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The Fiscal Compact and Current Account Patterns in Europe

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This paper shall give an overview of the implications to the sectoral balances stemming from the implementation of the Fiscal Compact in the Euro area in 2013. Since there is now a more or less strict limit to deficit spending—absent from cyclical factors—some other sector has to make up for the reduction of the financial deficit of Euro area governments. While applying sensible estimates on the trajectories of the sectoral balances in the Euro area, I reach the conclusion that the only logical outlet for these (potentially) reduced deficits would be the foreign sector, reflecting the inability of the private sector to run a sizeable surplus of investments over savings over the long-run. Under the scenario described in the paper, the Euro area would run a considerable current account surplus in the foreseeable future.

Keywords: fiscal policy, Fiscal Compact, current account, sectoral balances

JEL classification: E27, E61, E62, E66, F32, H62, H63

I. Introduction

The aim of the first Stability and Growth Pact (SGP) in the European Union (EU) was to curb reckless government spending and set government budgets on solid grounds. Lessons from history were (supposedly) learned. Throughout history unfunded budgets posed problems to governments in the form of inflation and/or defaults. To not repeat these mistakes, the Euro convergence criteria set limits to the ability of governments adopting the Euro to run unfunded and excessive deficits. A limit of 3% of gross domestic product (GDP) on the budget deficit in every single year, with a ceiling of 60% of GDP for the debt stock, was set to enable this fiscal prudence. But these rules were bent and broken repeatedly. With no strict sanctioning mechanism—and needing merely a qualified majority to suspend these sanctions—the rule commitment was not very strict from the beginning.

With the Fiscal Compact most EU member countries now have a more rigorous set of rules in place to eliminate the deficiencies of the original treaty. As a result, a strict limitation on deficit spending is imposed, which shall not be circumvented as

^{&#}x27;Since the beginning of the Euopean Monetary Union (EMU) over three dozen excessive deficit procedures have been initiated, but because of the EMU member states' veto no sanctioning ever took place (see Bauer and Zenker (2012) for an overview).

easily as before. Beginning in 2013, countries which ratified the treaty are allowed to run a yearly structural deficit on their government spending of 0.5% of their GDP (see European Commission (2012)). Governments who break these goals are subject to an automatic sanctioning mechanism (see ECB (2012)). This leaves little room for deficit spending, aside from countercyclical fiscal policies during economic downturns, or in the light of extraordinary events like natural disasters. The fiscal restraint shall put government spending on solid grounds, enable policies which are in compliance with the Maastricht Treaty, give more rule binding to the former SGP, and therefore enable long-run debt sustainability within the EU member countries (see Van Rompuy (2012)).

Although the improvements in the treaties are predominantly perceived positively among most commentators—since the necessity to fund sustainable government spending is seen as essential—the EU might have imposed itself with a too strict mechanism. With low budget deficits in the foreseeable future, it remains to be seen which sector will absorb the savings surplus of private households, since they desire—and are required through their budget constraint—to run financial surpluses over the long run (see Godley and Zezza (2006)).

From the system of national accounting we know that if one sector in the economy runs a deficit (surplus), at least one other sector has to run a surplus (deficit). These strict numerical identities have to be met ex post. Therefore, if governments are forbidden to run (large) deficits, someone else has to, reflecting the inability of the household sector to run deficits over prolonged periods. Absent from households there are three other possible outlets for the potentially reduced government deficits. These are either financial corporations and non-financial corporations, which are consolidated together with households forming the private sector, or other countries, representing the foreign sector.

The analysis conducted here shall shed light on the issue of who can and should run this accommodating deficit. First I want to recall the identities from national accounting to develop a clear understanding of the argumentation regarding the sectoral balances. This is followed by an analysis of the empirical picture since the introduction of the common currency in the Euro area. Afterwards, I discuss the implications which result from the ratification of the Fiscal Compact on government finances, give an assertion about possible future scenarios, and discuss their implications. Section 7 concludes.

II. The System of National Accounting

The formation of total aggregate demand—which represents the total amount of final goods and services purchased over a given time period—in an economy can be traced down to the contributions of the different sectors towards it. To outline

these relationships, which have to be met ex post, a simple three sector model with the private sector, the government sector and the foreign sector is used. These can be derived from the measurement of GDP as shown in (1) via the expenditure side:

$$Y = C + I + G + (X - M) \tag{1}$$

where aggregate demand Y (i.e. GDP) is measured as the sum of the consumption of the private sector (C), investment of the private sector (I), government spending (G), and exports (E), minus imports (M). It can also be stated from the supply side as:

$$Y = C + S + T \tag{2}$$

where S represents the savings of the private sector, and T are taxes to the government. While rearranging these two expressions we obtain the main sectoral balance equation:

$$(S-I) + (T-G) + (M-X) = 0 (3)$$

where (S-I) is the private sector balance, (T-G) is the public sector balance, and (M-X) is the foreign sector balance. We also see that the balances of these three sectors must add up to zero. Therefore, if one sector runs a surplus (deficit), at least one of the other sectors must run an according deficit (surplus).

III. Empirical Assessment

Let us now have a look at the empirical picture. Figure 1 shows the sectoral balances in the Euro area since the introduction of the common currency in 1999.² The private sector (Priv) shows the surplus of savings (S) over investments (I), while the public sector (Gov) outlines the government budget surplus. Negative values indicate a budget deficit. The balance of the third sector, the foreign sector (RoW), can be seen as identical to the current account.³ In the figure it is inverse to an intuitive guess, since it shows the balance of the rest of the world. Negative values indicate a deficit balance of the rest of the world with the Euro area (that means basically a surplus of Exports (X) over Imports (M)—i.e. a current account surplus—for the Euro area). Therefore, net lending would be negative for the foreign sector.

²The values are calculated using 4 quarter sums of the percentage of nominal GDP. Latest data is from the second quarter of 2013. The data is derived from the quarterly Euro Area Accounts (EAA) of the European Central Bank (ECB) available at http://www.ecb.europa.eu/stats/acc/html/index.en.html.

³There are slight differences between the sectoral balances as shown in the figures and the system of national accounting identities in section 2 because of differentiating methods of calculating the values. But these are rather small and do not change the statement brought forward here. With that being said, the term current account balance shall be used interchangeably with the foreign sector balance throughout the rest of the paper.

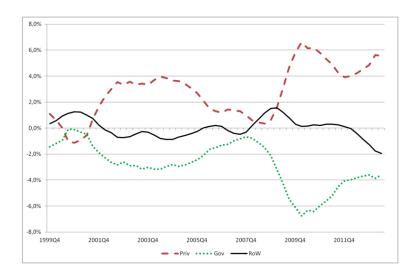


Figure 1: Sectoral Balances for the Euro area (Source: ECB)

For a deeper analysis about the underlying financial balances, the private sector can be split up into three sub-sectors: the net lending of households (*HH*), non-financial corporations (*Non-fin*) and financial corporations (*Fin*). This is reflected in figure 2:

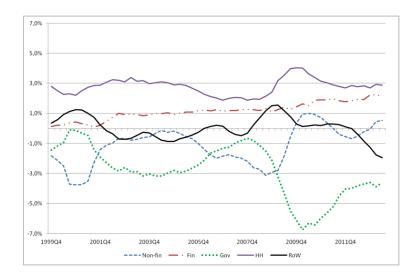


Figure 2: Sectoral Balances for the Euro area with private sub-sectors (Source: ECB)

As shown in the figure, households have a strong precaution motive and therefore run a quite large surplus balance. This is also evident for financial corporations. Non-financial corporations mostly run a small aggregate deficit. The current account fluctuated mostly between small surpluses and deficits, but since late 2011 it began to turn into surplus, mostly as a result of decreased imports in response to private sector deleveraging and reduced government budget deficits in the southern European crisis countries (see Atoyan et al. (2013)). Consequently, while deficits

and surpluses are canceled out, government budget deficits were exceeding 0.5% in almost every period, even over the whole business cycle, and also during the boom years of 2006 and 2007.⁴

IV. The Role of the Fiscal Compact

The Fiscal Compact, which was ratified in March of 2012 and came into effect in January of 2013, prohibits governments to run a structural deficit which exceeds 0.5% of GDP in any given year, while headline deficits are not allowed to go over 3%. If the debt-to-GDP ratio is significantly below 60%, a government is allowed to run a structural deficit of up to 1%. Therefore, another sector needs to reduce his surplus or go deeper into deficit. But which sector could and should this be?

Since households cannot run a deficit over an extended period of time as private credits have to be repaid from current income, an over-leveraging over a long period of time would result in credit defaults by the households. A good example is presented in the United States in the run-up to the financial crisis of 2007/2008. The household sector ran an aggregated deficit from the middle of 1999 on and became too overleveraged, which resulted in an inability to repay the acquired credits. Afterwards, the household sector balance went sharply back into positive, because of a reduced demand for credits. Therefore, it is not desirable and sustainable for the private sector to run a significantly lower surplus than the long-run, positive average (see Casadio and Paradiso (2010)).⁶

The same seems to be the case for the financial sector. The loss-absorption capacity of financial corporations is constrained by the profitability of their investments. Since financial corporations predominantly do not have other income than the return of their investments, it is not desirable for them either to run large financial deficits over an extended period. Although data between the Euro area and the United States might be difficult to compare, since the banking systems in both regions differ greatly, United States data seem to confirm this conjecture. The long-run average since the 1950s stands at roughly 0.2%, with just short periods of sectoral deficits, like in the 1980s disinflation era, where a great expansion of

⁴This shall not mean, that the government budget is a result of the outcomes in the other sectors since the "savings-investment" decisions are formed simultaneously. But a smaller fiscal deficit would mean that some other sector has to reduce their surplus or go into deficit, as these decisions are not formed independently of the other sectors, but are the outcome of the interaction between them.

⁵However, if followed strictly the Fiscal Compact would probably lead to substantially smaller deficits than 60% of GDP (given a high enough growth rate of the economy), which are seen as sustainable in the Maastricht Treat (see Whelan (2012)).

⁶A positive household balance can also be seen as desired from political players, as there is a strong political support for private pension plans, which would imply a quite high savings rate.

financial markets took place. Since 2000 the average stands at a sectoral surplus of about 0.5%, which is quite in line with European data.

Non-financial corporations have a greater ability to run a deficit in aggregate, since their deficits can be financed (or at least backed) in part by their capital stock and expected future revenues from their production. But in the long-run this capacity might not be all too big, since overly investments are mostly not sustainable. Data for the United States and the Euro area seem to support this argument. The average deficit for non-financial corporations in the Euro area is around 1% of GDP since 1999, which is quite similar to the long-run deficit in the United States since the 1950s of around 0.6%. What is evident is that short periods of above average deficits are followed by drastic swings into surplus (as seen f.e. in the Euro area from 2007 to 2009 in figure 2). Thus, deviations from the long-run average might not be sustainable. Therefore, the capacity of the non-financial corporate sector to run higher deficits over the whole business cycle might also be constrained.

This leaves the foreign sector as the only logical and perhaps possible outlet for the decreasing deficits of the government sector. But since the Euro area is quite large in terms of world GDP, a drastic shift towards current account surpluses over a long period of time might not be desirable and/or even possible. As the theory of the debt cycle states, periods of current account surpluses alternate with periods of current account deficits, since currency revaluations should adjust the surpluses/deficits accordingly⁷, and foreign debt has probably to be repaid at some future date. Although it might be possible to acclaim "eternal debt" under certain circumstances, it is probably not desirable to accumulate continuously claims abroad which are not used productively in the own country (see Cline (2005)). Additionally, as stressed in the following chapter, a turnaround in the current account towards a deficit in the Euro area might be quite hard to achieve and probably not sustainable with the current Fiscal Compact in place.

A tentative conclusion of this analysis might be that perhaps every country in the Euro area might become similar to Germany. As shown in figure 3, Germany runs a quite large current account surplus with a relatively small government deficit since the new millennium. Non-financial companies became more and more reluctant to invest after the "Neue Markt" bubble. A direct result of this was a shift of their balance into surplus. This increased surplus was absorbed through capital exports, and a corresponding current account surplus, since the government was also reluctant to run deficits especially in the second half of the 2000s.

⁷Theoretically one would expect that if a currency appreciates (depreciates) exports fall (rise) and imports rise (fall), which would automatically reverse the current account balance. But with a—as presumed here and maybe given with the Fiscal Compact—roughly unchanged current account, imports would also have to fall to hold the balance constant, which probably would diminish growth.

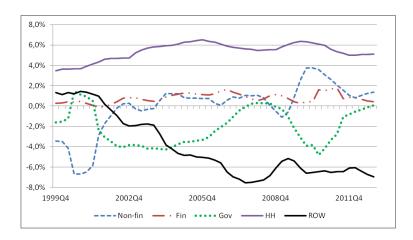


Figure 3: Sectoral Balances for Germany (Source: ECB)

With the Fiscal Compact in place, the picture in Europe seems to be shifting this way, too. One question which results from this analysis is, whether this is desirable and even possible over extended periods. The next section tries to answer this question.

V. Possible Scenarios going Forward

For this, I have calculated a possible trajectory for the Euro area. Figure 4 gives an overview. First of all, I have taken account for the reduction in the deficits according to the Fiscal Compact. As cyclical factors should be zero over the business cycle (at least in theory), I took the threshold for the structural deficit as the value for the government balance. While accounting for a gradual reduction of the deficits, the government sector in the Euro area will have an estimated deficit of 0.5% from 2016 on.8

Although this approach might underestimate headline deficits, it is just important here to show the qualitative implications from the Fiscal Compact, and not the exact numerical values. And since the political reluctance to run continued budget deficits is quite high in Europe, it is hard to see how the cumulated headline deficits could reach far more than the stated values in the foreseeable future—assumed that the economic crisis can be overcome—, even if one could say that the Fiscal Compact might also be circumvented through some loopholes, like the subjective distinction between cyclical and structural spending (see for example Rietzler et al.

⁸Since Germany and others (f.e. Austria) have country specific debt brakes which are below the threshold (f.e. 0.35% for Germany), the aggregate number regarding the structural deficit would probably not be 0.5%, but slightly lower. Additionally, not many countries are currently below the 60% threshold, which would enable a structural deficit of 1%. Even more so, the countries who have a lower deficit do not possess a large share of Euro area GDP to alter that number (f.e. Luxembourg), or already have country specific debt brakes in place (f.e. Estonia).

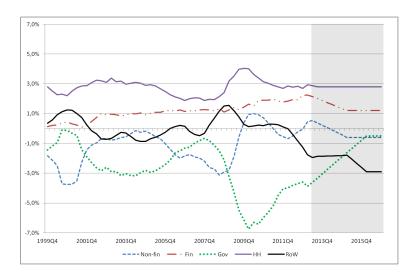


Figure 4: Estimated Trajectory for the Euro area (the shaded area indicates the estimation after the second quarter of 2013) (Source: ECB)

(2013) on the sensitivity of these distinctions, especially regarding revisions). Therefore, even if deficits would remain a bit higher than the 0.5%, the argument brought forward here does not change substantially.

Estimates for the other balances take account for long-run averages and sensible estimates of long-run sustainability. For the household sector the average for the period since 1999 is taken, which stands at a 2.8% surplus. Financial corporations are also represented by their long-run average of 1.2%. Non-financial corporations have an average deficit of 1.1%, but this seems quite high for long-run sustainability. In the United States the long-run average since the 1950s is -0.63%. Therefore, I estimate the deficit to be smaller, also reflecting the reluctance to go too much into deficit, since many corporations still have a debt overhang from the recent crisis. It is calculated with 0.6% from 2015 on forward (which might still be a fairly high deficit). This leaves the private sector with a total financial surplus of 3.4% of GDP.

Again, since the balances must add up to zero, this leaves us with a growing current account surplus for the Euro area, which reaches almost 3% in 2016. To put a numerical estimate on it, the current account surplus would reach around 300 Billion € for 2016 in the Euro area alone.¹⁰ The European Commission estimates a current account surplus of 377 Billion US\$ for 2016 in the Euro area, which would be 2.64% of GDP, and not far from my projected trajectory. This would be around 30% of total expected current account deficits of the world. This number can be seen as rather high, and one has to ask which countries are willing and able to

⁹It might be that the long-run average could be lower than the stated value here, but not substantially (see section 4).

¹⁰I used the estimate for the GDP from the World Economic Outlook Database of the International Monetary Fund (IMF (2013)).

absorb such a huge swing in the current account of the Euro area, and more so over a longer time horizon. If one adds the other European countries that have signed this treaty or are possibly going to sign it—especially if the UK ratifies the Compact—this absolute number is going to be even higher.¹¹

Additionally, I have generated 4 other potential scenarios (see table 1). The second, third and fourth take a smaller current account surplus of 1% as given. While holding the government deficit in the second and third at 0.5%, we see that the private sector would have to reduce their surplus balance tremendously, either through greatly reduced savings or remarkably higher investments. With unchanged balances for the corporate sectors, the household sector would run a surplus of just 0.9% in scenario 2. This low value was not even reached during the boom years of 2006 and 2007. Households would therefore need to save substantially less in average than before. Such a huge decrease in the savings rate might probably not be achievable, since many of the European households are still highly leveraged. Scenario 3 therefore allocates the reducing balances mostly towards the corporate sectors, and even there, the balances in the private sectors would be extremely low compared to historical values.

	HH	Non-fin	Fin	Gov	RoW	∑Priv
Baseline Scenario	2.8	-0.6	I.2	-0.5	-2.9	3.4
Scenario 2	0.9	-0.6	I.2	-0.5	- I	1.5
Scenario 3	2	- I	0.5	-0.5	- I	1.5
Scenario 4	1.4	-0.6	I.2	- I	- I	2
Scenario 5	2.8	-0.6	I.2	-2	-1.4	3.4

Table 1: Different Scenarios for the Sectoral Balances

In scenario 4 and 5 the requirement of a budget deficit limit of 0.5% is relaxed. While holding the current account at a more sustainable level of 1% in scenario 4, the private sector balance would again be left with a really small surplus of 2%—compared to an average of 2.8% since the introduction of the Euro—which is not inconceivable, but was never sustained over longer periods in the EMU. Scenario 5 assumes a government budget deficit of 2%, with the values of the private sector as in the baseline scenario. This would lead to a current account surplus of 1.4%, which might rather be seen as to be more feasible in the long-run.

As can be seen from the different scenarios, with the Fiscal Compact in place the Euro area would run a sizeable current account surplus, or the private sectors would have to reduce their balances to quite low and potentially unsustainable

¹¹The UK had a current account deficit of almost 4% of GDP in 2012. The IMF expects it to shrink to 0.5% by 2018 (IMF (2013)). This swing alone would correspond in a reduction of more than 75 Billion US\$, notwithstanding the probable additional swing if budget deficits would be cut further.

levels. Would these levels be on a more sustainable path and in line with their long-run averages (as in scenario 5), the government sector would have to run higher budget deficits, and therefore break the limits set by the Fiscal Compact—given the premise that cyclical deficits are neglected, because they should cancel each other out over the business cycle.

Hein and Truger (2013) use a similar approach as presented here. They analyse the implications of the German debt brake under different scenarios, while calculating possible trajectories of private investment and consumption patterns given low government deficits and a desirable small current account balance. All of their scenarios point towards "unrealistic shifts in the functional income distribution between wages and profits, and/or in investment and savings behaviour" (Hein and Truger (2013), p. 18f). Therefore, as also laid out here before, the authors see no feasibility of a reduction of current account surpluses given the restrictions of the Fiscal Compact.

VI. Implications

Although this paper does not call into question the necessity to run long-term sustainable government budgets, it shall raise attention about the consequences towards the sectoral balances from the implementation of the Fiscal Compact. In the analysis here, the only possible outlet for potentially reduced government deficits is seen in the rest of the world. The Euro area (and possibly the whole EU) would become a massive net capital exporter for the foreseeable future. And this circumstance might not change, since the Fiscal Compact is set to be implemented permanently with the elevation to constitutional status in some member countries. But unlike the private sector, governments can always lean back on future tax obligations as a safety blanket of revenues, and are therefore budgetary not as restricted as private sector agents. Thus, it is hard to see why the EU imposes itself with such draconian and strict limitations for active discretionary fiscal policy.

As was shown in figure 4, the assumed trajectory of the sectoral balances points towards a rising current account surplus in the Euro area. But since not every country can be a net exporter, there must be countries that run current account deficits. If the absorption capacity to finance capital exports of the Euro area, respectively the EU, for an extended period of time is large enough for the rest of the world can be called into question.

It might be possible for the United States—with their special role with the Dollar as the global reserve currency—to permanently attract capital and therefore run huge prolonged current account deficits, but not many other countries come into mind that have this capacity. With China opening their capital account one possible outlet might represent itself. But as long as legal certainty remains quite low, and

therefore the security of investments might not be given, it is hard to see how China can become a major net capital attractor in the near future. Other countries like commodity exporting and some emerging countries can also be expected to remain net capital exporters in the foreseeable future. This might leave a handful of advanced economies like Australia, Canada and Japan as possible destinations for Europe's capital, but investments in these countries might be scarce due to ageing societies, and/or, especially in the case of Australia and Canada, are already running quite high current account deficits in percentage of their GDP. Thus, a further increase in the deficit might not be sustainable over the long-run.

VII. Concluding Remarks

To sum up, Europe has to ask itself if it wants to continiously accumulate large foreign claims, which might be prone to a decline in value. It might be reasonable for an ageing society like the German to run a small current account surplus as investment opportunities might be relatively scarce and not very profitable at home, but too large surpluses are mostly a reflection of too little investment in the own country (see f.e. Dullien and Schieritz (2011)). This picture might be sustained on an European level with the implementation of the possibly irreversible Fiscal Compact, with negative impacts towards growth outlooks stemming from underinvestment.

For deficit countries it might not be a problem to run current account deficits for a short period of time. But exchange rate risks, perils of an overleveraging, and risks of sudden stops of inflowing capital into these countries might reduce the anticipated gains from capital exports of the surplus countries, if these are run over an extended period of time.¹³ Albeit it seems to be noble to run a balanced government budget, it might be unreasonable for the European Union member countries to run too small fiscal deficits at the cost of the trading partners, and ultimately on itself.

¹²Additionally, it probably can be questioned if some emerging market countries, who run large current account deficits (most notably Brazil, India and Turkey), can attract as much capital as in the last couple of years going forward. As seen in the spring and summer of 2013, seemingly unattached events can rapidly lead to sudden stops, and corresponding capital flights from these countries.

¹³Bach et al. (2013)) stress that capital losses of exported capital (compared to an estimated usual return in Germany) since 1999 add up to about 400 Billion Euro for Germany alone (see also Ma and McCauley (2013) on this issue).

References

- Atoyan, Ruben, Manning, Jonathan, & Rahman, Jesmin. 2013. Rebalancing: Evidence from Current Account Adjustment in Europe. *IMF Working Paper*, WP/13/74.
- Bach, Stefan, Baldi, Guido, Bernoth, Kerstin, Blazejczak, Jürgen, Bremer, Björn, Diekmann, Jochen, Edler, Dietmar, Farkas, Beatrice, Fichtner, Ferdinand, Fratzscher, Marcel, Gornig, Martin, Kemfert, Claudia, Kunert, Uwe, Link, Heike, Neuhoff, Karsten, Wolf-Peter-Schill, & Spieß, C. Katharina. 2013. Deutschland muss mehr in seine Zukunft investieren. *DIW Wochenbericht*, **Nr.** 26.
- Bauer, Matthias, & Zenker, Martin. 2012. Minor Nuisance Around Foreign Exchange Markets: Lessons from the Stability and Growth Pact Debate. Working Papers on Global Financial Markets, No. 32.
- Casadio, Paolo, & Paradiso, Antonio. 2010. Private sector balance, financial markets, and U.S. cycle: A SVAR analysis. MPRA Paper, No. 28105.
- Cline, William R. 2005. The United States as a Debtor Nation: Risks and Policy Reform. Institute for International Economics.
- Dullien, Sebastian, & Schieritz, Mark. 2011. Die deutsche Investitionsschwäche: Die Mär von den Standortproblemen. Wirtschaftsdienst, Zeitschrift für Wirtschaftspolitik, 91(7), 458–464.
- ECB. 2012. Monthly Bulletin. (available at http://www.ecb.int/pub/pdf/mobu/mb201205en.pdf), May.
- European Commission. 2012. Treaty on Stability, Coordination and Governance (TSCG) in the Economic and Monetary Union.
- Godley, Wynne, & Zezza, Gennaro. 2006. Debt and Lending: A Cri de Coeur. Levy Economics Insititue Policy Note, No. 4.
- Hein, Eckhard, & Truger, Achim. 2013. Fiscal Policy and Rebalancing in the Euro Area: A Critique of the German Debt Brake from a Post-Keynesian Perspective. Levy Economics Institue Working Paper, No. 776.
- IMF. 2013. World Economic Outlook. October.
- Ma, Guonan, & McCauley, Robert. 2013. Global and euro imbalances: China and Germany. *BIS Working Papers*, **No.** 424.
- Rietzler, Katja, Teichmann, Dieter, & Truger, Achim. 2013. IMK Steuerschätzung 2013-2017: Steurpolitik am Scheideweg. *IMK Report*, **No. 81, April**.

Van Rompuy, Herman. 2012. Speech during the signing ceremony of the Treaty on Stability, Coordination and Governance of the Economic and Monetary Union, March 2nd, Brussels. (available at http://www.european-council.europa.eu/home-page/highlights/treaty-on-stability,-coordination-and-governance-signed?lang=en).

Whelan, Karl. 2012. Golden rule or golden straightjacket? VoxEU.org, February 25.

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