EFD
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Practical steps to withdraw from Euro

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Executive summary

In this essay we evaluate the alleged costs of a euro exit and propose practical steps to make a withdrawal from the euro as smooth as possible.

The costs of remaining within the euro are very high. These costs do not only include the costs of the open bailouts and guarantees for the rescue funds. The euro is a misconstruction as several independent governments can finance their deficits through one (central) banking system. The incentive is to run higher deficits than other states of the EMU. The setup of the Eurosystem made interest rates converge and enabled monetary redistribution. Due to its incentives there is a tendency for price inflation.

To save the euro the ECB will have to be highly inflationary in the future. The ECB will have to keep accepting or buying governments bonds and finance the rescue funds. Within the EMU the incentives to reduce deficit spending are diminished. There is a general tendency for the size of government to increase due to this inflationary deficit spending. Most likely, only a centralization of some sort (fiscal union) will be able to save the euro at this point with its current members. The growing size of government and the centralization imply a loss for individual liberty for citizens of governments that remain within the euro. Lastly, the redistribution may cause conflicts between nations and disturb the harmonious cooperation in Europe.

The problems of a euro exit have been largely exaggerated. Introduction costs, wage inflation, trade losses, political costs, legal problems, procedural costs, banking crisis, costs of disentangling of the ECB, pose important but no insurmountable problems. With accompanying measures and careful negotiation these problems are all solvable.

We found three ways to exit.

> First, redenomination of all contracts and deposits into a new national currency. Coins and notes bearing the national symbol are exchanged gradually into the new currency preferably at a 1:1 exchange rate. In order to prevent disturbing flows of capital a

"provisional" redenomination allowing for democratic discussion is found as the most elegant way.

Second, issue of a parallel national currency. This national currency may be backed by government or central bank assets preferably gold and would compete with the euro.

Third, currency competition. All legal tender laws are abolished. Gradually, citizens will start using more stable currencies and possibly adopt commodity based means of payment.

It is essential to accompany an exit from the euro with supporting reforms to alleviate transition costs. The sovereign debt and euro crisis is foremost a crisis of the state that has grown to a dimension that threatens the stability of the euro currency. Accompanying measures must roll back the state. In order to introduce a new currency with success it is essential that the new currency is expected to be less inflationary than the euro.

As a banking reform will be necessary in any case, an exit from the euro should be used to thoroughly reform the banking and monetary system putting them finally on a sound basis. Moreover, the public deficits should be eliminated, old public debt restructured, public assets privatized, markets deregulated and made flexible, and taxes lowered.

1. Introduction

European politicians are still trying to save the project of the euro. They design ever greater bailout packages and increase the funds pledged for future bailouts. The plan is to increase the European Financial Stability Facility (EFSF) and to reform it into the permanent European Stability Mechanism (ESM). Along with the bailouts an economic government may be forthcoming. Countries may give up parts of their sovereignty. The character of the European Monetary Union (EMU) but also the European Union (EU) may change forever.

While it is still unclear where future developments will lead the EMU, the costs and risks of remaining within the system are already immense and rising. The risks of the project keep increasing day by day.

In this paper we show that the sovereign debt crisis of the EMU and currency problems that the euro is facing are no coincidence. The euro is a misconstruction. We qualitatively and quantitatively evaluate the costs and risks of staying within the EMU. Following this analysis we show practical steps to withdraw from the euro. We discuss alleged problems of an exit. Finally, we name accompanying measures that would smooth an exit.

2. Problems and costs of the euro

2.1 The misconstruction of the euro

In the Eurozone, there are fiscally independent sovereign governments coexisting with one (central) banking system. This is a unique construction as normally there is one government with its own banking system.

Governments can finance their deficits through the banking system and money creation. When governments spend more than they receive in tax revenues, they typically issue government bonds. The financial system buys an important part of these bonds by creating new money. Banks purchase these bonds because they can use them as collateral for new loans from the European Central Bank (more precisely the European System of Central Banks).

New money flows to governments that monetize their deficits indirectly. The cost of the indirect monetization is born by all users of the currency in form of a reduced purchasing power, i.e., inflation. If there is one government per central banking system, the whole nation bears the cost of the deficit monetization. However there are in the Eurozone several governments running their own budgets.

Imagine that all governments but one have a balanced budget. The one deficit government can then externalize onto other nations part of the costs of its deficit in form of higher prices. This monetary redistribution is the already existing transfer union in the EU.

A government like the Greek's, with high deficits, prints government bonds bought and monetized by the banking system. As a consequence there is a tendency for prices to rise throughout the monetary union. The higher the deficit of a government in relation to the deficits of other countries, the more effectively it can externalize the costs of a deficit. The incentives of this setup are explosive as governments benefit from deficits higher than those of their eurozone neighbours.

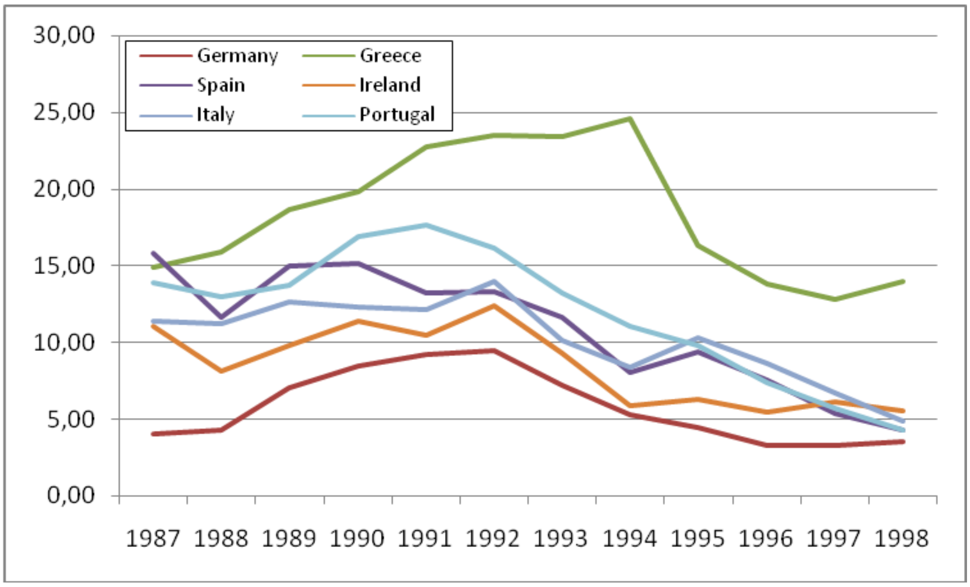
The Stability and Growth Pact designed to contain these incentives utterly failed because governments themselves judge whether sanctions are imposed on them.

One effect of this ill-fated setup is that it allows governments to maintain uncompetitive economic structures like inflexible labour markets, huge welfare systems and public sectors for a long time. Thereby the system causes the over-indebtedness and uncompetitiveness typical for the recent sovereign debt crisis. Multiple sovereign debt crises have in turn triggered a tendency toward centralization of power in Brussels and the new rescue fund. In other words, the monetary transfer union causes the general sovereign debt crisis to bring us now ever closer to a more explicit transfer union. The possible European economic government or transfers through eurobonds are only the result of underlying and dangerous monetary transfer union implied in the institutional setup of the euro.

2.2 The pre-bailout redistribution: interest rate and monetary flows

An important cost of the eurosystem consists in the redistribution implied in its setup. This redistribution brings benefits for some countries at the costs of others. The redistribution before the 2010 bailouts resulted mainly from interest rate adjustments and money production.

Fiscally more irresponsible governments benefitted from the implicit guarantee by the fiscally more sound countries even before the euro was installed. Interest rates dropped to the level of Germany.



Three month interest rates in Germany, Greece, Spain, Ireland, Italy and Portugal (1987-1998)

Source: Eurostat

Another factor reducing interest rates in peripheral countries was a reduction of the inflation premium in interest rates. The inflation premium fell because inflationary expectations were reduced. The European Central Bank (ECB) was considered to act like the Bundesbank.

These lower interest rates allowed countries to run deficits and accumulate higher public debts. More debts could be accumulated than would have been possible without the implicit guarantee of countries such as Germany.

The lower interest rates coupled with an expansionary monetary policy by the ECB led to distortions in peripheral economies. The Greek government used the lower interest rate to build a public adventure park. Italy delayed necessary privatizations; Spain expanded the public sector and built a housing bubble. Ireland added to the housing bubble a financial bubble. These distortions were partially caused by the EMU interest rate convergence and the expansionary policies of the ECB. Naturally, people related to the bubble activities in these countries benefitted, such as public employees and construction workers. However, the population in general took a loss through the extension of the public and reduction of the private sectors, as well as through malinvestments in the construction industry.

While private and public debtors of the periphery enjoyed lower interest rates due to the euro, someone was to pay for it. The implicit bailout guarantees were given by more productive countries such as Germany. The German government had to pay marginally higher interest rates due to the guarantee than it would have paid otherwise.

In sum, in the EMU with its assumed "solidarity" there is redistribution because interest rates converge. Irresponsible governments benefit at the cost of more responsible governments.

More irresponsible governments benefit in another way; through unequal money creation. A country as a whole can benefit if it runs higher public deficits than other countries. Its government prints government bonds that are bought by banks that may use them as collateral for ECB loans. The money supply increases. The first receivers of the new money benefit at the cost of later receivers. Take the Greek example: the ECB accepted Greek government bonds as collateral for their lending operations. European banks could buy Greek government bonds and use these bonds to gain a loan from the ECB at a lower interest rate.

The banks bought the Greek bonds because they knew that the ECB would accept these bonds as collateral for new loans. As the interest rate paid to the ECB was lower than the interest received from Greece, there was a demand for these Greek bonds. Without the acceptance of Greek bonds by the ECB as collateral for its loans, Greece would have paid much higher interest rates than it did. Greece was, therefore, bailed out or supported by the rest of the EMU for a long time.1

The costs were partially shifted to other EMU countries. New euro were effectively created by the ECB, accepting Greek government bonds as collateral. Greek debts were monetized, and the Greek government spent the money it received from the bonds to secure support among its population. As prices started to rise in Greece, money flew to other countries, bidding up prices throughout the EMU. Abroad, people saw their buying costs rise faster than their incomes. This was redistribution in favor of Greece. The Greek government was being bailed out by a constant transfer of purchasing power from the rest of Europe.

2.2.2 The tendency for the size of government to increase

The incentive for higher deficits has unwelcome secondary effects. Governments that traditionally have been fiscally more irresponsible see in the eurosystem a chance to profit from higher deficits. Running deficits they can win votes and increase state power. Both lower interest rates and money creation work in favor of these states. Similarly, the incentives of the more responsible states are to spend more. Why reduce public spending in favor of the more irresponsible governments that run high deficits profiting from the monetary redistribution? As governments boost spending the state's size increases.

By the increase in government spending more resources are drawn from the private sector where they compete in satisfying consumer wants and put into the public sector serving ends of politicians. The increase in the state's size caused a loss in productivity and a lower standard of living than otherwise.

[1] See Bagus (2010) for a detailed analysis of the tragedy of the commons implied in the Eurosystem.

2.2.3 Open bailouts, subsidies, transfers

The incentives and mechanisms of the Eurosystem lead to excessive deficits and rising debts. The financial crisis of 2008 led market participants to doubt the commitment of fiscally sounder governments and the ECB to bail-out weaker governments. Due to bank bailouts and increased public spending deficits and debts had soared in 2008 and 2009. Would Germany really be capable of and willing to support peripheral governments?

The rising yields of peripheral government bonds, their unsustainable fiscal situation and the unclear commitment led to the bailouts of Greece I (€110bn.) and II (€109bn.), Ireland (€85bn.), and Portugal (€78bn.). These bailouts total € 392 bn. Eventual losses are born by tax payers in the fiscally sounder countries.[2]

In addition to these bailouts the EFSF has been installed. Its size is to be €750 bn. Germany´s part of the guarantees are €211 bn. When other countries that are guaranteeing this sum get into fiscal difficulties, the German part will rise.

Indeed, the size of the EFSF will not be enough. To effectively guarantee all peripheral debt the fund has to be increased to €1.45 tr.[3] As the guarantee of Italy and other peripheral countries are worthless, Germany would have to guarantee €790bn. or 32% of GDP according to a report from Bernstein. If France loses its AAA rating the German share would rise to €1.385 tr. or 56% of the German GDP (almost €17.000 per capita).

In addition, tax payers are also indirectly on the hook through the engagement of the International Monetary Fund (IMF). At the same time, tax payers may suffer losses from the bailouts undertaken by the ECB. The ECB had bought until the beginning of October 2011 more than €160 bn. of peripheral government bonds. For any losses Germany´s part is 27%.[4]

Moreover, the ECB has accepted government bonds of peripheral countries as collateral. If a government defaults, it will probably take down with it a great part of its banking system that had bought its government's bonds. The banking system in turn will be unable to repay ECB loans. The ECB will be then stuck with the collateral: government bonds in default. Raoul Ruparel and Mats Persson (2011) from the think-tank OpenEurope calculated in June 2011 , that a Greek default (restructuring of 50%), would cost the ECB between €44.5 and €65 bn.These sums have been rising since June 2011 and will rise in the future. Peripheral governments keep running (substantial) deficits, the ECB buys more bonds and peripheral banks increase their refinancing with the ECB. [5]

[2] The part of the IMF is about €108 bn. The German part of the IMF loans is about 6% or €6.5 bn. The numbers include also loan from the British government offered to Ireland of 3.25 bn. pounds.

[3] See Zerohedge (2011).

[4] See SpiegelOnline (2011).

[5] The IFO-Institute calculated the total risk for Germany in September at €465 bn. (Sinn 2011).

Another support for peripheral countries works through the TARGET2 system. There are credit and debit accounts within the eurosystem and its national central banks that are not netted. At the end of 2010 the Bundesbank had claims of €326 bn. while peripheral countries had liabilities of €335 bn. (Sinn and Wollmershäuser 2011, 5).

The TARGET2 system works the following way: imagine that a Greek depositor transfers his money from his Greek bank to a German bank. As a result the German bank reduces its refinancing with the Bundesbank and the Greek bank increases its refinancing with the Bank of Greece.

The Bundesbank earns a claim against the eurosystem, the Bank of Greece a liability. In theory these claims could be netted, for instance, by transferring assets such as gold from the Bank of Greece to the Bundesbank. Yet, these claims are never paid in the Eurosystem and the balances continuously build up. When the Greek bank finally defaults, the losses are shared by all central banks in the eurosystem and affect ultimately tax payers.

2.2.4 Tendency for price inflation

The eurosystem is prone to price inflation to the detriment of all users of the currency. As we have seen, the Eurosystem incentivizes deficits and debt accumulation. These debts and deficits are very likely to be paid via money production, at least part of them. The ECB has been quite inflationary in order to support the project of the euro.

The following measures indicate the inflationary stand of the ECB:

1. Since 2008, the ECB provides unlimited liquidity to banks. Whenever a bank provides a new Greek government bond as collateral the ECB provides more base money.

2. The ECB has diluted collateral standards. Greek, Portuguese, and Irish bonds will be accepted as collateral even if rated as junk. The quality of assets that are backing the currency is diluted.[6]

3. The ECB has bought government bonds outright in a sum of €160 bn.

4. The ECB holds interest rates at artificially low levels to save the euro project. Higher interest rated could lead to defaults both private and public in the periphery.

Prices in the eurozone are thus higher than they otherwise would have been. The bailout costs will probably not paid entirely by higher taxes but also through money production. Imagine that Germany takes a loss from loans to the Greek government of €10 bn. Will the German government increase taxes by €10 bn. or reduce expenditures by €10 bn.? The answer is "probablynot". More likely, the German government will increase its debts financing through the banking system thereby increasing the money supply. As debt mountains are increasing in

[6] For the quality of money and the importance of a central bank´s assets see Bagus (2009a).

all of the EMU, inflationary pressure is increasing as well. Within the EMU there is no way to escape.

2.2.5 Centralization and the loss of liberty

The EMU has a built in bias toward centralization that can affect the whole European Union. As seen before, there is an incentive for deficits especially in the smaller countries that can expect to be bailed out. The accumulation of debts triggered a sovereign debt crisis. This crisis, in turn, has been and may be used for centralization. The bailouts and rescue funds require new central institutions. In order to manage and prevent further debt crisis, some politicians ask for an economic government. Countries are expected to lose sovereignty in exchange for bailouts and in favor of an increase of power of European institutions.[7] In fact, Porter (2010, 13) argues that a solution to the current problems would be a harmonization of taxes, a "federal" tax, as well as a full merger of the ECB and national central banks in a step toward political union. Similarly, Deo, Donovan and Hatheway (2011) regard some kind of "fiscal union" as the solution to the euro crisis.

The centralization of fiscal policies contains important risks for members of the eurozone. They lose part of their sovereignty. The centralization will imply some harmonization of fiscal policies. One may think that austerity measures will prevail in this harmonization. And this may be so in the beginning as the German influence remains dominant. However, the German influence will likely suffer the same fate it suffered within the ECB. The ECB was thought to be in favor of "hard money" and modeled after the Bundesbank. Similarly, the new economic government may be modeled after fiscally responsible Germany. Yet, like in the council of the ECB, Germany and its allies will find themselves in the minority.[8]

Already in the case of Ireland´s bailout important aspects of the European harmonization became apparent. European politicians such as Nikolas Sarkozy pressured Ireland to increasing its corporate tax. The deal was: bail out for tax increase. In spite of the pressure the Irish government resisted.

Lastly and most importantly, fiscal harmonization eliminates competition. In Europe there still exists tax competition to attract citizens, companies and investments.[9] Countries cannot increase taxes too much, because people and capital can easily move to other EU countries. The possibility of voting by foot, exiting countries with higher tax burdens, is an important guarantee for individual liberty. The EMU drifts toward centralization and economic

[7] The Bundesbank (2011a, p. 11) in its monthly report argues implicitly in favor of "an extensive surrender of national fiscal sovereignty…".

[8] We may remind of Axel Weber and Jürgen Stark that resigned from their position as they found themselves in a minority position against the more inflationary position in the council.

[9] Small governments have many close competitors and cannot tax and regulate much more than their competitors. Due to Europe´s traditionally decentralized power system, Europe provided the origin of capitalism and unknown prosperity (Hoppe 1993).

government thereby eliminating tax competition and making voting by foot more costly. Once harmonization is reached, taxes and regulations will probably increase and liberty be reduced. So, staying with the EMU comes with this important risk for liberty.

2.2.6 Threat of conflicts between nations

The EMU provokes conflicts between otherwise peacefully cooperating nations. Redistribution is always a potential cause of social stress. The monetary redistribution in the EMU was not understood by the bulk of population and, thus, did not cause conflicts. The bailouts, the rescue fund and the interventions of the ECB that were ultimately caused by the setup of the EMU have made the redistribution between countries more obvious.

Germans do not like maintaining the Greek welfare state. In the German media Greeks are called 'liars' and 'lazy'. The Greek media, in turn, demanded reparations for WWII. While the German do not like paying for the periphery, people in peripheral countries blame Germans for austerity measures. They feel that the unpopular measures are imposed on them by foreign (German) pressure. Within the EMU, these clashes and conflicts will continue and probably increase. Remaining in the EMU implies living in such an atmosphere and the risk of escalation.

3. Exit problems

As we saw the costs and risks are already immense and rising. So is an exit possible? Intuitively, the exit from the euro should be as easy as the entrance. Joining and leaving the club should be equally simple. Leaving is just undoing what was done before. Indeed, many popular articles discuss the prospects of an exit of countries such as Greece or Germany.[10] However, other voices have rightly argued that there are important exit problems. Some authors even argue that these problems would make an exit from the euro virtually impossible. Thus, Eichengreen (2010) states: “The decision to join the euro area is effectively irreversible.” Similarly, Porter (2010) argues that the large costs of an exit would make it highly unlikely. In the following we address the alleged exit problems.

[10] Reiermann (2011) discusses rumors of a possible Greek exit. Desmond Lachman (2011) maintains that Greece exit from the Eurozone is inevitable. Feldstein (2010) recommends Greece a “holiday” from the euro. Johnson (2011) and Roubini (2011) recommend Greece to leave the Euro and default. Alexandre (2011) and Knowles (2011) wonder how a Greek exit could be achieved. Edmund Conway (2011), on the contrary, thinks that Germany should leave the Eurozone. David Champion (2011) considers also the possibility of a German exit.

3.1 Legal problems

The Maastricht Treaty does not provide for a mechanism to exit the EMU. Thus, several authors maintain that an exit from the euro would constitute a breach of the Treaties (Cotterill 2011, Procter and Thieffry 1998, Thieffry 2011, Anthanassiou 2009).[11] In an ECB working paper from 2009 Anthanassiou claims that a country that exits the EMU would have to leave the EU as well. As the Lisbon Treaty allows for secession from the EU, withdrawal from the EU would be the only way to get rid of the euro.

The solution to this legal problem could be an exit from both the EMU and EU with an immediate reentering of the EU. This procedure could be negotiated beforehand. In the case of a net contributor to the EU budget such as Germany, the country would probably not face any problem to get immediately readmitted to the EU.

In any case, the referral to the Maastricht Treaty when discussing the legal possibility of exit is intriguing, because the Maastricht Treaty, especially the "no-bail-out clause" has been violated through the bailouts of Greece, Ireland and Portugal. The EFSF serves to guarantee effectively debts of other nations, not to mention the plans to introduce eurobonds.

In addition, the ECB has violated the spirit of the Maastricht Treaty by purchasing debt of troubled nations. It seems to be justified if not an obligation to leave the euro after the conditions for its existence have been violated.[12] Indeed, the German Constitutional Court ruled in 1993 that Germany could leave the euro if the goals of monetary stability were not attained (Scott 1998, 215). After the last couple of years, it is clear that the eurozone and the euro are far from being stable. Apart from these considerations it should be noted that a sovereign state can repudiate the Treaty (Deo, Donovan and Hatheway. 2011).

Another legal problem results from the possible redenomination of contracts in the wake of an exit from the euro. A government may redenominate euro contracts into the new currency (applying *lex monetae* - the state determines its own currency). It may do so without problems if the contracts were contracted in its territory or under its law. But what about private and public bonds issued in foreign countries? How would foreign courts rule (Scott 1998, 224)?

Imagine a German company that sold a bond in Paris. Will the bond be paid back in euro or in the new currency if Germany leaves the euro? The French court would probably decide that it can or must be paid back in euro.[13] Possibly, also the European Court of Justice would rule on

[11] Smits (2005, 464) writes: "There is no legal way for a separate exit from the eurozone. So, an intention to give up the single currency can only be realized by negotiating an exit agreement, or, failing successful conclusion thereof, leaving [the EU altogether] after the two-year notice period."

[12] Anthanassiou (2009, p. 19), in contrast, argues that no country can leave in protest the Eurozone.

[13]Mann (1960) maintains that if it is unclear which currency should be applied, the courts should use the law specified in the contract. So if the bond of the German company is sold in Paris under French law, the contract would be paid in euro. Porter (2010, p. 4) reaches the same conclusion.

such issues. Thus, in case of an exit there would be some uncertainty caused by court settlements. There may be one-time losses or profits for the involved parties. However, it is hard to see why these court rulings would constitute important disturbances or insurmountable obstacles for a euro exit.[14]

3.2 Economic costs

3.2.1 Introduction costs

An exit from the euro may imply the issuing of a new national currency. This involves the costs of printing new notes, melting new coins, exchanging vendor machines etc. There are also logistic costs exchanging the new currency against the old one. These costs are not higher than the costs of introducing the euro. The costs for introducing the euro in Austria have been estimated at €1.45 bn. euro or around 0.5 percent of GDP.[15]

3.2.2 Wage inflation and higher interest rates

Sometimes it is argued that peripheral countries with uncompetitive wages could just exit the euro and magically solve all their problems. Greece, for instance, suffers from too high wages mainly because there is no free labor market. Labor unions have caused wages to be too high. The resulting unemployment had been attenuated by government deficit spending and debt accumulation made possible by the eurosystem. The Greek government employed people at high wages, paid unemployment benefits and retired people early with high pensions.

As strong labor unions prevent wages to fall and recuperate competitiveness, some people recommend Greece to exit the euro, depreciate the currency and thereby increase competitiveness. This argument contains a problem. If labor unions remain strong they may simply demand wage increases to compensate for higher import prices (Eichengreen 2010, 8). Such a compensatory increase in wages would eliminate all advantages from depreciation.[16] The exit would have to be accompanied by a reform of the labor market in order to improve competitiveness. In any case, after an exit from the EMU, the Greek government could not use EMU monetary redistribution and deficit spending to push up wages artificially anymore.

[14] Thieffry (2011, p. 104) fears a "serious legal dislocation of government bond markets and a long period of uncertainty." Problems for irresponsible governments to finance deficit spending might actually be seen as advantageous.

[15] See Newsat (2001).

[16] The argument of increased competitiveness via depreciation has more fundamental problems (Rallo 2011, 158). While it is important to lower some prices vis-à-vis the foreign world (e.g. wages in some sectors), depreciation lowers all prices to the same extent. Moreover, it makes imports more expensive. If a country has to import commodities and goods which are later exported, the depreciation may not increase competitiveness at all.

Similarly, an exit without further reforms could lead to a repudiation of government debt. This would imply higher interest rates for the government in the future (Eichengreen 2008, 10). An accompanying reform of fiscal institutions such a constitutional limits for budget deficits could alleviate this problem.

3.2.3 The end of monetary redistribution between countries

Some countries benefit from the monetary setup of the EMU. They pay lower interest rates on their debts than otherwise. If a country like Greece exits the euro and repays its debts with a devalued new currency, it will have to pay higher interest rates for its debts.

In addition, countries such as Greece could not benefit from the monetary redistribution anymore. The Greek government and indirectly part of the Greek population benefit from the high Greek deficits and the flow of new money into the country. This process allowed Greece to finance an import surplus and standard of living it would not have achieved otherwise. At least in the short term, an exit from the euro would *ceteris paribus* mean a deterioration of artificially high living standards. In other words, after an exit of the EMU, the size of its public sector and standard of living would likely fall as the EMU subsidies would end. These redistribution costs only apply for countries that have been on the receiving end of the redistribution. For fiscally sounder countries the opposite reasoning applies.

3.2.4 Trade losses

Some authors argue that European trade would collapse in the wake of a euro exit. Trade barriers would be re-erected. In any case there could be an appreciation of the new currency like a new DM. In a UBS research paper Flury and Wacker (2010, 3) estimate that the new DM would appreciate about 25%.

In contrast to another UBS research paper (Deo, Donovan and Hatheway 2011) that comes up with horrific costs of a euro break up[17], I do not regard such trade barriers very likely for several reasons. First, such barriers would be an economical disaster for all involved parties and lead to a severe and long depression and reduction of living standards. Second, net

[17] The authors estimate the costs for "weak" countries to leave between 9,500€ and 11,500€ per person and 6,000€ to 8,000€ per person for "strong" countries. The authors contrast these numbers with the relatively small cost of €1,000 per German in the case of a 50% haircut on Greek government debt. These estimations neglect some important benefits of exit and exaggerate the costs. For instance, they do not take into account the long term costs of a fiscal union, nor the higher inflation. Moreover, they assume that the "strong" leaving country would have to "write off its export industry" and civil disorder in weak countries, while the possibility of such disorder it actually higher staying within the eurozone.

contributors to the EU such as Germany could still use their contributions to the EU budget to as a negotiation card to prevent such barriers. Third, trade barriers are a blatant violation of EU Treaties. Fourth, tariffs could provoke severe tensions between nations possibly leading to war.

3.3. Political costs

Sometimes it is maintained that an exit implies high political costs. Most importantly, an exit could trigger the dissolution of the euro and mean the end of the euro project. [18] The disintegration of the EMU could endanger the dream of a federal European state. At least, it would mean an important blow to the "European project." It could mean the end of the EU as we know today. The EU could "degenerate" into a free trade zone.

Politicians of the exiting country would lose influence on the policies of other EMU countries. The politicians of the exiting country would also lose appreciation of other EMU politicians and in the mainstream media that has supported the euro staunchly. However, for supporters of a free trade zone in Europe, these political costs imply immense benefits. The danger of a federal European state would disappear for now.

3.4 Procedural costs and capital flows

An exiting nation has to print new notes, mint new coins, reprogramme automatic teller machines and rewrite computer codes (Eichengreen 2008, 17).[19] This takes time. The case of machines may not be tragic since during the transition period old machines may be in use without chaos. A public parking place using euro coins will not bring the economy down.

The notes and coins problem has a fast solution because on both the country´s origin is visible. Coins have a country specific image and notes bear a country specific letter. In a German exit from the euro all German coins and notes would be redenominated into the new currency and later gradually exchanged into the new notes and coins. Of course, the transition period involves some checking costs as people have to look on the symbols when transacting in cash.

The most severe problem of a euro exit, that according to Eichengreen (2010) would pose "insurmountable" barriers are capital flows when the option of exiting is discussed.[20] Such a

[18] On the history of the political project of the euro as a means toward a central European state see Bagus (2010).

[19] Flury and Wacker (2010) estimate one year of transition to fully establish the new currency.

[20] Smith (2005. 465) points to the instability caused by speculations about an exit: "even the threat of withdrawal will affect the euro stability and may lead to speculation against the single currency." Scott (1998, 211) argues that speculation on which country is to leave may lead to a break-up of the eurozone.

discussion takes time in democracies. During this time there may be important capital inflows and outflows.[21]

Let us first discuss the problem of capital outflow such as in the case of an exit of Greece with no accompanying reforms. If Greek senior politicians would seriously discuss an exit from the euro, Greek citizens will expect a depreciation of the new currency, a new drachma. Greek citizens will transfer their euro held at Greek banks to accounts in other EMU countries. They will probably not turn in their euro notes to be exchanged into the new drachma voluntarily.

Greek citizens may also acquire other currencies such as Swiss franc, US dollars, or gold to protect themselves from depreciation. In this way Greece could be practically immunized against the new drachma even before its introduction. As a consequence, the Greek banking system may get into liquidity and solvency problems. Meanwhile, Greek citizens would continue to transact in euro held outside Greek jurisdiction.

This is the so-called "problem" of capital outflows. Yet, these outflows are not a problem for ordinary Greek citizens. For them these outflows are a solution to the problem of an inflationary national currency. Moreover, capital outflows are already occurring. The discussion in parliament of a Greek exit would only speed up what is happening already.

The opposite reasoning applies when a more solvent country like Germany discusses the exit from the eurozone. When people expect an appreciation of a newly introduced currency, there would be capital inflows into Germany. The money supply of euro within Germany, which would be later converted into a new currency would increase. Prices of German assets (eg, housing and stocks) would increase in advance of the actual German exit in benefit to the current owners of such assets. In section 4 we will see how this "problem" could be reduced.

3.5 A systemic banking crisis

Finally, there may be a negative feedback for the banking system as there will most likely be losses for banks both domestic and foreign.[22] [23] Eichengreen (2010) fears the "mother of all financial crises". Due to connectivity it does not matter if Germany or Greece leaves the euro.

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[21] Porter (2010, p.6) depicts the following scenario. If Germany is expected to introduce a strong currency. banks will transfer deposits to Germany. They could lend at the marginal lending rate of their central banks and deposit at the Bundesbank. The Bundesbank balance sheet would expand substantially. Porter suggests a surprise shut down of the TARGET2 system.

[22] Another alleged problem is contagion. If one country leaves the eurozone, investors may sell the debt of other weak EMU governments and their banks triggering more exits. The contagion problem does not concern us here, because we want discuss the possibility of exit. If exit is possible and desirable, contagion is no insurmountable problem but may be even recommendable.

[23] As Porter (2010, p. 5) points out that an exit would result in a currency mismatch of many companies and banks. Suddenly they would have assets or debts denominated in a foreign currency with a changing value resulting in windfall profit or losses. As Germany has a net foreign asset position and an exit would likely lead to an appreciation of the new German currency, losses would result. The losses would damage balance sheets.

If Greece leaves the euro and pays back its government bonds in a depreciated new currency or defaults outright, there will be losses for European banks that could get into solvency problems. Similarly, if Germany leaves the euro, the implicit guarantee and support to the eurosystem will disappear. The result may be a banking crisis in Greece and other countries. The banking crisis may negatively affect German banks.[24] The banking crisis will also affect negatively sovereigns due to possible bank recapitalizations. Other countries may be regarded as possible defaulters or exit candidates leading to higher interest rates on public debts. A systemic financial crisis infecting weak governments is likely (Boone and Johnson 2011).

Recently, the IMF suggested that European banks face €300 bn. in potential losses and urged the banks to raise capital.[25] We should emphasize that the problem of bank undercapitalization and bad assets (most importantly, peripheral government bonds) does already exist in the EMU and will deteriorate without an exit.

It is almost impossible to leave the euro without already rotten structures collapsing. Yet, this collapse would have the beneficial effect of quickly purging unsustainable structures. Even if there are no exits from the euro, the banking problem exists and will have to be solved sooner or later. Potential bank insolvency should therefore be no argument against an exit.[26] In the EMU tax payers (mostly German) and inflationary measures by the ECB are momentarily containing the situation. An exit would speed up a restructuring of the European banking system.

At this point I would like to give the following recommendation for a solution of the banking crisis. There are important free market solutions to bank solvency problems.[27]

A) Banks with non-viable business models should be allowed to fail, liberating capital and resources for other business projects.

B) A debt-to-equity conversion may put many banks on a healthy basis.[28]

C) Banks may collect private capital by issuing equity, as they are already doing.

A free market reform has important advantages.

[24] Flury and Wacker (2010) discuss this and other problems related to a German exit from the euro.

[25] See Reddy (2011).

[26] One may also ask whether a country should not have used the possibility of secession from the Soviet Union in fear of banking problems.

[27] For a detailed plan and critique of the 2008 bailouts see Bagus and Rallo (2011).

28 Ideally, this conversion would be voluntary. If bank creditors are unwilling to convert their investments into equity, the bank would have to be liquidated with high losses due to fire sales. Thus, there is an incentive for creditors to convert bank debts into equity, if the business model is be viable. Doing so they can prevent the higher losses from a liquidation. On the contrary, Buiter (2008) has suggested an involuntary across the board debt-equity conversion. This measure is unnecessary if we allow for bank failures.

a) Tax payers are not hurt.

b) Unsustainable banking projects are resolved. As the banking sector is over-sized it would shrink to a more healthy and sustainable level.

c) No inflationary policies are used to sustain the banking system.

d) Moral hazard is avoided. Banks will not be bailed out.

3.6 The problem of disentangling the ECB

The eurosystem consists of the ECB and national central banks. The task of disentangling is facilitated because national central banks still possess their own reserves and have their own balance sheet.Scott (1998) argues that this setup may have been intentional. Countries wanted to retain the possibility to leave the euro if necessary.

On January 1st, 1999 the ECB started with a capital of €5 bn. In December 2010 the capital was increased from €5.76 bn. to €10.76 bn.[29]

Only part of all EMU reserve assets have been pooled in the ECB making a disentangling easier. On January 1st, 1999 national central banks provided €50 bn. in reserve assets pro rata to their capital contribution (Procter and Thieffrey, 1998, p. 6). National central banks retained the "ownership" of these foreign reserve assets and transfered the management of the reserves to the ECB. (Scott 1998, p. 217) In the case of an exit both the return of the contribution to the ECB's capital and the foreign assets transferred to the eurosystem had to be negotiated (Anthanassiou 2009).

Similarly, there is the problem of TARGET2 claims and liabilities. If Germany would have left the EMU in December 2010, the Bundesbank had found TARGET2 claims denominated in euro of more than €326bn. on its balance sheet. If the euro depreciated against the new DM, important losses for the Bundesbank would have been the result.[30] As a consequence, the German government may have to recapitalize the Bundesbank. Take into account, however, that these losses would only acknowledge the risk that the Bundesbank and the German Treasury are facing within the EMU. This risk is rising everyday the Bundesbank stays within the EMU.

If, in contrast, Greece leaves the EMU, it would be less problematic for the leaving country. Greece would simply pay its credits to the ECB with the new drachma involving losses for the ECB. Depositors would move their accounts from Greek banks to German banks leading to TARGET2 claims for the Bundesbank. As the credit risk of the Bundesbank would keep

[29] The Bundesbank capital share is 27.1 percent. The paid up capital is €1.4 bn. (The Bundesbank´s capital share is 18.93 percent including both eurozone and non-eurozone member).

[30] A depreciation of the euro implies a loss of almost €100 bn.

increasing due to TARGET2 surpluses, the Bundesbank might well want to pull the plug on the euro itself (Brookes 1998).[31]

4. Ways to leave the euro

4.1 Redenomination – return to the national currency

A) Public debate and subsequent exit

In a complete redenomination all contracts and debts within a country's jurisdiction are redenominated into a new currency. Old notes and coins are gradually exchanged against new ones. The redenomination rate could be 1:1 to make the transition easier. There are several practical ways to achieve such a redenomination. The first option contains a discussion about the exit in the parliament. In the case of Greece, this would trigger an immense outflow of capital.[32] When redenomination finally comes after intense democratic discussion, almost no money will be left to be converted into the new drachma. Greek citizens could just continue to use euro held at foreign banks for the bulk of their transactions. Indeed, these capital flows are already occurring.[33]

If Germany or similar countries discuss an exit, capital flows into Germany would be the case, reducing interest rates. In the extreme almost all of the euro money supply would be held at German banks. A redenomination of these euro into the new currency would make the Bundesbank effectively the real central bank of Europe.[34] People might start using the new DM in their respective countries. German prices would probably increase before redenomination relative to prices in the rest EMU. This effect could dampen the appreciation of the new DM after redenomination.

[31] Note that the claims or liabilities in the TARGET2 system are not against other national central banks but a single net bilateral position is established vis-á-vis the ECB only. (Whittaker 2011). See also Bundesbank (2011b, 34).

[32] Arghyrou and Tsoukalas (2010) discuss a temporary split from the Euro where all existing Greek debt would remain in the strong euro to prevent a banking crisis. A devaluation would restore competitiveness and be used for reforms and fiscal consolidation. The disadvantage of such a proposal is that by a devaluation the pressure to reform is actually reduced.

[33] Greek banks had lost 18% of their deposit base in July 2011 during the past 18 months and European banks had diminished their loans to Greece by more than €20 bn. (Lachman 2011) In other words, capital flights are already underway within the eurozone and will keep rising even without an exit.

[34] The inflow may be sterilized later by selling loans to other EMU central banks against the new DM.

In order to prevent such capital flows during public discussion capital controls and bank holidays are necessary.[35] One could convene the German parliament in an emergency meeting on Friday night and decide on the weekend on the exit. Banks would remain closed until they had changed their software to the new DM. However, capital controls are against European law. But bank holidays may be justified with an emergency situation.

B) Complete surprise without discussion

In order to prevent speculative capital flows, the decision to redenominate all currency and contracts must come as a complete surprise.[36][37] On Friday night, for instance, the German government announces that from now on all contracts and bank accounts within the country are redenominated into the new DM. The Bundesbank stops accepting euro coming from abroad and ends TARGET2.[38]

The government may invoke emergency law and declares a bank holiday until all bank software changes are completed. The country´s notes and coins are also redenominated and exchanged later.

The main problem of this approach is that it is undemocratic. There is no public debate in parliament or in the media. Democratic institutions are circumvented. Nevertheless, there are ways to justify such an approach out of several reasons.

First, the opinion of the population (such as the German one) as expressed in elections and polls is in favor of such a measure.

Second, a state of emergency may be declared to prevent greater evil from the population through fast decision making.

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[35] When Czechoslovakia broke up, capital controls were installed to prevent capital flows. No currency was allowed to be transported abroad (Eichengreen 2008, 17). The Czechoslovak case is one of the few fiat currency break ups. People voluntarily brought their money in as they trusted the new currency. See on the Czechoslovak case also Fidrmuc and Horváth (1998).

[36] Alfonso Tuor argues that a German exit had to be done overnight in response to Ansgar Belke who does not mention this requirement for a German exit. (Larouchepac 2010).

[37] One important question is if capital flows should be prevented in the first place. Capital flows may be disturbing for policy makers. For citizens they are a way of expressing their will and a vote on the currency system they want to be in. Capital flights are a possibility for citizens to defend themselves against a domestic inflationary monetary policy. They just want sounder money.

[38] Something similar happened after the break-up of the Soviet Union in the ruble zone (Boone and Johnson 2011, 6). After a strong monetary expansion by national central banks, national central banks stopped to accept rubbles produced by each other. In other words, the deposits could not flow through the banking system from one country to the other, while ruble cash still could. Due to the letters on the Euro notes identifying the country´s origin, notes could be distinguished in a euro exit in contrast to ruble notes.

Third, the will of the population has not been consulted before. For instance, there was no referendum on the introduction of the single currency in many countries. Further, the bailouts of Greece, Ireland and Portugal were decided on the European level first without asking parliaments beforehand and without debate in parliaments or the public.

C) Provisional redenomination

There exists an elegant way to prevent both capital flows and a democratic deficit. This way allows for an extensive debate on the decision to leave the euro both in parliament and in public, allowing even for a referendum: The exiting government uses the emergency situation of the eurosystem to justify a *provisional* redenomination of the currency.

On a weekend the government could convene an emergency meeting of the parliament and vote for a provisional redenomination. From this moment on all contracts and accounts in the country are provisionally redenominated into a new currency. For international transfers banks could open euro accounts beside national currency accounts. The central bank could exit TARGET2 provisionally.

The provisional redenomination would allow for public debate and a referendum on the issue without disturbing capital flows. After the provisional period the change would be made permanent or accounts and contracts are simply nominated into euro again.

4.2 Parallel currency

Another possibility to pull out of the euro or at least its most harmful disadvantages is the introduction of a new parallel national currency.[39]

The national central bank would exit the eurosystem and issue a new currency. National banks would refinance themselves with other EMU banks or get loans in the new currency from the national central bank. The national central bank would back the new currency with its gold reserves and other assets. For instance, Greece could sell public assets and buy gold to issue a gold backed currency. The Bank of Greece could even make a redemption promise into gold and introduce a 100% gold standard. The government could pay its government bonds in the new currency as well as its employees.

4.3 Currency freedom

A last possibility is the introduction of currency freedom or currency competition by abolishing all legal tender laws (Klein 1974, Vaubel 1977, Hayek 1990). For some countries currency freedom could mean adopting the euro in the beginning, especially for small

[39] Porter (2010) discusses such a possibility from another perspective.

countries as people would continue to use euro. Gradually, however, contracts denominated in Swiss franc, US dollars, or gold could gain market share.

The currency competition option has the following advantages. First, currency freedom is an advantage in itself from an ethical point of view. Individuals use their currency of choice and are not forced to use an inflationary legal tender. Second, in the long run the most stable currencies will survive in currency competition. Issuers compete in offering stable currencies. Third, currency freedom allows a country (presumably a small one that could face difficulties to introduce credibly a stable new national currency) to exit the EMU and with it to avoid all losses resulting from engagements in the EFSF, ESM or losses suffered by the ECB. As initially the euro would remain in circulation there would be no rough disruptions.

A disadvantage of currency competition may be the initial intrusion of the euro. Most likely, the euro will be inflationary in the next years to help financing the bailout of banks and governments. The exiting country would, at least, in the beginning suffer from imported price inflation and monetary redistribution.

5. Accompanying steps to make an exit a success: roll back the state

If, for instance, Greece would exit the euro today with no further reforms, the result would be disastrous.[40] Greece would still run a gigantic structural deficit, maintain an enormous public sector, and suffer from high taxes, too high wages, powerful labor unions, privileges of all sort and inflexible markets. People would sell the new currency (new drachma), possibly causing very high price inflation rates. Greeks would also run banks to exchange the new drachma into hard assets. Investors and entrepreneurs would flee the country. Private capital would leave the country. Interest rates would soar. Misery would be the result.[41]

For an exit to be successful, the new currency must be expected to be less inflationary than the euro.[42] In case of Germany due to its fiscal situation, competitiveness and monetary tradition, such an expectation would be easy to achieve. But even in the case of a German exit, there may be a negative feedback to the German economy by turmoil caused in foreign

[40] If the Greek government is unwilling to reform its economy, there is no legal way to expel it from the euro as the Maastricht Treaty does not provide for such an option (Anthanassiou 2009).

[41] Karlsson (2010) argues that there are reduced incentives for reforms after getting full control on monetary policy, since Greek politicians could just print their way out of any debt problems. On the contrary, one could argue that the necessary reforms are less likely to be done within the euro. Politicians may be able to sell austerity measures to the public if it is done not on the advice of other European politicians but in order to restore the stability of their own currency.

[42] Scott (1998, 220) argues that countries that want to withdraw and establish a stronger currency would have no difficulties. We have to clarify that it is essential that people *expect* the new currency to the less inflationary than the euro.

and financial markets by its very own exit. Therefore, reforms alleviating such a negative feedback should also accompany a German exit. In the case of Greece, a successful exit would require bolder action.

a) Initiate a banking and monetary reform

To prevent inflation and bank runs it is essential to put the financial system on a sound base. A recapitalization of banks is in order and inevitable even without an exit sooner or later. A free market solution to the undercapitalization problem was outlined above.

A monetary reform would also help the transition to a new currency. A new currency could, for instance, be backed by the gold of the national central bank. The Greek government, for instance, could back all new drachma 100% with gold making the drachma convertible into the metal. By backing all bank deposits 100% by gold, a bank run could be prevented.[43]

b) Eliminate the public deficit

By eliminating the public deficit, fears of monetization would be reduced. When a government keeps running high deficits, people will think that the debt will be monetized sooner or later. Capital outflows would be the result. The elimination of the deficit could attract foreign capital reducing interest rates and smoothening the transition period. The reduction of government spending to reduce the deficit also promotes growth in the private sector, and eliminates distortions and waste. In addition, it helps to win confidence for the currency.

c) Restructure old debt

Restructuring or defaulting on part of the old public debt has several advantages. A diminution of existing government debts reduces the fear of monetization and thereby generates confidence in the new currency. It makes also future deficits more unlikely as the government will have problems to issue new debt. The temptation for governments to run deficits and to monetize them is thereby reduced.

d) Privatize

Privatization of public assets puts assets into the hands of the productive private economy. Privatizations, thereby, generate growth and reduce public expenditures. The number of public employees is reduced. In addition, the receipts can be used to lower the burden of

[43] For concrete reform plans see Huerta de Soto (2009, ch. 9), or Bagus (2008, 2009b).

public debts or buy assets such as gold to back a newly issued currency. Capital of the public sector is set free for private projects.

e) Deregulate

Deregulation allows entrepreneurs to engage in combinations of factors of production to satisfy consumer wishes that before were forbidden. Deregulation stimulates innovations and growth. It makes resources available, smoothing the transition and helping with eventual banking and monetary reforms.

f) Make flexible

It is essential to make markets flexible, especially the labour market. Inflexible labour markets reduce growth and produce unemployment. Unemployment produces government expenditures in form of unemployment benefits. Uncompetitive countries such as Greece have compensated such unemployment with deficit spending absorbing the unemployed onto the public payroll. Without a labour market reform an introduction of a new currency could be disastrous. Flexibility would make the economy competitive, increase growth, and attract private capital necessary for the restructuring of the economy. It also helps with privatizations that will set free people working in the government sector. These people need to find jobs in the private sector quickly.

g) Lower taxes

Lower taxes allow the economy to grow. Projects that with higher taxes were unprofitable suddenly become profitable. Saving and capital accumulation is promoted. The lower taxes boost growth and attract capital necessary for the reforms and restructuring.

Conclusion

A famous essay by Frédéric Bastiat is titled: “What is seen and what is not seen”. Bastiat emphasizes in this essay that we have to look not only on the more direct effects of an action but also on the more long term, more indirect, less visible effects. The same is true for a euro exit. We should not only look at the obvious problems such a step would cause but also on the more hidden and long term costs of remaining within the eurozone. Accordingly, in this article we tried to make the immense costs of remaining within the euro seen and compare them with the problems of exiting the euro.

When a country exits the euro there will be turmoil in the markets and probably a banking crisis which is very visible. Thus, an exit is generally feared because calamity is seen. Even though they are more hidden and less visible, the costs of remaining within the euro are even higher. These costs do not only include the costs of the open bailouts and the guarantee for the rescue funds.

The euro is a misconstruction as several independent governments can finance their deficits through one (central) banking system. The incentive is to run higher deficits than other states of the EMU. The setup of the eurosystem made interest rates converge and enabled monetary redistribution. Due to its incentives there is a tendency for price inflation.

To save the euro the ECB will have to be highly inflationary in the future. The ECB will have to keep accepting or buying governments bonds and finance the rescue funds. Within the EMU the incentives to reduce deficit spending are diminished. There is a general tendency for the size of government to increase due to this inflationary deficit spending. Most likely, only a centralization of some sort (fiscal union) will be able to save the euro at this point with its current members. The growing size of government and the centralization imply a loss for individual liberty. Lastly, the redistribution may cause conflicts between nation and disturb the harmonious cooperation in Europe.

The problems of a euro exit have been largely exaggerated. Introduction costs, wage inflation, trade losses, political costs, legal problems, procedural costs, problems with disentangling of the ECB, sometimes pose important but no insurmountable problems. With accompanying measures and careful negotiation these problems at the end are all manageable.

We found three ways to exit the euro.

> First, a redenomination of all contracts and deposits into a new national currency. Coins and notes bearing the national symbol are exchanged gradually into the new currency preferably at a 1:1 exchange rate. In order to prevent disturbing flows of capital a "provisional" redenomination allowing for democratic discussion seems to be the most elegant way.
>
> Second, the issue of a parallel national currency. This national currency may be backed by government or central bank assets preferably gold and would compete with the euro.
>
> Third, currency competition. All legal tender laws are abolished. Gradually, citizens will start using more stable currencies and possibly adopt commodity based means of payment.

It is essential to accompany an exit from the euro with supporting reforms to alleviate transition costs. The sovereign debt and euro crisis is foremost a crisis of the state that has grown to a dimension that threatens the stability of the currency. Accompanying measures must roll back the state. To introduce a new currency with success it is essential that this new currency is expected to be less inflationary than the euro. A banking reform will be necessary in any case. An exit from the euro should be used to thoroughly reform the banking and monetary system putting them on a sound basis. Moreover, the public deficit should be eliminated, old public debt restructured, public assets privatized, market deregulated and made flexible, and taxes lowered.

If an exit from the euro is accompanied by these measures, it will be a great triumph for growth, peace, and liberty in Europe. The alternative is stagnation, inflation, centralization and conflicts.

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