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The Effectiveness of Fiscal Rules - The Case of Switzerland

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Abstract. This paper aims to measure the effectiveness of fiscal rules. Fiscal rules are constraints on fiscal policy that limit budgetary outcomes. Some studies in the literature have examined their effectiveness using a stringency index. Arguing this index possesses some arbitrariness, this study measured the effectiveness of fiscal rules using cluster analysis. This cluster analysis resulted in dividing the data into two clusters. Using panel data of 26 Swiss cantons plus the Swiss federation over the period 1990 - 2012, a Least Squares Dummy Variable econometric model was conducted. The findings indicate that fiscal rules have a favorable effect. It was found that the frameworks of cantons in cluster 1 are more effective in decreasing cantonal deficits than those of cluster 2. Furthermore, it was found that cantons in cluster 1 have lower debt levels in comparison to cantons in cluster 2.
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JEL. C50, C80, H30, H50, H60, H70.

Highlights

The aim of this research was to measure the effectiveness of fiscal rules. Some studies in the literature have examined their effectiveness using a stringency index. Arguing that the stringency index possesses some arbitrariness, this study measured the effectiveness of fiscal rules using another method: cluster analysis. This cluster analysis resulted in dividing the data into two clusters. The distribution among clusters 1 and 2 most likely depends on whether or not a canton implements fiscal rules. Using panel data of 26 Swiss cantons plus the Swiss federation over the period 1990 - 2012, fiscal rules were found to have a favorable effect. It was found that the frameworks of cantons in cluster 1 are more effective in decreasing cantonal deficits than those of cluster 2. Furthermore, it was found that cantons in cluster 1 have lower debt levels in comparison to cantons in cluster 2. For instance, fiscal rules in Z¨urich reduce the amount of realized deficits by a total of ca. 300,000 CHF.

In total, 1.7 million is the amount of deficits not realized in Switzerland due to fiscal rules. Moreover, debts not realized due to fiscal rules are 80 million in Zurich and 460 million for Switzerland as a whole. These results are in line with the results of the literature. Accordingly, to answer the research questions, this study concludes that fiscal rules are effective in terms of realizing fiscal sustainability in the Swiss cantons. The fiscal rules'

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framework of cantons in cluster 1 is more effective than those in cluster 2. Concerning the regression analysis, both models used might have a problem of endogeneity. In both models, the fiscal balance and the cantonal debt were chosen to be dependent on the implementation of fiscal rules. However, a reverse relationship might additionally exist. The implementation of fiscal rules may be dependent on the fiscal balance and the debt level. Cantons with balanced fiscal balances and low debt levels will not need fiscal rules, as is the case of Appenzell Innerrhoden. This endogeneity problem is one limitation to this study. Another limitation, regarding the debt model, is the spurious regression mentioned in chapter 6. Therefore, one suggestion for future research is to find a way to solve the endogeneity problem. Another suggestion is to carry over the research in this area to the developing countries. Would the implementation of fiscal rules be of benefit to the developing countries, especially in those countries where rules are not always applied? Finally, to obtain a sustainable fiscal policy it is recommended to implement a similar framework to the one of the Swiss debt brake. The Swiss federation and cantons have proven to control their deficits and decrease their debts by implementing the fiscal rules.

Summary

Some countries have high debt levels and accordingly face hardships as they struggle to repay their debts. Examples of such countries include Greece, Spain, Ireland and Portugal, and to a lesser extent Italy and France (Kirchgaessner; 2013). Most of these countries have reached a debt ratio that is above 100% of their GDP (Public debt; 2014). The discussion of public debt is a rich one because it affects the fiscal policy and its sustainability. Debt is a tool in the hands of the government that is double edged with the power of improving or worsening the welfare of society depending on how well it is managed. Fiscal rules are one of the tools used to manage debt. Many OECD countries try to avoid high levels of debt through the use of different fiscal rules. In Europe, the Maastricht Treaty was signed in 1992 to control each country's budget. According to this treaty, member countries of the EMU are required to keep their budget deficits below 3% of GDP and their public debt below 60% of GDP. Deviation from this rule is not allowed except in extraordinary cases like a severe economic downturn or a natural disaster. In the case of the United States, the Gramm-Rudman Hollings Act, passed in 1985, was meant to balance the federal budget and reduce the federal public debt. Similarly, in Switzerland, the federal debt sharply increased during the 1990s. In reaction, the Federal Council and the Parliament introduced the "debt brake" in 2003 (Niepelt and Schaltegger; 2013), which is a mechanism to limit expenditures (Bodmer; 2006). The main aim of this debt brake is to cease the increase of the debt level (Die Schuldenbremse des Bundes: Erfahrungen und Perspektiven; 2013).

Besides the federation, most cantons of Switzerland have a debt brake. The Swiss cantons are a well suited ground to study the effectiveness of the fiscal rules due to the following reasons. First, there was a staggered introduction of the fiscal rules across cantons. The first fiscal rule was introduced in St. Gallen in 1929 and fiscal rules continued to be introduced until 2005. Second, the Swiss cantons are characterized by a high degree of fiscal autonomy, making their fiscal rules vary among each other. Third, despite their variation and autonomy, they share a common constitutional, political, and cultural background (Luechinger and Schaltegger; 2013) (Krogstrup and Waelti; 2008). Each canton designs its framework of a debt brake differently. Babuc and Mueller (2012) and Luechinger and Schaltegger (2013) have comprised the different fiscal rules that compose the debt brake for each canton and for the federation in a table. Further on, other authors studied the effects of the fiscal rules. For instance, Luechinger and Schaltegger (2013) studied the effects of fiscal rules on projected and realized fiscal outcomes. Also Krogstrup and Waelti (2008) find that fiscal rules continue to

have a significant effect on real budget balances. These researchers concluded that fiscal rules have a stronger effect on projected fiscal outcomes than on realized ones. Feld and Kirchg¨assner (2006) have investigated the effects of the constitutional clauses on public deficit and debt. Their study showed that fiscal constraints significantly reduce budget deficits. Chatagny (2013) found that fiscal rules reduce the effect of ideology on tax revenue projection errors. In general, the literature finds fiscal rules effective. To conduct these studies, the data on the fiscal rules of each canton and of the federation has to be divided into groups in order to be included in a regression. Dividing the data was done by placing the different cantons on an index according to the stringency of their fiscal rules. However, this stringency index possesses some arbitrariness, as will be explained later on. Therefore an alternative method is needed to measure the effect of the fiscal rules. This study contributes to the literature on the effectiveness of fiscal rules by using clustering technique to estimate the effects of the different frameworks of the debt brake.

Through the use of a panel dataset comprising 27 cross-sections and 22 years, this research aims to answer the following questions: Are fiscal rules effective in realizing fiscal sustainability in the cantons of Switzerland? Which framework of fiscal rules is most effective? The aim of this research is to measure the effectiveness of fiscal rules. The motive for answering this question is to provide guidelines on how fiscal rules contribute to long-term fiscal sustainability. It can be shown that the fiscal rules' frameworks of cantons in cluster 1 are more effective in decreasing cantonal deficits than those of cluster 2. As mentioned above, cluster 1 includes the cantons with a debt brake framework that implements more fiscal rules. A potential theory for why a greater number of fiscal rules leads to less deficits include the possibility that citizens and politicians respond better to structure as structure provides clarity, cohesion and information.

The results also show that cantons with different languages affect the fiscal budget differently. The coefficients of cantons who speak French or Italian is -1.439 and -1.224 for cantons who speak more than one language. Contrary to the results of Feld and Kirchgaessner (2006), these results suggest that, on average, non-Germanspeaking cantons incur more deficits and less surpluses than German-speaking cantons, Latin-speaking by 1.44 CHF per capita and cantons speaking more than one language by 1.22 CHF per capita. The different levels of deficits between Frenchspeaking and German-speaking cantons may reflect differences in certain expenditures that arise from cultural differences. According to Schwok (1993), most Frenchspeaking Swiss tend to believe in collectivist values while German-speaking Swiss tend to support individualistic ideals for historical reasons. In line with Schwok's theory, local French-speaking governments may invest more in social services such as schools and hospitals while German-speaking governments may be more likely to invest in sectors that will benefit the individual, such as the private industry. The results also revealed that the elevation status of a canton affects the fiscal budget as well. Mountain cantons incur less deficits in comparison to non-mountain cantons by an average of 0.99 CHF per capita. It is possible that mountain cantons have smaller economies compared to non-mountain cantons, thereby decreasing the need for deficits.

As for the urbanization status, urban cantons increase the fiscal balance more than rural cantons by 0.44 CHF. However, this relation could be random according to the results. It should also be mentioned that the category of mountain vs. non-mountain status may overlap with urban vs. rural status as mountain cantons may be considered rural. Therefore, no conclusion can be confidently drawn from these two variables. In regard to the coefficient of population, this variable indicates that the effect of an additional one million citizens together on the fiscal balance is an

increase of only 0.338 CHF. Obviously, this number is very small. Furthermore, the coefficient of this variable is insignificant. Therefore, it could be interpreted that either the population has no impact on the fiscal balance or the relationship between the population and the fiscal balance is non-linear. Referring to chapter 5, it is more likely that the second conclusion is the reason behind the insignificance of this variable. As Feld and Kirchgaessner (2006) explained, on one hand expenditure per capita decreases due to economies of scale for public goods. On the other hand, expenditure per capita increases due to indivisibility of some public goods. Hence we cannot conclude a direct relationship. Furthermore, in comparison to a finance minister affiliated to FDP, finance ministers affiliated to BDP, Gruene, PPN and independent finance ministers incur less deficits (higher surpluses) by an average of 0.13 CHF, 0.25 CHF, 0.16 CHF and 0.07 CHF per capita, respectively. On the other hand, finance ministers affiliated to CVP, LDP, LPS, SP and SVP will increase it by 0.04 CHF, 0.34 CHF, 0.39 CHF, 0.05 CHF and 0.12 CHF per capita, respectively. However, these numbers are not statistically significant, as well. So, for now, there is no proof of association between the party affiliation of the finance ministers and the fiscal balance. However, since the coefficient is insignificant, these relations can be due to chance. As for the party share in the government, the shares of all parties measured were each found to lack a significant relationship with the fiscal balance. Consequently, we can draw little conclusion between the constitution of the government and the fiscal balance.

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