

# The NEWNEY approach to unscrambling the Euro

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**ECONOMICS PRIZE**  
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# Unscrambling the Euro

The bankruptcy of Lehman Brothers provides a pertinent lesson for the European Economic and Monetary Union. Prior to the Lehman collapse, there were clearly substantial underlying problems with global debt levels in general, and with the subprime mortgage and housing market in particular. These problems would have been painful to work through in an orderly way, but the disorder in the financial markets that followed the collapse of Lehman, resulted in a seizing up of credit markets, and so substantially greater impact on the global economy than would have come from an orderly work out of the underlying problems.

It is evident that some of the problems around Lehman's collapse resulted from regulators and policymakers having had no contingency plan in place for how to deal with a situation such as Lehman, and how to prevent the "domino effect" as the loss of confidence shifted from Lehman to other financial institutions around the world. These other financial institutions, in turn, then faced a collapse in liquidity and so withdrew credit from their "real economy" customers. The reduction in lending and credit, in areas such as trade finance, slowed the real economy. This "domino effect" magnified the impact of the collapse of Lehman, resulting in a global credit contraction and loss of confidence, which in turn caused the first global recession since the Second World War.

One or more member states leaving the European Monetary Union, if this were to happen in a disorderly way could, as will be shown, be a five to ten times larger event for the global economy compared with the Lehman collapse<sup>1</sup>. There is also an analogous "domino effect" to that seen with Lehman, with the exit from the Economic and Monetary Union of even one country. If one country leaves the Economic and Monetary Union, financial markets, speculators, corporations, and even citizens could start anticipating which country could leave next. They would move deposits and assets out of financial institutions in what they perceive to be the countries that

<sup>1</sup> This paper in no way forecasts that any country will, or should leave the Economic and Monetary Union. It was written to contribute one idea to a debate on possible options should a country decide to leave.

might exit next, resulting in a catastrophic loss of liquidity and credit in these “domino countries”. This loss of liquidity and credit could, in itself, precipitate the need for some of these “domino countries” to exit the Economic and Monetary Union as the ECB and other government mechanisms might be unable to provide sufficient liquidity to offset these speculative flows – the impact of speculative flows was seen with the UK’s exit from the ERM. At a minimum, these “domino countries” might need to introduce capital controls, which combined with the loss of credit, could result in a substantial reduction in economic growth for all the members of the Economic and Monetary Union, and the global economy.

Whether the Economic and Monetary Union will remain together is beyond the scope of this paper. It is also hard to forecast, as it is may be more a question of politics than a question of economics. There are very strong economic and political forces pulling the Union apart and very strong economic benefits and political will keeping the Union together. Countries in the Union such as Greece need to restore their competitiveness, and a devaluation following an exit from the Economic and Monetary Union would be the natural way of starting the restoration of their competitiveness. Countries such as Germany or the Netherlands might become weary of making ongoing transfer payments to other countries in the Union, and the enduring moral hazard of repeated failures to meet austerity targets. All countries might grow concerned on the loss of sovereign authority.

However there have also been substantial benefits from the Economic and Monetary Union, including the reduction in transaction costs and uncertainty that comes from currency volatility, and from lower interest rates. And some countries, such as Germany that in the early years of the Economic and Monetary Union took major steps to improve their productivity and competitiveness, have subsequently benefited from a lower exchange rate than they would have had without their membership of the Economic and Monetary Union: a flight to a safe haven Deutschmark, and the consequential appreciation of that currency, would have undone some or all of the improvements in productivity and competitiveness.

So while an exit of one or more countries from the European Economic and Monetary Union is by no means certain, policymakers need to develop a “Plan B” for how one or more countries could leave the Economic and Monetary Union so as to minimise the shock to the members of the Economic and Monetary Union and to the whole global economy. But having such a “Plan B” could, if public, *increase* instability as speculators would view that it suggests that an exit is possible and start making destabilising capital movements. It is, therefore, hard for the debate on a “Plan B” to be initiated by the governments of the Economic and Monetary Union in too public a forum. The debate on the options for a “Plan B” that the Wolfson Economics Prize has initiated is therefore to be welcomed, even if the Economic and Monetary Union eventually remains intact. Policymakers cannot run the risk that comes from the lack of preparation that occurred before the Lehman collapse.

Indeed, having in place the right plan that could allow an orderly exit of one or more countries, could, in fact, support the Euro Zone remaining intact. If the plan is such that there is no incentive for capital to flow out of countries that might exit, the risk of destabilising capital flows should be reduced. And as has been discussed, these destabilising capital flows themselves could result in a country being forced to exit the Union, or bring about other fundamental changes in the Economic and Monetary Union such as the removal of the free flow of capital.

The process by which one or more country leaves the Economic Monetary Union is, therefore, in itself the biggest threat to the future growth and prosperity of the current membership of the Economic and Monetary Union. To contribute to the debate on options, this paper contains a blueprint for how the economic processes could be managed to allow the orderly exit of one or more member states from the Economic and Monetary Union. This approach removes the incentives for destabilising capital flows.

For reasons that will become apparent, this plan is called NEWNEY. At the heart of this NEWNEY plan is the principle that all Euros, wherever they are in the Union, get treated equally. And the exit of one or more countries is not viewed as an exit, but a split of the Union into two (or more) regions. This paper builds on the

unscrambling analogy<sup>2</sup> to call these regions the White and Yolk regions, where it is the Yolk region that needs to restore competitiveness through devaluation. The Yolk region could clearly be a single country. Each of these regions would have their own central banks, monetary policies and currencies – these currencies are called the New Euro-White (NEW) and the New Euro-Yolk (NEY). The Yolk region would be able to pursue a devaluation of their currency over time. This could be achieved without a run on their currency through higher interest rates and higher inflation.

The transfer to the new currencies, and equal treatment of all Euros throughout the Economic and Monetary Union, can be achieved by the central banks agreeing that every existing Euro gets exchanged for a fixed combination of the two currencies, the New Euro-White (NEW) and the New Euro-Yolk (NEY). As an example, a Euro could get exchanged for 0.8 NEWs and 0.2 NEYs – how this exchange ratio could be set is discussed later. As NEWs and NEYs become the legal tender, it would still be possible to determine the value of the old Euro denominated in NEWs or in NEYs from their relative exchange rate and the exchange ratio that was fixed at the start. This approach, therefore, allows for the automatic redenomination of currently Euro-denominated assets, contracts and liabilities. The equal treatment of all Euros removes the incentive for the speculative capital flows that could easily destabilise the Economic and Monetary Union.

This entry for the Wolfson Prize focuses on defining and detailing the execution of this NEWNEY approach. The entry has been submitted with the intention of contributing to the debate for options around a “Plan B” to allow one or more countries to leave the Economic and Monetary Union in an orderly way, and so as to prevent Lehman type shocks to the global credit system. It does not suggest that the break-up of the Economic and Monetary Union is in any way desirable or inevitable. However, a “Plan B” is needed so that if a transition becomes required, it can be managed so as to provide a minimum impact on global growth and welfare.

<sup>2</sup> Many have used the omelette analogy. For instance, “Wolfson’s prize is impossible to win” by Tim Harford, *Undercover Economist* October 21, 2011 *Financial Times*

NEWNEY provides some components that could be included in this plan. But the NEWNEY approach could also support the Euro Zone remaining together as it reduces the risk of speculative capital flows that could destabilize the Union. So paradoxically, a plan that would allow a member state to leave the Economic and Monetary Union, could allow the Union to remain together. The real power of NEWNEY might come from it never being used.

# 1. The threat to the global economy

There are substantial tensions inherent in the Economic and Monetary Union that raise some uncertainty on whether the Union can remain together. However, a precipitous exit of one of more players from the Union could result in a major shock to the global economy, a shock orders of magnitude larger than the collapse of Lehman Brothers. Therefore, policymakers need to develop a plan for how an exit can be managed in an orderly way.

This chapter explores the tensions inherent in the Economic and Monetary Union, the risks of a disorderly exit, and explain why a “Plan B” that could allow an exit of one or more countries is needed.

## **Very different economies in the Economic and Monetary Union**

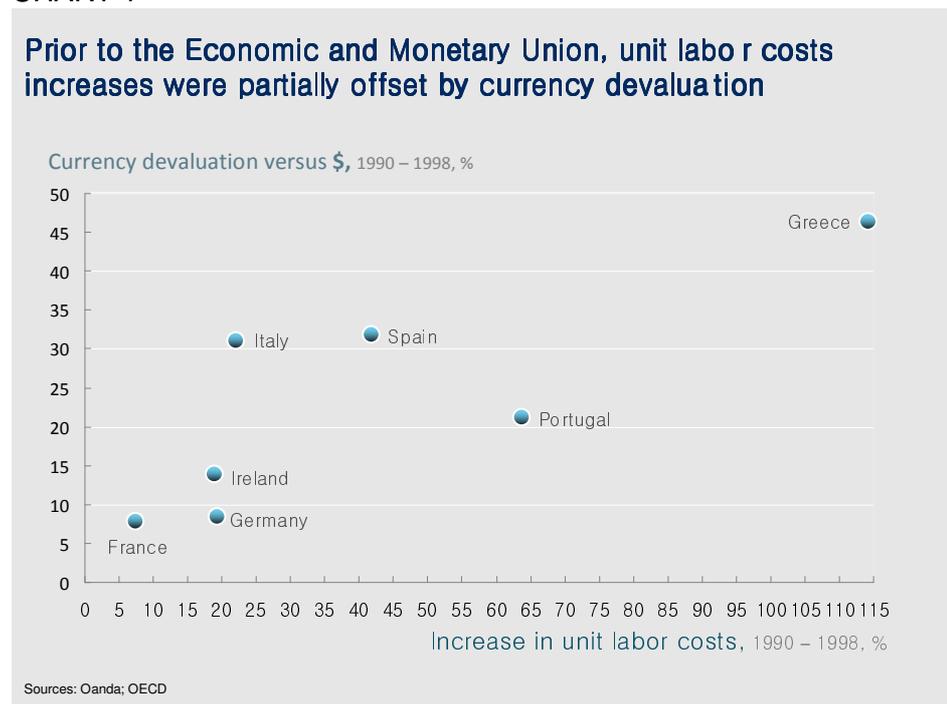
There were clearly substantial differences between the economies and monetary policies of the Euro countries before the creation of the Economic and Monetary Union. Probably the most substantial difference was their approach to productivity, currency depreciation and inflation. As can be seen from Chart 1, Germany historically retained competitiveness despite a strong currency through productivity growth and low wage inflation. At the other end of the spectrum, Greece, prior to their entry into the Economic and Monetary Union, had higher wage inflation but remained somewhat competitive through a long run depreciation of the drachma. Other countries such as Italy and Spain had higher currency depreciation than Germany and this allowed higher wage inflation, without loss of competitiveness.

The creation of the Economic and Monetary Union on the 31 December 1998,<sup>3</sup> changed this situation. The Euro no longer depreciated at the historic rate seen by the Drachma, Lira, Peseta, or the Escudo. However wage inflation in many of these countries remained more in line with the historic rates that workers, managers and the government had grown up with. Germany undertook major

<sup>3</sup> While the Euro notes and coins were not introduced until January 2002, two years later, the exchange rates between countries were locked on the 31 December 1998.

steps to increase their productivity and competitiveness in the earlier years of the Euro, but during this period, many other countries did not. With the benefit of hindsight, it is clear that the introduction of the Economic and Monetary Union was not accompanied by the required change in attitude and mindset on inflation, productivity and wages across all of the Eurozone, and the introduction of the required programmes to improve productivity and competitiveness.

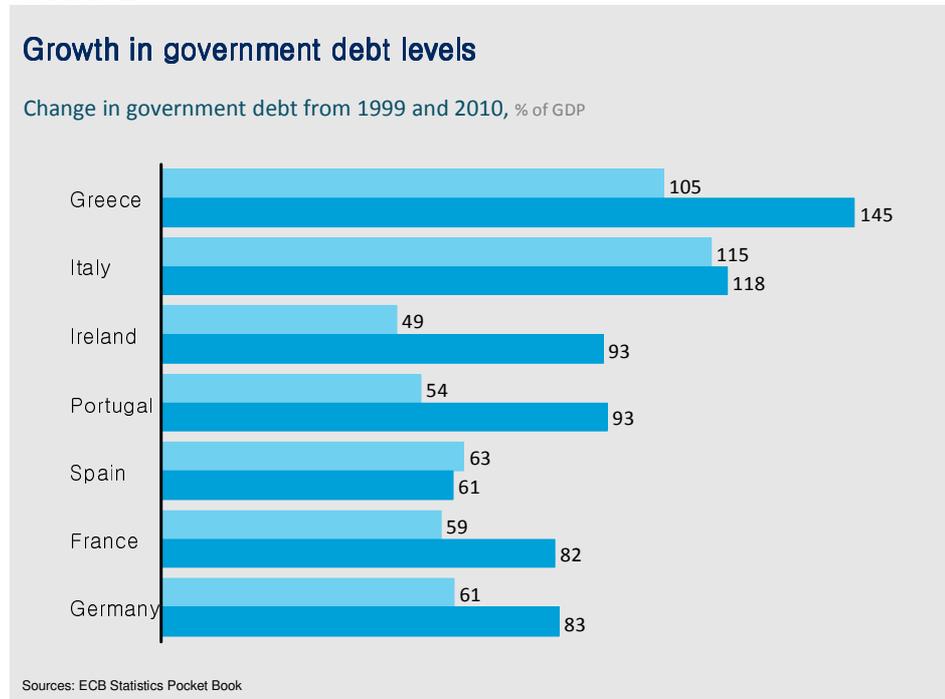
CHART 1



Ten years later, it is now clear that the competitiveness of the southern countries in the Eurozone, in particular, has substantially deteriorated. Their governments have been able to take up some of the slack (or avoid the immediate need for structural change and productivity improvements) by borrowing more, taking advantage of the lower interest rates and easy credit that have come from their membership of the Euro. The growth in government debt for these countries is illustrated in Chart 2. However, it isn't just governments that borrowed. Household debt has also risen. For example, in 2000 Greek household debt was around 10% of GDP, but by 2010 this had

risen to 60%. Portugal's household debt in the same period rose from around 55% of GDP to around 95%.<sup>4</sup>

CHART 2



While this sudden growth in debt masked underlying productivity issues for a while, it is clear that southern European economies are now suffering from a loss of competitiveness, increased government deficits and high unemployment. In Greece and Spain, for instance, unemployment is running at around 19% and 23% respectively compared to around 10% for the EU as a whole.<sup>5</sup> The financial markets and credit rating agencies have lost confidence in some governments' ability to repay debt, making the cost of debt very high and existing debt levels very expensive. And some governments have become reliant on transfer payments and guarantees from the northern countries, as well as the European Central Bank buying their sovereign debt.

The experience of developing countries has shown that devaluation is not, in itself, a growth strategy. It purchases competitiveness by making the country poorer and so in the long run is not a substitute

<sup>4</sup> Debt data from The McKinsey Global Institute *Debt and Deleveraging* reports

<sup>5</sup> Source: European Central Bank, *Statistic Pocket Book*, January 2012.

for productivity growth as a source of competitiveness. But it can help in some situations to restore competitiveness. It is clear that a number of the Economic and Monetary Union southern countries could benefit from the improved competitiveness that could come from a devaluation of their currencies, if they were to leave the Economic and Monetary Union. This competitiveness would help restore growth and reduce unemployment. And could also help address government deficits – though this would be dependent on the treatment of their sovereign debt in the restructuring around their exit from the Economic and Monetary Union, and their eventual creditworthiness.

While there are benefits from some countries exiting the Union and devaluing their currency, there are also continued substantial benefits to be gained from the Economic and Monetary Union. Transaction costs and uncertainty that comes from currency volatility is reduced substantially. Various estimates put the increase in trade that resulted from the Euro at around Euro 100 to Euro 300 billion per annum<sup>6</sup>. Capital has flowed much more between Euro countries than prior to the Union as a result of the near removal of exchange rate risks within the Economic and Monetary Union. This capital flow has helped contribute to lower interest rates, on average, across the Eurozone.

And in recent years, countries such as Germany have benefited from the competitiveness that came from a lower exchange rate than they would have had without the Economic and Monetary Union. It seems certain that in a non Economic and Monetary Union world, the Deutschmark would have strengthened considerably, given the productivity improvements achieved in earlier years on the Euro. In this, it is pertinent to look at the performance of those other currencies that are viewed as safe havens. From August 2008 to the end of 2011, the Swiss Franc outperformed the Euro by 32%, though the Swiss Franc has subsequently weakened as a result of the recent government announcements and intervention. The Japanese Yen, another perceived safe haven currency despite considerable domestic problems, strengthened by 54% in this period against the

<sup>6</sup> See The Euro's Trade Effects, Richard E. Baldwin (2006)

Euro. Gold has also strengthened by 125% when valued in Euros. If the Deutschmark had still been in existence, it is likely to have substantially appreciated, hurting the competitiveness of German exporters. German exports would likely have been reduced by hundreds of billions of Euros if they had retained the Deutschmark currency and this currency had appreciated in this way, though clearly the wealth of Germany would have also benefited from a stronger currency.

The benefits from holding the Economic and Monetary Union together might well be sufficient to compensate for the costs and lack of competitiveness of some of the members. Indeed, the competitiveness of the southern countries could be restored through austerity, salary cuts, productivity programmes and potentially a little more Euro inflation. Germany's experience in the earlier years of the Euro has shown that it is possible to achieve this productivity improvement. Though for countries such as Greece the over 40% gap in competitiveness measures such as GDP per hour worked compared to Germany would be a long and painful process to close fully. The ongoing transfer payments, largely from Germany to the southern countries could be viewed as good value for the competitiveness the European Economic and Monetary Union brings German exporters from a weaker exchange rates, as well as the benefits from a reduction in volatility and the associated transaction costs.

In addition, any separation is bound to be expensive and a major distraction. It could also cause massive volatility. The value that comes from the avoidance of the pain and cost of separation is significant.

But the tensions of the loss of competitiveness of the southern member states and the political cost of these transfer payments will be substantial, suggesting that there is a significant risk that one or more member states may decide to leave the Economic and Monetary Union.

How this plays out will be more of a political process than an economic process. As a result it is hard to forecast. Will the voters of all the southern countries accept the path of austerity, wage

reductions and unemployment or could populist candidates get elected in one of more country on a platform of an exit from the Euro, a devaluation, and maybe a default on some sovereign debt? Will the voters in the northern countries accept the ongoing need to subsidise countries in the south? And be prepared to accept them missing their targets. Will the voters of the Euro zone understand the pros and cons of different options? How will the relationship between the leaders of the different countries evolve in terms of working together? How will all of these issues play out in coalition governments?

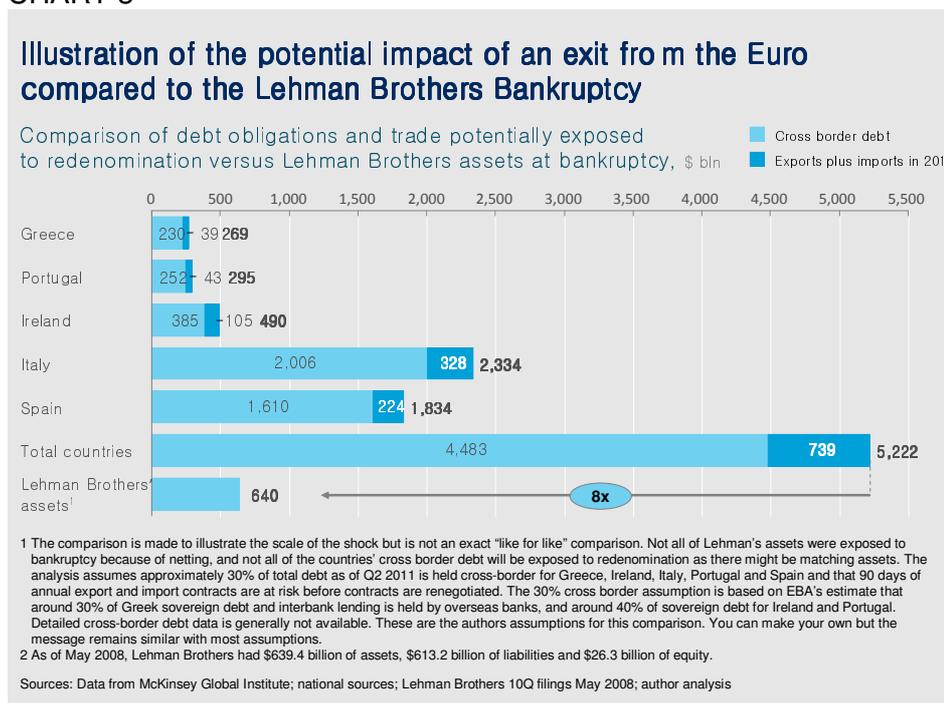
Given all of this, there is a substantial risk that one or more country could decide to exit the Economic and Monetary Union.

### **A bigger shock than Lehman**

One or more member states leaving the European Monetary Union in a disorderly way could be an orders of magnitude larger event for the global economy compared with the Lehman collapse.

While the comparison is not exact, the outstanding contracts Lehman had at the point of collapse can be compared to a rough estimate of the size of cross border sovereign, financial institutions, corporate and household debt, as well as three month of imports and export contracts. This debt and these import and export contracts would be exposed to changes in value, and uncertainty on their value, as one or more member state leaves the European Monetary Union, and their unit of exchange gets renegotiated. This is analogous to the Lehman contracts that were exposed to changes in value, and the corresponding uncertainty because of the Lehman bankruptcy. Chart 3 compares, as an illustration, the value of outstanding debt and an estimate of what might be the existing import and export contracts that are exposed to changes in value – the footnote explains the basis for the comparison.

CHART 3



A rough estimate suggests that even a small economy in the Economic and Monetary Union such as Greece has existing debt and import and export contracts that could be around half the size of Lehman's contracts. For Italy, this number would be 3 to 4 times the size of Lehman's contracts. If Portugal, Ireland, Italy and Spain are also included, their cross border debt and import and export contracts could be as much as 7 to 8 times the Lehman contracts.

An exit of these countries from the Euro, would make all of this cross border debt and import and export contracts potentially open for renegotiation, raising questions on the solvency of financial institutions and corporations outside the exiting country. This risk is clearly particularly acute for financial institutions in countries such as France and Germany which have domestic liabilities but assets disproportionately in the southern countries sovereign and other debt. But all European banks and other financial institutions are exposed to cross border interbank lending and sovereign debt. The EBA estimated that around 30% of Greek sovereign debt and interbank lending is held by overseas banks. And that this number is around 40% for sovereign debt for Ireland and Portugal.<sup>7</sup> The exit

<sup>7</sup> European banking authority, 2011 EU-wide stress test, aggregate report

and disorderly default of one country could impact the solvency of financial institutions in other countries.

But with the Lehman collapse, there was another problem. At the time, it was unclear whether the solvency of some of Lehman's counterparties was impacted by Lehman's collapse. And Lehman's collapse itself raised issues on the viability and business models of other players. These two factors resulted in a "domino effect" as the loss of confidence shifted from Lehman to other financial institutions around the world. These other financial institutions, in turn, then faced a collapse in liquidity and so withdrew credit from their "real economy" customers, especially in areas such as trade finance. This "domino effect" magnified the impact of the collapse of Lehman, resulting in a global credit contraction and loss of confidence which in turn caused the first global recession since the Second World War.

The exit of one country from the European Economic and Monetary Union could have a similar "domino effect". If one country leaves the Economic and Monetary Union, financial markets, speculators, corporations, and even citizens could start anticipating which country could leave next. They would move deposits and assets out of financial institutions in what they perceive to be a country that might exit next, resulting in a catastrophic loss of liquidity and credit in these "domino countries".

### **The need for a "Plan B"**

Prior to the Lehman collapse, there were clearly substantial underlying problems with global debt levels in general, and with the subprime mortgage and housing market in particular. These problems would have been painful to work through in an orderly way, but the disorder in the financial markets from the collapse of Lehman, resulted in a seizing up of credit markets, and so had substantially greater impact on the global economy than would have come from an orderly work out of the underlying problems.

It is evident that part of the problems during the Lehman collapse resulted from regulators and policymakers having no contingency plan in place for how to deal with a situation such as Lehman, and how to prevent the "domino effect" as the loss of confidence shifted

from Lehman to other financial institutions around the world. This “domino effect” magnified the impact of the collapse of Lehman, resulting in a global credit contraction and loss of confidence.

As has been shown, the exit of one of more countries from the Economic and Monetary Union could be or orders of magnitude larger event for the global economy. Policy makers need to have a “Plan B” for how this can be executed.

### **Yolk and White countries**

In line with the wording of the Wolfson Prize Question, this entry also does not take a view on which countries could be likely candidates to leave the Economic and Monetary Union, though the analysis above shows which countries could benefit most from a devaluation of their currency to restore competitiveness. Indeed which countries are likely to leave could be determined as much by domestic politics, success of austerity programmes (including those to reset wage levels) and inter government relations within the Economic and Monetary Union, as it will be by fundamental economics.

As a labelling convention, this paper draws from the unscrambling the omelette analogy to use the label Yolk to describe the countries that leave the European Economic and Monetary Union. And White for those that remain inside the Union. The assumption is that Yolk-zone countries are those that require a devaluation to restore their competitiveness, while White-zone countries are those that are already competitive or that have a chance of restoring their competitiveness through austerity programmes.

This paper tests whether the possible economic approaches for separation could work with multiple countries leaving, resulting in the European Economic and Monetary Union countries separating into more than two currencies regions – some of which might be individual countries. And the paper also tests that the approaches could work in several phases – so for instance one country leaves and at a subsequent point another country leaves, though clearly the uncertainty and costs of a repeat exercise will be higher with a two stage process.

## 2. Achieving an orderly exit through the NEWNEY approach

The exit of one or more country from the Economic and Monetary Union could be achieved through a surprise redenomination in those countries, followed by a crash devaluation. However this approach raises a slew of legal and contractual issues – and is likely to be a very regressive move with the rich and speculators making money and the poor being hit. The NEWNEY, ordered approach to the exit of one or more countries might therefore be preferred.

This chapter starts by laying out some criteria that should be used when assessing the different approaches to the exit of one of more states from the Economic and Monetary Union. It also considers the practicalities and downside of a surprise redenomination, and then lay out at a high level how the more signalled NEWNEY approach might work.

### **Assessing different approaches to the exit of one of more states from the Euro**

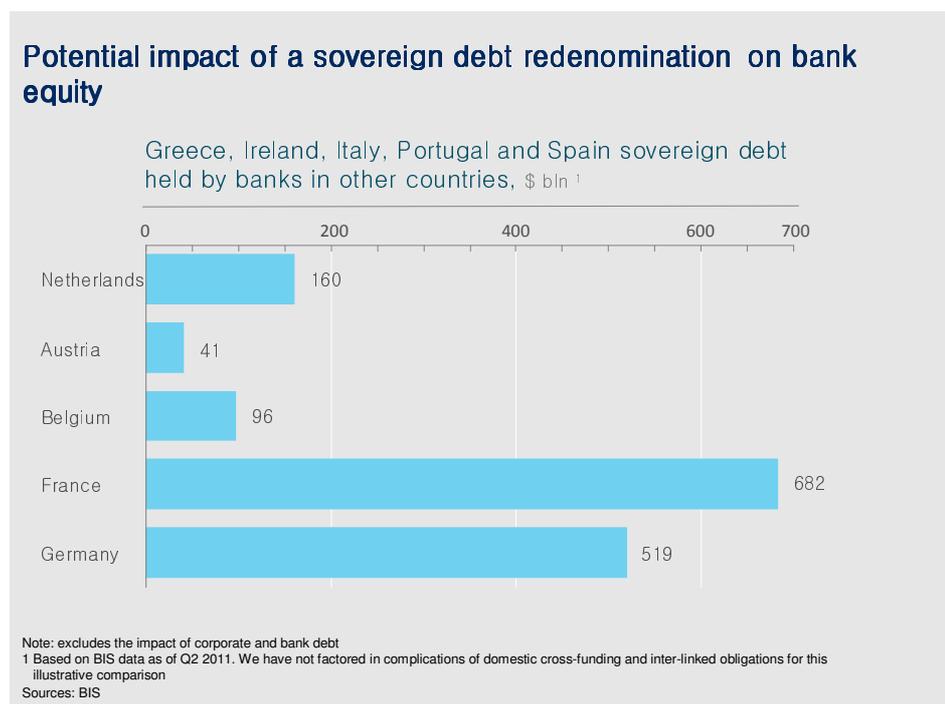
An ideal approach to how one of more member states leave the Economic and Monetary Union would pass seven tests, some of which were highlighted by the Wolfson Prize documents:

- 1. Does the approach provide clarity on how Euro denominated contracts, assets, liabilities and sovereign debts are redenominated in the new multi currency regime?** For instance, how will loans or contracts evolve when they are between players based in the different zones? So how should a Euro denominated mortgage for a Greek household, borrowed from a German Bank be redenominated after separation?
- 2. How well does the approach result in “matched” treatment of assets and liabilities (and supply and sales contracts) for corporations, governments and individuals?** Having clarity on how contracts work in the new multi currency regime, is only a start. If assets and liabilities of an institution (corporation, financial institution or even households) are

redenominated into different mixes of currencies and these currencies then change in value relative to each other, the solvency of the institution could come under threat. This problem is most acute for a number of the banks which have assets (including government debt) disproportionately in what could become Yolk countries but liabilities in White countries. As the European Banking Authority report shows, 30% of Greek Sovereign debt and inter bank liabilities are held by banks outside Greece,<sup>8</sup> and for countries such as Italy the value of debt held outside Italy will probably be even higher. The forced redenomination of Yolk countries government debt into the new local Euro-Yolk currency and the depreciation of the NEY currency could result in the equity of a number of banks being substantially reduced. Chart 4 shows the level of potential Yolk country sovereign debt held by banks in other countries. A 30% devaluation in the new currency used for Greece, Ireland, Italy, Portugal and Spain's sovereign debt could reduce the equity of banks in these other countries by around 30%. A similar effect could occur for corporations with long term contracts for instance, the long run purchase of Russian gas with contracts to sell electricity in a Yolk country.

<sup>8</sup> European Banking Authority, 2011 EU-wide stress test, aggregate report

CHART 4



- 3. How can the migration pace and process be managed so as to provide minimal disruption?** The separation of one or more countries from the European Economic and Monetary Union could cause greater disruption than the disruption following the Lehman collapse. For instance, there is a risk that the process of separation would require the Yolk countries to put in place capital controls to prevent a flight of capital to financial institutions in White countries. They might need to impose border controls to prevent notes being moved. They might also have to limit the withdrawals of Euro notes from banks and take steps to prevent hoarding of these notes. All of these could have a major disruption to normal business and personal activities.
- 4. Does the migration treat individuals roughly evenly?** There is a substantial risk that any exit of one or more countries from the Economic and Monetary Union could be very regressive in nature – so hitting poorer members of society. Richer members of society are more likely to be able to anticipate the separation and rearrange their finances so as to benefit from it – or at least to be hit less – by, for instance, moving their assets outside the Yolk countries, while leaving their liabilities there.

As the UK exit from the ERM showed, speculators could be some of the biggest winners of an exit from one of more countries from the Economic and Monetary Union – it was hedge funds, such as that run by George Soros, that reportedly made £1 billion from betting ahead of the UK's decision to leave the ERM<sup>9</sup>. In contrast, poorer members of the York countries would have less opportunity to reposition their assets and so would have their wealth hit disproportionately. Such a regressive change would be politically unacceptable.

5. **How doable is the approach politically?** There are clearly considerable political challenges to one or more member states leaving the Economic and Monetary Union. Currently, the treaties are such that they would have to leave the European Union – though they could potentially remain part of the European Economic Area. While the *political processes* are outside the scope of the prize question which focuses on the economic process, the political acceptability will be an important criteria and so will be considered. In particular, it will be important to assess whether cooperation is required from all European Economic and Monetary Union countries for the exit.
6. **Impact on macroeconomic effects of exit including inflation, confidence and the effects on debt.** How quickly will the economy of those countries exiting, and the global economy for that matter, recover from the shock of an exit?
7. **Does the discussion of an exit approach within governments circles, in itself, result in destabilising the Economic and Monetary Union?** There is a risk that the discussion of an exit approach could become self fulfilling as capital moves speculatively.

### **The impracticalities of a surprise redenomination**

Many other changes in Monetary Unions and Currency pegs, such as in Argentina or the exit of the UK from the ERM, have been achieved through a surprise devaluation or disorderly exit. Currencies were

<sup>9</sup> Billionaire who broke the Bank of England, By David Litterick, Daily Telegraph, 13 Sep 2002

devalued overnight. The benefits of competitiveness that came from new levels of currencies were delivered immediately. A surprise redenomination removes the opportunity for substantial speculative capital outflows – at least relative to a signalled or orderly change – though, as has been discussed, clearly some speculators made significant profits from the UK exit from the ERM.

However, in all of these situations, the new physical currencies were already in place, and all that was required was a revaluation. It was clear what currency each individual contract was denominated in, notes and coins were already in circulation, etc, even if the value of the currency changed. So an overnight change in relative currencies values was possible, though clearly companies, financial institutions and the government itself had to cope with the matching issue (as described in the previous section) from the unequal changes in the value of their assets and liabilities or supply and sale contracts.

The biggest challenge in pursuing a surprise redenomination approach for the European Economic and Monetary Union is that the new currency, notes and coins do not exist for the country or countries leaving the Union. Companies, governments and financial institutions will also need time to change their systems to reflect the change of some part of the European Economic and Monetary Union to a new currency.

The production of new physical notes and coins is one of the greater challenges with a surprise redenomination. It seems unlikely that the printing of new bank notes and minting of new coins could be achieved in secret. This printing problem could be overcome by having banks in the York region defacing existing Euro notes (eg with an ink stamp) drawn in the York region.<sup>10</sup> This would signal that they are the new currency, until the actual new York currency is printed and distributed. This could be harder to achieve for coins. And could be very difficult to police and would be hard for vending machines, to be reprogrammed quickly to reflect the change.

<sup>10</sup> The approach to stamping notes, has been suggested by Eric Dor, *Leaving the Euro Zone: a user's guide*.

Maybe a bigger challenge would be that multi national corporations and financial institutions would need time to adjust their systems and accounts for the new currency. As a reference, two years were allowed between the Euro exchange rates being locked and the launch of the Euro as legal tender, including the use of physical notes and coins. But preparations for the new currency had started before then, though there was also considerable focus on addressing Y2K software issues at the time of the switch over. Given the time required, an overnight redenomination is therefore not possible and there would need to be some hiatus period of a minimum of three months up to the launch of the new currencies.

During that period, consumers, corporations and speculators are likely to try to move their cash and savings that will be redenominated in the NEY currency to financial institutions where they will be redenominated as NEW currencies. They would have an incentive to withdraw and hoard old Euro notes in cash. And if capital controls were imposed, as would seem necessary, Euro notes could be smuggled over the border. It is also likely that the change would be very regressive in nature. Indeed, it seems likely that the better informed have already positioned their assets for any exit.

All of this could be very disruptive to economic activity. It is also unclear how international contracts would work with this crash redenomination. Financial institutions in White countries would face solvency issues as they do not have matched assets and liabilities across the White and Yolk zone.

So this paper needs to explore how a signalled or managed transition to a multi currency regime might work.

### **The NEWNEY approach in concept**

The challenge with a signalled approach to one or more countries leaving the European Economic and Monetary Union is how to ensure that, during the period up to the switch to the new currency, destabilising speculation does not occur as companies, financial institutions, governments and individuals position their financial assets so as to be in the stronger currency. With a signalled exit, there is a certainty that individuals and corporations will withdraw their

deposits from the Euro-Yolk banks either electronically or in cash. It will probably be necessary for Yolk country banks to impose constraints on cash withdrawals and the Yolk governments to put in place some type of exchange controls, though it seems hard to envisage that these will be effective given individuals could literally drive across customs-free borders with suitcases of cash. A signalled or orderly approach needs to remove the incentive for speculative capital flows.

This paper proposes the NEWNEY approach for how the economic processes could be managed to allow an orderly transition around one of more member state leaving the Economic and Monetary Union, but without any gain (and so incentive) for speculative capital flows. To achieve this, every Euro needs to be treated equally. So instead, of viewing this as a country leaving the Economic and Monetary Union and establishing its own currency, every Euro instead gets replaced by a basket of two or more currencies – the number will depend on the number of regions that exist after separation. Following our naming convention, these are referred to as the “New Euro-White” (NEW) and the “New Euro-Yolk” (NEY) currencies, and hence the NEWNEY name for this approach.

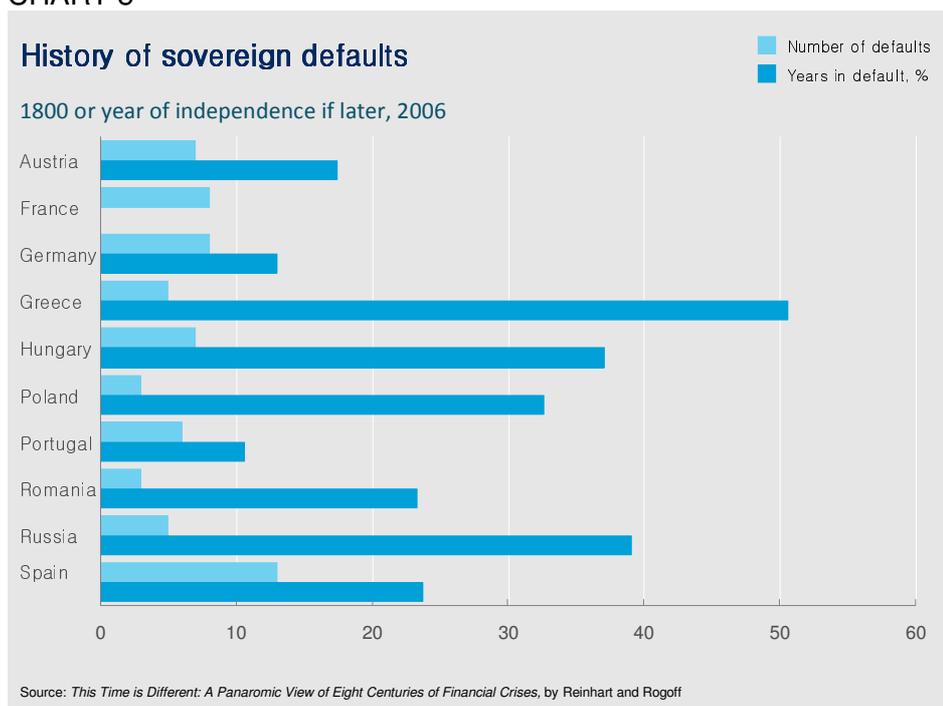
This approach could have a number of modifications, but in its purest form would be designed around the following principles:

1. Every Euro unit in the European Economic and Monetary Union should be treated equally in the migration to multiple currency regions, whether the individual Euro be physical cash, electronic money, or a unit of exchange in a contract, and more importantly whichever country they are in.
2. The process of migration to a multi currency regime of two or more currencies will be achieved in an orderly way, to allow time for corporations to adjust, currency to be printed, and distributed, etc.
3. Each of these new regions would have their own central bank, monetary policy, and currency unit. It is likely that the Yolk countries will have higher interest rates, inflation and a depreciating currency relative to the White countries.

4. Each existing Euro, in perpetuity, gets exchanged for a basket of the New Euro-Yolk and New Euro-White currencies, in fixed proportions determined by an exchange ratio. As an illustration, the exchange ratio could be set as 1 Euro can be exchanged for 0.7 NEW currency units and 0.3 NEY units. How this exchange ratio might be set is discussed later. If the Union was to split into more than two regions, this could also be achieved by including all the currencies for all the regions in the basket.
5. Across the European Economic and Monetary Union, everyone will have their Euros changed into the currencies in the basket in the proportions set by the exchange ratio. No one is forced to switch into any particular currency, but over time, individuals would be able to exchange the currencies in their basket from the other region, to their region's home currency. As will be discussed, central banks might need to support the exchange through a one off offer or through the provision of liquidity.
6. The gradual devaluation of the Yolk country currency or currencies would be achieved through higher nominal interest rates in the Yolk countries. If true risk free rates (not government rates) in the Yolk countries are say 5% higher than in the White countries, then the currencies would be expected to depreciate by 5% a year. This difference in interest rates could need to be announced in advance. And the gradual devaluation would allow the start of a process of restoring competitiveness in the Yolk countries. However it is important to stress that this devaluation provides a short term boost in competitiveness only if wages do not rise at the same rate. In effect, it provides head room for the austerity and structural reform measures that are required.
7. Any renegotiation of, or default on debt by these countries could also be managed separately and subsequently. Recently Greece has shown how debt restructuring can be managed in a negotiated way. Indeed, as Chart 5 below from Reinhart and Rogoff shows, the global economy has a long history of managing the types of debt default or renegotiation.

8. For the sake of contracts (including debt) that are currently denominated in Euros, the value of the Euro for the contract could continue to be determined through the market exchange rate between the different currencies in the basket and the exchange ratio – which will be set at the start.

CHART 5



The NEWNEY approach meets our matching criteria - there will be no impact on the solvency of financial institutions that have Euro denominated assets and liabilities that are unmatched in terms of the eventual region in which they end up, as the NEWNEY approach has equal treatment of all Euros. However, clearly the default by one or more country could itself provide an issue for the solvency of financial institutions, though this is no different in the current Economic and Monetary Union. The equal treatment of all Euros, means that there is no incentive for capital to move between countries prior to the establishment of the new currency or for individuals to make withdrawals from their bank accounts and hoard Euro notes.

The NEWNEY approach also allows contracts that are denominated in Euros to run their course as the value of the Euro (and how this relates to other currencies such as the NEY, NEW, Pound or dollar)

could always be determined from the exchange ratio and the value of the NEW and NEY, against each other. For an illustration of how this would work, imagine that the exchange ratio was set at 1 Euro can be exchanged for 0.7 NEWs and 0.3 NEYs. And subsequently the Euro Yolk devalues such that new currencies trades such that 1 NEWs is 1.2 NEYs. Simple algebra allows the value of a Euro in an existing contract to be determined in NEWs or NEYs – see Chart 6.

CHART 6

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**How the exchange ratio and market exchange rate can be used to determine the value of a Euro in a contract**

**Exchange ratio set at transition**                      **1 Euro =**                      **0.7 NEW (new euro-white)**                      **+ 0.3 NEY (new euro-yolk).**

So everyone can exchange a Euro for 0.7 NEWs and 0.3 NEYs. This exchange ratio remains fixed. But the relative exchange rate between the NEW and NEY changes as the NEY gets devalued

Subsequent market determined exchange rate                      1 NEW =                      1.2 NEY

The implicit spot value of the Euro in a contract can be solved for algebraically from the two equations above                      1 Euro=                      1.14 NEY

Or

These change as the exchange rate changes                      1 Euro=                      0.95 NEW

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A more detailed discussion of aspects of the NEWNEY approach follows later. But first this paper explores the steps that would be required to put the NEWNEY approach into practice.

### **Key steps in the NEWNEY process**

A number of sequential steps would need to be followed to implement the NEWNEY approach:

1. **Political agreement of how many monetary regions will emerge and setting a timetable for the process.** This would need to be an intergovernmental negotiation between all the countries in the Economic and Monetary Union – and would clearly also need to start with whether separation is necessary at all, and the approach to be followed. While the process of separation could be repeated, with other countries leaving the Economic and Monetary Union at a later date, the costs and disruptions are such that it would be better for the countries to separate in one go. While renegotiation of debt levels can be separated from the implementation of the NEWNEY transition to a multi currency world, it is seems certain that these would also be part of this political negotiation.
2. Establishment of central banks and monetary policy committees, development of monetary policies, and the designing the new currencies for each of the new regions or countries. Each of the new monetary regions or countries would need to establish their own central bank, monetary policy process and their own currency, including the name to be used. It will also be necessary for each country to determine a rough target valuation of their currency – so should it be in line with the Euro or in line with historic currencies such as the Drachma or Lira. The level of the currency will be important psychologically as the Yolk countries use a devaluation to restore competitiveness – this will be discussed in more detail later.
3. **Setting the exchange ratio for the new currencies and launch of trading in the new currencies on a shadow basis.** The process of setting the exchange ratio will be discussed in more detail below, but will be based on the target valuation of the new currency as well as the anticipated required money supply and debt levels for

each of the new monetary regions. Once the exchange ratios have been determined, and monetary policies have become clear, trading in the currencies can start.

4. **Establishment of a one off governments sponsored currency exchange option.** The governments of the Economic and Monetary Union could choose to provide liquidity to support what would be undoubtedly the largest set of exchange rate transactions in history as individuals trade the currency they receive in their basket that is not their home currency. As discussed below, this might be through offering a fixed tender price for a limited period. However, it is important that this be on a voluntary basis.
5. **Move to different monetary policies.** Once the new currencies are established, the governments in the new regions or countries would be able to pursue different monetary policies. As has been discussed the York countries are likely to want to have a currency that depreciates over time. This could be achieved by having higher nominal interest rates and inflation in the York countries.
6. **Switch over day.** Prior to this date, bank accounts and invoices, would remain denominated in Euros. After the switch over date, the legal tender for settlement of payments would switch to the new local currency. As the Chart 5 above shows, it will always be possible to derive a Euro- NEW or Euro-NEY exchange rate for contracts and debt with long duration.
7. **Redenomination of contracts.** Over time contracts (including loans) would get renegotiated to be redenominated into one currency, but there would always be a fall back that the value of the Euro as a unit of exchange in contracts could still be determined in the new currencies from the value of the exchange ratio and the value of the new NEW and NEY currencies.
8. **Renegotiate of York countries debt, if needed.** This is not required for the NEWNEY process to work – but the experience to date of Greece shows that the level of debt for some of the Euro countries could be unsustainable. And this debt level could get worse as their currency devalues given the debt will be denominated in Euros – so will need to be repaid in a mix of NEWs and NEYs as set by the exchange ratio. So it seems likely

that some renegotiation of debt will be required – this will be discussed in more detail below.

### 3. Specific details on the NEWNEY approach

There are a number of aspects of the NEWNEY approach that need a bit of further exploration. These include setting the exchange ratio, getting the required foreign exchanges to happen, different monetary policies, debt levels and renegotiation, and the politics of getting it to happen. A discussion of these will be the focus of this chapter. As has been discussed, which country or countries exits the Economic and Monetary will be as much a political decision as an economic one. But determining which country, if any, should exit is not part of the Wolfson prize question.

However to make the discussion of the specifics more real, this paper will illustrate points with the case the York countries or country exiting the Economic and Monetary Union being a large country or set of countries which represents around 20% of the Eurozone. This paper will assume, to begin with, that if it is more than one country, they will form a new single York Economic and Monetary Union – though this paper will later consider how the NEWNEY approach would work with multiple regions. The key statistics for the new York Zone are set out in the Chart 7.

#### CHART 7

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#### Illustrative data for York zone exiting the economic and monetary Union

EUR BILLIONS

	<b>Eur Billions</b>	<b>% Eurozone</b>
GDP	1,800	20%
Money supply	1,850	20%
Real economy debt	6,600	22%

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## Setting the exchange ratio

Before the exchange ratio is set, the Yolk government(s) would need to decide what is the target level of their new currency. The Economic and Monetary Union countries had a wide range of different levels for a unit of their currencies before joining the Euro. A similarly priced coffee could cost 6,000 Liras, 6 Deutschmarks or 2.5 Punts. Chart 8 shows the exchange ratios used for converting into the Euro.

CHART 8

### Euro conversion rates

Belgian Franc	40.3399
Luxembourg Franc	40.3399
Deutsche Mark	1.95583
French Franc	6.55957
Dutch Guilder	2.20371
Austrian Shilling	13.7603
Irish Punt	0.78756
Portuguese Escudo	200.482
Spanish Peseta	166.386
Italian Lira	1936.27
Finnish Markka	5.94573

Source: European Central Bank

The Yolk government(s) could decide to make a clean break and return to the currency levels seen in their pre-Euro days. Alternatively, they could aim to have their new currency trade at around the same level as the Euro. The choice on this is largely driven by individual consumers' and workers' perceptions.

It is probably easier for individuals to have a currency with roughly the same value as the current Euro as they will have got used to this level. There was a popular belief that the move to the Euro caused some short term inflation as companies rounded up their prices – though the evidence on this is less clear and the Economic and

Monetary Union clearly did result in lower inflation for most member countries in the long run<sup>11</sup>. There might be a benefit for the Yolk government(s) in setting the value of the NEY at a slight discount to the NEW so as to start the process of regaining competitiveness. However, it could be argued that setting it at a slight premium would provide markets and consumers in the Yolk countries with greater confidence on their new currency. The relative importance of these could be tested through market research of consumers and workers in the Yolk countries. It seems likely that the White countries will want to keep the NEW close to the value of the Euro.

For the purpose of this paper, it is assumed that the Yolk and White governments target that their new currencies start at levels close to parity with the Euro.

The second step in targeting the exchange ratio is to estimate the monetary supply and debt (less double counting) that is likely to exist after the separation for each of the two new monetary areas. This is required because the exchange ratio determines how many NEWs and NEYs get created from the transfer to the new regions. How this works can be shown from an example.

If the exchange ratio was set at 1 Euro converts to 0.8 NEWs and 0.2 NEYs, there will end up with 4 times as many NEWs in circulation as NEYs. If the demand for the two currencies are roughly in this 4 to 1 ratio (this paper will come back shortly to defining what the demand is for currencies), then the NEW, NEY and Euro will start with around the same exchange rate. If instead the exchange ratio was set at 1 Euro is equal to 0.8 NEW and 400 NEYs, then there will be around 500 more NEYs in circulation as NEWs. If the demand for the two currencies are in line with the 4 to 1 ratio used earlier, then the NEY will be in effect devalued by a factor of 2000 relative to the earlier case. And so the NEY would have a value of around the level seen for the Italian Lira prior to the Economic and Monetary Union.

<sup>11</sup> "Did Prices Really Soar after the Euro Cash Changeover? Evidence from ATM Withdrawals". Paolo Angelini; Francesco Lippi;. Fünf Jahre nach der Euro-Bargeldeinführung –War der Euro wirklich ein Teuro? [Five years after the introduction of euro cash – Did the euro really make things more expensive?] Irmtraud Beuerlein; Did the introduction of the euro impact on inflation uncertainty? - An empirical assessment, Matthias Hartmann and Helmut Herwartz; source Wikipedia

## CHART 9

### Estimating the demand and exchange ratio

EUR BILLIONS

	Pre Separation	Post Separation		Comment
	Euro Zone	White Zone	Yolk Zone	
Currency in circulation	847	886	141	Need to adjust for reserve currency status remaining in the White Zone and frictional effect
Overnight deposits	3,942	3,154	788	Pro rated by GDP and GDP multiplier
Deposits with an agreed maturity of up to 2 years and deposits redeemable at notice of up to three months	3,801	3,041	760	Pro rated by GDP and GDP multiplier
Money market funds	1,185	948	237	Pro rated by GDP and GDP multiplier
Real Economy Debt	30,000	23,400	6,600	Higher debt levels in Yolk Zone
Less double counting as held by financial institutions	- 20,000	- 16,400	- 3,600	Higher bank holdings in White Zone
Total	<u>19,775</u>	<u>15,028</u>	<u>4,927</u>	
Exchange ratio		0.75	0.25	

So how can the “demand” for the NEWs and NEYs be forecast? Any error in forecasting demand for the two currencies, is not a major problem as it will result in the market determined shadow price of each currency diverging prior to the switch over. The demand for the currencies will come in two main types: classic monetary supply; and Euro denominated financial instruments that are not included in the monetary supply, but which will be redenominated into the new currency. The latter includes government debt and corporate bonds, but probably excludes most equity, and other assets such as housing which do not have a fixed principal and interest obligation in a particular currency. The reason that debt instruments need to be included in the calculation is because the demand for them is a close substitute for the demand for NEW and NEY currency: an individual wanting to hold NEY has a choice between cash, bank deposits, governments’ debt or corporate debt. In doing this calculation, it will be necessary to remove the impact of double counting of financial institutions holdings of debt instrument in estimating the aggregate demand. So, some bank deposits are used to fund the bank’s holding of government debt – but the aggregate end demand for a currency is the bank deposits and not the bank’s holdings of the debt instruments.

To see why this is the case, consider an illustrative conversion process. The consumer withdraws their deposits from the bank, which the bank funds by selling the bonds it holds to the government. The cash that then needs to be converted is the monetary value of the deposits, with no conversion requirement for the bonds that are held by the banks funded by deposits. Consider instead, the government bonds are held by the consumer. Then the conversion process is that the consumer sells the debt for cash. The cash gets converted. So bonds held by consumers (and corporations for that matter) do need to be converted. Hence the “demand” for the new currency will be driven by classic monetary supply and Euro denominated financial debt that are not included in the monetary supply, but which will be redenominated into the new currency and which are not held by a financial institutions to match deposits.

For the current Euro area, the ECB estimates that M3 is around Euro 9.775 trillion<sup>12</sup>. For the sake of this analysis, let's assume that there is roughly Eur 30 trillion real economy debt (so household, government and corporation) of which say two thirds is held by financial institutions – and so is double counted.

An illustration of how these might break up after separation is included in Chart 9. There are a few additional comments on this analysis.

A proportion of the Euro money demand comes from the reserve currency status of the Euro. In the pre crisis year of 2008, the ECB estimated that around 20% of Euro currency notes and coins were held by non residents. The number for the US is incidentally around 50%. It could be argued that a substantial majority of this is as a result of the reserve currency status of the Euro. So maybe around Eur 160 billion. It seems likely that the majority of this money will remain with the White Zone currency. The total money supply after separation is likely to increase by a small factor because of frictional effects – the analysis in Chart 9 assumes that this be Euro 20 billion.

Countries within the Eurozone historically had different monetary supply to GDP multiples – see Chart 10 for M1. These need to be taken into account – the analysis on Chart 9 has not.

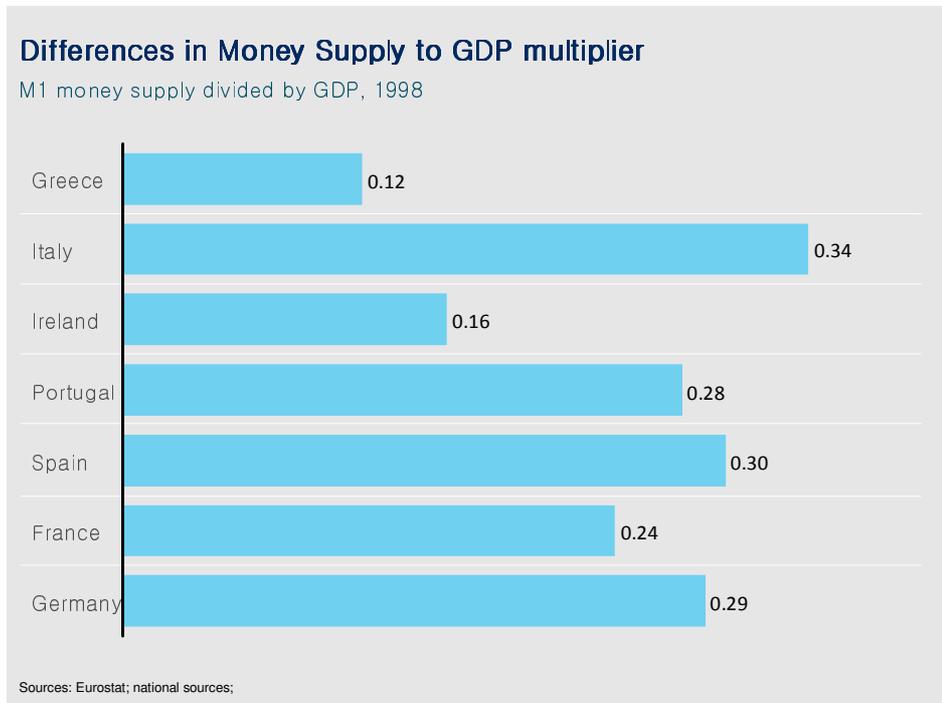
The debt holdings for the Yolk Zone will be higher than the GDP split (20%). However the offsetting bank holdings will be more likely skewed to the White Zone (in this example this is assumed to be 82%). In this calculation it is assumed that debt and bank holdings return to their home region – this will not be the case and would require further research to understand.

Once the demand is estimated, it is then possible to set the exchange ratio so that the amount of each of the new currencies created by the swapping of the Euros for the basket of currencies, is in line with the eventual level of debt and monetary supply created for each of these currencies, at the target exchange rate. As can be seen above, this will have a little more of the Yolk currency needing to be created than the

<sup>12</sup> ECB Statistics Pocket Book, January 2012

relative GDP proportions because of the greater debt affecting the York countries.

CHART 10



### **Allowing FX movements and getting the exchange to happen in practice**

Under the NEWNEY approach, all players will receive a basket of the two currencies in exchange for their Euro. Individuals in the White-zone will largely want to trade out of their NEY currency. And individuals in the York-zone will want to trade out of most of their NEWs – though clearly they might decide to retain some NEWs as a hedge against a collapse of the NEY.

Chart 11 shows an estimate of the new money supply and debt that will be created on switch over day. If the majority want to switch to their home currency, around Eur 4 trillion of trading will be required to switch over the different monetary and debt instruments. The need to trade will be particularly acute in the York Zone as the majority of the new money received will be the NEWs.

## CHART 11

### Required currency exchange

EUR BILLIONS

	Pre Separation	Post Separation	
	Euro Zone	White Zone	Yolk Zone
Money supply and net debt		15,028	4,927
Money Created	NEWs	11,318	3,710
	NEYs	3,710	1,217

Clearly not all of the debt instruments will need to be swapped to the home currencies on day one. So not all of these trades need to occur immediately.

Because of this and the fact that the debt and money supply are in different proportions in the two regions, there is likely to be somewhat of an imbalance in cash trading. In addition, the trading volumes are almost certainly too large to be left to the free market. The BIS estimates that the daily FX volumes are around \$4 trillion<sup>13</sup>, but this number includes swaps, forwards and derivatives, and of course is global.

To overcome this, the central banks of the White and Yolk regions could offer, for a limited period, a fixed exchange rate between the currencies, providing the liquidity for White and Yolk companies, households and financial institutions to trade to the other currencies. In offering this, it will be important that these trades are not compulsory. Individuals in the Yolk countries are clearly going to be concerned that they end up holding the NEY currency that runs the risk of a substantial devaluation, and if they think they are going to be compelled to switch to the NEY currency, there would be a substantial risk of exactly the capital flight that the NEWNEY approach was designed to avoid.

<sup>13</sup> Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity in April 2010, Bank for International Settlement.

So how might this work in practice? Every Euro bank account holder would have the right to have their Euro denominated bank account replaced by two accounts. One denominated in the NEY and one denominated in the NEW. All Euro cash holders would have the right to change their cash holdings converted to the combination of NEW and NEY set in the exchange ratio.

For some corporations and individuals (for instance those with houses or family in both zones) keeping the two accounts, cash holdings, etc might be their desired end state. But for other corporations and for most individuals, they would prefer to switch to their home currency. So prior to switch over day, they could be given a choice. End up with two accounts, cash holdings, bonds. Or have them switched to their home currency at the Government exchange rate offered on switch over day. Some techniques drawing on behavioural economics could be used to encourage switch over. In the Pension Commission's Turner report, the benefits of using inertia or "soft compulsion" were identified.<sup>14</sup> A similar approach could be adopted with bank accounts by default opted into a switch to their home currency unless the holder explicitly opts out.

All Euro redenominated bonds would be replaced by two sets of bonds, one denominated in NEW and one denominated in NEY. The issuer of the bonds could either let their bonds run to maturity in the currency mix. Or they could offer their bond holder the opportunity to exchange into another mix – the "fair exchange" rate would be dependent on forward exchange rates and so would be slightly different from the Government spot exchange rate described above.

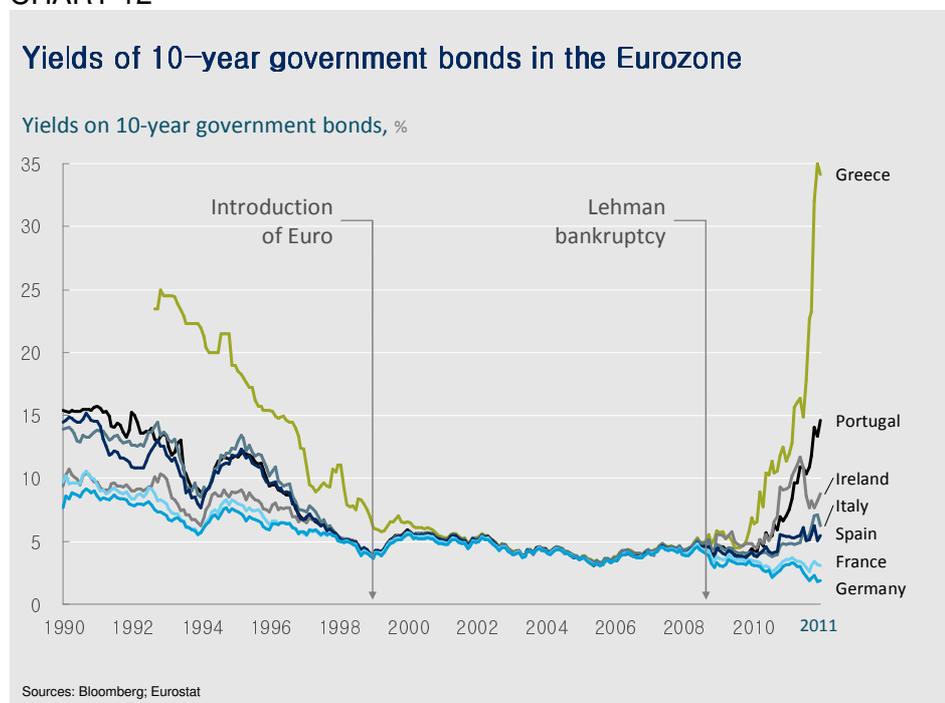
Corporations would decide in which NEW or NEY currency – or other currency too such as the dollar for that matter– they would denominate their accounts and dividends but as there is no fixed obligation with dividends (as there is with debt interest and capital) they can decide this with input from their shareholders but do not need to split their stocks into a NEW and NEY denominated stock.

<sup>14</sup> See for instance, *The controversial benefits of opting out* Financial Times December 1, 2005

Stock exchanges would decide which currency or currencies they would use to trade debt and equity instruments.

This government Euro-NEW and Euro-NEY exchange rate (and the forward curves that can also be derived from the forward NEW-NEY curve) would also provide a reference point for renegotiation of contracts – though these contracts would need to be agreed between the relevant parties. As has been discussed above, if they are unable to agree the basis for a renegotiation, these contracts could continue to run with the Euro exchange rate derived from the fixed exchange ratio and the evolving exchange rate between the NEW and the NEY.

CHART 12



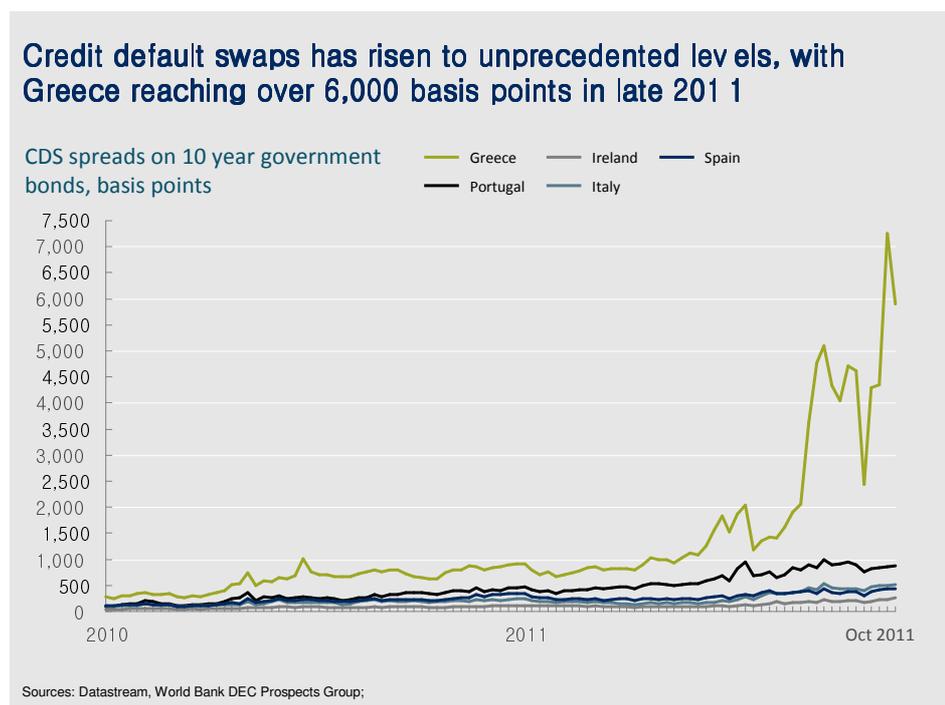
### Different monetary policies

Once the separation occurs, the York country would be able to follow different monetary policies and start to restore competitiveness through currency devaluation. As has already been stated, many emerging markets have shown that currency devaluation is not, on its own, a basis for ensuring ongoing competitiveness. Structural changes are needed to achieve the productivity improvements required for competitiveness, along with potentially resetting wages, entitlement programmes, retirement ages, and cutting government

expenditure. The nature of all of these changes are fundamentally painful. So the short term boost to competitiveness that comes from a currency devaluation will allow room to make other changes happen.

The York countries can achieve a gradual devaluation of their currency by running higher nominal interest rates. If the White countries 3 year true risk free interest rates are around 2%, and the York countries true risk free interest rates are around 7%, then the York NEY currency would be expected to devalue around 5% a year relative to the White countries NEW, or 15% over 3 years. These higher interest rates will also provide an additional encouragement to investors to continue to hold the NEY. It is important to remember that this difference needs to be measured on the true risk free rate. Currently interest rates already show a differential that is greater than this – see Chart 12 – but this differential is because of default risks as the credit default swaps show – see Chart 13.

CHART 13



There are two challenges with this gradual devaluation. First it could enter peoples expectations on inflation and so become self defeating. And second the higher interest rate could dampen economic growth, assuming borrowers get hit more than savers. This paper will come back to the latter. On the former, there is a significant risk that

inflation expectations get raised and so salary levels rise offsetting the benefits that come from the devaluation. However, with the current levels of unemployment seen in a number of the likely exiting countries, this risk might be contained.

### **The NEWNEY with more than 2 regions or a phased exit**

The illustrations for the NEWNEY approach, so far, have been around the Economic and Monetary Union splitting into two regions or one country leaving as a single transition. However, the approach could be applied if there were more than one region or for a phased exit.

For more than one region, the approach would need to be modified so that the basket of currencies that people receive in exchange for a Euro include all the currencies. So if the label  $Yolk_1$ ,  $Yolk_2$ , are adopted the basket of currencies people would receive in exchange for a Euro would be

$$E1 * NEWs + E2 * NEY1 + E3 * NEY2 + \dots$$

Where  $E1$ ,  $E2$ ,  $E3$ , etc are the exchange ratios, and  $NEY1$ ,  $NEY2$ , etc are the new currencies.

While the approach could be applied to a phased approach to exit, where one country leaves, and then another, this is not recommended as the costs associated with issuing the new currencies will be almost doubled.

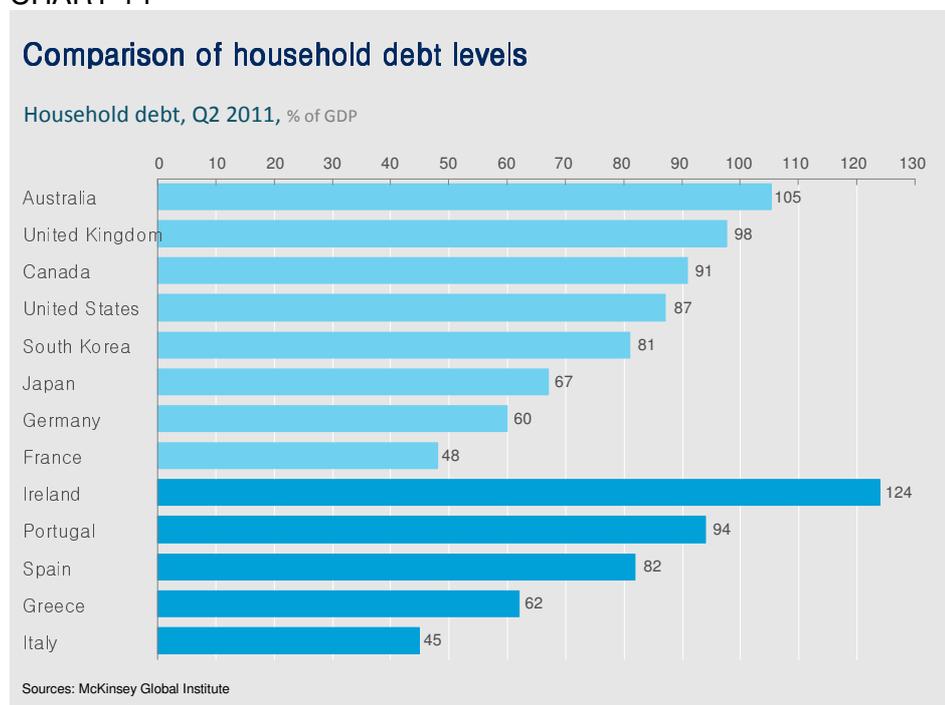
### **Implications for private savings, domestic mortgages and international contracts**

The nature of the NEWNEY approach is that it allows the automatic redenomination of savings, domestic mortgages and international contracts. There is not a loss in value for savings (as measured in the old Euro) as would have been seen from an Argentina type devaluation.

Individuals will switch their savings and mortgages to their local currencies, over time. But again, because the approach to devaluation relies on higher interest rates, there will not be a shift in

the value (as measured in the old Euro) for savings and mortgages – if the interest rate is floating for these. For savings and mortgages where the interest rate is fixed, there could be a reduction in the value of York countries savings and mortgages because of the higher inflation. Contracts would have a very small erosion of value as the NEY devalues – because the contracts do not receive the benefit of the higher York country interest rate. However with 20% of the basket being in NEYs and 15% devaluation over 2 years, this will be very small.

CHART 14



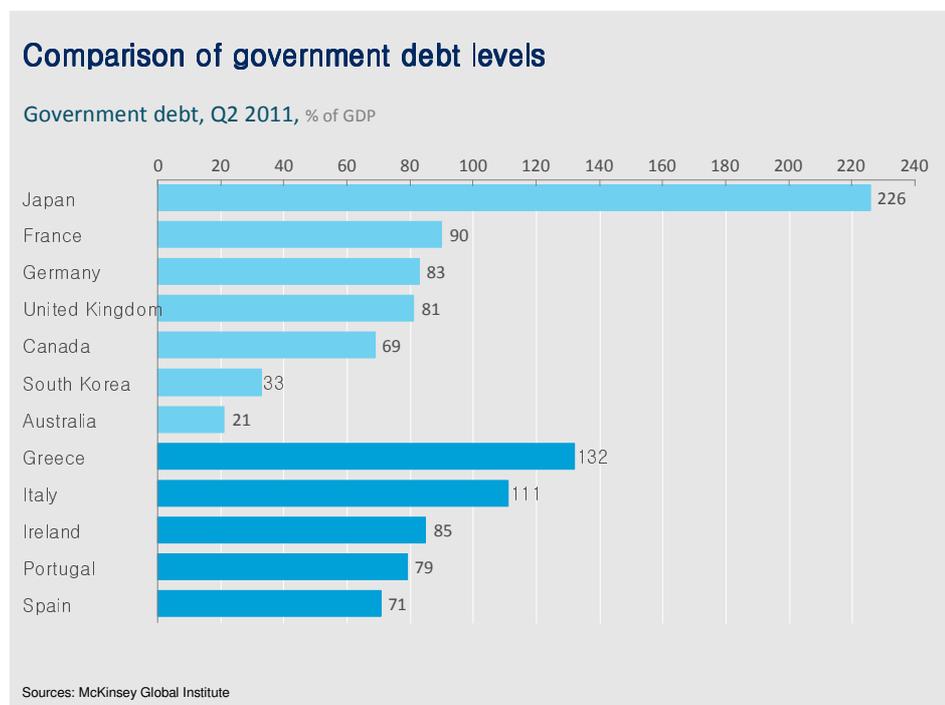
As the NEY currency devalues and York salaries (as measured in the old Euro) are reduced to retain competitiveness, one might expect to see the York savings and domestic mortgages are worth a greater multiple of salaries. This increase in effective debt levels could be a drag on growth. However it does seem that the level of household indebtedness for some of the likely York countries such as Italy and Greece is not that high relative to other countries – see Chart 14. For countries such as Ireland, the increase in household debt to GDP will be a constraint on growth. However it is also evident for these countries that the level of household debt level is already a problem

and that they are likely to need to follow the US path to household deleveraging, probably through greater levels of default.

### Implications for government debt

Government debt faces a similar issue to that discussed above for household debt: the devaluation of the Euro currencies and the higher interest rates will result in Euro Government debt growing. And this is unlikely to be offset by growth in GDP resulting from a boost in competitiveness. This problem could be acute for Greece, Italy and Ireland – see Chart 15 for current levels of government debt.

CHART 15

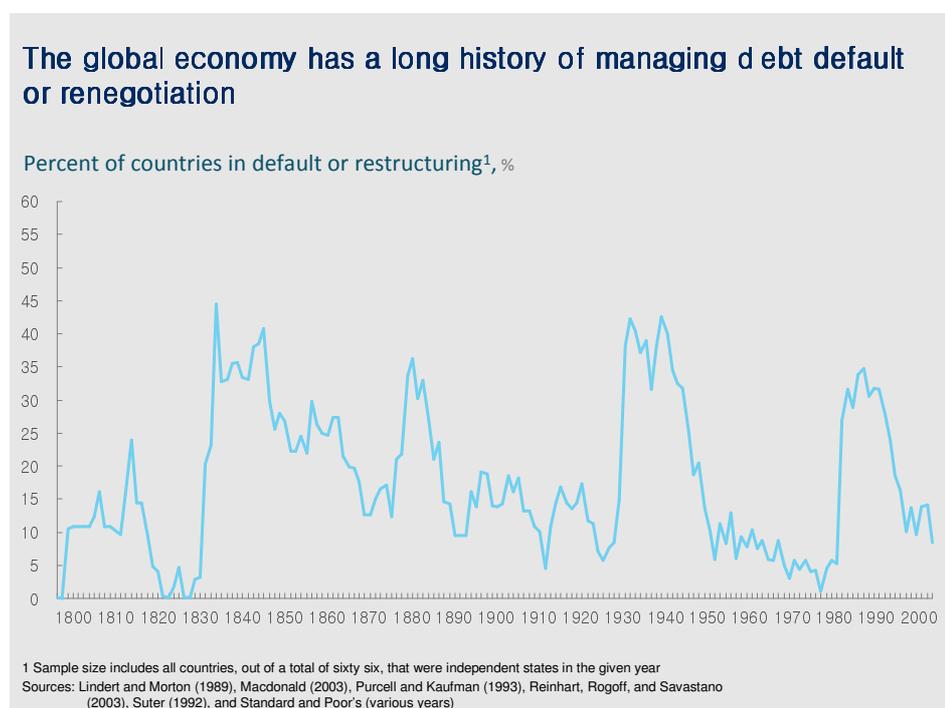


However a bigger government debt challenge currently exists for the Eurozone-crisis countries than the increase that could come from any devaluation of the currency. At the moment, these countries are struggling to refinance their debts at a viable yield, without support from the IMF and ECB. The credit default swaps suggest a significant probability of default. The original benefit these countries received when they joined the Economic and Monetary Union of being able to borrow at the same rate as Germany has now disappeared. And if some of these countries leave the Economic and

Monetary Union, they will no longer have the support of the ECB in financing their debt.

Any renegotiation of, or default on debt by these countries could also be managed separately and subsequently. Recently Greece has shown how debt restructuring can be managed in a negotiated way. Indeed, as Chart 16 from Reinhart and Rogoff shows, the global economy has a long history of managing the types of debt default or renegotiation.<sup>15</sup>

CHART 16



### **The stability of the banking system**

The NEWNEY approach has been built around the principal of matching. So all banks assets and liabilities will start off matched and there will no change in solvency of the banks because of the change over to the new currencies. Banks also will not suffer form speculative outflows.

The banking system will however be hit by any renegotiation of debt. But it is unclear how different this would be with or without the exit

<sup>15</sup> Reinhart and Rogoff's *This Time is Different*

of one or more country. Banks in the two regions will not have the support of the ECB – this will be particularly an issue with banks in the York regions. Their stability will be dependent on support from their local central bank – and institutions such as the IMF.

### **The politics**

The challenge with implementing the NEWNEY approach could be around politics. It requires all members of the Economic and Monetary Union to agree to the exit. A unilateral exit by one country can be achieved without all members of the Economic and Monetary Union agreeing, by the exiting country walking away from its treaty obligations. The NEWNEY requires all members to agree to the exit – and some are passionate about preserving the Economic and Monetary Union.

So how might one of more countries that decides to exit, ensure that the members of the Economic and Monetary Union all agree to the NEWNEY approach? The first argument is that the approach provides greater stability than the crash exit. This will be particularly relevant if the exit were to be more than just a small country such as Greece. Secondly if there is a liquidity crisis, it might be the easiest way for the Economic and Monetary Union to survive through an orderly exit of one country. Finally, the exiting country could also threaten to walk away from some of its debt obligations, or its obligations to the ECB. The latter might be achieved by the exiting country issuing its own currency, swapping it for Euros, and using the Euros received to repay its debt obligations. This threatened approach could be sufficiently disruptive that all members of the Economic and Monetary Union agree to the NEWNEY managed exit.

However, perhaps the most likely way that the political challenge could be addressed is for the existing members to sign up for a NEWNEY approach as the route to be followed in the event of an exit. Having in place the NEWNEY “Plan B” would allow financial markets to see that an orderly exit could be achieved and remove the incentive for speculative capital flows. The existing members could sign up for the NEWNEY approach as the “Plan B” as the best way of supporting the Euro Zone remaining intact.

# Conclusions

This document has been written as a contribution to the debate for what might be a “Plan B” in case one of more countries decided to leave the Economic and Monetary Union but also as a mechanism for the Union removing the risk of speculative attacks. The NEWNEY approach meets the criteria laid out above to a reasonable extent:

1. **Does the approach provide clarity on how Euro denominated contracts, assets, liabilities and sovereign debts are redenominated in the new multi currency regime?** These can be derived from the NEW-NEY exchange rate and the initial exchange ratio. Or the contract can be settled with a basket of the new currencies.
2. **Does approach result in “matched” treatment of assets and liabilities (and supply and sales contracts) for corporations, governments and individuals?** This is achieved because of the equal treatment of all Euros.
3. **How can the migration pace and process be managed so as to provide minimal disruption?** The separation of one of more countries from the European Economic and Monetary Union will always be a painful process. The NEWNEY approach is more disruptive in that it impacts the whole Union. However it removes the risk of the disruption from speculative cash flows.
4. **Does the migration treat individuals roughly evenly?** The equal treatment of all Euros achieve this. The approach is not regressive.
5. **How doable is the approach politically?** There are clearly considerable political challenges to one or more member states leaving the Economic and Monetary Union. The challenge with the NEWNEY approach is that it requires all members to sign up. While this might be challenging, it is not impossible for the reasons discussed above.
6. **Impact on macroeconomic effects of exit including inflation, confidence and the effects on debt.** The approach prevents the type of shock that could slow the global economy for a

decade. It allows the York countries to devalue, though in a more deliberate way. The York countries will no longer have the benefit of the ECB as a backstop.

7. **Does the discussion of an exit approach in governments in itself, result in the destabilising of the Union.** As the approach does not provide any benefit to speculative capital flows, the discussion does not destabilise the Union.

Even if the Economic and Monetary Union is expected to remain together, policymakers need a “Plan B” for how one or more countries could leave the Union. NEWNEY provides some components that could be included in this plan. But the NEWNEY approach could also support the Euro Zone remaining together as it reduces the risk of speculative capital flows that could destabilize the Union. So paradoxically, a plan that would allow a member state to leave the Economic and Monetary Union, could allow the Union to remain together. The real power of NEWNEY might come from it never being used.

# Biography, contact details and acknowledgements

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## Non-technical summary

The bankruptcy of Lehman Brothers provides a pertinent lesson for the European Economic and Monetary Union. Prior to the Lehman collapse, there were substantial problems with global debt levels and the subprime mortgage and housing markets. These problems would have been painful to work through in an orderly way, but the disorder in the financial markets that followed the collapse of Lehman, resulted in a seizing up of credit markets, which in turn caused the first global recession since the Second World War.

One or more member states leaving the Euro could be shock for the global economy five to ten times larger than the Lehman collapse.<sup>16</sup> A redenomination of sovereign debt could wipe out 30% of the equity of banks in countries such as France, Germany and the Netherlands, substantially restricting credit. Cross border contracts and debt will all be exposed to settlement uncertainty and legal issues, freezing trade.

Even if companies, financial institutions and individuals were only to suspect that one or more country might leave the Euro, they would likely want to position their financial assets so as to be in a stronger currency. Were speculation to grow about a potential exit, there would be a risk that individuals and corporations might withdraw their deposits from the potentially exiting countries' banks. To prevent this, the governments of those country or countries might have to impose constraints on cash withdrawal and exchange controls, though it seems hard to envisage that these will be effective in preventing individuals taking suitcases of cash across the currently customs-free borders. As the UK's ERM experience shows, there is a risk that speculators could result in a country being forced to exit the Union, or bringing about other fundamental changes such as the removal of the free flow of capital.

This Wolfson Prize entry proposes a process that, were one or more countries to leave the European Monetary Union, would allow this

<sup>16</sup> This paper in no way forecasts that any country might leave, or should leave the European Economic and Monetary Union.

exit to be managed in a way that removes the incentives for destabilising capital flows, ensures the ongoing solvency of the banking system and provides a mechanism that automatically redenominates debt and contracts. The process would allow the migration to a multi-currency regime of two or more currencies in an orderly way, to allow time for currency to be printed and distributed, and for institutions to adjust their accounting systems.

At the heart of this approach is the principle that all Euros, wherever they were in the Union, are treated equally. Under the approach, any exit of one or more countries from the Economic and Monetary Union would not be viewed as an exit, but as a split of the Union into two (or more) regions. Each of these new regions would have their own central bank, monetary policy, and currency unit. Each existing Euro would be exchanged for a fixed basket of each of these new currencies.

This paper does not take a view on which countries, if any, should exit the Union. Instead, building on the unscrambling analogy, these regions are called the “White” and “Yolk” regions, where it is the Yolk region that needs to restore competitiveness through devaluation – the Yolk region, of course, might be a single country or a group of countries. Each of these regions would have their own currencies – the New Euro-White (NEW) and the New Euro-Yolk (NEY). Hence the NEWNEY name for the approach.

Under NEWNEY, each existing Euro would be exchanged for a basket of the NEY and NEW currencies, in fixed proportions set by an exchange ratio (the paper describes how this is determined). As an illustration, the exchange ratio could be set as 1 Euro is exchanged for 0.7 NEW currency units and 0.3 NEYs. If the Union were to split into more than two regions, this could also be achieved by including currencies for all the regions in the basket.

Across the Economic and Monetary Union, everyone would receive the same basket of currencies in exchange for their Euros. No one would be forced to switch into any particular currency, but over time, individuals would be able to exchange the currencies they receive from the other region, to their region’s home currency. Central banks

could support this exchange through a one-off offer on switch over day or through the provision of liquidity.

The gradual devaluation of the Yolk country currency or currencies would be achieved through higher nominal interest rates in the Yolk countries. If true risk-free rates in the Yolk countries were, say, 5% higher than in the White countries, then the currencies would be expected to depreciate by 5% a year. This difference in interest rates would need to be announced in advance to prevent a collapse in the Yolk currency. This gradual devaluation would provide a short-term boost in competitiveness, assuming wages did not rise at the same rate. In effect, it would provide head-room for the austerity and structural reform measures that are required.

For contracts (including debt) that are currently denominated in Euros, the value of the Euro for the contracts could continue to be determined in perpetuity through the market exchange rate between the NEY and NEW currencies in the basket and the exchange ratio.

Any renegotiation of, or default on, debt by these countries could also be managed separately and subsequently. Indeed, the global economy has a long history of managing the types of debt default or renegotiation.

Even if the Economic and Monetary Union is expected to remain together, policymakers need a "Plan B" for how one or more countries could leave the Union. NEWNEY provides some elements that could be included in this plan. But the NEWNEY approach could also support the Euro Zone remaining together as it reduces the risk of speculative capital flows that could destabilize the Union. So paradoxically, a plan that would allow a member state to leave the Euro, could allow the Union to remain together. The real power of NEWNEY might come from it never being used.