would provide an explanation for why countries with similar institutions would create similar FRs, but this explanation has its own limits. One aspect that the common pool argument cannot explain is why countries which are governed by an influential finance minister would adopt strong FRs given that such a finance minister can serve as a functional substitute to FRs. The time inconsistency formulation also fails to provide an explanation for this variation between countries as time inconsistency problems remain a relatively constant characteristic of all democracies.
One plausible explanation is that the variation in FRs stringency represents a variation in the
government budgetary surplus before the fiscal reform as an indicator for the strength of the
deficit bias, Bluth found that countries with a smaller deficit bias are more likely to adopt fiscal
rules, raising the possibility that the mechanisms associated with the deficit bias might not be the
main driving force behind the creation of FRs. At a minimum, there is a lot of variation in FRs
that the deficit bias models cannot explain.

1.1.2 Empirical Research on Fiscal Rules

Turning to empirical research, the seminal work of Debrun et al. (2008) proposes a
comprehensive analysis of FRs using quantitative tools to test the validity of different
hypotheses. While the paper itself focuses on the impact of FRs in the EU setting, they have
explored a larger set of hypotheses that could explain the creation of FRs. Here we use this
paper to provide an overview of those hypotheses.

The first observation they make is that the countries who had a larger deficit in 1995 have lagged
behind in the adoption of FRs. This can possibly suggest that the need to control the debt levels
might not have been the major driving factor behind the creation of FRs. Countries with a strong
budgetary position in 2005 were also the ones that have relied heavily on FRs.

Second, countries governed by a powerful finance minister with delegated budgetary power had,
on average, adopted FRs later than countries with a more fragmented government using political
agreement to control budgets. However, all countries did adopt FRs. They also found that
countries with more fragmented coalitions were more inclined to adopt and strengthen FRs.

Third, Debrun et al. (2008) have also tested the impact of government ideology and found no
significant relationship. However, by exploring the impact of national politics, they concluded
that FRs tend to be adopted or strengthened during election years. Nonetheless they were unable
to provide an explanation for this finding. They hypothesized that the incumbent government
could be trying to tie the hands of a future coalition, or that new governments may be enshrining
their fiscal platform into a formal setting.

Fourth, they have made an attempt to see if countries could learn from one another. To that
effect, they have developed a lagged index of FRs in other countries to measure the impact of
learning. Unfortunately, their index did not reach significant levels.

Fifth, they have found that the introduction of the EU fiscal framework had an impact on
national FRs. However, the mechanism remains unclear. Did the growth and stability pact force
countries to change their behaviour, or did these countries mimic what was happening at the EU
level? Chapter 3 will attempt to arbitrate among these two positions.

Debrun et al. (2008) raises a significant number of questions. How can a policy that is supposed
to reduce government deficit be uncorrelated with government finance? How important is the
role of institutions in the creation of FRs? Why are FRs created in election years if they are
independent from government ideology? Their results on learning and on the EU fiscal
framework suggest an international dynamic. How important are the roles of international
dynamics in the creation of FRs? One contribution of this thesis was to import the insight of the
diffusion literature to answer this specific question. The main thrust of this section has been to
illustrate that research on the origins of FRs has focused up until now on national explanations.
While some attempts have been made to include elements of international influence, these have
remained poorly attached to a theoretical framework and have neglected important mechanisms
like coercion. This points to a significant realm of possible explanations that have not seriously
been explored yet. The diffusion literature suggests five mechanisms that could explain how
policies diffuse from one country to another.

1.1.3 Diffusion Mechanisms

The diffusion literature proposes five mechanisms that could explain the stringency of fiscal
rules. Shipan and Volden (2008) have identified four types of diffusion of public policies:
learning, coercion, imitation, and competition. Dobbin, Simmons, and Garrett (2007) added a
fifth mechanism: socialization. Of interest is that not all these mechanisms apply to every type of
policy.

Economic competition does not seem to be compatible with FR policies. This mechanism can
function in two different manners: adopting a policy gives the country an advantage over its
competitors whereas not adopting a policy gives an advantage to the competitors. As an example,
countries liberalizing their economy can receive a boost in FDI (Foreign Direct Investment)
while countries resisting liberalization will progressively lose their FDI. The same cannot be said
for FRs as they do not provide direct economic advantages. Assuming they succeed in stabilizing
the debt of a given country, the increased stability could then improve economic perspectives. But to the best of our knowledge, there is no evidence that FRs have a positive impact on GDP or FDI. On the contrary, FRs can theoretically produce pro-cycle spending policies which in turn could be destabilizing for the economy (Eichengreen and Bayoumi 1994). At best, it can be shown that FRs improve credit terms. The possibility remains that fiscal rules help to gain access to credit from financial markets that carry lower interest rates (Poterba and Rueben 1999, Iara and Wolff 2010, Kriz and Johnson 2005). However, it remains well documented (Lane 2012) that before the crisis, all European countries had access to credit.

The orthodox version of the learning mechanism can also be rejected. Shipan and Volden (2008) have argued that for a learning process to happen it must be possible to observe the positive outcome from a policy. This mechanism is characterized by the fact that it depends on the resources that a political unit has to learn from other political units. Along these lines, Shipan and Volden (2008) have shown that small municipalities with few resources will tend to imitate instead of learn from the policies of bigger cities because they lack the resources to independently analyze the impact of those policies. Learning involves having to wait for the results of a policy to become compelling, or at least observable. Only then can studies be made to evaluate those policies. Contrary to other diffusion mechanisms, learning is a slow process and FRs have spread rapidly across the world. Also, there are still important debates about the impact of FRs and no definitive consensus has emerged yet. Without a clear outcome to learn from, the learning mechanism cannot operate. However, this does not exclude the possibility of actors believing that FRs have a positive impact. Assuming actors act on the unsubstantiated belief that
fiscal rules have a positive impact, the difference between learning and socialization becomes blurred.

The socialization mechanism focuses on shared beliefs among political actors as a result of a global political culture. In the case of FRs, both the EU and the IMF promote FRs as a norm of good governance. The socialization mechanism implies that the spread of FRs can be explained by national political actors either internalizing the norm or at least deciding to act in accordance with the norm. Simmons and Elkins (2004) has demonstrated that frequent inter-governmental meetings at multiple levels of office can transmit information, thus creating an opportunity to learn and persuade. Because of the density of its institutions, the EU is a perfect venue for such processes. Similarly, because of its involvement with governments around the world, the IMF could also be considered as an agent of socialization, keeping in mind that socialization rests on the idea that individuals’ ideas can evolve through social interactions. Nevertheless, both ideas and social interaction are extremely hard to observe, making the testing of the socialization mechanism quite tricky to demonstrate.

The mimicking mechanism consists of following the example of a leader without considering the outcome of the policy (Besley and Case 1995). As is the case in the learning process, this mechanism does not depend on the impact of the policy, that is the imitation process does not require actors to have internalized the norm like a socialization process. One could say that mimicking happens when a political unit mindlessly copies the policy of another. Along these lines, Shipan and Volden (2008) predicted that mimicking would be a rapid process of imitation while learning and socialization would take more time. Generally, under the mimicking
mechanism, smaller units will adopt the policies of more important ones. As an example, a small city might adopt the policies of a metropolis.

The final diffusion mechanism is coercion. It is normally used to characterize the relationship between the central government and its units (Simmons et al. 2006). The coercion mechanism rests on power-asymmetry through which stronger actors can impose their policy on weaker ones. This can be done by using military or economic threats, by controlling the access of weaker units to information and expertise Dobbin et al. (2007), or by promising rewards if the weaker unit complies. In other words, any attempt by a foreign agent, country or international organisation to modify the cost or benefits associated with a set of policies can be viewed as coercion. While the term and idea of coercion often have a negative connotation, they should not be viewed as such in this context. Coercion is simply a mechanism where one actor uses its leverage over another to push for its favoured policies. Though organisations that provide financial aid to countries that respect basic human rights are engaged in coercive behaviour, it would be difficult to argue that it is a negative phenomenon.

1.1.4 Chapter 2:
Chapter 2, using a panel of 28 European countries from 1990 to 2013, has investigated different theories to explain changes in national FRs, while paying attention to the role of economic and diffusion mechanisms to explain FRs stringency in Europe. To that effect, seven hypotheses were formally tested. First, we were interested to know if the financial market could influence FRs via the interest rate imposed on government borrowing. We found no relationship between government bond yield and FRs. Second, we tested the “war of attrition” argument formulated
by Alesina and Drazen (1989). The core of this argument is that in the short run, fiscal stress will prevent fiscal reform because no societal group is willing to bear the brunt of reform. Confrontation between different actors will persist until one group is able to implement its favoured reform. FRs might be strengthened in this context in an attempt to protect reform in the long run. This argument predicts that in the short run, fiscal stress will have negative or null effects on FRs stringency. However, in the long run, fiscal stress will lead to an FRs stringency increase. Both conditions were tested and supported by the data. Third, we tested the argument that coalition governments will use rule-based strategies to control public finance. However, we found no correlation between FRs and the presence of coalition governments. Finally, chapter 2 tests two diffusion mechanisms: socialization and coercion. Testing for a third mechanism, mimicking, is presented in the appendix of the chapter.

The core of the socialization argument is that policy changes can be driven by changes in the belief of political actors. In the case of the EU, national actors can be socialized to European norms through European institutions. The socialization mechanism requires (1) the existence of a European norm, (2) that the institution allows for the diffusion of the norm via socialization, and (3) that once socialization to the norm has taken place, national elites change their national FRs. The first section of this chapter demonstrates that a European norm supporting FRs does exist and that the conditions for national elites to be socialized are in place. However, our statistical test showed that there was no relationship between the stringency of FRs and the strength of the belief in FRs in national governments. We have therefore rejected the socialization hypothesis because of this failed hoop test.
The coercion mechanism is based on the idea that strong actors can impose their preferences on weaker actors. This imposition can take the form of promising a reward to the coerced actors if they adopt a given policy or if there is a threat of punishment if they do not. First, we found evidence that countries eager to join the EU have shown their commitment to Maastricht targets by incorporating FRs into their own national laws. In this case, joining the EU has served as a reward. Second, countries facing financial difficulties after the 2009 sovereign debt crisis were coerced into adopting more stringent FRs if they wanted to obtain fiscal support from the EU. Both cases support the idea that coercive diplomacy might explain the strength of national FRs in the EU. We tested the possibility of an imitation mechanism in which smaller European countries mimic the behaviour of more important countries such as Germany, France, and the UK and found no evidence supporting this argument. In summary, the main conclusions of Chapter 2 are that FRs might be used to enshrine fiscal reform after a “war of attrition” and that coercion seems to be one of the main driving forces behind FRs in the EU. The main issue we face with the coercion test is that statistical analyses can only demonstrate the correlation between contexts where countries are vulnerable to coercion and positive changes in FRs. Illustrating the causal chain that links coercion to FRs in a more effective manner did require the creation of other types of evidence.

1.1.5 Chapter 3:

Chapter 3 provides the evidence that Chapter 2 was unable to put forward. This chapter uses a process tracing approach to further test the coercion hypothesis and found strong evidence supporting the idea that FRs spread through coercive diplomacy. In testing the coercion hypothesis, we also found evidence supporting the mimicking mechanism. This evidence could
not be found in statistical analyses using the EU data. However, mimicking seems to only lead to the creation of weak FRs.

This chapter draws on work from the diffusion literature to develop the coercion mechanism and distinguishes two coercion strategies that lead to the creation of FRs. First, countries can be coerced when they are under the obligation to borrow money from an international organization. The IMF remains the principal international organization promoting FRs in this way. The strategy used by the IMF is explained by Mosley et al. (1995). Resting at the core of this idea is that IMF loans are divided in multiple instalments and each instalment is linked to a set of specific conditions. Of importance, one of these conditions involves the creation of FRs in a significant number of cases. The payment of each instalment can be delayed or cancelled if the borrowing country does not respect the conditions set by the IMF. Therefore, coercion power comes from the financial need of the borrowing country as well as the capacity of the IMF to delay or cancel the loan, but the reality is that this strategy appears not to be extremely efficient. While it does allow the IMF to push for its desired policies, in most cases, the coercion effect remains very limited. In short, there is a small possibility that the use of conditional loans can lead to the creation of FRs. However, the sheer number of loans offered by the IMF indicates that this mechanism can still explain the creation of a significant number of FRs.

We tested this mechanism both at the country level and at the level of monetary unions. The country level evidence shows that in almost all cases where FRs were created during an IMF arrangement, a paper trail links the new FRs to IMF conditions. The evidence from monetary
unions has shown that the success of IMF coercion is correlated with the strength of IMF leverage.

Second, we have looked at coercion strategies which use rewards as a source of leverage. Schimmelfennig and Sedelmeier (2004) have shown that the EU was able to significantly influence institutions in countries that wanted to become EU members. The EU changes the gain associated with the adoption of a given policy, FRs in this case, by promising a reward to countries that adopt EU policies. If the promise of a reward is credible and the reward is highly desired, this simple commitment can lead to significant policy changes. This chapter uses the case of Eastern European countries to test how this mechanism affected the adoption of FRs. The results of this test show that the creation of a significant number of FRs in Eastern European countries are the result of the coercive diplomacy. Furthermore, it clearly illustrates that countries not wishing to join the EU did not adopt FRs.

In summary, this paper provides qualitative evidence linking the creation of FRs to coercion. Once the evidence from chapters 2 and 3 are considered simultaneously, it becomes clear that coercion is one of the most important mechanisms to explain the creation of FRs. However, does it matter that FRs are coerced on national governments? Are coerced FRs significantly different from FRs resulting from national politics? Those are the questions chapter 4 attempts to answer.

1.2 Does the process leading to the creation of FRs change their impact?

The economic literature has explored some of the impact of FRs while considering them as exogenous. Eichengreen and Bayoumi (1994) were amongst the first economists to pay serious
attention to FRs in the US. Their main goal was to use them to better understand the implications of the Maastricht Treaty. They uncovered two main implications that have become the mainstream for future research. First, they found a relationship between FRs and lower deficits. Second, they found a negative relationship between required returns on general obligation bonds and FRs. This section will present the literature on the impact of FRs on deficit on bond yields, before introducing chapter 4.

1.2.1 Impacts of Fiscal Rules on Public Finance

The literature studying the impacts of FRs on fiscal discipline is nuanced. There remains significant doubt about the ability of FRs to enforce fiscal discipline on politicians lacking motivation to reduce or eliminate their deficit.

Alesina and Bayoumi (1996) have shown that tighter FRs are associated both with a larger average surplus and a lower cyclical variability in budget balances. They have also found that in US states, reduced budget flexibility did not affect output volatility. This would suggest that FRs have little economic cost, however, the mechanism behind those results remains unclear. Alesina and Bayoumi have proposed two potential explanations: first, that state budget macro stabilizing interventions are not very important—even when they are reduced, they do not appear to have a significant impact on the economy. The second possibility is that FRs prevent not only “good” macro stabilizing policies, but also “bad” politically driven fiscal policies. In this latter scenario, both effects would cancel each other out.
Bohn and Inman (1996), using a panel of results from 47 US states between 1970-1991, have provided additional evidence that budget rules can have a positive impact by reducing deficits. They have also compared the impact of different types of rules and found that an end-of-the-year balanced budget requirement produced a significant impact on a state’s general fund surplus. Their analyses showed that for the same level of stringency, statutory constraints have a smaller impact than constitutional constraints. They have presented evidence suggesting that constraints can be achieved at less cost via spending cuts instead of tax increases. Moreover, they did not find evidence that those cuts would have a major impact on the economy. Additionally, they determined that states where the Supreme Court justices are directly elected by citizens are more likely to apply the rules, thus effectively increasing their stringency.

By the 2000s, the balance of evidence was leaning toward FRs’ having a significant impact on fiscal discipline. Kennedy and Robbins (2003) summarized the knowledge up to that point. They studied the impact of FRs on fiscal performance and counter-cyclical fiscal policy using a cross national sample (the US, EU, Canada, Sweden, Japan, etc.), providing midway results. The relevance of their work rests more on the broad coverage and the knowledge summary it offers than on its original contribution. They observed that in the mid-1990s, countries both with and without FRs could implement successful fiscal adjustments. This led them to conclude that FRs are not crucial in all countries. In other words, while FRs can be useful, they are not the only option. They also found that stricter rules and rules that affect actual budget outcomes can be proven as more efficient. Comparing results across previous studies, they encountered mixed evidence of the impact of FRs on economic stabilization. They also argued that FRs have not
been seriously tested, and that the real test would only come with the next recession. Accordingly, the 2008 crisis became the real test to the efficiency of FRs that they had predicted.

There is also serious concern that FRs might only help to control deficits on paper. Indeed, an important stream of research has provided increasing evidence that FRs promote the use of fiscal gimmickry (Buti et al. 2007; Hagen and Wolff 2006). This research suggests that governments manipulate deficit figures through the use of stock-flow adjustment. This also means that research using official deficit figures have a significant chance to overestimate the impact of FRs. In the worse case scenario, FRs could actually destabilize public finances by reducing the transparency of the government’s budgeting processes.

1.2.2 Impact of Fiscal Rules on Bond Yield

The literature exploring the impact of FRs on government bond rates points to the evidence that strong FRs, including strong anti-deficit measures, do indeed reduce the interest premiums that governments pay to borrow from financial markets. Studying US states, Poterba and Rueben (1999) found that fiscal institutions affect the required rate of returns that lenders demand when states enter tax-exempt bonds markets. Their main conclusions were that binding tax limitations will increase the bond interest rate, that expenditure limitations will reduce borrowing rates, and that strict anti-deficit rules will decrease bond rates when compared to weak anti-deficit rules.

Iara and Wolff (2010) arrived at a similar result when studying EU states. Their core argument was that stringent FRs can reduce the risk facing by lenders. As the risk is lower, the interest rate also gets reduced. They concluded that more stringent rules are indeed correlated with lower
interest rate premiums, and that strong constitutional rules seem to have the most impact on government bond rates.

Kriz and Johnson (2005) have looked at the impact of FRs on borrowing costs on municipal securities in the US using the ‘Chubb Relative Value Survey’. Their results are slightly different, showing that revenue limits are associated with higher interest costs while having little impact on the credit rating. On the other hand, expenditure limits, balanced budget rules, and restrictions on debt are associated with lower interest costs and higher credit ratings. They also evaluated the direct and indirect impact of FRs through credit ratings and found that spending limits seem to only have an indirect impact. It is rather surprising that spending limits seem to have only an indirect impact through credit ratings. Potentially, this could indicate that it would have no impact on political behaviour, but instead would simply act to reduce the cost of borrowing. This would support the idea that the spending rules merely serve as a signal to the finance industry.

1.2.3 Chapter 4:

Chapter 4 builds on this literature as well as the results shown in Chapters 2 and 3, and explores the possibility that the creation process leading to the creation of FRs might influence their efficiency to reduce government deficit and bond yield. To our knowledge, this is the first attempt to evaluate if the creation process of FRs can influence their effectiveness. This is important since FRs resulting from a coercion process might not have the same political legitimacy as FRs resulting from a national debate. Thus, it is conceivable that fiscal gimmickry is used more often when FRs lack political legitimacy, thus making coerced FRs less efficient.
Using a panel of 28 European countries between 1990 and 2014, this chapter also compares the impact of coerced FRs and national FRs on yearly changes in government debt and yearly changes in bond yields. To that effect, this chapter divides the total stringency of the national system of FRs between the coerced and non-coerced parts of the system. The main statistical results indicate that FRs resulting from coercion do not affect government bond yields and are more likely to be correlated with yearly increases in government debt. In contrast, FRs resulting from national debates are correlated with decreases in government bond yield and have no impact on government debt.

Most of the literature on the impact of FRs uses panel estimators known to be problematic in the presence of predetermined variables. Our analyses are based on system-GMM estimators that are robust in the presence of predetermined variables. Along these lines, the second goal of this chapter is to demonstrate that the use of panel estimators accounts for problematic results. More precisely, panel estimators could lead to the conclusion that coerced FRs are correlated with a decrease in bond yields while national FRs may be correlated with yearly decreases in government debt.

The main conclusion of this chapter is that FRs resulting from coercion do not have the positive impact that we might expect from the literature. This may suggest that the use of improper statistical tools have led to faulty, or at least, problematic conclusions. These results also raise serious doubts about IMF and European policies.

2.1 Introduction

Since the Great Recession, persistent deficits resulting in secular growth of debt have led many to argue that fiscal rules (FRs) may play a central role in either helping to reduce or eliminate deficits while they help to control the growth of government debt (Drazen 2001). Over the last two decades, we have witnessed the implementation of FRs all around the world (Debrun et al. [2008]; Eichengreen and Bayoumi [1994]; Iara and Wolff [2010]). Moreover, they are perceived as an effective mechanism to ensure fiscal discipline. Stronger and even more stringent FRs have been promoted and implemented as a remedy to the fiscal indiscipline that supposedly caused the European Union (EU) sovereign debt crisis. Such a promotion was somewhat surprising given that many studies have argued that neither the 2008 economic crash nor the 2009 debt crisis are cautionary tales of fiscal intemperance (Buti and Carnot [2012] and Schäfer [2011]). In addition, there is still considerable debate about the ability of FRs to control government deficits. Authors such as Alt and Dreyer (2006) believe that fiscal gimmickry blossomed following the adoption of these FRs. Thus, an important question remains: are FRs a response to real fiscal stress, or are they merely the result of some other mechanisms? A second question that poses a problem is: to what extent is the stringency of FRs driven by politics?

While FRs can go unnoticed, they can fundamentally change how democracies respond to public preferences. The general term "fiscal rules" encompasses four main types of rules: (1) the Budget Balance Requirements (BBR) which regulate deficit levels; (2) the Debt to GDP Ratio (DR) which defines targets for the relative level of debt; (3) the Revenue limits (RR) which sets a minimum or a maximum limit to public revenues; (4) and, finally, the Expenditure limits (ER) which defines a spending ceiling. Because debts and deficits already exist at the time when FRs are implemented, the number of viable political options can be severely limited, thus often leaving austerity as the only possible policy option. Although FRs are increasingly used as significant pieces of legislature that affect all aspects of government policy, we still have limited knowledge about why such rules are enforced by political actors.

This paper contributes to clarify three aspects of the debate surrounding the political origins of FRs. First, we have used the policy diffusion literature to explore the socialization and coercion mechanisms that could explain changes in Fiscal Rules Stringency (FRS) based on a panel of 28 European countries during the period 1990 through 2013. Second, to the best of our knowledge, this paper is the first to seriously consider the time series property of FRs measures: we believe that a failure to address this question could lead to false inference. Finally, we provide new evidence about the mechanisms linked to fiscal stabilization and show that FRs are created in patterns that closely match the predictions contained in the “war of attrition” argument formulated by Alesina et al. (1989).

Two conclusions resulted from the empirical test using the Panel Time Series (PTS) with system-GMM estimator. Firstly, high levels of deficit and accumulation of debt can lead to significant
fiscal stress for any given country. Because fiscal adjustments are costly, fiscal stress can lead to a “war of attrition” scenario resulting in different political groups resisting fiscal adjustments until it becomes apparent that some other group will pay the cost of these adjustments. However, we know that in the long run, the pressure created by fiscal stress will accumulate and will eventually force the implementation of fiscal adjustments. In the short term, fiscal stress will prevent the creation of FRs, while it will favour stronger FRs in the long run.

Secondly, coercion is a mechanism where power asymmetry between actors allows the leading actor to impose their preferences on the weaker one. We have found evidence that countries who were applying to join the EU, as well as countries who relied on EU assistance after the sovereign debt crisis, were coerced into adopting more stringent FRs.

This paper is divided into four sections. Section 2.2 describes the current status of FRs in Europe while Section 2.3 presents the existing literature on the origins of fiscal rules and derives testable hypotheses from it. Section 2.4 presents the empirical strategy before pursuing a discussion of the results.

2.2 Fiscal Rules in the EU

Kopits and Symansky (1998) have defined FRs as permanent constraints on budgetary policy through the use of numerical targets on budget aggregates. These include supranational, constitutional or legal constraints that determine how much revenue, spending, debt, and deficit a government can handle. The 1992 Maastricht Treaty acted as a seminal FR by establishing that public deficit would be limited to 3% of GDP and public debt was limited to 60% of GDP for all
member states. The visibility of this common norm coupled with the strength of inter-
governmental interaction makes the EU a perfect case to observe the socialization process.

Since 2009, EU countries have been strengthening their FRs under renewed German leadership. Entering into force on January 1st, 2013, the "fiscal compact" has coerced all 25 ratifying countries to adopt national FRs into national constitutions or laws within a year. The negotiations leading to the “fiscal compact” involved significant power asymmetry, with Portugal, Ireland, Italy, Greece and Spain each facing bankruptcy and therefore being more vulnerable to German-led EU authorities. The European context has thus provided a unique opportunity to test whether coercion by international organizations can explain FRs stringency.

The European Commission, through the Working Group on the Quality of Public Finances (WGQPF), has created an empirical overview of FRs in the EU containing records of 171 FRs from the 28 EU members between 1990 and 2013. From those records, 78 were balanced budget requirements (BBR), 42 were debt rules, 48 were expenditure rules, 10 were revenue rules, and 3 were a mix of expenditure and BBR. Most rules had a legal basis (120 legal acts and 10 constitutional acts), while the rest were either coalition agreements (28), political agreements (3), or political commitments (15). From the 171 rules, 91 (53.3 %) were still in force in 2013.

Around 35% of the 171 FRs were resulting from the post-2009 legislation. Between 2011 and 2013, the fiscal environment has changed substantially with 27 new rules being adopted while 33 existing rules were modified. The percentage of FRs with political status (coalition agreement,
political agreement, or political commitment) has decreased by 20 percentage points, while those with a legal status increased by the same amount (Table 2.1).

Table 2.1: Composition of fiscal rules pre- and post- 2009 period

<table>
<thead>
<tr>
<th>Type of Fiscal Rules</th>
<th>Legal Status</th>
<th>Pre-2009</th>
<th>Post-2009</th>
<th>Pre-2009</th>
<th>Post-2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BBR</td>
<td></td>
<td>47.78%</td>
<td>37.04%</td>
<td>5.56%</td>
<td>6.17%</td>
</tr>
<tr>
<td>DR</td>
<td></td>
<td>22.22%</td>
<td>25.93%</td>
<td>57.78%</td>
<td>76.54%</td>
</tr>
<tr>
<td>EL</td>
<td></td>
<td>23.33%</td>
<td>28.4%</td>
<td>36.66%</td>
<td>16.04%</td>
</tr>
<tr>
<td>RL</td>
<td></td>
<td>6.67%</td>
<td>4.94%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of FR</td>
<td>90</td>
<td>81</td>
<td>90</td>
<td>81</td>
<td></td>
</tr>
</tbody>
</table>

Note: BBR (Budget Balance Requirements), DR (Debt to GDP Ratio), RL (Revenue limits), and EL (Expenditure limits).

Previous literature has used strength or stringency to refer to the degree of binding imposed on governments by a set of FRs. Analyzing the stringency of FRs requires a metric that is comparable across all countries. The WGQPF computes an index of FRs stringency for each country, which is created in two steps. First, using a random weighting technique on five qualitative dimensions of FRs (legal basis, room for revising objectives, strength and independence of the monitoring bodies, enforcement mechanism, and media visibility), a score is first calculated for each FR independently. The rule’s scores are then aggregated per country and year to obtain an index of stringency. Then, each rule is weighted according to its coverage on general government finances. When multiple rules apply to the same sub-sector, the strongest rules are assigned a weight of one; second and third rules are respectively assigned weights of 0.5 and 0.33. This weighting system is used to reflect the decreasing marginal benefit of having multiple rules for the same sub-sector of government finance.
FR stringency varies significantly both between countries and over time (see Appendix A.2). During the period 1990 through 2009, the average increase in all European countries has reached 2.32 points compared to 0.86 after the fiscal crisis period (post-2009). Of interest is that in most countries, the FRs system was built prior to the crisis. Only a few countries, such as Greece, Cyprus, Germany, and Croatia started to apply FRs after the crisis. Others such as Slovakia, Portugal, Latvia, Ireland, and France have significantly increased the strength of their FRs systems after the 2009 crisis (indeed more than 50% of the total increase over that period). On the contrary, few countries have weakened their FRs system after 2009 (UK, Slovenia, Luxembourg, Finland, and Czech Republic). Only 40% of the strength increase since 1990 can be traced back to the sovereign debt crisis (Figure 2.1). However, as this policy “was diffused”
across Europe over time, FRs did not converge in terms of stringency. While the average FRs stringency increased over time, so too did the standard deviation (Figure 2.1). A significant share of this variation stems from a major shift in France, Germany and the UK, and none from countries holding a weaker fiscal position.

2.3 Theories Explaining Fiscal Rules Stringency

Existing empirical literature on the origins of FRs has focused on two different sets of explanations. Economic literature has paid great attention to the deficit bias of political actors whereas institutional literature has focused on electoral and political institutions. We will now consider the diffusion process as a third option.

2.3.1 The Economic Argument

The idea that FRs may prevent fiscal indiscipline is supported by the belief that government deficits are the result of deficit bias. By limiting the discretion of political actors, FRs correct for this deficit bias. Political economy literature generally considers the common pool problem (Von Hagen and Hardan [1995]; Hallerberg and Von Hagen [1999]) and the time inconsistency (Alesina and Tabellini 1990) of preferences as the two most important factors explaining deficit bias. As explained in chapter 1, when a country faces a common pool problem FRs might be created to allow political elites to coordinate on a better fiscal outcome. When a country faces a time inconsistency problem, FRs might be created to prevent deviations from the optimal fiscal path. Additional details pertaining to these two sources of deficit bias are accessible in Appendix B. More recently, Badinger and Reuter (2016) tested the correlation between FRs stringency and
all sources of deficit bias and concluded that all sources of deficit bias are linked to FRs stringency.

Bluth (2016) shows the opposite: countries with higher deficit bias are less likely to adopt FRs. Contrarily to Badinger and Reuter, Bluth’s work includes proper controls (GDP general and central government debt, openness, election years, political ideology, etc) and uses average government surplus to measure the deficit bias. Those results suggest caution. We should not assume that political actors would want to correct this bias, and other possibilities need to be explored. Among such possibilities, political actors might either be coerced into adopting FRs, or the accumulation of deficits over many years may create a significant fiscal stress that will eventually lead them to undertake political actions. Following such logic, the driving force of FRs stringency is not the deficit bias but rather the fiscal stress, whether it originates from a deficit bias or not. Fiscal stress may affect political actors either through market pressure, taking the form of an increase in government bond yields, or through debt accumulation.

2.3.1.1 The influence of financial markets

The argument we proposed is that markets evaluate a country’s fiscal stance. A country facing significant fiscal stress is a risk. This provokes lenders to increase the risk premium, effectively increasing the cost of borrowing, which in turn puts pressure on governments to adopt more stringent FRs. Moreover, as evidenced by Eichengreen and Bayoumi (1994), Poterba and Rueben (1999), and Iara and Wolff (2010), markets reward governments that have adopted more stringent FRs by reducing the interest rate paid on borrowing.
However, to what extent can markets influence government policies, if they do at all? Mosley (2000) has argued that markets have a ‘strong but narrow’ impact on policy and has shown that market operators tend to consider only a few indicators when they make investments in developed countries (deficit-to-GDP ratio, inflation rate, and debt-to-GDP ratio). Because market operators do not have strong preferences for any given policy nor the size of government, there is little pressure for national policies to converge outside of the few indicators that are strongly affected by FRs. As a result, markets should pressure governments to adopt stronger FRs at times of significant fiscal stress. Therefore, we should expect FRs stringency to increase after markets raise interest rates on government bonds (*hypothesis 1*).

\[ H1: \text{An increase in the interest rate paid by governments on long-term bonds will subsequently result in an increase in the stringency of FRs.} \]

2.3.1.2 Debt Accumulation

Two types of results regarding the relationship between fiscal stress and changes FRs stringency are documented in the current literature. Studies using short-term indicators have found a null result (Debrun *et al.* 2008), while studies using long-term indicators of fiscal stress have noticed a positive relationship with FRS (Bluth 2016).

The “war of attrition” argument of Alesina *et al.* (1989) can explain both types of results. The core argument is that fiscal stabilization bears significant costs that political actors are not willing to assume. Indeed, two types of costs are paramount: tax increases and expenditure cuts. This leads to a situation in which each group will defend its own interests, preventing a reform until one group yields and absorbs most of the cost. This deadlock may persist during many
years. While theoretically FRs do not dictate which reform to adopt, they do force governments to enact a reform. Under those circumstances, two possible short-term scenarios are likely to occur. Firstly, in the case where there are no existing FRs, no novel FRs should be created because creating FRs would force a reform, and none of the parties involved would favour this option until they are in a position to impose their own preferred solution to the fiscal problem. The second scenario occurs when there are pre-existing FRs. Fiscal stress could lead to a violation of the rules, and to bad publicity for the government, thus creating incentives to weaken existing FRs in the short term.

\[ H2: \text{In the short term, there should be no relationship between fiscal stress and changes in the strength of FRs.} \]

As the deadlock persists, fiscal stress becomes more and more acute, resulting in an increase in the political cost of inaction. Solutions that were previously unacceptable might then become more acceptable to the actors. It is likely that eventually a reform will be adopted and that more stringent FRs will be created to enshrine the reform.

\[ H3: \text{In the long term, stronger fiscal stress should lead to an increase in the stringency of FRs.} \]

2.3.2 The Institutional Argument

The institutional approach developed in Hallerberg and Von Hagen (1999) and Hallerberg et al. (2009) work has argued that coalition and single party governments use different strategies to deal with the common pool problem. Single-government ministers can agree on policy priority, thus delegating spending power to their Minister of Finance, who in turn is obligated to generate
a balanced budget. This strategy is not a viable option for coalition governments simply because ministers belonging to different parties have significantly different preferences, preventing them from easily agreeing on spending policies (Blais, Kim, and Foucault 2010). Therefore, coalition governments will favour strategies based on FRs, agreeing in advance on a government spending policy. Von Hagen and Hardan (1994) have pointed out that countries with more fragmented coalitions were more likely to adopt and strengthen FRs. Debrun et al. (2008)’s test based on a typology of countries has also supported this argument. Assuming this is accurate, we should observe stronger positive changes in FRS under coalition governments.

\[ H4: \text{Coalition governments should be positively correlated with increases in FRS.} \]

2.3.3 The Diffusion Argument

The diffusion literature proposes five mechanisms that could explain how the following policies can shift between countries: competition, learning, imitation, socialization, and coercion (Shipan and Volden 2008, and Dobbin, Simmons, and Garrett 2007). We have opted to focus on socialization and coercion while Appendix C will provide details about why competition, learning, and imitation were excluded.

The socialization mechanism focuses on shared beliefs amongst political actors resulting from a global political culture. International norms lead to changes in the beliefs of national actors, which in turn leads to policy changes. In order to conclude that the socialization mechanism explains FRs stringency, we need to find evidence that supports the entire causal chain. At the beginning, there must exist a European norm supporting FRs. Then, the norm must be transmitted from European institutions to national elites, and finally, national elites that have
internalized the norm must act to change FRs stringency. In order to reject socialization, one would only need to disprove one step in this causal process.

Moreover, a European norm that could explain the creation of FRs would need to have certain characteristics. Based on Meyer and Rowan's (1977) definition, such a norm would need to be very specific not only about its objective but also on the means to reach it, must be institutionalized, and must go beyond the discretion of any individual actor. The major objective of FRs remains to ensure the viability of public finances. One must keep in mind that FRs were first introduced into the Treaty established under German and Dutch pressure, mostly for domestic reasons (Heipertz and Verdun 2004), thus making it difficult to argue that FRs were the result of a shared belief at the time. Of interest is that they are now part of the EU institutional setting. As of today, FRs resulting from the Maastricht Treaty have taken a life of their own. Mosley (2000) has demonstrated that market operators have adopted the Maastricht standards in their practice. This means that change for weaker fiscal standards would garner negative feedback from lenders.

The immediate response to the European fiscal crisis was not only framed in the fiscal institutions, but even more so in the design of more stringent rules, thus supporting the idea that at least some of the EU actors do believe in FRs. More evidence comes from the EU website in its attempt to explain the debt crisis: ‘The EU introduced new and stronger rules to keep a tighter check on public debt and deficits to make sure countries don't spend beyond their
means." While we cannot measure the strength nor the spread of the belief described above, it is clearly present in European institutions.

For a socialization mechanism to be not only plausible but also credible, it follows that national elites might be influenced by the European norm. Simmons and Elkins (2004) have demonstrated that frequent inter-governmental meetings at multiple office levels can transmit information, therefore creating opportunities for national elites to change their own perspective. Due to the density of its institutions, the EU provides the perfect ground for a socialization process to take root. However, the fragmented multilevel governance of the EU makes it extremely difficult to identify the source of socialization (Beyers 1998).

Finally, socialization implies that national actors that have internalized the European norms do act to change FRs stringency. Assuming that the socialization mechanism is legitimate, one could expect to see a positive relationship between government belief in FRs and change in the strength of such fiscal institutions. However, given that we remain unable to prove that socialization stems from EU institutions, this merely provides a hoop test for the socialization mechanism. Collier (2011) defines a hoop test as a test that a hypothesis must pass in order to be true. Failing the hoop test would therefore disprove the hypothesis.

\[ H5: \text{The more government parties have internalized the FRs norm, the more likely they are to increase the stringency of FRs.} \]

\[^{2}\text{http://ec.europa.eu/economy_finance/explained/the_financial_and_economic_crisis/responding_to_the_debt_crisis/index_en.htm} \]
According to Simmons, Dobbin, and Garrett 2006, the coercion mechanism is based on power-asymmetry. Prior to the 2009 crisis, Schimmelfennig and Sedelmeier (2004) have shown that the EU has used the desire of countries to join the Union to impose its rules on the candidate countries. It is important to keep in mind that the FRs that the EU imposes are based on SGP and anchored in article 121, 126, and 136 of the treaty on the functioning of the European Union, and apply to all EU members\(^3\), even those who have not adopted the euro. The asymmetry of power stemmed from the possibility of a reward for those countries complying with the rules.

\[H6: \text{A country applying to become a member of the EU will adopt stronger FRs.}\]

The sovereign debt crisis has forced some countries to demand EU financial support, thus creating a second form of coercion. By forcing stronger states to support the weaker ones, the crisis reinforced the power-asymmetry, allowing lender countries to impose FRs on countries that were seeking help. The German government was then perceived by many as attempting to instrumentalize the 2009 crisis to force their own views on fiscal institutions. This implies that Germany had a preference for FRs, given that it was the country spearheading this policy. In a case study, Wierts (2011) was indeed able to confirm that Germans’ preferences were skewed toward FRs. Economic strength as well as the central role it played in European financial rescue operations provided Germany with a dominant position that could be used to coerce vulnerable countries.

H7: A country receiving EU assistance after the year 2010 will adopt stronger FR.

2.4 Data, Variables, and Model

We used panel-time series (PTS) regression models to test correlations between change in a stringency index for FRs and indicators for each hypothesis previously presented. The population of interest is composed of all European countries; almost all of those countries are in our sample. The FRs dataset, covering 28 EU members over the period 1990 through 2013, comes from the European Commission’s WGQPF. This set of data was based on a survey sent to officials in each member state. Economic variables were made available by the IMF and the World Bank libraries. Political variables were supplied by World Bank indicators, the Bormann and Golder electoral dataset (Bormann and Golder 2013), and the Manifesto Project (Volkens et al. 2015). Detailed distribution information for each variable is presented in Appendix A1.

2.4.1 Empirical Strategy

There were only 115 change events from the data set of 489 observations, thus making it difficult to detect any relationship. Since we had access to yearly data, we decided to use a country-year panel design. Panel time series classic estimators have infamously poor statistical properties when dealing with average N, average T panels, as is the case for the one used in this paper. Whenever T is not large enough and a lag of the dependent variable is included on the right hand side, models can suffer from the Nickell bias (Nickell 1981). Models that neglect the temporal dynamic of the series might also be significantly biased. Westerlund’s error-correction-based panel co-integration test did not detect any form of co-integration between the series, and tests using panel error correction models (ECM) have confirmed this result, thus preventing the use of
ECM. The great majority of explanatory variables are predetermined, meaning they can be correlated with future values of the error term. This makes fixed and random effect specifications for time series panels inconsistent.

Similarly to Bergman et al. (2016), we employed a System-GMM estimator using past values of the variables as instruments to deal with the predetermination problem. This is a modified version of the original Arellano-bond estimator (Roodman 2009). There are three limitations though with this approach. First, when T increases, the number of instruments increases quadratically. As the number of instruments increases, the estimation bias converges toward OLS bias. Second, weak instrument bias can occur when the first stage relationship is weak. Both issues can be addressed by using Principal Component Analysis (PCA) to reduce the instrument count and produce stronger instruments (Kapetanios and Marcellino [2010] and Bai and Ng [2010]). This approach allowed us to predetermine the number of instruments used. The minimal number of instruments is determined by the number of parameters estimated (Bai and Ng, 2010), corresponding to fourteen instruments in our specification. However, models with 14 to 18 instruments, while they were not significantly different, did provide less stable estimates. Third, we used Windmeijer (2005)’s correction for finite sample to estimate standard errors. This allowed us to compensate for System-GMM poor estimation of standard errors in finite samples.
2.4.2 Variables

2.4.2.1 Variables of Interest

The first step when considering time series is to verify whether those series are stationary or not. Panel unit root tests\(^4\) have shown that most variables required first differences. For us, the dependent variable was the yearly change in strength index of FRs computed by the WGQPF. We then collected government 10-year bond yields from the IMF with missing data being collected from Eurostat. Missing values for Estonia after the year 2010 were replaced by zero. As Estonia had not sold long-term bonds for many years, we believed that market speculation should not affect government decisions. Yearly changes in bond yields were used in the regression analysis.

The simplest instrument to measure debt is the debt-to-GDP ratio per year and per country. Short-term pressure created by variations in the debt level and long-term fiscal stress were respectively measured by the change in debt over the previous year and over a five-year period. We used a dummy variable, coded 1 if there was more than one party in government and coded zero otherwise\(^5\), to identify coalition governments using the Database of Political Institutions (DPI 2013) from the World Bank.

The PTS approach only allowed us to test if there was a correlation between political actors’ beliefs about FRs and actual change in FRS. Assuming there was no correlation between what actors believe and change in FRS, the socialization mechanism could then be rejected.

\(^4\) We used Maddala and Wu (1999) and Pesaran (2007) panel unit root tests

\(^5\) An alternative specification using effective number of party in parliament was tested. Effective number of party is better for identifying the level of fragmentation in parliament. It did not affect the results.
While we could not observe how much individual political actors believe in FRs, it was possible to have a proxy of how strong the belief in the norm sustaining FR was within a given political party. The key idea is that a belief commonly held in a political party should be more salient in its electoral manifesto. This measure does not need to be exact as it only requires that political parties where the belief is stronger score, on average, higher than parties for which the belief is weaker.

The Manifesto Project did not specifically collect information on FRs. Nonetheless, the economic orthodoxy salience measure comes extremely close to this effect as this indicator measures the ‘Need for economically healthy government policy making’ while it includes statements about (1) deficit reduction, (2) retrenchment in crisis, (3) thrift and saving in the face of economic hardship, and (4) support for traditional economic institutions. We chose this category because most types of statements included were linked quite directly to FRs: (1) FRs are a tool to reduce deficits, (2) a significant downside of FRs is that they force retrenchment during crisis, (3) FRs help to reduce wasteful spending behaviour, and (4) FRs are supported by traditional market institutions. The manifesto data provided the relative frequencies of those statements in each party’s manifesto.

In order to obtain an indicator for the strength of the belief within any given government, we weighted party score by the percentage of seats in parliament for each government party and summed up the resulting value for all parties in government. While imperfect, this measure provided a sufficiently accurate approximation of the relative strength of belief in FRs in government for a hoop test.
To test coercion, we first created a dummy indicating whether countries received assistance from EU institutions, which we refer to as “EU Financial Assistance”. This variable takes the value of 1 for both Greece and Ireland after 2010 as well as for Portugal after 2011. The variable allowed us to test whether countries receiving fiscal assistance were forced to implement stronger FRs or not. We used another dummy to indicate the steps toward EU membership with “EU applicant” taking the value of 1 for countries that have applied and were not yet members of the EU. Details for the coding of controls are presented in the Appendix A.3.

2.4.2.2 Lag Structure

Because governments tend to react to economic change with a certain delay, we can easily state that a change in FRS cannot be caused by a simultaneous change in the economy. For this reason, we did not include lag 0 for debt and bond yield variables. Using the first lag (L1) for change in debt and change in bond yield variables did ensure that only events that predated the change in FRS would be considered. For political variables such as ideology and coalition, changes must predate change in the FRS index. This by itself justifies using a first lag with election year being an exception. The theory related to election years proposes little insight about the appropriate number of lags to use. We tested specifications going from 0 to 2 lags but found that none were significant. The final model follows the example of previous research and includes simultaneous values alone (Debrun et al. 2008).

-------------------

6 We tried specifications with 0 lag and they posed serious estimation problems. One of the main problems with 0 lags is that they seize the feedback that fiscal rules have on explanatory variables.
2.5 Results

Table 2.2 presents the model’s estimates according to two specifications: fixed effects vs. system-GMM. First, we found no evidence that increases in bond yields are positively correlated with an increase in FRS. This supports the idea that European governments do not create FRs to reduce the interest rate they must pay on bonds. Nevertheless, this result could also be an artifact of using a yearly panel design. An increase in bond yields can presume that the government is unable to manage public funds in a responsible manner. This could trigger a rapid response from governments wishing to restore their credibility. However, our design would not detect such rapid changes. Still, we found no evidence linking market pressure to FRS.

Of interest is that changes in debt levels over both short and long term are significant. The negative sign for change in debt levels over one year is consistent with the “war of attrition” argument. During the deadlock period, there is an incentive to reduce FRs stringency in order to avoid violation of FRs. The positive sign for the coefficient of change in debt level over five years supports the idea that over time, fiscal stress builds up and forces reform. When coupled, those two results strongly support the “war of attrition” argument.
### Table 2.2 Determinants of Fiscal Rules Stringency Changes

<table>
<thead>
<tr>
<th>Variable</th>
<th>Fixed Effect</th>
<th>System GMM</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR index (lagged)</td>
<td>-0.217***</td>
<td>-0.097</td>
</tr>
<tr>
<td></td>
<td>(0.051)</td>
<td>(0.224)</td>
</tr>
<tr>
<td>Change in debt level over 5 years (L1)</td>
<td>0.007***</td>
<td>0.007*</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.004)</td>
</tr>
<tr>
<td>Change in debt level over 1 year (L1)</td>
<td>-0.011**</td>
<td>-0.047**</td>
</tr>
<tr>
<td></td>
<td>(0.005)</td>
<td>(0.021)</td>
</tr>
<tr>
<td>Bond yield (L1)</td>
<td>0.004</td>
<td>0.015</td>
</tr>
<tr>
<td></td>
<td>(0.007)</td>
<td>(0.061)</td>
</tr>
<tr>
<td>FR Norms salience (L1)</td>
<td>-0.023**</td>
<td>-0.083</td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.133)</td>
</tr>
<tr>
<td>Coalition (L1)</td>
<td>-0.006</td>
<td>-0.009</td>
</tr>
<tr>
<td></td>
<td>(0.081)</td>
<td>(0.111)</td>
</tr>
<tr>
<td>Ideology (L1)</td>
<td>0.004</td>
<td>0.021</td>
</tr>
<tr>
<td></td>
<td>(0.007)</td>
<td>(0.074)</td>
</tr>
<tr>
<td>Election year</td>
<td>0.073</td>
<td>0.118</td>
</tr>
<tr>
<td></td>
<td>(0.068)</td>
<td>(0.114)</td>
</tr>
<tr>
<td>EU applicant</td>
<td>-0.002</td>
<td>0.511**</td>
</tr>
<tr>
<td></td>
<td>(0.089)</td>
<td>(0.214)</td>
</tr>
<tr>
<td>EU Financial assistance</td>
<td>0.558***</td>
<td>2.562*</td>
</tr>
<tr>
<td></td>
<td>(0.136)</td>
<td>(1.562)</td>
</tr>
<tr>
<td>Constant term</td>
<td>0.105*</td>
<td>0.035</td>
</tr>
<tr>
<td></td>
<td>(0.062)</td>
<td>(0.170)</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>N</th>
<th>463</th>
<th>463</th>
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</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of instruments</td>
<td>29</td>
</tr>
<tr>
<td>Sargan over-identification test (p-value)</td>
<td>0.890</td>
</tr>
<tr>
<td>Hansen over-identification test (p-value)</td>
<td>0.360</td>
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</table>

<table>
<thead>
<tr>
<th>PCA information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser Meyer Olkin measure of sampling adequacy</td>
<td>0.946</td>
</tr>
<tr>
<td>Portion of variance explained*</td>
<td>0.249</td>
</tr>
</tbody>
</table>

Standard errors in parentheses:
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

# Portion of variance explained increases with the number of instruments up to a maximum of 0.441
The strong upward in $\beta$ for one-year changes in debt (Figure 2.2) suggests that a fixed effect model would have suffered from a significant bias toward 0, which might explain Debrun et al. (2008)’s null results. On the other hand, estimation for SE experienced a downward trend. The result for $\beta$ was never positive, which does contradict the “war of attrition” argument. With a small number of instruments, the model supports the idea that in the short-term, fiscal stress produces resistance to fiscal adjustments that in turn can lead to weakened FRs. As the number of instruments increases, the results tend to indicate no real correlation between short-term fiscal stress and change in FRs stringency. Both scenarios are consistent with the “war of attrition” argument. Interestingly, the results for change in debt levels over five years remained relatively stable across instruments numbers (see Appendix D).

![Figure 2.2 Stability of $\beta$ and SE Estimates for Change in Debt Over One Year](image)
Secondly, we did not find a significant relationship between the stringency of FRs and the presence of coalition governments. Yet, there was a clear upward trend in the results, which are sensitive to the number of instruments used. This is true for both SE and $\beta$. Again, this may simply reflect the fact that the relationship found by Debrun et al. (2008) was caused by the use of LSDV models. Considering the findings of previous work, this result seems to indicate that while FRs may be more present under coalition governments, they remain probably not more stringent, thus suggesting that coalition agreements are easier to break than statutory laws or constitutional rules.

Thirdly, we found a non-significant negative coefficient for the socialization indicator, contrary to our hypothesis that had predicted a positive relationship. Classic fixed effect specification seems to underestimate the size and the standard error of $\beta$ which in turn would cause the fixed effect to lead us to falsely reject the null hypothesis. This provides the strongest evidence against the hypothesis that our design has allowed us to verify. One explanation could be the absence of a correlation between the economic orthodoxy indicator in the government and the strength of the norm justifying FR. However, this seems unlikely since the two concepts are relatively close, and should in the worst case be weakly positively correlated. There is also the possibility that a relationship exists in the long run. However, since we did not find any sign of co-integration, or significant results using panel ECM, we have ruled out this possibility. In summary, the socialization hypothesis has failed the hoop test we had designed.

Coercion seems to play an important role in the creation and strengthening of FRs. The two variables used to indicate precise moments when countries were vulnerable to coercion were
significant. This model supports the mechanism proposed by Schimmelfennig and Sedelmeier (2004), which puts forward the argument that to join the EU, non-founder countries had to demonstrate their commitment to the target embedded in the growth and stability pact. Incorporating Maastricht targets into national FRs was an effective way to credibly commit to those targets. However, applicant countries had no freedom to negotiate the target. This means that even if the process was driven by the prospect of EU membership, it did remain a coercive process in which FRs were imposed on a national entity. Fixed effect specification significantly underestimated the size of $\beta$ for this variable. The same problem surfaces again in System GMM when the number of instruments increases (see Appendix D).

The second type of coercion also seems to be present in the EU. The positive and significant coefficient found across model specifications supports the hypothesis that countries that received EU financial assistance were coerced into adopting stronger FRs. In this case, the fixed effect model also seems to underestimate the size of the relationship. Estimation of $\beta$ and SE are relatively stable across estimations, with just a small downward trend (see Appendix D).

It could be argued that these results were not driven by coercion. However, since both variables are positive and significant, which is exactly what the coercion argument would predict, and given that the two indicators cover very different periods as well as a large sample of countries, this result nonetheless provides strong support for the coercion argument. Qualitative evidence provides additional support to the coercion argument (see Chapter 3).
Amongst controls, government ideology does not seem to affect FRs. In addition, we found no correlation between election year and changes in FRs stringency (Table 2.2). This latter result somewhat contradicts Debrun et al. (2008)’s findings. This could indicate that the significant result found in previous research was actually caused by fiscal stress creating a “war of attrition” scenario. To confirm our intuition of past biased results, we re-ran our model after removing both short-term and long-term indicators of fiscal stress. The election dummy came out positive and highly significant. This means that after controlling for the true source of pressure, namely fiscal stress, the election year dummy lost its power of explanation. Elections are points in time where the balance of power is being reshuffled. One could argue that under a “war of attrition” scenario, this might allow a group to break the deadlock and transfer the cost of reform to other groups. Previous research with only short-term measures of fiscal stress have revealed a consistent relationship between election years and increases in FRs stringency (Hallerberg et. al. 2007). In fact, studies with better measures of fiscal stress have shown weaker or insignificant relationships (Bluth 2016). This suggests that election years would favour stronger FRs because they help to solve the deadlock problem created by fiscal stress. According to Alesina et al. (1989), when fiscal stabilization occurs, it generally coincides with a political consolidation. Elections help to solve the deadlock between political actors by allowing winners to transfer the cost of adjustment to losers.
Table 2.3 Findings Summary

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Conclusion</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>An increase in the interest rate paid by government on long-term bonds will be followed by an increase in the strength of FRs.</td>
<td>Not Supported</td>
<td>L1 Bond yield</td>
</tr>
<tr>
<td>In the short-term, there should be no relationship between fiscal stress and changes in the strength of FRs.</td>
<td>Supported</td>
<td>L1 Debt</td>
</tr>
<tr>
<td>In the long-term, stronger fiscal stress should lead to an increase in the strength of FRs.</td>
<td>Supported</td>
<td>L5 Debt</td>
</tr>
<tr>
<td>Coalition governments should be positively correlated with increases in FRs. The more government parties have internalized the FR norm, the more likely they are to increase the strength of FRs.</td>
<td>Not Supported</td>
<td>L1 FR norms Salience</td>
</tr>
<tr>
<td>A country applying to become a member of the EU will adopt stronger FRs.</td>
<td>Supported</td>
<td>EU applicant</td>
</tr>
<tr>
<td>A country receiving EU assistance after 2010 will adopt stronger FRs.</td>
<td>Supported</td>
<td>EU Financial assistance</td>
</tr>
</tbody>
</table>

2.6 Discussion

This article contributes to the current literature by providing three different approaches to explain FRs. First, by including fiscal stress, we were able to explain the correlation found between the deficit bias indicator and FRs stringency. Second, we were also able to explain FRs stringency without neglecting the time dynamics of policy. Lastly, we had the opportunity to test mechanisms from the diffusion literature and to show that they could drive FRS.

The “war of attrition” argument sheds new light on the relationship between fiscal stress and FRs stringency. Past research has found a link between deficit bias and FRs stringency (Badinger and Reuter 2016); mechanisms that drive deficit bias will, by definition, drive fiscal stress. The “war of attrition” argument also explains differences between existing findings found in the literature.
Research focusing on short-term fiscal stress has generally found no relationship between economic indicators and FRs stringency. Studies analyzing aspects of fiscal stress that better reflect the long term-impact of fiscal stress, for example (Bluth 2016) which used debt service cost of government, on the other hand have found positive and significant relationships. We have contributed to the debate on fiscal adjustment by providing clear evidence supporting Alesina et al. (1989)’s “war of attrition” argument. Our results indicate that FRs do matter in government strategy when implementing fiscal reform, and that FRs also behave similarly to other fiscal reforms.

Our research provides evidence that coercion should be perceived as a viable explanation for FRs stringency. We examined two types of situations in which countries were vulnerable to coercion and those periods were associated with significant increases in FRs stringency. In the first case, countries planning to join the EU adopted stronger FRs on average. In the second case, countries requesting financial support were forced to adopt stronger FRs. It is therefore not surprising that within a monetary union, where one government’s fiscal situation can affect all members, at least some pressure is placed on governments to improve their fiscal stance and avoid free riding. In contrast, the socialization hypothesis failed the hoop test we had designed. There may be multiple explanations for these results, one of them being that FRs are imposed on countries rather than being freely chosen. The indicators of market pressure fell short of statistical significance, thus possibly indicating that while FRs stringency do affect bond yields, bond yields do not affect FRs stringency. Most would argue that market pressure should be amongst the strongest predictors of variation in FRs stringency, yet changes in bond yields do not seem to have an impact on FRS. Our results suggest that it is not necessary to worry about endogeneity.
when studying the impact of FRs stringency on government bond yields. These findings support Iara and Wolff (2010)’s claim that FRs can be considered predetermined to government bond yields.

Finally, from a methodological perspective, by comparing System-GMM results with other fixed-effect estimation strategies, we have shown that the data used to study FRs is prone to estimation bias. This in turn raises questions about the validity of previous research. To conclude, we provide evidence that the use of FRs in Europe might be caused both by fiscal stress and coercive diplomacy, and that FRs are not simply used to correct deficit bias, nor are they simply the results of electoral systems that favour coalition governments.

One limitation of our analysis is the focus on the EU. While driven by data availability, the focus on EU countries might limit the generalization of our conclusion. The strength of EU institutions and their strong belief in the importance of FRs increase the probability of observing coercion in the EU context. There are other institutions in the world that promote FRs. The IMF has been an active player in the diffusion of FRs. However, those institutions’ ability to coerce might be significantly weaker than that of the EU. This means that the role of coercion might be weaker outside of the European context. Also, the monitoring ability of EU institutions might accentuate the impact of fiscal stress. Data collection and analyses from non-European countries will be necessary to confirm our results.
Chapter 3: It’s External Pressure, Not Internal Politics: The Role of Coercive Diplomacy in the Diffusion of Fiscal Rules

3.1 Introduction

The ability to use fiscal policy is critical for governments in pursuit of their policy and electoral goals. In the last 30 years, most government budgets have been written in red ink and budgetary surpluses have been the exception more than the rule. Over this period, the adoption of fiscal rules has become widespread across both rich and poor countries. However, Lienert (2010) remarks: "Fiscal Responsibility Laws (FRLs) appear to be more popular in middle-income countries than advanced countries." Since the early 1990s, 89 countries have adopted fiscal rules. These rules are meant to be legally enforceable and severely limit government flexibility on debt, deficits, or expenditures. By limiting politicians’ discretion and effectively tying their hands when it comes to budgets, fiscal rules may be seen as a way to reduce deficit and pay back government debts. However, these benefits appear only in the long term. These long-term benefits may be appealing for political actors that are not struggling for their election in the short term. Politicians facing short-term demands may be more reluctant to bind their hands. This raises a number of puzzling questions: Why would a government decide to bind its own hands when the control of fiscal policy is so important to the pursuit of their goal? Why do fiscal rules appear in poor and middle-income countries that cannot afford them? Why did so many countries adopt fiscal rules in such a short amount of time?

The existing literature on fiscal rules suggests that fiscal rules are created to correct politicians’ deficit bias. By limiting their budgetary discretion, fiscal rules prevent political actors from using
deficits to gain electoral advantages. As suggested in Chapter 1, the deficit bias might not be the only mechanism, nor the main mechanism explaining the creation of FRs.

Thus, this paper explores an alternative possibility. The central hypothesis examined in this paper is that fiscal rules arise from an interaction between national governments and international organizations in a context of power asymmetry. In contrast to national governments, international organizations, like the EU and the IMF, have an incentive to ensure the viability of public finance. In the case of the EU, these incentives come from the need to ensure the monetary stability of the union and to avoid free riding behaviour from its members. The IMF’s incentive comes from its need to have loans to countries in financial difficulties reimbursed. Including fiscal rules as a condition to these loans reduces the risk of default.

Statistical work by Doray-Demers and Foucault (2017) found evidence suggesting that coercion might play an important role in the diffusion of FRs in the EU. However, correlational evidence is not sufficient: it can show that there is a relation between moments in which countries are in a position of weakness and the creation of fiscal rules, but does not provide evidence as to what mechanisms are at play. One of the goals of this paper is to test whether the mechanism suggested by correlational evidence is really what is at play. More specifically, this paper uses a process tracing approach to study the role of coercive diplomacy in legally binding national and supranational FRs created in the last 30 years. This includes all rules that are anchored either in an international treaty, national law, or national constitutions. Process tracing allows us to collect causal evidence that will help confirm or disconfirm the role played by coercive diplomacy in the creation of fiscal rules. Special attention was given to the timing of events and to official
communication between actors. Specifically, we are looking for traces of communication between actors that can help arbitrate between different mechanism. We focus our research on two coercive agents that have historically supported FRs: The IMF and the EU. For both actors, we used staff reports documenting the interaction between the organization and national governments. In the case of the IMF we also studied the interaction between the IMF and officials from non-European monetary unions.

This paper’s findings might have broader implications for our understanding of austerity politics and the interaction between globalization and democracy. First, fiscal rules are one of the key institutions enforcing the state of permanent austerity that has been documented in the last few years (Blyth 2013). A better understanding of their origins might significantly help us understand their broader impact. Globally, the use of coercion to impose fiscal rules might lead to serious legitimacy problems for the liberal world order. By forcing austerity and limiting democratic choices, fiscal rules may cause a significant increase in public dissatisfaction. In the EU, there is already resistance and dissatisfaction with the EU fiscal requirement. Second, by standardizing and depolarizing government budgetary choices, fiscal rules might be viewed as a limit on democratic choice. Here we encounter a trilemma argument. Rodrick (2011) argues that between globalization, democratic politics, and nation states, a society can only retain two of the three options. Fiscal rules have spread at the same time as globalization. While the concomitance of both events is not sufficient to draw conclusions, it raises the possibility that FRs are one of the policies that limit democratic politics in favour of globalization, in a world composed of nation states. Fiscal rules favour convergence on the ideal of low deficit and low debt. However, if fiscal rules are created in response to external coercion and they do not have political legitimacy,
they might disappear as fast as they are created. The coercion mechanism might force policy change, but it does not allow for the political legitimacy required to uphold fiscal rules as a permanent institution. That said, the mechanisms behind the creation of fiscal rules may be informative as to how society deals with Rodrick’s trilemma.

The remainder of this paper is divided into five sections. Section 2 presents stylized facts about FRs around the world. Section 3 presents different arguments that may explain the creation of FRs and derives a testable hypothesis. Section 4 presents the method used to test this hypothesis. Tests are conducted in section 5 and section 6 offers a discussion of the results as well as a conclusion.

3.2 Key Definition and Facts

FRs come in many forms. We use the general definition of FRs presented in section 2.1. Fiscal rules can also be classified according to the level of government they apply to. National rules apply only to a given country, while supranational rules are the result of a monetary union's treaty between multiple countries. In addition, there are subnational FRs that apply to regions within a given country. National FRs can be classified using their legal status: (1) political commitment, (2) Statutory Law, or (3) Constitutional. FRs with a political status are considered less binding than FRs with a legal status. This paper aims at studying FRs that are legally binding. FRs not anchored into law represent a small fraction of all FRs (Table 3.1 and Figure 3.1) and are outside the scope of this paper.
We have identified four potential coercive contexts that could lead to the creation of FRs. After World War II, Germany and Japan had to adopt FRs (Table 3.1 line A). In more recent history, countries receiving IMF financial assistance may have been coerced in adopting FRs (Table 3.1 line B). This is highly plausible considering the IMF’s strong institutional preference for FRs (see Appendix H for details). It has been argued that countries wanting to join the EU might have been forced to adopt EU institutions, including FRs (Table 3.1 line C). Finally, the Fiscal Compact treaty demands that EU members adopt FRs in their national laws. Members failing to do so will lose their access to the European emergency fund. The clear presence of a threat suggests that this might be a coercive context (Table 3.1 line D). Finally, some countries were exposed to EU and IMF pressure at the same time (Table 3.1 line E).

RRs are significantly less frequent than the other three types of rules. Previous research suggests that RRs might not have the positive impact on government finance that are expected from FRs (Johnson and Kriz, 2005). BBRs and DRs have a longer history than ERs. Traditionally, international organizations like the EU and the IMF have been less concerned with ERs. The interest in ERs became much more important after the 2008-2009 crisis (Figure 3.1). For example, ERs were only integrated into EU institutions with the Six-Pack treaty (2011) (Appendix F presents a short history of FRs in the EU).

Particularly striking is the number of national FRs with a legal status created in potentially coercive contexts. Indeed, more than 45% of ER (11 out of 24), 60% of BBR (25 out of 45), and almost 74% of DR (17 out of 23) with legal status have been created in contexts fertile to
coercion (Table 3.1). The sheer fraction of national FRs that have been created in such contexts justifies a deeper analysis of the coercion mechanism.

Table 3.1 Number of National Fiscal Rules Created Since World War II per Legal Status and Type

<table>
<thead>
<tr>
<th></th>
<th>ER</th>
<th>RR</th>
<th>BBR</th>
<th>DR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of countries with national FRs</td>
<td>33</td>
<td>7</td>
<td>52</td>
<td>32</td>
</tr>
<tr>
<td>Political Status</td>
<td>9</td>
<td>4</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Legal or constitutional status</td>
<td>24</td>
<td>3</td>
<td>45</td>
<td>23</td>
</tr>
<tr>
<td>FRs with a legal status created in potentially coercive contexts:</td>
<td>11</td>
<td>0</td>
<td>25</td>
<td>17</td>
</tr>
<tr>
<td>A- World war II: rules imposed on Germany and Japan</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>B- Rule created during IMF Interventions</td>
<td>8</td>
<td>0</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>C- Rule created during EU application</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>D- Rule resulting from the EU Fiscal Compact</td>
<td>1</td>
<td>0</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>E- IMF + EU</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: Pakistan is included in the count of BBR and DR even if the rules were created in the year after the IMF intervention because the law is called “Fiscal responsibility law”, which is the trademark of the IMF.


The IMF has produced an FRs dataset\(^7\) that contains key classification information about FRs in 89 countries, between 1985 and 2014. Out of those 89 countries, only 13 have FRs with political status. Appendix J provides preliminary evidence linking those rules to electoral dynamics. The highest concentration of FRs with legal or constitutional status can be found in Europe (Figure 3.1). This might be explained in part by the fact that some countries were forced to adopt FRs in the process of joining the EU. More than half of the countries that have or had fiscal rules are in a monetary union (48 out of 89). This includes the 28 countries of the European Union (EU), the 8 countries of the West African Economic and Monetary Union (WAEMU, also known by its

French acronym UEMOA)\(^8\), the 6 members of the Central African Economic and Monetary Union (CEMAC)\(^9\), and 6 out of the 8 members of the Eastern Caribbean Currency Union (ECCU)\(^10\) that are independent countries. FRs created in different monetary unions are highly similar (Table 3.2). Around the year 2000, all currency unions have adopted BBRs and DRs, following the EU’s example. Only the ECCU’s BBRs have since been abolished. The high level of similarity between these rules suggests that they may not have been the result of an independent process.

<table>
<thead>
<tr>
<th>Monetary Union</th>
<th>Debt Rule</th>
<th>Deficit Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>EURO</td>
<td>60% debt to GDP ratio (1992)</td>
<td>3% deficit (1992)</td>
</tr>
<tr>
<td>WAEMU</td>
<td>70% debt to GDP ratio (2000)</td>
<td>Budget should be balanced or in surplus (2000-2014) 3% deficit (since 2015)</td>
</tr>
<tr>
<td>CEMAC</td>
<td>70% debt to GDP ratio (2002)</td>
<td>Budget should be balanced or in surplus (2002)</td>
</tr>
<tr>
<td>ECCU</td>
<td>60% debt to GDP ratio (1998)</td>
<td>Deficit 3% of GDP (1998-2005)</td>
</tr>
</tbody>
</table>

Source: IMF Fiscal Rules Dataset
http://www.imf.org/external/datamapper/fiscalrules/map/map.htm

Table 3.2 Types of Fiscal Rules in Each Monetary Union

Twenty-two European countries are submitted to both national and supranational rules. Since 2009, the imposition of the Fiscal Compact has imposed the adoption of national FRs on top of the Maastricht rules, making this phenomenon more salient. Since the 2008-2009 crisis, the idea

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\(^8\) Benin, Burkina Faso, Cote d’Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo

\(^9\) Cameroon, Chad, the Central African Republic, Equatorial Guinea, Gabon, and the Republic of Congo

\(^10\) Anguilla, Antigua and Barbuda, Commonwealth of Dominica, Grenada, Montserrat, St Kitts and Nevis, St Lucia, and St Vincent and the Grenadines
that supranational FRs are not enough to ensure fiscal sustainability has become more salient in both the EU and the IMF. Both organizations have started to promote the idea that, to be fully effective, supranational FRs must also be included in national constitutions or statutory laws. This has led to an increase in the number of national FRs in the EU. Until recently, both the EU and the IMF mostly promoted BBRs and DRs. ERs were added to the EU institutional setting only after the 2008-2009 crisis (Figure 3.1).

3.3 Theoretical Explanation for the Creation of Fiscal Rules

There are many hypotheses that seek to explain the creation of FRs. Past research has mostly explored mechanisms entrenched in a national rationale. This paper focuses on explanations anchored in external political dynamics. National rationale can spur the international dynamics that might lead to the creation of FRs by providing a justification for the promotion and adoption of FRs. This section presents an overview of both groups of explanations.
Figure 3.1 Fiscal Rule by Type of Rule and by Legal Status per Geographic Region
3.3.1 Deficit Bias Argument

The deficit bias argument is central in the FRs literature, used both as a causal mechanism and as a normative justification for the creation of FRs. Too much of the literature simply takes the existence of a deficit bias as a sufficient condition to explain the creation of FRs. As discussed in Chapter 1, the deficit bias alone might not be sufficient to explain the creation of FRs. The source of deficit bias varies depending on the authors. Alesina and Perotti (1995) argues that deficit bias comes from politicians raising spending to increase their electoral chances. A second formulation of the deficit bias argument stipulates that government incomes are a common pool for all interest groups that seek financing for their projects. Since interest groups fully internalize the benefits and only a part of the costs of a project, there is an over-provision of government projects resulting in deficits and debt accumulation (Von Hagen and Hardan 1995, Krogstrup and Wyplosz 2010, Velasco 2000). The deficit bias argument alone does not explain when political actors will create FRs. Deficit bias has been documented since the end of WWII, yet it is only in the 1990s that we saw an increase in the number of FRs. There is a need to explore other plausible mechanisms.

3.3.2 Economic Argument

The logic of the economic argument is that repeated deficits and debt accumulation will force governments to take actions to stabilize public finances. Accordingly, FRs appear as a fiscal governance answer to fiscal problems (Debrun et al., 2008). This argument has been tested repeatedly and receives only modest empirical support. Debrun et al. (2008) found no statistical association between FRs and economic indicators, while Doray-Demers and Foucault (2017) only found a relation between changes in FRs stringency and debt increase in the long term.
3.3.3 Institutional Argument

The institutional approach, developed by Hallerberg and Von Hagen (1999) and Hallerberg et al. (2009), amongst others argues that coalition and single-party governments deal differently with the common pool problem. As stated in section 2.3, single party government ministers can delegate spending power to the Minister of Finance to assure a balanced budget. While coalition governments should favour strategies based on formal rules to control budget deficits, agreeing in advance on government spending policy, because ministers belonging to different parties can have significantly different preferences and cannot as easily agree on spending policies (Blais, Kim, and Foucault (2010)). This is supported by Von Hagen and Hardan (1994)’s findings that countries with more fragmented coalitions were more likely to adopt and strengthen FRs. This result could not be reproduced in Doray-Demers and Foucault (2017). The limit of this argument is that it fails to explain the creation of FRs in institutional contexts that favour a delegation strategy, that is, contexts with small government fragmentation or one-party government. Because of the Fiscal Compact Treaty (2012), all EU members will have to adopt legally binding national FRs. This means that FRs will be adopted in institutional contexts not favourable to FRs and suggests that the institutional argument might have limited explanatory power, clearly pointing toward the importance of international politics.

3.3.4 Mimicking and Learning Mechanisms

Mimicking and learning are two diffusion mechanisms of policies that can potentially explain the diffusion of fiscal rules. In both cases, a political unit will reproduce the policy adopted by another unit without outside intervention. However, the motivation behind this behaviour differs
significantly between the two mechanisms. In a case of pure mimicking, a unit applies the same policy as another to look like the unit being imitated (Shipan and Volden, 2008).

In a pure learning case, a decision is motivated by the study of a given policy’s impact in another political unit (Shipan and Volden, 2008; Dobbin et al., 2007). The conclusion reached might be wrong or later disproven, but an active attempt was made to learn from the experience of others. Because of this, learning requires the use of resources and time to study the impacts of a given policy, making it a slower process than mimicking. Also, because of the cost associated with learning, it is generally used by political entities that have more resources. In contrast, smaller political units tend to favour mimicking (Shipan and Volden 2008). Specifically, smaller units tend to imitate bigger ones. In practice, differentiating between these two mechanisms is often difficult. Cases where political actors use superficial results to justify copying the policy of another political unit can be hard to classify.

When it comes to FRs, the general context may be more favourable to mimicking than learning. FRs have worked in some cases and failed in others. Political actors could cherry pick the cases justifying the creation or rejection of FRs. In addition, no scientific consensus exists to guide decision makers. In a review of the literature on the impact of FRs, Rommerskirchen (2015) has argued that it is still too early to conclude what their real impacts are, making it difficult to identify a learning mechanism at the national level. When it comes to supranational FRs, preliminary evidence would favour mimicking. The fact that all supranational FRs were enforced
in a four-year period\textsuperscript{11} makes it impossible for a learning mechanism to take place; there is not enough time to analyze the results of the policy and go through the negotiation process to create such rules. The fact that the EU (the strongest monetary union) was the first to create a set of FRs and that smaller monetary unions created their own FRs around the time the EU enforced its rules is highly consistent with the mimicking mechanism.

The adoption of highly similar policies in multiple units could support both learning and mimicking. However, two types of evidence generally support the mimicking over the learning argument: (1) diffusion is relatively fast since it does not require resources or time to evaluate the outcome of the policy and (2) smaller units apply the same policy as bigger units.

\textsuperscript{11} the SGP was signed in 1992 but was only fully enforced in 1999
3.3.5 Coercion Mechanism

Coercion explains the diffusion of public policies by the power asymmetry between actors. Coercion can be exercised by governmental and nongovernmental entities through the use of physical force, the manipulation of costs and benefits, or the monopolization of information (Dobbin et al. 2007). Coercion strongly depends on the ability of the coercive agent to exercise its power. Two ways of exercising power could explain the diffusion of FRs: coercion through conditionality and coercion through reward. Despite small differences, these strategies are two sides of the same coin. Because the national argument justifying the utility of FRs has been around for a relatively long time, there is reason to expect that these arguments guide the action of coercive agents.

Coercion through conditionality is based on the power a lender has over a borrowing country. For instance, international organizations can create leverage by conditioning a loan on policy reform. Mosley et al. (1995) revealed how lending was used as leverage to push policy reforms by the World Bank. The core of their argument can be summarized in three steps. First, the borrower and the lender negotiate the conditions of the loan, referred as conditionalities. In IMF and World Bank lending arrangements, conditionalities contain the policy changes demanded by the institutions. Second, the loan is divided into multiple installments, each installment depending on the progress made in the policy reforms. The condition which relies on further installments is the main source of leverage of the lending organization. Between installments, the borrower must decide how far to honour the conditionalities. Third, the lenders decide to release additional tranches depending on the borrower’s compliance to the conditionalities. FRs are often one of the policy changes demanded by a lending institution. This strategy was first
developed by the World Bank but is also applied by the IMF. Both institutions provide financial help to countries in need, set conditions for these loans, and expect the loan to be paid back. The conditions imposed by the IMF and World Bank have converged over time (Dreher 2004).

While this strategy allows the World Bank to push for its favoured policy, it has been significantly less effective than initially anticipated (Mosley et al. 1995). This comes from the ability of the lender to only partially apply the conditions demanded by the lending organization. Indeed, history has shown that conditionalities are notoriously hard to enforce (Dobbin et al. 2007). In the case of FRs, there is reason to believe that trying to impose FRs through the use of conditionality will have a small rate of success. FRs can severely limit a government’s future ability to make budgetary decisions and, if we agree with the deficit bias argument, can limit the ability of the incumbent government to use public finances to increase its electoral prospects. This means that national governments may have strong incentives to try to avoid FRs and could have the means to avoid them. Dreher (2009) estimated that the IMF conditions are respected in only 50% of cases—an estimate largely supported in the literature.

This strategy was first developed to push policies on countries. However, there is no reason to believe that international organizations will not use the same strategy against larger political units like monetary unions. In fact, exercising coercive influence on monetary unions could provide additional leverage to international organizations. By imposing FRs at the level of the union they can use their leverage in a given country to push their preferred policies in countries where the international organization has no leverage.
A second mode of enforcement is based on the promise of an important reward if policy changes are adopted. The reward is given only once desired policy changes have been made. Schimmelfennig and Sedelmeier (2004) have documented how the EU used such a strategy to push its preferred policies on neighbouring countries. The authors do not know of any organization outside of the EU that used this strategy. They show that the desire of countries to join the union allows the EU to impose its rules on the candidate countries. The theoretical model developed by Schimmelfennig and Sedelmeier (2004) has only two steps. First, the coercive agent sets the conditions the candidate country must meet in order to be eligible for the reward. In contrast to conditionalities, no part of the reward is given before policy changes are made. In a second step, the coerced country decides to comply or not. This decision is determined by the cost of the reform compared to the value of the reward. A country will not reform its institutions if the political or economic cost is higher than the promised reward. Another key difference with coercion through conditionality is that the coercive agent does not have to intervene further to influence the decision process, meaning the probability of observing documentary traces is lower under coercion through reward. Schimmelfennig and Sedelmeier (2004) argue that this has allowed the EU unprecedented influence and the opportunity to restructure national institutions of candidate countries, suggesting a higher rate of success for this enforcement mechanism than the former. This is the main argument tested in this paper.

3.4 Method

The objective of this paper is to test the possibility that a coercion mechanism explains the creation of FRs. While Doray-Demers and Foucault (2017) have already provided correlational evidence suggesting that coercion might be one of the key mechanisms behind the creation of
FRs, this can only reveal a statistical association between periods where countries are vulnerable to coercion and changes in FRs stringency. This is not sufficient to establish whether a coercive mechanism is really at play. Using a process tracing approach, this paper tests the plausibility of the coercion hypothesis.

More specifically, our interest is to test whether the creation of FRs can be explained by coercion. Our population of interest is composed of all FRs created up to 2014. Our population is divided between countries where FRs were created nationally and supranational FRs. Supranational rules exist in four monetary unions. Among those, the European Union has already been studied in depth and we have little new information to add (see Appendix F for more information about the history of FRs in the EU). Therefore, this study will focus on the three other monetary unions and retrace the development of FRs in each case. Studying national FRs poses an additional challenge. The sheer number of countries that have adopted national FRs makes it impossible to study each national dynamic at length. With this in mind, our focus will be on cases that have plausibly been coerced by two international organizations: the EU and the IMF.

A process tracing approach has the major advantage of being flexible enough to accommodate both subpopulations. Process tracing is a useful qualitative tool to test process-level observable implications of an explanation in light of specific hypotheses. This approach allows us to evaluate trajectories of change and causation (Collier, 2011), which is appropriate in light of the specific objective of this study. More specifically, we hypothesize in this study that coercion is a mechanism at play in the creation of FRs.
Our process tracing approach will use three tests: leverage, promotion, and compliance. Each test refers to specific conditions associated with the coercion hypothesis. These tests are done at the level of the FRs. The coercion hypothesis gains more support each time an FR passes the three tests. This is due to the fact that an FR that passes the three has almost certainly been created through the coercion mechanism.

First, the leverage test looks at the presence of coercive agents with leverage when the FR was created. To pass this test, an FR must be created during a period where the coercive agent had a source of leverage to influence national or monetary union authorities. An FR that is created in the absence of a coercive agent with leverage fails this test. We will look specifically at leverage that results from the use of conditionalities, as suggested by Mosley et al. (1995), and to leverage which results from the promise of a reward, as suggested by Schimmelfennig and Sedelmeier (2004). This is a necessary condition for the coercion mechanism to be true: without leverage, there can be no coercion. As such, the observation of leverage is a hoop test as defined by Collier (2011). Failure to observe leverage in a specific case will imply that coercion did not cause the creation of the FR. Systematic failure to observe leverage would disprove the coercion hypothesis globally. However, observing leverage is not a sufficient condition to conclude that coercion is at play.

Second, the promotion test is also a hoop test. For the coercion hypothesis to be supported, we must be able to observe that the coercive agent actively pressures the coerced entity into adopting the policy of interest, in this case FRs. The key of the promotion test is the observation
of direct promotion of FRs during the creation process of an FR. The challenge here is that promotion can be informal and often untraceable in official documents. Therefore, for FRs to pass the promotion test, there must be sufficient evidence that strongly suggests the country that created the FRs was being lobbied by an outside actor. An FR will fail the promotion test if we cannot demonstrate beyond a reasonable doubt that the country creating the rules was lobbied. However, for a coercion mechanism to work, it is not sufficient that the coerced entity receive pressure—the coerced entity must also react to the demands of the coercive agent. This is why observing the active promotion of FRs is a necessary condition for coercion.

When possible, we also try to contrast cases where both leverage and promotion are present with cases where they are not. These cases can provide support for the coercion hypothesis if, in the absence of leverage or promotion, there is also an absence of FRs.

Third, the **compliance** test investigates whether or not we can observe either documentary evidence or evidence resulting from the sequence of events that can link the creation of FRs to the pressure of the coercive agent. For FRs to pass this test, we must be able to observe either (1) evidence in official documents to suggest that the FRs were created because of pressure from the coercive agent or (2) a sequence of events that shows the FRs were created and the coercive agent subsequently provided the reward that the coercive agent linked to the creation of the FRs. If such evidence cannot be observed, we cannot directly link the demand of the agent to the reward and the FR will fail the test. This test provides even stronger evidence for coercion if we can observe resistance. This means that if we can observe either delays in the adoption of the rule or counterarguments from public officials, we can conclude that national elites did not desire the
FRs. Observing an FR that was not desired by national elites clearly shows that this FR was not the result of a national process but rather coerced. Linking the demands of the coercive agent to the rule that is created provides strong supporting evidence that the rule was created under a coercion mechanism.

One could argue that countries that create FRs are more likely to join the EU or to receive IMF financial support. Under this logic, the presence of the coercive agent would be coincidental and would not cause the creation of FRs. In other words, our results might be driven by the selection of the cases that are the most likely to be involved with the IMF or the EU. In this study, there is no bias in the case selection process; we took the entire population of FRs. Yet, that does not solve the confounding problem. However, one major advantage of process tracing methods is that they are less vulnerable to selection effects. The leverage of process tracing evidence is not based on correlation. Instead, it comes from retracing the different steps composing the causal chain.

The idea that our results might be driven by a systematic difference between countries that create FRs and those that do not would be further weakened if many FRs pass the leverage test. Indeed, if the creation of FRs results from an unobserved characteristic of countries that join the EU or that receive help from the IMF, we should also observe the creation of FRs just before or just after IMF or EU intervention since the unobserved characteristic should also be present at those moments. If a significant majority of rules are created when coercive agents are present, it would suggest that their presence is an important condition for the creation of FRs. Also, if the creation of FRs is the result of a national process that happens to correlate with the presence of a coercive
agent, we should not observe systematic discussions about the creation of the rule between country officials and agents of the coercive organization. This implies that we should not find documentary evidence of promotion in many cases. Therefore, a significant number of rules should fail the promotion test. Assuming that a majority of rules pass both the leverage and promotion test, the argument that FRs are caused by an unobserved characteristic of a country that is concomitant with the presence of a coercive agent should be rejected. Also, we should not be able to observe evidence of resistance from countries that adopt FRs if coercion is not the mechanism that leads to the creation of those FRs.

As suggested by Collier (2011), it is useful to look at alternative hypotheses. In this case, a second likely candidate is the mimicking mechanism. We cannot provide a test for the mimicking as it pertains to national FRs, as this would require deeper analyses of national history, going beyond the scope of this paper. In addition, Doray-Demers and Foucault’s (2017) results suggest that mimicking might not be a key mechanism to explain the creation of national FRs. However, it is possible to use the supranational cases to look for evidence that would support the mimicking hypothesis. Three types of evidence would suggest a mimicking mechanism: (1) FRs reform should be similar in each monetary union, (2) reform in the different monetary unions should take place in a relatively short time span, and (3) reform in smaller monetary unions should be similar to that in the EU, the most important monetary union in both size and resources. While the first type of evidence is a necessary condition, the other two types are not necessary and are strongly suggestive of mimicking.
Two different types of evidence were used in these tests: historical chronology of events, and factual information about the interaction between international organizations and national or monetary union authorities contained in official documents. The data used to establish sequences of events come from official sources and academic literature. The official documents that we used mostly come from official IMF and EU reports complemented by official national and monetary union sources (details of primary sources in Appendix I).

We face the challenge that governments are unlikely to admit to having been coerced, whether or not the coercion hypothesis is true. Since FRs can severely limit government freedom, it is unlikely that a government would publicly admit to sacrificing their sovereignty to an international organization. This is even more true in a strong democracy, where the electoral cost of such a decision can be high. In addition to negative feedback from the population, admitting that they had been coerced would be humiliating for a government, tantamount to admitting their own weakness. Therefore, it is expected that public demonstration of coercion is limited, even when coercion is present. The probability of observing direct evidence of coercion is relatively low for any given country. Observing the admission of a public official that the government is being coerced would therefore be smoking gun evidence that would almost automatically pass the compliance test, because of how unlikely this observation is under any other hypothesis than coercion.

3.5 Results

This section is divided between the tests done on national FRs—FRs that have been created by national governments and that apply only to a single country—and those done on supranational
FRs—FRs created by a monetary union that apply to multiple countries. The section on national FRs first presents the leverage test for both the EU and the IMF cases, then each coercive agent is analyzed separately for the promotion and the compliance test. The structure for the supranational FRs section is similar: first we present the leverage elements, and then we use the narrative for each of the monetary unions for the promotion and compliance test. Contrary to the section on national FRs, the monetary union cases allow us to compare cases with significantly different levels of leverage.

3.5.1 National FRs Leverage Test

We have identified two types of leverage that can explain the creation of FRs. Mosley et al.’s (1995) work suggests that a country receiving IMF assistance can be coerced through the use of conditionalities, whereas Schimmelfennig and Sedelmeier (2004) argue that countries wanting to join the EU can be coerced into adopting EU institutions. This means that FRs created in countries that were receiving IMF financial help (cases in Table 3.1 line B) and countries that were applying for EU membership (cases in Table 3.1 line C) can be considered to have passed the leverage test. Only FRs from those categories will be used in the compliance test.

3.5.1.1 European Union Country Sample: Promotion Test

The promotion test would fail in the absence of evidence that the EU actively promotes FRs to candidate countries. The EU adopted supranational FRs itself before starting to promote FRs on neighboring countries. The origins of FRs spur from the fear of German political elites that once the Euro was adopted, Germany might be forced to bail out other members of the currency union. It could be argued that supranational EU FRs imposed under the Maastricht criteria are
themselves the result of coercion by the German government (Appendix F provides additional detail about the history of FRs in the EU). The European Central Bank (ECB) and other European institutions’ preference for FRs can be retraced to the original negotiation of the SGP spearheaded by Germany (Blyth, 2013; Waigel, Herpertz and Verdun, 2011). Once those FRs were adopted, the EU began promoting FRs, as is clearly stated in the EU Directive on requirements for budgetary frameworks (Directive 85/2011 Article 5) to candidate countries to join EU.

“Each Member State shall have in place numerical fiscal rules which are specific to it and which effectively promote compliance with its obligations deriving from the TFEU in the area of budgetary policy over a multiannual horizon for the general government as a whole.” (Directive 85/2011 Article 5)

Additional evidence of the active promotion of FRs can be found in European Commission Country reports for the five countries that are presently trying to join the EU (Table 3.3). The only report where FRs were not discussed is the 2014 Bosnia and Herzegovina report. Year after year, the recurrence of statements on this condition indicate a surveillance of its fulfillment, fully in line with coercion. This evidence supports the idea that the EU actively promotes FRs to all countries submitting their candidacy for membership. Based on this evidence, it can be argued that FRs created in countries wanting to become EU member pass the promotion test.

3.5.1.2 European Union Country Sample: Compliance Test

For the compliance test, we expand the sample by taking advantage of the specific context of eastern European countries. Eastern European countries are interesting because, out of 20 relatively similar countries, 4 did not join the EU whereas 5 are in the process of joining the EU,
providing a variety of outcomes. Also, the fact that Eastern European countries are relatively similar reduces the risk of having the result driven by confounding variables. This context allows us to test for compliance and can provide extra leverage showing that the absence of pressure from the EU—that is, the absence of coercion—leads to the absence of FRs. FRs fail the compliance test if they are created outside of EU membership negotiations.

To pass the compliance test, FRs must be adopted between the start of the discussions to become an EU member and the effective admission in the EU (Table 3.4). We can only be certain that the reward was offered once official membership discussions were opened with the EU. Once the country became a full member, there is no more leverage to force policy changes. Institutional changes that predate the offer of the reward cannot be assumed to support the coercion hypothesis, even if they are done in anticipation to candidacy for EU membership. Similarly, FRs created after the reward was given would not fit the sequence predicted by the coercion hypothesis and would fail the compliance test. A country that wants to join the EU which also does not create FRs would fail to support the coercion hypothesis. Countries that do not try to join the EU are not expected to create FRs under the coercion hypothesis.
Table 3.3 Examples of EU Report Promoting Fiscal Rules

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>2014</td>
<td>“Significant work is needed to align with Directive 85/2011 on requirements for budgetary frameworks including the introduction of a fiscal rule.” P.35</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>“Fiscal credibility is to be reinforced by adopting a fiscal rule the details of which have yet to be worked out.” P.27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“In the coming year, the country should in particular: further strengthen the medium-term budgetary framework and increase commitment control, partly by adopting a well-designed fiscal rule in line with the Directive on requirements for budgetary frameworks” p.45</td>
</tr>
<tr>
<td></td>
<td>2016</td>
<td>“A fiscal rule was adopted in June 2016. The rule mandates a long-term debt ceiling of 45 % of GDP and budget balances that ensure a falling debt ratio until the target is reached.” P.27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“Albania is moderately prepared in the area of economic and monetary policy. Some progress was made in particular by introducing a basic fiscal rule and strengthening medium-term budget planning.” P.50</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>2014</td>
<td>Missing</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>“In mid-September, the Republika Srpska adopted a law on fiscal responsibility, including establishment of an independent Fiscal Council and a fiscal rule limiting government expenditures and deficits.” P.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“ERP recommendation 1: ‘Improve the budget management framework by adopting and implementing the Law on Fiscal Responsibility in Republika Srpska, especially including the establishment of a Fiscal Council and the adoption of a fiscal rule.” P.33</td>
</tr>
<tr>
<td></td>
<td>2016</td>
<td>“The Federation of Bosnia and Herzegovina Government continued to deliver on reform priorities as defined in the Reform Agenda. This included the adoption of legislation in areas such as labour market, fiscal responsibility and business environment.” P.8</td>
</tr>
<tr>
<td>Macedonia</td>
<td>2014</td>
<td>“Significant efforts will be needed to align national legislation with Directive 85/2011 on the requirements for budgetary frameworks of Member States, including the requirement that a fiscal rule be introduced” p.35</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>“In the coming year, the country should in particular: introduce expenditure benchmarks and fiscal rules to improve public finance management.” P.45</td>
</tr>
<tr>
<td></td>
<td>2016</td>
<td>“In the coming year, the country should in particular: introduce fiscal rules so as to improve public finance management” p.48</td>
</tr>
<tr>
<td>Montenegro</td>
<td>2014</td>
<td>“The adoption of fiscal rules in April 2014 seems to confirm the continuity of consolidation efforts, although the efficiency of its enforcement mechanism needs to be verified once the law is implemented.”p.16</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>“In 2014, Montenegro introduced numerical fiscal rules, which represent partial alignment with the directive on requirements for budgetary frameworks.” P.43</td>
</tr>
<tr>
<td></td>
<td>2016</td>
<td>“Since 2015, the State Audit Institution reviews the application of the fiscal rules.”p.48</td>
</tr>
<tr>
<td>Serbia</td>
<td>2014</td>
<td>“Public debt continued increasing up to 63% in July 2014, breaching by far the 45% of GDP ceiling introduced by the fiscal rules.” P.35</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>“Serbia introduced fiscal rules in 2010, but public debt continued to increase and is expected to stabilise only in 2017 at almost 80% of GDP, breaching the statutory 45% ceiling” p.44</td>
</tr>
<tr>
<td></td>
<td>2016</td>
<td>“However, the fiscal responsibility framework and, in particular the system of fiscal rules, is weak and needs to be strengthened.” P.27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“In the coming period, Serbia should in particular: consider strengthening the system of fiscal rules, while making them more binding” p.48</td>
</tr>
</tbody>
</table>

Sources: European Commission Country reports, See Appendix I for detailed list of documents
<table>
<thead>
<tr>
<th>Countries</th>
<th>Start of official discussion to obtain EU membership</th>
<th>Reaching Candidacy Stage</th>
<th>Creation of national fiscal rules</th>
<th>EU admission</th>
<th>Supports coercion argument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>2009</td>
<td>2014</td>
<td>2016*</td>
<td>NO</td>
<td>True</td>
</tr>
<tr>
<td>Belarus</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>True</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>2016</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>True</td>
</tr>
<tr>
<td>Croatia</td>
<td>2003</td>
<td>2004</td>
<td>2009</td>
<td>2013</td>
<td>True</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>1996</td>
<td>1997</td>
<td>2004</td>
<td>2004</td>
<td>-</td>
</tr>
<tr>
<td>Hungary</td>
<td>1994</td>
<td>1997</td>
<td>2004</td>
<td>2004</td>
<td>-</td>
</tr>
<tr>
<td>Kosovo</td>
<td>NO</td>
<td>NO</td>
<td>2010</td>
<td>NO</td>
<td>False</td>
</tr>
<tr>
<td>Latvia</td>
<td>1995</td>
<td>2000</td>
<td>2004</td>
<td>2004</td>
<td>-</td>
</tr>
<tr>
<td>Lithuania</td>
<td>1995</td>
<td>2000</td>
<td>1997</td>
<td>2004</td>
<td>True</td>
</tr>
<tr>
<td>Macedonia</td>
<td>2004</td>
<td>2005</td>
<td>NO</td>
<td>NO</td>
<td>-</td>
</tr>
<tr>
<td>Moldova</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>True</td>
</tr>
<tr>
<td>Montenegro</td>
<td>2008</td>
<td>2010</td>
<td>2014</td>
<td>NO</td>
<td>True</td>
</tr>
<tr>
<td>Poland</td>
<td>1994</td>
<td>1997</td>
<td>1999</td>
<td>2004</td>
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<tr>
<td>Romania</td>
<td>1995</td>
<td>2000</td>
<td>2007</td>
<td>2007</td>
<td>-</td>
</tr>
<tr>
<td>Serbia</td>
<td>2009</td>
<td>2012</td>
<td>2011</td>
<td>NO</td>
<td>True</td>
</tr>
<tr>
<td>Slovakia</td>
<td>1995</td>
<td>2000</td>
<td>2004</td>
<td>2004</td>
<td>-</td>
</tr>
<tr>
<td>Ukraine</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>True</td>
</tr>
</tbody>
</table>

True: Cases that support the coercion argument | False: Cases that contradict the coercion argument | Neutral: Cases that neither support nor contradict coercion

<table>
<thead>
<tr>
<th>True</th>
<th>False</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

Sources: http://ec.europa.eu/enlargement/countries/check-current-status/index_en.htm
Complementary information was collected from the EU commission enlargement archives
Table 3.4 classifies the 20 eastern European countries into three groups. The “True” category contains cases that support the coercion hypothesis, by virtue of being EU members with FRs that pass the compliance test or by being non-EU members that did not adopt FRs. The “False” category regroups cases that contradict the coercion hypothesis. Finally, the “-” category contains ambiguous cases that cannot be assumed to support the coercion hypothesis. Out of 20 Eastern European countries, 12 provide clear support for the coercion hypothesis. FRs in eight countries were created between the moment the country started official discussion with the EU and the moment they became a full member, effectively passing the compliance test. In the case of Albania, which is presently in negotiations with the EU, the 2016 European Commission report shows that an FR is under preparation.\(^\text{12}\) Among the countries that did not join the EU, three did not create FRs.

It must be noted that the Czech Republic, Hungary, Latvia, Romania, and Slovakia adopted the Maastricht criteria when they became official EU members. These cases are categorized as ambiguous, since they do not support nor contradict the coercion hypothesis. However, Hungary could also have been classified in the “true” category since it created a national BBR the same year it adopted the Maastricht criteria, showing that the political process to adopt national FRs was en route before Hungary became a member. This BBR was extremely close to passing the compliance test. However, as a measure of caution, we must classify that this result is ambiguous since it was done the year Hungary became an EU member.

Only Estonia and Kosovo contradict the coercion argument. In the case of Kosovo, FRs were created under IMF leadership (see next section). Estonia created a BBR before official discussions with the EU commenced.

It is noteworthy that the years when FRs were adopted do not form a sequence. Under the mimicking hypothesis, we would expect the first mover to adopt FRs, then observe mimicking countries adopting them soon after. This process would lead to a sequential distribution of the date of FRs creation. The absence of such a pattern suggests that those rules have not been adopted through a mimicking process.

This section provides evidence supporting the idea that the EU has actively promoted FRs to countries seeking EU membership and that, in a significant number of cases, FRs were created before EU membership was granted. This is expected if the coercion hypothesis is true. This section also provides evidence that countries that did not apply for EU membership, though similar to those that did, did not create FRs. This suggests that coercion was necessary for FRs to be created.

3.5.1.3 IMF Country Sample: Promotion Test

The second sample of FRs we analyzed are those created during an IMF intervention. The fact that the IMF ties conditionality to loans offered to countries in financial difficulty is sufficient to provide leverage to the IMF. Therefore, FRs created during an IMF intervention pass the leverage test. Two elements remain to be tested: (1) whether or not these FRs were created in a
period when the IMF promoted FRs, and (2) whether we can tie the creation of the FRs to IMF demands.

The observation of active promotion by the IMF in official documents faces an important challenge: it is not because the IMF staff promoted FRs that the promotion of FRs will be mentioned in their reports. Therefore, the non-observation of promotion in IMF reports is not evidence of the absence of promotion. Instead of trying to demonstrate the active promotion of FRs by the IMF one country at a time, we attempt to show that IMF’s promotion of FRs is relatively constant across countries and over time. Finding clear testimony that the IMF does not promote FRs would imply that all FRs created during IMF intervention fail the promotion test.

The IMF is present in all countries throughout the world. IMF discussions with country officials are highly documented and provide clear evidence showing that the IMF actively promotes FRs. Each year the IMF produces a series of reports summarizing its interactions with different governments around the globe. These reports are called “IMF Country Reports”. The yearly activities of the IMF are summarized in the “IMF Annual Reports”. A rapid search in the IMF library for country reports will reveal 42,000 documents, including a significant number of duplicates. Evidence of active promotion of FRs by the IMF has a high prevalence in those reports. A selection had to be made. We illustrate this by presenting examples from 7 countries (Table 3.5). We chose these countries to show that the IMF promotes FRs to a wide range of countries. France, Russia, and the United States (Table 3.5) were selected to provide geographic diversity and also because they have strong economies that can resist IMF pressure. Kosovo and Peru were selected because they created FRs during an IMF intervention. Bolivia and Ukraine
were selected to show that the IMF also promotes FRs in countries that did not create FRs during an IMF intervention. Other examples covering African countries can be found in the section on monetary unions. Through the observation of staff reports and executive board discussions, we find that, in all cases, the IMF does push for FRs. However, the language changes between countries. This is a valuable example because, if the IMF staff does push FRs onto a wide variety of countries, including some of the biggest economies in the world, there is little reason to believe the IMF would not be pushing them onto weaker economies. This evidence suggests that any FRs created during an IMF intervention would pass the promotion test.

3.5.1.4 IMF Country Sample: Compliance Test

For the compliance test, we could not look at cases that failed to create FRs, as we did for the EU—the number of countries receiving financial help from the IMF is too large. We focus on FRs that pass the leverage and promotion test, that is, FRs that were created during an IMF intervention. However, simply showing that FRs were created during an IMF intervention is similar to correlational evidence. For those FRs to pass the compliance test, we need to find official documents that link the creation of the FRs to the demands of the IMF. Failure to find these documents implies a failure of the compliance test.
Table 3.5 Example of IMF Report Promoting Fiscal Rules

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Document</th>
<th>Page</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>2010</td>
<td>IMF Country Report No. 10/240</td>
<td>30</td>
<td>“Adopting a fiscal rule would strengthen the consolidation strategy and add credibility both to the national efforts and to the broader European fiscal governance reforms. Staff* encourages the authorities to adopt a fiscal rule on the structural general government balance that is enshrined in the highest legislation.”</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>IMF Country Report No. 11/211 p.17</td>
<td>17</td>
<td>“Staff encouraged the authorities to push ahead with their efforts to adopt a fiscal rule consistent with the planned EU directive.”</td>
</tr>
<tr>
<td>Russia</td>
<td>2012</td>
<td>IMF Country Report No. 12/217</td>
<td>2</td>
<td>“Directors stressed the importance of a strengthened fiscal framework to anchor medium-term fiscal policy. They welcomed the plan to introduce a new fiscal rule to decouple the fiscal stance from short-term variations in oil prices, but saw scope for further improvements to allow for the effective rebuilding of the Reserve Fund.”</td>
</tr>
<tr>
<td>United States</td>
<td>2010</td>
<td>IMF Country Report No. 10/249</td>
<td>1</td>
<td>“Fiscal stabilization: develop a credible plan for stabilizing debt/GDP over the medium term, which would entail a larger adjustment than under the authorities’ budget path, without jeopardizing the recovery. A credible plan would have three elements—an upfront adjustment (the planned adjustment in 2011 would be appropriate under staff’s baseline outlook), clear commitment to future measures (perhaps by enshrining targets in legislation), and further entitlement reforms—with trade-offs among them if necessary, say in a downside risk scenario.”</td>
</tr>
<tr>
<td>Kosovo</td>
<td>2010</td>
<td>IMF Staff Visit Concluding Statement - Kosovo June 24 2009</td>
<td></td>
<td>“The authorities should consider embedding policy targets resulting from such a framework into a simple and transparent fiscal rule; this would prove beneficial in setting and communicating policy.”</td>
</tr>
<tr>
<td>Bolivia</td>
<td>2014</td>
<td>IMF Country Report No. 14/36</td>
<td>36</td>
<td>“Once monitoring of the structural balance is well established and integrated as a policy tool, the authorities could consider establishing formal fiscal rules to cope with price volatility and the exhaustibility of natural resource revenues.”</td>
</tr>
<tr>
<td>Peru</td>
<td>2015</td>
<td>IMF Country Report No. 15/294</td>
<td>8</td>
<td>“Peru’s practices meet most of the principles of the IMF’s Fiscal Transparency Code at good or advanced level. Peru provides an extensive set of fiscal information with financial statements covering the entire public sector. There is a comprehensive budget supported by a solid fiscal framework with clear policy objectives embedded in numerical fiscal rules.”</td>
</tr>
<tr>
<td>Ukraine</td>
<td>2016</td>
<td>IMF Country Report No. 16/30</td>
<td>19</td>
<td>“In the mid-term: Consider introducing fiscal rules through the Budget Code and enforce them following the expiration of the IMF-supported program. Technical assistance to design the rules may be required.”</td>
</tr>
</tbody>
</table>

*Staff refers to IMF Staff

Exact conditions associated with a loan are generally not public. However, during an IMF intervention there are intense exchanges of official documents between the IMF and country officials than can contain useful evidence. Specifically, we study two types of documents countries send to the IMF during an IMF intervention: “Letters of Intent” and “Memorandums”. Both documents are often presented together on the IMF website. To simplify the reading, we refer to the combination of both documents as “Letters of intent”. These documents are written with the assistance of IMF staff to demonstrate how the country asking for help will meet IMF conditionalities, and contain information addressing all demands of the IMF Executive Board. The discussion of FRs in documents implies that at some point the IMF demanded that the government receiving financial help create FRs. What the letter of intent contains is the progress report on the creation of the FRs demanded by the IMF. Assuming that the IMF did not demand that a government create FRs, there would be no reason for FRs to be mentioned in these progress reports. The policies included in these reports appeal most to the IMF board of directors and encourage the board to release the next instalment of the loan. There is no logical reason to include policies that are of no interest to the IMF board of directors. Therefore, the mention of FRs in a letter of intent is evidence that the FRs being created were originally demanded by the IMF and that these FRs pass the compliance test.

There are 19 countries that have created FRs during an IMF program and sent letters of intent to the IMF. Letters were recovered from the IMF website. Letters for Cabo Verde 1998 and the Lithuania 1994 IMF interventions were not published on the web site. These are the only two
cases where the data were not available. In each of these letters, we looked for sections demonstrating that the country was active in creating FRs. Two countries created FRs with timing that perfectly matches an IMF intervention. Ecuador created FRs between two IMF interventions and Pakistan created an FR right after an IMF intervention. Nevertheless, the letters of intent of these two countries were included in the sample. Finally, we examined letters of intent for European countries that had dealt with the IMF. In total, we found the letters of intent for 17 countries.

FRs were discussed in 15 out of 19 letters of intent to show the country’s compliance with IMF conditionality (Table 3.6, full quote in Appendix K). The reference to FRs in the Nov 4, 2008 Hungarian letter of intent is particularly striking: “We have already submitted to parliament an amended fiscal responsibility law before consideration of our program by the IMF’s Executive Board.” Not only was the rule submitted to parliament, it was submitted prior to the program’s submission to the IMF, suggesting that this was done to please the IMF board of directors. This implies that 15 FRs pass all three tests.
<table>
<thead>
<tr>
<th>Country</th>
<th>Year of agreement</th>
<th>IMF intervention number</th>
<th>Type of intervention</th>
<th>Date of letter</th>
<th>FR mention in letter of intent</th>
<th>Name of law</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>1999</td>
<td>281</td>
<td>SBA</td>
<td>Jan 11, 1999</td>
<td>YES</td>
<td>Fiscal responsibility law</td>
</tr>
<tr>
<td>Brazil</td>
<td>1998</td>
<td>308</td>
<td>SBA</td>
<td>Nov 13, 1998</td>
<td>YES</td>
<td>Fiscal responsibility law</td>
</tr>
<tr>
<td>Cabo Verde</td>
<td>1998</td>
<td>248</td>
<td>PRGF</td>
<td>Missing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colombia</td>
<td>1999</td>
<td>323</td>
<td>EFF</td>
<td>Dec 20, 2001</td>
<td>YES</td>
<td>Fiscal responsibility law (presented in 2002 to ensure permanence) Fiscal Responsibility, Stabilization and Transparency Law</td>
</tr>
<tr>
<td>Ecuador</td>
<td>2002**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Georgia</td>
<td>2013</td>
<td>683</td>
<td>SBA-SCF</td>
<td>March 27, 2012</td>
<td>YES</td>
<td>Economic Liberty Act</td>
</tr>
<tr>
<td>Jamaica</td>
<td>2010</td>
<td>631</td>
<td>SBA</td>
<td>Jan 18, 2010</td>
<td>YES</td>
<td>Fiscal Responsibility Framework</td>
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<tr>
<td>Kosovo</td>
<td>2010</td>
<td>650</td>
<td>SBA</td>
<td>June 20, 2011</td>
<td>YES</td>
<td>Public Debt Law</td>
</tr>
<tr>
<td>Nigeria</td>
<td>2005</td>
<td>581</td>
<td>PSI</td>
<td>March 30, 2006</td>
<td>YES</td>
<td>Fiscal responsibility bill</td>
</tr>
<tr>
<td>Pakistan</td>
<td>2001</td>
<td>377</td>
<td>PRGF</td>
<td>Nov 12, 2004</td>
<td>YES</td>
<td>Fiscal responsibility law</td>
</tr>
<tr>
<td>Panama*</td>
<td>2000</td>
<td>338</td>
<td>SBA</td>
<td>July 18, 2002</td>
<td>YES</td>
<td>Fiscal responsibility law</td>
</tr>
<tr>
<td>Peru</td>
<td>2000</td>
<td>298</td>
<td>EFF</td>
<td>March 13, 2000</td>
<td>YES</td>
<td>Law on Fiscal responsibility</td>
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<tr>
<td>Serbia</td>
<td>2009</td>
<td>606</td>
<td>SBS</td>
<td>Dec 3, 2009</td>
<td>YES</td>
<td>Fiscal responsibility amendments to budget law</td>
</tr>
</tbody>
</table>

**EU Countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>Year of agreement</th>
<th>IMF intervention number</th>
<th>Type of intervention</th>
<th>Date of letter</th>
<th>FR mention in letter of intent</th>
<th>Name of law</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>2002</td>
<td>398</td>
<td>SBA</td>
<td>July 5, 2002</td>
<td>YES</td>
<td>Public debt law</td>
</tr>
<tr>
<td>Greece</td>
<td>2010</td>
<td>638</td>
<td>SBA</td>
<td></td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>Hungary</td>
<td>2008</td>
<td>600</td>
<td>SBA</td>
<td>Nov 4, 2008</td>
<td>YES</td>
<td>Fiscal responsibility law</td>
</tr>
<tr>
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<td>1994</td>
<td>121</td>
<td>EFF</td>
<td>Missing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>2009</td>
<td>617</td>
<td>SBA</td>
<td>April 24, 2009</td>
<td>YES</td>
<td>Fiscal responsibility law</td>
</tr>
</tbody>
</table>

Total: Yes 15, No 2, Missing 2

*Because of missing letters, the evidence was found in the IMF public notice for Panama
**Year the rule was created

Note: The names of the laws are presented only when they are available in English, no translation used, and meaningful, i.e. not a simple number.

Source: http://www.imf.org/external/index.htm
Interestingly, in 12 of the 17 countries, the name of the law was a variation of “Fiscal Responsibility Law”. This seems to be the generic name used by the IMF for laws that create FRs. This evidence supports the idea that IMF pressure can explain the creation of FRs. The fact that the same names are used across countries and languages suggests a “one size fits all” approach to the promotion of FRs. The coercion hypothesis could also explain this phenomenon. Imitating countries could easily adopt the name of the law. However, the fact that the term “Fiscal Responsibility Law” seems to originate from the IMF favours the coercion hypothesis.

3.5.1.5 Sample of Supranational Rules: Leverage Test

This section analyzes the evolution of FRs in the Central African Economic and Monetary Union (CEMAC), the West African Economic and Monetary Union (WAEMU), and the Eastern Caribbean Currency Union (ECCU). We take advantage of the similarities between the three cases to arbitrate between the coercion and mimicking hypotheses. All monetary unions created very similar DRs and BBRs (Table 3.2) around the time of the Euro’s launch (1999-2001). Both mechanisms could explain this similarity: coercion is plausible because the IMF coerced all monetary unions around the same time; mimicking is plausible because smaller monetary unions seem to have followed the example of the EU.

Conducting tests on the supranational FRs sample will be done in two steps. First, we apply the leverage test on FRs from the three monetary unions. Next, we go through the history of FRs in each union to apply the promotion and compliance test.
To pass the leverage tests, these FRs need to have been created when the IMF had leverage over the monetary union in which the rules were created. We argue that IMF leverage over countries receiving financial help could be translated into leverage over the monetary union. However, since countries in a monetary union only have limited influence, having leverage over a single country does not provide leverage over the entire monetary union. IMF’s leverage should increase with the number of countries receiving financial help in a monetary union. In other words, we can use the proportion of countries under IMF arrangement in a given monetary union as a proxy for the leverage that the IMF can exercise over the monetary union at any point in time (Table 3.7). The logic of this proxy is that the more countries that the IMF can influence, the more support it can muster for its reforms at the level of the monetary union. The level of leverage varies significantly between monetary unions and across time. This leverage is the strongest in the WAEMU and the weakest in the ECCU. To pass the leverage test, FRs must be created in a period in which the IMF had leverage over at least 50% of the countries. Supranational rules created by the CEMAC (2002) and the WAEMU (2000) pass the leverage test. However, rules created by the ECCU fail the leverage test and cannot be explained by coercion.
Table 3.7 Number of Countries Involved in an IMF Program per Year and Monetary Union

<table>
<thead>
<tr>
<th></th>
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Source: IMF Monitoring of Fund Arrangements (MONA) database

Because of the small number of monetary unions, we were able to retrace the evolution of FRs in each monetary union over time. This allows us to retrace the exact demands of the IMF and the policy answer given by each of the monetary unions. Under the coercion hypothesis, we expect convergence between fiscal reform in monetary unions and the IMF’s demands when IMF leverage is strong. In contrast, strong convergence between IMF demands and FRs reform is very unlikely if the coercion hypothesis is false. When IMF leverage is weaker we should observe resistance. The absence of reform or the abolition of FRs are the most extreme cases of divergence from IMF demands and should be viewed as strong evidence of resistance. Both compliance when leverage is strong and resistance when leverage is weak will provide evidence in line with the coercion hypothesis. Because the mechanism transforming financial aid into leverage is by nature inefficient, the probability of observing reforms that diverge from IMF demands is high, even under the coercion hypothesis.
Resistance could also take the form of arguing against or refusing IMF demands. There is no reason to expect such resistance under the mimicking hypothesis, since IMF demands are irrelevant. Sequentially observing, resisting, and then adopting the IMF’s demands would provide strong support to the coercion hypothesis. Such a sequence would show that the original preferences of the coerced actor were not the driving factor behind the creation of FRs.

Under the mimicking mechanism, we should observe a different set of results. First, FR reform should be similar in each monetary union. Second, reform in a different monetary union should take place in a relative short time span. Demonstrating that reforms in smaller monetary unions are similar to reform in the EU, would be strong evidence in favour of the mimicking mechanism. Observing a parallel evolution of FRs among different monetary unions—that is, consistently observing the adoption of comparable reforms at similar times in different monetary unions—would support the mimicking argument. On the contrary, observing a dissimilar reform history among the different monetary unions would contradict the prediction of the mimicking mechanism. Divergence in all four monetary unions would be very unlikely if a mimicking mechanism was at play and could be considered as decisive evidence against the mimicking hypothesis.

The history for each monetary union was built using mostly IMF staff reports and IMF annual reports. The IMF publishes a “Country Report” for each monetary union almost every year, providing a yearly summary of discussions between IMF staff and monetary union authorities. The “IMF Annual Reports” contain a section on each of the four monetary unions. This
information was completed by looking at the official publication of each monetary union. However, these are rare and randomly distributed in time, providing little insight on the interaction between the IMF and the monetary unions.

3.5.1.5.1 CEMAC

FRs pertaining to the Central African Economic and Monetary Community (CEMAC) are included in their convergence criteria. These criteria have existed since the establishment of the CEMAC in 1994 and aim at assuring economic and budgetary convergence of countries in the Community. Originally, these criteria did not include FRs, dealing instead with inflation and debt payment. In the CEMAC case, the IMF appears to be the chief impetus behind the creation and strengthening of FRs. The IMF had strong leverage over the CEMAC between 1998 and 2008, since more than half of CEMAC countries were dependent on an IMF arrangement. In the 2000, the IMF Board of Directors urged the members of the CEMAC to establish a solid framework for close coordination of fiscal and structural policies.\textsuperscript{13} The CEMAC first applied a basic fiscal balance (BBR) and a debt cap at 70\% of GDP (DR) in 2002. Four of the six members were under IMF arrangements (Table 3.7).

In 2002, the IMF Board of Directors continued to push for “binding rules and quantitative criteria, periodic reviews, and mechanisms to compel individual countries to take corrective measures in case of slippages”\textsuperscript{14}. The new FRs were criticized by IMF staff\textsuperscript{15} and Board of Directors for not including oil revenues into the deficit calculations.

\textsuperscript{13} IMF Annual report 2000, p.25  
\textsuperscript{14} IMF Annual report 2002, p.21  
\textsuperscript{15} IMF Country Report No.02/203
At first, CEMAC representatives seems to have resisted the IMF push. Indeed, according to the 2003 IMF staff report, the CEMAC representatives believed “that it might be difficult to implement a rule-based convergence criterion”\textsuperscript{16}. However, by 2005, the CEMAC, “in response to earlier discussion of this issue”\textsuperscript{17}, started to informally monitor income of oil wealth. The CEMAC tightened the BBR in 2008, adding that the structural fiscal balance should be in balance or in surplus and that the budget should be balanced when excluding oil products, effectively conforming to IMF demands. This BBR reform passes the leverage, promotion, and compliance tests. In addition, the presence of counterarguments shows that this reform did not result from national dynamics. This evidence provides clear support for the coercion hypothesis. The leverage of the IMF weakened significantly after 2008, as less than 50\% of CEMAC countries remain under an IMF arrangement. At the same time, the ability of the IMF to push for reforms also seemed to diminish. Between 2012 and 2016, the IMF argued that the FRs in the CEMAC were not sufficiently binding and recommended the creation of a medium-term fiscal framework including mandatory limits on non-oil primary deficit and a lower and a more binding debt ceiling.\textsuperscript{18} Negotiations for such rules have started in 2015. The IMF suggested the reduction of the debt ceiling to under 70\% of GDP. In 2016, the new rules that kept the debt ceiling at 70\% of GDP were announced. These rules were based on the overall budget balance with oil revenues saving rules and included a new monitoring mechanism based on a three-year average debt level.\textsuperscript{19} In sum, these reforms were relatively mild and did not reduce the debt ceiling as asked by the IMF.

\textsuperscript{16} IMF Country Report No. 03/398
\textsuperscript{17} IMF Country Report No. 05/403
\textsuperscript{18} IMF Country Report No. 12/244, IMF Country Report No. 13/322
\textsuperscript{19} IMF Country Report No. 16/277
According to the President of the CEMAC commission, the 2015 reform discussions were done to conform to the policy changes in IMF support programs\textsuperscript{20} (full quote in Appendix G). It is extremely unlikely and unexpected to have a public official acknowledge that their organization needs to change its inner policies to please an international institution. This can be summarized as a situation of mild leverage leading to mild reforms.

The CEMAC FRs pass both the promotion and compliance tests. First, we can observe clear evidence in IMF staff reports that IMF promoted FRs actively to the CEMAC. This evidence is strengthened by the president of the CEMAC commission’s acknowledgement that the 2015 negotiations were opened in reaction to IMF policy changes. Second, there is evidence that the CEMAC conformed to the IMF’s demands when IMF leverage was stronger and mild reform when the leverage was weaker. This evidence is complemented by the observation of counterarguments from CEMAC officials. Indeed, we observed initial resistance from CEMAC officials, and yet IMF demands are adopted, suggesting that CEMAC was not adopting FRs based on its own preferences or internal pressures. In sum, the CEMAC case provides strong support for the coercion hypothesis.

\textsuperscript{20} Discours du président de la commission de la CEMAC: À L’Ouverture des travaux du séminaire régional de haut niveau sur la surveillance multilatérale en zone CEMAC, à Yaoundé, le 21 juillet 2015
3.5.1.5.2 WAEMU

The West African Economic and Monetary Union (WAEMU) treaty was signed on January 1994, following the devaluation of the CFA (Colonies françaises d’Afrique) currency. Between 1994 and 2000 WAEMU imposed a convergence criteria on its members targeting inflation and payment on national debt. Discussion of FRs began in 1998 when the WAEMU asked the IMF for technical assistance on the topic of fiscal convergence.\textsuperscript{21} The IMF Executive Board welcomed the efforts undertaken to create a common budgetary framework.\textsuperscript{22} Those consultations led to the creation of two FRs in 2000 that were added to the existing convergence criteria (Table 3.2), once again welcomed by the IMF Executive Board.\textsuperscript{23} A technical assistance mission can be considered evidence of the promotion of FRs, since it involves sending a team to explain what the best practice is—from IMF’s perspective. These rules are identical to those created two years later by the CEMAC. While there is little direct evidence of what demands the IMF made to the WAEMU, the fact that those rules correspond to the demands that were made by the IMF in the CEMAC case strongly suggests that they respect IMF demands. Therefore, these rules can be considered as passing the compliance test.

After 2003, we observe divergence between IMF demands and WAEMU policy. During this period, the IMF pushed for stronger regional fiscal surveillance,\textsuperscript{24} for a debt limit under 70%,\textsuperscript{25}

\textsuperscript{21} IMF technical assistance on fiscal convergence was asked and being considered in 1998: The West African Economic and Monetary Union: Recent Developments and Policy Issues. IMF Occasional Paper 170; IMF annual report 1999
\textsuperscript{22} IMF annual report 1999
\textsuperscript{23} IMF annual report 2001, p.17
\textsuperscript{24} IMF Country Report No. 03/70
\textsuperscript{25} IMF Country Report No. 11/98
the enshrinement of FRs into national law, and the creation of an independent fiscal council. There is little evidence of discussion on the topic of FRs between WAEMU and IMF staff between 2003 and 2011. The application of existing FRs were also postponed in 2003, 2006, and 2009. On the topic of the debt ceiling, the authorities of the WAEMU state that they were in the process of strengthening and clarifying some criteria, effectively acknowledging IMF demands and doing very little. Such a scenario repeated itself in 2012 and 2013 when the IMF pushed for strong surveillance mechanisms and lower debt caps. In 2015 the WAEMU authorities finally presented a reform that included neither a reduction in the debt cap, national FRs, nor independent fiscal council. In the case of the WAEMU, we observe the build-up of pressure over an extended period of time. The IMF pressured WAEMU’s authorities over many years until they gave some ground and adopted cosmetic reforms to relieve some of the pressure. In this interpretation, these delays are a form of resistance. However, these events could also signify a failed attempt at coercion. As mentioned earlier, coercion through the use of conditionality has a high probability of failing. This episode of divergence may not provide support for, though neither does it contradict, the coercion hypothesis.

To sum up, the FRs created in 2000 by the WAEMU pass all three tests and their creation can be inferred to have been the result of coercion. There is ample evidence of IMF pressure on WAEMU authorities over the entire period. In this case, we can observe compliance to IMF

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26 IMF Country Report No. 14/84  
27 IMF Country Report No. 14/84  
28 IMF Country Report No. 11/98  
29 IMF Country Report No. 12/59  
30 IMF Country Report No. 13/92  
31 IMF Country Report No. 15/100
demands until 2003. However, after 2003 the events can either be interpreted as resistance or non-compliance. Evidence for the period before 2003 is ambiguous and does not provide clear support for the coercion hypothesis. However, the period before 2003 confirms the prediction of the coercion hypothesis. The WAEMU case provides only partial support for coercion because the FRs created in 2000 support coercion. However, the sequence of reform of these FRs fails to provide clear support.

3.5.1.5.3 ECCU

The case of the ECCU differs from the others because FRs were created in the absence of leverage. There has been a common currency in the eastern Caribbean since 1965. The Eastern Caribbean Central Bank (ECCB) was created in 1983 as the central monetary authority for the union. ECCU economic history has been marked by an increase in public debt and economic hardship since the collapse of the sugar and banana industries in the 1990s. The IMF has had strong interaction with the ECCU over the period studied. However, the IMF has never had strong leverage over the ECCU (Table 3.7).

In 1998, the ECCB created a maximum deficit (3% of GDP) and a debt cap (60% of GDP) to be reached by 2007.\textsuperscript{32} According to Leonce and Hope (2013) the DR was inspired by the Maastricht treaty. It is interesting to note that at the time, both authors were employed at the ECCB. Contrary to the rules in other monetary unions, the FRs in the ECCU were guidelines developed by the ECCB, were not binding, and involved no enforcement mechanism (Kufa \textit{et al.} 2003).

\textsuperscript{32} IMF Country Report No. 04/299 p.24
The IMF qualified these guidelines of minimal requirements\textsuperscript{33} because it lacked the appropriate mechanisms for surveillance and systems of incentives for compliance. The ECCU local authorities disagreed, arguing that more binding rules would not constrain irresponsible governments and might tie the hands of democratically elected governments.\textsuperscript{34}

Since their creation, the IMF argued that the guidelines have failed\textsuperscript{35} and that more stringent rules were needed. In 2009 the IMF recommended the creation of “national fiscal responsibility laws” to strengthen ECCU FRs. Similar demands were made in 2011, illustrating that the IMF was promoting FRs to the ECCU.

However, FRs were never strengthened. A contrario, compliance with the debt rule was first postponed to 2020,\textsuperscript{36} then to 2030. The BBR was abolished in 2006. The abolition of the BBR follows the 2005 EU reform of the Excessive Deficit Procedure (EDP) that significantly weakened EU FRs. The fact that the ECCU also weakened its FRs in the following year is highly consistent with a mimicking mechanism. In 2014, ECCU authorities postponed compliance with the 60% benchmark to 2030. From this point, the ECCU trajectory diverges from the EU. Indeed, the EU started to strengthen its FRs after 2013, while ECCU countries seems unwilling to impose real costs on constituents.

\textsuperscript{33} IMF Country Report No. 03/87
\textsuperscript{34} IMF Country Report No. 04/299 p. 24
\textsuperscript{35} IMF Country Report No. 05/304
\textsuperscript{36} IMF Country Report No. 07/96
The only observable element in this case is pressure from the IMF to adopt more stringent FRs. This case would pass the promotion test. However, once the details of the case are observed, the IMF does not appear to have ever had significant leverage over the ECCU, and the ECCU never showed any sign of compliance. The latter is coherent with the low leverage, high resistance pattern. The ECCU case can be seen as the counterfactual case for the coercion hypothesis: no coercion seems to lead to no FRs.

ECCU FRs seem to be the result of a mimicking mechanism. More generally, the ECCU case provides interesting evidence supporting the mimicking hypothesis. The creation of the ECCB guidelines follows the application of the SGP. In addition, the ECCB BBR was abolished when the EU relaxed its FRs. This fits perfectly with the pattern of smaller units imitating bigger ones, as predicted by the mimicking hypothesis. The short delay between the EU and ECCU reform is also coherent with the mimicking hypothesis. Additional evidence of mimicking comes from the fact that ECCU rules are extremely similar to those of the EU. Leonce and Hope (2013) appear to confirm that at least the DR was copied from the Maastricht treaty.

In sum, these results are consistent with both the coercion and mimicking mechanisms. In terms of coercion, this case shows that without coercion, there are no stringent FRs. In terms of mimicking, these rules suggest that mimicking can explain the creation of weak rules or the weakening of rules. The fact that ECCU countries seem unwilling to impose real costs on their constituents in the absence of coercion suggests that truly binding one’s hands may require coercion.
3.5.2 Results Summary

In sum, at the national level, we took a sample of FRs that pass the leverage test by the country creating them either hoping to join the EU or receiving financial help from the IMF. We demonstrated that these FRs pass the promotion test because either the IMF or the EU were actively promoting FRs at the time of creation. For the IMF, we provided evidence that the promotion of FRs is done on a large spectrum of countries with different political and economic conditions. Finally, at the national level we provided evidence suggesting that a large share of eastern European countries applying to the EU complied with EU demands, effectively creating FRs that pass the compliance test. For the IMF, we used letters of intent to link FRs to IMF’s demands, effectively providing evidence that these rules pass the compliance test. At the supranational level we show that the WAEMU and CEMAC pass the leverage test, since the IMF had some level of leverage over them when they created FRs. We then provided evidence suggesting that the IMF was actively promoting FRs in each of the monetary unions, meaning that those rules pass the promotion test. Finally, we provided evidence that in cases where the IMF had high leverage, the monetary union complied with IMF demands and when the IMF only had weak leverage, the monetary union resisted these demands. Both patterns are consistent with the coercion hypothesis. Finally, the case of the ECCU provided evidence suggesting that, in the absence of coercion, FRs can also diffuse through the mimicking mechanism. In sum, the evidence collected in this paper strongly supports the coercion hypothesis and suggests that the diffusion of FRs is in part driven by coercion.
3.6 Conclusions

This paper is the first attempt at using a process tracing approach to study the origins of fiscal rules. In doing so, we provide new causal evidence that significantly increases our understanding of how and why fiscal rules are created. This paper sets out to test the hypothesis that fiscal rules are created through the coercive interaction between international organizations and national or monetary union authorities. We provide a significant amount of evidence supporting the coercion hypothesis. We retraced the role of two coercive agents, the EU and the IMF, in the creation of fiscal rules at the national and supranational levels. For fiscal rules created at the national level, we took two samples of countries: one for the EU and one for the IMF. Finally, we looked at the creation of FRs in three monetary unions outside of the EU.

The EU sample used 20 eastern European countries to test the role of the EU as a coercive agent. In this sample, 16 of the 20 countries applied for EU membership. Among those, 8 countries perfectly match the sequence predicted by the coercion hypothesis, creating fiscal rules during their membership process, and two contradicted the coercion hypothesis. The remaining countries created fiscal rules only once they joined the EU. The sample used to test the role of the IMF as a coercive agent was composed of 19 countries. From these, 15 cases perfectly match the prediction of the coercion mechanism. In the 4 remaining cases, we found no supporting evidence. These results provide strong support for the coercion hypothesis. Together, these two sets of results imply that coercion of national governments by the EU and the IMF explains the creation of FRs in a minimum of 21 countries.
The case of monetary unions also provided strong supportive evidence for the coercion hypothesis. By tracing the history of FRs in the WAEMU, CEMAC, and ECCU, we provided evidence that fiscal rules in the WAEMU and CEMAC were created under IMF leadership. Fiscal rules in the ECCU for their part seem to have been created to mimic the EU. This is in part explained by the fact that the IMF never had strong leverage against the ECCU. The fact that these rules were significantly weaker than the ones found in other monetary unions seems to indicate that the mimicking mechanism produced fiscal rules that are less binding. It is also interesting to note that coercion explains the creation of fiscal rules in 14 of the 20 countries composing these 3 monetary unions. Adding these countries to those from the national samples, we have strong evidence that the coercion mechanism explains the creation of fiscal rules in at least 35 out of 76 countries that have legally binding fiscal rules. Considering that we have not specifically looked for signs of coercion in western European countries and that we did not test FRs created as a result of the Fiscal Compact, the high prevalence of fiscal rules created under coercion suggests that coercion is a key mechanism in explaining the creation of fiscal rules around the world.

It has been argued that national elites might be happy to be coerced into adopting fiscal rules. Even more, some literature suggests that national elites may actually ask the IMF to coerce them. This does not invalidate our argument. Without coercion from the EU and the IMF, there would be significantly fewer fiscal rules around the world today. Also, the fact that national elites ask to be coerced would show that fiscal rules do not have strong support from the population and only limited legitimacy. More importantly, it would also show that support from national elites is not sufficient to create fiscal rules, external intervention still being necessary. This suggests that the
creation of fiscal rules is not an endogenous process to national politics or economic conditions. In fact, they are imposed exogenously.

Our results provide a logical reason why "Fiscal Responsibility Laws" are more prevalent in middle-income countries than advanced countries (Lienert 2010). Middle and low-income countries are more likely to be on the weak side of an asymmetric power relation, leaving them vulnerable to coercion and forcing them to create fiscal rules. Our results also contribute to an explanation of the impressively fast spread of fiscal rules across the globe. The coexistence of at least two influential organizations, the EU and the IMF, backed in the European context by an economically strong Germany with strong preference for fiscal rules, has led to strong pressure to adopt fiscal rules in many countries. These pressures have led to an explosion in the number of fiscal rules in the last few years. However, they may also be the downfall of this policy. There is already significant dissatisfaction throughout the EU about the European fiscal constraint. This suggests that it may be hard for democratically elected governments to protect existing fiscal rules, or at least that governments that are trying to uphold these rules might pay an electoral cost.

This paper also brings new insight to debate about the impact of fiscal rules. Significant debate remains about the efficiency of fiscal rules to solve fiscal problems. At the national level, our results show that fiscal rules are correlated with IMF interventions, raising questions about the statistical association we find in the literature between stronger fiscal rules and reductions in debt levels and deficits. Since fiscal rules are positively associated with IMF interventions and IMF interventions are generally not included in the models, the positive correlation found between
fiscal rules stringency and reductions in debt and deficit might simply be an indirect measure of the impact of IMF interventions.

Finally, our results bring back normative questions regarding the legitimacy of fiscal rules. Fiscal rules can seriously limit democratic choices, especially in a world where fiscal competition between states seems to be returning. The fact that international organizations with no democratic legitimacy are forcing policies that limit democratic choices might be difficult for many to accept. There is also significant debate in the literature about the link between fiscal rules and fiscal gimmickry (Buti et al. 2007; Hagen and Wolff 2006; Wyplosz 2012). Our results suggest that fiscal rules are imposed on unwilling governments in many cases. In such cases, it is not surprising that governments try to avoid fiscal rules. A potential avenue for future research would be to examine the link between imposition of fiscal rules and fiscal gimmickry.
Chapter 4: Did Fiscal Rules Miss the Target?

4.1 Introduction

Austerity is one of the most controversial policies that has been adopted across the European Union (EU). Fiscal rules (FRs) serve as a fiscal institution to enshrine austerity in budgetary policy. In the last 20 years, FRs have spread throughout Europe under German leadership, first through targets included in the Maastricht Treaty (1992) and in the Stability and Growth Pact (SGP) (1997), which created supranational FRs for all members of the EU and second, through the adoption of the Six-Pack (2011) and the Fiscal Compact (2012), which constrain all EU members to introduce FRs in their own national laws. The underlying rationale was that more stringent rules at the national level would protect government finance from opportunistic politicians. Stringent rules are expected to reduce public debt and default risk, and thereby reduce yields on government bonds (Iara and Wolff, 2010).

However, growing evidence supports the idea that the 2008-2009 crisis was not created by government profligacy but by private debt (Blyth 2013). This discrepancy between the origin of the crisis and its remedy raises serious concerns. As the changes introduced by the Six-Pack and the Fiscal Compact are close to the 1995 German original proposal for the SGP, there is an open possibility that the 2008-2009 crisis was used as an opportunity to push controversial fiscal institutions on unwilling governments. In this context, one might ask if FRs can indeed help to reduce debt if they are not supported by national political elites and voters.

It is not rare that FRs are imposed by international organizations such as the IMF or the European authorities rather than resulting from national politics (Doray-Demers and Foucault
2017) and (Doray-Demers, Chapter 3). However, research linking the creation process of FRs to their final outcomes remains scarce. It has been suggested that FRs externally imposed on national authorities might be more effective in binding government choices. When creating FRs, national governments often face mixed incentives. On the one hand, FRs might help stabilize public finance, yet on the other hand they can also limit government freedom. Therefore, governments might be tempted to create weaker FRs to preserve their ability to influence electoral outcomes through government spending. Supporting this idea is the fact that FRs that are externally imposed more often incorporate independent monitoring bodies, alert mechanisms, and enforcement bodies, meaning that coerced FRs should be harder to break. However, rules coming from the outside might have less political legitimacy, in which case local actors may try to avoid them (Hagen and Wolff 2006). This raises the issue of a possible relationship between the context of the creation of FRs and their fiscal efficiency.

This remains an important question to be addressed. The external imposition of FRs by international institutions is a growing trend. Under German leadership, FRs have taken a central role in European institutions and, over the last 20 years, the IMF has been actively promoting FRs across the world (Doray-Demers, Chapter 3). Being able to assess the impact of coerced FRs on national budgets might help to assess the pertinence of this policy, or at least shed light on the centrality of their creation process to their efficiency.

This paper addresses this issue by comparing the impact on debt and bond yield of FRs externally imposed on national authorities to those resulting from national politics. This is done using a panel time series approach. Contrary to previous work, we use system-GMM estimators
that are robust to a variety of biases that limit classic panel estimators. We also explore the
possibility that coerced and national FRs produce different incentives that impact the use of
creative accounting.

This paper is organized into five sections. First, we will present some prior results on the
association between the stringency of FRs and decreases in debt levels and government bond
yields. We will also explore theoretical rationales supporting competing explanations of FRs’
impact (Section 4.2). This will be followed by a brief description of FRs in the EU (Section 4.3).
The methodology will be developed in Section 4.4 and our statistical results will be presented in
Section 4.5. These results will be discussed in Section 4.6.

4.2 Theoretical background
FRs may be defined as permanent constraints on budgetary policy through the use of numerical
targets on budget aggregates (Kopits and Symansky (1998)). Eichengreen and Bayoumi (1994)
were among the first to pay serious attention to the impact of FRs on government budgets. Their
study conducted in the US shows a relationship between FRs and lower deficits, a negative
relationship between required returns on general obligation bonds and FRs, and finally, that FRs
seemed to reduce counter cycle stabilizing investments from state governments. FRs are
generally associated with two types of impacts: reduction in bond yields and lower deficits
Eichengreen and Bayoumi (1994).

The literature studying the impact of FRs on government bond rates tends to suggest that strong
FRs could reduce the interest premiums paid by governments. Poterba and Rueben (1999),
studying US states, found that binding tax limitations will increase bond interest rates, that expenditure limitations will reduce borrowing rates, and that strict anti-deficit rules can also decrease bond rates when compared to weak anti-deficit rules. Iara and Wolff (2010) arrived at a similar result when studying EU states. Their core argument is that stringent FRs reduce the risk faced by lenders. They conclude that more stringent rules are indeed correlated with lower interest rate premiums and that strong constitutional rules seem to have the most impact on government bond rates.

The literature studying the impact of FRs on fiscal discipline is somewhat more nuanced. Alesina and Bayoumi (1996) have shown that tighter FRs tend to be associated with a larger average surplus as well as with a lower cyclical variability in budget balances. Bohn and Inman (1996), using a panel of 47 US states between 1970 and 1991, have provided greater evidence that budget rules can reduce deficits. They also compared the impact of different types of rules and found that an end-of-the-year balanced budget requirement had a significant impact on states’ general fund surplus. Their analyses have shown that for the same level of stringency, statutory constraints have a smaller impact than constitutional constraints. Kennedy and Robbins (2003) studied the impact of FRs on fiscal performance and counter-cyclical fiscal policy using a cross national sample. They have observed that in the mid-1990s, countries both with and without FRs were able to implement successful fiscal adjustments. This has led them to conclude that FRs are not necessary for all countries. FRs may be useful but should not be considered as the only option. They found that stricter rules and rules that affect actual budget outcomes can be more effective than other rules. Comparing results across previous studies, they found mixed evidence
of the impact of FRs on economic stabilization. They also argue that FRs have not been seriously tested, and that a real test would come with the next recession.

On a skeptical note, there exist significant research results pointing toward the shortfalls of work on FRs. First, in the American literature, Hou and Smith (2006) have clearly demonstrated that two of the key measures of FRS used in US studies were inadequate. They proved that the measures produced by the Advisory Commission on Intergovernmental Relations were built on subjective judgments from the organization staff, that it was impossible to reproduce, and that it contained a significant number of errors. The measure from the National Association of State Budget Officers was mainly problematic because it was based on insufficient information (Hou and Smith 2006). In addition, Rommerskirchen (2015) has shown how the existing empirical literature suffers from major methodological problems. One such problem is the fact that FRs can be endogenous to a fiscal policy. This raises the possibility that existing results might be significantly biased. Moreover, since the literature is based on a few datasets—EU countries and US states—there is a good reason to believe that many studies might have suffered from the same biases.

4.2.1 Why Should Fiscal Rules Work: The Hunt for Government’s Deficit Bias

The common assumption is that FRs are created to reduce government debt and deficit by preventing politically motivated overspending. Kopits and Symansky (1998) argue that if one can assume that there is a politically driven deficit bias, then FRs provide a second-best solution to control government spending policy. This is because FRs “can help reduce or remove the
influence of short-run political expediency that leads to a deficit bias” (Kopits and Symansky 1998, p.8).

There are different explanations as to where the deficit bias comes from. Three of them share a similar logic: (1) the “Fiscal Illusion” argument; (2) the Intergenerational argument; and (3) the Geographic argument. In all three models, political actors will overspend to increase their re-election prospects. Under the “Fiscal Illusion” formulation, voters tend to overestimate the benefits of spending and underestimate the future cost of taxes, allowing opportunistic politicians to raise spending in an attempt to increase their electoral chances (Alesina and Perotti 1995). In the inter-generational version of the argument, it is assumed that the debt is created by one generation and will be paid by subsequent generations. Because the generation that has created the debt does not internalize the cost of the debt, it will borrow and spend more than would be optimal (Calmfors and Wren-lewis 2011). Finally, the geographic version of the deficit bias argument is specific to cases in which candidates are elected on a geographic basis. The logic behind this argument is that the benefits of local public good are concentrated geographically while the related costs are shared by the entire nation. Within this formulation the rest of the country, rather than the next generation, will internalize the cost of the debt; the effect remains the same. The cost will not be fully internalized by elected officials whose constituents enjoy the public good but only pay a fraction of the cost, leading to higher spending (Weingast et al. 2017). All three arguments rest on the highly questionable idea that voters will reward higher spending. Eslava (2011) has reviewed existing research and concluded that contrary to conventional wisdom, voters do not prefer high-spending governments. While voters can reward spending in specific programs, they appear to be quite aware of the costs incurred (Eslava 2011).
and seem to punish deficits (Brender 2003; Brender and Drazen 2008). Without the electoral reward, there is not an incentive to run a deficit for the incumbent government.

Strategic interactions between parties is a second explanation often used to explain the deficit bias of a government. Two versions of this argument exist. The first one states that when two parties have different policy preferences, the incumbent may borrow to overspend toward its favoured policy. It will then transmit the incurred debt to the next government in order to limit its ability to apply its favoured policy (Alesina and Tabellini 1990). The second version argues that conservative parties will borrow more to limit liberal parties’ spending, while liberals will borrow less to encourage conservative spending. The core of the argument is that when an incumbent party is at high risk to be replaced by another party with a different political orientation, the incumbent can strategically use debt levels to influence the decision of its successor (Persson et al. 1989). Neither version of the argument has found strong empirical support (Eslava, 2011). While Persson et al.’s (1989) version was empirically supported in a study on local Swedish elections (Pettersson-Lidbom 2001), it remains unclear to this date if those results can be generalized.

The version of the deficit bias argument which presents the most empirical support is the common pool argument (Krogstrup and Wyplosz 2010; Velasco 2000; Von Hagen and Hardan 1995). The common pool logic argues that government incomes are a common pool for all interest groups that desire to finance projects. Since interest groups fully internalize the benefits of the project and only part of the costs, there is an over-provision of government projects resulting in deficits and debt accumulation. The higher the number of different interest groups in
a government, the higher the deficit bias. Eslava (2011) found relatively strong empirical support for the common pool argument. Lower levels of fragmentation in the government, presidential regimes and majoritarian electoral rules seem to lead to higher fiscal discipline.

The deficit bias argument implies that governments have incentives to overspend. Therefore, it is counterintuitive to expect governments to create stringent FRs in a spontaneous manner. Even more so, when they do create FRs, it should be expected that the resulting rules will not prevent all forms of spending that could help the government’s electoral prospects. This implies that rules spontaneously created by governments should be less effective by design. On the other hand, rules imposed by an outside actor, such as the EU, should be more stringent. Since the outsider does not have any electoral incentive, the FRs can be designed exclusively to reduce the government debt. FRs created under coercion can be perceived as more credible since they have been created solely to ensure some form of government financial stability and should contain fewer loopholes for this reason. Therefore, financial markets might react more positively to coerced rules, implying that FRs created under coercion may lead to a more important reduction in government bond yields. The following are the first hypotheses tested by this paper:

_H1 A- Debt:_ FRs created under coercion should be more efficient in reducing government debt than rules created by national political actors

_H1 B- Bond Yield:_ FRs created under coercion should be more efficient in reducing government bond yields than rules created by national political actors
4.2.2 Why FRs Should Not Work: Creative Accounting and Fiscal Gimmickry

On the opposite side of the spectrum, Wyplosz (2012) argues that we should not expect FRs to have a significant impact on deficits or debt. To be efficient, FRs must be flexible enough to accommodate unforeseeable events, and thus create opportunities to deviate from the rules. Rules that are too stringent will favour procyclicality, while optimal fiscal policy should be countercyclical. This creates a paradox: stringent rules will not only destabilize the economy, but they will also reduce government incomes in the long run and eventually, weaker rules will simply be broken. There are also multiple ways through which a government can avoid the rules. For example, given that government budgets are based on prediction, governments can present a balanced budget by either overestimating income, or by simply underestimating spending.

There is a significant amount of literature on the interaction between creative accounting and FRs in Europe. Buti et al. (2007) have studied how stock-flow adjustments can be used to hide deficits when governments operate under numerical FRs. They provided statistical evidence that stock-flow adjustments are indeed used to hide debts and deficits. They also showed that the SGP is statistically associated with a more intense use of accounting gimmicks. Even more, they showed that fiscal gimmickry increases significantly when the deficit is above the Maastricht threshold. Hagen and Wolff (2006) also arrived at similar conclusions. Their work on European countries has provided empirical evidence that the SGP is linked to government use of creative accounting through the manipulation of stock-flow adjustment. They concluded that creative accounting is stronger when the FRs become binding. Together, these papers provide strong evidence that creative accounting is often used to avoid FRs.
Anderson and Minarik (2006) have argued that no fiscal rule can resolve deficit problems when there is a lack of political will. By definition, FRs that are imposed on countries do not result from a national consensus and therefore might not possess the political legitimacy needed for the rules to work. In such cases, we should expect governments to use creative accounting to avoid the rules. This implies that FRs that have been imposed should be less efficient than rules resulting from national politics. This argument provides the second, and competing, hypothesis test for this paper.

\textit{H2 A- Debt: FRs created under coercion should be less efficient in reducing government debt than rules created by national political actors}

\textit{H2 B- Bond Yield: FRs created under coercion should be less efficient in reducing government bond yield than rules created by national political actors}

The aim of this paper is to compare the impacts of coerced and national FRs. This objective does not require the formulation of a hypothesis on the average impacts of FRs. Also, making a hypothesis on the average impact of FRs would require an assumption about the sign of the impact of coerced FRs. Such an assumption seems undesirable.

\subsection*{4.3 A Brief Description of Fiscal Rules in Europe}

To be able to measure the impact of coerced rules vs. the impact of rules resulting from national politics, we need to be able to classify rules between the two categories. This section explains how we proceeded and provides descriptive information for both types of rules.
The coercion mechanism explains the diffusion of a policy via power asymmetry (Simmons, Dobbin, and Garrett 2006). Three types of coercive processes leading to the creation of FRs can be identified in the EU. First, rules created as the result of the Fiscal Compact should be considered coerced because the treaty was negotiated under strong power asymmetry and because there is a clear threat for noncompliance. Indeed, German authorities and the European Central Bank (ECB) had strong preferences in favour of FRs and the 2008-2009 crisis provided them with the opportunity to push those preferences (see: Blyth 2013, Doray-Demers Chapter 3). However, not all rules created after 2012 can be linked to the Fiscal Compact. To be the result of the Fiscal Compact, FRs need to respect three conditions: (1) they must have been created precisely between 2012 and 2014; (2) they must be a Budget Balance Requirement (BBR); (3) they must have either a legal or a constitutional status. Second, FRs adopted by countries receiving financial help from the EU or the IMF should be considered as coerced. Both the EU and IMF are strongly in favour of FRs, and financial difficulties create a state of power asymmetry which is a fertile ground to impose FRs. The IMF has used such power asymmetry in the past (Doray-Demers Chapter 3). Eight countries belong to this category: 37 Cyprus (2013-2016), Greece (2010-2018), Hungary (2008-2009), Ireland (2010-2013), Latvia (2009-2010), Portugal (2011-2014), Romania (2009-2011), and Spain (2012-2013). Third, countries wanting to join the EU were coerced to adopt national FRs as a condition for their membership (Doray-Demers Chapter 3). To be considered coerced under this condition, the rules must have been adopted during the EU accession process. These criteria were applied to classify the FRs

37 http://ec.europa.eu/economy_finance/assistance_eu_ms/index_en.htm
contained in the European Commission Working Group on the Quality of Public Finances (WGQPF) data as “coerced”.

However, not all FRs can be explained by coercion. A significant share of FRs are the result of national political processes. FRs that do not result from coercion are referred as national rules, by opposition to coerced rules in the rest of the paper. Doray-Demers and Foucault (2017) suggest that over the long run fiscal stress can lead to stronger FRs. Debrun et al. (2008) suggest that electoral dynamics can also explain the creation of FRs. Hallerberg et al. (2009)’s results suggest an institutional explanation: electoral rules that favour more fragmented government seem to be correlated to the use of FRs.

Table 4.1 presents types and legal statuses of FRs according to their context of creation. From 223 FRs originating from 28 EU members between 1990 and 2014, one out of five was created in a coercive context (44/223). Compared to those created in a nationally driven context, FRs created in a coerced context are significantly more likely to be DR rules (43.18% vs 18.44%) and to have a constitutional status (13.64% vs 7.26%) or a legal status (75.00% vs 62.01%).
Table 4.1 Composition of Normal and Coerced Fiscal Rules

<table>
<thead>
<tr>
<th>Type of Fiscal Rules</th>
<th>Legal Status</th>
<th>National</th>
<th>Coerced</th>
<th>National</th>
<th>Coerced</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBR</td>
<td></td>
<td>45.25%</td>
<td>40.91%</td>
<td>7.26%</td>
<td>13.64%</td>
</tr>
<tr>
<td>DR</td>
<td></td>
<td>18.44%</td>
<td>43.18%</td>
<td>62.01%</td>
<td>75.00%</td>
</tr>
<tr>
<td>ER</td>
<td></td>
<td>27.37%</td>
<td>15.91%</td>
<td>25.7%</td>
<td>11.53%</td>
</tr>
<tr>
<td>RR</td>
<td></td>
<td>7.26%</td>
<td>0%</td>
<td>9 cases</td>
<td></td>
</tr>
<tr>
<td>ER/BBR</td>
<td></td>
<td>1.68%</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: BBR (Budget Balance Requirements), DR (Debt to GDP Ratio), RR (Revenue Rules), and ER (Expenditure Rules).

4.4 Data, Variables and Model

We will use panel time series regressions to test the two sets of competing hypotheses. We were interested in evaluating the impact of FR stringency on two key variables: debt and government bond yields. Our dataset was built using different sources. The economic data was provided by the IMF, the World Bank, and the Eurostat libraries. The data on FRs originated from the European Commission’s WGQPF. The 2016 version of this dataset contains information about 223 FRs originating from 28 EU members, covering the period between 1990 and 2014. From those, 99 were BBR, 52 were DR, 56 were ER, 13 were RR, and 3 were a combination of BBR and ER. The political variables have been supplied by the World Bank DPI 2013 and the Bormann and Golder electoral dataset (Bormann and Golder, 2013). Missing pieces of information were completed using the ParlGov dataset (Döring and Manow 2017). The final data covers the period between 1990 and 2014. Detailed distribution information of each variable is presented in Appendix E.
4.4.1 Empirical Strategy

Panel time series are known to have poor statistical properties when neither the number of countries (N) nor the number of time periods (T) are large. Most panels in political science can be qualified as average N and average T panels, thus rendering proper inference difficult. Westerlund’s error-correction-based panel co-integration test has failed to detect co-integration in our data, therefore preventing the use of error correction models. Most of the variables in the model cannot be considered strictly exogenous because they can be correlated with future values of the error term. However, since they do correlate with past values of the error term they can be considered as predetermined. Classic fixed and random effect estimators are inconsistent in the presence of predetermined regressor. System-GMM uses past lags of the variables included in the model as instruments to provide valid estimates. They were used previously to study similar datasets by Doray-Demers and Foucault (2017) and Bergman et al. (2016). System GMM can correct the Nickell bias (Nickell 1981), i.e. when T is small and the model includes a lag of the dependent variable on the right-hand side, the estimate will be biased. Unfortunately, there are significant limitations with this approach, the major one being the choices in the number of instruments. In effect, including many instruments will cause the estimation to converge toward the bias of OLS estimates. Moreover, when the number of time periods increases, the number of instruments increases quadratically, thus creating estimation bias. System GMM estimates are also susceptible to the effect of a weak instrument bias that might occur when the first-stage relationship is weak.

The use of PCA (Principal Component Analysis) to reduce the instrument count and to produce stronger instruments can resolve both problems (Kapetanios and Marcellino 2010, Bai and Ng
2010, and Mehrhoff 2009). We have used Windmeijer's (2005) correction of classic estimators for our finite samples to improve the estimation of standard errors. This approach demands caution and comes at the cost of statistical power. Indeed, the number of instruments used to estimate the model can significantly influence the results. Adding instruments will cause the bias to converge toward the OLS bias. Adding one instrument or removing one can account for the difference between statistically significant results and non-significant results. Therefore, we could not use a single instrument specification for testing our hypotheses. In order to safely reject the null hypothesis for any coefficient, the size of the coefficient must be relatively stable when changing the number of instruments and the results must reach statistical significance in multiple estimates. To that effect, we first estimated a model with a number of instruments close to the technical minimum required for estimates to converge, then we increased the number of instruments and estimated the model again. The number of instruments was increased up to the point where it was obvious that there were too many instruments. This provided us with multiple results for each of the coefficients, allowing us to monitor how they would react to changes in the number of instruments.

4.4.2 Variables

4.4.2.1 Dependent Variables

FRs are tools used to reduce public debt. Because their creation announces a reduction in debt and a reduction in default risk, they lead to a reduced yield on government bonds. There are multiple strategies available to measure the impact of FRs on debt. This paper focuses on government gross debt. It has been established that debt is a blunter instrument when compared to other measures such as deficit or primary balance. However, it has the significant advantage of being less prone to fiscal manipulation from governments. For example, Buti et al. (2007) have
used the difference between changes in debt levels and the value of deficits as a measure for creative accounting. Debt is also one of the most common aggregates targeted by FRs. In our sample, 39% of the countries had debt rules by the year 2000. This proportion had increased to 50% by 2004 and reached 71% by 2014. Because debt is one of the principal aggregates targeted by FRs as well as the aggregate less prone to creative accounting, it makes debt the logical choice to monitor the impact of FRs. Moreover, from a theoretical level, FRs serve two objectives: to prevent both deficit and debt accumulation. Assuming that FRs are efficient and no deficits are present, we should observe a reduction in debt to the GDP level, either because loans are paid back or because debt is inflated away. Cases where debt would keep building up even in the presence of FRs would be a clear indication that those FRs do not function. The main difficulty in using debt is that yearly changes in debt levels will be relatively small, making any relationship more difficult to detect. The main measure of debt is the gross debt expressed in the ratio of GDP from the IMF data. Missing points at the beginning of the series were left missing, while two gaps in Hungary and one gap in Luxembourg were inferred via linear approximation. Because debt level is not stationary, we used the yearly changes in debt level as our first dependent variables.

Bond yields can be used as a measure of how markets react to changes in government finance and policy. In this regard, we collected government 10-year bond yields from the IMF. Missing data were retrieved from Eurostat. Missing values for Estonia post-2010 were replaced by zero, since Estonia has not sold long-term bonds for many years. Government bond yields were also not stationary and yearly changes were used in the regression.
4.4.2.2 Explanatory Variables

Our main variables of interest are coerced stringency and national stringency. Those variables are obtained by dividing the total of FRs’ stringency into its coerced and national parts. FRs stringency is used to measure how binding FRs are. Two DRs fixing the same target, 60% of the GDP for example, will relate to different stringency if one has a strong automatic enforcement mechanism while the other does not. To that effect, two empirical strategies can be found in the literature: either measuring the stringency of individual rules or measuring the stringency of the entire system of rules—the total stringency. Individual rules can be compared using their stringency. We can also aggregate individual rules’ scores to produce a total stringency index describing the system of FRs in a given country. As a measure of the total stringency of FRs systems, we have used the Working Group on the Quality of Public Finances (WGQPF) stringency index for all EU members. The index is computed in two steps. First, using a random weighting technique on five qualitative dimensions of FRs (legal basis, room for revising objectives, strength and independence of the monitoring bodies, enforcement mechanism, and media visibility), a score is calculated independently for each FR. After this, each rule is weighted according to its coverage on general government finances and is aggregated both per country and per year in order to obtain an indicator of stringency. When multiple rules apply to the same sub-sector, the stronger rules are assigned a weight of one with second and third rules being assigned weights of 0.5 and 0.33 respectively. This weighting system is used to reflect the decreasing marginal benefit of having multiple rules for the same sub-sector of government finance\(^{38}\). The lowest value of the standardized index over the sample is -1.008, representing a

\(^{38}\) [http://ec.europa.eu/economy_finance/db_indicators/fiscal_governance/fiscal_rules/index_en.htm](http://ec.europa.eu/economy_finance/db_indicators/fiscal_governance/fiscal_rules/index_en.htm)
weak FRs system, and the maximum is 3.548, representing a stringent system of FRs. As such, the FRs stringency index represents the total stringency of FRs and includes both formal and informal enforcement mechanisms. For example, a FR might fix hard-to-reach targets, but if they have weak enforcement mechanisms, this will cause their FRs stringency index to be low. This approach allows us to obtain the total stringency of the system of FRs that we divide between its coerced and not-coerced parts.

The core of our strategy is to divide the total stringency of the system between its coerced and uncoerced parts. We were able to obtain the “coerced stringency” by computing the FRs stringency index using the WGQPF methodology, but we only include in the calculation FRs that have their origin in one of the coercive contexts we had previously identified. “National stringency” was obtained by subtracting coerced stringency from the total FRs stringency. Both indices were standardized, as per the guidelines of the WGQPF (Table 4.2).
### Table 4.2 Stringency Comparison of Coerced and National Fiscal Rules

<table>
<thead>
<tr>
<th></th>
<th>Not Standardized</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Stringency</td>
<td>Std. Dev.</td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td>National</td>
<td>6.64</td>
<td>1.22</td>
<td>3.3</td>
<td>10</td>
</tr>
<tr>
<td>Coerced</td>
<td>6.89</td>
<td>1.21</td>
<td>4.72</td>
<td>9.05</td>
</tr>
<tr>
<td>Standardized</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRS</td>
<td>0</td>
<td>1</td>
<td>-1.01</td>
<td>3.55</td>
</tr>
<tr>
<td>Coerced</td>
<td>0</td>
<td>1</td>
<td>-0.41</td>
<td>5.30</td>
</tr>
<tr>
<td>National</td>
<td>0</td>
<td>1</td>
<td>-0.79</td>
<td>4.16</td>
</tr>
</tbody>
</table>

In our regression models, we have tested the possibility that the coerced and national parts could reinforce each other by introducing an interaction term between the two measures. This interaction was not significant, therefore supporting the idea that an additive specification is proper. While imperfect, these measures allowed us to compare the impact of coerced FRs on yearly changes in the debt level and bond yields with the impact of uncoerced FRs. The evolution of FRs stringency indices varies through time for the 28 EU members (Figure 4.1).

We can also compare coerced and normal rules on a rule-by-rule basis. Both coerced and uncoerced FRs do not differ in their total stringency (non-standardized score) (Table 4.2). The general FRs stringency index provided by WGQPF was used as the first explanatory variable to calibrate our models. Only then was the index separated. In order to measure the impact of FRs on yearly changes in bond yields, we had to account for the fact that bond yields are set in part by comparing conditions in different countries. Therefore, we standardized the coerced stringency and national stringency per year, providing each country with a measure of how strong FRs are in comparison to other European countries during the same period.
4.4.2.3 Controls

Two distinct elements need to be considered for controls when using system-GMM. First, adding control reduces the risk of omitted-variable bias. Second, adding controls will increase the minimum number of instruments, making it more difficult to find meaningful relationships. To control for the state of the economy, three dimensions were considered: unemployment rates, GDP per capita (constant US dollars), and GDP growth. These three variables represent the state of the labour market, the wealth of the country, and the health of the economy, respectively. To
reduce the number of variables, we combined them using a Principal Component Analysis (PCA); factor loadings are presented in Table 4.3. As the resulting economic index was not stationary, we used yearly changes in the index in the regression models. While this is not the optimal solution, it did provide a summary of the economic condition useful as a control. Using PCA to reduce the number of variables may be open to criticism. However, after running the models using only growth and unemployment rates, we reached the same conclusion of the PCA model. The cost of collapsing the three variables into a single indicator using a PCA was compensated by the gain made from having a single variable to control for the state of the economy.

### Table 4.3 Factor Loading within the Economic Index

<table>
<thead>
<tr>
<th>Variables</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment</td>
<td>-0.7109</td>
</tr>
<tr>
<td>GDP per Capita</td>
<td>0.6868</td>
</tr>
<tr>
<td>GDP growth rate</td>
<td>0.1517</td>
</tr>
</tbody>
</table>

We have decided to control the inflation rate separately in our model because of the strong theoretical relationship between inflation and bond yields. As Debrun et al. (2008) has argued that large countries are more prone to deficit, we also controlled for the log of the total population. To control for political variables, we included a dummy identifying coalition governments and one identifying legislative election year. We also included a measure of ideology, which was first proposed by Beck et al. (2001) and used in Debrun et al.’s work (2008). This variable was mainly used to isolate the prior government’s ideological commitment to fiscal stability. It serves as an indicator of a right-wing ideology, going from 0 (not right wing) to 8 (right-wing government). For one-party governments, the indicator took the value of 8 if the
government party was right-wing, or 0 otherwise. For two-party governments, we summed up the right-wing score for each party, giving them a 0 if they were not on the right, and a 4 if they were. For a three-party coalition, the main partner was coded 4 if they leaned toward the right, the other two partners were coded 2 if they were right-leaning. Missing data for Bulgaria, Slovakia and Romania were filled with values from the ParlGov dataset (Döring and Manow 2017). We also coded as right-wing parties those that were coded 6 or higher in the ParlGov left-right scale. The main party was always the one of the prime minister.

We included a series of dummies to control for specific events that could have influenced government debt and bond yields. The dummies were used to remove the sum of the effect those events could have had on our dependent variables. To control for the EU application process, we allotted a dummy equal to 1 for each year the country was in the application process (EU application). A second dummy identifies years during which countries were submitted to the Maastricht criteria (EU rules). Three additional dummies were added to control for certain periods. The first one was equal to one (1) for the period between the ratification of the Maastricht treaty (1992) and the launch of the EURO (1999) (Run to EMU), as previously used by Debrun et al. (2008). A second dummy was also equal to one (1) for the years 2008 and 2009 in order to control for the crisis year (Crisis). We also used a dummy equal to one (1) for years after 2010 so that we could capture the impact of all other political measures that had been used to deal with the debt crisis at the EU level.
4.4.2.4 Model Specification

Our model of governmental bond yields is based on Mosley’s (2000) study of international financial markets. One of their key findings is that in countries with a low risk of default, such as most of the European countries, the two key variables used by market operators when investing in government bonds are inflation and government deficits. Mosley (2000) demonstrated that other variables would only play a marginal role. Regarding the issue of debt, our model was strongly inspired by Debrun et al.’s work from 2008. In both cases, we include all controls to avoid bias.

We decided to test multiple specifications of the lag structure for the different variables. In the bond yield model, we used one (1) lagged value of the dependent variable on the right-hand side of the equation to control for past evaluations of government debt. For yearly change in debt and inflation rates, we tested lag 0 and 1. For debt levels, we found that the value of lag 0 was inconsistent. This reflects the fact that debt data are published with a certain delay and are not available in real time to market actors. The combination of those practical and theoretical reasons led us to remove lag 0 from the model. For inflation, we chose to use the lag 0 value. Using lag 1 only marginally changed the results. The remaining controls were included with no lag.

The debt model used one lag in the past realization of the dependent variable, and one lag on bond yield. The use of lag 0 on bond yield was not significant and did not change the model significantly. Also, there were no logical reasons to explain why present bond yields should influence changes in debt during the last year. For those reasons, only the first lag was included on bond yield. All controls were included with no lags. FRS variables were also included with no
lag because they bind budgetary choices when they are enforced and past budgetary decisions would normally need to adapt to present FRs. Models with lags for FRS were tested and the lags were not significant.

4.5 Results

System-GMM with the Windmeijer (2005) correction applied to an average N and an average T panel are extremely conservative, therefore making it hard to reject the null hypothesis for any β. Moreover, those models are sensitive to the choice of instruments. Therefore, to be considered significant, a coefficient must reach at least the p <0.1 threshold for three different instrument specifications.

System-GMM uses instrumental variables to produce unbiased estimates. The minimal number of instruments then depends on the number of parameters estimated. In the case of the bond yields model, it was 16 instruments. However, this specification did not allow us to test on instrument quality. For bond yield and debt, we tested models using between 19 and 32 instruments. We have reported the detailed coefficient of the estimation for 26 instruments (Table 4.4) and we have shown the variation of β and SE in Figures 4.2 to 4.5.

One could argue that the results might be driven by a latent predisposition to be fiscally conservative, which could also influence the mechanisms that lead to the creation of FRs. This would have very different implications for the coerced stringency and the national stringency coefficients. In the first case, we are looking for impacts that would have amplified the size of
the coefficient. In the case of national stringency, we are looking for mechanisms that could explain the null result.

There is no solution to deal with this problem. We have already included inflation, a relatively good proxy for the fiscal stance of a government, as a control in table 4.4. We can further reduce the risk that the fiscal predisposition of a country drives our results by modeling the relationship between this predisposition and each of our stringency indicators. This could provide evidence that the same variable, latent fiscal conservatism, does not explain both the creation of FRs and future fiscal performance. Specifically, we estimated a regression model using variation in stringency as the dependent variable for both coerced and national stringency (Table M.1). Those models are highly similar to those used in Chapter 2. For each model, we have included inflation and variation in debt level (short term and long term) as explanatory variables. Those variables should be relatively good proxies for the fiscal habits of any given country.

We found no relation between either indicators and past fiscal behaviour and inflation for coerced stringency. This is reassuring in two ways. First, it suggests that the risk of endogeneity is relatively low since fiscal conservatism does not seem to explain the creation of coerced FRs. Second, this also suggests that our coerced stringency index was properly built. Indeed FRs that are imposed from the outside should not be explained by national factors and this is what the model suggests.

As for national stringency, the results are quite different. There seems to be a relationship between fiscal conservatism and the creation of national FRs. However, since national stringency does not seem to influence future fiscal outcome, this is not an issue. On the contrary, it suggests
that FRs that are adopted through a national process might simply serve to formalize fiscal practices that were already in place. Appendix M discusses the endogeneity question in more detail.

Table 4.4 also presents estimates of the same models using classic fixed effect estimators with robust standards errors. Unfortunately, those models are biased and their results should not be trusted. However, the models are similar to the panel estimator used in most of the literature on the impact of FRs. Interestingly, the biased results are highly similar to results commonly found in the literature. Based on those results, one would tend to conclude that FRs help reduce debt and bond yield. The more robust results presented in our work, however, reveal another story. One of the reasons our model is more robust is that we acknowledge that dependent variables are not strictly exogenous as assumed by fixed effects models.
### Table 4.4 Determinants of Fiscal Rules Stringency Changes

<table>
<thead>
<tr>
<th>Variable</th>
<th>Bond Yield</th>
<th>Bond Yields (Bias Fixed Effects)</th>
<th>Debt</th>
<th>Debt (Bias Fixed Effects)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiscal Rules Stringency Index</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coerced stringency</td>
<td>-0.07(0.30)</td>
<td>-0.18(0.10)*</td>
<td>3.27(1.18)**</td>
<td>-0.43(0.29)</td>
</tr>
<tr>
<td>National stringency</td>
<td>-2.26(1.16)*</td>
<td>-0.11(0.07)</td>
<td>2.54(2.69)</td>
<td>-0.95(0.34)**</td>
</tr>
<tr>
<td>Controls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in Bonds (lagged)</td>
<td>-0.29(0.19)</td>
<td>-0.09(0.02)**</td>
<td>0.48(0.16)**</td>
<td>0.27(0.04)**</td>
</tr>
<tr>
<td>Change in Debt (lagged)</td>
<td>-0.03(0.08)</td>
<td>-0.02(0.03)</td>
<td>-0.00(.12)</td>
<td>-0.16(0.08)**</td>
</tr>
<tr>
<td>Economic Index</td>
<td>0.54(0.53)</td>
<td>-1.24(0.48)**</td>
<td>-3.19(2.40)</td>
<td>-6.45(1.05)**</td>
</tr>
<tr>
<td>Inflation</td>
<td>-0.14(0.09)**</td>
<td>-0.05(0.00)**</td>
<td>-0.12(0.06)**</td>
<td>-0.05(0.00)**</td>
</tr>
<tr>
<td>Coalition</td>
<td>0.00(1.91)</td>
<td>-0.30(0.55)</td>
<td>-7.12(3.47)**</td>
<td>1.13(0.35)**</td>
</tr>
<tr>
<td>Election year</td>
<td>0.56(0.31)*</td>
<td>0.15(0.14)</td>
<td>-2.48(1.41)*</td>
<td>0.02(0.35)</td>
</tr>
<tr>
<td>Ideology</td>
<td>0.05(0.07)</td>
<td>-0.02(0.13)</td>
<td>0.01(0.11)</td>
<td>-0.07(0.09)</td>
</tr>
<tr>
<td>Ln Population</td>
<td>0.16(0.07)</td>
<td>2.79(1.49)*</td>
<td>0.01(0.11)</td>
<td>16.70(8.39)**</td>
</tr>
<tr>
<td>Period Specific Dummy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU application</td>
<td>-40.12(32.21)</td>
<td>2.02(0.53)**</td>
<td>-339.28(451.77)</td>
<td>-0.86(1.15)</td>
</tr>
<tr>
<td>EU rules</td>
<td>-36.62(31.57)</td>
<td>2.67(0.58)**</td>
<td>-339.53(451.84)</td>
<td>-2.26(0.91)**</td>
</tr>
<tr>
<td>Run to EMU</td>
<td>0.21(0.61)</td>
<td>-0.53(0.21)**</td>
<td>4.23(2.55)*</td>
<td>0.51(0.56)</td>
</tr>
<tr>
<td>Crisis</td>
<td>0.15(0.46)**</td>
<td>-0.11(0.20)</td>
<td>4.73(1.66)**</td>
<td>2.88(0.68)**</td>
</tr>
<tr>
<td>Post 2010</td>
<td>-0.85(0.68)</td>
<td>-0.61(0.16)**</td>
<td>0.96(1.14)</td>
<td>2.78(0.43)**</td>
</tr>
<tr>
<td>Constant term</td>
<td>34.54(30.14)</td>
<td>-46.97(29.08)**</td>
<td>348.47 (453.00)</td>
<td>-265.73*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N</th>
<th>519</th>
<th>519</th>
<th>519</th>
<th>519</th>
</tr>
</thead>
</table>

**System GMM information**
- Number of instruments: 26
- Sargan test of over-identification (p-value): 0.959
- Hansen test of over-identification (p-value): 0.161
- PCA information
  - Kaiser Meyer Olkin measure of sampling adequacy: 0.928
  - Portion of variance explained: 0.258

**Standard errors in parentheses**
- * p < 0.10, ** p < 0.05, *** p < 0.01
4.5.1  Bond Yield Results

FRs resulting from national politics were negatively and significantly correlated with yearly changes in government bond yields while FRs resulting from coercion are not (Table 4.4 Bond Yield model). Such results support the idea that markets are able to differentiate between the two types of rules, and generally prefer rules that are driven by national politics.

![Figure 4.2 Stability of β and SE Estimates for National FRS](image)

4.5.2  Debt Results

Our results suggest that FRs resulting from national politics have fewer negative impacts on debt, while rules that come from the outside might be detrimental to debt control. Coerced stringency was correlated with debt increase (Table 4.4 Debt model), suggesting the coerced FRs might accentuate fiscal problems. National stringency most likely had no impact on yearly change in debt. This might be the result of the costs incurred by creative accounting. Another possible explanation is that FRs that are imposed in institutional settings that favour a delegation strategy (Hallerberg et al. 2009) might weaken the delegation process and thus increase deficits.
To confirm our results, we reran the model after having removed outliers from the dependent variable. After analyses were run removing changes in debt that were bigger than 25 percentage points of GDP in absolute value, we encountered highly similar results. However, the extreme values for the constant and the control dummies dropped significantly.

One important tendency that we noted is that the impact of FRs’ stringency on yearly changes in debt levels decreased with the number of instruments. This is true for coerced stringency, national stringency, and the total FRs stringency index (Figure 4.3, Figure 4.4, and Figure 4.5 respectively). Figure 4.5 illustrates that exceeding 28 instruments becomes particularly problematic. Since we know that our estimator converges toward biased results when the number of instruments increases, the fact that the estimations converge toward results that are similar to those obtained in previous research suggests that prior research might suffer from significant bias. More to the point, our results strongly suggest that negative relationships previously found between FRS and government debt might be the results of an estimator bias.

We did some additional testing by adding a dummy that was equal to one (1) for countries that received EU financial help. The dummy turned out not to be statically significant and the results were highly similar, thus removing the possibility that the results were simply driven by the conditions imposed by the EU on countries facing financial trouble after the 2008-2009 crisis.
Figure 4.3 Stability of $\beta$ and SE Estimates for Coerced Stringency on Debt

The possibility remains that the results may have been driven by confounding variables. Extensive testing has been done to reduce this risk. First, by using first difference in our dependant variables, we removed any country effects. We have also added key dummies to control for time specific effects. Our economic index provided a good control for any economic aspect that varies in time. Finally, we used coerced rules that had been imposed at different points in time, and in different political contexts across multiple countries with varying political

Figure 4.4 Stability of $\beta$ and SE Estimates for National Stringency on Debt
conditions. Indeed, the political context varies significantly between countries wanting to join the EU and EU members implementing the Fiscal Compact, removing the possibility that the results were driven solely by the common political setting of the country trying to join the EU or by the context imposed by the Fiscal Compact.

What mechanism could explain this result? One possibility those results raise is that only coerced FRs increase the use of creative accounting. Buti et al. (2007) used the difference between yearly changes in debt and official deficit as a rough proxy for the level of fiscal gimmickry. While the difference between the yearly changes in debt and official deficit is not entirely driven by fiscal gimmicks, creative accounting can explain a significant part of the variation in this difference. If the positive correlation between more stringent coerced FRs and yearly debt increase were explained by fiscal gimmickry, we should observe a higher level of gimmickry under strong coerced FRs than under strong national FRs. To test this possibility, we used a regression model inspired by (Buti et al. 2007). The dependent variable was the difference between yearly changes in debt and official deficits reported by Eurostat. According to Eurostat, the difference between
the two values can be explained by stock-flow adjustment\textsuperscript{39}, which is the principal tool used in creative accounting. As the use of creative accounting depends in general on the level of debt and deficit, we included dummies identifying cases under which the Maastricht rules were broken. This includes a dummy indicating countries with a debt ratio higher than 60% of the GDP and another one for deficits higher than 3% of the GDP. We included lagged debt as GDP percentage and lagged yearly changes in debt as GDP percentage to control for past budgetary decisions. We also included the election year dummy to control for the electoral budget cycle as well as ideology variables to control for partisan preferences. We included all of the period-specific dummies of the previous models to control for policy reform in the EU that might have limited the use of creative accounting. The economic index and inflation were also included to control for the impact of economic conditions, as a better economy implies higher tax revenues and decreases the incentive to use creative accounting.

Table 4.5 suggests that more stringent coerced FRs increase creative accounting. By contrast, FRs that result from national politics might have a negative impact on creative accounting, however this relationship did not reach significance level. Our results suggest that coerced FRs lead to higher debt because they encourage creative accounting. FRs resulting from national politics prevent debt increase by limiting creative accounting. These results also support the idea that FRs resulting from a national consensus have more political legitimacy and, as a result, are more respected and are more efficient in controlling debt.

\textsuperscript{39} http://ec.europa.eu/eurostat/documents/4187653/7707555/STOCK-FLOW-2016-OCT.pdf
<table>
<thead>
<tr>
<th>Variable</th>
<th>System GMM</th>
<th>Bias Fixed Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fiscal Rules Stringency Index</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coerced stringency</td>
<td>5.64(2.49)**</td>
<td>0.35(0.35)</td>
</tr>
<tr>
<td>National stringency</td>
<td>-4.31(5.17)</td>
<td>-1.64(0.58)*****</td>
</tr>
<tr>
<td><strong>Controls</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L. Debt</td>
<td>0.02(0.20)*****</td>
<td>-0.24 (0.07)*****</td>
</tr>
<tr>
<td>L. Yearly changes in debt</td>
<td>0.62(0.23)</td>
<td>-0.03(0.09)</td>
</tr>
<tr>
<td>Debt &gt; 60% GDP</td>
<td>-8.64(7.29)</td>
<td>6.58(2.08)*****</td>
</tr>
<tr>
<td>Deficit &gt; 3%</td>
<td>8.72(4.81)*</td>
<td>9.20(1.15)*****</td>
</tr>
<tr>
<td>Economic Index</td>
<td>-6.12(4.17)</td>
<td>-6.96(1.07)*****</td>
</tr>
<tr>
<td>Inflation</td>
<td>-0.09(0.02)*****</td>
<td>-0.02(0.01)****</td>
</tr>
<tr>
<td>Coalition</td>
<td>-5.30(3.00)*</td>
<td>0.65(0.78)</td>
</tr>
<tr>
<td>Election year</td>
<td>-0.76(1.37)</td>
<td>-0.10(0.41)</td>
</tr>
<tr>
<td>Ideology</td>
<td>0.05(0.28)</td>
<td>-0.07(0.12)</td>
</tr>
<tr>
<td>Ln Population</td>
<td>0.92(1.46)</td>
<td>9.61(0.09)</td>
</tr>
<tr>
<td><strong>Period Specific Dummy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU application</td>
<td>20.17(20.59)</td>
<td>8.69(4.66)**</td>
</tr>
<tr>
<td>EU rules</td>
<td>21.39(19.19)</td>
<td>7.08(4.77)</td>
</tr>
<tr>
<td>Run to EMU</td>
<td>3.04(3.81)</td>
<td>1.56(0.85)*</td>
</tr>
<tr>
<td>Crisis</td>
<td>0.67(2.61)</td>
<td>-0.67(1.25)</td>
</tr>
<tr>
<td>Post 2010</td>
<td>2.22(4.66)</td>
<td>6.02(1.09)*****</td>
</tr>
<tr>
<td>Constant term</td>
<td>-28.26(21.98)</td>
<td>-149.90(224.34)</td>
</tr>
</tbody>
</table>

| N                              | 558              | 558                |

| System GMM information         |                  |                    |
| Number of instruments          | 27               |                    |

| Sargan test of over-identification (p-value) | 0.976 |
| Hansen test of over-identification (p-value) | 0.143 |

| PCA information               |                  |                    |
| Kaiser Meyer Olkin measure of sampling adequacy | 0.968 |
| Portion of variance explained | 0.292 |

Standard errors in parentheses
* p < 0.10, ** p < 0.05, *** p < 0.01
4.6 Discussion

The aim of this paper was to compare the impact of externally coerced FRs and of nationally driven FRs on debt and bond yield. Two competing hypotheses were tested. The first hypothesis posits that FRs created under coercion should be more efficient than rules created by national political actors (H1). In contrast, the competing hypothesis (H2) posits that FRs created under coercion should be less efficient than rules created by national political actors. Our results clearly support the second set of arguments. We found that coerced FRs are correlated with an increase in debt levels and are not correlated with a decrease in bond yields whereas nationally driven FRs have no significant impact on the debt and are correlated with a decrease in bond yields. We have also shown that FRs resulting from a coercive process are correlated with an increase in creative accounting. In summary, these results support the idea that coerced FRs are less efficient than nationally driven FRs.

In section 4.3, we have presented two arguments providing rationale for these competing hypotheses. The first argument implied that, because of mixed incentives, FRs created by national actors might not be as efficient as those induced by outside actors. The second argument stated that FRs created under coercion could not be efficient because they might lack political support and encourage creative accounting.

Why might national FRs have greater positive effects on bond yields than coerced FRs?

Visibility of the FRs might play an important role because FRs signal commitment to pay back the debt, effectively reassuring bond markets. The IMF has been promoting FRs for many years and the theoretical economic literature that might be used by financial market operators is
generally favourable to FRs, raising the possibility that financial markets react positively to FRs for ideological reasons. Nationally driven FRs are generally more visible in the media than those resulting from coercion (the WGQPF dataset indicates that 31.18% of nationally driven FRs are highly visible compare to 13.64% of externally coerced FRs), which may explain the stronger positive reaction of financial markets to FRs resulting from national politics. This difference can also be understood in the context of the creation process, which suggests that when FRs result from a national debate, a government might want to claim credit for the creation of the rules, thus increasing its visibility in media. By opposition, when the rules are created to please the EU or to get access to European funds, media visibility is not required to obtain the reward associated with the creation of the rule.

Regarding debt, our results are at odds with formal models (Bianchi and Menegatti 2012) predicting a debt reduction associated to FRs. In contrast, our results support the idea that imposing stringent FRs on countries does not solve fiscal problems, and can even make them worse. This result is not driven by the difference in the level of stringency between coerced and nationally driven rules—in fact, the stringency of both types of FRs are quite similar (Table 4.3). Additionally, the nature of the enforcement mechanism cannot explain the difference observed as coerced FRs more often have independent monitoring bodies, alert mechanisms, and enforcement bodies, meaning that coerced FRs should be harder to break. Hallerberg et al.’s (2009) work on delegation and rules strongly suggests that to be effective in reducing government debt, both strategies have to be in harmony with other national institutions. This provides a logical explanation for our results. FRs that are the result of outside pressure often may not be complementary to pre-existing institutions, leading to inefficiency. Multiple sources
of inefficiency are plausible. One possibility is that creative accounting makes it harder for the
delation strategy to work properly. The delegation strategy is based on the idea that one agent -
the finance minister - is in charge of balancing the budget. The manipulation of stock-flow
adjustments by multiple ministries might make it significantly harder for the finance minister to
track all the spending. This could create room for each minister to pursue their own agenda and
to increase their ministry spending, which in turn would lead to an increase in debt. A second
possibility is that FRs, even if they can be avoided, force changes in government programs,
taking money from efficient programs and transferring it to less efficient programs. In the mid
run, this could reduce growth and increase the debt ratio. One last possibility is that FRs resulting
from coercion are violated more often. This idea is supported by the results presented in Table
4.5. FRs that are coerced might not have political support, meaning that political elites will
simply not respect them. The more stringent those rules are, the harder it is for national elites to
conform, and the less they will try to do so. This might explain why more stringent coerced FRs
lead to debt increase. Clearly, further research is needed to arbitrate between these possibilities.

On a more general level, our results regarding debt are at odds with previous literature on the
topic. Krogstrup and Wälti (2008) found, using OLS regression, that FRs helped maintain budget
balance in Swiss cantons. Similarly, Reuter (2015) found, using LSDV estimator, that even if
they were not respected, FRs had a positive impact on fiscal policy. Finally, Debrun et al. (2008)
found, using LSDV estimator, that FRs led to higher primary budget balance. Two reasons might
explain why our results differ from previous research. First, the use of system GMM estimators,
which are robust to predetermined explanatory variables and correct for the Nickell bias,
provides a more robust estimation of the impact of FRs. Even more interesting is the fact that our
results converge toward previous results when the number of instruments increases. Table 4.4 shows that the use of bias estimator on the WGQPF datasets produces problematic results that are highly similar to those found by previous studies using the same data set (for example, Debrun et al. (2008)). This is exactly what would be expected when using a panel estimator with predetermined data (Roodman 2009). Second, our choice of using yearly changes in debt also contrasts our results with previous literature using primary balance and deficits as dependent variables. Both variables are targeted by FRs, making them vulnerable to fiscal gimmickry. Both Buti et al. (2007) and Von Hagen and Wolff (2006) have shown that such behaviour was present in the EU. This implies that previous results may be explained by the fact that their dependent variables were manipulated for political reasons. By using change in debt, which is less prone to political manipulation, we provide a better measure of the impact of FRs once the negative impact of fiscal gimmickry is considered.

The results presented here also raise a clear warning for future research on FRs. Not all FRs should be considered equally. The fact that past research has neglected the mechanism leading to their creation might have led to incomplete results. Indeed, the process leading to the creation of FRs significantly affects more than just stringency. The way FRs are created affects how much fiscal gimmickry those rules will allow as well as the level of political support and social consensus behind the rules. These are all elements that can make the difference between effective and ineffective FRs. This also implies that we need to better understand the spectrum of mechanisms leading to the creation of FRs. While this study contrasts coerced and national FRs, there remains a significant possibility that national FRs are not a homogenous group and that
multiple mechanisms explain their creation. This is an area of research with great potential for the future.

This study has also raised significant policy questions for the EU. One of the cornerstones of EU post-crisis reform was the ratification of the Fiscal Compact. As mentioned earlier, the ratification and application of this treaty is necessary to have access to EU emergency funds. Since this treaty forces countries to incorporate FRs in their legal framework under the threat of being denied emergency help, it is a perfect example of coerced FRs. Our result brings into question the wisdom of this treaty by showing that FRs imposed on countries can lead to debt increase. This suggests that Blyth (2013) may be correct in his assertion that the answer to the 2008-2009 crises might have been driven by German ordoliberal ideology. Also, since FRs can seriously limit democratic choices, imposing FRs on democratically elected governments might cause serious damage to the legitimacy of European Institutions.

Outside of Europe, our results also bring into question the IMF policy of promoting FRs. Doray-Demers (Chapter 3) has shown that the IMF has actively promoted FRs across the globe. Our results in Europe suggest that imposing FRs might not be an optimal strategy for international organizations. Further research should explore this possibility outside of the EU. However, such an endeavor would not be easy. The quality of data, both on FRs and on economic variables, is significantly poorer outside of the OECD and European countries. Data on debt and deficits might be particularly hard to find for countries where the IMF has successfully promoted FRs. Even if the data was assembled, the question of reliability would not be a trivial one.
Our research also questions the generalizability of results obtained from the United States when compared to the rest of the world. The study of FRs in the US has a long history and has often been used as evidence of the positive impact of FRs (Smith and Hou 2013). However, coercion is probably a less important factor in explaining the creation of FRs in US states. Therefore, one would expect to find a stronger relationship between FRS and the reduction in debt and bond yields in such a sample. One implication from our research is that we must remain careful before generalizing those results about FRs to an international sample where coercion plays an important role (see Doray-Demers, Chapter 3). Indeed, the impact of FRs might change significantly when they are the result of coercion.

On an even broader scale, this paper provides an example by linking how policies diffuse from one country to another and the outcomes of those policies. We have effectively demonstrated that a policy that is diffused via coercion might not have the expected impact. In fact, it can worsen the problem it aims to solve.

The main limit of this study is that the results might not hold beyond EU borders. While we know that the IMF has also been actively pushing FRs on unwilling governments, we cannot assume that this push will have the same impacts found with EU coercion. While it is true that the mechanism at play might be highly similar, it would be necessary to confirm this result using a sample of countries in which FRs have been created under IMF leadership.
Chapter 5: Conclusion

In the last 30 years, the number of countries using fiscal rules has exploded. This thesis has studied the political processes leading to the creation of fiscal rules and addressed two questions: (1) Why are Fiscal Rules (FRs) created? and (2) Does the process leading to their creation change their impact? Despite a significant body of research on FRs, research on their origins remains sparse and has focused mainly on national rationale. Our contribution is twofold: we have opened up the field to the international dynamics that may explain the creation of FRs and we have linked their creation process to their impact.

The core idea of this thesis is that a policy can be imposed or coerced on one actor by another when there is a power asymmetry between the two. It is organized around three papers. The first uses time series analysis in a European panel to arbitrate between the different mechanisms that could lead political actors to adopt fiscal rules. It finds that fiscal rules are strengthened when countries are facing fiscal stress over an extended period or when governments are in a position of relative weakness toward European institutions. The latter result suggests that fiscal rules might diffuse through coercive diplomacy. The second paper uses a process tracing approach to test the possibility that the creation of fiscal rules is driven by the coercive diplomacy of the IMF and the EU. We conclude that the coercive diplomacy of those two actors explains a large proportion of the fiscal rules existing in the world today. The final paper takes this result and compares the impact on debt and bond yields of fiscal rules that are externally-coerced to those that are nationally-driven. We conclude that externally-coerced fiscal rules do not help to control government debt and favour fiscal gimmickry.
These results have been extensively discussed in each paper. We will focus here on the big picture that emerges from these papers. That is, a large fraction of fiscal rules are not created voluntarily by national governments, but are the result of the coercive diplomacy of international or supranational institutions. These coerced FRs may not have the efficiency that is expected of them. Political actors always try to keep their hands untied. Even when they are constrained, national governments still attempt to use fiscal gimmickry to avoid the rules imposed on them, making those rules less effective than rules resulting from national processes. We will discuss here the theoretical, methodological and political contributions related to this finding.

5.1 Theoretical Contribution

The main theoretical contribution of this thesis is the introduction of the diffusion mechanism to the set of mechanisms put forth to explain the evolution of FRs. While the study of FRs has been centered on national explanations, our thesis adds international dynamics to the set of factors that may explain their creation. The evidence presented in this thesis strongly suggests that coercive diplomacy plays an important role in the creation of FRs. Our finding that coerced FRs may not be an effective way to reduce debt levels and the yields paid on government bonds is clearly at odds with previous findings.

Because we did not assume that the existence of a deficit bias is sufficient to explain the creation of FRs, our results differ from the core of the literature. Our approach is based on the idea that there must be an impulse that leads to the creation of FRs. A significant share of FRs research, often inherited from the public choice school, assumes that since FRs correct governments’
deficit bias, the presence of a deficit bias is sufficient to explain the creation of FRs. In our view, this is an oversimplification of reality that has important theoretical implications which have prevented the exploration of important diffusion mechanisms.

At odds with formal models, we found that FRs might not always have a positive impact on government debt. The positive outcome predicted by formal modeling often rests on the assumption that recurrent deficits are mostly the result of corrupt or opportunistic politicians. This approach infers that budgets would be balanced if it were not for politicians and therefore the presence of the deficit bias explains the creation of FRs. Generally, these results are too optimistic about the impacts of FRs and have failed to explain why the same politicians would bind their own hands.

The difference between theoretical results and the realities found through observation is non-negligible. By testing different mechanisms and by stepping back from the deficit bias assumption, we were able to identify mechanisms that have been previously ignored.

5.2 Methodological contribution

Research on fiscal rules faces some important methodological challenges. First, this research suffers from a significant shortage of data. There are only two samples allowing complex analyses of FRs: US states and the EU. Regarding US states, most of the publicly available measures are problematic (see Hou and Smith 2006) while the appropriate measures collected by Smith and Hou (2013) are not shared by the authors for either further analysis or replication, making it impossible to confirm the validity of their results.
On the contrary, data coming from the European Commission (WGQPF) are publicly accessible and have been extensively analyzed. While in the future there might be more research using this data, we must keep in mind that this is still the same material under study, strongly limiting the generalization of the results to others contexts. The same can be said about data on public finance.

Second, our research on the WGQPF has shown that the use of improper statistical techniques may lead to biased results. This is a major scientific contribution of our thesis. We have applied cutting edge quantitative tools that can address most of the issues highlighted in previous research. The research on FRs always had to deal with variables that are not strictly exogenous which, in a panel time series setting, can lead to serious bias. Our thesis shows that the bias resulting from the use of classic panel estimators on existing datasets tends to overestimate the positive impacts of FRs. This by itself calls into question the validity of previous results on the impact of FRs, at least in the EU, and emphasizes the need to confirm those results with new and more efficient statistical tools.

There are a few papers that have played an important role in the research on FRs that would need to be replicated using a panel time series method which could deal with weakly exogenous variables. Debrun et al. (2008) and Smith and Hou’s (2013) analyses of FRs in the EU and the US, respectively, come to mind. At the time this thesis was written, two strategies were available to do such estimations: the system-GMM and the transformed likelihood approach proposed by Pesaran (2007). In both cases, the main challenge to this replication endeavour is accessibility to data.
The third challenge is mainly ethical. Up to now, the literature remains modestly optimistic about the impact of FRs. Correcting the bias mentioned above may lead to the confirmation of mainstream results or to their dismissal, if no impact or a negative impact of FRs is found. In the latter case, results will have to be replicated using different datasets and published. Null results are difficult to publish, particularly when they contradict the established paradigm. Finding a negative impact of FRs on public finance would be easier to defend because significant results could be presented, though certainly, such result would be subject to comprehensive review.

5.3 Political Challenges

There are vested interests supporting FRs that are likely satisfied with the present state of research. Up to now, research on FRs has been largely developed inside the IMF. The IMF’s dual role as a money lender promoting policy as well as a research institution, may raise a significant conflict of interest. As a money lender promoting policy and institutional changes, the IMF needs to preserve its reputation and credibility. National governments would not apply the recommended reforms in the absence of the IMF’s reputation for professionalism and economic competency. National governments, especially in developing countries, need to trust that the reforms promoted by the IMF will not be harmful. To preserve this reputation, the IMF, as an institution, needs to present itself as being at the cutting edge of economic and policy research. Hence, it needs to have a strong research department. The IMF also needs to show consistency in the reforms it demands from national governments if it wants national governments to enforce these reforms.
This dual dynamic may raise two types of political challenges. First, research done by the IMF can hardly contradict or show the inefficiency of a demanded reform without the risk of delegitimising these demands. Second, the IMF cannot easily contradict itself as instability in IMF research conclusions may be interpreted as a sign that IMF demands are not based on strong scientific results. In summary, to preserve its credibility, we may expect IMF research conclusions to be consistently in support of IMF policy. This highlights the need for the development of academic research on FRs outside of the IMF to either validate or challenge the internal IMF research. This is particularly apparent when we consider that, after Kopits and Symansky's (1998) seminal work on FRs, no critical research emerged until 2008. At first, critics of FRs came only from oil producing countries (Ossowski et al. 2008). In 2010, following the economic crisis, two papers criticizing FRs were published (Bova et al. 2014; Lienert 2010).

The IMF institutional setting demands that IMF loans be reimbursed, creating a possible bias in the use of data. Once debt reimbursement becomes one of the primary goals, debt and deficit indicators become much more important as growth, income distribution, and democratic legitimacy become secondary goals. Policy like FRs, while helping to balance government budgets, might also be detrimental. FRs can deter growth, cause severe austerity, and limit democratic choices. The value of FRs policies might seem good when considering only budgetary impact. However, once the negative impacts are factored in, they might seem less attractive.

Finally, though not directly related the topic of the thesis, the fact that the IMF ignores its own role in the diffusion process of FRs is troubling. Worse, the tendency of the IMF to present the
proliferation of FRs as a phenomenon outside of their influence and explained by national politics might seem misdirected.

5.4 Future Research

Clearly, there is a need to revisit established research on the impact and origins of FRs. Our thesis has explored some avenues, but some stones are left unturned. The conclusion of this thesis argues that there is a significant probability that previous results were driven by significant estimation biases. It would therefore be essential to try to replicate key results with new statistical tools.

Moreover, this thesis was unable to cover all plausible mechanisms that could be at play in the creation of FRs. Among the most promising is the link between FRs and the electoral cycle. However, this link is hard to explain if we assume that political actors are systematically rewarded for overspending. Brender (2003) and Brender and Drazen (2008) have supported the idea that voters punish governments that create deficits. This raises the possibility that governments wishing to be elected need to make some credible commitment to curtail deficits. FRs allow political actors to tie their own hands and to credibly commit in an effort to maximize their electoral prospects. This explanation is internally consistent and could explain why political actors wanting to maximise their electoral returns will tie their own hands when faced with a fiscally conservative electorate. To examine this link, information on the exact moment when fiscal rules were voted on is needed. As it stands, such information is extremely limited.
5.5 Final Remarks and Broader Implications

The idea that FRs can help stabilize public finance rests on the assumption that most government deficits are caused by biased budgetary decisions. When government deficit bias is weak, the impact of FRs is to force governments to cut public spending, since competition between states limits tax increases. Those cuts might have very little legitimacy when the rules are coerced from above by an external agent. This is even more likely to be true if the deficit is caused by the nationalisation of private debt. This exact scenario played out during the 2008-2009 crisis. Private debt was transformed into public debt to avoid the failure of the banking system (Blyth 2013). It would be interesting to analyze which portion of government deficits are actually caused by an economic recession or the nationalization of private debt. However, in the short run, there are important questions to ask about the legitimacy of the Fiscal Compact. FRs will force populations to pay for the bailout of financial institutions and the profit of private bankers. In the view of many citizens, this can significantly delegitimize the liberal order, raising serious question about the viability of FRs as permanent fiscal institutions. Also, the western world is facing new challenges that will significantly raise government spending, namely, aging populations and high unemployment levels. In this context, the only policy answer allowed by FRs is to reduce the size of the government. Then, it may seem that FRs solve the problem in the short run, though they do not allow for the consideration of the systematic causes of government deficit outside of short-term government choices. However, spending cuts may lose their positive reputation once they start to affect the key institutions of democratic society, such as health care. In the presence of a deficit bias, FRs can significantly help to improve public finance. However, if such a bias is not present and if deficits are caused by structural phenomena outside of
government control, FRs can have devastating impact on government legitimacy. Imposing FRs across the board might be a more dangerous policy than is often expected.
Bibliography


Appendices

Appendix A  Supplemental information on how variables were coded and descriptive statistics for the experiment presented in Chapter 2

A.1  Descriptive statistics used in Chapter 2

Table A.1.1: Descriptive statistics of variable used in chapter 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR Index</td>
<td>489</td>
<td>0.11</td>
<td>0.46</td>
<td>-2.87</td>
<td>3.53</td>
</tr>
<tr>
<td>L1 Change in debt level over 5 years</td>
<td>489</td>
<td>3.52</td>
<td>21.61</td>
<td>-213.30</td>
<td>92.54</td>
</tr>
<tr>
<td>L1 Change in debt level over 1 year</td>
<td>489</td>
<td>1.20</td>
<td>5.94</td>
<td>-44.90</td>
<td>26.77</td>
</tr>
<tr>
<td>L1 Bond yield</td>
<td>489</td>
<td>-0.48</td>
<td>2.76</td>
<td>-53.02</td>
<td>8.40</td>
</tr>
<tr>
<td>L1 FR Norms salience</td>
<td>489</td>
<td>0.01</td>
<td>1.37</td>
<td>-17.71</td>
<td>8.86</td>
</tr>
<tr>
<td>L1 coalition</td>
<td>489</td>
<td>0.78</td>
<td>0.42</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>L1 Ideology</td>
<td>489</td>
<td>-0.02</td>
<td>2.31</td>
<td>-8.00</td>
<td>8.00</td>
</tr>
<tr>
<td>Election year</td>
<td>489</td>
<td>0.23</td>
<td>0.42</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>EU Financial help</td>
<td>489</td>
<td>0.02</td>
<td>0.14</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>EU Applicant</td>
<td>489</td>
<td>0.13</td>
<td>0.34</td>
<td>0.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>
A.2 Changes in fiscal rules stringency over time in different countries

Figure A.2.1: Changes in fiscal rules stringency

A.3 Supplementary information on variables coding

We include election years for each country and ideology of governments in office. Ideology is measured using Beck et al.'s (2001) indicator going from 0 (less right wing) to 8 (full right-wing). For one-party governments, the indicator takes the value of 8 if the government party is right-wing and 0 otherwise. For two-party governments we sum up the right-wing score for each party, 0 if they are not on the right and 4 if they are. For a three-party coalition, the main partner
is coded 4 if they lean toward the right, the other two partners are coded 2 if they are right-leaning. Missing data for Bulgaria, Slovakia and Romania values were filled using the WKB data set. Right-wing dominant parties were coded 8 and center-right were coded 4.

Appendix B  Supplemental information on deficit bias as presented in Chapter 2

The common pool problem, put forward by Von Hagen and Hardan (1995) and Hallerberg and Von Hagen (1999), arises when the budget is set by several policymakers (ministers, parties, lobby groups). Thus, if a policymaker prefers to increase public spending to favour one constituency, the cost of such a fiscal measure will be shared by all constituencies through a higher general future tax burden. Unconstrained, policymakers will tend to push for policies which increase the budget deficit while a similar push for fiscally conservative budgetary measures will not exist, resulting in a deficit bias.

The deficit bias due to time inconsistency of government preferences (Alesina and Tabellini 1990) is similar in nature to the common pool problem. It arises when policymakers are subject to elections, and therefore do not internalize the cost of running deficits because they do not take the public finances of potential successors sufficiently into account.

Appendix C  Rejected diffusion mechanisms studied in Chapter 2

This section explains why we rejected economic competition, learning and mimicking as plausible candidates to explain FRs.

Economic competition does not seem to be compatible with FR policies. This mechanism can work in two opposite ways: a country may benefit from its competitors either by adopting or not adopting a policy. For example, countries liberalizing their economies can receive a boost to Foreign Direct Investment (FDI), while countries resisting liberalization will progressively lose FDI. The same cannot be said for FRs, which do not provide economic advantages directly. Assuming that they succeed in stabilizing the debt of a given country, the increased stability might improve economic perspectives. However, no evidence exists that FRs have a positive impact on GDP or FDI, and FRs can theoretically produce destabilizing pro-cycle spending policies (Eichengreen and Bayoumi 1994). FRs might also help countries access credit at better prices on financial markets with lower interest rates (Poterba and Rueben 1999 and Iara and Wolff 2010). However, it is well documented that, before the crisis, all European countries had access to credit (Lane 2012). Finally, EU countries act collaboratively rather than competitively on fiscal issues. The shared standard of the Stability and Growth Pact and the coordination to increase the strength of FRs post-2009 cannot be considered competitive. This makes it hard to argue that EU countries have competed against each other for credit, FDI, or economic advantages using FRs.
The orthodox version of the learning mechanism can also be rejected. Shipan and Volden (2008) argue that for a learning process to happen, it must be possible to observe the positive outcome from a policy. As the jury is still out on their impact, this is not possible for FRs. Rommerskirchen (2015) reviewed the literature on the impact of FRs and argued that we should be moderately optimistic at best. Without a clear outcome to learn from, the learning mechanism cannot operate.

Mimicking can also be dismissed. A mimicking process consists of following the pace of a leader without considering the outcome of the policy. According to Shipan and Volden (2008) mimicking is recognized when a smaller unit adopts the policies of a larger one in a short amount of time. The aim of mimicking is to appear similar to the leading country. Within the EU, this would mean that a smaller country would mimic a larger one.

To test the mimicking mechanism, we used the lag value of the FR index for countries that could be leaders: France, Germany, and the UK. The mimicking mechanism would be supported if the coefficient for one of the three countries was positive and significant. Table C1 shows the estimates of our main model with the mimicking variables. The variable for France is the only one that is positive. The variable for the UK is barely significant, but with the wrong sign. In sum, none of these results supports the mimicking mechanism.
Table C1. Complementary tests on mimicking mechanism

<table>
<thead>
<tr>
<th>Variables</th>
<th>Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lag in FR index</td>
<td>-0.049 (0.375)</td>
</tr>
<tr>
<td>L1 Change in debt level over 5 year</td>
<td>0.008*** (0.003)</td>
</tr>
<tr>
<td>L1 Change in debt level over 1 year</td>
<td>-0.036* (0.020)</td>
</tr>
<tr>
<td>L1 Bond yield</td>
<td>0.015 (0.043)</td>
</tr>
<tr>
<td>L1 FR Norms salience</td>
<td>-0.062 (0.120)</td>
</tr>
<tr>
<td>L1 coalition</td>
<td>-0.070 (0.095)</td>
</tr>
<tr>
<td>L1 Ideology</td>
<td>0.038 (0.061)</td>
</tr>
<tr>
<td>Election year</td>
<td>0.127 (0.183)</td>
</tr>
<tr>
<td>EU Applicant</td>
<td>0.741* (0.401)</td>
</tr>
<tr>
<td>EU Financial help</td>
<td>3.339* (1.959)</td>
</tr>
<tr>
<td>Constant term</td>
<td>0.049 (0.149)</td>
</tr>
<tr>
<td>L1 FR index France</td>
<td>0.497 (0.546)</td>
</tr>
<tr>
<td>L1 FR index UK</td>
<td>-0.259* (0.157)</td>
</tr>
<tr>
<td>L1 FR index Germany</td>
<td>-1.475 (0.939)</td>
</tr>
</tbody>
</table>

N 463

System GMM information
Number of instruments 29
Sargan test of overidentification (p-value) 0.979
Hansen test of overidentification (p-value) 0.476

PCA information
Kaiser Meyer Olkin measure of sampling adequacy 0.946
Portion of variance explained# 0.249

Standard errors in parentheses
* p < 0.10, ** p < 0.05, *** p < 0.01


Appendix D  Analysis of the impacts of the number of instruments used in the experiment presented in Chapter 2

The results for change in debt levels over five years are relatively stable across the number of instruments (Figure D1), with a small downward trend for $\beta$ and a weak upward trend in SE caused by two outliers (models with 35 and 63 instruments).

Figure D1: Stability of $\beta$ and SE Estimate for Change in Debt Over Five Years

Regarding the impact of EU applications, our first indicator of coercion, both $\beta$ and SE have a downward trend as the number of instruments increases. However, this trend does not lead to a significant difference since the values of $\beta$ are concentrated between 1.5 and 2.5.
Regarding EU financial assistance, the estimations of $\beta$ and SE are relatively stable across estimations, with a small downward trend (Figure D3).
Appendix E  Sample Outliers in Chapter 3

It is interesting to highlight the outlying countries in the dataset. Whereas most countries created FRs after 1985, 5 cases created FRs significantly earlier: Japan (1947), Germany (1949), 40 Malaysia (1959), Singapore (1965), and Indonesia (1967). In the cases of Japan and Germany, it is common knowledge that the two countries were not fully independent in the aftermath of World War II. In both cases FRs were enacted as part of post-war macro stabilization plans (Kopits and Symansky 1998). Malaysia gained independence in 1957 and adopted DR and a Golden Rule in 1959. Singapore was expelled from Malaysia in 1965 and quickly adopted a constitutional BBR the same year. Finally, Indonesia adopted a BBR in 1967, a year that marked a change of leadership following a period of instability resulting from the failed coup d’état of September 1965. In the first two cases the rules were created during the occupation. In the last three, they were created in a period of political instability.

40 Not in the IMF data; see Kopits & Symansky (1998)
Appendix F Fiscal Rules Treaty History in the European Union

This appendix reviews the type of arguments that led to the creation of FRs in the EU, then presents a short history of FRs in the EU.

There were many arguments, of different strengths, justifying the creation of FRs in the EU. Eichengreen et al. (1998) found and severely criticized five types of arguments explaining why FRs should be created in the EMU. The first argument focused on the idea that, in a monetary union, FRs protect the central bank against inflationary debt bailout. The logic of this argument is that, if a member-country gets into serious financial trouble, it might cause a drop in the bond price of the country. This will affect the capital of banks holding the bonds in other countries of the monetary union. In extreme cases, that could lead to a meltdown of the banking system, forcing the central bank to buy the bonds of the country in trouble. In this scenario, the cost of the bailout is assumed by the entire union and not just by the country that got into trouble in the first place, creating a risk of free-riding. The role of FRs in this scenario is to prevent countries from getting into financial trouble in the first place.

The second type of argument focused on price stability. Following this logic, the accumulation of deficits and debt by member states will exert pressure on the central bank to allow more inflation to help reduce the debt burden. Such pressure makes the central bank’s commitment to price stability non-credible. FRs are seen as tool to make the commitment to price stability credible.

The argument that FRs protect the central bank of the monetary union was defended by Artis and Winkler (1998) among others.

The third argument is that governments suffering a deficit bias have a negative economic impact on the monetary union. FRs are necessary to suppress the deficit bias.
The fourth argument is that one country’s government borrowing will affect the interest rate paid by other members. In this logic, FRs minimize negative spillover effects associated with large deficits. Eichengreen et al. (1998) raised the objection that, since countries borrow on the global market, borrowing in one country has minimal impacts on the interest rate.

The last argument is a variation on the fourth one. The idea is that FRs, and the SGP more generally in the case of the EU, help to coordinate fiscal policies among member-states. Eichengreen et al. (1998) argue that limiting policy flexibility might not be the best way to ensure fiscal coordination and they highlight that the benefits of fiscal coordination are minimal. Despite this criticism, such arguments are still present in the literature. Schaechter et al. (2012) argued that fiscal rules are introduced with the objective of constraining individual countries from running fiscal policies that are inconsistent with the needs of monetary unions, implicitly referring to arguments of type one, two and four. Eyraud and Wu (2015) argued that FRs were introduced in the EMU to prevent national fiscal policies from producing an increase in interest rates (type 4), increasing inflation (type 2), and forcing bailouts (type 1). In sum, the idea that FRs are necessary for the survival of monetary unions is deeply anchored in the literature, meaning that the EU and IMF might promote FRs to monetary unions simply to ensure their stability.

These arguments help to justify the measure included in the Stability and Growth Pact (SGP), however it is the political impulse from Germany that led to the creation of FRs in the EU. Historically, Germany has preferred rules over discretion when dealing with fiscal policies. Blyth (2013) argued that this rule based preference comes from the ordoliberal doctrine of the German elite. FRs were first created in the EU in 1992 with the adoption of the Maastricht Treaty.
original rules were strengthened by the Stability and Growth Pact (SGP) in 1998. The SGP was first proposed in November 1995 by the German finance minister, Theo Waigel. Heipertz and Verdun (2011) argued that the SGP was the result of the German government’s need to reassure the German public and the Bundesbank, who were worried about abandoning the stable Deutschmark. The original proposal involved automatic sanctions for any deficit higher than 3% of GDP and the creation of a “Stability Council” that would supervise the strict application of the pact (Buti and Franco 2005). The proposition was opposed by many countries and a compromise without automatic sanctions, which also included an Excessive Deficit Procedure (EDP) was reached. This final proposition was close to the German ideal because Germany had a significant bargaining advantage (Heipertz and Verdun 2004). This advantage rested on the veto position of the Bundesbank combined with the German threat to either exit the EMU process, which was supported by a significant share of the population, or to block the entry of southern European countries into the EMU (Heipertz and Verdun 2004). In 2005 the EDP was made more flexible.

The 2009 crisis forced another round of reform in the EU. At the same time, the crisis accentuated the central role of Germany as the EU’s most powerful economy, effectively increasing German negotiation power. The first reform was the Six-Pack in 2011, which includes five regulations and one directive proposed by the European Commission. The Six-Pack made sanctions for countries violating the European FRs semi-automatic. The Six-Pack sanctions are applied automatically by the European Council unless a majority of Member States vote against.

41 IMF Country report 05/265 p.21
The Six-Pack also created an expenditure rule that limits the growth of expenditure to the medium-term rate of growth of each country. Finally, the Six-Pack forces member states to include the objective of the reform into national targets to be met by 2020. This complements the fact that member-states have to translate EU fiscal rules as set out in the Stability and Growth Pact into national legislation. The European council exact wording was:

“Participating Member States commits to translating EU fiscal rules as set out in the Stability and Growth Pact into national legislation.”

“The exact formulation of the rule will also be decided by each country (e.g. it could take the form of a "debt brake", rule related to the primary balance or an expenditure rule), but it should ensure fiscal discipline at both national and sub-national levels.”

Further reform—the Fiscal Compact treaty—came into force on January 1, 2013, demanding that national FRs be introduced in the year following entry into the treaty. National FRs must preferably be included into national constitutions and must also include automatic corrective action in the event of “significant observed deviations” from medium-term objectives. The ratification and application of the Fiscal Compact is the condition that allows access to funds

42 EU MEMO/11/898
43 EU MEMO/11/898
44 EU MEMO/11/364
45 European Council EU CO 10/1/11 (European council conclusion)
46 European Council EU CO 10/1/11 (European council conclusion), p.19
47 European Council EU CO 10/1/11 (European council conclusion), p.19
48 The Fiscal Compact and the European Constitutions: « Europe Speaking German »
The Fiscal Compact can be considered as a form of coercive diplomacy since EU members that do not comply with the “Fiscal Compact” forfeit their access to funds from the European Stability Mechanism in case of crises. As the punishment for not joining the Fiscal Compact is clearly stated, it would be hard to argue against coercion.

The final piece of reform following the sovereign debt crisis was the Two-Pack, which entered into force on May 30, 2013. Contrary to previous reform, the Two-Pack aimed at making FRs more binding by increasing transparency. This implies that states must publish their medium-term fiscal plans. In turn, the EU commission examines the annual government budgets in view of the medium-term targets and if the budget does not comply with European FRs the Commission will demand a revised plan. While the Two-Pack does not give the commission the power to modify national budgets, the published budget submitted to the Commission can be used as evidence to trigger an EDP and eventually impose sanctions on deviant countries. In sum, the Two-Pack forces the Commission to work as an independent fiscal council by giving the Commission oversight powers.

The creation of FRs in the EU is in itself a story of coercion led by Germany. An analysis by Wierts (2010) has demonstrated that throughout the SGP negotiation and post 2009 crisis negotiation, Germany has taken positions favouring FRs, thereby showing German preference

49 Treaty Establishing the european stability Mechanism, T/ESM 2012/en 4
for FRs. EU FRs were first created under clear German leadership. The coercion mechanisms predict that the final outcome will be the one desired by the strongest actor, even if other actors oppose it. This is exactly what is observed in the EU. Indeed, the final set of FRs, including the Six-Pack automatic sanction and the Two-Pack “Stability Council”, are highly similar to the original demands of Theo Waigel. In the end, the sovereign debt crisis provided the extra leverage Germany required to impose its preferences. While it is interesting to note that the creation of FRs in the EU generally conforms to the prediction of the coercion hypothesis, we are mostly interested in the role of the EU as a coercive agent. The key element to understand is that the leadership position of Germany in the EU negotiations has allowed Germany to shape the preference and the action of EU institutions. The German influence over the ECB was particularly strong. Germany only accepted giving up its autonomy over monetary policy if the rest of the EU agreed to create the Euro favouring the Deutschmark’s image. This implies that the ECB was designed using the blueprints of the “Bundesbank” (Matthijs 2016), explaining why the ECB shares Germany’s preference for strong FRs. These ideological similarities between Germany and the ECB were particularly visible in the development of the 2009 crisis (see Blyth 2013). The result is that the influence of Germany in the EU is accentuated by the ECB when it is time to negotiate FRs. Another consequence of this strong bloc supporting FRs inside the EU is that the European institutions promote FRs to potential members, as explained by Schimmelfennig and Sedelmeier (2004).

References:

Appendix G  President of the CEMAC Commission Full Quote

Discours du president de la commission de la CEMAC: À L’Ouverture des travaux du seminaire regional de haut niveau sur la surveillance multilateral en zone CEMAC, à Yaoundé, le 21 juillet 2015

“In the last twelve months, three new elements were added to existing constraints. They are:
iv) The IMF reform of debt limits associated with IMF’s support programs and that concern almost all member states; v) The important decrease in oil prices that strongly affect the incomes of most CEMAC members;
vi) The persistent security tension that creates and eviction effect on both public income and spending”

Original French Version: « Au cours des douze derniers mois, trois éléments supplémentaires sont venus s’ajouter aux contraintes existantes. Il s’agit de :iv) la réforme par le Fonds Monétaire International des limites d’endettement associées à ses programmes de soutien, et qui concerne la quasi-totalité des États membres ; v) la baisse importante du cours du baril de pétrole qui affecte très fortement les recettes budgétaires de la plupart des pays membres de la CEMAC ; vi) la persistance des tensions sécuritaires qui créent un effet d’éviction sur les finances publiques tant au niveau des recettes que des dépenses. »
Appendix H  IMF Preference for Fiscal Rules

This appendix explores the idea that there is a preference for FRs both in the IMF diplomatic staff and in the IMF research teams. For the diplomatic staff, we use quotes promoting FRs to demonstrate the preference for FRs. For the research staff, we show that there is a pro-FR bias in IMF research compared to the academic peer reviewed work.

The IMF produces documents on different topics. We looked at some of these documents in order to look for references to FRs and clear statements in favour of FRs. The probability of finding such statements if the institution did not support FRs would be relatively low, because the IMF would not favour publication of work that goes against the institution’s position.

Finding such statements could be considered a smoking gun type of evidence. Such evidence is present in Kopits and Symansky (1998) "Fiscal Policy Rules". The value of this evidence comes from the fact that at the time of writing, George Kopits was assistant Director in the IMF Fiscal Affairs Department and Steven Symansky was Deputy Division Chief. This paper was also presented to the IMF Executive Board. The following quotes clearly support the idea that FRs were indeed promoted by the IMF and these IMF programs have been effectively used to encourage FRs.

“Some of these lessons relate to IMF involvement in fiscal policy issues through surveillance, as well as financial or technical assistance. Generally, in line with its concern for fiscal discipline, the IMF has supported fiscal policy rules adopted by member countries as long as such rules broadly conform to the foregoing characteristics of a model fiscal rule. Recently, for example, through Article IV consultation discussions with EU members, the World Economic Outlook
exercise, and consideration of special Executive Board papers, the IMF has closely monitored and encouraged convergence toward the fiscal criteria under EMU.” P. 20 Kopits and Symansky (1998).

We compared IMF research publications with academic peer reviewed work. For the IMF, we focused on research published in IMF edited books, IMF Working Papers, IMF Staff Papers, and IMF Occasional Papers that were written by IMF staff. Using the IMF library website, we identified 310 papers using “fiscal rules” as a keyword. Moreover, papers with “Fiscal rules” in the title were also added. In addition, “Fiscal Responsibility Law”, “Fiscal Policy Rules” and other close variants of the concept of FRs were used to complete the sample of papers. Once we filtered out duplicates and unrelated papers, 75 papers remained and were then coded. To have a basis of comparison we did a similar research for academic papers, using “Web of Science” instead of the IMF library. This second sampling used the same conditions and keywords as the one done for the IMF. In the end, 72 academic papers were coded. We separated the research in three categories: papers in favour of FRs, neutral papers, and papers against FRs. A paper was coded in “favour” of FRs if they either promoted FRs, analyzed the impact of FRs and/or concluded that they are an efficient policy to reduce debt, deficit or interest rates. Papers with a biased research question, for example: “What kind of FRs are the most efficient in reducing debt”, were also coded in favour of FRs. Finally, papers arguing for improvement over existing fiscal rules were also coded in “favour”. The “neutral” category contained papers with balanced positions or mixed conclusions. Factual papers that did not take a position were also coded neutral. Finally, papers arguing that FRs are bad policy choices or concluding that they do not
help reduce debts, deficits or interest rates were coded “against”. Similarly, papers suggesting abolishing FRs would have been coded against. However, this case did not present itself.

Table H1. Position on fiscal rules in IMF and academic research

<table>
<thead>
<tr>
<th>Position</th>
<th>IMF Papers</th>
<th>Academic Papers</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>In favour (1)</td>
<td>56 (75%)</td>
<td>45 (62%)</td>
<td>Paper promotes or recommends FRs as a policy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Concludes the FRs are efficient to reduce debt, deficit, or interest rates</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Papers discussing how to improve FRs</td>
</tr>
<tr>
<td>Neutral (0)</td>
<td>11 (15%)</td>
<td>12 (17%)</td>
<td>Takes a balanced position</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mixed conclusion</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Papers not taking position or Factual</td>
</tr>
<tr>
<td>Opposed (-1)</td>
<td>8 (11%)</td>
<td>15 (20%)</td>
<td>Argues against FR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Concludes that FRs do not have any impact on debt, deficit, or interest rates</td>
</tr>
</tbody>
</table>

Among the academic papers, four papers are IMF working papers that were eventually published in peer reviewed journals. All four papers were in favour of FRs. Even if these four papers are included, the ratio of papers that are skeptical about FRs in the IMF literature is only half of those skeptical in academic literature. The ratio of papers that are generally in favour of FRs in the IMF literature is 13% higher than in academic literature. This supports the idea that there is a bias in favour of FRs in IMF research staff. In sum, we have shown that there is a bias in the IMF staff who deal with government officials, in the general IMF research staff, and in the case of the IMF fiscal affairs department, this bias is ever-present in higher levels of the job hierarchy.
# Appendix I Primary Source List

<table>
<thead>
<tr>
<th>Documents</th>
<th>Years</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMF Reports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMF Annual Report 1999</td>
<td>1999</td>
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<tr>
<td>IMF Annual Report 2001</td>
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<td>IMF Annual Report 2002</td>
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<td>IMF Country Report No.02/203</td>
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<td></td>
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<tr>
<td>IMF Country Report No. 03/70</td>
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<td>IMF Country Report No. 03/87</td>
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<td></td>
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<td>IMF Country Report No. 04/299</td>
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<td></td>
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<td></td>
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<tr>
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<td></td>
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<td></td>
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<tr>
<td>IMF Country Report No. 12/244</td>
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<td></td>
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<tr>
<td>IMF Country Report No. 13/92</td>
<td>2013</td>
<td></td>
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<tr>
<td>IMF Country Report No. 14/84</td>
<td>2014</td>
<td></td>
</tr>
<tr>
<td>IMF Country Report No. 15/100</td>
<td>2015</td>
<td></td>
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<tr>
<td>IMF Country Report No. 16/277</td>
<td>2016</td>
<td></td>
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<td>Documents</td>
<td>Years</td>
<td>Additional Information</td>
</tr>
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<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>EU MEMO/11/364</td>
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<tr>
<td>EU MEMO/11/898</td>
<td>2011</td>
<td></td>
</tr>
<tr>
<td>European Council EU CO 10/1/11</td>
<td>2011</td>
<td>European Council Conclusion March 2011</td>
</tr>
<tr>
<td>T/ESM 2012</td>
<td>2012</td>
<td>Treaty Establishing the European Stability Mechanism</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEMAC president speech:</td>
<td>2015</td>
<td>Yaoundé, le 21 July 2015 :</td>
</tr>
<tr>
<td>Regional seminar on multilateral</td>
<td></td>
<td>“<a href="http://.cemac.int/sites/default/files/Allocution%20du%25">http://.cemac.int/sites/default/files/Allocution%20du%</a></td>
</tr>
<tr>
<td>surveillance in the CEMAC zone</td>
<td></td>
<td>20President%20de%20la%20Commission%20v4.pdf”</td>
</tr>
<tr>
<td>Government of Montserrat,</td>
<td>2009</td>
<td></td>
</tr>
<tr>
<td>Ministry of Finance:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The ECCB Boot Camp Experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28th September, 2009</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix J  Evidence of Electoral Dynamic

The difference between FRs with political status and FRs with legal status is analytically important. This paper does not defend the idea that all FRs are created because of coercion. There are other mechanisms that can lead to the creation of FRs. One of the probable mechanisms is anchored in electoral competition. Table J.1 presents the total number of countries having FRs with only political status. From those, we can isolate the FRs that have been created during a legislative election year and those that have been created in the year following a legislative election. Table J.1 shows that the creation of FRs with political status is highly correlated with legislative elections, supporting the idea that the creation of FRs with political status results from an electoral mechanism. The study of the electoral mechanism goes behind the scope of the present paper. However, we need to acknowledge that FRs with political status are less likely to be explained by coercion.

Table J.1. Fiscal Rules with Political Status

<table>
<thead>
<tr>
<th></th>
<th>ER</th>
<th>RR</th>
<th>BBR</th>
<th>DR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of countries with Political FRs</td>
<td>9</td>
<td>4</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>FRs created during election year</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>FRs created following an election</td>
<td>5</td>
<td>2</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Ratio of FRs created around election</td>
<td>88.89%</td>
<td>100%</td>
<td>57.14%</td>
<td>77.78%</td>
</tr>
</tbody>
</table>

Source: IMF Fiscal Rules Dataset
http://www.imf.org/external/datamapper/fiscalrules/map/map.htm

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### Appendix K Full Quote From Letter of Intent

<table>
<thead>
<tr>
<th>Country</th>
<th>Date of the Letter</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>Jan 11, 1999</td>
<td>A more fundamental change in fiscal policies will occur as a result of a &quot;Fiscal Responsibility Law&quot; which is expected to be approved by Congress in the coming months.</td>
</tr>
<tr>
<td>Brazil</td>
<td>Nov 13, 1998</td>
<td>The federal government plans to make fundamental changes to the management of its finances. A key element in its efforts will be the new Fiscal Responsibility Act, which the government will submit to Congress by December.</td>
</tr>
<tr>
<td>Colombia</td>
<td>Dec 20, 2001</td>
<td>To ensure the permanence of the reforms described above, the government will submit to congress in the first half of 2002 a proposal for a fiscal responsibility law. The purpose of fiscal policy is to safeguard adequate fiscal buffers and keep the government debt-to-GDP ratio on a steady declining trend by maintaining low deficits, consistent with our commitment under the Economic Liberty Act. Accordingly, we will reduce the fiscal deficit to no more than 3.5 percent of GDP in 2012 and no more than 3.0 percent of GDP in 2013.</td>
</tr>
<tr>
<td>Georgia</td>
<td>March 27, 2012</td>
<td>“Fiscal consolidation measures will be underpinned by core structural reforms—fiscal responsibility legislation, central treasury management, and public bodies and employment reforms—that entrench fiscal discipline.”</td>
</tr>
<tr>
<td>Jamaica</td>
<td>Jan 18, 2010</td>
<td>“The government will enact legislation before the end of FY2009/10 to establish a fiscal responsibility framework (FRF). The overall objective is to operationalize the key principles of prudent fiscal management in order to ensure that the institutional framework is consistent with the government’s short- and medium-term fiscal targets.”</td>
</tr>
<tr>
<td>Kosovo</td>
<td>June 20, 2011</td>
<td>“Over the medium term, our fiscal policy is guided by the objectives of enhancing the efficiency of public expenditures and achieving a sustainable fiscal stance consistent with stabilizing public debt as a share of GDP well below the 40-percent threshold enshrined in our public debt law. To this end, further structural fiscal adjustment will be required in the years ahead”</td>
</tr>
<tr>
<td>Nigeria</td>
<td>March 30, 2006</td>
<td>“The passage of key legislation, such as the Fiscal responsibility bill and public procurement bill will help to underpin the reforms at the State level.” “The Fiscal Responsibility Bill has made progress in the National Assembly. Present expectations are that it will be passed into law in Q3 2006. Meanwhile, Government will prepare by June 2006 an implementation manual/guideline in readiness for the enactment of the Fiscal Responsibility Act;”</td>
</tr>
<tr>
<td>Pakistan</td>
<td>Nov 12, 2004</td>
<td>“This is in line with the path set out in the PRSP and the draft Fiscal Responsibility Law (FRL). The draft FRL has already been approved by the Standing Committee on Finance of the National Assembly and we expect parliamentary approval later this year.”</td>
</tr>
<tr>
<td>Country</td>
<td>Date of the Letter</td>
<td>Quote</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Panama*</td>
<td>July 18, 2002</td>
<td>“Directors remarked that, in an uncertain external environment, the pursuit of sound fiscal policies and a decline in the public debt ratio were crucial for maintaining macroeconomic stability, reducing country risk, and creating conditions favoring more rapid output growth. In this connection, they welcomed the steps which had been taken to limit the deficit of the nonfinancial public sector in 2002, as called for under the recent fiscal responsibility legislation”</td>
</tr>
<tr>
<td>Peru</td>
<td>March 13, 2000</td>
<td>“the medium and long term, Congress approved a law on fiscal responsibility in December 1999. It sets limits to the deficit, the growth of general government expenditure, and the increase in public debt.”</td>
</tr>
<tr>
<td>Serbia</td>
<td>Dec 3, 2009</td>
<td>“Fiscal responsibility legislation. The present Budget System Law (BSL) will be amended to further strengthen fiscal discipline. Amendments should be adopted by the government and submitted to parliament that: (i) establish a simple and transparent rule that strengthens control over the medium-term fiscal framework; (ii) strengthen fiscal procedures of the current BSL, potentially including by setting up an independent fiscal council; and (iii) establish effective fiscal monitoring and enforcement mechanisms (end-April 2010).”</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>March 28, 2003</td>
<td>“A Fiscal Management Responsibility Act (FRA) was enacted in January that sets a medium-term fiscal deficit path, and mandates &quot;pre-election budget reports&quot; to discourage pre-election handouts.”</td>
</tr>
</tbody>
</table>

**EU Countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>Date of the Letter</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>July 5, 2002</td>
<td>“We will seek to ensure that the new public debt law is approved by parliament, and will publish our medium-term external debt management strategy.”</td>
</tr>
<tr>
<td>Hungary</td>
<td>Nov 4, 2008</td>
<td>“We have already submitted to parliament an amended fiscal responsibility law before consideration of our program by the IMF’s Executive Board.”</td>
</tr>
<tr>
<td>Romania</td>
<td>April 24, 2009</td>
<td>“key component of our medium-term strategy will be a new fiscal responsibility law that will, among other things: (i) set up, in coordination with the IMF and the World Bank, procedures for improved multiyear budgeting”</td>
</tr>
</tbody>
</table>
### Appendix L. Descriptive statistics of Chapter 4’s variables

Table E.1 Descriptive statistics of variables used in Chapter 4

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>S.E.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in Bonds (lagged)</td>
<td>-0.44</td>
<td>2.73</td>
<td>-53.02</td>
<td>15.46</td>
</tr>
<tr>
<td>Change in Debt (lagged)</td>
<td>0.88</td>
<td>8.13</td>
<td>-117.3</td>
<td>37</td>
</tr>
<tr>
<td>Controls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic Index</td>
<td>0.01</td>
<td>0.34</td>
<td>-2.14</td>
<td>1.55</td>
</tr>
<tr>
<td>Inflation</td>
<td>4.98</td>
<td>44.62</td>
<td>-4.47</td>
<td>1058.374</td>
</tr>
<tr>
<td>Coalition</td>
<td>0.77</td>
<td>0.42</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Election year</td>
<td>0.26</td>
<td>0.44</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Ideology</td>
<td>3.84</td>
<td>3.17</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Ln Population</td>
<td>14.99</td>
<td>1.40</td>
<td>12.85</td>
<td>18.23</td>
</tr>
<tr>
<td>Period Specific Dummy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU application</td>
<td>0.14</td>
<td>0.34</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>EU rules</td>
<td>0.86</td>
<td>0.35</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Run to EMU</td>
<td>0.22</td>
<td>0.42</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Crisis</td>
<td>0.10</td>
<td>0.30</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Post 2010</td>
<td>0.29</td>
<td>0.46</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

N = 574
Appendix M  Endogeneity: A Real Risk?

Endogeneity is always a possibility in any statistical model. The real issue is whether endogeneity can change the conclusions drawn from a model. In chapter 4, we conclude that FRs resulting from coercion do not work partly because they lack political legitimacy and because they encourage fiscal gimmickry. Mainly two types of biases could affect this result: the omitted variable bias as well as the selection bias.

The first source of bias to be considered is the presence of a selection effect. A selection effect can happen when the sample significantly differs from the population we wish to study. In chapter 4, we define the population under study as all European countries. With this definition in mind, our sample covers almost the entire European population. Only a handful of countries that are considered European are not members of the EU. Such countries include Switzerland as well as some eastern European countries like Ukraine. In this case, the risk of selection bias is marginal because we almost have the entire population.

The second source of bias is omitted variables. Per definition, there can always be an omitted variable that might be correlated with some included variable or the error term. However, in a regression model with multiple explanatory variables, the bias, if there is one, is likely to be spread among all estimated slopes, depending on the correlation structure of the omitted variable. Therefore, even if we had omitted a variable, it is unlikely that the effect would overwhelmingly influence one specific coefficient.
Yet, one may argue that some unobserved variable could affect both the mechanism leading to the creation of FRs and to their future fiscal outcome. Generally, the idea of “bad” or “rebel” governments that have, by design or tradition, bad fiscal behaviour, is in the background when the impact of fiscal policy is discussed. In the case of chapter 4, the question we address is whether the predisposition to behave as a poor government could bias the coerced stringency coefficient in the debt model from table 4.4 to the point of producing negative and significant outcomes. Any other results would not change the conclusion that coerced FRs do not have the positive impacts that one would expect. Indeed, even a non-significant coefficient would support our conclusion because it would show that coerced FRs have no positive impact on the debt. Only conclusions about the perverse effect of FRs would have to be moderated. First, there must be a general tendency to impose FRs on governments with questionable or deplorable fiscal behaviour. This is unlikely since most eastern European countries have adopted FRs in the process of becoming EU members. This includes countries like Estonia that have not sold long term bonds since at least 2010 and that cannot be considered to have bad fiscal behaviour. Also, all EU countries had to adopt national FRs after signing the Fiscal Compact. In both cases, FRs are not imposed only on countries with bad fiscal behaviour, they are imposed on all EU countries. This significantly reduces the risk that the coerced stringency coefficient would be driven only by the omission of a variable identifying “bad” fiscal countries. In addition, to strongly impact the coerced coefficient, the bad fiscal behaviour indicators should be weakly correlated with the economic condition, the level of inflation, or any of the period specific dummies. Any strong correlations would distribute the effect of the bias among multiple variables, making it unlikely that the coerced stringency would be massively biased while all other coefficients maintain reasonable estimates. This seems even more unlikely, considering
that inflation is often used as an indicator for such bad fiscal behaviour. In chapter 4 models all coefficients have a reasonable estimate, making it unlikely that a massive bias could be present and therefore the risk of an omitted variable bias seems minimal.

One way to reduce the risk further is to test if past inflation and fiscal behaviour are correlated with the coerced stringency or national stringency. We tested regression models similar to the one discussed in chapter 2 for both coerced stringency and national stringency. On the left-hand side of the equation we used the same variation in stringency as we did in Chapter 2. We included on the right-hand side of the equation variables like inflation and variation in debt that should be correlated with a predisposition to have good or bad fiscal behaviour. Finding a significant correlation between those variables and stringency indicators would support the endogeneity argument. We estimated models containing 20 to 33 instruments. Only results for a model with 28 instruments are presented in this appendix (Table M.1). Regarding the coerced stringency regression, neither inflation nor variation in debt level were significant. Moreover, in both cases the coefficients were extremely close to 0, suggesting that there is no statistical association between the variables. These results strongly suggest that the coerced stringency result in table 4.4 is not driven by the predisposition to have “bad” fiscal behaviour. In the case of national stringency, both inflation and variation in debt over the last 5 years are negative and significant. This suggests that countries that do create FRs spontaneously are those that might have a predisposition to be fiscally conservative. This might also explain the null result for national stringency. Because of their fiscally conservative position, countries that spontaneously create FRs would already have internalized the benefit of those rules before creating them. In other words, the rules only formalized a behaviour that was already present. The negative relationship between national stringency and inflation should not influence the results for
coerced stringency, since there is no correlation with coerced stringency and because we also control for inflation in the main model. Those results suggest that our conclusion is not driven by a pre-existing preference for balanced budgets.
Table M.1 Descriptive statistics of variables used in Chapter 4

<table>
<thead>
<tr>
<th>Variable</th>
<th>ΔCoerced Stringency</th>
<th>ΔNational Stringency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stringency (lagged)</td>
<td>-0.26</td>
<td>0.15</td>
</tr>
<tr>
<td>Change in debt level over 5 years (L1)</td>
<td>-0.05</td>
<td>-0.06**</td>
</tr>
<tr>
<td>Change in debt level over 1 year (L1)</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Bond yield (L1)</td>
<td>-0.02</td>
<td>-0.14*</td>
</tr>
<tr>
<td>Economic Index (L1)</td>
<td>-0.10</td>
<td>-0.55</td>
</tr>
<tr>
<td>Inflation</td>
<td>-0.00</td>
<td>-0.01**</td>
</tr>
<tr>
<td>Coalition (L1)</td>
<td>0.90**</td>
<td>0.25</td>
</tr>
<tr>
<td>Ideology (L1)</td>
<td>-0.02</td>
<td>-0.01</td>
</tr>
<tr>
<td>Election year</td>
<td>0.05</td>
<td>0.17**</td>
</tr>
<tr>
<td>Ln Population</td>
<td>0.1</td>
<td>0.02</td>
</tr>
<tr>
<td>EU applicant</td>
<td>1.51***</td>
<td>-0.50***</td>
</tr>
<tr>
<td>EU Financial assistance</td>
<td>1.60***</td>
<td>0.14</td>
</tr>
<tr>
<td>Run to EMU</td>
<td>0.13</td>
<td>0.01</td>
</tr>
<tr>
<td>Crisis</td>
<td>0.08</td>
<td>0.13**</td>
</tr>
<tr>
<td>Post 2010</td>
<td>0.10</td>
<td>0.31**</td>
</tr>
<tr>
<td>Constant term</td>
<td>-2.33</td>
<td>-0.42</td>
</tr>
<tr>
<td>N</td>
<td>456</td>
<td>456</td>
</tr>
</tbody>
</table>

Number of instruments: 28

Sargan over-identification test (p-value): 0.199 (0.421)
Hansen over-identification test (p-value): 0.432 (0.414)
PCA information:
Kaiser Meyer Olkin measure of sampling adequacy: 0.914 (0.933)

Portion of variance explained: 0.317 (0.296)

Standard errors in parentheses:
* p < 0.10, ** p < 0.05, *** p < 0.01

# Portion of variance explained increases with the number of instruments up to a maximum of 0.441