Working Paper

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Overcoming the EMU crisis by ignoring Hume's Mechanism?

Abstract

The slump in the southern periphery of the Eurozone is mostly attributed to the loss of competitiveness in the region. In a system of pegged exchange rates yet not being an optimum currency area, deficit economies must reduce their price levels in order to return to a balanced current account. Europe has repeatedly tried to establish functioning systems of pegged exchange rates, which all failed. The primer reason was that going through internal devaluation is economically costly. Yet it is the property of fixed exchange rate systems that the lion's part of the rebalancing is born by the deficit countries. For the sake of saving the euro, Germany and the North might be pushed towards a political union. While it wouldn't make the Eurozone an optimum currency area, it would entail a massive burden sharing. However, Germany and the North are not big enough to shoulder a large-scale mutualization, which includes seemingly painless solutions like Eurobonds and the ECB OMT program . At the same time, it is hard to address the loss of competitiveness in the South. Being between a rock and a hard place, a break- up of the currency union can no longer be ruled out.

In the early 17th century, an influential group of economic agents in Great Britain, the mercantilists, maintained that a trading nation should always run a trade surplus if it wouldn't lose economically against its trading partners. In an essay describing the so called price-specie-flow mechanism (specie refers to precious metals like gold and silver), the British philosopher David Hume tuned their claim down explaining that the external balance of a nation is always self restoring. At that time, imports were paid in gold and silver, and trade deficits would deplete the stock of precious metals in a country. Since gold and silver would flow out of the country, prices would fall and make that nation's goods more competitive, with the result of less trade deficit or more surplus. Gold would flow in and build up the reserves. The price-specie-flow mechanism would make sure that any trade imbalance eliminates itself. According to Hume, a perpetual surplus/deficit is impossible, because gold inflows/outflows drive up/down domestic prices and restore equilibrium in the balance of payments.[1]

Cross border shipping of precious metals became obsolete as central banks emerged and took responsibility for the money supply. However, starting in the 19th century and well into the 20th century, the so-called gold standard was reminiscent of Hume's view and an attempt to maintain external balance that is brought about automatically. Under the gold standard, currencies' prices are fixed in terms of gold, and thus maintain parity against each other. But the gold standard also breeds the problems that have caused its collapse and replacement by other mechanisms: central banks were concerned with keeping a sufficient stock of gold in the

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[1] An easy to read overview of Hume's work in R. Baldwin, Ch. Wyplosz, The Economics of European Integration, London, 2012, p. 380.

country. While running a lasting trade deficit, the central bank preferred to get around the necessity to allow prices to fall. Instead, it would sell domestic assets (say, bonds) to depress their prices and raise long-term interest rates. The latter would attract foreign money (gold) and keep the gold stock of the country preserved. This system worked more or less smoothly until the outbreak of World War I, when the governments of the countries in war started printing money to finance their military expenses. Inflation was the result, as the money stock in circulation was not backed by the same increase in the stock of gold. A half-hearted attempt to restore the gold standard after the war failed, i. a. because some countries (Great Britain) reintroduced it at overvalued gold parity and had to deflate, which exacerbated unemployment and stalled growth. Also, deficit countries (almost all Western economies except the US and France by the end 1920s) were attempting to raise interest rates by selling assets, which sent them into a deeper recession. A shift of attention away from the external and towards the internal balance (fighting deflation and returning to growth) produced the beggar-thy-neighbor policy disrupting international trade and imposing losses of no-trade.

In 1944, the Bretton Woods agreement was supposed to lay the ground of an international monetary system free of the faults of the prewar system. Specifically, full employment and price stability should be achieved while allowing the participating nations to avoid disruptive trade imbalances. The gold parity of the American dollar (35 $ per ounce of gold) and other currencies' fixed exchange rate were considered a sufficient firewall against loose monetary policies. At the heart of the Bretton Woods system was the understanding that no government would be willing to maintain both free trade and fixed exchange rates at the expense of long-lasting unemployment. By the early 1960s, after the postwar boom and restoration of the capital stock in Western Europe, the major European economies began to move in different directions. Under the system of fixed exchange rates, speculative attacks on the currencies of France, Italy, and UK became frequently forcing their central banks to deplete their foreign exchange holdings. As the German currency tended to appreciate, the German Bundesbank was accumulating foreign exchange reserves. This was one major reason for the breakdown of the Bretton Woods system, alongside with the policies of the US undermining the gold parity of the American dollar, which made markets additionally suspicious if the system would hold. In the end, internal considerations prevailed, and the system was abandoned in favor of flexible exchange rates (it was a managed float though).

But some 20 years later, the Europeans began reconsidering a system of fixed exchange rates, later called Economic and Monetary Union. The push for it came from the one of the "four fundamental freedoms" in Europe, the priority of free cross-border movement of capital. Also, a preference for stable exchange rates to foster trade played a role – research results suggested that a system of fixed European exchange rates, or what is the same, a single currency, would boost growth by several percentage points.

Moreover, the adoption of the Euro was seen as a highway to greater capital stock, and thus higher productivity and income in the periphery according to the catch-up prediction of the neoclassical growth theory.

History matters: the poor European record of pegging exchange rates

This brief overview of the gold standard and the Bretton Woods experience gives a hint that a system of pegged exchange rates (be it to gold or to an anchor currency) tends to disintegrate and to push for return to flexible forms of realignment. Usually a single currency can serve economically different regions only within a single nation, because national economies form an optimum currency area. The single currency circulates in all regions and areas of the country no matter how much they are apart in terms of their level of development. Against the backdrop that the EU is not a nation, now the question is raised: was it a wise decision to have a single currency for many countries with different levels of productivity and income?

The past European experience should have raised some red flags: in 1972 the member states of the then European Communities (EC) decided on a "snake in the tunnel," where the tunnel was an anchor currency (the American dollar); inside the tunnel the participating European currencies were allowed to fluctuate slightly. The following year this system collapsed, although the blame goes mostly towards the US, which has let the dollar floating. More telltale is the next attempt by the Europeans to stabilize their currencies against each other with no third parties involved. Pointedly, the European Monetary System was built on the concept of stable, yet adjustable exchange rates. In 1979, the EC member states committed themselves to keep their exchange rates almost fixed – only 2.25 percent appreciation/depreciation against a fictive European Currency Unit, a currency basket based on a weighted average of all currencies, was allowed. Notice that not all currencies were required to fluctuate within the pre-announced narrow band of just 2.25 percent of the central rate. Italy, Spain, Portugal, and UK were permitted to give their currencies a broader band of plus-minus 6 percent. Notice also, that back then the currency of Austria, a country outside the EC, was already tightly pegged to the German mark without any problems, and that the currency of Greece was not part of the EMS. Moreover, in August 1993 these bands were widened to 15% in order to counter a shock (originating from Germany's unification) and Italy and UK left the system, the former temporarily, the latter permanently. In hindsight, the EMS proved to rest less on stable, but rather on adjustable exchange rates given that not less than 11 realignments occurred between the start of the EMS in March 1979 and January 1987, and 18 times till March 1995.[2] Therefore the

[2] Krugman, P., Obstfeld, M, Melitz, M, International Economics, Pearson, 2012, p. 560; R. Baldwin, Ch. Wyplosz, The Economics of European Integration, London, 2012, p. 389.

predecessor of the EMU was characterized by frequent currency realignments and was supported by government control over capital movements, which left scope for national monetary policies. Another important feature of the EMS was a built-in intervention mechanism and preventive tool. Once the exchange rate of a currency reached 75 percent of the maximum fluctuation margin, the country had to take remedial action through interest rates and fiscal policy adjustments. Plainly, the government, which currency was about to become divergent, was called on to increase the competitiveness of the economy in order to make the currency attractive, i.e. to meet Hume's requirement to eliminate external imbalances. Yet the EMS was still not living-up to its promise (and was replaced by the EMU).

Why have the attempts to set up a robust system of pegged currencies been unsuccessful? The core reason was that the fundamentals of many EC member states at that time moved in opposite directions. For example, unit labor costs developed much faster in the South, France included, than in the North of the former EC, Austria included (Table 1). Notice that ULC should stay flat; at least they should increase at the same rate in all countries to make sure competitiveness in not being eroded. Otherwise, a surge in some country's ULC would translate into higher inflation there. Not surprisingly, between 1971 and 1990 yearly inflation rates ranged from the three northern countries' 2.7 percent to 6.3 and 10.5 percent in France and Italy, respectively, and much more in other economies of the then EC[3]. Since the EC was relaxing capital controls, inflation differentials of such magnitude have been exerting pressure on the nominal exchange rate (and on the domestic interest rate) of the high inflation economies causing their competitiveness to diverge.

Table 1: Unit labor cost increase in selected EC member states from 1975 through 1990, whole economy, percent

NL	DE	AT	FR	SP	IT	PT	GR
40	41	70	164	400	430	600	1200

Source: EU Commission

Another reason was the poor capacity for shock absorption of a currency system that was far from being an optimum currency area (OCA). The EMS crisis of 1992 is very instructive: the one-size-fits-all belief is wrong, when OCA is lacking - although the lesson was later ignored. As an outcome of the reunification, a boom occurred in Germany with higher inflation, which the inflation-averse Bundesbank, the then central bank, dealt with by raising the policy rate. Other EMS members such as France, Italy, and the United Kingdom were not simultaneously booming, although they were required to maintain the pre-agreed exchange rate. By matching the high German interest rates to hold their currencies fixed against Germa-

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[3] Source: EU Commission

ny's, they were involuntarily pushing their own economies into recession. Italy and UK gave in and left the EMS, whereas France and the remaining members were forced to significantly widen the exchange rate margins.

Therefore the decision on a common currency for effectively all EU member states (save UK and Denmark) came about while ignoring the lessons by the failed attempts before. Pointedly, the Delors Report focused on the removal of the national monetary autonomy and was negligent about the problems that a fixed exchange rate would entail.[4] This view was never altered in spite of the turmoil, which hit the ERM in 1992-93, causing the withdrawal of the Italian lira and the pound sterling, and the widening of the fluctuation bands to 15 percent. Rather, a more severe approach was decided upon: no exceptions for economies with lower productivity and no elements of fiscal federalism to make-up for the national, linguistic, historical and mental diversity of the EU. Credible safeguards to prevent the irrevocably fixed nominal exchange rates from producing various real exchange rates lacked. While the problem of speculative attacks on the weak currencies under the EMS was banned, it was replaced by the mercy of the financial markets to roll-over the debt of countries in fiscal trouble. So the question is raised if a single currency can suit dissimilar economies.

To be clear, currency blocks that are not designed as OCA can work smoothly and last for the long-term. A handy example is the former Deutschmark block (DMB), an EMU lite, that is still in place. The currencies of the Northern countries of the Netherlands, Belgium, Luxembourg, Austria, Denmark, and more recently Finland, were from the mid-1970s/mid-1980s fixed to the then Deutschmark. Those currencies' exchange rates never came under strain.[5] Also, following the demise of the former Soviet system, a number of East European countries – the Baltic States and Bulgaria - started operating currency boards, which provided trust in their monetary policy; those countries have either adopted the euro in the course of time, or have kept the exchange rate stable. (Only Latvia had trouble to handle a major bank failure in 2009 and was given balance of payments assistance by the EU and IMF, but still managed to keep the peg unchanged). On the same token, Sweden, an industrialized economy, faced great difficulties to maintain a stable exchange rate against the currencies of the DMB and to be part of the EMS; famously, in 1992 in a heroic attempt to defend the exchange rate the Riksbank, the Swedish central bank, raised the marginal lending rate 500 per cent to discourage speculation, yet it had no success. It was not possible to defend the fixed exchange rate any longer and the krona was allowed to float.

Against this backdrop, there is no clear-cut answer to the question, how long a currency block, which does not meet the OCA requirements, would last. However, as a rule of thumb, the block would sustain itself, when the participating countries co-move economically: when they enjoy similar

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[4] EU Commission, DG EcFin, The Road to EMU, Part The Single Currency Would Complete the Single Market, http://ec.europa.eu/economy_finance/euro/emu/road/delors_report_en.htm
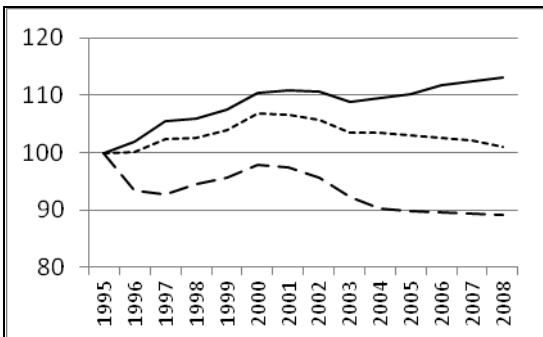
[5] Source: Deutsche Bundesbank, Monatsbericht Nr. 12, Table 9, p. 74*, Frankfurt, 1998

productivity gains and similar growth rates. Catching-up economies tend to run current account deficits, and therefore, they should be prepared to restore their external balance by − admittedly socially very painful - internal devaluation. But there would be participants in the currency block that would not be able to apply that mechanism. They would need some room for maneuvering to adapt by means of nominal devaluation. The latter is proved by the above sketched-out history of Europe's unsuccessful attempts to introduce a system of stable exchange rates before the EMU came into existence.

The issue of productivity and competitiveness divergence

Once a co-movement is no longer in place, the likely reason is the divergence in relative prices, which translates into weakening/strengthening the competitiveness of the participating economies. If the partners are similarly as developed as Germany, France and Italy were at the start of the EMU, the reason for shifts in competitiveness is mostly domestic wage and labor market policies. Graph 1 illustrates the three big developed EMU economies moved in opposite directions in terms of their competitiveness in the run up to the euro and after its adoption. Mostly because of unit labor costs moderation in the export sector, Germany gained competitiveness vis-à-vis its partners, Graph 1.

Graph 1: Real exchange rate* based on nominal unit labor costs relative to 35 industrial trading partners (double export weights), 1995 = 100

*Inverted scale: increase/decrease reflects gain/losses in competitiveness. Source: EU Commission

In the case of catching-up economies in trouble like Greece, Portugal and Spain (Ireland is a special issue and less troubling), a widening trade deficit and ensuing foreign debt position at some point trigger sudden stops to enforce the painful Hume mechanism. In the late pre-crisis period, Greece and Portugal and the much bigger economy of Spain ran high current account deficits funded by private financial inflows that ceased in 2010. Also, Cyprus and a number of new member states reported even higher trade imbalances − mainly due to net portfolio investments, which mirror

picture is a current account deficit. Regarding Greece and Portugal, private capital imports went in many sectors, yet barely in manufacturing; regarding Spain, capital flows helped to create an oversized (more than twice the EU average) construction sector. Little capital went into the goods producing sector though. Why?

In theory, a catching-up economy would attract foreign investment to build up its smaller capital stock until a steady state at a similar level is reached. However, this never happened in some peripheral EU member states. Instead of expanding their industrial sector and exporting manufactured goods produced less costly, they were net importers of such goods, while their industrial sector grew at a slower pace than in the northern industrialized nations. Also, in the 2000s most economies at the southern periphery were undergoing a process of deindustrialization; their industrial sector was growing much slower than the whole economy, see Table 2. By contrast, the northern core's industry has grown faster than the GDP making them net exporters of manufactured goods. The latter seem to have contributed to the current account surplus of the core compared to the periphery (most Northern countries are net importers of services). Most likelyEU (German, Austrian, Swedish, and so on) industrial investment has flowed into the manufacturing sector of China and other countries (among the new member states into the Czech Republic, Slovakia, and Poland in the first place). It had preferred those destinations to Greece, Portugal, and Spain despite their lower capital intensity. At the same time, the EMU membership has eliminated the exchange rate risk, and therefore the interest differentials between the northern and southern part of the currency area. This encouraged capital imports, yet the capital went in the wrong places. The net-capital-to-output ratio in Greece and Spain is now higher than in the industrialized economies of Germany, France and Italy (the Netherlands and Austria as well). But as labor productivity growth is a function of capital intensity growth and the contribution by new technology (the Solow residual, TFP), the TFP component has been negative in Spain in Portugal since 2001 and in Greece since 2006 (the three are referred to as Club Med). Investment has gone in infrastructure projects and has enlarged the overall capital stock, but not so much in the industrial capital stock. Given that TFP is embodied in equipment and machinery in the first place, it does not come as a surprise that in spite of capital stock gains, the overall productivity level in the three countries lags behind the industrialized Northern countries. (According to Rybzcynski´s theorem once a nation uses less of a factor, say industrial capital, it will tend to produce more goods based on say, labor, e.g. services. That would hurt its competitiveness against the capital abundant partners). Notice also, that Greece and Portugal have received upon their admission to the EU in 1981 and 1986 structural funds in the vicinity of their GDP (ca. 2-3 percent p. a. over some 25 years), much of which were used for public construction spending. That added-up to the book value of the nation's capital stock, but not always to higher productivity and catch-up. Sadly, too big of a capital stock tends to slow down the

economy since it tries to return to steady state, and slow down occurred in the Club Med.

Table 2: GDP and industrial production - average growth rates 2001-2010, percent p.a.

	GR	SP	PT	FR	IRE	IT	GER	NL	AT
GDP	2.0	2.0	0.7	1.1	2.7	0.4	1.0	1.3	1.5
Industry	-2.1	-1.6	-1.5	-1.3	3.8	-1.6	1.1	1.2	2.6

Source: EU Commission

The current account balance deteriorated, and now the three countries have to export more to the North applying Hume's mechanism. The latter means that since they participate in the EMU, they are required to reduce their price levels in real terms by means of expenditure cuts and lay-offs. So far, the process has been overburdening these countries with economic hardship.

At the same time, a process of deindustrialization has taken place in the mature economies of Italy and France. In Italy, labor productivity growth was very low from 2001 (just 0.1 percent p. a. compared to 1 percent in Germany) and TFP was negative. The latter indicates less innovation within the industrial sector – apparently because of adverse macroeconomic conditions like high taxation and rigid labor markets as depicted in Graph 1. France, too, reports lower productivity growth than the German figure since the introduction of the common currency. This has encouraged German export to France forcing French manufacturers to close their businesses and causing the French industrial sector to shrink. Specifically, in the 2000s productivity growth trailed output growth by a wide margin. Therefore, despite that some new jobs were created (yet not sufficiently since the French unemployment rate stayed one of the highest in Western Europe), they showed-up most likely in the services sector with its lower productivity. In 1999, Italy and France gave up their previous ability to protect their industrial sector from being competed down by means of nominal devaluation. After all, between 1975 and 1995, the French currency devaluated against the German mark by 50 percent; Italy's lira has devaluated by 75 percent. In the same period, France's manufacturing sector declined from 24 to just 12 percent of GDP; fortunately, Italy managed to keep its manufacturing, now 18 % of GDP, more or less in place.[6] Anyway, these figures indicate that the magnitude of price and cost cuts, in order to rebalance France's, and to a lesser extend Italy's economy, would be sizable.

The analysis leads to the conclusion that some countries have difficulties in meeting the requirements of a strong currency, which serves other partners well. Some may succeed: the Baltic States were hit by the financial crisis and they returned to balance after going through the mentioned

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[6] Source: Deutsche Bundesbank, Monatsbericht Nr. 12, op.cit.

above internal devaluation. Bulgaria, another de-facto EMU member state, was careful to maintain budget surpluses or just small deficits at the expense of a disappointing standard of living and only minimal catch-up with the rest of the partners, which sparked street riots. Finally Ireland, another crisis ravaged country, never overinvested (the net capital stock to GDP ratio is less than of the northern industrial countries). Far from deindustrialization, it has developed a strong export sector in the 1980s and 1990s with real industrial growth of up to 20 percent per year. The share of manufacturing is above 22 percent of GDP and thus higher than in Germany and Italy, and way higher than in France. On top of this, it slashed unit labor cost in the goods sector more aggressively than in the countries in the southern periphery and returned to significant current account surpluses (5 percent of GDP in 2012 and some 3-4 percent in 2013 and 2014).[7] In other words, when Hume's mechanism is allowed to work, tensions across a currency area would disappear in the process. If some countries are not willing or able to accept the harsh conditions of Hume's mechanism though, the EMU will have to make a few hard choices. What is left is a move to a political union of dissimilar states, that is, resorting to burden sharing and redistribution in favor of the troubled member states - at the expense of the better-off ones. And there is a solution of last resort too: an exit from the EMU.

The cost of a political union/mutualization

Within a politically united nation, the currency in circulation is based on the criteria of optimum currency areas with some labor mobility and fiscal federalism. In the EU, member states labor mobility across regions is rather low though; however, this is almost everywhere made up by a significant regional fiscal redistribution, which is mostly accepted by the surplus regions of the nation. National solidarity across the country is taken for granted and the national currency is often a symbol of national pride. At the same time, in some cases, a single currency can serve different nations well, once they are politically united; the Swiss Confederation is a good example for a currency, which has been in use by at least four different national minorities for decades, even centuries. In Europe, the mentioned above Deutschmark block worked nicely for at least two decades. It was much smaller than the failed EMS though.

A political union only for the purpose to make the EMU work, i. e. pooling together dissimilar states politically has never been an option to the fathers of the common currency. Rather, the divergences between the member states of the EU have always been considered, and one stark demonstration of this perception used to be the (now defunct) no-bail-out clause. In Europe, the understanding is strong that a political union of dissimilar states would be fragile.[8] A growing literature has explored the

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[7] Source: Data on devaluation by Deutsche Bundesbank; data on manufacturing by Worldbank

[8] Enrico Spolaore, What is European Integration Really About? A Political Guide for

links between measures of heterogeneity and political outcomes, such as the provision of public goods, the extent of redistribution, the quality of government, and the likelihood of civil and international conflict. Microeconomic evidence links ethnic heterogeneity to the undersupply of public goods at the local level. There is also macroeconomic evidence of negative correlations between ethnic and linguistic fractionalization and government performance, although causality and robustness are less clear-cut.[9] Also, research results point out that ethnic and linguistic polarization is associated with civil face-off. Great differences between languages as observed in the EU, with its remarkable linguistic diversity, have significant negative effect on redistribution. A European federation would be quite heterogeneous by most of these measures, and likely to face significant political costs, when choosing common public goods and policies at the federal level. [10] Therefore, a political union in the form of a fiscal union would not make the EMU an OCA. OCAs rest to a large extent on intensive cross-border labor mobility, which in a culturally and linguistically diverse EMU, would not happen. Also, European labor markets tend to be quite unionized with the result of limited real wage flexibility. Shock absorption would hence rely upon the fiscal component – redistribution of funds from the better faring economies to the ones in trouble. Apart from a moral hazard question (easing the effort to rebalance), too heavy a load would be put on the Northern economies. Bear in mind that France, Italy and Spain alone have a combined GDP way bigger than Germany's. The three make a formidable block, which cannot be fiscally supported by Germany and the other Northern economies. Moreover, large transfers are pointless, because a term-of-trade issue would pop up - the famous Keynes-Ohlin dispute on post-World War I Germany is instructive.[11]

Therefore even within a political union, countries would be required to adjust at the national level; the hope that fiscal redistribution will fix the flaws of the EMU is misleading. Also, the common currency must not be seen as the fate of Europe. A common currency wouldn't unite nations, which feel they differ from each other as the recent experience with the breakup of the Soviet Union, Yugoslavia and Czechoslovakia showed. In Spain, a county made up of Spaniards, Catalans, Basques and others, industrialized Catalonia is unhappy with being forced to fund "profligate" rural Andalucía and bilingual Belgium was also often on the brink of breakup – similar to French and English speaking Canada. Here, the East-West economic divergence of the country is part of the story since the eastern provinces' economy is based on manufacturing, whereas the West is economically dependent on commodities. A surge in the commodity

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Economists. NBER Working Paper No. 19122, June 2013, Cambridge, MA, 2013, p. 3

[9] Ibid, p. 3

[10] Ibid, p. 4

[11] In this debate Keynes argued that in order to pay reparations post-World War I Germany would need to cut its export prices relative to the import prices. A deterioration of Germany's terms-of-trade would make it impossible to achieve the necessary trade surpluses.

prices may hurt the East, but benefit the West; a slump may work the opposite way. A resemblance to industry-services/North-South divide in EMU is obvious. Even one-nation, Germany with its economically strong southern and relatively weak northern and eastern Laenders, has its own redistribution debate.

Still, the debate is gaining momentum to deepen the integration process within the EMU, by making it more federation-like. The scope of ideas is broad – from economic reforms in the North to absorb more exports by the South to various forms of burden sharing in the handling of the debt crisis in the PIGS[12] - mostly mutualization in the form of Eurobonds, debt redemption funds, a banking union and the like. Most of the ideas come from sources that have never bothered to calculate the possible amounts of money needed, George Soros and Warren Buffet included (both have regularly urged Germany to accept mutualization), but also political activists and intellectuals. The following sections contain calculation to help understanding that without applying Hume's mechanism a return to balance at no cost, or low cost, to the deficit countries is impossible. Bear in mind that the economic load on Germany or the North calculated here would be the same no matter what form the mutualization takes – whether the below described direct support or various schemes of indirect North-South transfers like common bonds or the ECB OMT program.

Making the South competitive by cutting Germany's and North's saving rate

The debate of how the PIGS countries, and recently more worrying, France, can regain competitiveness has so far revolved around the idea that those nations need to rebalance their budgets by cutting spending and adjusting their labor cost by – for instance – reducing payroll taxes. Structural reforms were suggested and initiated as well.

The PIGS are still trapped in debt and economic difficulties: neither sound budgets nor output growth have been achieved after years of effort. There are many reasons why austerity - defined as a real cut in wages and prices - cannot come about easily. One is the unions, who compete with each other to offer the best conditions to their members; no trade union wants to take the lead on lower income and longer working hours. Another reason is the balance sheet of the company: once prices start falling, the discounted stream of future revenues does not match the debt of the company anymore, thus making it a potential candidate for bankruptcy[13]. Critics of austerity policies vociferously call for a mutual approach: the PIGS economies cannot rebalance successfully, because cutting spending and reducing wages in a crisis is pro-cyclical. The surplus countries, too, must rebalance in order to reduce its trade position. More

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[12] Abbreviation of "Portugal, Ireland, Greece and Spain"; sometimes Italy – and recently France – may be included.

[13] H.-W. Sinn. "Austerity, Growth and Inflation. Remarks on the Eurozone's Unresolved Competitiveness Problem", CES-IFO WP 4086. January 2013.

precisely, Germany, the Netherlands, Finland and others should cut their current account surplus with various policies.

Germany was running, as of the mid 2000s, current account surpluses of up to 6 percent of GDP, most of it with its EMU partners. On average, its current account surplus within the EMU matches the combined current account deficit of Spain, France and Italy, Table 3. Already before the current crisis, the then French finance minister Christine Lagarde counseled Germany to raise the wage level of the country to increase unit labor cost at a higher pace than the EMU partners. Other proposals followed - all of them urging Germany to boost domestic demand and to invest more in domestically consumed goods and services.

Table 3: Current account positions in EU/EMU, average 2000s, € bn

Spain	-106
UK	-78
France	-53
Italy	-26
Sweden	28
Netherlands	56
Germany	184

Source: European Commission

But in terms of economics, and when boiled down to the basics, the surplus-deficit problem can be seen as an issue of savings and consumption. Germany's saving rate is outperforming its investment rate, yielding a current account surplus. The opposite occurred (and is still the case) in Spain and the other countries that are in trouble. Therefore, a reduction of the saving rate of Germany and other Northern member states appears to be a promising to fix the crisis.

The national saving rate is made up of the saving rate of the private and public sectors. The private sector savings is the savings of the household sector and the business sector. It is hard for democracies to force the private sector to save less. What looks rather appealing and easier to try in a democratic society is to cut the saving rate of the government.

Currently, Germany's government does not save at all; rather, the fiscal position of the General Government (all levels of the state) is negative, since the country is running a budget deficit. The implementation of the idea of reducing Germany's (and Netherlands', and so on) current account surplus would therefore require the Federal Government to expand and run for a while even larger budget deficits. The additional spending as estimated based on the data in Table 1, i.e. roughly 200 billion euros, would require the deficit to be in the vicinity of 6-7 percent of GDP. This is to compare to the current 1-2 percent.

Given the German preference for rainy day money, this may trigger Ricardian equivalence. High deficits will likely drive the interest rate up,

causing a crowding out and in the medium run a recession. A higher public debt combined with slow growth will make it harder to fund the deficit. Moreover, the EU Commission will launch an excessive deficit procedure within the tightened Stability and Growth Pact with its painful fines. And Germany will prove not credible after it was Berlin that pushed hard for Fiscal Pact, Six-pack, Two-pack and a debt brake[14]. Most likely, the expected result will never show up.

Making the South competitive by higher compensation in Germany and the North

This proposal centers on changing policies between the core and the periphery; because the periphery cannot deflate in a recession successfully, the core should inflate to make it easier for the crisis-ridden economies to resume growth. It has been repeatedly and stubbornly floated by critics of austerity and proponents of solidarity alike. For this reason, it has been investigated in more depth to estimate what Germany would be supposed to deliver in terms of adjustment. A few calculations make it clear that such a "solution" is next to impossible.

We start with the assumption, that the German headway in competitiveness vis-à-vis France, Italy and Spain should be eliminated within five years (to be politically acceptable). A German inflation rate just enough to eliminate the real exchange rate appreciation in the three countries, since the inception of the common currency, is envisaged. Because in the long run the exchange rate reflects price changes in the sector of tradables and nontradables, the shift of the exchange rate at purchasing power parities (ppp) is calculated.[15] In the EMU, with its free capital movement and price arbitrage, the ppp exchange rate is a function of several variables:

- the inflation differential between the countries

- the price increase in the tradables sector

- the price increase in the nontradables sector.

When perfect competition is also assumed, the goods price level is determined in the market and gains/losses in competitiveness in the goods sector are due to real wage increases/decreases. Between 2001 and 2010, inflation rates, export prices and unit labor cost in the observed economies have moved in different direction, with the effect that Germany has gained competitiveness against Spanish, Italian and French producers.

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[14] A German-style debt brake was insisted at the EU Summit 2011 first and agreed upon by several member states (see: O. Hishow, "Curing Europe's addiction to borrowing: Germany's debt brake as a panacea?" SWP Working Papers, 2011/07, December 2011).

[15] The following calculation of the necessary adjustment is according to Paul De Grauwe, International Money: Post-War Trends and Theories, Oxford, 1989.

Modeling the adjustment

In a simple form, the ppp exchange rate is calculated as

$$e = P_t/P_t^* \qquad (1)$$

where P_t is the price level of tradables in *Home* and * denominates *Foreign*. In the model, *Home* will apply to Spain, Italy and France; *Foreign* stands for Germany. Because of open markets, perfect competition in the EMU makes sure that the real wage w is reflecting productivity q_t in the tradable sector and q_n in the sector of non-tradables:

$$w/P_t = q_t \quad \text{and} \quad w/P_n = q_n.$$

Solved for P yields

$$P_t = w/q_t \quad \text{and} \quad P_n = w/q_n \qquad (2)$$
$$P_t^* = w^*/q_t^* \quad \text{and} \quad P_n^* = w^*/q_n^* \qquad (2a).$$

The term $P_t = w/q_t$ and $P_t^* = w/q_t^*$ is then solved for w

$$w = P_t.q_t \; ; \; w^* = P_t^*.q_t^* \quad (3)$$

and inserted in the right hand side of (2) and (2a):

$$P_n = P_t.q_t/q_n \; ; \quad P_n^* = P_t^*.q_t^*/q_n^* \qquad (4), (4a).$$

The price level P in a country is made up of the price level of the sector of tradables and the price level of the non-tradables sector. Once the share of the tradable sector in all prices is α, the share of the non-tradables prices is 1-α, i.e.

$$P = \alpha.P_t + (1-\alpha).P_n \qquad (5)$$
$$P^* = \alpha^*.P_t^* + (1-\alpha^*).P_n^* \qquad (5a).$$

Replacing in P_n and P_n^* by the right hand side of (4) and (4a) leads to

$$P = \alpha.P_t + (1-\alpha)(P_t.q_t/q_n) \quad \text{and} \quad P^* = \alpha^*.P_t^* + (1-\alpha^*)(P_t^*.q_t^*/q_n^*) \qquad (6), (6a)$$

Returning to (1), the ppp exchange rate can be rewritten as

$$e = P_t/P_t^* = [P(\alpha^* + (1-\alpha^*)q_t^*/q_n^*]/[P^*(\alpha + (1-\alpha)q_t/q_n] \qquad (7).$$

Because the exchange rate appreciation is looked for, (7) is differentiated to obtain

$$\varepsilon = \pi - \pi^* - (1-\alpha)[(\kappa_t - \kappa_t^*) - (\kappa_n - \kappa_n^*)] \qquad (8).$$

Here κ_t and κ_n is the change in competitiveness in the sector of tradables and nontradables. Notice also, that in order to keep the calculation of (8) simple, it is assumed that the share of the tradables sector in Germany (in the model *Foreign*, denominated with *) and in the respective *Home* country is constant and of the same percentage. This is not quite the case: Germany's export sector became bigger than it used to be up to the early 2000s, and also bigger than the export sector of the other investigated countries.

Therefore, the result is skewed somewhat, albeit not significantly.

In formula (8), $\underline{\alpha}$ is assumed 27% of GDP. To capture κ_t and κ_n in Germany and the three other countries, the change of the unit labor costs (ULC) in the export sector, and of the ULC in the whole economy has been used. The change of the variables is over the period 2001-2010; only the ULC of the export sector is based on the period 2005-2010 due to the respective data by Eurostat (Table 4). Table 4 shows how much the exchange rate of the periphery appreciated in real terms in the 2000s against the "German euro" and how much the latter has depreciated against the weighted average of the three. Using formula (8) the result is a real appreciation of some 29, 21, and 15 percent against Germany in Spain, Italy, and France, respectively. Then, given a preferred inflation rate of zero (or close to zero) in the latter countries within the next five years, the German inflation rate should be 6.6 percent per year – also in the next five years. This is because the 21 percent is to be brought down by the end of the fifth year, and given the combined relative economic weight of France, Italy, and Spain over Germany of 1.66.[16] Because individual member states of the EMU can push up inflation only by raising wages (which is the major national price), the nominal wage increase has to be in the neighborhood of 7 – 8 percent and above when kept in mind that the wage sum is not more than 66% of a Western country's national income. In other words, the overall wage increase in Germany would be around 40 percent in five years to help the three other big economies out of their competitiveness woes. This astronomical figure would be softened somewhat if the other competitive Northern EMU member states, Netherlands, Austria, Finland, Luxembourg, and the nominally non-EMU member Denmark, would get along. The combined GDP of those countries plus Germany would match the three southern member states' GDP, making it for Germany by one third cheaper to inflate the North.

However, even this result is not the whole story when born in mind that the government cannot force the social partners to agree on wage increases for the sake of other nations. Then the solution of last resort would be to allow for an increase of the compensation of the civil service employees, a variable the government controls. Yet, that would be another blind alley: in Germany, the share of the civil servants in the labour force is some 18, at most 20 percent. Applying the hitherto calculation, a wage increase in the neighbourhood of 40 percent p.a. in the government sector over five years in row would be required – another mission impossible.

Table 4: Main economic variables in selected EMU member states and associated exchange rate appreciations/required depreciation (for Germany)

2001-2010	Germany	Spain	Italy	France
Inflation	0.11	0.33	0.24	0.21
ULC export	-0.06	0.05	0.04	0.03

[16] The per-year discount of 21 percent over five years gives some 4 percent per year. This is multiplied by 1.66 to make-up for the difference in output.

sector				
ULC whole economy	0.04	0.24	0.25	0.19
$\underline{\alpha}$		0.27	0.27	0.27
Exchange rate shift	-0.21	0.29	0.21	0.15

Source: European Commission

Conclusions

Because in the EMU most member states trade predominantly with their EMU partners, competitiveness gained by some member is reflected by loss of competitiveness by another member. Therefore, shifts in the current account position by county would be the result. Exactly, this happened: for example, Germany expanded its trade surplus; Spain overstretched in terms of trade deficit - and jobs were lost. To regain competitiveness in a currency union, which is not an optimum currency area, deficit countries must bring down their price levels relative to the surplus partners. However, the associated economic and social pain makes it hard to get back to balance by means of internal devaluation. The history of Europe's effort to establish a system of pegged exchange rates is a history of failures. Currently, the southern periphery (plus France) is in trouble not in spite of, but because of the euro. It is the same group of countries that had difficulties to match the much softer requirements of the EMS. Now it is forced by the EMU to accept its harder criteria. More trouble is ahead: as a back-of-the-envelope calculation based on Okun´s law, the nominal GDP growth in Spain, Greece, and Portugal should be 4 percent per year (2 percent real) some 10 years in row in order to reduce the current unemployment rate of 24 percent to still high 10 percent. Getting France´s and Italy´s unemployment rate from now 11-12 percent to fiscally acceptable 7 percent would require them to grow at the same rate for the next couple of years. Sadly, the real potential growth in the EMU is falling, because of ageing and rising old age dependency ratios from 2 percent in the pre-crisis period, to not much more than 1 percent in the future. An internal devaluation under such circumstances tends to be even more painful - Spain and Greece cannot rely upon a vibrant construction sector or large structural deficits for growth. It will be challenging for the PIGS countries to regain competitiveness after having lost their manufacturing sector.

Most likely the politically influential South, France included, will insist on some form of mutualization, probably on making the North exporting less, pooling part of the outstanding debt, issuing common bonds to roll over the debt due and so on. Certainly the pressure will grow to implement the ECB OMT program. A debate on a political union with a fiscal union as its core is speeding up. But even a political union cannot turn the culturally and linguistically diverse EMU into an optimum currency area.

The bulk of the adjustment cost has to be borne by the deficit partners in the first place – a sobering lesson that was already taught by the gold standard. Research results prove a German effort to support growth in the PIGS via aggregate demand expansion would translate into only marginal GDP gains there[17].

Setting up a common currency area for different economies that cannot form a political union makes it a sub-optimal currency area. It would require a determined implementation of Hume´s mechanism. Rejection of Hume and resorting to burden sharing between the core and periphery in the form of redistribution of resources in favor of the troubled member states is a deceptive hope. (However, given the degree of indebtedness in Greece, Portugal and Ireland some debt forgiveness should be considered). The bottom line is that the core is not big and strong enough to shoulder the required amounts of money to bring up the entire periphery, Italy and France included, back to growth. Large transfers would overburden Germany with the result that the North would likely plunge into depression too. In the wake of it, a break-up of the common currency area couldn't be ruled out. But as the EMU has put itself between a rock and a hard place, a disintegration of the EMU may come anyway. The reason would be that some nations would always need room for nominal adjustment. The European Monetary System of stable, but adjustable exchange rates might just come back.

[17] B. Graef, H. Peters, Ausblick Deutschland, DB Research Briefing, 18 Februar 2013.