

Compliance effects of sovereign debt cuts

Eckhard Janeba*

University of Mannheim

Armin Steinbach†

Max Planck Institute for Research on Collective Goods

July 5, 2019

Abstract

The controversy about sovereign debt cuts loomed prominently throughout crisis in the European Union (EU), as the EU legal rules were viewed to impose strict limitations on debt restructuring involving public creditors due to moral hazard concerns enshrined in the legal ban on bailouts. This analysis explores the economic plausibility of the legal regime, with the applicable legal standard capturing the impact of debt restructuring on the debtor's expected compliance with fiscal rules. Our theory shows that the effect of debt cuts on fiscal compliance depends on three effects, the direction of which determines the overall effect on expected fiscal compliance. We empirically review the plausibility of our theoretical results by exploiting survey data from members of state parliaments in Germany. Data limitations notwithstanding, our results offer some plausibility that haircuts can make fiscal compliance more attractive and likely.

*University of Mannheim, Department of Economics, L7 3-5, D-68131 Mannheim, Germany, janeba@uni-mannheim.de

†Max Planck Institute for Research on Collective Goods, Kurt-Schumacher-Str. 10, 53113 Bonn, steinbach@coll.mpg.de

Helpful comments by Jochen Andritzky, Christoph Engel, Lucas Guttenberg, Giuseppe Pisauro and Jeromin Zettelmeyer are gratefully acknowledged. All mistakes are ours.

1 Introduction

Haircuts are controversial instruments of sovereign debt restructuring. While being discussed for a long-time in relation to debt relief for developing countries (Das et al. 2012; Sturzenegger/Zettelmeyer 2006), haircuts have recently loomed prominently in the European sovereign debt crisis (Hofmann 2017; Steinbach 2016). Debt restructuring has evoked comparatively less legal controversy where bonds held by private investors are concerned (Zettelmeyer et al. 2013), yet controversies centered around the request for Greek debt restructuring held by public creditors as precondition for financial assistance – the IMF insisted on debt restructuring involving public creditors, the EU opposed it due to legal boundaries. EU legal rules impede the scope for restructuring sovereign debt to the extent that EU institutions or EU Member States relinquish their creditor position. The no-bailout principle enshrined in EU law dictates strict fiscal responsibility, and may hinder non-market based debt relief as having the equivalent effect of a debt bailout (Steinbach 2016). Policy-makers opposing debt restructuring have invoked the EU no-bailout clause to sustain their refusal to agree to nominal cuts of Greek debt (Hoffmann 2017). A recurrent argument associated with the application of the ban on bailouts is moral hazard concern infused by debt cuts undermining the debtor country’s fiscal compliance efforts.

From a legal perspective, the lively discussion on the economic desirability of debt cuts for the purpose of Greek debt relief (Eichengreen et al. 2018) raises the question of whether the EU legal standards can claim economic plausibility. Since the EU legal benchmark is concerned about maintaining budgetary responsibility and compliance with fiscal rules, our economic analysis seeks to assess the effect of debt cuts taking into consideration that moral hazard is relevant for a country’s expected compliance with fiscal rules. The theoretical analysis shows that the effect of debt cuts on fiscal rule compliance depends on the sign and strength of three effects, which together determine the overall effect. The first effect is the induced reduction in interest and principal repayment, which makes compliance with a fiscal rule more likely (direct static effect). The second effect is a dynamic effect, as a debt cut raises the expectation that future debt relief (here modeled as reduction in future interest rate on government debt) is induced (direct dynamic effect). The third effect captures expectations about the consequences on non-compliance with the rule, whose sign is ambiguous a priori (indirect effect). A debt cut increases the probability of compliance with the balanced budget rule if it lowers the perceived probability of soft consequences. In the reverse case, the probability of soft consequences goes up, the first two effects and the third effect move in opposite direction, making the overall effect of a debt cut on the compliance probability a priori unclear. Upon a debt reduction it becomes easier to comply because the fiscal burden from debt is relaxed, but at the same time the expectation for future debt relief rise as do the incentives to rely on soft consequences in case of fiscal rule violation go up, thereby making the net effect ambiguous.

On that basis, we examine the direction of the theoretically ambiguous effect empirically

by looking at two different case studies. First we exploit survey data from two survey rounds of members of 16 state parliaments in Germany about the German debt brake, a national fiscal rule in Germany that limits state government to achieve a structurally balanced budget from 2020 onwards. The results suggest some plausibility that haircuts can make fiscal compliance more attractive and likely. The advantage of the German case study is that the expectations about fiscal rule violation are directly asked for (as captured by the indirect effect described above). A downside is that a fiscal rule in the German context is fairly specific and insights may not easily hold in other contexts. We therefore consider a second case, the recent (non-)compliance of Italy with the Stability and Growth Pact in 2018, which is much closer to the debate on hair cuts and moral hazard issues. While we do not know for sure the expectations of the new Italian government about the changes in the likelihood of soft or harsh consequences in case of violating the Stability and Growth Pact, we deduce from the the Italian government's budgetary plan for 2019 that the indirect effect moves in the same direction as the direct effects. However, since the budgetary plan was not fully accepted by the EU Commission, conclusions must be drawn with care. For our legal analysis, the results from the two case studies suggest re-visiting the legal interpretation given to applicable legal standards under EU rules. A limitation of our analysis is associated with the modelling of the debt cut as exogenous event, rather than allowing for endogenous factors to determine future debt cuts, which offers avenues for future research.

There is a large literature in economics on fiscal rules. Debrun et al. (2008) were one of the first to document the use of national and European fiscal rules in EU countries and examined the effect of fiscal rules on fiscal outcomes, which has been the subject of a fairly large number of articles, for example, Eyraud et al. (2018), Heinemann et al. (2018), and Asatryan et al. (2018). A crucial issue in this literature is the causal identification of effects from fiscal rules. Based on Swiss experience, Feld et al. (2017) argue that well-designed fiscal rules lower the risk premium of sovereign bonds and thereby contribute to sound public finances. In addition, Reuter (2019) analyses the determinants of fiscal rule compliance. He finds that compliance with rules is higher if the rules are i) specified in terms of a stock rather than a flow variable, ii) fixed in a coalitional agreement, and iii) cover larger parts of general government finances. We differ from those studies by looking at the expectations about the consequences of fiscal rule violations.

The article is structured as follows: Section 2 sets out the legal framework applicable under EU law to debt restructuring. Section 3 offers a theoretical model capturing how the probability of compliance with a fiscal rules changes given a debt cut and initial bailout expectations. On that basis, we empirically explore the direction of effects from debt cuts. Section 4 infers from the results an economically sound interpretation of legal rules. Section 6 concludes.

2 Legal framework

There are no legal barriers under EU rules as to the treatment of haircuts on private debt, with the private sector involvement of 2012 in Greece amounting to debt reduction of over 50% of 2012 GDP in Greece's debt stock (Zettelmeyer et al. 2013).¹ However, this does not apply to the involvement of public creditors. EU rules assess the lawfulness of sovereign debt haircuts against the standard of the no-bailout clause enshrined in Article 125 of the Treaty on the Functioning of the European Union (TFEU). This provision stipulates that neither the European Union nor a Member States shall be liable or assume the commitments of another Member State.

² Hence, by its purpose and spirit, the provision aims at maintaining budgetary discipline through market forces, as Member States are exposed to markets rather than counting on the support of other public entities. The purpose of the provision has led legal scholars to interpret the bailout prohibition as a ban on any measure lifting budgetary pressure exerted through markets (Adam/Mena Perras 2013; Borger 2013; Eichengreen 2011; Palmstorfer 2012). The credibility of the ban on government support is reflected in the degree to which other governments would respond to a situation in which a Member State faces fiscal difficulties. If the ban on financial support is credible, the debtor would expect harsh consequences (i.e. denial of any non-market based debt relief) in case of fiscal difficulties, while reduced credibility makes soft consequences (i.e. fiscal leniency and willingness to offer non-market fiscal support) more likely. Credibility of the bailout prohibition translates into moral hazard concerns revolving around the incentives resulting from a debtor's expectation as to whether its budgetary and fiscal policy conduct triggers harsh (market-based) or soft (lenient non-market based) consequences (Ghosal/Thampanishvong 2013; Kahan/Leshem 2017). It is the moral hazard concern associated with debt relief that leads parts of legal scholarship to the conclusion that relinquishing debt would be incompatible with the legal bailout prohibition (Steinbach 2016; Hofmann 2017; Thiele 2017).

With the moral hazard concerns lying at the core of the legal prohibition of bailouts, one can use the moral hazard concept to determine the impact of debt restructuring on the debtor's expected compliance with fiscal rules. Moral hazard refers to the debtor's expectations to benefit from a variety of possible fiscal reliefs such as, inter alia, flexible implementation of fiscal rules, financial support in fiscally difficult times, privileged fiscal treatment under financial assistance programmes, or an annulation of parts of its debt (varying to the extent that debt haircut may modify this expectation). These expectations

¹Under ESM rules, there is even an explicit provision requiring private sector involvement in exceptional cases in accordance with IMF practice (ESM Treaty, recital 12).

²It is acknowledged that the ESM rules also require that granting financial support prerequisites an assessment whether public debt is sustainable and even expects the assessment, wherever appropriate, to be conducted together with the IMF (Article 13, para. 1 b) of the ESM Treaty). However, EU primary law as enshrined in the no-bailout clause not only adds further legal barriers to the debt sustainability analysis requirement, it would also ultimately override this requirement. In other words, even if the ESM's debt sustainability assessment of the debtor states would be positive, the assessment of the no-bailout clause has to be determined separately and a violation of the no-bailout prohibition would render the financial aid incompatible with EU law.

over harsh or soft consequences can be determined as function of the level of existing debt. Expectations associated with the credibility of prohibition of non-market based financial support do have an impact on the debtor's fiscal policy in general and compliance record in particular, as they determine the incentives for debtors to comply with fiscal rules or to rely on fiscal leniency.

However, while the relevance of these expectations for fiscal rule compliance seems intuitive, the question is whether the design of EU fiscal governance, encompassing a detailed set of fiscal rules, captures the expectations associated with the moral hazard concerns. There is widely shared acknowledgement that the no-bailout principle aims to maintain budgetary pressure on states and to subject them to market discipline (ECJ 2012: Case C-62/14). Both jurisprudence and legal scholarship concur in that budgetary discipline is essential in a currency union where a country's fiscal conduct can create negative spillover effects on other Member States. Therefore, in the EU, the governance of budgetary discipline – as safeguarded by the no-bailout clause – has been gradually specified and complemented by a set of fiscal rules. Since its inception with the Treaty of Maastricht (1993), the no-bailout clause in Article 125 TFEU was sidelined by fiscal rules limiting Member States' budgetary conduct, with fiscal rules adding a layer of operational fiscal standards to the bailout prohibition. Numerical fiscal rules underscore the rationale to desincentivize budgetary misconduct and to tie harsh consequences to it. Hence, the liaison of bailout prohibition subjecting states to market forces and fiscal rules was crafted with a view of safeguarding the overall stability of the currency union. In other words, no-bailout principle and fiscal rules represent a complementary fiscal framework in which the ban of bailouts stipulates the desirability of market pressure to materialize effectively and the fiscal rules mitigate the moral hazard concerns by reinforcing the negative consequences resulting from unsound fiscal conduct.

However, given the track record of fiscal rule enforcement, the credibility of the no-bailout clause (i.e. the degree to which the debtor must expect harsh consequences as response to fiscal misconduct) has been considered rather weak since the introduction of the common currency (Atik 2016). Therefore, on various occasions, the fiscal rules have been gradually expanded and specified with the intention to compensate the limited credibility of the no-bailout clause. This has led first to the creation of Stability and Growth Pact (1997) and subsequently to fiscal rule tightening implemented by the “Six Pack” (2011) and the “Two Pack” (2013), and the Fiscal Compact for a large subset of EU countries (Armstrong 2013) – all of these changes to the fiscal legal framework have been undertaken in order to strengthen the fiscal ties subjecting Member States to compliance control of national budgetary plan with EU fiscal standards. Essentially, extension of and compliance with fiscal rules has been viewed as pivotal to divert expectations of soft consequences in order to fully account for the normative claim of market-discipline as enshrined in the no-bailout clause. In light of the legal interrelatedness between the no-bailout clause and the operational fiscal rules, we can thus infer for the purpose of this analysis that compliance with fiscal rules offers a sound indication as to whether debtors expect harsh/soft consequences resulting from compliance

and thus consider the bailout prohibition to be credible or not. In sum, the concept of moral hazard (as enshrined in EU rules) can be understood as concepts of expectations on future fiscal compliance. This approach is subject to two limitations. First, it does not exclude other motivations leading states not to comply with fiscal rules, such as political opportunity. We allow for this consideration in our subsequent economic analysis. Second, our economic modelling does not capture moral hazard resulting from the endogeneity of debt cuts. Once debt has been restructured, states may count on future restructurings, which may modify its expectations on consequences of non-compliance with fiscal rules.

3 Economic Analysis of the Legal Problem

For the purpose of the economic assessment, the EU law approach can be re-phrased as function of expected compliance with fiscal rules. Moral hazard captures the phenomenon that bailouts lower compliance expectations with future fiscal obligations including fiscal rules. On that basis, the effect of debt restructuring can be integrated into a model describing the dynamic fiscal decision of a government to meet the target of a binding fiscal rule in the future. The stochastic nature of the government budget due to unforeseen shocks makes compliance uncertain. This can be captured by the probability of compliance with a fiscal rule p , from the perspective of the time at which a debt cut is considered. We are interested in how p changes with a debt cut. If the debt cut improves the probability of fiscal rule compliance, this tends to speak against an interpretation of EU rules that prohibits haircuts, while a decline in the probability of compliance tends to favor such interpretation of EU law. In the theoretical model (section 3.1) we show that the effect of a debt cut can go in either direction, depending on the sign of the change in beliefs about the consequences of fiscal rule non-compliance. In a second step (section 3.2) we therefore explore empirically the sign of this effect using survey data on compliance with the German debt brake.

3.1 A simple model

Our model is an adapted from Heinemann et al. (2016), who examine the determinants of compliance with a balanced budget rule. We consider an economy (for simplicity without economic growth and inflation) with two periods $t = 1, 2$, in which the government budget constraint in period t is $D_t = (1 + i_{t-1})D_{t-1} + G_t - R_t + s_t$, where debt is denoted by D , government expenditures excluding interest on debt by G , tax revenues by R , and the interest rate by i . The variable s represents a spending shock, whose density is $f(s)$ and cumulative distribution function $F(s)$. Assuming no spending shock in period 2, and defining the primary balance as tax revenues minus government expenditures (excl. interest payments) $P = R - G$, we can transform the government budget constraint and write it in terms of the budget deficit d_t

$$d_1 = D_1 - D_0 = i_0 D_0 - P_1 + s \quad (1)$$

and

$$d_2 = D_2 - D_1 = i_1 D_1 - P_2. \quad (2)$$

The government chooses the primary balance in the second period P_2 . The choice of the primary balance in period 1 is not considered here.³ The shock s occurs in period 1 after P_1 is determined.

The government faces a balanced budget rule in period 2, which requires $d_2 = i_1 D_1 - P_2 \leq 0$ or after substitution from (1)

$$P_2 \geq i_1 D_1 = i_1 [(1 + i_0) D_0 - P_1 + s]. \quad (3)$$

The primary balance must not be less than interest payments on debt to fulfill the balanced budget requirement. In period 2 the government has the option to comply with the balanced budget requirement (“compliance”), or to pursue a different policy that leads to non-compliance. We assume that an improvement of the primary balance is politically costly, which is captured in a cost function $k(P_2 - P_1)$, with the properties $k(P_2 - P_1) \geq 0$ when $P_2 - P_1 \geq 0$, and $k' > 0$. A higher primary balance than in the previous period requires less spending or higher taxes which is assumed to be unpopular with voters. Because of these political considerations there is no reason to overachieve the fiscal rule, but rather to satisfy the balanced budget rule exactly when compliance (superscript c) is targeted, that is,

$$P_2^c = i_1 D_1 = i_1 [(1 + i_0) D_0 - P_1 + s]. \quad (4)$$

Utility under compliance with the fiscal rule is given by the constant benefit from rule compliance u minus the political cost of fiscal adjustment

$$U^c = u - k(P_2^c - P_1). \quad (5)$$

By contrast, when not complying with the fiscal rule, the government obtains lower gross utility $b(P_2)u$, where $b(\cdot)$ is a function of the primary balance in period 2 with the properties $0 < b(\cdot) < 1$ and $b' > 0$. Under non-compliance the gross utility is lower than under compliance, therefore $b < 1$. $b(\cdot)$ is a positive function of the primary balance in that period: a higher primary balance leads to higher benefits. The purpose of making the benefit of compliance dependent on the primary balance (rather than having a flat benefit) is to reflect the idea that the degree of deviation from the balanced budget requirement matters. In addition, it guarantess an interior solution to the choice of the optimal primary balance in case of non-compliance. The potential advantage of non-compliance lies in lower political cost.

Thus utility from non-compliance when the primary balance is smaller than what it takes to comply with the fiscal rule, $P_2 < P_2^c$, is given by $b(P_2)u - k(P_2 - P_1)$, which is maximized

³See Heinemann et al. (2016) for an endogenous determination of deficit reduction in period 1, which in the present model corresponds qualitatively to the choice of the primary balance in period 1.

with respect to P_2 . The optimal primary balance in case of non-compliance is given by the solution to the first-order condition to this maximization problem and denoted by P_2^{nc} . The associated utility is

$$U^{nc} = b(P_2^{nc})u - k(P_2^{nc} - P_1). \quad (6)$$

In period 2, after the shock s in period 1 has been observed, the government complies with the balanced budget rule if the utility in (5) is greater than in (6), that is, $U^c \geq U^{nc}$. Defining

$$\Delta u = u - U^{nc}$$

as some measure of the gross compliance gain, compliance is preferable if the gross gain from compliance outweighs the political cost of fiscal adjustment to meet the balanced budget, that is

$$k(P_2^c - P_1) \leq \Delta u$$

or, after substitution from (4) for P_2^c and rearranging terms, if

$$s \leq s^* = \frac{k^{-1}(\Delta u) - i_1(1 + i_0)D_0 + (1 + i_1)P_1}{i_1}. \quad (7)$$

The threshold s^* is thus the maximum realized fiscal shock that is consistent with balanced budget rule compliance by the government. If the realized spending shock is stronger, the government does not comply, while the opposite occurs when the shock is smaller than s^* . This feature of the model appears to capture the reality of fiscal rule compliance in the EU, in which both several rule violations as well as many years of compliance have occurred in the past.

From an ex ante perspective, that is before the shock s is realized, compliance with the fiscal rule is an uncertain outcome. The threshold defined in (7) can be used to write the probability of compliance p as

$$p = F(s^*), \quad (8)$$

where $F(s)$ is the cumulative distribution function of the fiscal shock. As can be seen from (7) and (8), a larger primary balance in period 1, P_1 , makes compliance more likely: $\partial p / \partial P_1 = f(s^*)(1 + i_1)i_1^{-1} > 0$. Moreover, a larger gross gain from compliance (=larger Δu) makes compliance also more probable because $\partial k^{-1} / \partial \Delta u > 0$, which can be seen by differentiating the condition of indifference between compliance and non-compliance $k(x) = \Delta u$, where $x = P_2 - P_1$. An increase in Δu , holding everything else constant, means it is more attractive to comply with the fiscal rule. Since $k' > 0$, x must rise, which for given P_1 implies an increase in P_2 . The latter allows for a higher shock s to maintain the balanced budget condition in period 2, as can be seen from (4).

We now turn to the main part of the analysis. We are interested in the effects of an exogenous debt cut, here understood as a reduction in the initial debt level D_0 . The debt cut is not endogenously derived, but rather assumed. The debt cut affects s^* in three ways:

First, it makes compliance more likely as it reduces debt repayment and interest payments on initial debt, which in turn make it easier to achieve the deficit target (direct static effect).

Second, it may raise the likelihood of future debt relief such as debt forgiveness or cuts in interest rates. Specifically, we consider a reduction in the interest rate on D_1 , that is i_1 , which makes i_1 a function of D_0 with the property $\partial i_1/\partial D_0 > 0$ (direct dynamic effect). Given the legal framework, we assume that future debt cuts are conditional on compliance with the fiscal rule. Past experience with design and implementation of fiscal aid programmes underscores that any debt relief granted to debtors (e.g. Greece) have been made conditional upon compliance with a deficit reduction plan. Specifically, debt relief, such as maturity extension or lower interest, have been granted only in return for progress in fiscal consolidation. Similarly, under the ESM Precautionary Financial Assistance, states may enjoy favorable access to credit lines only under the condition of compliance with fiscal rules.

Third, a debt cut may affect the beliefs what happens when the balanced budget rule is violated(indirect effect), on which we elaborate below.

Formally, we differentiate (8) with respect to D_0 , and use (7), which leads to $dp/dD_0 = f(s^*)ds^*/dD_0$, and obtain for the last term

$$\begin{aligned} \frac{ds^*}{dD_0} &= \frac{\partial s^*}{\partial D_0} |_{\Delta u \text{ given}} + \frac{\partial s^*}{\partial i_1} |_{\Delta u \text{ given}} \cdot \frac{\partial i_1}{\partial D_0} + \frac{\partial s^*}{\partial(\Delta u)} |_{D_0 \text{ given}} \cdot \frac{\partial(\Delta u)}{dD_0} \\ &= -(1 + i_0) - \left(\frac{[P_1 + k^{-1}(\Delta u)]}{i_1^2} \right) \frac{\partial i_1}{\partial D_0} + \frac{k^{-1'}(\Delta u)}{i_1} \frac{\partial(\Delta u)}{dD_0}. \end{aligned} \quad (9)$$

The direct static effect, represented by the first term in (9), leads to a positive compliance effect from a debt cut. Intuitively, it becomes easier to fulfill the fiscal rule because lower interest payments in period 1 lead to a lower debt level D_1 carried into period 2, and thus allows for a lower primary balance in order to achieve a balanced budget. The second term is the direct dynamic effect on future debt/interest rate relief, which is non-positive, implying that an induced debt/interest rate relief in the future makes compliance (weakly) more likely. Finally, there is also the indirect effect, the third term in (9), which is more involved. We assume that an exogenous debt increase (or debt cut) influences the expectations of the government about the consequences in case of violation of the balanced budget rule. We think of soft or harsh consequences. An example of the former is that the government in violation does not face any negative consequences at all, possibly even receiving financial support from the outside, such as a higher level of government support in a federation. Alternatively, additional time may be granted to comply with the rules (as, for example, extra time for France granted by the EU Commission in recent years to comply with the Stability and Growth Pact). By contrast, harsh consequences are conceivable, such as the strict enforcement of rules, for example through an externally imposed budget director that takes the fiscal autonomy of the country away (akin to the troika in Greece's case). We assume that the type of consequences of a rule violation are not known ex ante with

certainty.

To implement this idea into our model, we assume that the utility level under noncompliance U^{nc} is the weighted sum of the utilities under soft and harsh consequences. Specifically, let $U^{nc} = qU_{soft}^{nc} + (1 - q)U_{harsh}^{nc}$, where q is the probability of soft consequences, which is a function of the initial debt level D_0 . On the one hand, a high existing debt burden may call for harsh consequences in order to provide proper incentives for reform, thus suggesting a negative functional dependence of q on D_0 . On the other hand, in a situation of high debt the enforcement is politically and socially more challenging in the country under consideration, and thus the relationship may be positive. Using the definition of U^{nc} , and recalling $\Delta u = u - U^{nc}$, we can simplify (9) and write ⁴

$$\frac{ds^*}{dD_0} = -(1 + i_0) - \left(\frac{[P_1 + k^{-1}(\Delta u)]}{i_1^2} \right) \frac{\partial i_1}{\partial D_0} - \frac{k^{-1'}(\Delta u)}{i_1} \cdot [U_{soft}^{nc} - U_{harsh}^{nc}] \frac{dq}{dD_0}. \quad (10)$$

We assume that in case of non-compliance the utility under soft consequences is higher than under harsh ones, which makes the last square bracket positive. Under this assumption the overall sign of (10) is negative if $dq/dD_0 > 0$, as then all three effects go in the same direction: A debt cut increases the probability of compliance with the balanced budget rule, formally that corresponds to $ds^*/dD_0 < 0$. This case holds when the debt cut lowers the probability of soft consequences (i.e., an increase in initial debt makes soft consequences more likely). Put differently, the debt cut increases the belief in harsh consequences of rule violation and thus makes compliance more likely. On the other hand, when $dq/dD_0 < 0$, the indirect effect moves in opposite direction of the two direct effects, making the overall effect of a debt cut on the compliance probability a priori unclear. In this situation, the debt cut raises the probability of soft consequences. Upon a debt reduction it becomes easier to comply because the fiscal burden from debt is relaxed, but at the same time the incentives to rely on soft consequences in case of fiscal rule violation go up, thereby making the net effect ambiguous.

We like to note that the dynamic effect shown above is only a shortcut for the more elaborate game that creditors and debtors may play in practice because in our model the future debt/interest rate relief effect is taken as exogenous. Ideally, this effect should be endogenized as well. As far as we know, there is no literature formally modeling compliance with fiscal rules in a fully dynamic strategic setup. The literature on the dynamics of bailouts, however, may provide some guidance. Chari and Kehoe (2016) show in their infinite horizon model of a government that has the option to bail out a firm to prevent bankruptcy that governments that lack commitment can induce inefficiencies through bailouts where none existed if governments could commit. In this sense, the bailouts today trigger further problems tomorrow. However, Salcedo et al. (2017) show that in a bailout context the equilibrium of an infinitely repeated game can be better from a welfare perspective than

⁴We disregard the effect of a debt change on the optimal primary balance in period 2 under non-compliance. This is justified if P_2 is optimally chosen after the bailout decision is announced, and hence the envelope theorem applies.

the infinite repetition of the one-shot game. In their model, expectations of future bailouts are used to improve incentives and reduce the incidence of crisis. We conclude from these two contributions that the precise modeling of dynamic interaction between government interactions and expectations about future interventions is crucial for the economic outcome and welfare consequences.

In any case, our theoretical model does not unambiguously resolve the question whether sovereign debt cuts improve fiscal compliance, but points to the importance of the perception on the influence of debt cuts on the consequences in case of fiscal rule non-compliance. This suggests that further insights can be gained from empirical analysis.

3.2 Empirical illustration

3.2.1 Violation of the Debt Brake in Germany

Our theoretical analysis suggests that debt cuts tend to raise fiscal rule compliance due to the direct effects. The indirect effect may run counter to this, however, and could potentially overcome the direct effects. In this section we explore the direction of the indirect effect. Our analysis is not a complete econometric test due to data limitations. Rather we like to shed some light on the indirect effect to illustrate the conceptual idea of our analysis.

To this end, we examine the fiscal rule compliance expectations of policy makers in German state parliaments who face a balanced budget rule from 2020 onwards. The balanced budget rule, known as the German debt brake (“Schuldenbremse”), was introduced into the German constitution in 2009. It requires a nearly structurally balanced budget for the federal government from 2016 onwards and a structurally balanced budget for each state government from 2020 onwards. The long delay between constitutional implementation and rule effectiveness in conjunction with exogenous changes in the fiscal situation allows us to study compliance expectations as function of debt levels.

We use two survey rounds in 2011/2 and 2014-6 of more than 1800 members of state parliaments based on Heinemann et al. (2016) and Blesse et al. (2016), of which 34% and 36% responded in the two rounds respectively. In the surveys politicians were asked about the likelihood of compliance with the fiscal rule in his or her own and all other states in 2020. In addition, the survey included questions about the consequences of possible rule violations. Politicians could check (possibly several) answer options including, fiscal transfers from other governments, loosening of fiscal rule, or nothing at all, to enforcement of rule by courts, merger of states, interventions into state’s budget autonomy, and sanctions. The answers to the question can be used to construct an index of expectations of hard consequences by policymakers in case of rule violation. The coding implies that a positive index number means harsh sanctions, while negative numbers show a soft regime. On average politicians believe in moderate sanctions in the first wave of 2011/2, as all states have positive numbers. The following display shows the average survey responses in the sanction index by state of

policymaker⁵ between the first and second wave.⁶

Insert graph 1 about here

The graph shows that expectations of soft consequences of a debt brake violation increased between 2011/2 (survey 1) and 2014/6 (survey 2), as the index dropped in value across all states. It is a period during which the German economy returned to normal growth and the fiscal situation improved in most states (see, for example, Federal Ministry of Finance, 2018), including a reduction in overall public debt levels. Taken together, the fall in the index and the general debt reduction suggest a negative relationship between debt levels and soft consequences of rule violation, and thus an indirect effect that runs counter to the direct effect. However, many aspects may influence the sanction index and therefore it is not clear whether the correlation is causal.

In order to make progress in identifying the effect of the fiscal situation on expectations of policy makers, we make use of a particular event in 2015 that fell in the middle of the second survey. In August of 2015, chancellor Merkel “opened” the German border for about one million refugees, mainly from Syria and other middle Eastern countries, by welcoming them to Germany. Soon after the inflow of refugees concerns about the fiscal implications at all levels of government were raised, including state governments. The annual costs associated with the influx of refugees amount to approximately 20 billion Euros per year for 2017 onwards (Hentze/Golev 2016), which corresponds to roughly 0,6% of GDP. Estimates in the fall of 2015 assumed additional government outlays relative to 2014 in the range of one half of a percentage point for 2016 (see Independent Advisory Board to German Stability Council, 2015). From the viewpoint of state policymakers the inflow of refugees was largely exogenous⁷ and represented a substantial negative fiscal shock.

In order to use this idea to shed light on our theoretical model several implicit assumptions are worth being emphasized. First, we assume that the effect of a tax cut and an expenditure/debt shock have simply the opposite effect on compliance expectations. Secondly, we assume that the fiscal shock from the refugee inflow is generic in the sense that a fiscal shock of the same magnitude but of different nature would have the same effect. This need not be the case, as the inflow of refugees may be more exculpable than other shocks because of the humanitarian character of the government intervention. While this is a legitimate aspect in the short run, we believe that it has only limited bite in our context. Due to the number of refugees and their different cultural background the integration of refugees into German society is a long term task that requires additional expenditures over many

⁵State abbreviations are as follows: BB: Brandenburg, BW: Baden-Württemberg, BE: Berlin, BY, Bavaria, HB: Bremen, HE: Hessen, HH: Hamburg, MV: Mecklenburg Western Pomerania; NI: Lower Saxony, NW: Northrhine Westphalia, RP: Rhineland Palatinate, SH: Schleswig Holstein, SL: Saarland, SN: Saxony, ST: Saxony Anhalt, TH: Thuringia

⁶The coding in the graph differs for the first survey slightly from the one provided in Heinemann et al. (2016), as the number of answered checked during the first and second survey differed. In order not to bias the result from this effect alone, the coding used here was done the following way: any option checked in favor of weak enforcement lowered the index by -1, any option checked for strong enforcement was coded +1.

⁷Asylum seekers and refugees are distributed by a formula to states.

years. Our survey question about the consequences of the debt brake violation starting in 2020 points also to a longer horizon.⁸

The second survey was spread out from December 2014 until April of 2016, that is, some surveys were conducted prior to the border opening, while others afterwards. The allocation of states to a particular survey date was quasi-random, as both in the first and second survey all surveys were conducted in such a way to be not too close before or after state elections. Elections dates in Germany differ by state and are not related to the timing of immigration inflow. We compare the reduction in the sanction index from the first to the second survey from those states surveyed before with states surveyed after the peak refugee inflow. This is in spirit of a difference-in-difference analysis that is common in economics. The finding is as follows:

States surveyed in December 2014 and January 2015 (BW: -0.4, BE: -0.5, MV: -0.4, RP: -0.2, ST: -0.5): average (unweighted) change in sanction index: -0.4

States surveyed in May and June of 2015 (BY: -0.7, NI: -0.1, NW: -0.8, SL: -0.8, SH: -0.1): average (unweighted) change in sanction index: - 0.5

States surveyed in February to April 2016 (BB: -1.1, HB: -0.8, HH: -1.0, HE: -0.9, SN: -1.1, TH: -1.1): average (unweighted) change in sanction index: -1.0

States surveyed later have therefore a bigger reduction in the index, meaning a bigger shift towards expectations implying softer consequences.⁹ It is notable that the reduction in the index was approximately twice as large in those states who were surveyed after the decision to open the borders for refugees in the summer of 2015. Given that tax increases or other spending cuts were not actively pursued in light of the immigration inflow into Germany, we interpret the event as a negative fiscal shock comparable to a short term increase in debt. The survey data therefore suggests a positive correlation between debt and soft expected consequences in case of rule violation, that is $dq/dD_0 > 0$. In the context of our formal model, the finding supports the view that in the case of Germany the direct and indirect effects move in the same direction and thus make compliance in the scenario of a debt cut more attractive and likely.

We like to emphasize that the analysis of Germany's debt brake is meant to be illustrative only. It does not imply that in general sovereign debt cuts improve the compliance with fiscal rules. The example shows however, that the condition for sovereign debt cut to improve fiscal rule compliance is not implausible either.

⁸As noted by the Independent Advisory Board to the German Stability Council (2015) in the context of Germany's compliance with the Fiscal Compact, a possible violation of the fiscal rule due to an unexpectedly large inflow of refugees in 2015 would have been tolerable in 2016, but in subsequent years the additional expenditures would not be unexpected and would have to be funded permanently. This view has also been adopted by the European Commission (2018) in the application of the Stability and Growth Pact that provides for unusual events that are outside the control of the government, such as the refugee related expenditures. Deviations from the adjustment requirements towards the medium term objective can be granted only on a temporary basis, see European Commission (2018, section 1.3.2.5)

⁹The result (available from authors upon request) finds some support in regression analysis using individual survey data: Policymakers that were surveyed after the peak of the refugee inflow expect softer consequences when controlling for state individual characteristics (such as party membership, age, etc.) as well as state and survey wave fixed effects.

3.2.2 Italy's (non-) compliance with the Stability and Growth Pact (SGP)

The empirical insight offered by the possible violation of the German debt brake may generally allow to disentangle direct and indirect effects associated with a negative fiscal shock. However, the German debt brake bears some particularities which impede the transfer of the results to the context of sovereign debt cuts. We therefore seek further orientation from an episode closer related to our research question. A second case centers on Italy and its fiscal policy plan put forward in 2018 leading initially to incompatibilities with European Union fiscal rules. The case sheds some light on possible consequences of fiscal rule violation, as it allows to study the interaction between the debtor country and the rule enforcer.

Parliamentary elections on March 4, 2018, brought after difficult negotiations a new government coalition into power in May, consisting of the two parties MoVimento 5 Stelle and Lega. In its Draft Budgetary Plan (DBP) 2019 of October 2018 the new government massively revised the fiscal policy plan laid down in the Stability Program of April 2018 (as part of the European Semester) in two ways: first to account for lower GDP growth and higher interest payments than previously expected, and secondly to account for higher expenditures and lower tax rates as part of the new government's agenda. The latter aspect alone would double the deficit from 1.2% in 2019 to 2.4% of GDP, and subsequently triple it from 0.7% in 2020 to 2.1%, and from 0.5% to 1.8% in 2021 (see Italy's Draft Budgetary Plan 2019). The Italian government claimed that the measures would promote economic growth and reduce poverty. The former aspect can be viewed as an exogenous negative shock to the fiscal position of Italy from the perspective of the new government, while the second is an endogenous policy choice.

In light of Italy's very high public debt level of above 130% of GDP in 2017, the new government plan was not consistent with the debt reduction benchmark (among other things) that would require yearly reductions in the debt level to reduce the gap to the 60% target of the Maastricht Treaty. The European Commission responded to Italy's DBP in a sharp diplomatic note on October 23 (Commission opinion on the 2019 DBP of Italy) by stating that the fiscal path would violate the requirements of the Stability and Growth Pact and earlier commitments by Italy, and that the growth projections were too optimistic. In a subsequent exchange of opinions, as well as partial revisions and commitments by the Italian government, the conflict was temporarily resolved. The new plan put forward in December 2018 brings down the deficit for 2019 to around 2% of GDP, which went hand in hand with the Commission's announcement that it does not open an Excessive Deficit Procedure. As the improvement of the budgetary plan for 2019 was in large part obtained by postponing those measures that would create the deficit to the following year, the problem is in part shifted only to subsequent years (see EU Commission press release, Dec. 19, speech by Commissioner Dombrovskis).

The new government may have expected the European Commission to tolerate its new fiscal policy and forego sanctions. This is not an unreasonable assumption, as on other

occasions the Commission has had taken a soft stand, such as in case of Portugal and Spain in 2016 out of fear of massive electoral gains for populist parties in national elections and for rewarding structural reforms in prior years. Upcoming European Parliamentary elections in May of 2019 could therefore play a role in the present case. Also in case of Italy, the Commission had used degrees of flexibility in its interpretation of the SGP in the past (Sajedi/Steinbach 2019). In the period 2015-8, Italy was granted temporary deviations from the budgetary adjustment path to the medium term objective (MTO) by about 1.8 percentage points of GDP (see Commission opinion on DBP of Italy from October 23, 2018). The spillovers from the use of flexibility in the past, both in other countries as well as in Italy itself, correspond in a loose way to the direct dynamic effect in our comparative static analysis within the theoretical model (i.e. the reduction in the interest rate).

The increase in budget deficits planned by the new Italian government was an order of magnitude greater than the granted flexibility in the past however: the cumulative increase in the deficit from the new baseline was 3.9 percentage points for the period 2019-21, compared to 1.8 percentage points for four years from 2015-2018. We note that the worsening of the fiscal position of Italy was in part due to a deterioration of the economic situation, which was exogenous from the viewpoint of the new government and hence can be matched to the exogenous change in the initial debt level of our theoretical model, and in part due to the substantial increase in the planned deficit as a result of the new policy agenda, which was clearly endogenous.

We now aim to deduce the sign of the indirect effect from this episode. Had the Italian government expected tougher consequences by the European Commission in response to the worsening of the fiscal position due to the decline in general economic conditions, the Italian government would have stuck to the fiscal plan outlined by the previous government or even tightened its fiscal policy beyond that plan. Instead the government shifted its budgetary plan in expansionary fashion late in 2018. This makes it somewhat plausible that the Italian government did not expect a higher probability of harsh consequences in response to the exogenous increase in government due to worsening of the economic environment, but rather the opposite, that is, the Italian government expected that soft consequences are more likely. In the context of our model this means $dq/dD_0 > 0$, and implies that the indirect effect goes in the same direction as the direct effect. However, unlike what the Italian government expected, the European Commission did not accept the Italian government's budgetary plan by stating "the existence of a particularly serious non-compliance with the recommendations addressed to Italy by the Council on July 2018" and threatened severe consequences such as an Excessive Deficit Procedure (Report from the European Commission, Nov. 21, 2018, COM(2018 809) final). The revision of the Italian government's fiscal plan indicates that the original expectations of the new government were not fully validated.

Of course, we cannot rule out that the compromise outcome was anticipated by the Italian government in the first place, and the strongly expansionary budget plan was entirely a strategic bargaining tool in order to get more flexibility. In that case the expectations

of the new government about consequence of rule violation might not have changed as suggested. To the extent that the Italian government did not expect the tough stand by the European Commission, however, expectations that fiscal rule violations would not be sanctioned, gained traction and would be consistent with a particular outcome of our model.

4 Re-visited legal analysis

How does the economic result inform the interpretation of the relevant legal norms under EU rules? The economic analysis has specified the potential legal interpretations warranted by economic plausibility, allowing to draw inferences to for the legal assessment. Most importantly, the narrow focus of the interpretation of the no-bailout on the malincentives due to moral hazard does not reflect the positive compliance effect potentially associated with debt restructuring. Such narrow legal interpretation would ignore that malincentives of debt cuts must be balanced against possible positive fiscal compliance effects. Therefore, interpretation of the no-bailout clause should abandon the restrictive assumption that budgetary relief due to debt cuts would always worsen budgetary conduct. Rather, the above economic results suggest that one should adopt an interpretation in light of purpose and spirit of this norm allowing leeway in the application of fiscal rules provided that positive fiscal compliance effects can be achieved.

Hence, a well-informed interpretation of the EU legal rules governing the legality of sovereign debt cuts widens the interpretation of the no-bailout clause taking into account fiscal compliance effects. An interpretation accounting for purpose and spirit of the no-bailout rule would give scope to evaluate the direct and indirect effects of debt cuts on an individual case basis.

5 Conclusions

Restructuring sovereign debt has become controversial throughout the EU sovereign debt crisis. Conventional legal interpretation of EU fiscal rules has considered the no-bailout principle to impose a prohibition of debt cuts considered as violation of that principle. Our economic analysis sought to examine this legal standard by offering a theoretical and empirical framework which aimed to identify how moral hazard concerns translate into a country's future fiscal compliance. Our theoretical results suggest that no unambiguous effect of debt cuts can be determined. On the one hand, debt cuts promote fiscal compliance in cases when the debt cut lowers the bailout probability in case of fiscal rule violation (i.e., when an increase in initial debt makes a bailout more likely). On the other hand, when a debt cut increases bailout probability, the overall effect of debt cuts become a matter of strength of opposing effects. On that ambiguous basis, our empirical illustration, albeit limited due to data limitations, offered an plausible underpinning for the positive compliance effect of debt cuts by demonstrating that – at least for the chosen example Germany – the effects move

in the same direction and thus sustain that debt cuts may promote fiscal compliance.

We draw policy implications from our analysis with the necessary caution in light of the ambiguity of our results. First and surely, our analysis underscores the need to re-visit the legal framework applicable to sovereign debt cuts, which must be designed to account for the effects from both a reduced burden of debt service as well as modified bailout expectations. Second, the overall effect of a debt cut must be assessed on an individual case-by-case basis, which militates against the kind of categorical judgment on the suitability of debt cuts which is often put forward in the policy debate. And finally, further theoretical analysis is needed to better understand the dynamic effects of debt cuts on fiscal rule compliance, as debt cuts may trigger expectations of future debt forgiveness, which in turn may affect rule compliance.

References

- [1] Adam, S. / Francisco Javier Mena Parras (2013), The European Stability Mechanism through the Legal Meanderings of the Union's Constitutionalism: Comment on Pringle, 38 *European Law Review* p. 848
- [2] Armstrong, K. (2013). 'The New Governance of EU Fiscal Discipline', *European Law Review*, 38:5, 601–17
- [3] Asatryan, Z. /C. Castellon/T. Stratmann (2018), Balanced Budget Rules and Fiscal Outcomes: Evidence from Historical Constitutions, *Journal of Public Economics* 167, 105-119
- [4] Atik, J (2016), From No Bailout to the European Stability Mechanism, 39 *Fordham International Law Journal* 1201
- [5] Blesse, S. / F. Heinemann / E. Janeba (2016), Einhaltung der Schuldenbremse und Bewertung von Länderfusionen - Ergebnisse einer Umfrage in allen 16 Landesparlamenten, *ZEW policy brief* Nr. 16-06.
- [6] Borger, Vestert (2013), How the Debt Crisis Exposes the Development of Solidarity in the Euro Area, 9 *European Constitutional Law Review* (2013), 7
- [7] Chari, V.V./P.J. Kehoe (2016), Bailouts, Time Inconsistency, and Optimal Regulation: A Macroeconomic View, *American Economic Review* 2016, 106(9), 2458–2493
- [8] Das, Udaibir S. / Michael G. Papaioannou / Christoph Trebesch (2012), Sovereign Debt Restructurings 1950–2010: Literature Survey, Data, and Stylized Facts, *IMF Working Paper*, WP/12/203, August 2012
- [9] Debrun, Xavier Laurent Moulin & Alessandro Turrini & Joaquim Ayuso-i-Casals & Manmohan S. Kumar, 2008. "Tied to the mast? National fiscal rules in the European Union," *Economic Policy*, vol. 23, pages 297-362, April.

- [10] D’Erasmus, Pablo / Enrique G. Mendoza / Jhing Zhang (2015), What is a sustainable public debt?, Harald Uhlig and John Taylor (eds), *Handbook of Macroeconomics*, (North-Holland, vol. 2, 2015)
- [11] Eichengreen, Barry (2011), *The Euro’s Never-Ending Crisis*, 110 *Current History* (2011) p. 91
- [12] Eichengreen, Barry / Avgouleas, Emiliós / Maduro, Miguel / Panizza, Ugo / Portes, Richard / Weder di Mauro, Beatrice / Wyplosz, Charles / Zettelmeyer, Jeromin (2018), *Independent report on the Greek official debt*, Centre for Economic Policy Research, Policy Insight No. 92, March 2018.
- [13] European Commission (2018), *Vade Mecum on the Stability and Growth Pact*, 2018 Edition, European Economy Institutional Paper 075, March.
- [14] Eyraud, L./X. Debrun/A. Hodge/V. Duarte Lledo/C. A. Pattillo (2018), *Second-Generation Fiscal Rules; Balancing Simplicity, Flexibility, and Enforceability*, IMF Staff Discussion Notes 18/04, International Monetary Fund
- [15] Federal Ministry of Finance (2018), *German Stability Program 2018*.
- [16] Feld, Lars P. / Alexander Kalb / Marc-Daniel Moessinger / Steffen Osterloh, *Sovereign bond market reactions to no-bailout clauses and fiscal rules - The Swiss experience*, *Journal of International Money and Finance* 70, 2017, 319-343
- [17] Finger, Harald / Mauro Mecagni (2007), *Sovereign Debt Restructuring and Debt Sustainability: An Analysis of Recent Cross-Country Experience*, IMF Occasional Paper No. 255, 2007
- [18] FAZ (2015), *Frankfurter Allgemeine Zeitung*, Ein Schuldenschnitt fällt unter das ‘Bailout-Verbot’, Frankfurt, 7 July 2015) <www.faz.net/aktuell/wirtschaft/eurokrise/griechenland/sondergipfel-bruessel-schaeuble-will-keinen-schuldenerlass-13689659.html> accessed 18 January 2017
- [19] Ghosal, Sayantan / Kannika Thampanishvong (2013), *Does strengthening Collective Action Clauses (CACs) help?*, *Journal of International Economics* 89 (2013) 68–78
- [20] ECJ, European Court of Justice (2012), Case C-370/12, *Thomas Pringle v. Government of Ireland, Ireland and The Attorney General*, EU:C:2012:756
- [21] Hagan, Sean / Maurice Obstfeld / Poul M. Thomsen (2017), *Dealing with Sovereign Debt—The IMF Perspective*, IMFBlog| February 23rd, 2017
- [22] Heinemann, Friedrich / Eckhard Janeba / Christoph Schröder / Frank Streif (2016), *Fiscal rules and compliance expectations – Evidence for the German debt brake*, *Journal of Public Economics* 142, 11-23

- [23] Heinemann, Friedrich, Marc-Daniel Moessinger und Mustafa Yeter (2018), Do Fiscal Rules Constrain Fiscal Policy? A Meta-Regression-Analysis, *European Journal of Political Economy* 51, 69-92
- [24] Hentze, Tobias / Galina Kolev (2016), Gesamtwirtschaftliche Effekte der Flüchtlingsmigration in Deutschland, *Vierteljahresschrift zur empirischen Wirtschaftsforschung*, Vol. 43, IW-Trends 4/2016
- [25] Hofmann, Christian (2017), Greek Debt Relief, *Oxford Journal of Legal Studies*, Vol. 37, No. 1, pp. 1–30
- [26] Independent Advisory Board to German Stability Council (2015), Fourth Statement on compliance with the upper limit for the structural government deficit pursuant to Section 51 (2) of the Budgetary Principles Act, December 9.
- [27] International Monetary Fund (2002), *Assessing Sustainability*, May 28, 2002
- [28] International Monetary Fund (2015), *The Fund’s Lending Framework and Sovereign Debt – Further Considerations*, April 9, 2015
- [29] Kahan, Marcel / Shmuel Leshem (2017), *Sovereign Debt and Moral Hazard: The Role of Collective Action and Contractual Ambiguity*, August 2017, Law&Economics Research Paper Series, Working Paper No. 17-29, New York University School of Law
- [30] Kilpatrick, Claire (2016), *The new Economic component of EMU: A Lawful and Effective Design?*, March 2016, ADEMU Working Paper, 2016/007
- [31] Palmstorfer, R. (2012) ‘To Bail Out or Not to Bail Out? The Current Framework of Financial Assistance for Euro-Area’, *European Law Review* 37: 771–84
- [32] Reuter, W.H. (2019), *When and why do countries break their national fiscal rules?*, *European Journal of Political Economy* 57, 125-141
- [33] Salcedo, B./B. Sultanum/R. Zhou (2017), *A Crises-Bailouts Game*, mimeo.
- [34] Sajedi, Rana / Steinbach, Amin (2019), *Fiscal Rules and Structural Reforms*, *International Review of Law and Economics* Volume 58, June 2019, Pages 34-42
- [35] Steinbach, Armin (2016), *The ‘Haircut’ of Public Creditors under EU Law*, *European Constitutional Law Review*, Vol. 12 (2), pp 223-239
- [36] Sturzenegger, Federico / Jeromin Zettelmeyer (2006), *Debt Defaults and Lessons from a Decade of Crises*. Cambridge, MA: MIT Press.
- [37] Thiele, Alexander (2016), *(No) Haircut for Hellas?: A Short and Critical Reply to Armin Steinbach, ‘The “Haircut” of Public Creditors under EU Law’*, 13 *European Constitutional Law Review* (2016) p. 223

[38] Zettelmeyer, Jeromin / Christoph Trebesch / Mitu Gulati (2013), The Greek debt restructuring: an autopsy, 28 *Economic Policy* 75, 513-563.