The German Debt Brake Approaches for an Improvement of the Technical Design

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Summary: This article examines the German debt brake from a technical point of view. By designing the debt brake on the basis of the EU method, it should be possible to achieve an adequate division between the cyclical and structural components of the budget balance, while at the same time pursuing a countercyclical fiscal policy. However, recent studies suggest that the mechanics of the debt brake are of a rather pro-cyclical in nature. This paper focuses on the behavior of the NAWRU – a central element of the production function approach – as well as revisions, which both seem to be a source of a pro-cyclical influence towards the German debt brake. Additionally, reform proposals are outlined which show that a change of the Basic Law is not necessary in order to improve the dynamics of the fiscal rule at hand.

Zusammenfassung: Der Artikel untersucht die deutsche Schuldenbremse von einem technischen Standpunkt aus. Mit der Ausgestaltung der Schuldenbremse anhand der EU-Methode sollte eine adäquate Aufteilung zwischen der konjunkturellen und der strukturellen Komponente des Budgetsaldos gelingen und dabei antizyklische Fiskalpolitik möglich sein. Aktuelle Studien zeigen jedoch, dass die Mechanik der Schuldenbremse eher pro-zyklischer Natur ist. Dieser Beitrag thematisiert die Verhaltensweise der NAWRU – ein zentrales Element des Produktionsfunktionsansatzes – wie auch Revisionen, welche eine Quelle pro-zyklischen Einflusses auf die deutsche Schuldenbremse darstellen. Darüber hinaus werden Reformoptionen dargestellt, welche aufzeigen, dass eine Änderung des Grundgesetzes nicht notwendig ist, um die Sachgerechtigkeit der betrachteten Fiskalregel zu verbessern.

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→ Keywords: German debt brake, NAWRU, cyclicality, budget balance, stuctural balance, reform

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Between Success and Reform Discussion

The discourse on the German debt brake is currently being held with a particular determination within the scientific and financial policy community.[1] The timing of the debate is relevant for several reasons. On the one hand, the transitional regulation for the German Federal States with reference to Article (Art.) 143 paragraph (pg.) (1) sentence (s.) 3 of the Basic Law (GG), which allows derogation from the principle of structurally balanced budgets, expires on 31 December 2019. As a result, the ban on new indebtedness in a normal cyclical situation will for the first time unfold its full fiscal effect on public budgets of the Federal States in the coming fiscal year.

In addition to budgetary policy, the current economic conditions particularly contribute to the controversy surrounding the debt-limiting rules. Proponents of reform argue that the current favorable interest rate growth differential makes debt-financed investment and the thereby achievable growth in production potential appear attractive in comparison to its refinancing costs (Huether 2019: pp. 20). Therefore, it would be economically sensible and necessary to extend the fiscal capacity of public authorities in order to meet existing social and economic challenges. In addition to avoiding further losses of public assets, challenges include the restructuring of municipal infrastructure in a demographically appropriate manner, accelerating efforts of digitization, as well as increasing climate protection. According to many of its critics, the existing debt brake does not leave sufficient fiscal leeway for current investment requirements (Horn/Rietzler 2016 or Dullien et al. 2018: p. 3).

The technical details of the debt brake are a topic of discussion in addition to the fundamental discussion[2] on the risks and advantages of limiting new fiscal indebtedness in its current form. This level of discussion differs from the fundamental one in the sense that it does not question the implementation of the debt brake in general, but rather evaluates possible reform options that can largely be implemented within the existing normative framework. This mainly involves the specification of various provisions of the Basic Law which leave the legislator room to maneuver. The focus is on the "regulations on the symmetrical consideration of the effects of a cyclical development deviating from the normal situation during upswings and downturns" as described in Art. 109 (3) and Art. 115 (2) of the Basic Law, — in short: the procedures for cyclical adjustment of the budget balance. This article takes a critical look at selected aspects of the cyclical adjustment method. Hence, it identifies technical reform options, which could be tackled without a constitutional amendment and in consequence could maintain the existing fiscal policy regime.

Criteria for Fiscal Rules

First, the general question is whether the debt brake is an appropriate instrument for effectively limiting public debt. This can be evaluated with various quality criteria. To this end, Koptis and Symansky (1998) developed a catalog of criteria that should be covered by fiscal rules:

1 See e. g. Fuest et al. (2019) for a scientific discussion and Habeck et al. (2019) for a political contribution to the current debate.

2 Lenk/Glinka (2019) make a plea against a hasty departure from the debt brake and for the use of alternative possibilities to increase state investment activity.

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a) *Sustainability:* Compliance with the fiscal rule should contribute to sustainable public finances.
b) *Stabilization:* Economic fluctuations should not increase due to the applications of the rule. Automatic stabilizers must be able to work.
c) *Simplicity:* The rule should be easy to understand for the public and decision-makers.
d) *Operationalization:* Objectives of the rule should be translated into clear annual numerical targets. Corresponding budget items must be under the influence of the decision-makers, should they be affected by the rule.
e) *Robustness:* The validity of the rule should be a long-term goal in order to establish credibility. This also includes the fact that it cannot be circumvented or abolished after an economic shock.
f) *Simple monitoring and application:* Compliance should be easy to check. In addition, deviations from the target figure should be linked to opportunity costs (Koptis/Symanski 1998: pp. 18).

Eyraud et al. (2017: p. 2) conclude that fiscal rules should support or at least not counteract the main functions of fiscal policy: smoothing the economic cycle (1), promoting long-term growth (2) and supporting fiscal inclusiveness (3). The list presented here is not exhaustive and further criteria could be considered. Moreover, trade-offs may exist between the defined target figures, whereby – similar to the Federal Stability Act – not all goals could be reached at the same time.

Structure of the German Debt Brake in General

In general, it should be possible to measure the debt brake against the criteria defined above. Against this background, the determination of the structural balance, i. e. the methodology applied to the cyclical adjustment procedure, is of particular interest. There is no silver bullet here, as shown by the fact that the Federal Government and the Federal States have each organized the cyclical adjustment procedure differently during the implementation of the debt brake (Deutsche Bundesbank 2018: pp. 44).

While the Federal States will be subject to a ban on new net borrowing from 2020 onwards under normal cyclical conditions, the federal level will be permitted net borrowing of 0.35 % of its gross domestic product (GDP) (Art 115 (2) 2 GG). This exceeds the European rule, which targets a structural deficit of at most 0.5 % within the framework of the European Fiscal Pact. The target of 0.35 % in the context of the debt brake means that a debt ratio of 7 % will be achieved asymptotically in the long term, assuming nominal economic growth of 5 %.[3,4] In addition, there is a cyclical component which increases or decreases the room for maneuver depending on the cyclical situation. An exception clause is provided for emergency situations in order to adequately address the economic consequences in case of massive exogenous shocks. Furthermore, a control account is used to ensure compliance with the debt brake not only when drawing up the budget, but also during its implementation (Truger/Will 2012: p. 4). In addition to the core budgets, the outsourced

3 $\frac{0{,}0035}{0{,}05} = 0{,}07$

4 Here 5 % nominal growth is assumed, as this reference value also reflects the Stability and Growth Pact requirement within the 3 % flow criterion. If a 3 % growth rate is assumed, a debt ratio of 11.7 % will be achieved asymptotically.

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additional budgets are recorded in order to prevent trends in *creative accounting*.[5] Financial transactions are excluded as they do not have an effect on assets (Art. 115 (2) GG). This includes, among other things, the acquisition and sale of shareholdings as well as the granting and repayment of loans.

The technical design of the debt brake has a particularly influential effect. The choice of the cyclical adjustment procedure not only rejects other procedures at the federal level, such as the trend tax or reference value procedure[6], but the aggregated quota procedure, also known as the EU procedure, shows pro-cyclical tendencies and can thus in some cases have a destabilizing effect (Paetz et al. 2016: p. 3). Although the EU procedure is adopted within the framework of the debt brake, there are slight differences between the EU and federal levels in the specific instrumental design.[7]

Technical Design of the Debt Brake

The economics literature contains different depictions of the structural balance. In the following, the representation according to D'AURIA ET AL. (2010) is used, which is not only considered by the EU Commission, but also reflects in its methodological form the general calculation of the debt brake at the federal level.[8] The following cascade structure can be used for visualization (D'Auria et al. 2010: pp. 9–13 and DG ECFIN 2019a: p. 8):

Accordingly, the structural balance is separated into a cyclically adjusted balance and temporary deviations. The cyclically adjusted balance is defined as the difference between the general government balance in relation to GDP and the cyclical component, defined as the product of semi-budgetary elasticity and the output gap (DG ECFIN 2019a: p. 8). The output gap is defined as the ratio between GDP and potential output. This follows a Cobb-Douglas production function, where the elasticities for labor and capital have already been determined (D'Auria et al. 2010: p. 9). The calculations for PARTS and HOURS are forecasts for six years using an ARIMA model, whereby only the first three years are used for HOURS (ibid.: p. 12). Both values are smoothed using a Hodrick-Prescott filter.[9] The capital employed is adjusted for depreciation.

5 The following examples show what effects creative bookkeeping can have. The conversion by the federal government of the subsidy to the Federal Employment Agency in 2010 from a loan to a subsidy without repayment obligation had a direct impact on the debt brake (cf. Truger and Will 2013, p. 19). The loan would not be deficit-relevant in the sense of the financial transaction, as it is offset by an asset. The conversion, however, led to an increase in the deficit. This was of some relevance for the calculation of the permissible deficit of the transitional budgets from 2011 to 2015. The deficit was reduced in six equal sections of the initial value to the final value of 0.35 % of GDP still permissible in 2016 (ibid., p. 19). By increasing the start deficit, the permissible total debt was thus increased during the transition period.

6 For a description of the different procedures see: Schweisfurth et al.

7 For example, the EU Commission uses harmonized unemployment rates to calculate NAWRU (Non-accelerating wage rate of un-employment) estimates and uses Eurostat data to determine the working age population. The Federal Government, on the other hand, uses labor market data from national accounts and specifies the standardized estimates when updating time series, e. g. working time and participation rate, as these specifications are partly insignificant for Germany (cf. Rietzler (2013), p. 3).

8 Interestingly, the EU Commission is not only making the methodological structure freely available at www.circabc.europa.eu, but also the program for its econometric estimation. Thus, all results of the EU Commission, from the output gap to the structural balance, can be remodeled.

9 With a lambda of 10.

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Table 1

Description of the Structural Balance According to the EU Method; Following: Havik et al. (2014), p. 14; Own Presentation

Formula		Description
(1)	$SB_t = CAB_t - OE_t$	Structural balance (aggregated)
(2)	$SB_t = \left(\frac{BAL}{Y}\right)_t - \varepsilon OG_t - OE_t$	Structural balance (disaggregated)
(3)	$OG_t = \frac{Y_t}{PO_t} - 1$	Relative output gap
(4)	$PO_t = K^{0,35}L^{0,65}\ \Gamma_t$	Potential output with a Cobb-Douglas production function
(5)	$L^{1-\alpha} = POPW * PARTS*(1 - NAWRU)*HOURS$	Input factor Labor
(6)	$K^{\alpha} = I + (1 - dep)K(-1)$	Input factor Capital
(7)	$I = IYPOT*PO_t$	Investment
(8)	$\Gamma_t = \left(E_L^{\alpha}E_K^{1-\alpha}\right)\left(U_L^{\alpha}U_K^{1-\alpha}\right)$	Total factor productivity parameter

Definitions
SB = structural balance; CAB = cyclically adjusted balance; OE = one-off measurements; BAL = budget balance; ε = budget semi-elasticity; OG = output gap; Y = GDP; PO = potential output; K = capital stock; L = potential labor input; Γ = Total Factor Productivity (TFP) Parameter; POPW = population of working age; PARTS = smoothed participation rate; HOURS = trend of average hours worked; dep = depreciation rate; NAWRU = structural unemployment; IYPOT = investment to potential GDP ratio; E_L^{α} = level of labor efficiency; $E_K^{1-\alpha}$ = level of capital efficiency; U_L^{α} = degree of excess capacity in labor; $U_K^{1-\alpha}$ = degree of excess capacity in capital

The NAWRU is estimated using a Kalman filter, with economic information from a Phillips curve correlation being used in the calculations (ibid.: p. 30).[10] There is, however, a dissent in the current literature regarding the role of NAWRU. As structural unemployment is not observable per se, Havik et al. (2014: p. 28) argue that the NAWRU does not show structural unemployment, since it reacts to non-structural factors such as exogenous shocks. The cyclicality of NAWRU ultimately results from the fact that real wages adapt only slowly to labor demand shocks caused by rigidities (ibid.: p. 28). On the other hand, D'Auria et al. argue that the NAWRU can be seen as a proxy and thus as an approximation for structural unemployment (D'Auria et al. 2010: p. 13 and pp. 30–34). Orlandi shows, for example, that the NAWRU tends to reflect structural labor market developments (Orlandi 2012: p. 26). This paper assumes that although there is a difference between structural unemployment and the NAWRU, the latter converges towards the former. To this end, the NAWRU is respectively used as a proxy and approximation to the structural unemployment rate.

To estimate the input factor capital, a calculation of investments is carried out. This is obtained by the product of the ratio of investments to potential gross domestic product multiplied by the potential output (ibid.: p. 13). The factor productivity parameter, which is also used in the Cobb-Douglas production function, is calculated as the product of efficiency at a given technological level and the degree of utilization of the input factors capital and labor (ibid.: p. 13).

10 In the present case, a traditional Phillips curve is estimated. Within the framework of the estimation of production function at EU level, this is done not only for Germany but also for Austria, Belgium, Italy, Luxembourg, Malta and the Netherlands, while a New Keynesian Phillips curve is estimated for the other eurozone countries (cf. Havik et al. (2014), p. 20).

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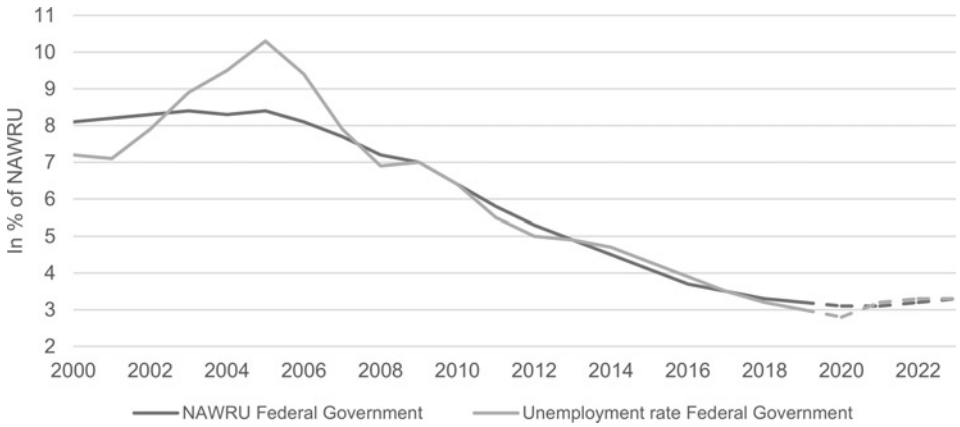
Inherent Instability – Selected Examples

From a technical point of view, some problems can be identified with the calculation of the structural balance. These include not only the estimated relationships and the role of filtering techniques, but also, for example, the revisions of projections and estimates of predictive components. One focus of this paper is on the problems associated with the unemployment rate, which does not accelerate wage growth (NAWRU).[11] In particular, the role of the Kalman filter is examined and the differences arising from the use of European data as opposed to federal data of Germany are pointed out. In addition, the revisions between the autumn and spring projections of the Federal Government are considered.[12,13]

Figure 1

NAWRU and ALQ from 1990 to 2023



Data: BMWi and BMF (2019a); own.

Figure 1 shows the NAWRU and the unemployment rate for Germany over time, including the forecast for the years 2019 to 2023 (BMWi/BMF 2019a: p. 7). The unemployment rate and the NAWRU converge over time, from which the conclusion can be drawn that a high proportion of unemployment is of a structural nature, especially at the current edge. The effect of using the Kalman filter becomes visible. This filtering technique according to Kalman is a methodology that was originally designed for the engineering sciences (Kalman 1960: p. 35). The filter process itself

11 Although the NAWRU is a central concept in the calculation of the structural balance, it is not the only nucleus of instability in the debt brake. Within the framework of the European procedure, it can be assumed that not only the measurement of the TFP parameter nor the budget sensitivity, but also the input factor capital is afflicted with instability.

12 It is questionable, however, whether the federal procedure is fully in line with the EU procedure in the calculation of the economic cycle component. Reference is made to Section 5 of the Implementation Act on Article 115 of the Basic Law, which states that "the cyclical component [...] is the product of the output gap and the budget-sensitivity, which indicates how the federal government's revenues and expenditures change in the event of a change in overall economic activity".

13 In addition to the different data basis, it must be pointed out that the calculation methods and the methodology of the debt brake are not fully disclosed at the federal level. According to this, there may well be a hitherto unobservable difference between the modelling of the NAWRU at the European level and at the national level.

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is based on a recursive structure, such that new information is included in the model as soon as it is available (Heimberger/Kapeller 2017: p. 8). This explains the strong variation of the NAWRU over time. With the constant addition of new data points, the NAWRU and its associated calculations change in value. This is accompanied by the so-called endpoint-bias: new information, which is recorded by the Kalman filter, has a high influence on the estimation of the trend. According to Hristov et al., this end-value problem ultimately leads to an incorrect assessment of the cyclical component, which not only distorts estimates but also increases the extent of revisions (Hristov et al. 2017: p. 2). During a crisis, the NAWRU rises, reducing the potential output ceteris paribus (c.p.) and decreasing the negativity of the output gap accordingly. The cyclically adjusted balance deteriorates. From this the NAWRU derives its pro-cyclical effect, which is translated into the calculation of the structural balance via the production function and the output gap (ibid.: p. 8).

In principle, the NAWRU is estimated using a Phillips curve (Fatacone et al. 2015: p. 22). In the context of fiscal policy, especially in the debate on the debt brake, this relationship has so far been accorded a subordinate role, although significant implications can be derived from it. Accelerating inflation can loosen the limits on public debt, since the *fiscal drag* either reduces the real value of debt or increases the nominal value of GDP (ibid.; p. 22).

In addition to these fundamental aspects, various points of criticism can be formulated at a detailed level. According to Stiglitz, the measurement of NAWRU is associated with a high degree of uncertainty, especially if the effect of hysteresis can be observed on the labor market (Stiglitz 1997: p. 10).[14] As Fatacone et al. (2015: p. 28) were able to show, the NAWRU is also strongly influenced by the economic cycle. In times of downturn and recession, a distortion is created which would lead to a pro-cyclical fiscal policy. This point is particularly important as the cyclical adjustment process is intended to separate the cyclical from the structural component.

Figure 2 shows the effect that the mere selection of the data basis can have. While the NAWRU of the EU Commission was continuously above the calculations of the Federal Government until 2018, the ratio changes from the forecast period onwards. The constant narrowing of the discrepancy between the two values in the recent past and the slight upward trend of the NAWRU of the Federal Government in the coming years indicate that its forecasts show a stronger upward bias than is the case with the Commission's calculations. Lower NAWRU values of the Federal Government mean that the cyclically adjusted input factor labor is higher than according to the Commission's calculation method. This has a positive impact on the potential output and ultimately leads to an increase in the negativity of the output gap compared to the EU values. This leads via the cyclically adjusted balance to an ultimately higher structural balance.

This shows that the choice of the data basis alone can lead to different structural balances. Ultimately, the changed data input generates a structural balance that has a different value date to that of the EU Commission for the same cyclical adjustment procedure. Thus, the chosen data basis alone creates a distortion to the Stability and Growth Pact at EU level.

For example, while European data is used for the Commission's medium-term budgetary objective, national data is used in the context of the debt brake. As a result, the same fiscal situation is presented in a differentiated manner with congruent indicators within the framework of the

14 Hysteresis describes the phenomena that the cause of an external shock has passed, the effects, however, persist.

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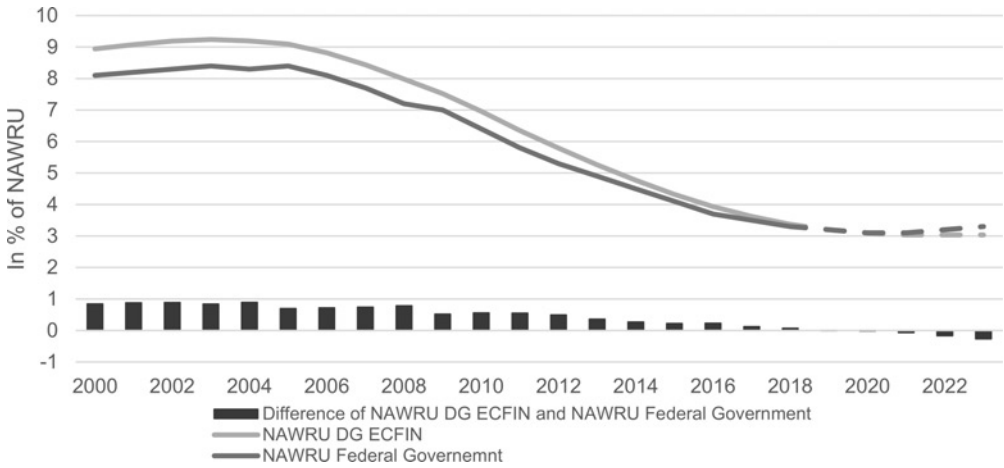
Figure 2

Comparison of NAWRU Between DG ECFIN and Federal Government for Germany; 2000 to 2023



Data: BMWi and BMF (2019a) and DG ECFIN (2019b); own.

various control and fiscal monitoring mechanisms. If this leads to different policy implications at EU and federal level, the choice of the data basis can generate a fiscal policy situation that procyclically influences the federal budget.

Internal audits present a further problem in addition to the general distorting effects of the data basis. Figure 3 can be consulted for this purpose. It describes the percentage change in the output gap for Germany from 2000 to 2023, using the spring and autumn forecasts used by the Federal Ministry of Economic Affairs and Energy (BMWi) and the Federal Ministry of Finance (BMF), as well as the annual forecast in January. While the annual and spring projections are close to each other, the autumn projection shows a higher volatility. It becomes apparent that the different forecasts from 2015 onwards are beginning to differentiate more clearly.

While in Figure 3 the differences in the projections on the current data margin appear only marginal due to the choice of scaling, Figure 4 shows the values of the three forecasts from 2015 onwards. Significant differences are evident for the years from 2017 onwards, which are not least reflected in the different signs of the individual forecasts.

This is particularly interesting against the background of the control account. According to the Federal Ministry of Finance, the control account should ensure that the debt brake does not only apply to budget preparation but also to budget execution. The deviations of the actual from the permissible net borrowing are recorded on the control account, with the final entry taking place in September of the following year (§ 7 of Art. 115 Act). As can be seen, there is a difference between the spring and autumn 2019 projections for all the years under consideration, which is why revisions would have to be made to the control accounts. This shows that for the years 2015 to 2019 the autumn forecast is higher than the spring forecast and that an upward revision is therefore nec-

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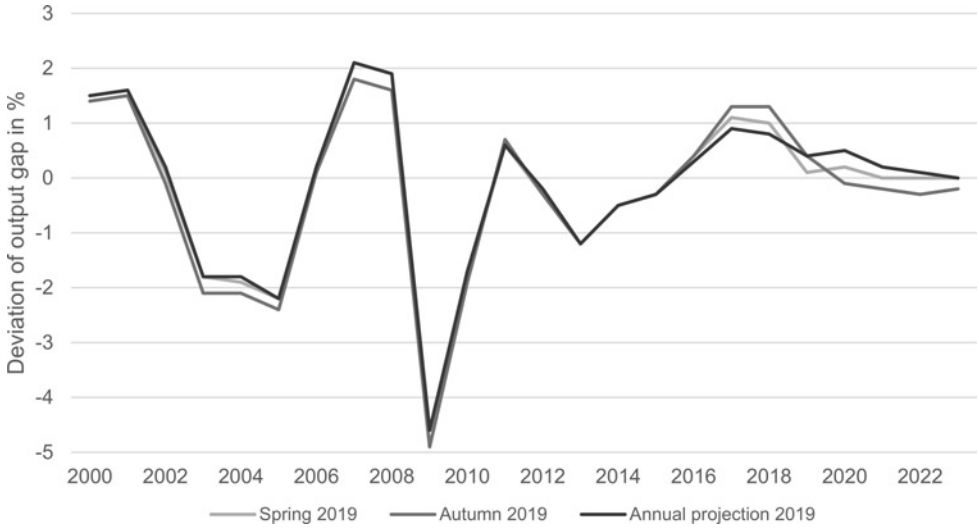
Figure 3

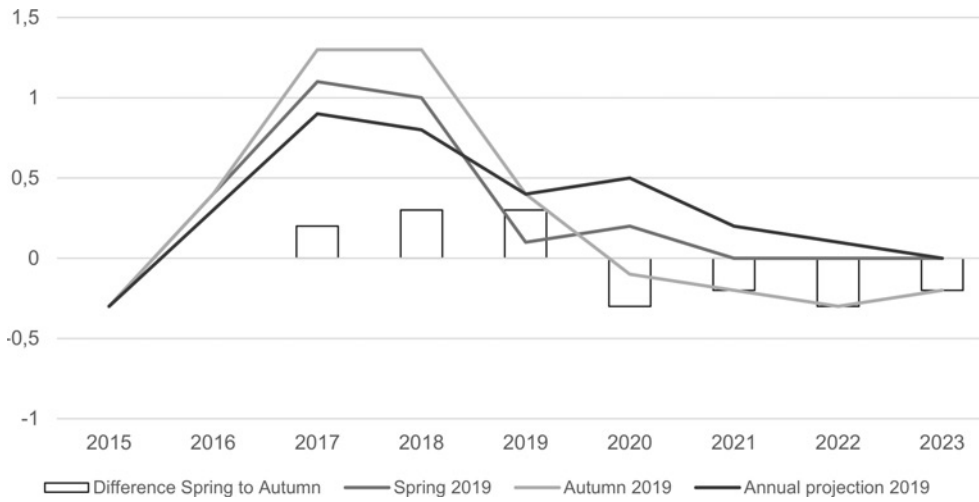
Output Gap in % Compared to the Previous Year for Germany; 2000 to 2023 with Different Forecasts



Data: BMWi and BMF (2019a), BMWi and BMF (2019b), BMWi and BMF (2019c); Own presentation.

Figure 4

Output Gap in % Compared to the Previous Year for Germany; 2015 to 2023 with Various Forecasts



Data: BMWi and BMF (2019a), BMWi and BMF (2019b), BMWi and BMF (2019c); Own presentation.

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essary for these years, with the result that a higher amount is deducted from the cyclically adjusted balance.

This indicates that the idea of a control account in its present form is too short-sighted. Due to an observation period between the budget preparation and September of the following year which is too short in budgetary practice, the consequences of data revisions can only be cushioned to an insufficient extent. As Truger and Will (2012: p. 26) describe it, fiscal policy cannot allow the automatic stabilizers to take full effect. This could trigger pro-cyclical policies as a result. The authors describe that, for example, depending on the scenario, the automatic stabilizers would be weakened by 15 % to 70 % (ibid.: p. 26).

Effects of the Debt Brake – Back to Fiscal Policy Criteria

At the beginning of this article, the criteria of fiscal rules according to Eyraud et al. where discussed. With regard to the intended support of the main fiscal functions by fiscal rules, the following results can be noted:

1 Smoothing of the Economic Trend

As it was demonstrated with the help of data revisions, the debt brake induces a pro-cyclical bias and thereby it hampers the effectiveness of the fiscal automatic stabilizers. As a result, this can lead to an increase in the economic amplitude and ceteris paribus (c.p.) does not lead to a corresponding smoothing of the economic cycle. Furthermore, the recursive structure of the Kalman filter distorts the NAWRU calculation which has a pro-cyclical influence as well.

2 Promotion of long-term growth

Critics of the debt brake, on the one hand, state that it prevents growth and investment.[15] Supporters, on the other hand, understand the fiscal tool as a necessity for reducing the long-term interest burden on public budgets and hence creating room for maneuver in fiscal policy. To what extent this goal is counteracted by the outlined pro-cyclical properties remains open for the time being.[16] Nevertheless, the debt brake can play a crucial role in ensuing long-term sustainable public finances with the help of internal reforms, especially in the calculation of the structural balance. For this purpose, however, it is necessary to perform technical modifications of the debt brake.

3 Promotion of Fiscal Inclusiveness

In the wake of the context, fiscal inclusiveness is understood as the inclusion of fiscal policy variables in order to reflect broad macroeconomic trends (IMF 2017: p. 2). The focus on the structural balance hinders fiscal policy from fiscal inclusiveness. Nevertheless, it should be mentioned, that this is not the objective of the German debt brake in a strict sense.

15 See for instance: Horn and Rietzler (2016).

16 For example, hysteresis effects could be one explanation approach why increased pro-cyclicality has effects on the growth path which in turn affects investments.

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The Debt Brake and the Way Forward

As described above, the German debt brake and especially its technical design have pro-cyclical effects. It should be pointed out once more that the inherent instability is not solely materialized by the NAWRU and its associated estimates, but also via other transmission mechanisms. In addition to the aforementioned pro-cyclical behavior, the operational performance of automatic stabilizers is not fully guaranteed as well. This can in turn lead to ongoing pro-cyclical fiscal policy, which should be prevented. It is essential to point to the fact that the debt brake not only changes the short-term budgetary leeway, but also has long-term distributive consequences. Artificial budget changes which follow the course of the economic cycle have a long-term impact because they influence the financing conditions of the government as well. This affects public investment behavior, government spending and the general distribution of public funds within the institutional entities. Accordingly, a first step would be to deviate from the overfulfillment of the debt brake and to borrow in accordance with the permissible upper limit (Lenk et al. 2019). The debt brake provides a reference framework of 0.35 % of GDP, while the Stability and Growth Pact provides for 0.5 %. It is therefore conceivable to adjust the debt brake in line with European requirements.

In order to remedy the problems described above, neither the Basic Law nor the Implementation Act to Art. 115 would have to undergo an amendment. It would be sufficient to redesign the legal ordinance of the Federal Ministry of Finance and the Federal Ministry for Economic Affairs and Energy. This appears to be possible as § 5 (4) of the Implementation Act to Art. 115 postulates the following:

"The Federal Ministry of Finance, in agreement with the Federal Ministry of Economic Affairs and Energy shall determine the details of the procedure for determining the cyclical component in accordance with the cyclical adjustment procedure applied within the framework of the European Stability and Growth Pact by **statutory order** without the consent of the Bundesrat. The procedure shall be **regularly** reviewed and further developed in the light of the **state of the art**" (§ 5 of Art. 115 Act).

Finally, it is necessary to review the calculation of the cyclical adjustment procedure. The basic idea of the mentioned control account is a positive one. However, it is designed incorrectly. The possibility to carry out corrections via the control account at a later point in time would be a first short-term measure. In the long run, the NAWRU will have to be reformed. Especially the filtering techniques as well as a critical scrutinization of the mechanics of the cyclical adjustment method have to be the main objectives.

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