

TOWARDS A SUSTAINABLE EUROZONE

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Abstract: We argue that various proposals aimed at stabilizing the Eurozone by financial engineering do not eliminate the inherent instability of the sovereign bond markets in a monetary union. During crises this instability becomes systemic and no amount of financial engineering can stabilize an otherwise unstable system. Real stabilization of the Eurozone goes through two mechanisms. The first one is the willingness of the ECB to provide liquidity in the sovereign bond markets of the Eurozone during times of crisis. The ECB has set up its OMT-program to do this. However, OMT is loaded with austerity conditions, which will be counterproductive when used during recessions, which is when crises generally occur. That is why a second mechanism is necessary. This consists in creating a Eurozone budget.

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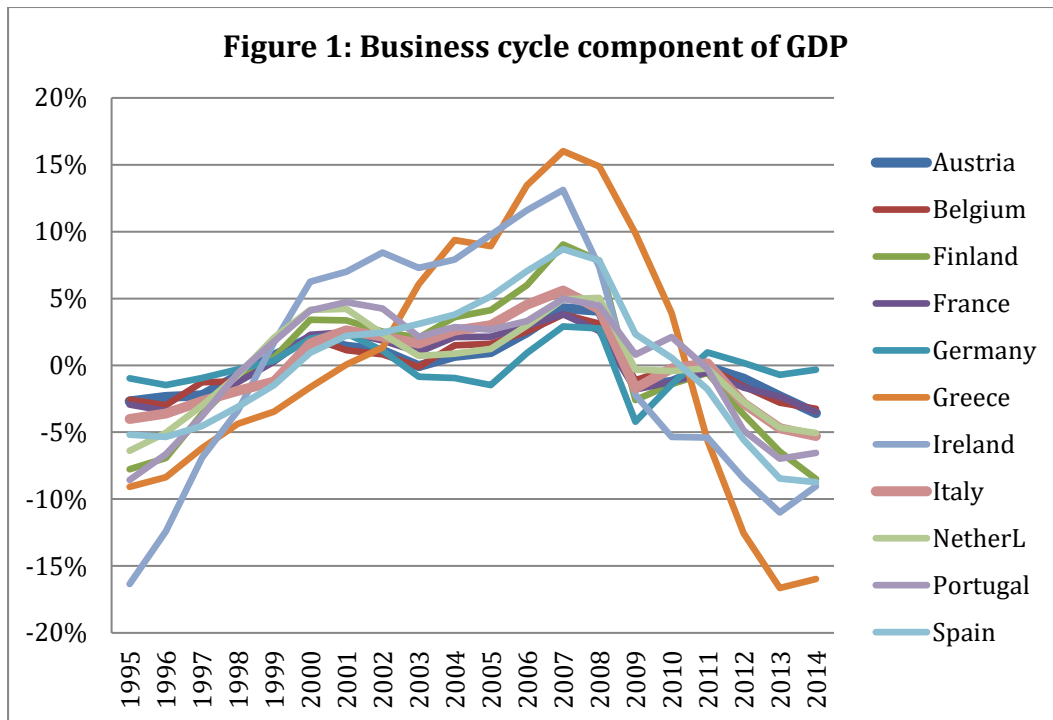
1. Introduction: Booms and busts in the Eurozone

It is well-known that monetary unions cannot easily deal with asymmetric shocks (Mundell(1961)). The surprising thing is that the nature of the asymmetric shocks that hit the Eurozone has been quite different from the traditional asymmetric shocks analyzed in the OCA-literature. In fact business cycles in the Eurozone have been relatively well synchronized. This is shown in Figure 1.

We observe that most Eurozone countries were booming in the period 2000-07 and experienced a downturn since then. If there was asymmetry it was in the amplitudes of the same cycle. Some countries (Ireland, Spain, Greece) experienced a very strong boom and later a deep and protracted recession. Other countries (Belgium, Germany, France, Italy, Netherlands) experienced a much more modest period of booming conditions followed by less intense recessions. Germany stands out as having experienced booms and busts with the lowest amplitude.

If there is asymmetry in the business cycle movements in the Eurozone it is in the amplitude of these cycles. This asymmetry led to a situation in which countries in the group experiencing the highest amplitudes first experienced an unsustainable boom, often accompanied by asset price bubbles and when the crash came, were hit very hard with deep recessions, leading to an explosion of government debt.

The problem with the monetary union lies in the fact that it had great difficulties in dealing with the asymmetric occurrence of these boom-bust scenarios, for two reasons.



Source: Eurostat

Note: the business component is obtained by applying a HP-filter to observed GDP.

First, the European monetary union lacks a mechanism that can deal with boom-bust scenarios with different amplitudes. These lead to divergent developments with large external imbalances, which crystallize in the fact that some countries built up current account deficits and other current account surpluses.

When these imbalances had to be redressed, it appeared that the mechanisms to redress these in the Eurozone (“internal devaluations”) are very costly in terms of growth and employment, leading to social and political upheavals. Countries that have their own currency and that are faced with such imbalances can devalue or revalue their currencies. In a monetary union, countries facing external deficits are forced into intense expenditure reducing policies (austerity) that inevitably lead to rising unemployment and much hardship to millions of people. This problem has been recognized by the economists that pioneered the theory of optimal currency areas (Mundell(1961), McKinnon(1963), Kenen(1969)).

In Figures 2 and 3 we show one dimension of these imbalances. Figure 2 shows the evolution of the relative unit labour costs in the periphery countries. It shows

how these countries experienced a massive reduction in competitiveness (increase in relative unit labour costs) produced by unsustainable booms that tended to raise prices and wages relative to other member countries. After the crash they were forced to adjust with large internal devaluations. These introduced strong deflationary forces leading to deep recessions and large increases in unemployment. From Figure 3 we observe that the core countries did not lose competitiveness during the boom years. After the crash they also did not reflate their economies which would have led to internal revaluations. As a result, the whole of the adjustment costs was borne by the periphery (deficit) countries and a net deflationary dynamics was imposed on the system as a whole.

That's when the second problem of the Eurozone stepped in. As stressed by De Grauwe (2011) the fragility of the Eurozone arises from the fact that member countries of the monetary union issue debt in a currency they have no control over. As a result, the governments of these countries can no longer guarantee that the cash will always be available to roll over the government debt. This lack of guarantee provided by Eurozone governments in turn can trigger self-fulfilling liquidity crises (a sudden stop) that can degenerate into solvency problems. When this occurs it leads to a massive outflow of liquidity from the problem countries, making it impossible for the governments of these countries to fund the rollover of their debt at reasonable interest rate.

This dynamics can force countries into a bad equilibrium characterized by increasing interest rates that trigger excessive austerity measures, which in turn lead to a deflationary spiral that aggravates the fiscal crisis (see De Grauwe(2011) and De Grauwe and Ji(2012)). This is exactly what happened during the sovereign debt crisis in 2010-12. Markets singled out these countries, leading to massive capital outflows from the first group of countries to the second one. The whole of the Eurozone was destabilized. This problem risks popping up each time the Eurozone is pushed into a recession. Each time some countries will be hit more than others. As a result, large internal capital flows risk further destabilizing the system.

Figure 2: Relative unit labour costs in periphery Eurozone (2000=100)

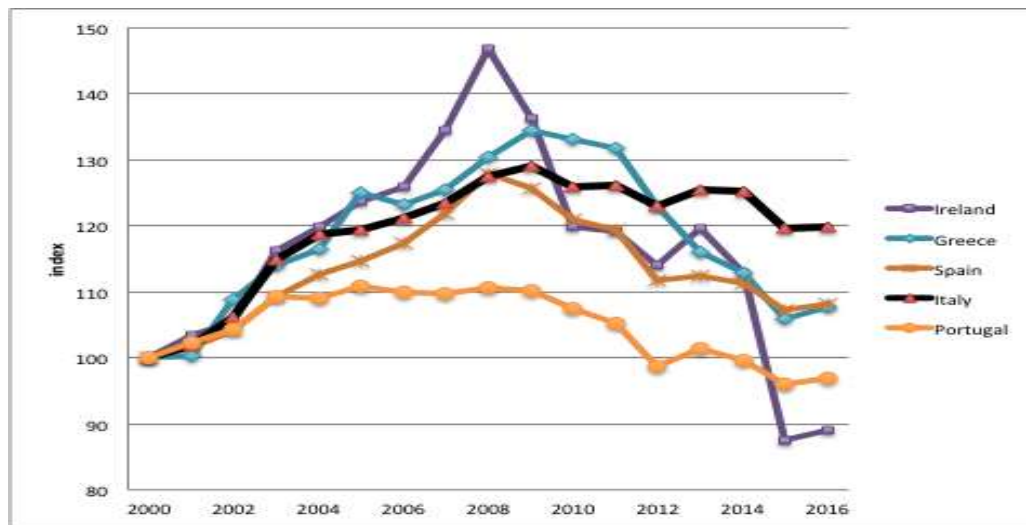
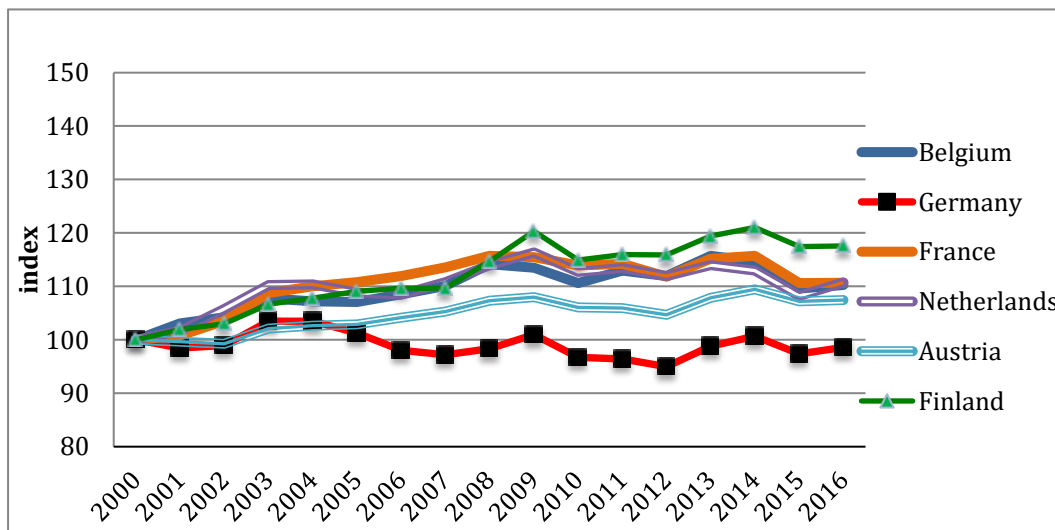


Figure 3: Relative unit labour costs in core Eurozone (2000=100)



Source: European Commission, AMECO

This episode also illustrated how unstable government bond markets in a monetary union can become in the absence of a backstop provided by a central bank. This is illustrated by the surge in the spreads in those countries that had been hit most severely by the crash.

The absence of a backstop for the sovereign in a monetary union also creates the possibility of generating a “deadly embrace” between the sovereign and the banking sector. When the sovereign is pushed into a bad equilibrium it becomes very likely that the domestic banks will experience solvency problems because

they are the major holders of the sovereign bonds. A hellish doom loop is set in motion where the sovereign debt crisis engenders a banking crisis. The reverse causality is equally possible, as the Irish crisis has demonstrated: a domestic banking crisis forces the sovereign to step in to save the banking system. This typically requires the government to take on more debt thereby creating a risk of insolvency.

2. Redesigning the Eurozone

We identified two problems of the Eurozone. The first one arises from the fact that it has poor instruments to deal with asymmetric shocks. We call this the OCA-problem. The second problem arises from the instability of the government bond markets in the Eurozone. We now discuss the way we can deal with the two problems as follows.

2.1. How to deal with the OCA problem?

The standard response derived from the theory of optimal currency areas is that member countries of a monetary union should do structural reforms so as to make their labour and product markets more flexible. By increasing flexibility through structural reforms the costs of adjustments to asymmetric shocks can be reduced and the Eurozone can become an optimal currency area. This has been a very influential idea and has led Eurozone countries into programs of structural reforms.

It is often forgotten that although the theoretical arguments in favour of flexibility are strong the fine print of flexibility is often harsh. It implies wage cuts, less unemployment benefits, lower minimum wages, easier firing. Many people hit by structural reforms, resist and turn to parties that promise another way to deal with the problem, including an exit from the Eurozone. From an economic point of view flexibility is the solution. From a social and political point of view flexibility can become a problem. Stressing flexibility too often as the way out of the conundrum risks creating enemies of the monetary union that as time moves on leads to an increasing political momentum favoring an exit from the union.

The traditional OCA-analysis is based on the assumption that asymmetric shocks are typically permanent and structural in nature (a change in preferences, a supply shock). We have found, however, that most of the shocks hitting the Eurozone have been temporary and the result of a boom-bust scenario. They are also typically demand shocks. In De Grauwe and Ji(2016) we provided a further discussion that business cycle shocks, albeit with different amplitudes, have been the dominant forces.

The implications for the governance of the Eurozone from the finding of the overwhelming importance of the cyclical and temporary component of output growth is that efforts at stabilizing the business cycle should be strengthened relative to the efforts that have been made to impose structural reforms. We are not implying that structural reforms are unnecessary, but rather that efforts at creating mechanisms aiming at stabilizing the Eurozone business cycles should be strengthened.

Inter-country versus inter-temporal smoothing

There have been many proposals made to create a fiscal space at the Eurozone level in the form of a *common unemployment insurance system* (see e.g. the Four Presidents report(2012), Enderlein, et al. (2012), Beblavy, et al.(2015), Alcidi and Thirion(2015), Benassy-Quéré, A., et al. (2018))¹.

Such an insurance system has both an inter-country and an inter-temporal insurance dimension. The inter-country dimension is easier to deal with. It is also the one that has received most of the attention in the past. When one country experiences a recession, and thus increasing unemployment, the other country experiences a boom, and declining unemployment. This facilitates the workings of the common unemployment insurance system. The booming country transfers resources to the country in a recession and thereby smoothens the business cycles in the two countries. Technically and politically such a system encounters relatively few problems.

¹ There is an older literature making similar proposals. See e.g. Italianer and Vanheukelen(1992), Hammond and von Hagen(1993) and Mélitz and Vori(1993).

Problems arise when business cycles are relatively well synchronized but of very different amplitude in the different member countries. In that case most countries will tend to experience a recession at about the same time, but in some countries the recession will be mild in other very intense. This creates both an economic and a political problem. First, countries with a mild recession are asked to transfer resources to countries experiencing a stronger recession. This tends to reduce the intensity of the recession in the latter country at the expense of making it more intense in the former country. It is not clear that this is welfare improving. Second, it is likely to create important political problems in the former country that is asked to transfer resources when the economy is not doing well.

The previous analysis suggests that common unemployment insurance schemes should put sufficient emphasis on smoothing over time. This can be achieved by allowing the common unemployment insurance scheme to accumulate deficits and surpluses over time. The fiscal rule that could be imposed is that the insurance scheme balances over the business cycle.

In principle, inter-temporal smoothing could be done at the national level, by allowing the national budgets to do the job. However, the large differences in the amplitude in the business cycle movements makes such a purely national approach problematic, as it leads to large differences in the budget deficits and debt accumulation between countries. These differences quickly spillover into financial markets when countries that are hit very hard by a downward movement in output are subjected by sudden stops and liquidity crises. This is likely to force them to switch off the automatic stabilizers in their national budgets (De Grauwe and Ji(2017)). In addition, these liquidity outflows are inflows in some other countries in the monetary union, typically those that are hit least by the recession². Their economic conditions improve at the expense of the others. Stabilization of common business shocks with different amplitudes at the national level makes the system unstable.

² This is confirmed by the empirical work of Furceri and Zdzienicka (2013) and Hoffmann and Nitschka (2012) who find that during recessions risk sharing through financial markets declines dramatically.

National stabilization efforts do not work and introduce an element of instability in a monetary union, mainly because it leaves the countries most hit by the business cycle shocks unable to stabilize. Thus when business cycle shocks dominate it will be necessary to follow a common approach to the stabilization of the business cycles. A budgetary union can provide this. By centralizing part of the national budgets into a common budget managed by a common political authority, the different increases in budget deficits following from a (common) recession translate into a budget deficit at the union level. As a result, the destabilizing flows of liquidity between countries disappear, and the common budgetary authority can allow the automatic stabilizers in the budget to do their role in smoothing the business cycle. In fact, because a common budget also generates implicit inter-country transfers the countries with the deepest recession will profit from the automatic stabilizing features of the common budget most. As a result, a common budget provides the most effective way to stabilize the business cycle.

A small step in the direction of creating a Eurozone budget was taken at the end of 2018 when the European Council decided to set up a “Budgetary Instrument for Convergence and Competitiveness” (BICC). No decision has as yet been taken about the size of this budget. The European Commission, however, had proposed an amount of €17 billion spread over the next EU “multiannual financial framework” of 2021-2027 is set aside to be used in the BICC (the Eurozone budget). This is €2.4 billion a year, or 0.01% of the Eurozone GDP (which in 2018 stood at €13.7 trillion. The aim of this Eurozone budget is to make public investments in the Eurozone that will “strengthen convergence” and that should improve competitiveness (see Consilium(2019) for more detail).

There are two ways one can judge this micro-step forward. First, it is so small that it will be negligible from a macroeconomic perspective and as a result it will do nothing to stabilize the Eurozone. The second interpretation is that it is a step, albeit a minuscule one, in the right direction. Let us hope this interpretation was the driving force behind this Eurozone budget.

2.2 How to deal with the instability of the government bond markets?

Let us now turn to the question of how to deal with the second problem of the Eurozone, the instability of the government bond markets.

The ECB has a central role to play here. By promising to provide unlimited support in the government bond markets in times of crisis, it can stop liquidity crises that are likely to emerge each time the Eurozone experiences a recession; liquidity crises that destabilize the system leading to large capital outflows from some country to other countries in the same monetary union.

The ECB recognized this problem when it started its OMT-program in 2012. This certainly helped to pacify financial markets at that time and avoided the collapse of the Eurozone. When the OMT-program was announced the yields in the government bond markets of the periphery countries started a steep descent. The beauty of that announcement was that the ECB did not have to buy one euro in the government bond markets.

The issue arises of how credible the OMT-program is for future use. The credibility problem arises from the fact that when using the OMT program the ECB will have to decide whether the crisis it is facing is due to a liquidity or a solvency problem. If it determines it is a liquidity problem it should step in; if it decides it is a solvency problem it should not. In the latter case the other governments should decide whether or not to support the troubled government.

This creates political problems that the ECB cannot take on. It is generally very difficult to determine in real time whether the problem is due to lack of liquidity or to insolvency. The uncertainty surrounding liquidity versus solvency problems makes it difficult for the ECB to step in without creating political controversy. In the Greek crisis of 2015 the ECB decided that the Greek problem was one of insolvency of the Greek government and therefore it refused to support the Greek government bond market, precipitating the crisis and leading to intense political conflicts in the Eurozone.

All this will lead to doubts about the willingness of the ECB to provide liquidity to future governments in times of crisis. As a result, the credibility of OMT is

limited, which means that it is not a foolproof insurance mechanism that will stabilize the markets in future crises.

This problem does not exist in standalone countries. The commitment of the central bank to support the sovereign of a standalone country in times of crises is unconditional mainly because in times of crisis the sovereign prevails over bureaucrats at the central bank. This may come at a price though, because it also implies that the credibility of the central banks' commitment to price stability is less than 100%. Paradoxically, one may argue that the commitment of the ECB towards price stability is stronger than in standalone countries precisely because the commitment of the ECB towards the support of the 19 different national governments is weak.

The only way to solve the lack of credibility of the ECB as lender of last resort in the government bond market is by creating a budgetary union that includes the consolidation of a significant part of the national debts into one Eurozone debt. This could be achieved by the issuance of Eurobonds that are backed by a joint liability of the issuing governments (see Delpla and von Weizsäcker (2010), De Grauwe and Moesen(2010)). Such a consolidation mimics the relation between the central bank and the government that exists in standalone countries. It makes the credibility of liquidity support of the sovereign watertight and eliminates the danger of destabilizing capital flows within the union. Clearly such a consolidation can only occur if it is embedded in a political union, characterized by a central government that has the democratic power to tax and to spend. These are very intrusive, if not revolutionary transformations of the Eurozone, for which there is little appetite today in official circles. These have now taken for granted that a further significant budgetary union together with a political union in which the budgetary union must be embedded is out of reach for the foreseeable future (which undoubtedly is true). As a result, they tend to embrace technical solutions that can solve the problem while avoiding the need to create a budgetary and political union.

3. The search for technical solutions aimed at enforcing market discipline by financial engineering

Official institutions in the Eurozone have embraced the intellectual idea that financial markets can be used to impose budgetary discipline and that suitably constructed financial assets can promote financial stability in the Eurozone. This idea has become popular among Eurozone policy-makers because of a realization that achieving discipline and stability by political means, such as political integration, has hit a wall preventing any further progress.

During 2018, a group of French and German economists proposed various schemes such as sovereign bankruptcy procedures and triggers that would force governments to issue different tranches of debt in the hope of garnering the disciplining powers of the markets (Bénassy-Quéré, et al. (2018), Lane and Langfield(2018))³. The European Systemic Risk Board (2018) published a report containing a proposal to create a “safe asset” for the Eurozone that is based on a repackaging of the risks of sovereign bonds. The European Commission followed up on this and came forward supporting the idea of creating a safe asset (European Commission(2018)). The hope is that this financial engineering will stabilize an otherwise unstable system of sovereign bond markets in the Eurozone. Thus, during 2018, official policy has become very much based on using market forces to discipline and to stabilize the Eurozone.

In a way all this is quite surprising. One thing we have learned from the financial crisis is that financial markets cannot be trusted as a disciplining device. During the booming years prior to the crisis, euphoria dominated in financial markets leading consumers, banks, firms, and investors to be blind for risk. As a result, encouraged by equally euphoric rating agencies, they took up massive amounts of debt disregarding the risks they took on their balance sheets. This was the time financial markets considered Greek sovereign bonds to exhibit the same risk as German sovereign bonds. Financial markets were an engine of indiscipline.

³ For a more general criticism of the French-German reform proposals, see Messori and Micossi(2018))

When the crash came, financial markets panicked. Suddenly they detected risks everywhere forcing consumers, firms and governments into excessive austerity thereby deepening the recession (e.g. Eurozone sovereign debt crisis see De Grauwe and Ji(2013)). Financial markets became engines of excessive discipline.

All this is not new. Economic historians (Kindleberger(1978), Minsky(1986)) have taught us for some time that financial markets almost never apply the right amount of discipline (see also Lo(2012)). During booms markets apply too little discipline thereby amplifying the boom and during recessions they impose too much discipline thereby making the downturn worse.

In this section we concentrate on several proposals that aim at enforcing market discipline by financial engineering. The first one proposes to change the existing structural budget balance rule by an expenditure rule that, if exceeded, would force governments to issue junior debt. The second proposal wants to enforce sovereign debt default procedures on governments that have become insolvent. Let us discuss these consecutively. The third one focuses on introducing a safe asset for the Eurozone.

3.1 Tranching government debt

The idea behind the proposal to force governments to issue junior debt if their expenditures exceed some threshold value is that this will subject governments to more market discipline. The reasoning is the following. When governments spend too much they are forced to finance the extra spending by issuing junior bonds. As a result, the buyers of these bonds will face more risk and demand a risk premium. Thus these governments will pay a higher interest rate which will enforce more discipline. The market will do its job of raining in the tendency of governments to spend too much.

All this sounds plausible. The evidence of past financial cycles of booms and busts, however, is that this disciplining mechanism typically fails. During booms, euphoria prevails and few investors perceive risks. As mentioned earlier, during the Eurozone boom years, investor saw no difference in risks between Greek and German sovereign bonds. It is likely that when euphoria prevails they will see no

significant difference in risks between the different tranches of outstanding government bonds.

During the downturn exactly the opposite will happen. In fact the existence of junior bonds will work as wake-up call and set in motion panic reactions of flight. As a result, governments, which have issued junior bonds, are more likely to be hit by a self-fulfilling liquidity crisis forcing them into excessive discipline and austerity.

The reality is that financial markets are not well-equipped to enforce discipline on sovereigns. The introduction of some new financial instrument will not change that reality.

3.2 Sovereign default procedures

The second proposal aiming at using market forces to discipline governments uses a formal sovereign debt restructuring procedure. Governments that are insolvent should be forced to restructure their debt. In other words the holders of these governments' bonds should be forced to accept losses. As a result, investors would realize that, without a possible bailout of the sovereign, their investments would be risky. This would lead them to ask for a risk premium, thereby introducing market discipline on the behavior of the sovereign.

Again, at first sight this sounds reasonable. The same criticism, however, applies here to the one we leveled against the forced issue of junior bonds. There is very little evidence that investors ask for risk premia during boom phases. That's when euphoria blinds them in not seeing risks properly. And during the bust phase the opposite occurs. That's when the knowledge of the existence of debt restructuring procedures will act as triggers that create fear and panic. As a result, the existence of a sovereign restructuring procedure may actually trigger crises more easily during the bust.

There is an additional problem with this proposal. This has to do with identifying when governments are insolvent. It is easy to say that an insolvent sovereign should be forced to restructure his debt. It is much more difficult, during crises moments, to distinguish between solvency and liquidity problems of sovereigns. This difficulty arose during the sovereign debt crisis of 2010-12. In the case of

Greece it was relatively easy to conclude that the Greek government was insolvent. But what about countries like Ireland, Spain, and Portugal? These countries were gripped by massive sales of their sovereign bonds leading to a liquidity crunch that made it impossible to rollover their debt at normal market conditions. Quite a lot of economists concluded that these countries were insolvent and should restructure their debt. It turned out that this advice was wrong and that these countries were solvent but had become illiquid. Had they been forced to restructure their debt, economic recovery would have been much more difficult.

3.3 The safe asset proposal

The proposal to create a safe asset in the Eurozone, which was made by the ESRB, explicitly aims at eliminating the destabilizing capital flows across the borders of the monetary union and to stabilize the system. Will it do this? This is the question we now turn to.

In contrast with earlier proposals to create Eurobonds (see De Grauwe and Moesen(2009), and Delpla and von Weizsäcker(2010)) which assume that participating governments are jointly liable for the service of the national debts, the “safe asset” proposal makes no assumption of joint liability. Instead, in this proposal national governments are individually liable for their own debt. There is no pooling of risks.

The “safe asset” is created when financial institutions (private or public) buy a portfolio of national government bonds (in the primary or in the secondary markets) and use this portfolio as a backing for their own issue of bonds, called “sovereign bond backed securities” (SBBS). The latter have the following characteristics. One tranche, the junior tranche, is risky. When losses are posted on the underlying portfolio of government bonds the junior tranche takes the hit⁴. The second tranche, the senior tranche, is safe. The proponents of these SBBSs take the view that a 30% junior tranche is large enough as a buffer to take

⁴ In the ESRB(2018) proposal this tranche is split further into two tranches, a junior tranche proper with the highest risk (10%) and a mezzanine tranche (20%) which takes the losses after the junior tranche has been depleted.

potential losses on the underlying sovereign bonds so as to make the senior tranche (70%) risk free. Based on simulations of underlying risk patterns, the authors claim that their proposal will allow to more than double the size of safe assets in the Eurozone. In addition, they claim that the existence of SBBSs will replace the destabilizing capital flows across national borders in the Eurozone by a movement from the risky asset (the junior tranche) into the safe asset (the senior tranche), thereby eliminating the instability in the Eurozone.

How likely is it that these SBBSs will help to stabilize the Eurozone? Note that in the way we formulate the question we do not dispute that in normal times the creation of a safe asset may not increase the efficiency of the financial system in the Eurozone. It probably will do so by supplying a new type of asset that can provide for a better diversification of normal risks. The issue is whether the safe asset will be an instrument for dealing with systemic risks in times of crisis? Our answer is negative for the following reasons.

First, the creation of a safe asset does not eliminate the national government bond markets. This is recognized by the proponents of a safe asset (see ESRB(2018) and Brunnermeier, et al.(2016)). In fact these proponents have made the continuing existence of national sovereign bond markets a key component of their proposal. According to the ESRB “the SBBS issuance requires price formation in sovereign bond markets to continue to be efficient” (p.33). The markets for sovereign bonds must remain large enough so as to maintain their liquidity. That is also why the ESRB proposes to limit the total SBBS issuance to at most 33% of the total outstanding stock of sovereign bonds.

This constraint on the issue of SSBS implies that national sovereign bond markets will be “alive and kicking”. As a result, the major problem that we identified earlier, i.e. the potential for destabilizing capital flows across the borders of the monetary union will still be present.

Second, we observe that during crises, the correlation pattern of yields changes dramatically. During normal times all yields are highly positively correlated. During crisis times, as investors are looking for safe havens, the yields in the safe assets tend to decline sharply and become negatively correlated with the high risk yields. This pattern was very pronounced during the sovereign debt crisis of

2010-12. In their simulations of the risks involved in SBBSs Brunnermeier, et al.(2016) do take into account the fact that risks can be correlated. However, this correlation pattern is fixed, while during crisis periods correlation patterns change dramatically. We show this feature in Table 1. We find that during the sovereign debt crisis of 2010-12, the government bond yields of the periphery countries under stress were highly positively correlated. At the same time these yields were negatively correlated with the yields of the core (safe) countries like (Germany, Finland, France, Netherlands).

The implication is that during crises it is very unlikely that the senior tranche in the SBBS can maintain its status of safe asset. It will consist of bonds investors dump and “safe-haven” bonds. The senior tranche will continue to depend on the cash flow generated by bonds that panicking investors deem to be extremely risky. The perception that this senior tranche is equally safe as the safe-haven sovereign bonds (e.g. German bonds) is very unlikely when markets are in panic mode. As a result, it is also likely that investors will flee the senior tranches of the SBBS to invest in the “real thing”, i.e. super safe sovereign national bonds.

A third problem is related to the previous one. During normal times, the safe asset will have been used in the pricing of derivatives and other financial instruments and it will be an important part of the repo market providing liquidity in that market. As a result, a large part of the financial markets in the Eurozone will depend on the perceived safety and liquidity of the SBBS construction. When during crisis periods, the safety of that construction is put into doubt (as we argued in the previous section), liquidity will tend to disappear and the whole financial sector of the Eurozone will be at risk. In the end we may have more rather than less financial stability in the Eurozone.

There is an historical analogy here. During the boom years CDOs were created backed by different types of securities, e.g. mortgages. At the time, many people were enthusiastic about this and believed that CDOs would make the financial markets more efficient by a better spreading of risks. Ultimately, it was believed, this would lead to more financial stability. The SBBS proposed by the ESRB has the same CDO structure as the previous ones. It would be surprising that

financial engineering, which in the past failed dismally in stabilizing financial markets, would do so in the future.

4. Conclusion: the inevitability of political union

We have argued that various proposals aimed at stabilizing the Eurozone by financial engineering do not eliminate the inherent instability of the sovereign bond markets in a monetary union. During crises this instability becomes systemic and no amount of financial engineering can stabilize an otherwise unstable system.

Stabilization by financial engineering will not work. Real stabilization of the Eurozone goes through two mechanisms. The first one is the willingness of the ECB to provide liquidity in the sovereign bond markets of the Eurozone during times of crisis. The ECB has set up its OMT-program to do this. However, OMT is loaded with austerity conditions, which will be counterproductive when used during recessions (which is when crises generally occur). That is why a second mechanism is necessary. This consists in creating a Eurozone budget.

With the election of Emmanuel Macron as French president in 2017 there was some hope that such a strategy of small steps could be set in motion. Macron's proposal to create an embryonic government budget for the Eurozone seemed to open the door for such a strategy. All this led to the European Council's decision to create a Eurozone budget in 2018. In order to avoid using standard English to give the baby a name, the proper name of Eurozone budget, it was called BICC. Although it is a step in the right direction, the size of this budget is so small, (0.01% of Eurozone GDP) it will have no significant contribution to stabilize the Eurozone in the foreseeable future. All this has to do with the lack of willingness to create a political union in which a budgetary union is embedded.

Although the willingness to create a political union today that is necessary to sustain the euro does not exist, it is important to keep a political momentum alive that this remains necessary for the long-term survival of the Eurozone. Such a momentum can be created by a *strategy of small steps* (Enderlein, et al. (2012), such as the creation of a limited fiscal space at the level of the Eurozone.

In this sense the creation of BICC in 2018 can be seen as a positive development despite the extremely small size of this Eurozone budget. Other proposals such as a common unemployment insurance mechanism come to mind as part of a strategy of small steps (Van Rompuy, et al. 2012), Alcidi and Thirion(2015)).

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Table 1. Correlation of yields before crisis (2000M1-2009M12)

	Germany	Finland	Netherlands	Austria	France	Belgium	Italy	Spain	Ireland	Portugal	Greece
Germany	1.00										
Finland	0.97	1.00									
Netherlands	0.97	1.00	1.00								
Austria	0.94	0.99	0.99	1.00							
France	0.98	1.00	1.00	0.99	1.00						
Belgium	0.95	1.00	0.99	1.00	0.99	1.00					
Italy	0.89	0.97	0.96	0.99	0.96	0.98	1.00				
Spain	0.94	0.99	0.99	1.00	0.98	1.00	0.99	1.00			
Ireland	0.61	0.78	0.76	0.83	0.74	0.81	0.88	0.83	1.00		
Portugal	0.90	0.98	0.97	0.99	0.96	0.99	0.99	0.99	0.87	1.00	
Greece	0.68	0.83	0.82	0.87	0.80	0.86	0.92	0.88	0.96	0.91	1.00

Table 2. Correlation of yields during crisis (2010M1-2012M09)

	Germany	Finland	Netherlands	Austria	France	Belgium	Italy	Spain	Ireland	Portugal	Greece
Germany	1.00										
Finland	0.98	1.00									
Netherlands	0.99	0.99	1.00								
Austria	0.89	0.93	0.91	1.00							
France	0.83	0.89	0.87	0.98	1.00						
Belgium	0.45	0.58	0.54	0.74	0.80	1.00					
Italy	-0.66	-0.57	-0.58	-0.34	-0.21	0.28	1.00				
Spain	-0.62	-0.60	-0.55	-0.48	-0.34	0.02	0.81	1.00			
Ireland	0.16	0.24	0.24	0.28	0.38	0.68	0.38	0.44	1.00		
Portugal	-0.62	-0.52	-0.54	-0.32	-0.19	0.29	0.88	0.73	0.54	1.00	
Greece	-0.82	-0.79	-0.78	-0.62	-0.50	-0.13	0.81	0.81	0.23	0.85	1.00

Table 3. Correlation of yields after crisis (2012M10-2017M12)

	Germany	Finland	Netherlands	Austria	France	Belgium	Italy	Spain	Ireland	Portugal	Greece
Germany	1.00										
Finland	1.00	1.00									
Netherlands	1.00	1.00	1.00								
Austria	1.00	0.99	1.00	1.00							
France	0.99	0.99	0.99	0.99	1.00						
Belgium	0.99	0.99	0.99	0.99	0.99	1.00					
Italy	0.92	0.91	0.92	0.93	0.95	0.95	1.00				
Spain	0.90	0.90	0.90	0.92	0.92	0.94	0.97	1.00			
Ireland	0.93	0.93	0.93	0.95	0.95	0.96	0.97	0.99	1.00		
Portugal	0.78	0.78	0.79	0.82	0.83	0.85	0.93	0.93	0.92	1.00	
Greece	0.31	0.31	0.31	0.35	0.34	0.38	0.45	0.58	0.55	0.57	1.00

Source: European Central Bank and authors' own calculation

Note: The yields are yields on 10-year government bonds