Austerity Versus Growth

Stefan Collignon

(I) Why We Can't Go On Like This

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Austerity is the curse of our time. Governments cut spending, raise taxes, reduce employment and lower wages in the hope of better times. The consequences are dire. 26 million people are unemployed in the European Union. Youth unemployment is 6 million, in Spain and Greece more than 50 percent. [1] A whole generation is desperately seeking work. In 2010, 115 million people in the EU27, or 23.4% of the population, were at risk of poverty or social exclusion and the situation is getting worse.[2] This cannot go on. Even European Commission President José Manuel Barroso has now warned that "public spending cuts alone will not solve the European financial crisis". And the German chancellor Angela Merkel has understood that power comes from controlling language: "Everyone else is using this term austerity. That makes it sound like something truly evil. I call it balancing the budget." [3] Leaving this Orwellian newspeak aside, I prefer to talk about growth: growth creates jobs; growth increases income; growth, in other words, is (nearly) all you need.

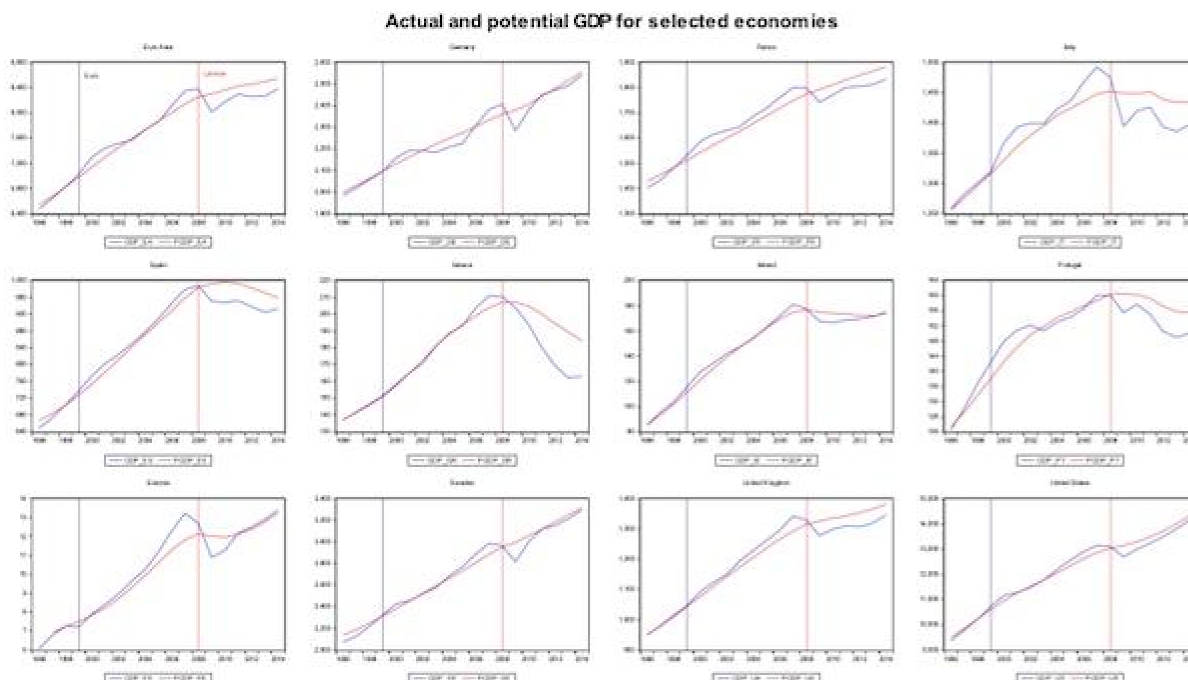
But how can Europe return to growth? Unfortunately, there is a lot of confusion about the meaning and drivers of economic growth. This makes the proper design of policies difficult. When economists refer to this concept, they usually think of steadily expanding economic productive capacities, due to the increasing use of labour, capital and technological progress. These supply-side factors determine the amount of output an economy *can* produce. Long run economic growth depends, therefore, on so-called "structural" factors, which determine whether resources are allocated efficiently, whether the potential capacities are fully used, and whether the efficiency of the economic system improves. When distortive regulations prevent firms from combining labour and capital optimally, economic growth will suffer. When women cannot seek employment, because there are no facilities to take care of their children, or when governments cut spending for schools and higher education, growth is not as high as it could be and total factor productivity is hampered for decades. When research and development remain underfunded, the essential sources of long run growth dry out.

In Europe, there are clearly many deficiencies in the productive capacities, and not only in the south. Even the much admired model of Germany's market economy (it hardly deserves the adjective "social" any longer) has only grown its economic potential on average by 1.1 percent per year since 1999, compared to 1.6 percent in the UK and the United States, or 3 percent in Slovakia and Poland. Even Greece has done better with 1.4 percent, despite the tragedy of the last 5 years. Only Italy (0.6%) and Portugal (0.8%) have performed worse than Germany. Thus, there can be no doubt: Europe needs structural reforms to improve its growth potential. It needs investment in people, infrastructure and capacities. And it needs smart growth, which minimizes the use of scarce and non-renewable resources. But this is not what conservative politicians mean when they talk about "structural reforms" that make labour markets more '"flexible" and abolish regulation. They think of how to make more profit.

However, when people on Europe's increasingly more vociferous left are demanding governments to stimulate economic growth, they also have other things in mind than improving the long run efficiency of Europe's economic potential. They focus on short-term increases in GDP at a time when incomes are falling. They want more effective demand.

They have a point. For there is a simple measure that indicates when demand is insufficient to absorb the potential supply of an economy and it sends a clear message. The measure is the output gap, i.e. the difference between actual GDP and potential output as calculated from a production function that assumes all resources to be fully employed. When the output gap is positive, demand exceeds supply and there are inflationary pressures. In that case, some austerity may actually be a good thing, for it avoids a deterioration of price competitiveness relative to trading partners. But when the output gap is negative, as it is now, economic capacities are larger than what people are willing or able to buy. Because markets do not absorb the potential output, investment and growth will slow down. During

the first decade of European monetary union, more austerity would have been the right policy in southern euro member states like Italy, France, and Spain, but also in the UK, Sweden and the United States. By contrast, Germany would have benefitted from higher demand, because its output gap was negative. However, all that changed in 2008 after the Lehman collapse. Figure 1 shows the dramatic drop in actual GDP subsequent to the global financial crisis. Output gaps turned deeply negative everywhere. Only Germany, Sweden, Estonia and very slowly also the United Stated have by now closed the gap. In all other European countries actual output has remained far below the potential.



In 2009 all G20 governments therefore agreed that stimulating effective demand by public borrowing was necessary. The stimulus worked. A sustained depression was avoided. But as soon as the world started to pull out of the global financial crisis, Europe was shaken a second time by the Greek debt crisis, which turned into a full-fledged Euro crisis. While the Obama administration started fiscal consolidation only very gradually, European policy makers responded to the Euro crisis with radical austerity. It did not work. The early exit from active demand stimulating policies has pushed Europe into a double dip recession.

However, there is more to austerity than insufficient demand. The economic literature usually interprets output gaps as a cyclical variation around a long run growth trend, which is determined by labour and capital input and technological improvement. These theories assume that the economy's supply side is exogenous, and aggregate demand has to adjust. For new classical economists this adjustment happens automatically if markets are allowed to operate flexibly; for Keynesians some demand management by means of monetary and fiscal policy is required to minimise the output gap. However, the crisis teaches us that both these approaches have missed the fact that the supply side may respond endogenously to demand conditions.

Demand management is not just a matter of avoiding cyclical variations around the long run trend of a steadily growing economy. It is also about generating an environment with incentives for productive investment and entrepreneurial initiative, so that demand management contributes to the long-run development of the supply side. A negative output gap (i.e. a lack in demand relative to potential output capacities) will affect the rate of investment and the development and adaptation of technological innovation as well. By contrast, a positive output gap ignites inflationary pressures, and they will be met by restrictive monetary policies which will also reduce investment and growth. Thus, the best condition for economic growth is that demand and supply are in balance. This is what economic policy should aim for.

Hence, aggregate demand will affect future potential output through two channels: a negative output gap indicates insufficient market opportunities leading to lower investment and less output in the future, especially when the demand gap persists for a long time. On the other hand, a positive output gap means demand exceeds supply, so that prices go up. This may generate some investment in the short run, but if inflation is repressed (as it should), the effect will be short-lived.

To test whether this hypothesis of a long-run reduction in the potential growth rate due to insufficient demand holds up, I have estimated a panel regression for Euro Area member states, where the potential growth rate, and the investment rate are dependent on the cumulative positive and negative output gaps. I have also added the GDP deflator and separated periods with positive and negative cumulated gaps.[4]

Table 1: Effect of cumulative output gap on potential GDP and investments

	Dependent variable: log(PotGDP)						Dependent variable: log(Inv)		
	1981-2012	1990-2012	1999-2012	1981-2012	1990-2012	1999-2012	1981-2012	1990-2012	1999-2012
CumGap +	0.024 [0.072]	0.034 [0.049]	0.022 [0.018]	0.069 [0.065]	-0.062 [0.073]	-0.055* [0.032]	0.027** [0.012]	0.033** [0.012]	0.007 [0.009]
CumGap -	-0.206** [0.073]	-0.201*** [0.059]	-0.121** [0.056]	-0.023 [0.091]	0.011 [0.104]	-0.339* [0.182]	-0.057*** [0.015]	-0.072*** [0.021]	-0.106** [0.043]
GDP defl	19.63** [9.035]	-0.044 [7.569]	12.819 [9.550]	14.177** [7.182]	10.562 [10.550]	3.339 [22.713]	1.979** [0.683]	1.039 [0.901]	0.59 [2.859]
log(Inv)				3.104** [1.293]	2.848** [1.110]	1.907* [1.095]			
N	383	264	168	375	257	163	375	257	163

Standard errors in brackets. *significant at 10% level; **significant at 5% level; ***significant at 1% level. Cum Gap+ =Cumulative positive gap in % of GDP; Cum Gap- =cumulative negative gap in % of GDP; GDP defl= GDP deflator;log(Inv)=log of net investment (2005 prices). Estimator: Common Correlated Coefficients Mean Group Estimator (CCEMG). Data are from AMECO.

The results in Table 1 support the hypothesis. Prolonged negative output gaps in the Euro Area will reduce potential GDP, because the lack of demand will disincentivize investment.[5] This phenomenon is less clear for the 1990-2012 period, which is dominated by many structural reforms due to the creation of the European internal market. However, for the monetary union era 1999-2012, the model is well supported by the data: a negative cumulated output gap lowers the potential growth rate, while structural reforms increase capital accumulation and raise the growth potential. Investment is the channel through which this effect is generated. Inflation does not matter, presumably because the ECB has been successful in maintaining price stability and this may also be the reason, why positive output gaps do not generate higher growth: because excess demand generates inflation, it will be countered by higher interest rates, which reduce investment and potential growth.

I conclude that there is significant evidence for the long lasting negative effects of austerity for European economic growth. The lovely story told by conservative policy makers that painful reforms today will guarantee a bright future tomorrow is wrong. When inflation prevails, austerity is good. But when demand is lacking, austerity is bad. It is bad in the present and it is bad for the future.

The conclusion is clear: European economic policies must change. Austerity must be stopped, but injection of demand in itself is not enough for better living standards in the future. Stimulating demand is, however, a necessary condition for future growth. How we can stimulate demand in the Euro Area will be explained in my next column.

[1]http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Unemployment_statistics#Recent_developments_in_unemployment_at_a_European_and_Member_State_level

[2] http://europa.eu/rapid/press-release_STAT-12-21_en.htm

[3]http://www.telegraph.co.uk/finance/financialcrisis/10013814/Angela-Merkel-Austerity-makes-it-sound-evil-I-call-it-balancing-the-budget.html

[4] I thank Piero Esposito for research assistance.

[5] The negative gap is expressed in absolute terms so that a negative sign signals that an increasing negative gap will reduce potential GDP.

(II) The Sources Of Europe's Demand Gap

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In my previous column, I have argued that prolonged negative output gaps in the Euro Area will reduce potential GDP, long-term growth and employment, because the lack of demand will disincentivize investment. What Europe needs, especially the south, is closing the output gap not by reducing supply but by increasing demand. The question is then, which factors are affecting aggregate demand in the Euro Area?

According to standard national income accounting, aggregate demand consists of investment, private and public consumption and the trade balance. All these components respond to different kinds of incentives. Investment can be broken down into purchases of plant and equipment (Gross Fixed Capital Formation) and into changes of inventory by firms. If firms are unable to sell all their output, their inventories go up, which is technically a form of investment, although not a driver of potential growth; if demand is booming, inventories might at first go down and only gradually be replenished by increased production.

It is useful to distinguish private from public investment. Private investment is more sensitive to interest rates and consumer demand, because the profitability of an investment project depends on the discounted value of future cash flows. When lending interest rates are low, the value of investment is high; however, when the expectation of future returns to capital is low because austerity cuts demand, then even low interest rates cannot generate attractive investment projects. This is why many studies found that investment will follow economic growth rather than the opposite.

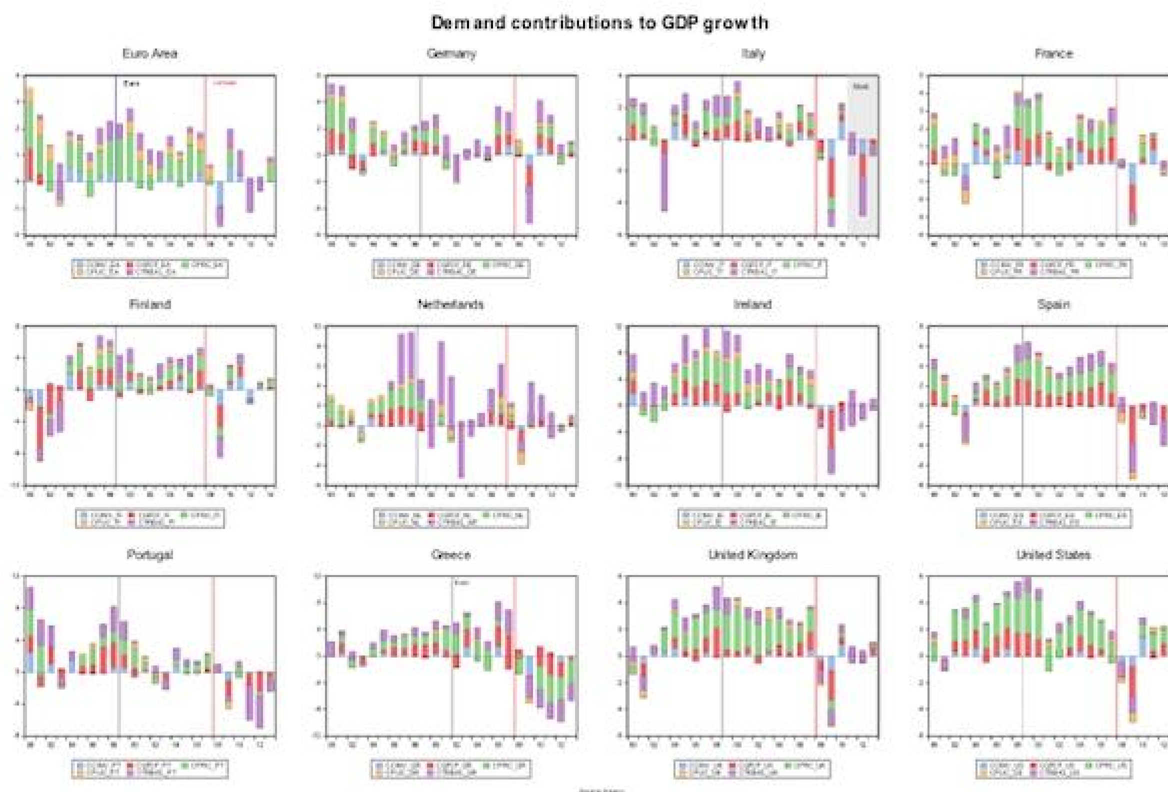
The purchase of new residential housing by households is another form of private investment. It, too, responds to changes in interest rates, but mainly through the cost of mortgage payments as a share in disposable income. However, when wage and social welfare cuts or tax raises reduce disposable income, households may no longer be willing and able to borrow for buying or improving their homes. In fact, debt defaults will increase, with nasty consequences for banks and their lending practices. Hence, as long as they are not reducing future cash flows for companies, higher wages will stimulate demand, private investment and job creation.

On the other hand, public investment depends largely on policy decisions by public institutions. In periods of large demand gaps, it can therefore serve as an important substitute for private investment. Yet, over the last three decades, public investment as a share of GDP has steadily fallen in Europe, while the share of public consumption has increased. This has made it quantitatively more difficult to stimulate demand, with negative consequences for long-run growth, because public consumption does not have the same demand effect as investment. When public consumption is properly financed by taxes, public and private consumption complement each other and the demand effect is limited. This justifies balancing budgets over the cycle, although in a recession deficits can close the demand gap. By contrast, private consumption, like private investment, depends on wages, taxes, social welfare, and on access to household credit. Hence, austerity reduces both public and private consumption with highly detrimental effects for demand and actual growth.

Finally, the trade balance responds to foreign and domestic demand, which reflects growth differentials and relative prices including exchange rates. Depreciating the (real) exchange rate shifts relative prices in favour of one country at the expense of another. Such mercantilist policies, which are the hard core of German ordo-liberalism, cannot be universally applied. In Europe they imply either Germany gives up some of its competitive advantages, or the south is condemned to remain the poor periphery.

All taken together, these different components of spending add up to aggregate demand, or actual GDP. Figure 1 shows the contribution of these demand components to the GDP growth rates. It is remarkable that since the early 1990s, investment has been absent as a driver of growth in the Euro Area as a whole. Private and public consumption were the most important components, followed by net exports into the rest of the world. But since the financial crisis, domestic consumption has faltered and Euro Area growth is nearly exclusively dependent on trade. Interestingly, this is different in the United States, where the Obama administration has avoided excessive austerity and investment now contributes to raising growth again (it did not do so under Bush).

Figure 1:



Among the individual member states of the Euro Area, performances are varied. In the Netherlands and Germany, trade surpluses have overshadowed domestic demand; most of these trade gains were due to net exports within the European Union.[1] However, in Germany there was hardly any contribution from private and public consumption; investment was also weak, although some investment has returned after the Schröder years. In Italy all components were weak. France, Portugal, Greece and Ireland went through consumer booms after they joined monetary union; the UK did the same on the outside. In Italy, public consumption was important in the first years of EMU, which means that the gains from monetary union where wasted instead of being used for the consolidation of the excessively high public debt levels. High growth in Spain was dominated by investment and private consumption fuelled by the property boom.

After the financial crisis, private consumption, investment and exports have turned negative everywhere in the Euro Area and variations in inventory became the shock-absorbing buffer. Nevertheless, Germany has pulled out of the recession already in 2010 due to a balanced mix of

exports, investment and private consumption complemented by public spending. France tried the same, but due to deteriorating competitiveness it was not supported by exports. In most other countries consumption remained flat and growth was depressed by foreign trade and negative investment. Greece is characterized by a collapse of private consumption, investment and exports and an absence of public consumption. In Ireland, net exports have compensated the negative growth of domestic demand, while in Portugal exports and investment are pushing the economy down. Thus, the lack of domestic demand has worsened in and after 2011 when austerity became the dominant economic policy in Europe.

In order to overcome Europe's unemployment crisis, active demand management is of utmost necessity. The policy objective must focus on bringing aggregate demand for goods and services back into balance with the capacity of supply. Once this is done, the economic growth potential should be improved. How can this be achieved? Conventional policies suggest stimulating investment. In normal times, this may be done by lowering interest rates and relaxing monetary policy, but in the present situation with interest rates close to the zero lower bound, monetary policy has become ineffective. However, if investment follows expectations about demand, one has to focus more directly on how to increase spending. This is why demand management is at the present time the only policy option likely to yield success.

John Maynard Keynes has famously argued that in the situation of a liquidity trap, which is prevailing again today, using debt-financed fiscal policy can be an instrument to compensate the collapsing private demand. Japan has demonstrated that when interest rates are low, high public debt levels are not necessarily a heavy burden for tax payers. However, while traditional Japanese fiscal policy may have prevented the collapse of the economy, it did not bring back economic growth. The new Prime Minister Abe has now embarked on a new strategy by tying together the "three arrows" of expansive monetary and fiscal policies combined with structural reforms. It seems to make a difference. While Abenomics in Japan is an exciting experiment with uncertain outcome, it cannot be copied one-by-one by the Euro Area. Europe does not have the institutional setup that would allow such daring policy shift. However, even marginal policy changes could improve economic growth and employment, if they were properly calibrated.

Europe needs a new policy mix that combines, like in Japan, the already very accommodating monetary policy with new fiscal policy orientations and structural reforms. However, in Europe the range of reforms is broader. The structural reforms prescribed by neoliberals have not worked; they have made things worse. How a new European policy mix could look like, I will discuss in my upcoming columns.

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[1] Collignon, S., (2013) "Macroeconomic imbalances and competitiveness in the euro area", Trasfer: Eurpean Review of Labour and Research, 19(1), 63-87.

(III) Fiscal Policy And Debt Sustainability
***Social Europe Journal*, 30/05/2013**

In my previous two columns I have argued that lack of aggregate demand is reducing potential growth and long-term employment, and that policies of cutting public expenditure and reducing disposable income for households will re-enforce the negative dynamics. Aggregate demand can be stimulated by private investment, consumption and debt-financed public spending. However, there are trade-offs. Higher public spending is needed when private demand is lacking. But even if monetary policy is very loose, as today in the Euro Area, large budget deficits and low-interest rates will not stimulate investment when government debt is considered not to be safe. Lending rates will then rise, despite a single unique money rate set by the ECB. This is a major cause for the output decline in the southern crisis states. Hence, fiscal policy could be a factor of growth, but it is

constrained by debt sustainability. Europe's problem is that it has reduced the stimulus prematurely and now it has few margins for action.

Europe's premature fiscal exit

In the immediate aftermath of the Global Financial Crisis, all G20 governments agreed to stimulate effective demand by public borrowing. It worked. A sustained depression was avoided and economic growth returned, although it did so at lower rates than before. Yet, as soon as the world pulled out of the global financial crisis, Europe was shaken by the Greek debt crisis, which revealed the failure of Europe's fiscal governance. Bad institutions, bad politics and bad communication turned a bad local event into a deep systemic crisis for everyone. The succession of two major crises pushed Europe into repeated recessions and stagnation with dramatic consequences for employment.

The problems were made worse by the premature exit from fiscal stimulus. America and Japan had kept their loose fiscal stance steady while output gaps were still negative in order to bring demand up to potential; but Europe tightened its fiscal regime as soon as economic growth had returned – except in Germany, where this was delayed by one year with positive growth effects. Hence, budget consolidation was imposed well before the output gaps had closed. Not surprisingly, Europe fell into a second recession. Again, this was bad politics, for Europe's fiscal rules would have allowed postponing the consolidation. The Stability and Growth Pact stipulates that the Excessive Deficit Procedure is suspended in case of a severe economic downturn "*if the excess over the reference value results from a negative annual GDP volume growth rate or from an accumulated loss of output during a protracted period of very low annual GDP volume growth relative to its potential*".[1] When GDP growth bounced back into positive territory, the suspension was revoked despite persistent negative output gaps. As a consequence, 12 Euro Area member states were declared to have "*excessive deficits*" already by the end of 2009 and early fiscal austerity was imposed. Yet, this was not unavoidable; the Pact was applied in an overly restrictive way for political reasons by Europe's conservative ruling alliance.

The diverging policy orientations in the USA and Europe have generated important differences in their economic performances. They teach a simple lesson: a loose combined fiscal and monetary policy stance is useful for reducing a demand gap and should be maintained until the output gap is closed; thereafter structural deficits must be consolidated. This should become the rule for a new, reformulated fiscal policy pact in Europe.

The debt sustainability constraint

When demand is insufficient to absorb the output capacity, austerity is self-defeating, because the lack of demand for products pushes firms to reduce investment and employment, and lower growth will reduce government revenue. Yet, if public debt is unsustainable, this will further destabilise financial markets and hamper the return to economic growth. There is, therefore, a delicate balance between excessive consolidation and excessive stimulus, while respecting the debt consolidation constraint.

Rigid austerity imposes rapid and excessive increases in primary budget balances in order to close deficits. But if such policies reduce economic growth, they become counterproductive. What matters for financial markets is the sustainability of debt, which means that over time the debt ratio will converge to stable long run equilibrium and does not explode. It can be shown that the fiscal rules under Europe's Excessive Deficit Procedure yield a simple condition for keeping the debt ratio from becoming explosive: ignoring the 60% debt target and just focusing on the deficit target, the gap between an excessive deficit and the 3%-ceiling should be *adjusted by not less than the growth-adjusted interest rate*. In this case, the debt ratio will converge to a long run equilibrium that is determined by the ratio of the 3% deficit target divided by the nominal growth rate of GDP. If real growth is 2% and inflation 2%, the long term equilibrium is 75%. But if the adjustment rule is violated, the debt ratio will increase without bounds.[2] The intuition is clear: when the interest rate is larger than the growth rate, the primary budget surplus must be increased in order to service the debt. On the other hand, the lower the interest rates and the larger the growth rates, the less fiscal consolidation is needed, because economic growth generates the income necessary to repay debt.

In principle, this adjustment rule is not very harsh, because in the long run growth and interest rates should converge. However, in the present crisis many economies are hampered by low or negative growth. Table 1 presents the consolidation efforts required to ensure dynamic sustainability in accordance with European fiscal rules. In order to compare European policies with the other major economies in the world, we apply these rules also to the United States and Japan. The first two columns show the actual deficit and the excess over the 3%. No consolidation is needed, when the public deficit is below 3 percent. Consolidation requires an increase in the primary structural balance. The difference between the interest rate and the nominal growth rate determines the minimum consolidation response required for debt convergence.[3] The calculations are based on implicit interest rates, i.e. the ratio of actual interest payments to gross debt, as this is a more realistic measure than 10-year government bonds.[4]

In five northern countries of the Euro Area and in most of the new member states in Central and Eastern Europe (except Lithuania, Poland and Czech Republic), there is no need for consolidation because deficits are below 3%. In principle, a fiscal stimulus would be possible here. In four states consolidation efforts have stabilised public debt. Under Monti, Italy has tightened its fiscal stance more than the minimum requirement. Hence, its public debt has become sustainable, but the margins for fiscal stimulus are still extremely narrow. The situation is similar in Slovakia, and in Lithuania and Denmark outside the Euro Area. In the other crisis countries, the situation is worse. 12 EU member states with excessive deficits are not meeting the sustainability condition. In Belgium and France, the required additional consolidation effort is less than 2% of GDP, and in the Netherlands and Ireland less than 3%. With an inflation rate of 2% this could easily be achieved by a return to historic growth rates. The situation is, however, much harder in Greece, Spain, Cyprus, and Portugal. Slovenia is also in trouble. In the United Kingdom and the Czech Republic, public debt is not sustainable either. In these last four countries, the problem is the loose fiscal policy stance, which would require fiscal tightening. But in most southern crisis countries, the dominant problem is the recession, because implicit interest rates are already relatively low. With negative growth of -3.4 or -7.4 stabilising public debt is simply impossible. Finally, Japan and the United States would also have to make big consolidation efforts, if they were following a policy regime similar to Europe's fiscal rules. Of course, this is not the case. The point here is to show that the system of European budget rules is clearly more constraining than in other parts of the world.

The sustainability of public debt is, therefore, a real issue in Europe. Borrowing in order to stimulate demand can be justified more easily in member states without excessive deficits and without explosive debt dynamics. Given its size, Germany is the prime candidate for a fiscal stimulus. However, as I have shown in the first paper of this series, Germany is already close to a zero output gap, which means a stimulus would become inflationary. Thus, Germany's capacity to stimulate Europe is also constrained. The other two large Euro economies have no room to manoeuvre either. France needs to avoid being too closely associated with southern crisis countries, because that would push up interest rates, and it must avoid a fiscally induced recession. Italy is the corner country between sustainable and unsustainable public debt. Given that it has one of the highest debt ratios in the Union, sliding into unsustainable debt positions could be fatal for the whole edifice of European integration. Hence, a fiscal loosening, which has been proposed repeatedly by Berlusconi and could be perceived as increasing the risks of insolvency, is counterproductive, but so is further fiscal tightening. The sad truth is that Europe's debt situation does not allow ending austerity by implementing a strong fiscal stimulus. Debt sustainability requires adopting a neutral fiscal policy stance: no stimulus, no austerity.

The question arises nevertheless whether marginally loosening the policy stance could make public debt more sustainable by increasing the growth rate. The Keynesian answer is "yes". By contrast, the neoclassical reply is that additional borrowing by governments will push up interest rates and lower growth. The empirical evidence leans slightly in favour of the Keynesian multiplier story as long as output gaps are negative.[5] However, given the debt constraints on fiscal policy, an alternative policy may aim at strengthening regional growth by proactive investment policies. I will deal with that in my next column.

Table 1. Fiscal consolidation requirements								
						In percent of GDP		
			implicit			required	2013	
Country	Deficit 2012	Excess	interest (r)	growth (g)	α=(r-g)	adjustment	adjustment	gap
Italy	-3.04	-0.04	4.5	-0.8	5.3	0.22	0.45	0.22
Malta	-3.34	-0.34	4.6	3.0	1.6	0.56	-0.27	-0.82
Slovakia	-4.35	-1.35	4.4	3.4	1.1	1.44	1.94	0.50
Belgium	-3.94	-0.94	3.6	1.9	1.7	1.61	1.20	-0.41
Euro area (17)	-3.72	-0.72	3.6	0.7	2.9	2.06	1.20	-0.85
France	-4.83	-1.83	3.0	1.6	1.4	2.62	1.39	-1.23
Netherlands	-4.06	-1.06	2.9	-0.2	3.1	3.33	0.87	-2.46
Ireland	-7.62	-4.62	3.6	2.9	0.8	3.56	0.91	-2.65
Slovenia	-4.00	-1.00	4.4	-2.0	6.4	6.36	-0.62	-6.98
Cyprus	-6.30	-3.30	4.4	-0.5	4.9	16.28	3.43	-12.85
Portugal	-6.41	-3.41	3.9	-3.4	7.3	24.81	1.40	-23.41
Spain	-10.64	-7.64	4.3	-1.3	5.6	42.48	4.47	-38.01
Greece	-9.99	-6.99	2.7	-7.4	10.1	70.43	5.47	-64.96
Austria	-2.48	0.52	3.7	3.0	0.7	no need	0.54	
Estonia	-0.27	2.73	2.8	6.4	-3.6	no need	0.03	
Finland	-1.88	1.12	2.2	2.6	-0.4	no need	0.18	
Germany	0.15	3.15	3.1	2.0	1.2	no need	0.16	
Luxembourg	-0.81	2.19	2.2	4.1	-1.9	no need	0.65	
Lithuania	-3.24	-0.24	5.1	6.2	-1.1	0.01	0.07	0.05
Poland	-3.93	-0.93	5.3	4.3	1.0	0.91	0.52	-0.39
Denmark	-3.99	-0.99	3.6	1.6	2.0	1.94	2.29	0.35
Czech Republic	-4.40	-1.40	3.6	0.1	3.6	5.01	1.98	-3.03
United Kingdom	-6.34	-3.34	3.6	1.7	1.9	6.29	-0.49	-6.79
Bulgaria	-0.80	2.20	5.5	3.0	2.5	no need	-0.39	
Hungary	-1.88	1.12	5.2	1.4	3.8	no need	-1.08	
Latvia	-1.21	1.79	3.4	8.4	-4.9	no need	-0.36	
Romania	-2.86	0.14	5.4	5.4	0.0	no need	0.46	
Sweden	-0.51	2.49	1.9	1.6	0.3	no need	-0.35	
Japan	-9.89	-6.89	0.9	1.1	-3.0	7.4%		
United States	-8.93	-5.93	2.8	4.0	1.7	10.3%		
Source: own calculations								

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[1] Council Regulation (EC) No 1056/2005of 27 June 2005 amending Regulation (EC) No 1467/97 on speeding up and clarifying the implementation of the excessive deficit procedure, Article 1.

[2] For the full explanation of the concept of debt sustainability in the European context, see: S. Collignon, Fiscal Policy Rules and the Sustainability of Public Debt in Europe; *International Economic Review*, Vol. 53, No. 2, May 2012

[3] If the growth rate exceeds the interest rate, the stability condition is not α>(r-g), but . I used this formula for calculating the consolidation efforts in Lithuania and Japan.

[4] Due to bailout money and haircuts, Greece has now fairly low implicit interest rates.

[5] See Corsetti G., Meier A., Müller G.J., (2012), "What Determines Government Spending Multipliers?", *IMF Working paper* 12/150; Blanchard O., Leigh D., (2013) "Growth Forecast Errors and Fiscal Multipliers", *IMF Working Paper*, 13/1; Auerbach A.J., Gorodnichenko Y., (2011) "Fiscal Multipliers in Recessions and expansions" *NBER Working Paper*, 17447; Auerbach A.J.,Gorodnichenko,Y., (2012) "Measuring the output responses to fiscal policy", *American Economic Journal: Economic Policy* 4(1), pp: 1–27; Barrel R., Holland D., Hurst I., (2012) "Fiscal

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