

A Primer on the Euro Breakup: Default, Exit and Devaluation as the Optimal Solution

SUMMARY

Many economists expect catastrophic consequences if any country exits the euro. However, during the past century sixty-nine countries have exited currency areas with little downward economic volatility. The mechanics of currency breakups are complicated but feasible, and historical examples provide a roadmap for exit. The real problem in Europe is that EU peripheral countries face severe, unsustainable imbalances in real effective exchange rates and external debt levels that are higher than most previous emerging market crises. Orderly defaults and debt rescheduling coupled with devaluations are inevitable and even desirable. Exiting from the euro and devaluation would accelerate insolvencies, but would provide a powerful policy tool via flexible exchange rates. The European periphery could then grow again quickly with deleveraged balance sheets and more competitive exchange rates, much like many emerging markets after recent defaults and devaluations (Asia 1997, Russia 1998, and Argentina 2002).

KEY CONCLUSIONS

- > **The breakup of the euro would be an historic event, but it would not be the first currency breakup ever** – Within the past 100 years, there have been sixty-nine currency breakups. Almost all of the exits from a currency union have been associated with low macroeconomic volatility. Previous examples include the Austro-Hungarian Empire in 1919, India and Pakistan 1947, Pakistan and Bangladesh 1971, Czechoslovakia in 1992-93, and USSR in 1992.
- > **Previous currency breakups and currency exits provide a roadmap for exiting the euro** – While the euro is historically unique, the problems presented by a currency exit are not. There is no need for theorizing about how the euro breakup would happen. Previous historical examples provide crucial answers to: the timing and announcement of exits, the introduction of new coins and notes, the denomination or re-denomination of private and public liabilities, and the division of central bank assets and liabilities. This paper will examine historical examples and provide recommendations for the exit of the Eurozone.
- > **The move from an old currency to a new one can be accomplished quickly and efficiently** – While every exit from a currency area is unique, exits share a few elements in common. Typically, before old notes and coins can be withdrawn, they are stamped in ink or a physical stamp is placed on them, and old unstamped notes are no longer legal tender. In the meantime, new notes are quickly printed. Capital controls are imposed at borders in order to prevent unstamped notes from leaving the country. Despite capital controls, old notes will inevitably escape the country and be deposited elsewhere as citizens pursue an economic advantage. Once new notes are available, old stamped notes are de-monetized and are no longer legal tender. This entire process has typically been accomplished in a few months.
- > **The mechanics of a currency breakup are surprisingly straightforward; the real problem for Europe is overvalued real effective exchange rates and extremely high debt** – Historically, moving from one currency to another has not led to severe economic or legal problems. In almost all cases, the transition was smooth and relatively straightforward. This strengthens the view that Europe's problems are not the mechanics of the breakup, but the existing real effective exchange rate and external debt imbalances. European countries could default without leaving the euro, but only exiting the euro can restore competitiveness. As such, exiting itself is the most powerful policy tool to re-balance Europe and create growth.
- > **Peripheral European countries are suffering from solvency and liquidity problems making defaults inevitable and exits likely** – Greece, Portugal, Ireland, Italy and Spain have built up very large unsustainable net external debts in a currency they cannot print or devalue. Peripheral levels of net external debt exceed almost all cases of emerging market debt crises that led to default and devaluation. This was fuelled by large debt bubbles due to inappropriate monetary policy. Each peripheral country is different, but they all have too much debt. Greece and Italy have a high government debt level. Spain and Ireland have very large private sector debt levels. Portugal has a very high public and private debt level. Greece and Portugal are arguably insolvent, while Spain and Italy are likely illiquid. Defaults are a partial solution. Even if the countries default, they'll still have overvalued exchange rates if they do not exit the euro.
- > **The euro is like a modern day gold standard where the burden of adjustment falls on the weaker countries** – Like the gold standard, the euro forces adjustment in real prices and wages instead of exchange rates. And much like the gold standard, it has a recessionary bias, where the burden of adjustment is always placed on the weak-currency country, not on the strong countries. The solution from European politicians has been to call for more austerity, but public and private sectors can only deleverage through large current account surpluses, which is not feasible given high external debt and low exports in the periphery. So long as periphery countries stay in the euro, they will bear the burdens of adjustment and be condemned to contraction or low growth.

- > **Withdrawing from the euro would merely unwind existing imbalances and crystallize losses that are already present** – Markets have moved quickly to discount the deteriorating situation in Europe. Exiting the euro would accelerate the recognition of eventual losses given the inability of the periphery to grow its way out of its debt problems or successfully devalue. Policymakers then should focus as much on the mechanics of cross-border bankruptcies and sovereign debt restructuring as much as on the mechanics of a euro exit.
- > **Defaults and debt restructuring should be achieved by exiting the euro, re-denominating sovereign debt in local currencies and forcing a haircut on bondholders** – Almost all sovereign borrowing in Europe is done under local law. This would allow for a re-denomination of debt into local currency, which would not legally be a default, but would likely be considered a technical default by ratings agencies and international bodies such as ISDA. Devaluing and paying debt back in drachmas, liras or pesetas would reduce the real debt burden by allowing peripheral countries to earn euros via exports, while allowing local inflation to reduce the real value of the debt.
- > **All local private debts could be re-denominated in local currency, but foreign private debts would be subject to whatever jurisdiction governed bonds or bank loans** – Most local mortgage and credit card borrowing was taken from local banks, so a re-denomination of local debt would help cure domestic private balance sheets. The main problem is for firms that operate locally but have borrowed abroad. Exiting the euro would likely lead towards a high level of insolvencies of firms and people who have borrowed abroad in another currency. This would not be new or unique. The Asian crisis in 1997 in particular was marked by very high levels of domestic private defaults. However, the positive outcome going forward was that companies started with fresh balance sheets.
- > **The experience of emerging market countries shows that the pain of devaluation would be brief and rapid growth and recovery would follow** – Countries that have defaulted and devalued have experienced short, sharp contractions followed by very steep, protracted periods of growth. Orderly defaults and debt rescheduling, coupled with devaluations are inevitable and should be embraced. The European periphery would emerge with de-levered balance sheets. The European periphery could then grow again quickly, much like many emerging markets after defaults and devaluations (Asia 1997, Russia 1998, Argentina 2002, etc). In almost all cases, real GDP declined for only two to four quarters. Furthermore, real GDP levels rebounded to pre-crisis levels within two to three years and most countries were able to access international debt markets quickly.

IMPORTANT NOTE TO THE READER

“Did you ever think that making a speech on economics is a lot like pissing down your leg? It seems hot to you, but it never does to anyone else.”

President Lyndon B. Johnson

It was with President Johnson’s salty humor in mind that the author decided to write this paper in plain English for the layperson in order to reach as wide an audience as possible. The paper is, however, based on a wide review of economic and legal academic and professional literature.

CONVENTIONAL THINKING ABOUT THE BREAKUP OF THE EURO: CATASTROPHE AHEAD

It would be like a Lehman-times five event.

- Megan Greene, director of European economics at Roubini Global Economics

A euro break-up would cause a global bust worse even than the one in 2008-09. The world's most financially integrated region would be ripped apart by defaults, bank failures and the imposition of capital controls.

- The Economist, 26 November 2011

If the euro implodes, [the UK's] biggest trading partner will go into a deep recession. Banks may well go under, so will currencies both new and old. Investment will freeze up. Unemployment will soar. There is no way the UK is going to escape from that unscathed.

- Matthew Lynn, MoneyWeek

A euro area breakup, even a partial one involving the exit of one or more fiscally and competitively weak countries, would be chaotic. A disorderly sovereign default and Eurozone exit by Greece alone would be manageable... However, a disorderly sovereign default and Eurozone exit by Italy would bring down much of the European banking sector. Disorderly sovereign defaults and Eurozone exits by all five periphery states... would drag down not just the European banking system but also the north Atlantic financial system and the internationally exposed parts of the rest of the global banking system. The resulting financial crisis would trigger a global depression that would last for years, with GDP likely falling by more than 10 per cent and unemployment in the West reaching 20 per cent or more.

- Willem Buiter in the Financial Times

Given such uniform pessimism on the part of analysts and the unanimous expectation of financial Armageddon if the euro breaks up, it is worth remembering the words of John Kenneth Galbraith, one of the great economic historians of the 20th century:

The enemy of the conventional wisdom is not ideas but the march of events.

- John Kenneth Galbraith

PAPER OVERVIEW

First, we will provide a brief overview of studies of currency exits and the conclusions that can be drawn from the very high number of breakups in the past century.

Second, we will briefly examine the cases of the Austro-Hungarian Empire in 1919, India and Pakistan 1947, Pakistan and Bangladesh 1971, the USSR's ruble zone in 1992-95 and Czechoslovakia in 1992-93.

These cases provide important insights into key questions concerning:

1. The sequence of announcement of exit, capital controls, eg "surprise" redenomination versus signalled transitions.
2. The physical changeover from old notes and coins to new notes and coins.
3. The redenomination of cross-border debts, sovereign debt, private savings, and domestic mortgages in the departing nations.
4. The macroeconomic effects of exit, including devaluation, inflation, confidence, and effects on debts.
5. The legal and institutional implications of managing a new independent monetary policy.

Using previous currency breakups as a model, we will then suggest practical steps that will be necessary to achieve the cleanest, most efficient ways to exit the euro, default in an orderly manner, and restructure debt and devalue.

We will examine the problems within the euro area and show that exiting the euro is the best option for peripheral countries and the most likely to lead towards a return to growth. Many economists do not believe exiting the euro is the best policy for growth. This submission will show that periphery growth is unlikely if not impossible within the euro straightjacket given the high levels of net external debt that have been built up.

Finally, we will look at previous emerging market crisis analogues, and why this leads us to end on an optimistic note. Almost all economic analysts argued that dire consequences would follow for previous defaults and devaluations (Asia 1997, Russia 1998, Argentina 2002, and Iceland 2008). However, history shows that following defaults and devaluations, countries experienced two to four quarters of economic contraction, but then real GDP grew at a high, sustained pace for years. **The best way to promote growth in the periphery, then, is to exit the euro, default and devalue.**

The clear implication from our analysis is that conventional economic thinking was wrong at the time about most emerging market defaults, and almost all the dire predictions about the breakup of the euro will likely prove to be wrong as well. It is unlikely to be the outright catastrophe many assume. Policymakers should then plan ahead meticulously for exits and implement them as quickly and cleanly as possible. This paper provides concrete, actionable recommendations for them to do so.

Historical Currency Exits: Case Studies for the Euro

THE MECHANICS OF A EURO AREA BREAKUP: LESSONS FROM PREVIOUS CURRENCY BREAKUPS

The dissolution of the euro would be an historic event, but it would not be the first currency breakup. Some noted economists have called the euro *sui generis*, or one of a kind. In fact, currency breakups and exits are a common occurrence. Within the past 100 years, there have been over 100 breakups and exits from currency unions.

Andrew K. Rose, a Professor of International Business at the University of California, Berkeley, has done a study of over 130 countries from 1946 to 2005. The following table taken from his research gives each exit during the period. In some cases, these were small colonies exiting currency areas and in other cases, these were large countries and currency unions breaking up:

Table A2: Departures from Currency Unions

Country	Year	Anchor		Year	Anchor
Algeria	1969	France	Mauritania	1973	CFA
Angola	1976	Portugal	Mauritius	1967	India
Bahrain	1973	India	Morocco	1959	France
Bangladesh	1965	India	Mozambique	1977	Portugal
Barbados	1975	ECCA	Myanmar (Burma)	1967	India
Botswana	1977	S Africa	New Zealand	1967	UK
Burundi	1964	Belgium	Nigeria	1967	UK
Cape Verde	1977	Portugal	Oman	1975	UK
Caymans	1972	Jamaica	Pakistan	1949	UK
Comoros	1994	CFA	Qatar	1959	India
Cuba	1950	USA	Reunion	1976	CFA
Cyprus	1972	UK	Rwanda	1966	Belgium
Djibouti	1949	CFA	Sao Tome and Principe	1977	Portugal
Dominican Rep	1985	USA	Seychelles	1967	India
Equatorial Guinea	1969	Spain	Sierra Leone	1965	UK
Gambia	1971	UK	Singapore	1967	UK
Ghana	1965	UK	Solomon Islands	1979	Australia
Guatemala	1986	USA	Somalia	1971	EACB
Guinea	1969	CFA	South Africa	1961	UK
Guinea-Bissau	1976	Portugal	South Yemen	1972	EACB
Guyana	1971	ECCA	Sri Lanka	1966	India
Iraq	1967	UK	St. Pierre and Miquelon	1976	CFA
Ireland	1979	UK	Sudan	1956	Egypt
Israel	1954	UK	Suriname	1994	Neth. Ant.
Jamaica	1954	UK	Tanzania	1978	EACB
Jordan	1967	UK	Tonga	1991	Australia
Kenya	1978	EACB	Trinidad & Tobago	1976	ECCA
Kuwait	1967	UK	Tunisia	1958	France
Libya	1967	UK	Uganda	1978	EACB
Madagascar	1982	CFA	Vanuatu	1981	CFP
Malawi	1971	CACB	Western Samoa	1967	NZ
Maldives	1967	India	Yemen, North	1971	EACB
Mali	1962	CFA	Zaire	1961	Belgium
Malta	1971	UK	Zambia	1971	CACB
			Zimbabwe	1971	CACB

Source: *Checking Out: Exits from Currency Unions* Andrew K. Rose, 2007
www.mas.gov.sg/resource/publications/staff_papers/StaffPaper44Rose.pdf

The conclusions Andrew Rose draws from the study of all the currency exits are remarkable:

*I find that countries leaving currency unions tend to be larger, richer, and more democratic; they also tend to experience somewhat higher inflation. **Most strikingly, there is remarkably little macroeconomic volatility around the time of currency union dissolutions,** [emphasis added] and only a poor linkage between monetary and political independence. Indeed, aggregate macroeconomic features of the economy do a poor job in predicting currency union exits.*

Source: *Checking Out: Exits from Currency Unions* Andrew K. Rose, 2007
www.mas.gov.sg/resource/publications/staff_papers/StaffPaper44Rose.pdf

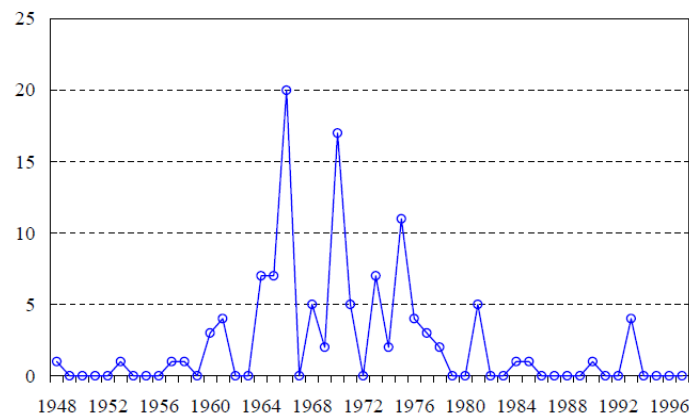
Currency breakups were also the subject of a study by Volker Nitsch of Free University Berlin. His conclusion was that currency unions were not unusual and that most exits had little to do with macroeconomic factors.

Historically, dissolutions of currency unions are not unusual. [Emphasis added] I use an annual panel data set covering 245 country pairs that use a common currency (of which 128 are dissolved) from 1948 through 1997 to characterize currency union exits. I find that departures from a currency union tend to occur when there is a large inflation differential between member countries, when the currency union involves a country which is closed to international trade and trade flows dry up, and when there is a change in the political status of a member. **In general, however, macroeconomic factors have only little predictive power for currency union dissolutions.** [Emphasis added]

Source: Have a Break, Have a... National Currency: When do Monetary Unions Fall Apart? Volker Nitsch, CESINFO Working Paper No 113. January 2004

The peak of currency breakups was the end of colonization, as the following chart from Volker Nitsch shows.

b) Number of Currency Union Dissolutions



Source: Have a Break, Have a... National Currency: When do Monetary Unions Fall Apart? Volker Nitsch, CESINFO Working Paper No 113. January 2004

The closest historical analogy in terms of heterogeneity of members and indeed geography to the euro is the currency dissolution of the Austro-Hungarian Empire. Peter Garber and Michael Spencer produced an extremely detailed account of the dissolution that is highly worth reading to understand the mechanics of breakup. They conclude that the historical episode of the Austro-Hungarian currency breakup in 1919 provides many lessons for current policymakers:

...currency separation can be accomplished relatively quickly. It involves little more than marking banknotes circulating within the breakaway state with a stamp. [Emphasis added] This initial operation will necessarily be followed by an exchange of stamped notes for new national currency, but it buys time for the authorities to plan the second stage carefully.

Source: IMF Working Paper, The Dissolution of the Austro-Hungarian Empire: Lessons for Currency Reform, Peter Garber and Michael Spencer, www.princeton.edu/~ies/IES_Essays/E191.pdf

The conclusion - that most exits from a currency union have been associated with low macroeconomic volatility and that currency breakups are common and can be achieved quickly - flies in the face of conventional wisdom.

(Incidentally, reading the research of Andrew Rose and Volker Nitsch is absolutely essential to anyone attempting to understand currency breakups.)

While almost all currency exits happened smoothly and were accompanied by little short-term macroeconomic volatility, almost all these currency exits happened in a period where international portfolio flows (stocks, bonds, and cash) were smaller as a percentage of global GDP than they are today. The euro would certainly be unique in happening in the context of a much more globalized world with freer capital flows. Capital mobility in the euro area vs previous exits would be, however, a difference of degree and not kind.

As already stated, although this paper does not believe a euro breakup would be the catastrophe many contend, there would undoubtedly be some pain. As we will show in this paper, the real problem with the euro breakup is that EU peripheral countries currently face severe, unsustainable imbalances in real effective exchange rates and external debt levels that surpass those typically seen before emerging market debt and currency crises. Therefore, understanding private cross-border debt resolutions and sovereign debt restructuring is as important as understanding the mechanics of currency exits.

Focusing purely on the mechanical problems of exiting the euro is misguided; indeed, it is like a doctor telling a patient suffering from AIDS to focus on the mechanics of relieving a cold rather than provide retroviral medicines to deal with the underlying problem of the HIV virus. The problems in Europe are not the mechanics of exit, but rather how to deal with too much debt and vastly overvalued real effective exchange rates. The cure, as we will show, is exits, defaults and devaluations.

Any exit from the euro would inevitably re-introduce devalued drachmas, pesetas, escudos, punts or lire, because of extremely overvalued real effective exchange rates and very high net external debt levels. **In this context, then, the exit from the euro should be looked at as an emerging market crisis, where countries defaulted on private and/or public debts, abandoned pegs or managed exchange rates, and devalued. The euro merely overlays currency exit to what is a classic emerging market crisis.**

EXITING THE EURO: RE-ACQUIRING THE EXCHANGE RATE AS A POLICY TOOL

A nation's exchange rate is the single most important price in its economy; it will influence the entire range of individual prices, imports and exports, and even the level of economic activity.

Paul Volcker and Toyoo Gyohten, Changing Fortunes: The World's Money and the Threat to American Leadership

In the following section we will provide a quick overview of four currency exits from previous currency unions and see what lessons can be learned. While each currency exit is unique historically, one can draw some general conclusions:

1. What to do with existing currencies – Almost all the case studies continued to use old notes, but mandated that they bear either an ink stamp or a physical stamp. This was the first step in the changeover of notes and coins. Typically, only stamped notes were legal tender during the transitional phase. Once new notes had been printed, old notes were withdrawn from circulation in exchange for new ones. Often old currencies were taken across borders to be deposited into the older, stronger currency.
2. Announcements and surprise elements – While almost all devaluations are “surprise” announcements, there is no clear pattern for currency exits. Surprise was important in some cases because, the more advance notice people have, the greater the ability to hoard valuable currency or get rid of unwanted currency. However, countries with less inflation and credit creation and strong political identity were able to avoid surprise, as people were eager to hold the new currencies and get rid of the old, eg the Baltics and the ruble.

3. Capital controls and controls on import/export of notes and coins – Allowing notes and currencies move across borders would open up the possibility for leakage of currency and for arbitrage between the old currency and the new currency, depending on expected exchange rates. In most cases, countries imposed capital controls and de-monetized old currency quickly.
4. Denomination of cross-border assets and liabilities – In most cases, cross-border liabilities were negotiated in advance by treaty or were assumed to convert at announced exchange rates on the date of the exit.
5. Monetary and fiscal independence is crucial once countries exit – The states that introduced new currencies to provide seigniorage revenue to cover fiscal deficits experienced higher inflation and depreciation of their currencies. Countries with independent central banks unable to lend to the government experienced more stable currencies and more stable exchange rates.

We will now look at four episodes of currency exit. The following treatments of currency exits are not meant to be exhaustive but are intended to provide a simple, quick overview of previous cases. These will inform the practical steps for countries to take to exit the euro. For more detailed reading, please see the source material.

AUSTRO-HUNGARY MONETARY BREAKUP 1919: QUICK, SIMPLE AND PAINLESS

The closest historical analogy in terms of heterogeneity of members and indeed geography to the euro is the currency dissolution of the Austro-Hungarian Empire.

Peter Garber and Michael Spencer produced an extremely detailed account of the breakup that is highly worth reading to understand the mechanics of dissolution. Garber and Spencer conclude that historical episode of the Austro-Hungarian currency breakup in 1919 provide many lessons for current policymakers:

This episode suggests five lessons for currency reform elsewhere. First, currency separation can be accomplished relatively quickly. It involves little more than marking banknotes circulating within the breakaway state with a stamp. This initial operation will necessarily be followed by an exchange of stamped notes for new national currency, but it buys time for the authorities to plan the second stage carefully. Second, the exchange of old notes for new provides an opportunity for the authorities to eliminate any “monetary overhang” by imposing a tax on notes exchanged. Such a tax was imposed in the Serbo-Croat-Slovene State, Czechoslovakia, and Hungary. Third, if currency reforms are not conducted simultaneously throughout the former currency union, differential conversion rates for the old currency will create incentives for individuals to spend or exchange their old notes in the region where they are most valuable. The imposition of a tax, or differential expected rates of inflation, creates another incentive to move notes to escape the tax. Thus old notes will flow into those countries with the most favourable tax-inclusive real conversion rate. Fourth, states that are late in breaking away from the currency union may find more than their share of the stock of old notes dumped on them. Breakaway reforms elsewhere may cause people to sell their old notes for goods and assets in those states where they are still legal tender. The last to convert the old notes will then absorb both the notes originally circulating in its territories and many of the notes previously circulating elsewhere. A liquidation of old central bank assets prorated on the amount of currency collected will only partially compensate for lost goods. Finally, currency reform will succeed in creating a stable medium of exchange only if it is accompanied by sound fiscal and monetary policies. In this respect it is not necessary for fiscal restraint to precede currency reform if the new monetary authorities are constrained in their ability to extend credit to the state. In each of the Successor States, fiscal equilibrium was attained as a consequence of the currency reform, rather than as a precondition of it.

Source: IMF Working Paper, *The Dissolution of the Austro-Hungarian Empire: Lessons for Currency Reform*, Peter Garber and Michael Spencer, www.princeton.edu/~ies/IES_Essays/E191.pdf

The breakup of the Austro-Hungarian Empire pre-dated electronic currency transfers, and physical banknotes were the primary means of re-denominating the currency. All old notes in circulation had to be stamped before new notes could be issued and old ones de-monetized.

The following specimen shows the physical process of re-denominating banknotes. The new Czechoslovakian 1000 koruna bank note was stamped by a machine authorizing its circulation in lieu of an adhesive stamp used for all other denominations.



Source: Keller and Sandrock, "The Significance of Stamps Used on Bank Notes" <http://bit.ly/sKODTQ>

As the following image shows, the 1 koruna stamp changed this former Austro-Hungarian 100 kronen note into Czechoslovakia's first currency. This was a first step until bank notes for the newly created Republic of Czechoslovakia could be printed and handed out.



Source: Keller and Sandrock, "The Significance of Stamps Used on Bank Notes" <http://bit.ly/sKODTQ>

For a much deeper and more thorough understanding of the breakup of the Austro-Hungarian currency union, please see: IMF Working Paper, *The Dissolution of the Austro-Hungarian Empire: Lessons for Currency Reform*, Peter Garber and Michael Spencer, www.princeton.edu/~ies/IES_Essays/E191.pdf

INDIA AND PAKISTAN: CURRENCY BREAKUP DURING PARTITION

One example of a currency breakup that went smoothly despite major civil unrest is the separation of India and Pakistan in August 1947. Before the partition of India, the two countries agreed that the Reserve Bank of India (the RBI) would act as the central bank of Pakistan until September 1948. In the same way as the Austro-Hungarian breakup, in the initial period of transition, Indian notes

overprinted with the inscription "Government of Pakistan" were legal tender. At the end of the transition period, the Government of Pakistan exchanged the non-overprinted Indian notes circulating in Pakistan at par and returned them to India in order to de-monetize them. The overprinted notes would become the liabilities of Pakistan.

The apportionment of central bank assets was set to take place after the transition period. Much like the agreement to apportion central bank assets after the Austro-Hungarian breakup, the division was to be based on the ratio of notes circulating in the two countries at the end of the transition period. Ultimately, because of the dispute over Kashmir, the financial settlement between India and Pakistan broke down, and the RBI's role as the central bank of Pakistan was terminated three months ahead of time.

Despite the civil and political conflict that surrounded partition, the mechanics of the monetary breakup and the apportionment of central bank assets proceeded smoothly.

For a better understanding of the intricacies of the breakup of India and Pakistan's currency, please read: *The Bank and the Partition, History of the Reserve Bank of India, Volume 1, Chapter 18* <http://rbidocs.rbi.org.in/rdocs/content/PDFs/89651.pdf>

PAKISTAN AND BANGLADESH: CURRENCY BREAKUP AMIDST A CIVIL WAR

The currency exit of Bangladesh from Pakistan is another clear example of a successful currency exit, despite the backdrop of a severe event such as civil war.

In early 1971, Bangladesh declared independence from Pakistan, but the government-in-exile could not return to the country and start functioning only nine months later. During this war of independence, Bangladesh continued to use the Pakistani currency without any change. In 1971, Pakistani notes were overprinted for use in Bangladesh, while Bangladesh began printing new taka notes to replace the Pakistani rupee.

As the following bills show, notes were overprinted during the transition process. Notice the word "BANGLADESH" stamped in Latin letters on the bill on the left and the words Joy Bangla stamped in Bengali on the right hand bill.



Pakistan, however, took the stance that the war of independence was a civil war and that the notes circulating in Bangladesh were looted from the branches of the Pakistan central bank. It then declared that all overprinted notes would not be legal tender in Pakistan and issued new currency notes in different colours and withdrew the old notes from circulation. This demonetization resulted in the paradoxical situation where the old overprinted Pakistan currency notes circulated only in Bangladesh which was at war with Pakistan.

Even after the war of independence, Bangladesh retained the old currency for several months before de-monetizing old notes. In 1972 Bangladesh printed new currency and exchanged the old notes. The taka became Bangladesh's currency in 1972, replacing the Pakistani rupee at par.

CZECHOSLOVAKIA BREAKUP: THE VELVET REVOLUTION 1992-93

Perhaps the most successful, fastest and least eventful currency exit ever was the breakup of Czechoslovakia. Jan Fidrmuc and Július Horváth have analyzed the episode in depth. They argued that the Czech-Slovak joint nation was not an optimal currency area. Depositors and investors from the Slovak side began transferring funds towards the Czech side, much as depositors in the periphery today are transferring deposits from Greek and Portuguese banks to German and French banks. The parallels are uncanny and very instructive.

The process of breaking up was very speedy. It was announced by surprise, and the entire proceedings were concluded within a few months from the announcement.

During late 1992 and throughout January 1993, many Slovak firms and individuals transferred funds to Czech commercial banks in expectation of Slovak devaluation shortly after the split. Further, Czech exports to Slovakia shot up substantially toward the end of 1992. Czech exports to Slovakia in the last quarter of 1992 rose by 25% compared to the last quarter of 1991. On the other hand, while Slovak exports to the Czech Republic also increased, it was only by 16%. Moreover, in expectation of future devaluation of the Slovak currency, Slovak importers sought to repay their debts as soon as possible while the Czech importers did exactly the opposite. All these developments led to a gradual outflow of currency from Slovakia to the Czech Republic. The SBCS attempted to balance this outflow by credits to Slovak banks, but this became increasingly difficult in December 1992 and January 1993. Thus, the Czech government and the CNB decided already on January 19, 1993 to separate the currency. After secret negotiations with the Slovak side, the separation date was set as February 8, 1993, and the Czech-Slovak Monetary Union ceased to exist less than six weeks after it came to being.

The separation was publicly announced on February 2. Starting with February 3, all payments between the two republics stopped and border controls were increased to prevent transfers of cash from one country to the other. During the separation period between February 4-7 (Thursday through Sunday), old Czechoslovak currency was exchanged for the new currencies. The new currencies became valid on February 8. Regular Czechoslovak banknotes were used temporarily in both republics and were distinguished by a paper stamp attached to the face of the banknote. The public was also encouraged to deposit cash on bank accounts prior to the separation since a person could only exchange CSK 4,000 in cash. Business owners were not subjected to this limit. Coins and small denomination notes (CSK 10, 20 and 50 in the Czech Republic and CSK 10 and 20 in Slovakia) were still used after the separation for several months. Nevertheless, such notes and coins only accounted for some 3% of currency in circulation each. On the other hand, the notes of CSK 10, 20 and 50 accounted for some 45 percent of the total number of banknotes. The stamped banknotes were gradually replaced by new Czech and Slovak banknotes. This process was finished by the end of August 1993.

Source: *Stability of Monetary Unions: Lessons from the Break-up of Czechoslovakia*, by Jan Fidrmuc, Július Horváth, June 1998 <http://ideas.repec.org/p/dqr/kubcen/199874.html>



Source: Keller and Sandrock, "The Significance of Stamps Used on Bank Notes"

http://www.thecurrencycollector.com/pdfs/The_Significance_of_Stamps_Used_on_Bank_Notes.pdf

In 1993 Czechoslovakia broke up into two separate states. Shown here is the interim Czech Republic issue of 1000 koruna with control stamp, which circulated only until new notes could be printed.



Source: Keller and Sandrock, "The Significance of Stamps Used on Bank Notes"

http://www.thecurrencycollector.com/pdfs/The_Significance_of_Stamps_Used_on_Bank_Notes.pdf

Slovakia also used old Czechoslovakian notes, placing them into circulation after an stamp had been affixed.



Source: Keller and Sandrock, "The Significance of Stamps Used on Bank Notes"

http://www.thecurrencycollector.com/pdfs/The_Significance_of_Stamps_Used_on_Bank_Notes.pdf

The breakup of the Czech-Slovak Monetary Union was accompanied by a very brief fall in output and trade. Ultimately, the breakup was hugely successful in terms of low macroeconomic costs, as the following analysis from Reuters shows:

Slovakia had a hard time at first but ultimately became a poster child for reform and qualified for the euro before its neighbour.

After contracting 3.7 percent in 1993, Slovakia's economy grew in 1994. Trade between Slovakia and the Czech Republic recovered after a 25 percent drop in 1993 and trade with the European Union grew. The Slovak currency devalued by 10 percent in mid-1993 and remained weaker than the Czech crown until Slovakia's euro entry in 2009.

"The costs of the event were relatively low and order was quickly restored in both new currency markets," Czech central bank chief Miroslav Singer said in a speech earlier this year. [Emphasis added]

Source: Analysis - Czechoslovakia: a currency split that worked, Jan Lopatka, Reuters, Dec 8, 2011
<http://uk.reuters.com/article/2011/12/08/uk-eurozone-lessons-czechoslovakia-idUKTRE7B717G20111208>

For a complete overview of the breakup of Czechoslovakia's currency union, please see: *Stability of Monetary Unions: Lessons from the Break-up of Czechoslovakia*, by Jan Fidrmuc, Július Horváth, June 1998 <http://ideas.repec.org/p/dgr/kubcen/199874.html>

USSR DISSOLUTION: LEAVING BEHIND THE RUBLE

Another example with similarities to the eurozone is the breakup of the ruble zone in the early 1990s after the collapse of the Soviet Union. Unlike most other currency breakups we have looked at, the breakup of the ruble zone happened over a three year period. The countries that left first generally had lower price stability, greater central bank credibility and were able to achieve lower levels of inflation.

The following chart shows the order of dates by which countries left the ruble zone:

Country	Date of new legal tender
Estonia	June 1992
Latvia	July 1992
Lithuania	Oct 1992
Ukraine	Nov 1992
Kyrgyz Republic	May 1993
Moldova	July 1993
Russia	July 1993
Georgia	Aug 1993
Belarus	Sep 1993
Armenia	Nov 1993
Kazakstan	Nov 1993
Turkmenistan	Nov 1993
Azerbaijan	Dec 1993
Tajikistan	May 1995

Source: The Breakup of the Ruble Area (1991-1993): Lessons for the euro by Ed Dolan,
<http://www.slideshare.net/dolanconslide/breakup-of-ruble-area-lessons-for-euro>

After the USSR broke up, despite the independence of many Soviet satellites, the emission of money was still in the hands of the newly formed Central Bank of Russia (CBR), which took over the old Soviet central bank (Gosbank) in Russia while Gosbank branches in the other countries became 14 independent central banks. However, all the printing presses were in Russia and so only the CBR printed rubles. The other countries relied on ruble notes and coins shipped from Russia.

The breakup of the ruble zone was primarily driven by Russia. The Baltics had adopted temporary currencies in 1992, but other countries continued to use rubles. The problems arose from the odd

fact that the Russian central bank controlled the emission of currency, but national banks could still create non-cash rubles. This created a free-rider problem where smaller national banks could print large amounts of money at will within the Russian system.

The old soviet system was based on a dual monetary circuit: enterprises could convert rubles in the bank (beznalichnye or non-cash rubles) into cash (nalichnye) only for specified purposes – chiefly the payment of wages, which were paid in cash. All inter-enterprise transactions were required to be in non-cash (beznalichnye) rubles to facilitate central planning and control. This dual circuit continued in the post-soviet ruble zone as well. The implication was that while the CBR had monopoly on cash rubles (nalichnye), other central banks could and did create non cash (beznalichnye) rubles.

Initially, the CBR continued the old soviet practice of accepting beznalichnye rubles of other ruble zone countries as payment for exports from Russia to these countries. So the central bank of Ukraine could lend beznalichnye rubles to a local bank which could lend them to a local factory which could use these to buy inputs from Russia. Effectively, Ukraine was paying for this stuff with rubles created by itself. This has striking similarities to how Germany has been lending to the rest of the eurozone through the ECB's Target 2 system.

Source: Examples of Currency Breakup, Jayanth Varma, <http://jrvarma.wordpress.com/2011/12/15/examples-of-currency-breakup/>

The CBR decided to put an end to the money creation by national central banks within the ruble zone. Much like Pakistan responded to Bangladesh by printing new currency, Russia began printing new Russian rubles for use within Russia while printing old soviet rubles for shipping to other ruble zone countries. This was a prelude to de-monetization of old soviet rubles.

Earlier we have looked at surprise announcements of currency exits. In the case of Russia, we can see that the process of de-monetization of old currency was also marked by surprise announcement:

During the first half of 1993, as the Russian government and CBR were attempting to rationalize the credit emission of the other central banks in the ruble zone, the CBR was also issuing new ruble notes. These new notes were distinctively Russian rubles, in contrast to the Soviet rubles, with their picture of Lenin and fifteen languages of the constituent republics, that had been circulating until then. The CBR kept nearly all of these Russian rubles within Russian territory, continuing to send the old notes to the other ruble-zone members. On 24 July 1993, the CBR announced that all rubles printed before 1993 would no longer be legal tender in Russia as of 26 July, and that they could be exchanged at a set rate within Russia.

It is not yet clear whether President Yeltsin or Prime Minister Viktor Chernomyrdin approved Gerashchenko's move in advance, but Finance Minister Boris Fedorov was apparently caught unaware. Fedorov complained publicly and bitterly about the currency exchange, calling it "stupid, scandalous, and senseless." The fact that the president's and prime minister's offices immediately issued separate statements with revisions both to the timetable and to the limits on the currency exchange, as well as different logics for the move, suggests that the CBR had not fully coordinated its actions with other institutions within the Russian state. The parliament was caught completely unprepared and complained about the move. Perhaps most surprised were the other ruble-zone members themselves, since Russia had agreed to inform them before adopting any currency reforms.

Source: Perspectives on the Russian State in Transition
www.princeton.edu/~lisd/publications/ch7_russian_state_in_transition.pdf

The forced exchange of pre-1993 rubles had compelled former Soviet republics still using the Russian currency to opt in or out of the ruble zone and effectively adopt new currencies if they chose to be outside the ruble zone. By the time of the Russian currency reform in July 1993, seven of the fifteen original members of the ruble area had already broken away by introducing their own currencies.

There are thus many historical precedents for currency union break-ups. They need not be chaotic or have long-term damaging effects. The main caveat is that a full or partial dissolution of the euro would happen with the backdrop of a much more globalized world with a higher volume of cross-border capital flows than previous breakup episodes. In the following section, we use the historical examples we have highlighted above, and how they can be used to guide policy in the event of a breakup of the euro.

Breaking up the euro: recommendations based on historical precedents

In this section we will examine the timing of exits, capital controls, the re-denomination of existing debts, the restructuring of private and sovereign debt, the recapitalization of the central banks, and the legal and institutional aspects of euro exit. These recommendations are based on historical currency exits as well as the experience of emerging market devaluations.

We recommend that any country exiting the euro should take the following steps:

1. Convene a special session of Parliament on a Saturday, passing a law governing all the particular details of exit: currency stamping, demonetization of old notes, capital controls, redenomination of debts, etc. These new provisions would all take effect over the weekend.
2. Create a new currency (ideally named after the pre-euro currency) that would become legal tender, and all money, deposits and debts within the borders of the country would be re-denominated into the new currency. This could be done, for example, at a 1:1 basis, eg 1 euro = 1 new drachma. All debts or deposits held by locals outside of the borders would not be subject to the law.
3. Make the national central bank solely charged, as before the introduction of the euro, with all monetary policy, payments systems, reserve management, etc. In order to promote its credibility and lead towards lower interest rates and lower inflation, it should be prohibited from directly monetizing fiscal liabilities, but this is not essential to exiting the euro.
4. Impose capital controls immediately over the weekend. Electronic transfers of old euros in the country would be prevented from being transferred to euro accounts outside the country. Capital controls would prevent old euros that are not stamped as new drachmas, pesetas, escudos or liras from leaving the country and being deposited elsewhere.
5. Declare a public bank holiday of a day or two to allow banks to stamp all their notes, prevent withdrawals of euros from banks and allow banks to make any necessary changes to their electronic payment systems.
6. Institute an immediate massive operation to stamp with ink or affix physical stamps to existing euro notes. Currency offices specifically tasked with this job would need to be set up around the exiting country.
7. Print new notes as quickly as possible in order to exchange them for old notes. Once enough new notes have been printed and exchanged, the old stamped notes would cease to be legal tender and would be de-monetized.
8. Allow the new currency to trade freely on foreign exchange markets and would float. This would contribute to the devaluation and regaining of lost competitiveness. This might lead towards a large devaluation, but the devaluation itself would be helpful to provide a strong stimulus to the economy by making it competitive.
9. Expedited bankruptcy proceedings should be instituted and greater resources should be given to bankruptcy courts to deal with a spike in bankruptcies that would inevitably follow any currency exit.

10. Begin negotiations to re-structure and re-schedule sovereign debt subject to collective bargaining with the IMF and the Paris Club.
11. Notify the ECB and global central banks so they could put in place liquidity safety nets. In order to counteract the inevitable stresses in the financial system and interbank lending markets, central banks should coordinate to provide unlimited foreign exchange swap lines to each other and expand existing discount lending facilities.
12. Begin post-facto negotiations with the ECB in order to determine how assets and liabilities should be resolved. The best solution is likely simply default and a reduction of existing liabilities in whole or in part.
13. Institute labor market reforms in order to make them more flexible and de-link wages from inflation and tie them to productivity. Inflation will be an inevitable consequence of devaluation. In order to avoid sustained higher rates of inflation, the country should accompany the devaluation with long term, structural reforms.

The previous steps are by no means exhaustive, and should be considered a minimum number of measures that countries would have to take to deal with the transition.

We will later explore which countries are best placed to exit and which ones should stay. Greece and Portugal should definitely exit the euro. Ireland, Spain and Italy should strongly consider it. The countries that should stay in the euro are the core countries that exhibit the highest symmetry of economic shocks, the closest levels of inflation, and have the closest levels of GDP per capita. These countries include: Germany, France, Netherlands, Belgium, Luxembourg, Finland, etc.

STEPS FOR THE COUNTRIES THAT REMAIN IN THE EURO

The countries that remain within the euro will have to take steps of their own in order to deal with the unilateral exit by a departing country.

1. Print new currency – In order to limit large inflows of “old” euros from the any country that has exited the euro, the core countries should print new euros and then de-monetize old euros.
2. Recapitalize banks exposed to periphery countries that have exited and defaulted – European banks in the core are already in the process of re-capitalizing, but they would undoubtedly need a much larger recapitalization in the event of periphery defaults.
3. The ECB should stabilize sovereign bond yields of solvent but potentially illiquid sovereigns in order to restore stability to financial markets. In order to counteract the inevitable stresses in the financial system and interbank lending markets, central banks should coordinate to provide unlimited foreign exchange swap lines to each other and expand existing discount lending facilities.

TIMING: DENY, DENY AND THEN EXIT BY SURPRISE

“The first rule of politics is never believe anything until it has been officially denied.”
Sir Humphrey Appelby, Yes Minister

Any euro exits would likely happen quickly and in rapid succession and would be done in a “surprise” announcement over a weekend while capital controls and bank holidays are imposed. The best way, and indeed the most likely way, for exits from the euro to proceed are for single exits by peripheral countries like Portugal and Greece in rapid succession. If one peripheral

country left the eurozone, it would create a large incentive for another to go quickly as well. The exit by any small country from the euro would accelerate any capital flight or bank runs in similarly placed countries. The country that is last to exit would likely face the greatest flight of deposits and cash beforehand.

Almost all emerging market devaluations were “surprise” devaluations, and there is no reason to believe that any exit from the euro would not be a surprise as well. There is no technical definition of what constitutes a surprise devaluation, but in it would likely involve official denials in public while political leaders prepare the way behind the scenes for devaluation and potentially capital controls.

The very first step of any exit would require an extraordinary weekend session of the legislature in order to pass new laws returning to pesetas, drachmas, liras, punts or escudos. While devaluations can typically be made by finance ministers, exiting the euro and instituting a new currency would require a legislative act to deal with all the particulars

Any exit from the euro would likely be announced over a weekend when markets are closed. The timing of the announcement would be critical to the short term success of the operation. In most countries banking insolvencies typically happen over the weekend to avoid immediate runs on banks given any bad news. In devaluations, the announcements are typically made over the course of a weekend, particularly when capital controls can be imposed. If necessary, Monday and Tuesday could be declared bank holidays as well. This was the case, most notably, with Argentina in 2002 where the announcement was made Sunday and then two days of bank holidays were declared.

STAMPING OF OLD NOTES, INTRODUCTION OF NEW NOTES AND DE-MONETIZATION

In the historical overview of previous currency breakups, we have already examined the mechanics of currency stamping and de-monetization of old notes. We will not belabor the point.

Re-denominating deposits overnight would effectively deal with almost all of narrow money (M1 money supply) that is held electronically. Most people keep their savings in a bank as an electronic entry in the bank's balance sheet. In most European economies, people do not carry large amounts of cash.

Changing from an old money to a new one is more complicated today than in examples such as the Austro-Hungarian empire in 1919 or even the former Soviet Union in the 1990s. Bank computer code must be re-written, cash points must be reprogrammed, electronic payment systems must be updated with currency codes, etc. There are many stories in the press that large banks are preparing for this quietly already, using old currency codes from the SWIFT interbank payment system. Companies that settle and clear currency trades, such as ICAP and CLS Bank International are preparing as well, according to the Wall Street Journal. European banking authorities, however, are unhelpfully discouraging any talk of currency exits or the preparation of any contingency plans.

If any country exited the euro area by surprise, it would be highly unlikely that it would have printed enough new notes to exchange immediately for old notes. **Before old notes and coins can be withdrawn, they will need to be stamped in ink or a physical stamp would need to be placed on them, and old unstamped notes would no longer legal tender. In the meantime, new notes are quickly printed.**

Capital controls would need to be imposed at borders in order to prevent unstamped notes from leaving the country. Despite capital controls, old notes would still likely escape the country and be deposited elsewhere as citizens pursue an economic advantage. Once new notes are available, old stamped notes are de-monetized and are no longer legal tender. The entire process of stamping and issuing new currency has typically been accomplished in a few months.

(It is most likely that any new currency would be a fiat currency – that is to say a paper currency that is only backed by the good faith and credit of a government. Some economists such as Philipp Bagus, Professor for Economics at University Rey Juan Carlos in Madrid, have argued that after the new currency is introduced, countries should allow for currency competition. All legal tender laws should be abolished. Gradually, citizens would start using more stable currencies and possibly adopt a commodity based means of payment, such as a gold standard. See 'The Tragedy of the Euro' by Philipp Bagus http://mises.org/books/bagus_tragedy_of_euro.pdf However, it appears highly unlikely that any country would want to give up its right to control its own currency, nor does it appear desirable to go from one quasi-gold standard to another.)

NATIONAL CENTRAL BANKS: ALL THE TOOLS ARE STILL FUNCTIONING

Despite the “No Exit” provisions of the Maastricht Treaty, when the ECB was created all eurozone central banks retained almost all their old functions. All the euro countries still have fully functioning national central banks, which should greatly facilitate the distribution of bank notes, monetary policy, management of currency reserves, exchange-rate policy, foreign currency exchange, and payment. The mechanics for each central bank remain firmly in place. The Maastricht Treaty merely made national central banks subservient to the new ECB and charged them with facilitating ECB policy. Any eurozone exit would not imply re-creating old functions that have disappeared.

CAPITAL CONTROLS: INEVITABLE FOR A SHORT PERIOD OF TIME

Following almost all emerging market currency crises, capital controls were imposed in order to stabilize exchange rates, and this would be inevitable following a currency exit.

It is impossible to: 1) provide free capital movement, 2) defend the currency, and 3) provide macroeconomic stability. If policymakers demand free capital movement and a defense of the currency, then stabilization must be sacrificed. If they want free capital movement and freedom in the use of monetary and fiscal policy to attempt stabilization, then they will not be able to defend the exchange rate. Since both austerity and a collapsing exchange rate are likely to lead to deep recessions, capital controls are the only solution. Typically these last for a fixed period of time after devaluation. (In many countries capital controls are still in effect via the non-deliverability of currency through forward currency transactions, as is the case in many countries like Argentina, Brazil, China, Russia and Colombia.)

A NEW CURRENCY AS LEGAL TENDER: DEBT REDENOMINATION

Once a new currency is announced, the most difficult issue of all is determining whether debts are to remain denominated in euros or be re-denominated in new currency.

The legal quagmires would be formidable, as legal scholars have noted:

...any break-up accompanied by re-denomination of existing euro obligations, including government bonds, will create great legal uncertainty and costly litigation. There are no continuity of contract rules for exiting EMU equivalent to those for entering.

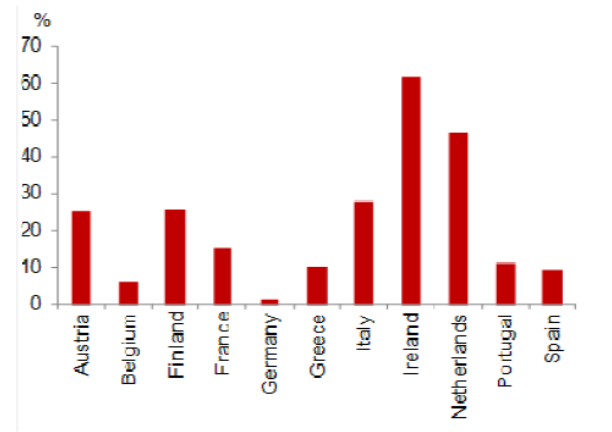
Source: *When the euro Falls Apart*, Hal S. Scott, *International Finance* 1:2, 1998: pp. 207-228
www.law.harvard.edu/programs/about/pifs/research/15scott.pdf

While the potential legal pitfalls are many, the following sections outlines the very best way to exit the euro and how to treat debt within an exiting country and across borders.

Applying the legal principle of *lex monetae* – that the state determines its own currency – periphery governments should re-denominate local euro debt contracts into the new currency which would be the new legal tender. Formally, legal tender is anything which when offered in payment extinguishes the debt. Countries may use the principle of *lex monetae* without problems if the debt contracts were contracted in its territory or under its law. But private and public bonds issued in foreign countries would be ruled on by foreign courts, who would most likely decide that repayment must be in euros.

Almost all countries within the euro issue most of their debt under their local laws. As the following chart from Nomura shows, Greece, Portugal and Spain local law governs 90% of the bonds issued by these countries. The only countries with very large foreign law issuance as a percentage of the total bonds issued are Netherlands, Italy and Ireland. (Ireland issues more than 60% of its bonds under foreign laws, but this is likely from subsidiaries of multinationals domiciled in Ireland and not Irish companies themselves.)

Fig. 11: Bonds under foreign law as a share of total bonds outstanding



Source: BIS, Bloomberg, Nomura

Source: *Currency Risk in the Eurozone: Accounting for break-up and redenomination risk*, Nomura Currency Research, January 2012

Given the principle of *lex monetae* it is unlikely that local courts would ever enforce foreign judgements seeking payments in euros for local contracts. Even if foreign courts were to seek enforcement of claims in euros under the Brussels Regulation (EC Regulation 44/2001 dealing with the reciprocal enforcement of judgments, they would likely fail because the local courts in the payer's jurisdiction would be prevented by legislation from recognizing as valid or enforcing judgments which are not in its new post-euro currency.

Before the euro was introduced, the law firm Norton Rose issued a paper examining the legal implications of exiting the single currency. Their conclusions were as follows, using bonds in Netherlands as an example:

If the bond was issued after 1st January 1999, then it will be expressed in euro and there will be no direct, contractual link to the former Dutch national currency. But if the debt is payable within the Netherlands, then it is suggested that debtor can discharge the obligation either (i) by payment in euro, since the obligation is expressed in that currency or (ii) by payment in the new Dutch currency, because the law of the place of payment may be taken into account in determining the means or method of payment. In the latter case, the appropriate rate of exchange between the euro and the new Dutch currency would be governed by the law applicable to the instrument or obligation in question - the courts would not necessarily adopt the exchange rate prescribed by the new Dutch monetary law. [Emphasis added]

If the bond was issued after 1st January 1999 but is expressed to be payable in euro outside the Netherlands, then it seems that the alteration in the Dutch currency should be irrelevant. Performance of the obligation in euro in the stipulated place of performance is entirely possible, because the euro remains the currency of the other, EMU-participant States. This rule would continue to apply even if the issuer were a Dutch-incorporated entity...

Source: Economic and Monetary Union: Thinking the Unthinkable – The Breakup of the Monetary Union, by Charles Proctor and Gilles Thieffry, Norton Rose <http://bit.ly/IHA0wF>

The interpretation offered by Norton Rose provides the best roadmap for interpreting the currency of liabilities post-Euro. In plain English: contracts governed by local law should be re-denominated into the new currency, and contracts governed and drafted under foreign laws would remain in euros or whatever currency they were when they were drafted.

It would be impossible to enumerate all the potential forms of debt that could safely be re-denominated into the new currency of the exiting country. However, Eric Dor of the IESEG School of Management has suggested the most obvious cases:

- *A sovereign bond that had been issued in euro's by the departing country, directed towards local investors, not to be traded on a foreign market and payable in the country;*
- *A loan in euros that was agreed on to a debtor of the departing country by a bank of another country in the euro zone or out of the zone, and which stipulated that the repayments and interest were to be paid to a subsidiary of the lender in the debtor's country.*
- *A loan in euro's that was agreed on by a bank of the departing country, to a debtor of this country;*
- *A private or sovereign bond that had been issued in euro's and that was traded from the start on the secondary market of the country wanting to quit;*
- *A debt based on a contract that was taken out in euros and governed by the law of the country wanting to quit or that stipulates that the payments were to be made in that country.*

Source: Leaving the euro zone: a user's guide Eric Dor, October 2011, IESEG School of Management, Working Paper Series

Undoubtedly, there are an infinite number of potential debts that one could envision would be subject to re-denomination upon exit. The previous examples, though, provide a good idea of the potential applicability of *lex monetae* to debts.

HOW TO DEAL WITH SOVEREIGN DEFAULTS

Almost all sovereign borrowing in Europe is done under local law, which would allow countries to exit the euro and re-denominate their sovereign debt in local currencies. The re-denomination of debt into local currency, would not legally be a default, but it almost certainly would be considered a technical default by ratings agencies and international bodies such as ISDA.

The following chart from Nomura shows that almost all major sovereign bonds are issued under local law.

Fig. 5: Governing law and standard financial securities and contracts

Governing Law	Security Type	Body of Law	Examples
Local Law	Sovereign Bonds, Bills	Local Statute/Contract	GGBs, Bunds, OATs
	International Bonds	Local Contract	Rep of Italy, Kingdom of Spain, etc
	Corporate Bonds	Contract	
	Covered Bonds (Pfandbriefe, OF, Cédulas, etc)	Covered Bond Law (Pfandbriefe)	Pfandbriefe, Obligacions Foncieres, Cédulas, Irish CBs
	Schuldscheine (marketable loans)	Contract	Banking schuldscheine
	Loans	Contract	
	Equities	Company	Any EU Equity
	Commercial Contracts	Contract	
	Deposits	Banking Law	CDs
	English Law	Sovereign Bonds	Contract
Corporate Bonds (Euro-bonds)		Contract	
Loans (Euro-Loans)		Contract	Euro-Loans
Commercial Contracts		Contract	
NY / Other Law	Sovereign Bonds	Contract	Yankees, Samurai, Kangaroos, Maple, Bulldogs, Dim Sum, Kauri, Sukuk, etc
	Corporate Bonds	Contract	
	Loans	Contract	
	Commercial Contracts	Contract	
Master Agreements	International Swap Dealers Association (ISDA)	English or NY Contract	IR Swap/Fwd, FX Swap/Fwd, CDS, Bond options
	Commodity Master Agreements	Various for each commodity	Gold Swaps/Forwards, Electricity Swaps/Fwds, etc
	Rahmenvertrag für Finanztermingeschäfte (DRV)	German Contract	Swaps and Repos with German counterparties
	Fédération Bancaire Française (AFB/FBF)	French Contract	Swaps with French counterparties and all local authorities
	Contrato Marco de Operaciones Financieras (CMOF)	Spanish Contract	Swaps with Spanish counterparties
	ICMA Global Master Repurchase Agreement (GMRA)	English Contract	Repo Agreements
	Master Repurchase Agreement (MRA)	NY Contract	Standard NY Law Repo Agreements
	European Master Agreement (EMA)	English Contract	Repo with Euro-systems NCB/ECB
	General Master Securities Loan Agreement (GMSLA)	English Contract	Sec lending
	Master Securities Loan Agreement (MSLA)	NY Contract	Sec lending
Other	(Euro) Medium Term Note Programme (MTN/EMTN)	English or NY Contract	WB, Rep Italy, EIB MTN Programmes
	Bond Futures (Eurex)	German Contract	Bund, Bobl, Schatz, BTP Futures on Exchange
	IR Futures (Liffe)	English Contract	Euribor Contracts on Exchange
	Equity Futures	Local Law/English Law	SX5E, DAX, CAC40, MIB, IX, IBEX, BEL20, PSI-20, WBAATX
	OTC Futures	English or NY Contract	Client back-to-back futures with member firm
	Clearing Houses (LCH, ICE, etc)	English Contract etc	Repo, CDS etc via clearing houses
Cash Sales	Sales or Transaction	All cash sales prior to settlement (i.e., before T+3)	

Source: Nomura

Source: *Currency Risk in the Eurozone: Accounting for break-up and redenomination risk*, Nomura Currency Research, January 2012

Re-denominating debt into local currency would take care of the vast majority of sovereign peripheral debt. Up to 94% of Greek government bonds are issued under Greek law, which could be redenominated into a new Greek drachma. However, Greek eurobonds, (which are issued under English law) or their USD denominated bonds (under NY Law), would not easily be redenominated into a new local currency, and may indeed stay denominated in euros. These, however, account for only 6% of Greek debt.

Beyond merely re-denominating debt, countries may wish to re-schedule their debt. The process of restructuring sovereign debt is not as well established as the process for restructuring debt through corporate bankruptcy. Nonetheless, there are informal processes in place for restructuring sovereign debt owed to other governments through what is known as the Paris Club and to commercial banks through the London Club. The Paris Club and London Club coordinate their actions with each other and with the IMF. In effect, both Clubs act in the same way creditor committees act in local bankruptcy processes.

Following any exit from the euro, periphery countries should work very closely with the Paris Club and the London Club in order to restructure their debt smoothly.

EFFECTS ON PRIVATE SAVINGS AND BORROWINGS

Local savers would be the primary losers in the event of any exit from the Euro, while debtors would likely derive the greatest benefits. While exiting the euro and devaluing would be positive for debtors, as it would reduce the real value of their debt, redenomination would be a huge blow to savers who would see the value of their euro bank accounts fall. Savers would be disgruntled and would likely take to the streets to protest, much as savers did Russia in 1998 and Argentina in 2002.

Money is already moving out of the periphery country banking systems into foreign banks: US, Switzerland and banks in the European core. Arguably, the people and companies moving their savings outside of periphery countries are the most sophisticated and agile of savers. It follows logically, that small savers without sufficient wherewithal of banking facilities elsewhere will be the biggest losers.

Unfortunately, it is not possible to solve the real effective exchange rate problems and reduce the real value of periphery debt without harming savers. This will be an inevitable consequence of exiting, re-denomination of legal tender and devaluation.

Arguably, one should not pity savers as the real effective exchange rates became more misaligned, the “euros” held by the periphery were in fact more and more overvalued every day. Exiting the euro and devaluing would merely reverse a previously unsustainable real effective exchange rate and mark to market the true value of a periphery’s currency.

HOW TO DEAL WITH PRIVATE DEFAULTS: LOCAL BANKRUPTCY LAWS SHOULD PREVAIL

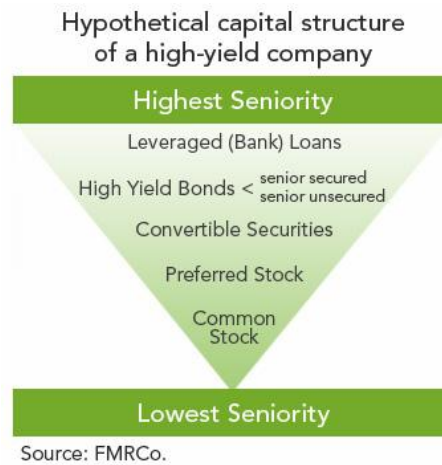
Almost all European sovereign debt is issued under local law. But a large part of corporate and bank debt is issued under foreign law, typically English or American law because of the unique role of London and New York as financial centers. Debt issued under foreign law should generally trade at a premium to local law debt, given the lower redenomination risk.

All local private debts should be re-denominated in local currency, but foreign private debts would be subject to whatever jurisdiction governed bonds or bank loans when they were contracted. Local private debts would all be re-denominated in local currency, which would reduce the instances of foreign exchange asset/liability mismatches. Many local mortgages and credit card debts are owed to local banks, so a re-denomination of local debt would help cure domestic private balance sheets. The main problem is for firms that operate locally but have borrowed abroad.

Exiting the euro would likely lead towards a high level of insolvencies of firms and people who have borrowed abroad in another currency. This would not be new or unique. The Asian crisis in 1997 in particular was marked by very high levels of domestic defaults. However, the positive outcome going forward was that companies started with fresh balance sheets.

Local bankruptcy laws should continue to be enforced exactly as before the exit from the euro. Exiting from the euro should not in any way alter the capital structure of firms and the place of creditors in the bankruptcy process. The bankruptcy of firms is a very well understood process even if it varies from country to country in its particulars. The primary objective of the bankruptcy process is the maintaining and enhancing the value of the firm’s assets so that the value can then be distributed according to seniority of claims, from senior secured lenders to senior unsecured lenders, then to junior lenders, to preferred shareholders and then finally to common shareholders.

The following chart shows the typical capital structure of a firm in terms of seniority:



Source: Fidelity <https://guidance.fidelity.com/viewpoints/leveraged-loan-market>

The bankruptcy process establishes a collective framework ruled by a bankruptcy court where the rights of creditors and debtors are weighed to make sure that creditors do not act to their own to the detriment of other creditors and the debtor company.

As Steven Radelet of Harvard Institute for International Development has pointed out, “Although bankruptcy proceedings differ in important ways across countries, most have four key elements in common:”

an arbitrator or administrator, usually a court or tribunal;
provisions for a standstill on payments to prevent a creditor “grab race;”
provisions for the possibility of the firm borrowing new money to continue operations during the standstill; and
a workout arrangement (following a period of time for information gathering and negotiation) consisting of some combination of a rollover/extension of existing loans, a reorganization of the firm and/or the debt contracts, or a closure of the firm.

Source: *Orderly Workouts for Cross-Border Private Debts*, www.cid.harvard.edu/archive/hid/papers/workouts.pdf

In the case of an exit from the euro, the bankruptcy processes in each country should continue to work as they have beforehand. The real issue is the jurisdiction of debt contracts that the company assumed in the course of its business. According to the principle of *lex monetae*, local contracts would be governed by local (periphery) law. International contracts subject to NY or London law, for example, would remain denominated in euros.

WHO'S HOLDING THE BAG?

The parties who will be holding the bag in the event of an exit, default and devaluation will be German, French and British creditor banks. These would have to be recapitalized with public funds. The EU has already started the process of raising common equity to total capital ratios. This process should be accelerated so that in anticipation of large losses banks be overcapitalized.

Local banks that are large creditors would likely suffer because they would hold government bonds that would be restructured. However, local banks would likely have small foreign exchange asset liability mismatches. Their deposits (liabilities) and loan books (assets) would both be in the same local currency. Foreign institutions, however, would have very large asset liability mismatches given their deposits (liabilities) would be in euros and loan books (assets) would likely be in devalued drachmas, pesetas, escudos, punts or liras, if loans were extended in periphery jurisdictions.

Nevertheless, for every cloud there is a silver lining. Periphery firms involved in exports that have no foreign debts and local wages and cost structures would have a very positive asset/liability mismatch. They would produce goods in local currency and collect payment in stronger euros, dollars and yuan.

INTERNATIONAL MASTER AGREEMENTS FOR SWAPS AND OVER THE COUNTER SWAPS

Many companies, particularly financial institutions, are parties to cross border agreements involving derivatives. The most notable of these are ISDA agreements, which are governed by the International Swaps and Derivatives Association. ISDA typically offers guidance on developing ISDA Master Agreements and a wide range of related documentation materials, and in ensuring the enforceability of their netting and collateral provisions, has helped to significantly reduce credit and legal risk.

It is not possible to know what guidelines ISDA would offer, but DLA Piper, a large multi-national law firm with extensive experience in securities law argues that ISDA would provide broad rules that would govern contracts in the euro area, much as they did before the euro was introduced:

Derivatives contracts could be significantly impacted by a euro collapse or by a country leaving the eurozone. Depending on the circumstances, such events could trigger an ISDA termination event (especially if exchange controls were imposed by the departing country) or may result in a disruption event with respect to particular ISDA products. Equally, such an event could affect the efficacy of any payment or close-out netting provisions. When the euro was introduced, ISDA published a euro protocol to effect a smooth transition in the market as adherence by parties to the protocol ensured that all necessary amendments were automatically made to their ISDA documentation without further bilateral amendments. We anticipate ISDA would proceed with an equivalent protocol in the event of a euro collapse or eurozone country departure.

Source: *The Eurozone in Crisis: What are the Risks for the parts in Cross Border Transactions?*, DLA Piper
<http://bit.ly/uNRwJW>

Almost all ISDA master agreements are governed by NY or London law and would remain in euros given that the principle of *lex monetae* would not allow the PIIGS to re-denominate contracts outside of their own borders.

Private parties need not wait for ISDA to rule in order to try to hedge themselves against any losses that may arise from counterparty failures and periphery exits. Investors may wish to hedge in anticipation of exit. Many trades would allow domestic private parties to hedge their foreign exchange asset liability mismatch. Buying German treasury bills outright or shorting EFSF bonds and short local law bonds would provide a good hedge in the event of devaluations and exits. Also, shorting the euro itself versus other major currencies should perform well on a path towards a eurozone break-up.

LIQUIDITY VS SOLVENCY AND COLLATERAL EFFECTS OF A EUROPEAN EXIT

Any exit from the euro would likely lead towards financial panic, rising credit spreads, higher equity volatility, sell-offs in stock markets, the withdrawal of capital from emerging markets and a flight to government bonds, and a spike in interbank borrowing rates. Previous emerging market devaluations and defaults such as the Asian Crisis in 1997, Russia in 1998, and Argentina in 2002 were marked. These effects were transitory and quickly receded from global markets.

In order to counteract the inevitable stresses in the financial system and interbank lending markets, central banks should coordinate to provide unlimited foreign exchange swap lines to each other and expand existing discount lending facilities. They should follow Walter

Bagehot's dictum to "lend freely at a high rate, on good collateral." Central banks should also consider reducing interest rates or pursuing additional quantitative easing in order to provide additional liquidity to counteract the short term deleveraging effects caused by financial panic. This approach was followed by American Federal Reserve, the Bank of Japan, the European Central Bank, the Bank of England, etc following the Lehman Brothers bankruptcy to great effect.

HOW TO RE-DISTRIBUTE CENTRAL BANK ASSETS

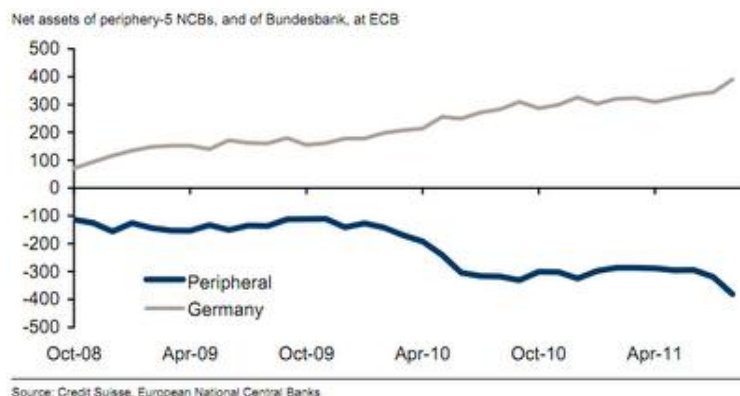
One of the more highly technical questions of an exit from a currency area is the re-distribution of central bank assets and liabilities. If we look at historical examples of currency exits, each exiting country has decided how to resolve this in a different way. The most common way, however, was it was decided based on the distribution of currency holdings upon exit. This was the case of the Austro-Hungarian Empire in 1919 and of Pakistan and India in 1947-48.

In the case of the euro, apportioning assets and liabilities by country is complicated by the interbank balance of payments system known as TARGET 2, which has allowed periphery countries to run very large intra-ECB surpluses and deficits. This was noted by Tomo Wollmershaeuser and Hans-Werner Sinn in a NBER paper:

The European Monetary Union is stuck in a severe balance-of-payments imbalance of a nature similar to the one that destroyed the Bretton Woods System. Greece, Ireland, Portugal, Spain and Italy have suffered from balance-of-payments deficits whose accumulated value, as measured by the Target balances in the national central banks' balance sheets, was 404 billion Euros in August 2011. The national central banks of these countries covered the deficits by creating and lending out additional central bank money that flowed to the euro core countries, Germany in particular, and crowded out the central bank money resulting from local refinancing operations. Thus the ECB forced a public capital export from the core countries that partly compensated for the now reluctant private capital flows to, and the capital flight from, the periphery countries.

Source: Target Loans, Current Account Balances and Capital Flows: The ECB's Rescue Facility Hans-Werner Sinn and Timo Wollmershaeuser, NBER Working Paper No. 17626, November 2011

The imbalances are substantial. The following chart shows the deficit of the PIIGS vs Germany at the ECB as part of the Target 2 system.



Source: Credit Suisse

Martin Wolf, a respected columnist for the FT, has noted that this problem echoes in many ways the imbalances that broke up the Bretton Woods monetary system. Bretton Woods fell apart when the French government demanded gold in return for its dollars. The US, however, did not have enough gold and had no intention of deflating its economy sufficiently to accumulate gold reserves. (It is useful to remember, as noted earlier, the burden of adjustment under a gold standard is always on

the debtor nation.) The US left the gold standard instead. One could argue that in the same way that the end of the gold standard and Bretton Woods was inevitable, the end of the euro is inevitable given the build-up of imbalances.

Periphery banks are net debtors under the Target 2 system. It is highly likely that the central banks of Germany, Netherlands, Luxembourg and other net creditors via the ECB's Target 2 system will sustain very large losses in the event of a euro exit. A default of the exiting country's central bank would lead to huge losses to the ECB, which would likely be shared pro-rata by all euro countries according to their claims on Target 2.

The issue of dividing up pooled ECB capital is not straightforward at all from a legal standpoint. Norton Rose examined the issue of ECB reserves and capital in the event of a euro exit. The issue, as ever, was clouded by the lack of any exit mechanism in the Maastricht Treaty:

The withdrawing State will have contributed its initial position of the capital of the ECB. Since the national Central Bank of the withdrawing State would cease to be a member of the ESCB, plus its share of any accrued profits but net of its share of losses...

The Maastricht Treaty does not allow for the withdrawal of contributed capital or reserves from the ECB, and financial terms would require a new negotiation. Such negotiations would be complicated by a number of factors; in particular, the withdrawal of a Member State would clearly shake market confidence in the euro and would be likely to lead to extreme volatility in its external value. This could only be mitigated by (i) a retention of a portion of the contribution of the withdrawing State and/or (ii) an additional financial contribution to the ECB by participating Member States in order to support the euro. It is quite likely that the available funding within the ECB itself would be insufficient (i) to support the euro adequately and (ii) to support the creation of a new national currency by the withdrawing State. This, in turn, might render it impossible to negotiate "exit" terms without placing the entire EMU process under impossible strain...

Source: *Economic and Monetary Union: Thinking the Unthinkable – The Breakup of the Monetary Union*, by Charles Proctor and Gilles Thieffry, Norton Rose <http://bit.ly/1HA0wF>

Central banks in the core will need to either be recapitalized by their national governments, or much more likely be recapitalized via recognizing and capitalizing seigniorage, which we discuss below.

HOW TO RECAPITALIZE THE ECB TECHNICALLY

In the event of periphery countries exiting the euro, the ECB and core central banks would likely be technically insolvent, but this is more a technical than practical issue. It is highly doubtful whether there is any practical impact to central banks being insolvent, as they have the ability to issue currency in unlimited quantities. The point is mainly technical and a public accounting issue.

The main asset that the ECB would have post-the exit of periphery countries would be 1) bonds from the core and 2) the current net present value of the seigniorage.

Central banks should capitalize the net present value of their seigniorage. Seigniorage exists when a central bank makes available the money it has itself created to the private sector in exchange for interest-bearing assets like bills of exchange or deposits of securities. Seigniorage is the interest earned on the assets that the central bank has acquired with its money (which is effectively costless for the central bank to create and issue).

Central banks don't typically recognize the value of seigniorage on their balance sheets, but this would be one way of plugging the technical hole in the gap between their assets and liabilities.

It is clear that before the ECB, the Bundesbank had very large benefits from seigniorage historically. As the IFO has noted, Germany gave up its seigniorage after entering the euro:

The Bundesbank once had accumulated a very large stock of assets relative to the size of the country because the deutschmark was also used abroad for transaction purposes and store of value. Following the collapse of communism, the deutschmark became popular in Eastern Europe and beyond. The thousand DM notes under Turkish mattresses were legendary. One third of the stock of deutschmarks once circulated abroad. This is why the deutschmark had special status compared to other pre-euro currencies, and the Bundesbank was able to earn special profits, which Theo Waigel and Hans Eichel, former German finance ministers, were always able to anticipate. Since 2002 these good times have passed. The euro has replaced the deutschmark, and the interest earnings from the stock of assets have been summed up and distributed according to country size.

Source: Ifo Viewpoint No. 83, *The Thirty Billion euro Deal: Seigniorage of ECB*, Munich, 22 May 2007, http://www.cesifo-group.de/portal/page/portal/ifoHome/B-politik/05stp/stp?item_link=stp083.htm

So how much would the total future seigniorage of the ECB be worth? Willem Buiter at Citigroup and Huw Pill of Goldman Sachs have done the arithmetic independently, and concluded that the discounted present value of all of the future income which the ECB can earn from investments financed by seigniorage is in the region of 2-3 trillion euros compared with the total outstanding value of Italian and Spanish bonds of about 2,700 billion euros. Based on historical sovereign defaults, even in the case of exit and default, the loss given a default of Spanish and Italian bonds would not reach more than 70%. Seigniorage, it appears, would be enough to plug any holes from holding periphery assets.

EU TREATY LAW AND INTERNATIONAL LAW: LEGAL ASPECTS TO EXITING THE EURO

*You can checkout any time you like / But you can never leave.
Hotel California, The Eagles*

The economic aspects of exiting the euro are arguably well understood and feasible. The legal aspects of exiting the euro would be tremendously complicated given that the euro itself was designed without any exit clauses.

The Maastricht Treaty created the euro without an exit provision. This made the euro a house on fire with no exit ladder for any country that might wish to exit at a later date.

The principal legal problem for any exit is that the language of the Maastricht Treaty itself does not envisage any exit because entry into the euro is an "irrevocable" undertaking according to Maastricht. As the ECB has pointed out:

Such a genuinely unilateral right of withdrawal would be unthinkable in the context of EMU, not least on account of its open conflict with the plain language of Articles 4(2), 118 and 123(4) EC and Protocol 24 on the Transition to the Third Stage of Monetary Union and, in particular, with the references therein to the 'irrevocability' of the substitution by the euro of the currencies of the participating Member States and to the 'irreversibility' of the monetary union process.

Withdrawal and expulsion from the EU and EMU some reflections, ECB Legal Working Paper Series, No 10 / december 2009 www.ecb.int/pub/pdf/scplps/ecblwp10.pdf

The fact that the possibility of withdrawal may not have existed under the EC and EU Treaties until recently does not per se exclude the possibility of its unilateral assertion, followed by its recognition as a legal right by the withdrawing Member State's former partners, nor does it have anything to say about whether or not such a right could be introduced by agreement between the parties to a treaty.

It is, no doubt, political considerations that explain why, despite the founding Treaties' silence on the possibility of secession, no Member State contested the UK's threatened withdrawal in 1975 and

why Greenland was allowed to leave the European Communities in 1982, following domestic opposition to the common fisheries policy and growing demands for home rule.

Peripheral countries could act against international law and disregard the Maastricht Treaty. It appears that any country that leaves the euro would not only violate the Maastricht Treaty, but also the Vienna Convention on the Law of Treaties.

If treaties do not explicitly allow for renunciation, it is difficult to exit treaties. According to the Vienna Convention on the Law of Treaties, which entered into force 27 January 1980, Article 56 of the convention provides:

Denunciation of or Withdrawal From a Treaty Containing No Provision Regarding Termination, Denunciation or Withdrawal

A treaty which contains no provision regarding its termination and which does not provide for denunciation or withdrawal is not subject to denunciation or withdrawal unless:

It is established that the parties intended to admit the possibility of denunciation or withdrawal; or

A right of denunciation or withdrawal may be implied by the nature of the treaty. A party shall not give less than twelve months' notice of its intention to denounce or withdraw from a treaty under paragraph 1.

Source: *When the euro Falls Apart*, Hal S. Scott, *International Finance* 1:2, 1998: pp. 207-228
www.law.harvard.edu/programs/about/pifs/research/15scott.pdf

The previous paragraphs would indicate that any exit from the euro would be against international law, and would make staying within the European Union itself subject to question. However, later treaties clearly allow for the exit from the European Union, which could allow governments to argue that an exit from the euro would also be implied by treaty frameworks.

As the ECB itself has noted, the Lisbon Treaty allows withdrawal from the EU and establishes a process for this via article 50:

*The Treaty of Lisbon provides for a mechanism for voluntary and unilateral withdrawal from the European Union (Article 50 of the Treaty on European Union). A Member State wishing to withdraw notifies its intention to the European Council, which provides guidelines for the conclusion of an agreement setting out the arrangements for its withdrawal. This agreement is concluded on behalf of the European Union (EU) by the Council, acting by qualified majority, after obtaining the consent of the European Parliament. **The Treaties cease to apply to the State in question from the date of entry into force of the agreement, or within two years after notification of the withdrawal [emphasis added].***

Source: http://europa.eu/legislation_summaries/glossary/withdrawal_clause_en.htm

The Lisbon Treaty allows for an exit from the EU but does not have a clause that allows a country to leave the eurozone but remain a member of the EU. The only way to withdraw from the Euro legally at present is to use Article 50, withdraw from the EU and then re-apply for EU membership but remain outside of the euro.

However, it is likely that countries would find a legal justification for leaving the euro and staying within the EU. The ECB itself in a study paper has established the arguments that could be made for withdrawal from the euro:

There are three hypothetical circumstances where a Member State could, in extreme circumstances, assert a right of unilateral withdrawal, whether as a remedy or by way of relief. These are where: (i) another Member State(s) has fundamentally infringed and continues to infringe the treaties; or (ii) the European institutions have acted ultra vires (in both of the foregoing cases, without the treaties appearing to offer any remedy guaranteeing an early return to legality); or (iii) a Member State faces extraordinary difficulties that prevent it complying with its treaty obligations.

Source: *Withdrawal and expulsion from the EU and EMU some reflections*, ECB Legal Working Paper Series, No 10 /
December 2009 www.ecb.int/pub/pdf/scplps/ecblwp10.pdf

Furthermore, there are clauses in the Maastricht Treaty that allow for taking temporary measures in derogation from the Treaty:

Where extraordinary domestic or international situations affect a Member State's ability to fulfil its treaty obligations, the EC Treaty provides for the possibility of Member States taking temporary measures, in derogation from the Treaty, in order to resolve 'serious internal disturbances affecting the maintenance of law and order, in the event of war, serious international tension constituting a threat of war, or in order to carry out obligations it has accepted for the purpose of maintaining peace and international security'

Source: *Withdrawal and expulsion from the EU and EMU some reflections*, ECB Legal Working Paper Series, No 10 /
December 2009 www.ecb.int/pub/pdf/scplps/ecblwp10.pdf

While the legal hurdles to exiting the euro may be high, in the end, national governments are likely to respond to domestic economic and political concerns over any EU treaty obligations. **Once one country declares that they will exit the euro, the treaty concerns about the legality of exit are likely to become a moot point.**

In this section, we have looked at how we believe exits from the common currency would take place in practice, and what the ramifications would likely be. In the following section we discuss why it is inevitable the euro cannot continue in its current incarnation. This will inform our conclusions made in the final section about what happens to the economies of the countries that do leave the euro.

Exit, Devalue and Default in Order to Restore Growth

PERIPHERAL EUROPE: MUCH WORSE THAN MOST EMERGING MARKETS BEFORE A CRISIS

The economist Herbert Stein once wrote, "If something cannot go on forever, it will stop." Current dislocations in European credit markets, stock markets and interbank lending rates are unsustainable and are choking periphery economies. The periphery economies cannot continue at such extremes without very deep economic contractions and large scale insolvencies. Without the European Central Bank, most banks in Europe's periphery would not be able to fund themselves. If the situation continues to deteriorate, it would imply an extremely deep recession that would rival or exceed the Great Financial Crisis of 2008.

The PIIGS (Portugal, Ireland, Italy, Greece and Spain) have built up very large unsustainable net external debts in a currency they cannot print or devalue. Each peripheral country is different, but they all have too much debt. Greece and Italy have a high government debt level. Spain and Ireland have very large private sector debt levels. Portugal has a very high public and private debt level. Greece and Portugal are arguably insolvent and will never be able to pay back their debt, while Spain and Italy are likely illiquid and will need help rolling their upcoming debt maturities.

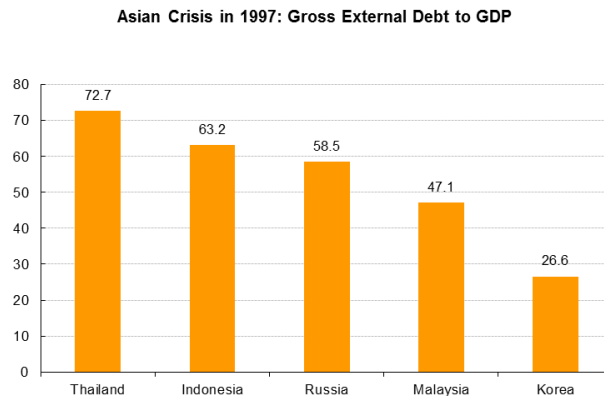
The problem for the European periphery is not only that debt levels are high, but that almost all the debt is owed to foreigners. As Ricardo Cabral, Assistant Professor at the Department of Business and Economics at the University of Madeira, Portugal, points out, "much of these countries' debt is held by non-residents meaning that the governments do not receive tax revenue on the interest paid, nor does the interest payment itself remain in the country":

In fact, external indebtedness is key to understanding the current crisis. Portugal, Ireland, and Spain have similar external debt dynamics to that of Greece. Despite netting out debt-like assets held by residents abroad, the PIGS' average net external debt-to-GDP ratio, is

approximately 30 percentage points higher than the average gross external debt-to-GNP ratio observed in the emerging market external debt crises.

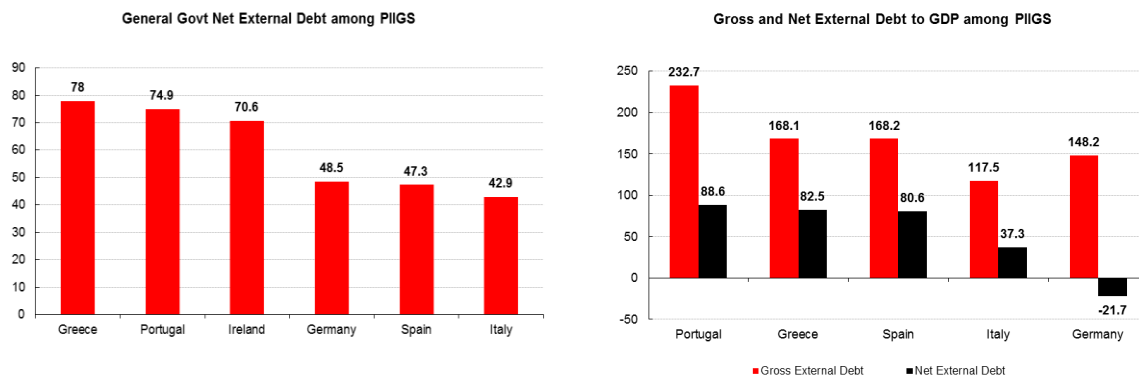
Source: *The PIGS' external debt problem*, Ricardo Cabral, May 2010 <http://voxeu.org/index.php?q=node/5008>

The following chart shows the net external debt to GDP ratios in Asia before the 1997 crisis, for example.



Source: *The PIGS' external debt problem*, Ricardo Cabral, May 2010 <http://voxeu.org/index.php?q=node/5008>

Periphery debt levels before the recent European crisis began in 2010 were much higher than Asia's debt levels before the widespread defaults and devaluations in 1997. The total net external debt of the peripheral countries far exceeded even the highest net external debt seen during the Asian Crisis of 1997. The ratios have since continued to deteriorate. It is also noteworthy that most of the government debt of Greece, Portugal, and Ireland is held abroad, and almost half Spanish and Italian government debt is held abroad.

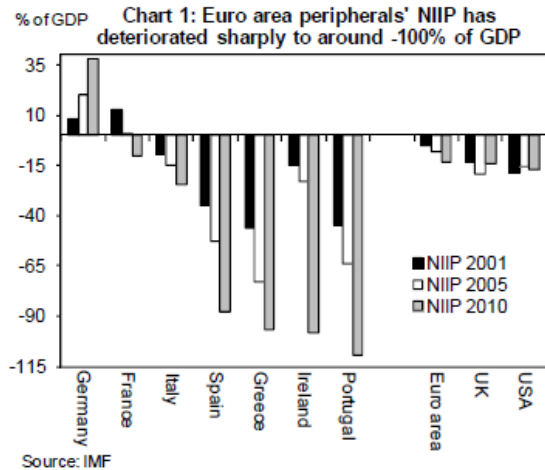
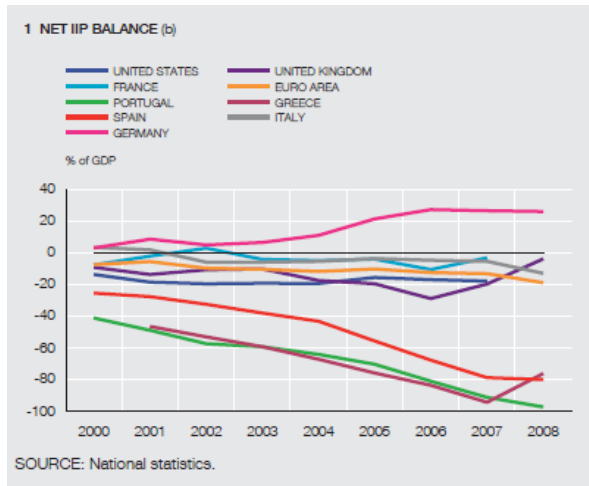


Source: *The PIGS' external debt problem*, Ricardo Cabral, May 2010 <http://voxeu.org/index.php?q=node/5008>

In the case of Asian countries, most of the debt was denominated in another currency, ie dollars. This produced an "inverted balance sheet". With inverted debt, the value of liabilities is positively correlated with the value of assets, so that the debt burden and servicing costs decline in good times and rise in bad times. Once Asian currencies started to depreciate, their debt to GDP ratios skyrocketed. Fortunately, for the European periphery, all the debt is in euros. This is one reason why staying in the euro makes short term sense. Any exit from the euro and move to local currencies that could be depreciated would increase the total debt burden.

In order to finance the large current account deficits, the European periphery has had to sell more assets to foreigners than it purchased. Staggeringly, for Portugal, Greece, Ireland and Spain, foreigners own assets worth almost 100% of GDP. Like a drug addict selling all the family silverware, the periphery has sold large chunks of their assets to fund sustained current account deficits.

The following chart show the evolution of the Net International Investment Position of the periphery and how it has deteriorated to extreme levels.

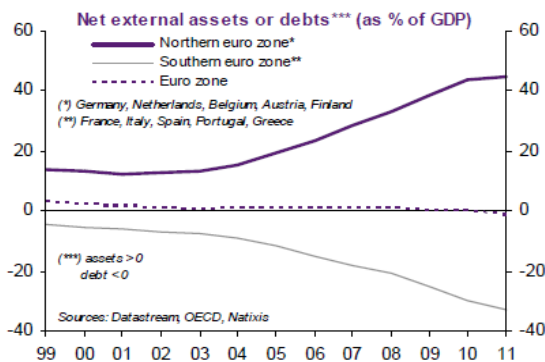


Source: Bank of Spain, <http://bit.ly/rvHs2g> and Goldman Sachs, European Weekly Analyst Issue No: 11/44 December 21, 2011 Goldman Sachs Global Economics, Commodities and Strategy Research

Clearly the trend started with the advent of the euro and has deteriorated almost every single year thereafter. Interestingly, as the periphery's NIIP deteriorated, Germany's improved. Germany is the flipside of the periphery. This is highly significant for reasons we discuss below.

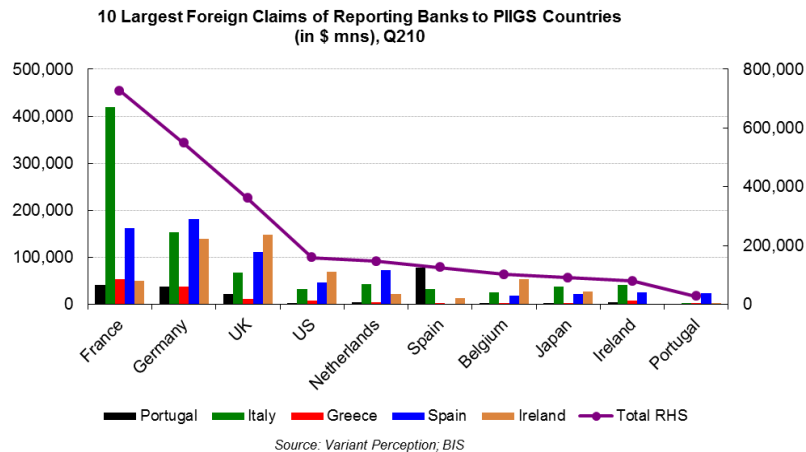
FOR EVERY BORROWER, THERE IS A LENDER. FOR EVERY DEFICIT, THERE IS A SURPLUS

The European periphery could only have run up very large debt levels if someone was willing to lend to them. While the European periphery borrowed heavily, the core of Europe lent freely. This means that any exit from the euro would make cross border liabilities a huge problem.



Source: Who is in the dominant position: The lender or the borrower?, Natixis 17 November 2011 - No. 833.
<http://bit.ly/rVbMHF>

If the periphery experiences widespread defaults or exits the euro, the creditors will be French, German and UK banks. As the following chart, based on data from the Bank of International Settlements, shows, France, Germany and the UK have the largest share of claims on PIIGS debt.



Source: Bank for International Settlements, April 2010, Table 9B, data as of December 31, 2009. Foreign claims = cross-border claims + local claims of foreign affiliates in foreign currency + local claims of foreign affiliates in local currency

TOO MUCH DEBT: THE ONLY WAY OUT IS DEVALUATION, INFLATION OR DEFAULT

*I've long said that capitalism without bankruptcy is like Christianity without hell.
Frank Borman, Chairman of Eastern Airlines*

The net external debt positions and net international investment positions of the periphery countries are extremely high. Indeed, they are so high, historically almost all countries that had such levels have defaulted and devalued. (See *This Time Is Different: Eight Centuries of Financial Folly* by Reinhart and Rogoff)

When people or companies have too much debt, they typically default. When countries have too much debt, governments have one of three options:

1. They can inflate away the debt.
2. They can default on it.
3. They can devalue and hurt any foreigners who are holding the debt. This is really just a variant of inflating it away.

The ECB cannot pursue inflationary policies or monetize government debt according to its charter. Peripheral countries, thus, owe very large amounts of money in a currency they can't print. Because they are in a currency union, they lack the tools typically available to countries that need to rid themselves of debt. Defaults, then, are the only option. However, defaulting would not solve the underlying problem of a one size fits all monetary policy. Defaulting, exiting the euro *and* devaluing would be necessary as well.

THE NEED TO EXIT: A ONE SIZE FITS ALL MONETARY POLICY

Europe exemplifies a situation unfavourable to a common currency. It is composed of separate nations, speaking different languages, with different customs, and having citizens

feeling far greater loyalty and attachment to their own country than to a common market or to the idea of Europe.

Professor Milton Friedman, The Times, November 19, 1997

Before the euro was created, Robert Mundell wrote about what made an optimal currency area. It is a groundbreaking work that won him a Nobel Prize. He wrote that a currency area is optimal when it has:

1. Mobility of capital and labor – Money and people have to be willing and able to move from one part of the currency area to another.
2. Flexibility of wages and prices – Prices need to be able to move downwards, not just upwards.
3. Similar business cycles – Countries should experience expansions and recessions at the same time (technically this is referred to as “symmetry” of economic shocks).
4. Fiscal transfers to cushion the blows of recession to any region – If one part of the currency area is doing poorly, the central government can step in and transfer money from other regions.

Europe has almost none of these characteristics. Very bluntly, that means it is not a good currency area.

The United States is a good currency union. It has the same coins and money in Alaska as it does in Florida and the same in California as it does in Maine. If you look at economic shocks, the United States absorbs them pretty well. If someone was unemployed in southern California in the early 1990s after the end of the Cold War defense cutbacks, or in Texas in the early 1980s after the oil boom turned to bust, they could pack their bags and go to a state that is growing. That is exactly what happened.

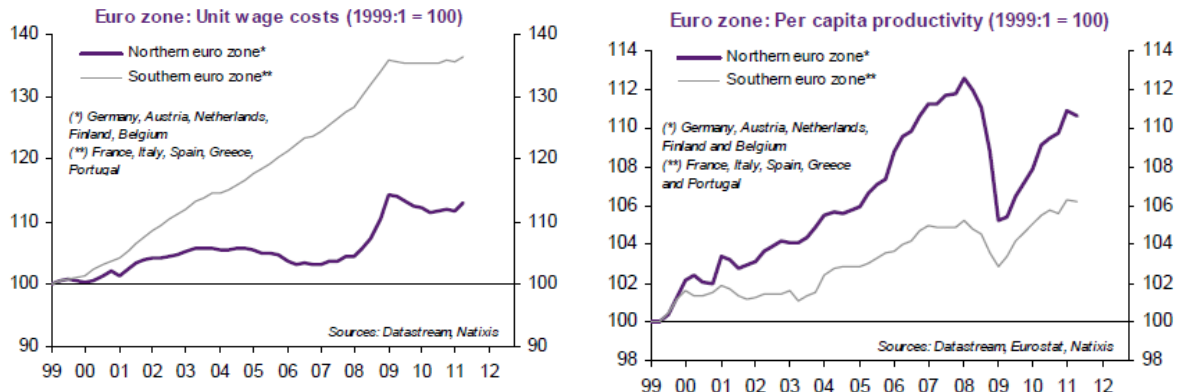
This doesn't happen in Europe. Greeks don't pack up and move to Finland. Greeks don't speak Finnish. And if Americans had stayed in California or Texas, they would have received fiscal transfers from the central government to cushion the blow. There is no central European government that can make fiscal transfers. So the United States works because it has mobility of labor and capital, as well as fiscal shock absorbers.

The fundamental flaw of the euro is that it provides one monetary policy for the entire euro area. This has led towards wildly divergent real effective exchange rates and has produced asset bubbles.

First we'll look at real effective exchange rates and then asset bubbles.

Once the euro was introduced, the ECB could provide only one interest rate for the whole of the euro area. If Europe were an optimal currency area, a one size fits all approach would have been ideal. However, Germany and France had very different growth rates and inflation rates than Greece, Spain, Portugal and Ireland. This led to disastrous consequences.

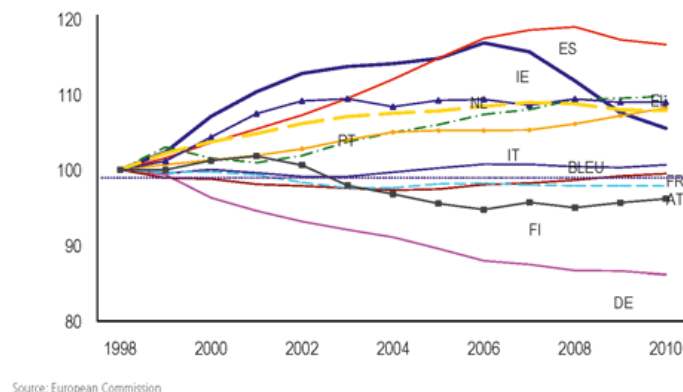
Over the past 10 years, the European periphery experienced large increases in wages and prices compared with the core. While prices and wages were stagnant in Germany, they were increasing at a rapid rate in the periphery. This made the periphery very uncompetitive relative to Germany and the rest of the core. The result? The periphery countries were importing a lot more than they were exporting and were running large current account deficits. The only way to fix this is through a real cut in wages and prices, an internal devaluation, or deflation. This is hugely contractionary and poses tremendous problems, as the periphery is now discovering.



Source: *Who is in the dominant position: The lender or the borrower?*, Natixis 17 November 2011 - No. 833.
<http://bit.ly/rVbMHF>

The huge differential in wages and productivity between the core and the periphery means that the *intra*-euro real effective exchange rates between the core and the periphery are extremely large according to the European Commission calculations. As the following chart shows, the divergences are as large as 35% between some peripheral and core countries, for example Germany and Spain.

Intra-European Real Effective Exchange Rates (1998=100)

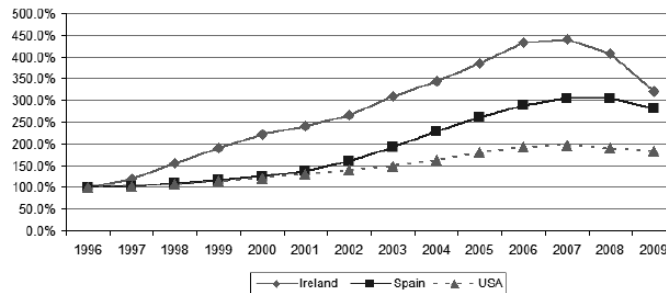


Previously, such under- or over-valuations in real effective exchange rates would have been solved via changes in open market prices for currencies or devaluations. Now that the drachma, lira and peseta don't exist, the possibility for devaluations does not exist either. All the burden of adjustment will have to fall on wages and prices. However, wages and prices in the European periphery are downward inflexible given high levels of bargained wage agreements on a sectoral level.

A one size fits all monetary policy also led to real estate bubbles and an enormous increase in debt to fund the mal-investment. Rapidly rising prices with low interest rates created the problem of negative real interest rates in the periphery. With negative real interest rates, you're in effect being paid to borrow. Unsurprisingly, the European peripheral countries racked up enormous debts in euros, a currency that they can't print.

Globally countries that had negative real interest rates had the largest housing bubbles. The following chart shows that Spain and Ireland also had very large run-ups in property prices, and now they are in the midst of enormous property busts.

Figure 3.1 Housing prices in Ireland, Spain and the US



Sources: Irish Dep. of the Environment, Banco de España, FHFA, OECD.

Source: *Cross-Border Banking in Europe: Implications for Financial Stability and Macroeconomic Policies*, CEPR, <http://bit.ly/tz1an5>

According to Charles Taylor, these countries also had loose monetary policies relative to established rate setting rules such as the Taylor Rule (many central banks subscribe to the Taylor Rule when setting policy). Spain and Ireland had the largest deviations from the rule and also had the biggest housing boom. Germany and France, the European core, did not have a housing boom because they had lower inflation and slower growth. The ECB's policy rate did not correspond to a loose monetary policy for them.

Figure 3.2 Deviations from the Taylor Rule in Ireland, Spain and the US



Notes: $TR_t = CPI_t + (\text{average IR over the sample period}) + 0.5 \cdot (CPI_t - 2\%) + 0.5 \cdot \text{output gap}_t$, where TR_t is the implied interest rate in period t, CPI_t is the consumer price index and IR is the central bank's official interest rate.

Sources: Data on inflation and output gap from the IMF World Economic Outlook Database and calculating the implied interest rate according to the formula.

Source: *Cross-Border Banking in Europe: Implications for Financial Stability and Macroeconomic Policies*, CEPR, <http://bit.ly/tz1an5>

Future housing bubbles in the euro area will be difficult to prevent given inappropriate real interest rates and mortgage rates for part of Europe. After the Great Financial Crisis, the ECB has provided extremely loose monetary policy. The loose monetary policy that was good for the periphery was inappropriate for the core. Unsurprisingly, French and German house prices have recently risen to all-time highs.

The extreme misalignments in REERs and asset bubbles of the past decade indicate that Europe is not an optimal currency area. *So long as the euro exists and Europe remains a sub-optimal currency area, either the core or the periphery will have an inappropriate monetary policy.* Monetary policy will either be too hot or too cold for some countries. This will lead towards further misalignments of real effective exchange rates and asset bubbles, either in the core or in the periphery.

EURO AS A MODERN DAY GOLD STANDARD: SIMILARITIES AND DIFFERENCES

In truth, the gold standard is already a barbarous relic. All of us, from the Governor of the Bank of England downwards, are now primarily interested in preserving the stability of business, prices, and employment, and are not likely, when the choice is forced on us, deliberately to sacrifice these to outworn dogma... Advocates of the ancient standard do not observe how remote it now is from the spirit and the requirements of the age.

John Maynard Keynes, 1932, in "A Retrospective on the Classical Gold Standard, 1821-1931" and in Monetary Reform (1924), p. 172

The modern euro is like a gold standard. Obviously, the euro isn't exchangeable for gold, but it is similar in many important ways. Like the gold standard, the euro forces adjustment in real prices and wages instead of exchange rates. And much like the gold standard, it has a recessionary bias. Under a gold standard, the burden of adjustment is always placed on the weak-currency country, not on the strong countries. *All the burden of the coming economic adjustment will fall on the periphery.*

Under a classical gold standard, countries that experience downward pressure on the value of their currency are forced to contract their economies, which typically raises unemployment because wages don't fall fast enough to deal with reduced demand. Interestingly, the gold standard doesn't work the other way. It doesn't impose any adjustment burden on countries seeing upward market pressure on currency values. This one-way adjustment mechanism creates a deflationary bias for countries in a recession.

What modern day implications can one draw from the gold standard-like characteristics of the euro? Barry Eichengreen, arguably one of the great experts on the gold standard and writer of the tour de force *Golden Fetters*, argues that sticking to the gold standard was a major factor in preventing governments from fighting the Great Depression. Sticking to the gold standard turned what could have been a minor recession following the crash of 1929 into the Great Depression. Countries that were not on the gold standard in 1929 or that quickly abandoned it escaped the Great Depression with far less drawdown of economic output.

It is odd then that Eichengreen and most economists today encourage peripheral countries to stay inside the euro as a proper policy recommendation when they would have encouraged countries in the 1930s to leave the gold standard.

DEFICITS AND SURPLUSES: PIGS TO THE SLAUGHTER

Not only are European leaders and economists recommending that countries not exit the euro, they are asking European countries to pursue "austerity" policies to reduce government deficits. Such recommendations cannot work and are very misguided. The medical equivalent of such diagnoses is to recommend leeches to a man dying of cancer.

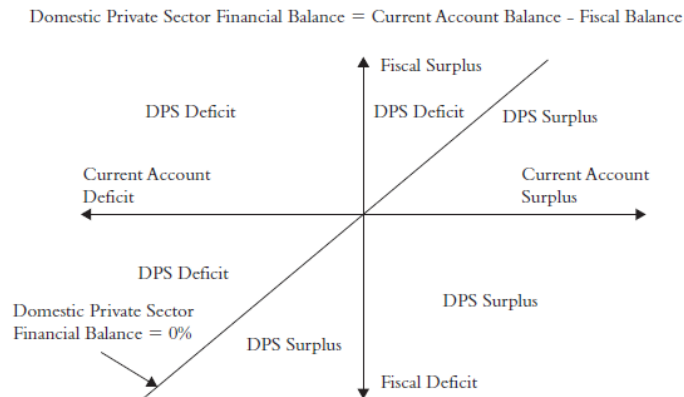
Given the constraints of the euro and the Maastricht Treaty deficit targets, the European periphery faces a period of debt deflation. The public sector and private sector in peripheral economies cannot deleverage at the same time without running a trade surplus. (The problem is that Germany and China aren't about to start running deficits.) This is true for mathematical reasons that are inescapable. A sectoral balances approach to the problem yields the mathematical relationship:

$$\text{Domestic Private Sector Financial Balance} + \text{Fiscal Balance} + \text{Foreign Financial Balance} = 0$$

This is an economic identity that cannot be violated. Sectoral balances must net out; the changes in one sector's financial balance cannot be viewed in isolation. If government wants to run a fiscal surplus and reduce government debt, it needs to run an even larger trade surplus, or else the

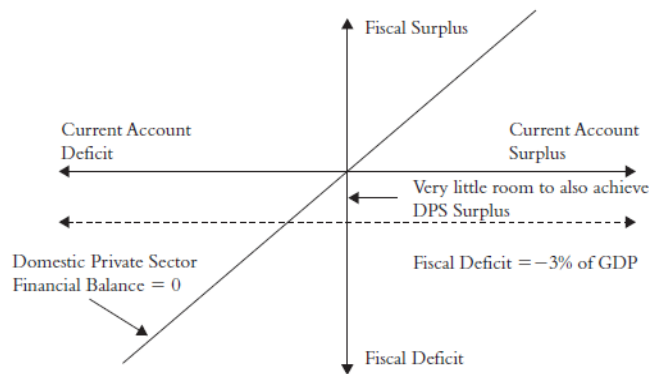
domestic private sector will need to engage in deficit spending. The only way that both the government and the private sector can deleverage is if the countries run large current account surpluses: your demand has to come from another country.

The following two charts are illuminating. The first chart shows a traditional financial balances map.



Source: *Leading PIIGS to Slaughter* by Robert Parentau, <http://bit.ly/c6lSPb>

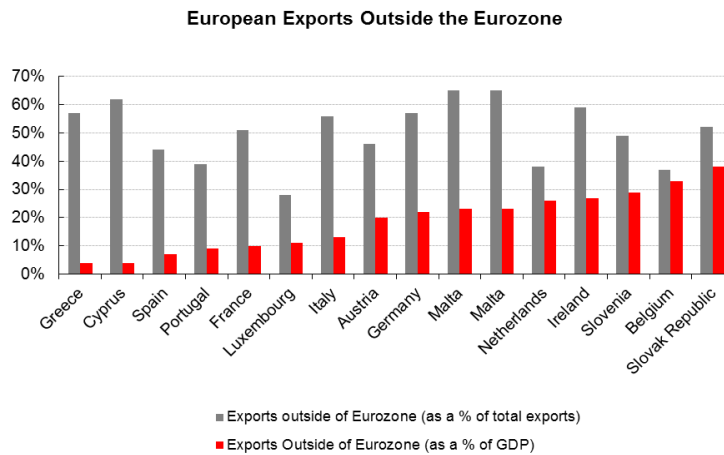
However, in Europe, governments, according to the Maastricht Treaty, are not supposed to run deficits of more than 3% of GDP. If you apply this constraint, then the financial balances map becomes extremely constrained. The following chart shows how little room there is to achieve any private sector financial balance under EU rules.



Source: *Leading PIIGS to Slaughter* by Robert Parentau, <http://bit.ly/c6lSPb>

Not all countries can export their way back to prosperity because not everyone can run a surplus. This includes Greece, Spain, and Portugal. As the periphery countries necessarily reduce their deficits, what must happen to maintain balance? Someone has to run a deficit if the periphery runs a surplus. Either European surplus countries reduce their surplus, or on net Europe must reduce its surplus, in which case China must reduce its surplus, or the United States must increase its deficit.

The principal way a country increases its competitiveness is via a weaker currency. *However, a weak euro will not help the European periphery, because almost all peripheral exports are to the EU.* As the following chart shows, exports outside the eurozone as a percentage of GDP are very low for Greece, Spain, and Portugal. Except for Ireland, the PIIGS are not very open economies, and most of their exports are to other European countries. Only internal measures to make wages and prices more flexible and to improve the labor market and improve skills will have any impact, and these cannot happen overnight.



Source: <http://www.pie.com/realtime/?p=1595>

The current peripheral crisis is not a one-time event. The intra-eurozone current account deficits and external debt accumulation will reoccur so long as there is a one-size fits all monetary policy.

Only two types of solutions to restore competitiveness for the deficit countries and lower the CA for surplus countries:

- 1) Internal adjustments to regain competitiveness, reducing wages, etc for the deficit countries while boosting imports via internal consumption for surplus countries.
- 2) Currency adjustments devaluation/revaluation

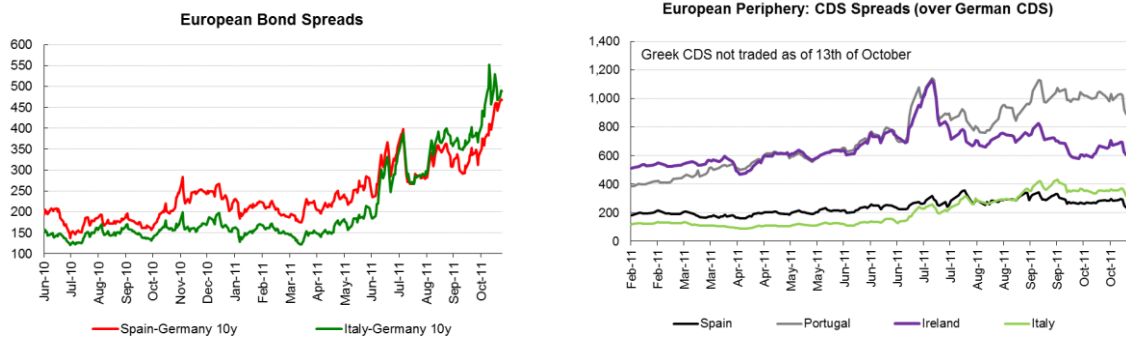
History has shown that the only solution that works in practice is option two. However, euro area politicians and academics only see option one as the solution.

Given the inability to devalue and hence the debt-deflationary dynamic imposed on the periphery, and the inability to export based on a weaker euro, **the peripheral countries should strongly consider exiting the euro. Exiting the euro would solve one of the principal ills facing peripheral countries by providing the exchange rate as a policy tool. This is crucial for understanding the potential macroeconomic effects post-exit.**

POLICYMAKERS NEED TO FOCUS ON ORDERLY DEFAULTS AND DEVALUATIONS

Policymakers have so far refused to accept that defaults, exits from the euro, and devaluations are likely. An enormous amount of national political capital has been invested in the EU and euro as political projects to advance national political, as opposed to economic, interests. However, the financial markets are already pricing in the rising probability of defaults and devaluations. Bond spreads and credit default swaps have shown that investors are increasingly worried about this possibility. It is foolish, therefore, not to contemplate defaults, explore possible ramifications and make appropriate contingency plans.

As the following charts show, the spread between Spanish and Italian bonds to German bonds, ie the risk premium, is now going parabolic. Spanish and Italian spreads are roughly 4.5-5% points above German yields. And Ireland and Portugal are even worse. Credit default swaps, which are like insurance contracts against default, are trading at 800-1000 basis points. This implies a high likelihood of default.



Source: Bloomberg, Variant Perception

Why have bond yields and credit default swaps spiked so much? The problem is that after the Great Financial Crisis, the European periphery has faced very low economic growth (around 0-2%) or even outright economic contraction coupled with very high deficits (around 8-14% of GDP), very high debt burdens as a proportion of GDP (80-120%), with very high rates of interest on government bonds (about 6-30%). All the debt, of course, is in a currency that peripheral countries cannot devalue.

This combination of characteristics violates what economists call the transversality condition. Put another way, this is a “No Ponzi” condition. The debt has to have a well-defined present value, independent of whether a greater fool buys that debt or not. Debt levels cannot go down and debt cannot be repaid ever if the wedge between economic growth and interest paid continues to be high. When investors expect debt levels never to fall and to rise in perpetuity, borrowing costs skyrocket, and the face value of debt collapses. The breakdown in confidence and collapse in debt value happens very quickly, as the recent case of Greece shows.

OPTIMUM EURO CONFIGURATION POST-EXIT: WHO SHOULD EXIT?

People only accept change when they are faced with necessity and only recognize necessity when a crisis is upon them.
Jean Monnet

As mentioned above, we believe **Greece and Portugal should definitely exit the euro. Ireland, Spain and Italy should strongly consider it.** Portugal and Greece are the countries that the market has already marked as being at high risk for exit and default. These happen also to be the countries that have 1) the highest levels of debt and 2) the most overvalued real effective exchange rates. Ireland, Spain and Italy have many of the pernicious characteristics of Greece and Portugal. The market has simply assigned lower probability so far of default and exit to them. This could quickly change and would likely make it even more difficult for them to remain solvent.

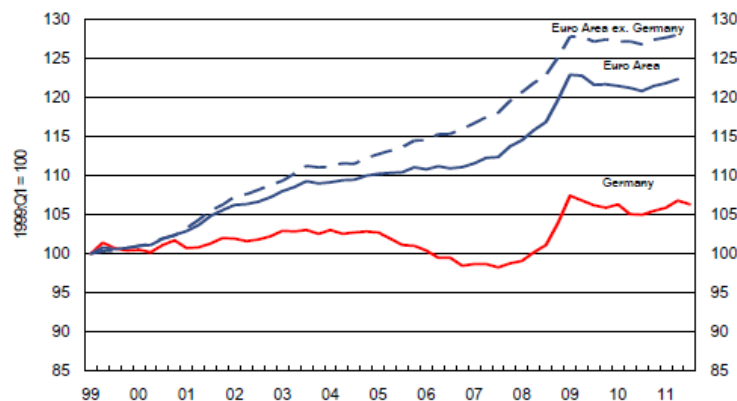
One way to think of dividing up the periphery is to distinguish two country profiles:

- 1) Countries with very large current account deficits together with unsustainable level of external debt (Greece, Portugal, Ireland, Spain and Italy). In these cases an orderly default and exit/devaluation are the solution.
- 2) Countries with sizable current account imbalances with a somehow sustainable debt level. In these cases the solution is no default with a one-time parity adjustment, and a devaluation.

Unfortunately, almost all the European periphery falls into camp one, where the best solution is default *and* devaluation.

Even though it would be best for many periphery countries to exit, it is highly unlikely that Germany would in fact want them to exit. Germany has benefited enormously by being tied to a weaker euro rather than a strong Deutschmark. Any exit from the eurozone is necessary for rebalancing, but would likely be a large blow to the German export machine. **As the following chart shows, a large devaluation would go a long way towards bringing nominal unit labor costs of the euro area closer to Germany.**

Figure 4. Nominal Unit Labor Costs



Sources: Haver Analytics, Eurostat, IMF, and Citi Investment Research and Analysis.

Source: *Empirical and Thematic Perspectives Germany's "Windfall" from Euro-Area Membership and European Imbalances*, Citigroup Global Markets

The countries that should stay in the euro are the core countries that exhibit the highest symmetry of economic shocks, the closest levels of inflation, and have the closest levels of GDP per capita. These countries include: Germany, France, Netherlands, Belgium, Luxembourg, Finland, etc.

CRYSTALLIZING LOSSES: SILENT BANK RUNS

Panics do not destroy capital; they merely reveal the extent to which it has been previously destroyed by its betrayal into hopelessly unproductive works.

John Stuart Mill

We have shown previously that the periphery countries have borrowed very large amounts of money that they will find it difficult to pay back in a currency they cannot print. Much of this money was spent unproductively in housing bubbles in Ireland and Spain, or in government largesse in Greece. Any exit from the eurozone would merely accelerate the recognition of losses that are the result of previous imbalances and the accumulation of too much debt. The destruction of capital would not come from default or devaluation but from its previous unproductive use.

The main reason offered for not exiting the euro is that it would lead towards large scale banking insolvencies as depositors would anticipate exit and would start runs on the bank. Professor Berry Eichengreen has elegantly outlined how this might happen:

Market participants would be aware of this fact. Households and firms anticipating that domestic deposits would be redenominated into the lira, which would then lose value against the euro, would shift their deposits to other euro-area banks. A system-wide bank

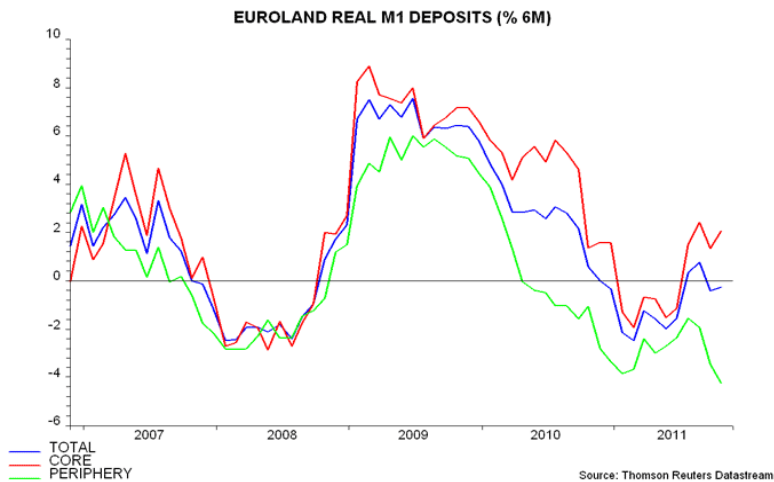
run would follow. Investors anticipating that their claims on the Italian government would be redenominated into lira would shift into claims on other euro-area governments, leading to a bond-market crisis. If the precipitating factor was parliamentary debate over abandoning the lira, it would be unlikely that the ECB would provide extensive lender-of-last resort support. And if the government was already in a weak fiscal position, it would not be able to borrow to bail out the banks and buy back its debt. This would be the mother of all financial crises. Presumably the government would respond with a “corralito,” Argentine style, limiting bank withdrawals. It would suspend the operation of the bond market, although this might be of limited effectiveness insofar as the same bonds and derivative instruments based on them are also traded on other national markets. But all this would almost certainly be costly in terms of output and employment. It would be hard to keep production going while the financial system was halted in its tracks; this is a clear lesson of Argentina’s 2001-2 crisis.

Source: *The Breakup of the euro Area*, by Barry Eichengreen, University of California, Berkeley
http://www.elsa.berkeley.edu/~eichengr/breakup_euro_area.pdf

Sadly, the bank runs in the Euro area are already happening with or without a Euro breakup.

The panic of a eurozone exit would merely make plain the silent bank runs that are already happening. People are already voting with their feet and withdrawing deposits from the euro area banking system. Real narrow money has collapsed in and has been negative for much of the past two years. The situation is even bleaker if you look at the collapse of narrow money in the periphery vs the core. The periphery is already facing a major bank runs.

As the following chart from Simon Ward at Henderson Asset management shows, real M1 is contracting at an 8% annualized rate in the periphery, far beyond what was seen before the Great Financial Crisis in 2008.



Source: Simon Ward, *Money Moves Markets*, <http://bit.ly/v2E1qx>

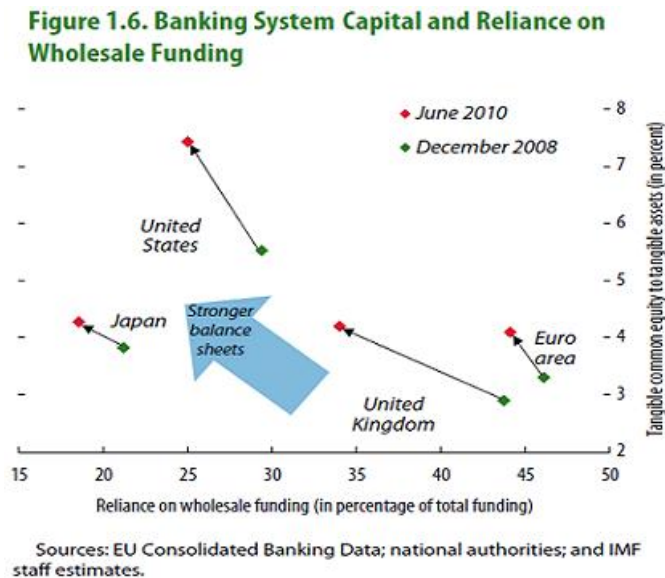
The macroeconomic data is corroborated anecdotally by new articles that document what thousands of chief financial officers are doing across Europe. For example, take the case of a Spanish IT company:

Grupo Gowex, a Spanish provider of Wi-Fi wireless services, is moving funds to Germany because it expects Spain to exit the euro. German machinery maker GEA Group AG is setting maximum amounts held at any one bank.

“I don’t trust Spain will remain in the euro zone,” said Jenaro Garcia, founder and chief executive officer of Madrid-based Grupo Gowex, which provides Wi-Fi access in 15 countries. “We moved our cash and deposits to Germany because Spain will come back to the peseta.”

Source: <http://www.businessweek.com/news/2011-12-12/european-ceos-move-cash-to-germany-in-case-of-euro-breakup.html>

Not only are bank runs already happening, but the European banking system is arguably already undercapitalized and insolvent based on extremely low tangible common equity to asset ratios as well as very high reliance on wholesale funding. As the following chart from the IMF shows, European banks have done the very least to improve their reliance on deposits for funding as well as having done the least to raise common equity.



Source: IMF Global Financial Stability Report, April 2011, <http://www.imf.org/external/pubs/ft/gfsr/2011/01/index.htm#c1figure>

The bottom line is that European banks have problems with or without any exits from the eurozone. Low levels of tangible common equity and high reliance on wholesale funding makes banks subject to solvency and liquidity risks. Solvency risks arise from not having a thin sliver of equity with which to absorb potential losses from the write-down of assets. Liquidity risks arise from a very high reliance on fickle capital markets to provide short term funding, which must be continuously rolled.

What Happens to the Economy After Exit?

MACROECONOMIC CONSEQUENCES: RECENT EXPERIENCES OF DEFAULTS AND DEVALUATION

The only function of economic forecasting is to make astrology look respectable.
John Kenneth Galbraith

It is useful to look at previous historical examples of countries after they defaulted and devalued to observe their growth and inflation trajectory. The three examples we will look at are Thailand, Indonesia and Korea in 1997, Russia in 1998, and Argentina in 2002.

Dire predictions about economic growth following devaluations are invariably wrong, and most countries quickly recover pre-crisis levels of GDP. If we look at recent devaluations, in almost all cases where countries devalued, they had short, sharp downturns followed by steep, prolonged upturns. Mark Weisbrot and Rebecca Ray prepared a report for Center for Economic

and Policy Research and examined GDP declines before and after devaluations. The following chart from their study shows where each country's GDP was three years after these large, crisis-driven devaluations. Almost all of the countries are considerably above their pre-devaluation level of GDP three years later.

Major Recent Devaluations and Ensuing GDP Loss								
	Date	Mos. until Trough	Devaluation			GDP Decline		
			National Currency per US Dollar		Size of Devaluation	Quarters until Trough	Loss of GDP	Change in GDP 3 Years After Devaluation
			Before	Trough				
Argentina	Jan-01	5	1.0	3.6	-72.2%	1	-0.3%	+25.8%
Finland	Sep-92	11	4.4	5.8	-23.9%	3	-1.2%	+9.2%
Georgia	Dec-98	2	1.5	2.3	-36.8%	0	0.0%	+10.1%
Iceland	Oct-08	1	91.2	135.3	-32.6%	5	-11.3%	-9.3% ¹
Indonesia	Jul-97	12	2,446.6	13,962.5	-82.5%	4	-16.6%	-9.8%
Iran	Mar-93	2	67.3	1,635.7	-95.9%	3	-9.1%	+3.1%
Italy	Aug-92	12	1,102.6	1,605.1	-31.3%	1	-0.6%	+7.9%
Malaysia	Sep-97	4	2.7	4.4	-37.8%	5	-8.5%	+6.7%
Mexico	Dec-94	3	3.4	6.7	-48.6%	3	-15.1%	+6.2%
South Korea	Dec-97	1	1,025.6	1,701.5	-39.7%	2	-9.1%	+14.0%
Sweden	Nov-92	9	6.2	8.1	-22.8%	1	-0.6%	+10.0%
Thailand	Jul-97	6	25.8	53.8	-52.1%	4	-13.8%	-3.7%
UK	Aug-92	12	0.5	0.7	-23.1%	0	0.0%	+10.4%
Latvia	2007Q4	24	0.49	0.48	2.1%	8	-24.1%	-21.3%

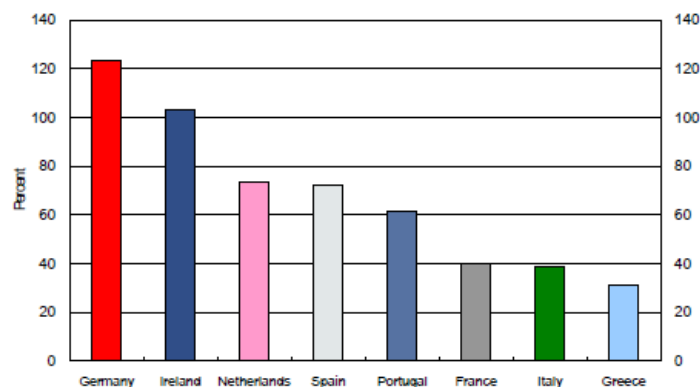
¹ Not enough time has elapsed to measure Iceland's GDP three years after devaluation. Shown here is the most recent data: 2.5 years after devaluation.
Source: IMF (2011a).

Source: *Latvia's Internal Devaluation*, Mark Weisbrot and Rebecca Ray December 2011
www.cepr.net/documents/publications/latvia-2011-12.pdf

Devaluations typically work because if they come after periods of price stability, devaluation can have real effects due to rigidities and money illusion. It can create improved economic sentiment arising from strong demand, higher export profits and temporary employment increases in the short run when wage rigidities can be relied on.

As the following chart shows, the periphery has massively lagged Germany, Ireland and the Netherlands in terms of exports. The very poor export growth of the past decade indeed *requires* a devaluation to boost the competitiveness of periphery countries.

Figure 3. Cumulative Real Export Growth, 1999-2011:Q3*



Note: *Data for Greece is through 2011:Q1.
Sources: Haver Analytics, Eurostat, and Citi Investment Research and Analysis.

Source: Empirical and Thematic Perspectives Germany's "Windfall" from Euro-Area Membership and European Imbalances, Citigroup Global Markets

In this section, we will look at the experience of countries that defaulted and devalued and show how completely misguided catastrophic predictions about the fate of the economies before the crises turned out to be.

ASIAN LARGE SCALE PRIVATE DEFAULTS AND DEVALUATION, 1997

The Asian crisis shows how defaults and devaluations work to make countries more competitive, clear balance sheets of unwanted debt and allow for strong, sustained growth afterwards.

Before the 1997 crisis, East Asia was booming. From 1993 to 1996, the nine major East Asian countries – China, Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand averaged annual GDP growth over 6% each year from 1993-1996. Annual net capital inflows to Asia doubled during the period and cross border banking claims grew by almost 60%. This led to property and stock market bubbles, and Asian countries built up large short term borrowing in dollars to developed countries.

Asia had every ingredient for a blow-up before the wave of defaults and devaluations of 1997. Almost all the Asian borrowing was short term in nature (under 12 months) and much of it was in dollars. This created a foreign exchange asset liability mismatch. Also, while liabilities were short term and liquid, assets were often longer term and illiquid. Asian economies thus had not only a foreign exchange asset/liability mismatch; they also had a liquidity and maturity mismatch.

The events surrounding the Asian crisis began in early 1997 with the bankruptcy of several Korean conglomerates. During the summer the Thai baht, the Indonesian rupiah and the South Korean won all devalued.

Almost all local leaders denied that the currencies would be devalued, right up until the crisis. For example, according to the New Straits Times, on June 20th, 1997, "When asked if there would be a devaluation after [Finance Minister] Amnuay's departure, the bank's assistant governor Siri Ganjarerndee, told reporters 'The market is unduly panicking. There is no need to worry [about a devaluation].'" A few days later on 30 June 1997, Prime Minister Chavalit Yongchaiyudh said that he would not devalue the baht. The Thai baht was devalued two days later, on July 2nd.

On 11 August 1997, the IMF unveiled a rescue package for Thailand with more than \$17 billion, subject to conditions such as passing laws relating to bankruptcy (reorganizing and restructuring) procedures and establishing strong regulation frameworks for banks and other financial institutions. The IMF approved on 20 August 1997, another bailout package of \$3.9 billion.

At the time many people were predicting much slower growth. Nikhil Srinivasan, a vice president at Morgan Stanley in Bangkok said, "Asia has to be prepared for much slower growth in the coming 10 years. These tigers are going to be roaring much less loudly." (Source: NY Times, As Currency Crisis Roils Asia, Thais Ask IMF's Help, by Edward A. Gargan July 29, 1997)

Despite initial predictions of catastrophic collapses and Armageddon, Asia has done extremely well after large scale defaults and devaluations.

After the devaluation, Indonesia, South Korea, and Thailand experienced short, sharp downturns, but then grew quickly for the next decade and achieved pre-crisis GDP levels within two to three years. The following chart shows Indonesia's evolution.



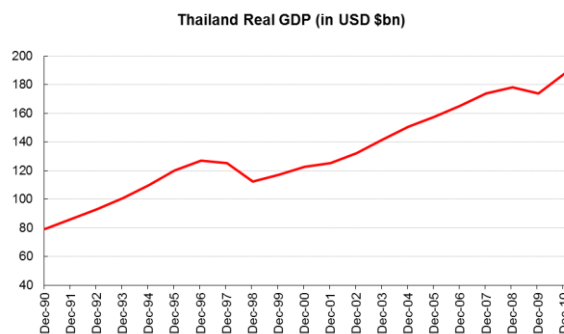
Source: Bloomberg, World Bank

South Korea saw its economy contract sharply for four quarters, but then bounced back very strongly and grew consistently for the following ten years. Within two years, South Korea's real GDP level had fully recovered from the downturn.



Source: Bloomberg, World Bank

Thailand experienced a very sharp contraction for one year, but was growing again strongly within two years. In fact, within two years Thailand's real GDP had reached a new peak. By 2001, Thailand's economy had recovered. The increasing tax revenues allowed the country to balance its budget and repay its debts to the IMF in 2003, four years ahead of schedule.



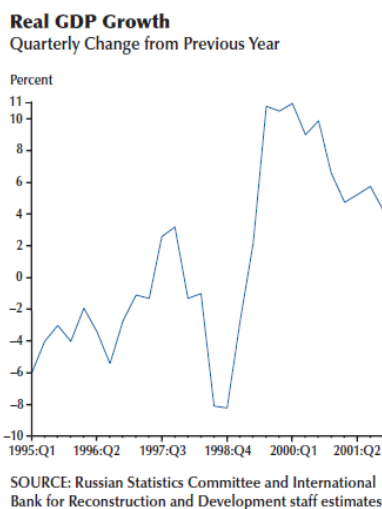
Source: Bloomberg, World Bank

RUSSIAN SOVEREIGN DEFAULT AND DEVALUATION 1998

Much like Greece today, the international community, the IMF, governments and holders of Russian debt thought default would be catastrophic. The government was told repeatedly that default would mean that Russia wouldn't be able to access the credit markets for a generation and that foreign money would never dare return.

Following the Asian crisis, in late 1997 and early 1998, Russia received very large loans from the IMF and the World Bank because Russia had trouble accessing international debt markets. Much like Greece today, borrowings from other sovereigns and the IMF did not resolve the solvency crisis. Ultimately, in August 1998, Russia defaulted on its sovereign debt and devalued its currency.

The expected catastrophe didn't happen. The pain lasted only about six months, followed by a decade long boom. The Russian stock market, which had declined by 90%, increased over 400% over the next decade. Russian industrial output rose over ten times over the next decade. The private sector benefited massively from the boost to competitiveness provided by the devaluation.



Source: *A Case Study of a Currency Crisis: The Russian Default of 1998* Abigail J. Chiodo and Michael T. Owyang, Federal Reserve Bank of Saint Louis research.stlouisfed.org/publications/review/02/11/ChiodoOwyang.pdf

Contrary to dire prophecies, foreign investors resumed lending to Russia within a year. Once growth returned, the Russian government paid a large portion of its debts in full, usually ahead of schedule.

ARGENTINA SOVEREIGN DEFAULT AND DEVALUATION 2002

The fiscal history of Latin America ... is replete with instances of governmental default. Borrowing and default follow each other with almost perfect regularity. When payment is resumed, the past is easily forgotten and a new borrowing orgy ensues.

Max Winkler, *Foreign Bonds: An Autopsy*, Rowland Swain Co., Philadelphia 1933

During the 1990s, seeking to tame hyperinflation, Argentina had tied the value of its peso to the American dollar. This strategy did not work in the long run because Argentina developed an overvalued real effective exchange rate relative to the dollar. The decision by Brazil, its largest trading partner, to devalue the Brazilian Real in 2001 made the Argentinian peso very uncompetitive.

Argentina's fiscal predicament before it defaulted seems tame compared to the situation of the European periphery today. At the time of its default, Argentina had a fiscal deficit of about 3% of GDP. Greece's deficit was over 10% of GDP in 2010. Argentina's total debt to GDP level was also very low coming in at 54% vs Greece's debt of over 150%.

Argentina was forced to default and devalue in late 2001 and early 2002. Despite dire predictions, the economy did extraordinarily well:

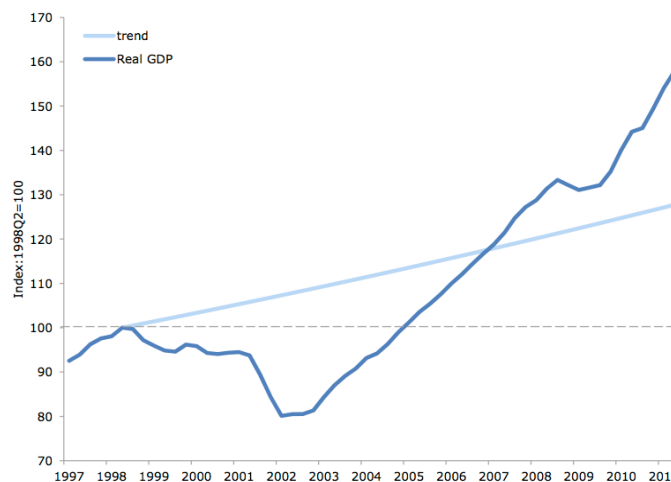
In December of 2001, the government defaulted on its debt, and a few weeks later it abandoned the currency peg to the dollar. The default and devaluation contributed to a severe financial crisis and a sharp economic contraction, with GDP shrinking by about 5 percent in the first quarter of 2002 and nearly 11% for the full year. However, recovery began after that one quarter of contraction, and continued until the world economic slowdown and recession of 2008-2009. The economy then rebounded, and the IMF now projects growth of 8 percent for 2011.

Argentina's real GDP reached its pre-recession level after three years of growth, in the first quarter of 2005. Looking at twenty-year trend growth, it reached its trend GDP in the first quarter of 2007.

Source: *The Argentine Success Story and Its Implications*, Mark Weisbrot, Rebecca Ray, Juan Montecino, and Sara Kozameh, Center for Economic and Policy Research, 2011 <http://www.cepr.net/documents/publications/argentina-success-2011-10.pdf>

As the following chart shows, once Argentina defaulted and devalued, it experienced two quarters of economic contraction. Its longest contraction happened as it postponed default. This is a very strong lesson to Europe. **Once Argentina defaulted and devalued economy has grown by more than 8% a year since 2003.**

FIGURE 1
Real GDP: Actual and 20-Year Trend (Seasonally-Adjusted)



Source: INDEC 2011a, IMF 2011b and Authors' Calculations.

Source: *The Argentine Success Story and Its Implications*, Mark Weisbrot, Rebecca Ray, Juan Montecino, and Sara Kozameh, Center for Economic and Policy Research, 2011 <http://www.cepr.net/documents/publications/argentina-success-2011-10.pdf>

The Argentine government waited until 2005, when its economy was already in recovery, to carry out the first of two debt restructurings. Non-government foreign investors took haircuts of almost 70%. However, the one creditor that was paid back in full in 2006 was the International Monetary Fund. (Today, private Greek bondholders are contemplating similar haircuts, while the IMF is likely to be paid back in full.)

The catastrophic consequences that investors predicted for Argentina never happened. Argentina was able to grow quickly, and indeed, it was not locked out of international debt markets. As a recent study of Argentina concluded:

We show that the Argentine case contradicts many of their standard predictions, in particular its posterior lack of access to international credit, restriction to international trade and negative economic growth. Moreover, it corroborates the historical fact that many defaulters “get away with it.”

Source: *Argentina’s Default and the Lack of Dire Consequences*, Werner Baer, Diego Margot, Gabriel Montes-Rojas, City University London Department of Economics, Discussion Paper Series No. 10/09
www.city.ac.uk/~data/assets/pdf_file/0009/73845/1009.pdf

INFLATION RISES AFTER BANKING CRISES AND SOVEREIGN DEFAULTS

Exiting is not without costs, but the costs are manageable and indeed necessary. The primary macroeconomic side-effect of a default and exit would be higher inflation.

Defaults, devaluation and inflation are inevitable, if history is any guide. They happen regularly and are not uncommon. After the Lehman bankruptcy, this is exactly the pattern the world finds itself in. As Reinhart and Rogoff have shown, the typical pattern is for banking crises to lead to sovereign defaults and for sovereign defaults to lead to inflation.

BANKING CRISIS --> DEFAULT --> INFLATION

This is beautifully illustrated by the following chart by Reinhart and Rogoff in their work on banking crises:

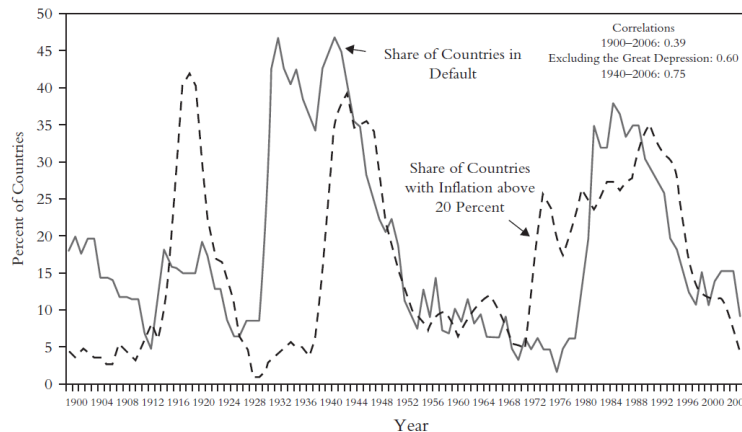


Figure 8.2 Inflation and External Default: 1900–2006

Source: Reinhart and Rogoff, “Banking Crises: An Equal Opportunity Menace,”
www.bresserpereira.org.br/terceiros/cursos/Rogoff.Banking_Crises.pdf

Indeed, inflation is a key remedy for high debt levels that works by eroding the real value or burden of debt. Defaults and devaluations go hand in hand. Government defaults typically lead foreigners to sell the local currency, leading towards weaker exchange rates. A devaluation makes prices for imported goods more expensive and leads to inflation. At the same time, governments and central banks fight the downturn with more expansive monetary policies in order to reduce the real value of debt, which leads to higher inflation.

Interestingly, countries exiting a currency union typically experience higher inflation rates before and after exit. Some of this is structural due to higher inflation rates in the exiting country, but it is also due to the effects of devaluation. Volker Nitsch has noted this in his study of currency exits:

The most convincing piece of evidence, however, is the economically and statistically large difference in the behavior of inflation between sustained and broken currency unions. Country pairs in dissolved currency unions tend to have a much higher rate of inflation and display also a much larger difference in inflation rates than country pairs in sustained currency unions. Moreover, the deviation from a typical currency union pair seems to accelerate during the run-up to the currency union break.

Source: *Have a Break, Have a... National Currency: When do Monetary Unions Fall Apart?* Volker Nitsch, CESINFO Working Paper No 113. January 2004

CONCLUSION

This paper has shown that many economists expect catastrophic consequences if any country exits the euro. However, during the past century over one hundred countries have exited currency areas with little downward economic volatility. The mechanics of currency breakups are complicated but feasible, and historical examples provide a roadmap for exit. The real problem in Europe is that EU peripheral countries face severe, unsustainable imbalances in real effective exchange rates and external debt levels that are higher than most previous emerging market crises. Orderly defaults and debt rescheduling coupled with devaluations are inevitable and even desirable. Exiting from the euro and devaluation would accelerate insolvencies, but would provide a powerful policy tool via flexible exchange rates. The European periphery could then grow again quickly, much like many emerging markets after recent defaults and devaluations (Asia 1997, Russia 1998, and Argentina 2002). **The experience of emerging market countries after default and devaluation shows that despite sharp, short-term pain, countries are then able to grow without the burden of high debt levels and with more competitive exchange rates. If history is any guide, the European periphery would be able to grow as Asia, Russia and Argentina have.**

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