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Macroeconomic effects of German fiscal austerity under different exchange rate regimes: the experience of Central and East European countries

Abstract

According to a familiar two-country Mundell–Fleming framework, the policy of fiscal austerity in Germany should be restrictionary for other European countries with a floating exchange rate while there is a possibility of an expansionary effect for countries with a peg. Using quarterly data of eight Central and East European countries over the 2002-2014 period, it is found with a four-variable VAR model that fiscal austerity in Germany leads to an increase in the money supply and output, while the effects on the real exchange rate are rather marginal. Our results contrast with several other studies, which imply that the policy of fiscal stimulus in Germany is beneficial for other European countries. Our results could be interpreted in such a way that demand and competitiveness effects are outweighed by international flows effect. The strongest expansionary effect is obtained for Bulgaria, Slovakia and Latvia, which maintain fixed exchange rates, while expansionary effects are weaker for countries with greater exchange rate flexibility, such as Poland, Hungary or the Czech Republic.

***Keywords*:** fiscal austerity; Germany; exchange rate regime; Central and East European countries; the Mundell–Fleming model

1. Introduction

It is quite common to blame policy of fiscal austerity in Germany for a slow recovery in the Eurozone and other European countries [Karger 2014; pp. 33–53; Krugman 2013; Zezza 2012, pp. 37–54], especially in the post-crisis economic environment. Arguments are not lacking that the government-spending multiplier can be much larger than one during recessions [Auerbach and Gorodnichenko 2012, pp. 1–27], financial crises [Corsetti, Meier and Müller 2012, pp. 521–565] and/or if monetary policy is constrained by the zero lower bound (ZLB) on the nominal interest rates [Christiano, Eichenbaum and Rebelo 2011, pp. 78–121]. However, fiscal austerity can be justified when public debt and sovereign risk are high [Müller 2014, pp. 243–258; Ilzetzki, Mendoza and Végh 2013, pp. 239–254]. Also,

uncertainty about fiscal policy can cause large declines in consumption, investment, and output under ZLB, thus reversing one of the most powerful arguments in favour of fiscal stimuli and accumulation of public debt [Johannsen 2014]. If austerity in Germany reduces uncertainties related to the sovereign debt in the Euro area, it can contribute to deviations of sovereign borrowing costs from their long-run equilibrium levels [Veld 2013].

In a wider context of the open economy setting, traditional analysis based on the Mundell–Fleming model implies that the fiscal multiplier is larger under a fixed exchange rate system, while it is supposed to be zero in economies with a freely floating exchange rate [Born, Juessen and Müller 2012]. More open economies are supposed to have stronger fiscal spillovers due to larger trade and capital flows, although the combined effect depends on the relative strength of foreign demand, relative price and capital flows channels [Veld 2013].

For an unbalanced panel of OECD countries over the 1985 to 2011 period, it is found by B. Born, F. Juessen and G.J. Müller [2012] that the difference of the fiscal multiplier across exchange rate regimes is driven by differences in the monetary policy stance, as in the Mundell–Fleming model, but it is due to an adjustment of the level of private expenditure rather than through a redirection of trade flows. Similar results are obtained by O. Gardi and G.J. Müller [2011, pp. 256–267] for an open economy version of the neoclassical model with endogenous terms of trade and habit persistence in consumption, as the current account tends to be larger and the effects on output more routed in more open economies. Assuming asymmetrical changes in the current account, it implies a stronger positive spillover effect of German austerity on other European countries. However, empirical results are not in favor of austerity spillovers in European countries [Beemstma, Giuliodori and Klaassen 2006, pp. 640–697; Ivanova and Weber 2011].

The aim of this study is to study empirical importance of German fiscal austerity upon several Central and East European (CEE) countries, with a focus upon exchange rate regimes. A two-country Mundell–Fleming model is used as a framework for explaining potential differences between fiscal spillovers under fixed and floating exchange rate regimes. Among countries to be studied, the Czech Republic, Hungary, Poland and Romania have maintained a floating exchange rate regime, while Bulgaria, Slovakia, Estonia and Latvia have followed a policy of exchange rate stability.

The remainder of the paper is organized as follows. Section 2 presents theoretical framework. Section 3 outlines data and statistical methodology. Section 4 discusses the estimation results. Section 5 concludes.

2. Theoretical framework

For the purpose of explaining basic relationships, a two-country Mundell–Fleming model is used (in logs), as follows [McCallum 1996, pp. 111–115]:

a) CEE countries

$$y_t = a_0 + a_1(m_t - p_t) + a_2 g_t - a_3 r_t + a_4 q_t + a_5 y_t^*, \quad (1)$$

$$m_t - p_t = b_0 + b_1 y_t - c_2 R_t, \quad (2)$$

$$r_t = R_t - (E_t p_{t+1} - p_t), \quad (3)$$

$$r_t = r_t^* + E_t e_{t+1} - e_t, \quad (4)$$

$$q_t = e_t + p_t^* - p_t, \quad (5)$$

b) Germany

$$y_t^* = a_0 + a_1(m_t^* - p_t^*) + a_2 g_t^* + a_3 r_t^* - a_4 q_t + a_4 y_t, \quad (6)$$

$$m_t^* - p_t^* = b_0 + b_1 y_t^* - b_2 R_t^*, \quad (7)$$

$$r_t^* = R_t^* - (E_t p_{t+1}^* - p_t^*), \quad (8)$$

where y_t and y_t^*, R_t and R_t^*, r_t and r_t^*, g_t and g_t^*, m_t and m_t^* are domestic and foreign income (output), nominal and real interest rates, budget deficit, and money supply, respectively, q_t and e_t are real and nominal exchange rates (domestic currency price of foreign exchange), with p_t and p_t^* denoting domestic and foreign price indexes, $E_t e_{t+1}$ are expectations of exchange rate depreciation.

In Equations (1) and (6), familiar IS relationships for both economic areas are presented. The usual assumption is that national income is determined by the budget deficit, the wealth effect (determination of private consumption by the real money supply), the real interest rate, relative prices and income abroad. Fiscal stimulus expands demand and thus should have favorable spillovers to foreign trade partners through a higher demand for their exports. On the other hand, a likely demand-driven increase in domestic prices should inhibit exports and enhance imports thus weakening the magnitude of income expansion. Both demand and relative price effects are favourable for trade partners. The outcomes are just the opposite for fiscal austerity which is supposed to reduce domestic demand and growth, with a negative spillover effect on other countries.

Money market equilibriums are defined in Equations (2) and (7). Money supply is determined in real terms. As it is assumed in the LM framework, demand for real money is proportional to output and inversely related to the interest rate. Equations (6)–(8) for Germany are analogous to Equations (1)–(3) for the CEE countries, with y_t playing the same role in (6) as y_t^* does in (1). For simplicity, the values of the a_i and b_i parameters are assumed

to be the same across both economic areas, but this restriction is not crucial for the analysis of fiscal policy issues.

While the real interest rate r_t is relevant to the IS specification of supply and demand choices in the loan market, the demand for real money balances according to the LM function is based upon the nominal rate of interest R_t. In Equation (3), the real interest rate r_t is a difference between the nominal interest rate R_t and the expected or anticipated value of $E_t p_{t+1} - p_t$ as of period *t*. As specified in Equation (4), real interest rate is dependent upon expectations of nominal exchange rate depreciation. The *uncovered* interest parity is based on the assumption that domestic and foreign securities are close substitutes, but their yields are not equal due to determination in different currencies. If it is expected that the domestic currency will depreciate (it means an increase in its value) over the next period, then one-period interest rates in the home economy will tend to rise.

The real exchange rate is defined in Equation (5) on the purchasing power parity basis, implying that relative prices are dependent upon a nominal exchange rate and domestic (CEE countries) and foreign (Germany) price levels.

Assuming price stability ($E_t p_{t+1} = p_t$) and lack of expectations of depreciation $E_t e_{t+1} = e_t$, not only real and nominal rates are equal ($r_t = R_t$), but nominal rates in both economic areas become equal as well ($R_t = R_t^*$). For the purpose of short-run analysis with sticky prices and perfect capital mobility ($r_t = r_t^*$), the list of endogenous variables under a fixed exchange rate regime becomes as follows: y_t, y_t^*, r_t, m_t, m_t^*. For a floating exchange rate regime, endogenous variables are as follows: y_t, y_t^*, r_t, e_t, and q_t. Assuming a stable money supply in a two-country system ($\overline{M}$ =const), q_t becomes an endogenous variable for a fixed exchange rate regime either.

Fig. 1 and 2 show the short-run response in both economic areas to a decrease in the budget deficit in Germany alone under assumptions of floating and fixed exchange rate, respectively. Since $a_3 < 0$, the IS curve representing Equations (1) and (6) is downward sloping in the *r*–*y* plane. As demand for money increases in line with a level of income, the LM curve will slope upward.

The policy of fiscal austerity in Germany shifts IS_0^* to IS_1^*, which results in a decrease in income from Y_0^* to Y_0^* and a downward pressure on the interest rate. As there is a contraction in Germany, it reduces demand for exports from CEE countries thus shifting their demand

scheduler downward from IS_0 to IS_1. As the interest rate in Germany at r_1^* is not consistent with equilibrium, some adjustment is needed. In model (1)–(8), the interest rate differential in favour of CEE countries results in capital inflow from Germany and subsequent exchange rate appreciation to follow. Consequently, demand recovers to IS_2^* in Germany and further falls to IS_2 in the CEE countries. The new equilibrium is such that income decreases in both economic areas, with the exchange rate appreciation in the CEE countries. On the whole, austerity policy in Germany seems to be counterproductive, as its opponents used to argue.

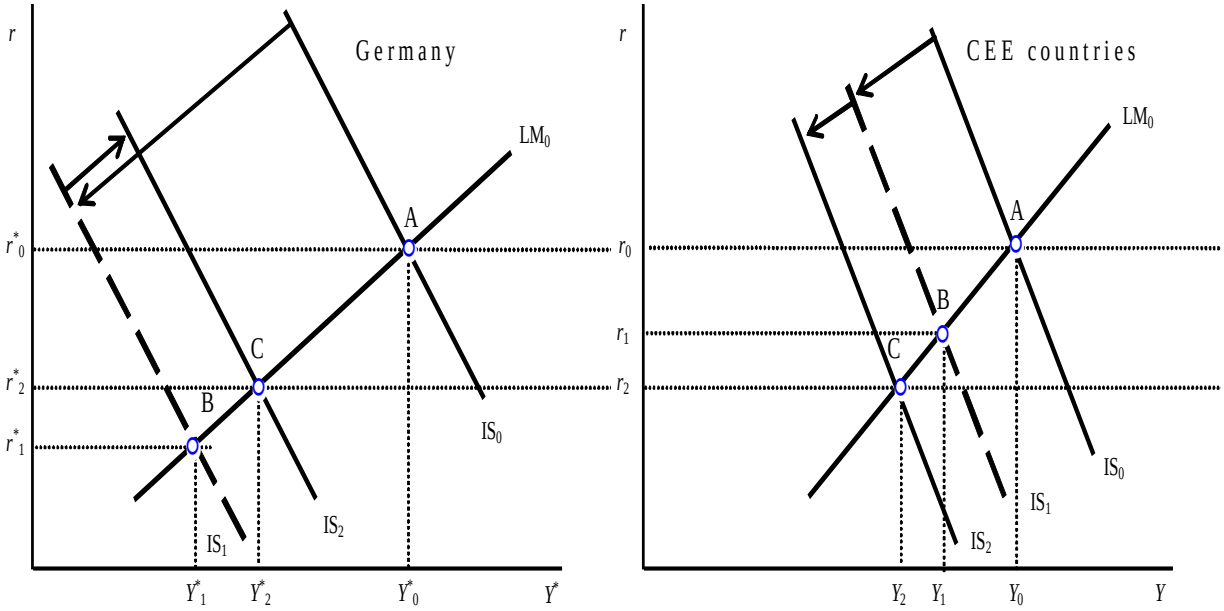

Fig. 1. Fiscal austerity effects under a floating exchange rate regime

Source: the author's study

However, macroeconomic developments could be quite different under exchange rate stability. While fiscal austerity is still restrictionary for Germany, it is possible to obtain an expansionary spillover to the CEE countries (Fig. 2). As in the previous case of a floating exchange rate, a decrease in the budget deficit shifts demand in Germany leftward from IS_0^* to IS_1^*. But this time capital outflow from Germany is combined with a decrease in the money supply from LM_0^* to LM_1^*, which deepen a fall in income to Y_2^*. On the other hand, monetization of capital inflows to CEE countries, as shown by the rightward shift of LM scheduler from LM_0 to LM_1, allows neutralizing an initial downward shift in demand from IS_0 to IS_1, with an expansionary outcome being not ruled out. The expansionary effect is more likely in the cases of (i) higher income elasticity in respect to interest rate, (ii) larger interest

rate differential and (iii) stronger wealth effect in the demand of goods and services. Following an increase in the money supply, there is an increase in demand from IS_1 to IS_2, which helps to compensate partially for an initial fall in demand due to a lower level of income abroad, i.e. in Germany.

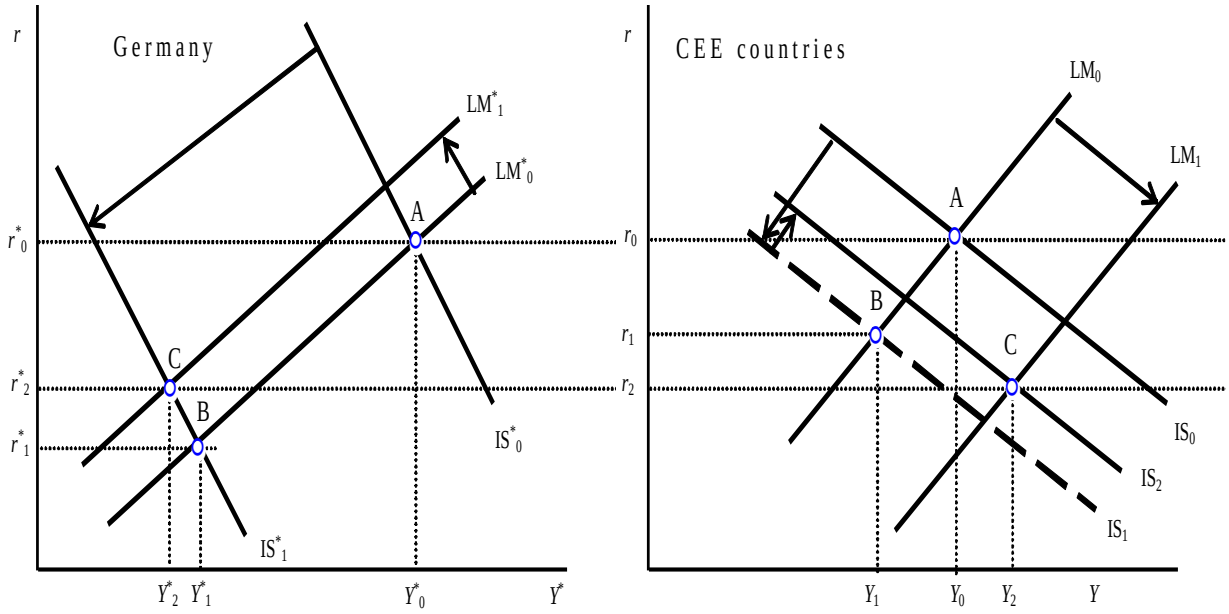

Fig. 2. Fiscal austerity effects under a fixed exchange rate regime

Source: the author's study

All said, maintaining of a fixed exchange rate regime seems to offer CEE countries much better prospects of avoiding a decline in income in the way of a fiscal austerity policy in Germany. Another possibility of an expansionary spillover is provided by endogeneity of risk premium in respect to fiscal austerity abroad. If there is a decline in the risk premium due to fiscal austerity, it should stimulated demand in the private sector and thus contribute to an increase in income.

3. Data and statistical methodology

Our VAR model includes four variables: the budget balance in Germany (in percent of GDP), $bdger_t$, the money supply (in percentage points of money aggregate M2 relative to trend), mc_t, the log of the real effective exchange rate (index, 2010=100), rer_t, output (in percentage points of GDP relative to trend), yc_t. German's budget balance is used in its structural form, i.e. adjusted for a lagged business cycle position. As presented in Fig. 3, the budget surplus had been substantial over the 2006–2008 period and again in 2011–2012, with a somewhat

smaller surplus since then. The money supply, nominal exchange rate and output series are obtained from the IMF's *International Financial Statistics* database (www.img.org).

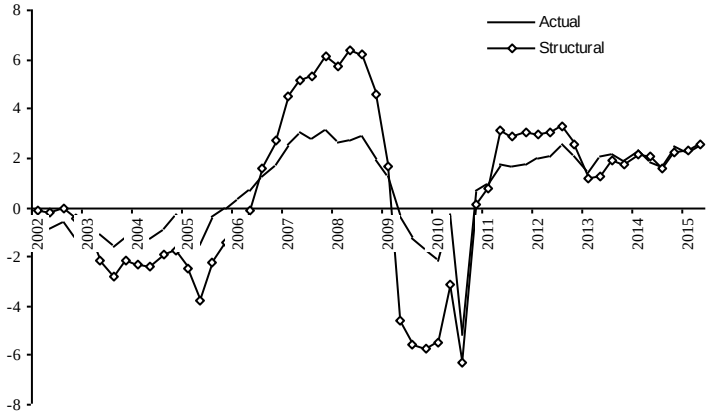

Fig. 3. Germany's budget balance (percent of GDP), 2002-2015

Source: Eurostat

Collecting the endogenous variables in the *k*-dimensional vector X_t the reduced-form VAR model can be expressed as follows:

$$X_t = C + A(L)X_{t-1} + u_t, \tag{9}$$

where C includes deterministic terms (constant and linear trend), $A(L)$ is a matrix polynomial in the lag operator L, u_t is a $k \times 1$ vector of reduced-form disturbances which are assumed to be normally distributed white noise $\mathrm{E}[u_t] = 0$ with a constant covariance matrix $\mathrm{E}[u_t u_t'] = \Sigma_u$ and $\mathrm{E}[u_t u_s'] = 0$ for $s \neq t$.

The vector of endogenous variables, X_t, is given by $X_t = [bdger_t, mc_t, rer_t, yc_t]$. It is assumed that the German's budget balance affects the money supply and/or real exchange rate on impact. Then foreign income, money supply and relative price effects are responsible for changes in the business cycle.

4. Estimation results

Our results for the VAR model regarding dynamic effects of an exogenous increase in the German's budget balance upon the real exchange rate, money supply and output of eight CEE countries are presented in Fig. 4 to 6, respectively. On the vertical axes, real exchange rate is measured in first differences of its log-level (Fig. 4), and both money supply and GDP are

measured in percentage difference between actual and trend. The horizontal axe measures time in quarter units.

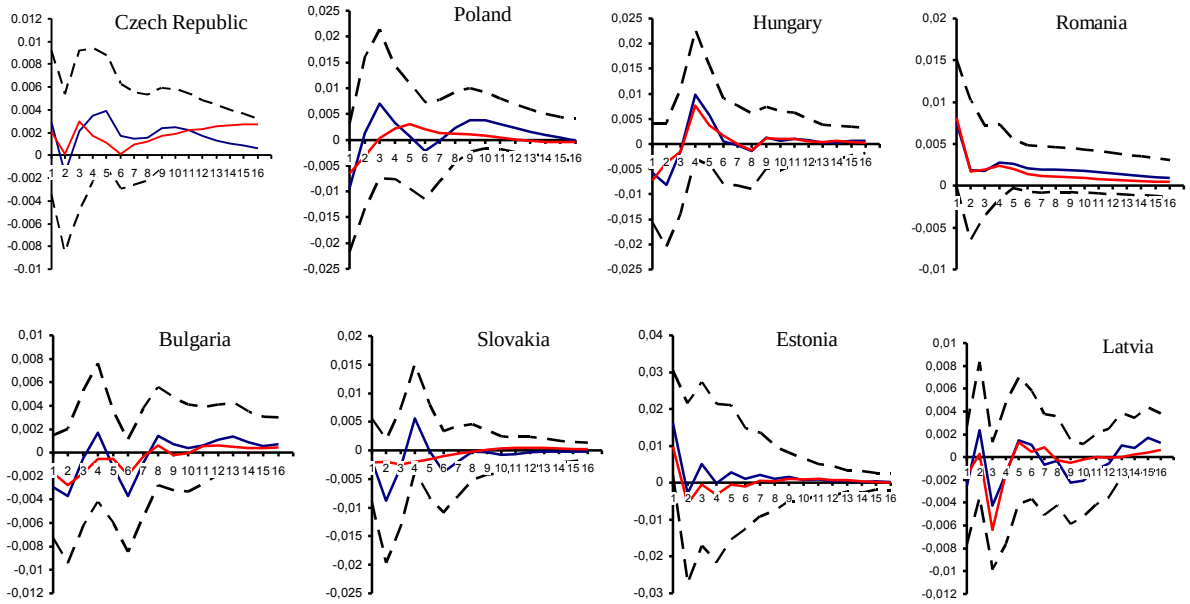

Fig. 4. Germany's budget balance effects on the real exchange rate (in first differences)

Note: the upper and lower bounds represent a two-standard deviation confidence interval.

Source: the author's calculations.

Regardless of the exchange rate regime and other country-specific features, Germany's budget balance seems not to have any significant effect on the real exchange rate (Fig. 4). Results do not differ from these ones obtained from a VAR model with three variables not including money supply. Romania is the only country where it is possible to report a statistically significant effect on impact, but it is short-lived. Contrary to the predictions of the Mundell–Fleming model, a fiscal austerity in Germany is associated with a sharp depreciation of local Romanian currency.

As expected, a fiscal austerity in Germany is associated with an increase in the money supply in Bulgaria and Slovakia, which have maintained a fixed exchange rate regime. However, the same relationship is observed for the Czech Republic, Poland and Romania, which have followed a floating exchange rate policy. It could be seen as an argument in favour of fear of floating, when the central bank tries to avoid any deviations from the perceived equilibrium trend, which are considered to be excessive ones[1]. Ultimately, a *de jure*

[1] Formally, the term fear of floating characterizes a situation where the announced intention to float a currency is not honoured in deeds as well as in words, reflecting the lack of central bank credibility, a high pass-through of exchange rates to prices and inflation targeting [Calvo and Reinhart 2002, pp. 379–408]. One of the recent

floating exchange rate regime starts to resemble a fixed exchange rate regime, when the money supply adjusts to external macroeconomic shocks, such as that of fiscal austerity in Germany. In this respect, our results are in contradiction with findings by T. Windberger, J. Crespo Cuaresma and J. Walde [2012] on the basis of weekly data for changes in the three-month interbank rate and the exchange rates vis-à-vis the euro that the Czech Republic, Hungary and Poland have had a signicant degree of monetary independence over the 2002–2011 period.

For Hungary, a decrease in the money supply on impact is reversed with 6 to 8 quarter lags, probably reflecting the sterilization policy effects. On the other hand, the link between fiscal austerity in Germany and domestic money supply is not detected for Latvia and Estonia to a lesser extent, being not consistent with the standard assumptions for a fixed exchange rate that both countries have been practicing over the last decade. One of the explanations could be an attempt of the central bank to sterilize the capital inflows in order to avoid likely inflationary developments.

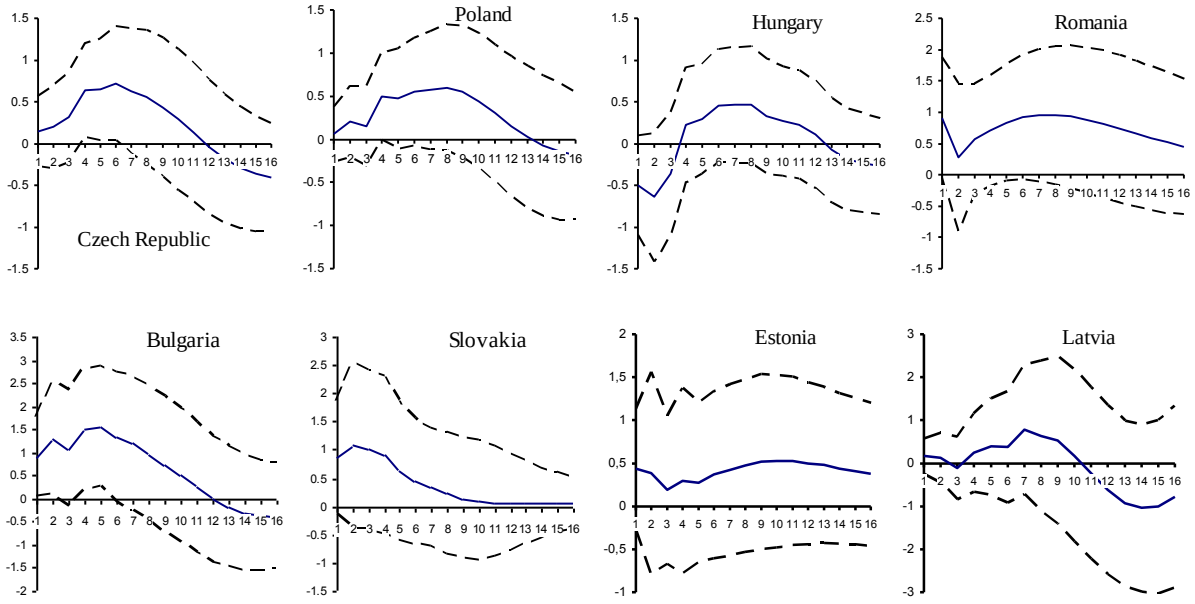

Fig. 5. Germany's budget balance effects on the money supply

Source: the author's calculations.

For all countries, the response of output to German austerity is uniformly positive in the short-run, with a gradual decline after the initial impulse. However, there are several

explanations of the fear of floating refers to the central bank overestimation of the unfavourable balance sheet effect [Bigio 2010, pp. 1923–1950].

differences in the dynamic adjustment across exchange rate regimes as well as between countries with a floating exchange rate regime. Under fixed rates, the average quarterly effect ranges between 0.22 (Estonia) and 0.55 (Slovakia) for the first year after the shock. It means that a percentage point of an improvement in the Germany's budget balance contributes to an increase in GDP above its trend by 0.22 and 0.55 percent, respectively. For Estonia, a positive spillover effect is as high as 0.68 percent of cyclically adjusted output growth, but it fades away in a speedy manner. For three other countries with a fixed exchange rate, the impact of German austerity is quite persistent, as during the second year the magnitude of the effect declines only by a third.

It is worth noting that accounting for a money supply channel does not change much the the shape of impulse function for Bulgaria and Latvia, but some differences are observed for two other countries. In Slovakia, the effect of fiscal austerity on impact becomes insignificant, with a somewhat stronger effect in the long run if compared with a VAR model without including the money supply. For Estonia, the difference in results between two VAR models is just the opposite. If not control for the money supply effects, the pro-growth effect of German fiscal austerity becomes much stronger on impact, while being characterized by a deeper correction in the long run.

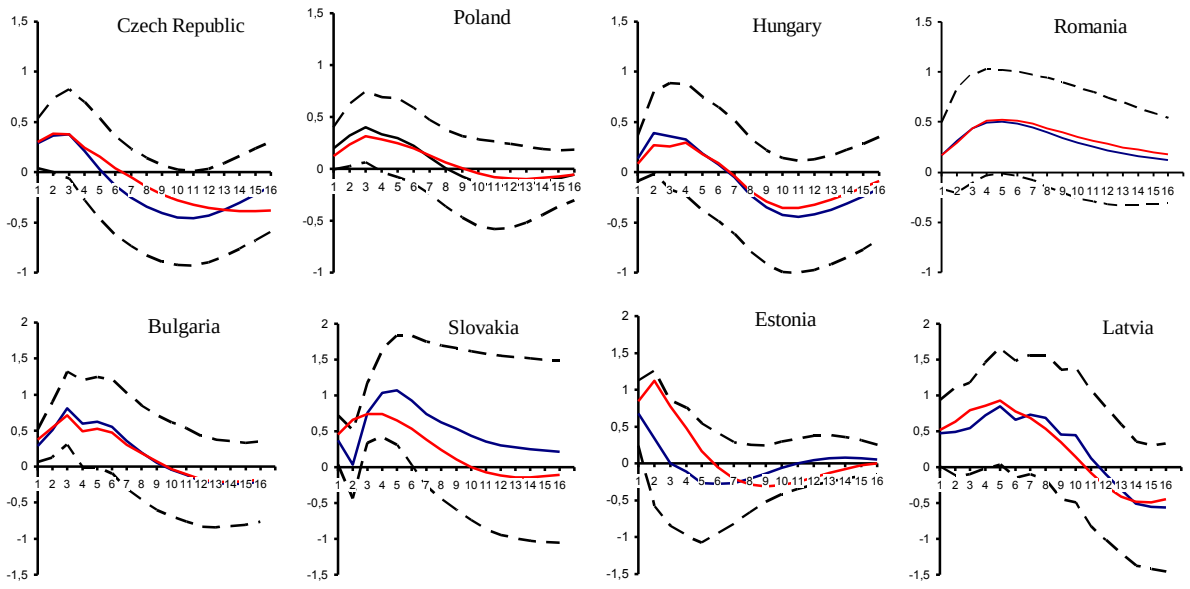

Fig. 6. Germany's budget balance effects on output

Source: the author's calculations.

Except Romania, the impact of German austerity is much weaker and lest persistent for countries with a floating exchange rate regime. The impact effect for the Czech Republic,

Hungary and Poland is obtained at 0.31 on average per quarter, which is about a half of the effect upon countries with a fixed exchange rate regime (without Estonia). Moreover, the fiscal spillover fades away completely during the second year after the austerity shock for Hungary and the Czech Republic, while being halved for Poland. For Hungary and the Czech Republic, there is evidence that a short-run expansionary effect is reversed with a lag of 8 to 12 quarters and since then the fiscal shock from Germany becomes neutral in respect to output. As for Romania, the second-year effect increases to 0.49, which has similarities to Latvia and Slovakia that follow a different exchange rate policy of a peg. In accordance with policy implications for a floating exchange rate regime, there is no much difference between impulse response functions of VAR models with and without the money supply as the endogenous variable.

Our estimates are in support of previous studies, see, for instance B. Born, B. Juessen and G.J. Müller [2012], that fiscal multipliers are larger under a peg. However, there is no support for findings by R. Beetsma, M. Giuliodori and F. Klaassen [2006, pp. 640–687] that a fiscal stimulus in Germany leads to an increase in output abroad. For CEE countries, it is just the opposite. Among different spillover channels, our results suggest that demand and competitiveness effects are outweighed by international flows effect. It is possible to argue that the policy of Germany's austerity is associated with lower uncertainty related to the sovereign debt and thus contribute to capital inflows into the CEE countries.

Table 1 reports the portion of the forecast error variance decomposition (FEVD) in the money supply, real exchange rate and output at different forecast horizons that is attributable to innovations in the German's budget balance. It is not surprising that the highest share of German budget balance in changes of money supply is observed for Bulgaria and Slovakia, with a fixed exchange rate regime. However, money supply in Estonia and Latvia seems to be insulated from external fiscal shock of German origin. Among countries with a floating exchange rate regime, German budget balance amounts to a quarter of FEVD for the money supply for the Czech Republic and Romania, with a smaller share for Hungary and Poland.

Fiscal spillovers do not play any significant role in the relative prices, as their contribution to changes in the RER is below 15 percent for 6 out 8 countries. Only for Poland and Slovakia the share of German budget balance in the FEVD of RER approaches 20 percent. If compared with the results for a VAR model without money supply, an extended VAR model brings about a higher share for German budget balance in the FEVD of RER for all countries, except Hungary and Romania.

Table 1. Forecast error variance decomposition

Responses of	Innovations in	Country	Forecast horizons			
			4	8	12	16
Money supply (*M2C*)	BDGER	Czech Republic	12	25	24	27
		Hungary	14	17	18	19
		Poland	18	14	13	13
		Romania	8	17	23	26
		Bulgaria	27	39	40	39
		Slovakia	29	32	30	30
		Estonia	6	7	11	13
		Latvia	3	6	7	8
Real exchange rate (*RER*)	BDGER	Czech Republic	4	6	9	9
		Hungary	10	11	11	11
		Poland	17	17	17	18
		Romania	7	9	10	11
		Bulgaria	7	9	9	10
		Slovakia	18	20	20	20
		Estonia	12	12	12	12
		Latvia	9	8	9	10
Income (*Y*)	BDGER	Czech Republic	14	17	30	34
		Hungary	11	12	24	28
		Poland	9	10	11	11
		Romania	9	20	23	24
		Bulgaria	32	37	35	35
		Slovakia	67	55	37	31
		Estonia	8	10	10	10
		Latvia	19	33	27	28

Source: the author's own calculations.

Slovakia is most dependent on the German fiscal shock, with its share in the FEVD of output gradually decreasing from as high as 67 percent to 31 percent. German fiscal shocks account for a significant portion of changes in output for Bulgaria and the Czech Republic (above 30 percent at different time horizons), Latvia (between 20 and 30 percent), Hungary

and Romania (between 10 and 30 percent). For Estonia and Poland, fiscal spillovers seem to be much weaker. If compared with the results of a VAR model without model supply, there is a twofold increase in the share of German budget balance in the FEVD of output for the Czech Republic, with a decrease of the same magnitude for Poland. For other countries, results are comparable.

Among other results, it is found that the RER depreciation contributes to a temporary increase of output above its trend in Estonia and Latvia (however, its contribution to changes in the business cycle does not exceed 10 percent), while the opposite short-run contractionary effect is observed in the Czech Republic (up to 30 percent) and Bulgaria (20 percent). For Hungary, Poland, Romania and Slovakia, the RER does not play any role in the business cycle.

The money supple is expansionary mostly in the countries with a peg, with its share in the FEVD of output being at 30 percent for Bulgaria, at 15 percent for Estonia and at 10 percent for Latvia. However, an excessive money supply appeared to be highly restrictionary in Slovakia, where about two thirds of changes in output are money-based. Changes in the money supply do not affect output in all countries with a floating exchange rate.

The RER is influenced by the money supply in all countries with a floating exchange rate, with the share of money in FEVD ranging from 20 percent at maximum for Poland to 30 percent for Hungary. While there is no any impact of money supply upon the RER for Bulgaria, Estonia and Latvia, it is quite different in Slovakia, where an excessive money is a significant factor behind the RER appreciation (its share in the FEVD approaches 20%). A direct link between money supply and the RER implies a strong inflationary pass-through and does not contradict a result reported above that the money supply has a distinct restrictionary effect.

Finally, an increase in output is met with a loosening of monetary policy in all countries with a floating exchange rate, with the share of business cycle in the FEVD of money supply ranging from 15-20 percent for Poland to 25 percent for the Czech Republic and above 30 percent for Hungary. On the other hand, the money supply does not react to output in Bulgaria and Slovakia. For Estonia, there is an inverse relationship between output and money supply, which could be explained by concerns about inflationary consequences of economic boom in the fashion of the Phillips curve. As for Latvia, a decrease in the money supply in the short run is reversed in the long run. For both Baltic States, the share of output in the FEVD of money supply is very high, in excess of 40 percent.

Conclusions

For eight CEE countries (Bulgaria, the Czech Republic, Hungary, Poland, Romania, Slovakia, Estonia and Latvia), it is found that Germany's policy of fiscal austerity have positive expansionary spillovers on impact. Regardless of the exchange rate regime, one of the transmission mechanisms implies an increase in the money supply following an improvement in the German budget balance. It means that countries with a *de jure* floating exchange rate regime provide a policy of targeting the exchange rate *de facto.* As a consequence, a capital inflow connected to the policy of fiscal austerity in Germany becomes a factor behind an increase in the money supply for the CEE countries thus leading to a demand-driven expansionary effect. On the other hand, the effects of German budget balance on the real exchange rate of CEE countries are rather marginal, suggesting weakness of the relative price effect in foreign trade.

In full accordance with a two-country Mundell–Fleming model, the strongest expansionary spillover from German fiscal austerity is to be expected for the Slovak Republic and Bulgaria, followed by Latvia, as both countries maintain a fixed exchange rate regime. However, the expansionary effect is found to be rather insignificant for Estonia, an another country with a peg. Expansionary effects are somewhat weaker for countries with a floating exchange rate regime, but there is not a single case with an output being contracted on impact in response to an improvement in the budget balance in Germany, as it should be the case for a 'pure' floating within the Mundell–Fleming theoretical framework. However, it is likely to expect a restrictionary effect from the German fiscal shock in Hungary and the Czech Republic, with a lag of 8 to 12 quarters. On the whole, our results contrast with several other studies, which imply that a higher budget deficit in Germany is beneficial for other European countries. Among different spillover channels, demand and competitiveness effects seem to be outweighed by international flows effect.

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Działania oszczędnościowe w Niemczech oraz ich skutki makroekonomiczne dla rozmaitych systemów kursu walutowego: doświadczenie krajów europy środkowej i wschodniej.

(Streszczenie)

Według znanego modelu Mundella–Fleminga dla dwóch obszarów gospodarczych, polityka oszczędnościowa w Niemcach powinna być jednoznacznie restrykcyjna dla innych krajów Europejskich, które prowadzą politykę kursu płynnego, w tym jak dla wypadku kursu

sztywnego istnieje możliwość otrzymania korzystnego efektu ekspansywnego. Wykorzystując dane kwartalne ośmiu krajów Europy Środkowej i Wschodniej z okresu lat 2002–2014, przy pomocy modelu VAR z czterema zmiennymi, że polityka oszczędnościowa w Niemczech prowadzi do zwiększenia podaży pieniądza i dochodu, ale nie ma wpływu na realny kurs walutowy. Nie potwierdziły się wyniki kilku innych badan, które przewidują, ze to zwiększenie deficytu budżetowego w Niemczech jest korzystne dla innych krajów Europejskich. Otrzymane rezultaty mogą oznaczać, że mechanizmy popytu i relatywnych cen są zniwelowane przez przepływy kapitału. Najmocniejszy efekt ekspansywny otrzymano dla Bułgarii, Słowacji oraz Litwy, które prowadzą politykę kursu sztywnego. Efekty ekspansywne są słabsze w przypadku krajów, które charakteryzują się większą giętkością kursu walutowego, jak Polska, Węgry i Czechy.

Słowa kluczowe: działania oszczędnościowe; Niemcy; system kursu walutowego; kraje Europy Środkowej i Wschodniej; model Mundella–Fleminga