Investment Opportunities in a World of Hurt

By William W. Priest, CEO, Co-CIO and Portfolio Manager

Last August, we published a whitepaper entitled: *The Road to Perdition?* In it, we demonstrated that the vast majority of growth in U.S. GDP for the period 1982 through 2008 was built on the simultaneous increase in leverage that occurred in the consumer and government sectors of the economy. The strong consumer and government balance sheets of the past were gone. As a result, we concluded that Americans were in for a long period of austerity and a major reset of expectations, and that Europeans had an even rockier road ahead, especially since it was unclear whether or not the region's monetary union could be saved.

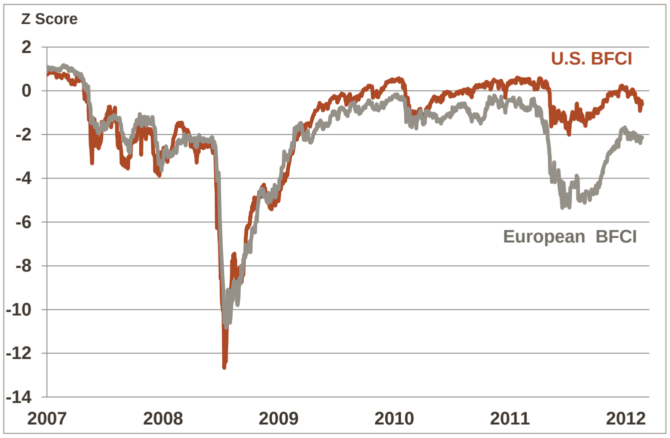
Where are we today? The answer, unfortunately, is a grim one. The debt situation is worse now than it was a year ago, with higher debt-to-GDP ratios in most of the developed world. Fiscal deficits have continued to expand. Economic growth continues to be weak throughout the developed world despite massive monetary and fiscal stimuli. The international financial system remains crippled with large unrecognized losses, and although there has been some improvement in the U.S., Europe's banks are essentially insolvent. Recession, therefore, seems inevitable within the euro zone. And because currency devaluation is not a policy option for countries who have adopted the euro, austerity is the only path to "fixing" these troubled economies, barring a fiscal union or some sort of euro bond.

THE TROUBLE WITH EUROPE: AUSTERITY AND ENTITLEMENT

Especially in comparison with Germany, the rest of Europe seems in particularly bad shape. Indeed, over the past decade, productivity measures suggest the peripheral European countries have been experiencing a loss of relative productivity of about 3% per year. As a result, the periphery is roughly 30% less efficient than Germany today. If one combines the large debt-to-GDP ratios of these countries (sovereign plus private sector debt) with their relatively uncompetitive economies (which do not have their own currencies), austerity is once again the only policy left. In other words, living standards must fall and debt must shrink relative to the nation's GDP in order for any semblance of a recovery to take place.

This is easier said than done in a world where the desires of the populace have come to be viewed as entitlements. Entire segments of European citizenry seem to think that government funding is a fundamental right, something that comes with no strings attached. "Give me what I want in terms of pensions, work, and healthcare. Protect me from change and market forces in my job. Oh, and tax someone else, preferably someone who has more than I do so I can enjoy these benefits." This social

FIGURE 1: BLOOMBERG FINANCIAL CONDITIONS INDEX



Source: Bloomberg (June 2012)
The Bloomberg Financial Conditions Index combines yield spreads and indices from money markets, equity markets, and bond markets into a normalized index.

mindset has collided with an economic reality that has caused nine governments to fall since the euro crisis began. Frankly, Europe is a mess and is only going to get messier.

Underlying much of this instability is the issue of liquidity. Figure 1 shows the Bloomberg Financial Conditions Index for the U.S. and Europe over the past five years. This index is a collection of measures of money market instruments, bonds, and equities, all of which are converted into a z-score which represents the standard deviation around a norm.

As the figure indicates, the world was working pretty well until August 2007, when a French bank had trouble meeting redemption requests and valuing certain assets in one of its funds. The ECB poured in €100 billion of liquidity the following day. Sensing the onset of a liquidity crisis, our Federal Reserve quickly followed suit, creating what was essentially a two-standard-deviation event. (See Figure 1 around August 2007.) The BFCI then moved sideways for just over a year until Lehman Brothers and AIG collapsed: a catastrophic 12-standard-deviation event that created what was probably the riskiest financial moment since WWII. Central banks throughout the world jumped in with very expansive monetary policies and governments dusted off their fiscal expansion plans. As a result, the liquidity crisis was solved in an astonishingly short period of time. A negative 12-standard-deviation mark became a minus 4 measure by April 2009. In the U.S., we were back to normal just over a year later: a remarkable achievement that can be credited to Fed Chairman Bernanke and his policies.

Because it is a monetary union and not a fiscal one,[1] Europe met a different fate. Even though their liquidity saga started out looking like ours, it wasn't resolved as neatly. Last summer, Greece's economic woes began to threaten the entire European banking system. Having Mario Draghi succeed Jean-Claude Trichet as the president of the European Central Bank was a wise move, but the situation continued to unravel nonetheless, as highlighted by the BFCI for Europe.

Saving the euro will require a concerted effort toward fiscal union. Given the varied work ethic of each country, the immobility of labor, and language barriers, this will be far easier said than done. The monetary cost of saving the euro will also be extremely high, exceeding a trillion euros by some guestimates. But are the costs of not saving it even higher? It is our view that Greece will probably leave the euro eventually, and there will be an attempt to build a firewall around the prospects of contagion. The fact remains that, by 2013 or 2014, the euro may dissolve. This would drag down growth rates in every corner of the globe.[2]

[1]Milton Friedman has suggested that the euro may be fundamentally flawed because there was no fiscal union provision at its inception.
[2]Please see the attached Appendix I, which offers *The Economist's* opinion on how to save the euro.

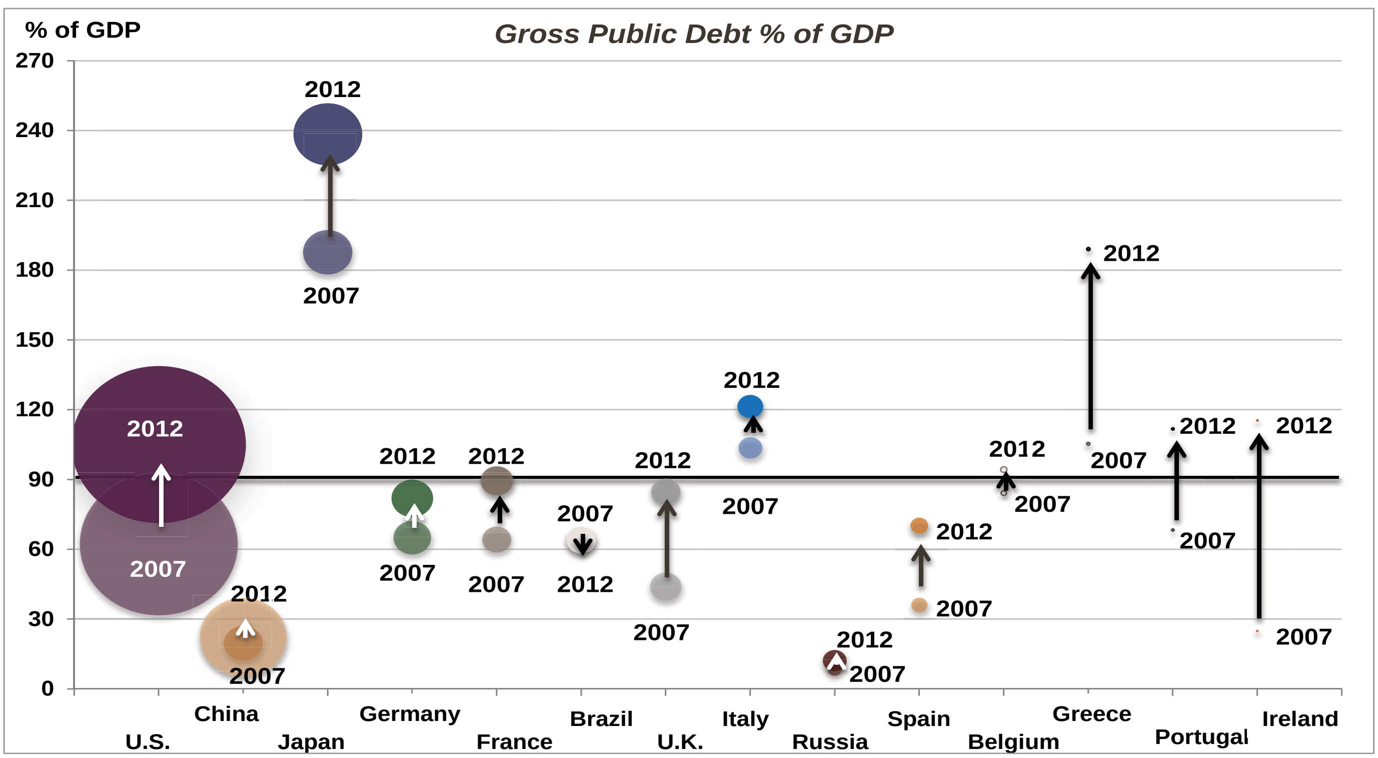
THE DEBT MONSTER

It was the ECB's introduction of the Long-Term Refinancing Operation (essentially a three year Repo) that finally put a temporary halt to the risk of bank failure. Markets responded very positively, as financial institutions were able to borrow what was, in essence, free money that was then used to buy their country's sovereign debt at yields three to five times higher than the cost of capital available through the LTRO. As a result, the debt yields among the PIIGS fell quite a bit from their November 2011 levels.

But while the liquidity risk was materially lessened, the solvency problem was getting worse. Just look at Figure 2. Debt to GDP for virtually every country has been rising rapidly since the crisis began in 2007. The State is playing a larger and larger role in the economy in order to offset the costs of an enormously over leveraged financial system.

FIGURE 2: DEBT OVERHANG WILL PERSIST FOR MANY YEARS — WHY THE 90% LINE?

Bubble sizes correspond to the GDP of the country.



Source: IMF, Epoch Investment Partners (January 2012)

The magnitude of our debt problem is striking and bodes ill for the near- to medium-term health of the global economy. Note the dark horizontal line at 90% in Figure 2. When sovereign debt to GDP goes above 90%, three things happen. First, future growth rates of GDP shrink by 100 to 150 basis points, as debt service costs consume more and more of annual GDP. Second, structural unemployment rises and stays well above average for many years. Third, the recovery from the financial crisis is slow, ranging from five to eight years.[3] So according to Figure 2, the world is in for a growth rate well below that of the past three decades.

The situation described in Figure 2 had many causes, one of which was certainly the aforementioned sense of entitlement felt by the citizens of the developed world: a point of view that politicians were more than happy to support if it helped them get elected. Developed countries have had their cake and eaten it too for many, many years. If we wanted something, there were no real sacrifices to be made. We simply paid for it in cash or charged it to the future. When current incomes began to stagnate in real terms — as they have over the past two decades — we began to borrow more in order to keep feeding our desires, securitizing assets wherever possible to fund consumption. In the U.S., our houses became ATMs. In the words of Warren Buffet, the U.S. was becoming a nation of share-croppers; to maintain our living standards, we were selling off what we owned even if that meant we would eventually be left with nothing.

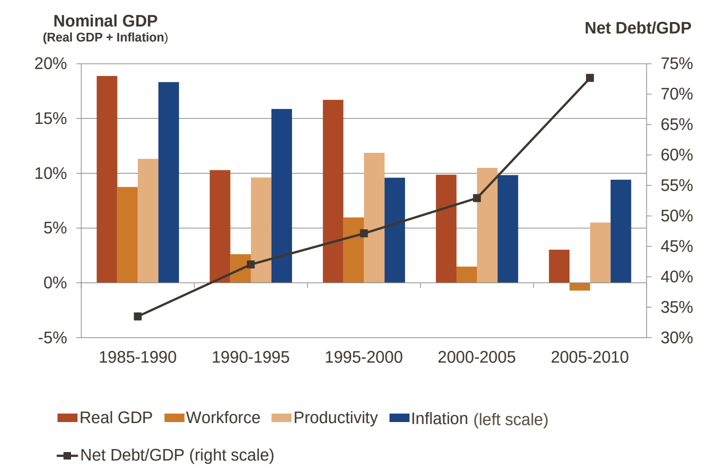
Our behavior, based on this false sense of entitlement, must change. There is a definitive and difficult choice to be made with regard to how we use our capital. When we have a dollar, we can choose to spend it or we can use it to pay down debt. We can no longer charge things to the future. We must bring the growth rate of our debt below that of our GDP in order to shrink the ratio of debt to GDP: an achievement that, while necessary in the long-term, will cause near-term growth to slow from historical averages. But how do we accomplish this end when the will of the populace seems to resist it? Despite the pain of the recent recession, we still want our entitlements. We have yet to fully realize that privileges are not rights and that any politician who assures us otherwise is simply not telling the truth.

DEBT AND GDP: A DELICATE DANCE

Our current situation is complicated even further by the intricate relationship between debt and GDP. There are only three variables that determine GDP, but each one can be turbo-charged by a fourth factor: debt. In Figure 3 , we show global GDP growth alongside workforce growth, productivity, and inflation. The black line shows debt to GDP in the developed world. Clearly, debt has had a profound influence on the three determinants of GDP. Today, with future debt increases limited by a slow-growing economy and debt-to-GDP ratios at historically dangerous levels, growth will be reduced to the extent debt reduction occurs.

With respect to the U.S., this deleveraging is already underway. Europe, too, is being forced to slow its rate of debt accumulation due to the fact that money can no longer be borrowed cheaply. Taken together, these attempts to control the growth of debt have had a very deflationary effect.

FIGURE 3: CHANGE IN G7 GDP COMPONENTS VS. NET GOVERNMENT DEBT/GDP



Source: Bloomberg (June 2012)

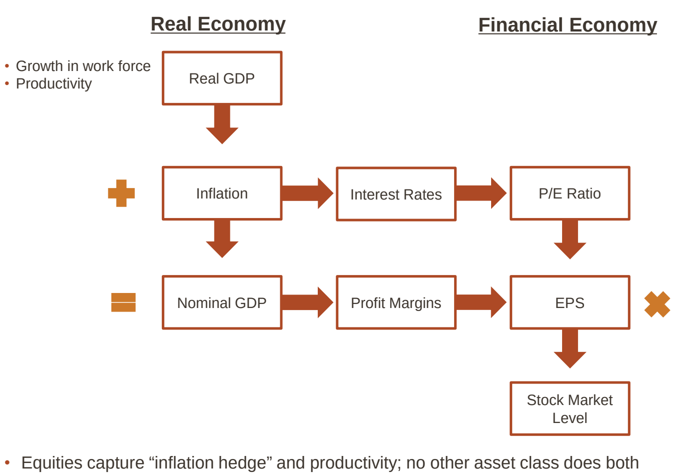
[3]Reinhart, Carmen M. and Kenneth S. Rogoff. *This Time is Different: Eight Centuries of Financial Folly.* Princeton: Princeton University Press, 2009.

The best way to solve the debt problem is to grow. But that appears incredibly difficult today. The second-best way is to inflate the economy so that debt is paid off with cheaper currency. The world's central banks are desperately trying to inflate but, so far, this has not resulted in growth but in liquidity. Most of the liquidity that has been created is trapped in the banking system, as demand for loans has been modest due to slow-growing economies and increased regulatory oversight.

Nevertheless, central banks will keep trying, largely because of their common dedication to the Taylor Rule. This rule was proposed in 1993 by John Taylor of Stanford University in his attempt to formulate a policy for the fed funds interest rate. It is based on the pursuit of twin mandates: limiting inflation and generating full employment. Although there are now several variations to the original equation, the initial idea was straightforward. With respect to the inflation variable, the rate should be 1.5 times the trailing-four-quarters level of the GDP deflator, while the full employment variable should be 0.5 times the output gap measure (the difference between theoretical GDP at full employment less the actual GDP level at present). Each variable carries a weight of 50% in the model. Hence, if inflation were 2%, then that variable suggests the central bank's interest rate should be +3%. If the output gap is 6%, that variable suggests a rate of -3%. So a central bank rate of 0% is the target when we combine the two variables and their weights in our example.

Indeed, given the slowdown in the global economy, an argument can be made for the central bank rate to be a negative number in real terms. Bernanke has effectively recommended as much, and soon we believe we will see Draghi take ECB rates to zero as well in an attempt to slow the development of the impending recession in Europe. Interest rates will stay low for a long time until either growth accelerates or inflation arrives. In the meantime, it is highly likely that some form of quantitative easing and a proposal to guarantee sovereign debts will be considered in Europe: a step that, as we previously mentioned in *The Road to Perdition?,* will be taken more out of fear than wisdom.

FIGURE 4: MARKET LINKAGES REAL VS. FINANCIAL ECONOMY



Source: Crestmont Research; Epoch Investment Partners, Inc.

LONG-TERM OPPORTUNITIES IN EQUITIES

In a world of slow growth, the potential disintegration of the euro, and a slowdown in China, what are the investment opportunities, if any?

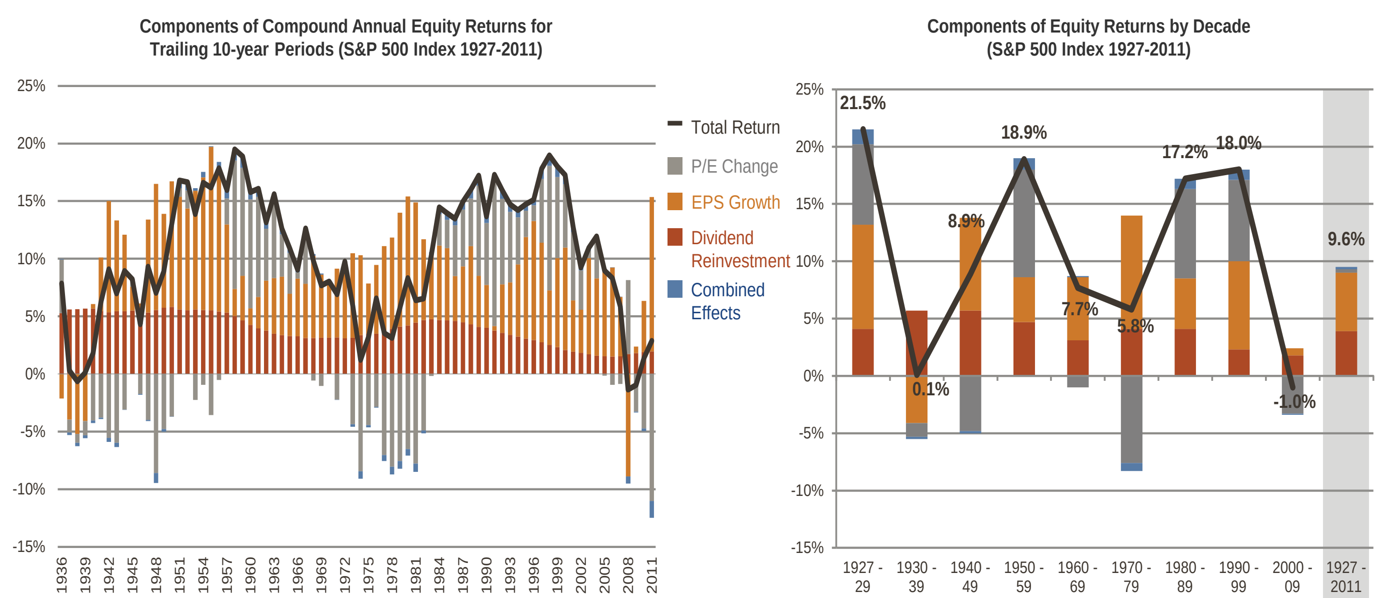
To answer this question, let's take a quick look at the relationships between the real economy and the financial economy, as shown in Figure 4. We have already discussed the components of GDP, but not its link to equity earnings. If one holds profit margins constant, nominal GDP and earnings are highly correlated over time. This means earnings reflect inflation and capture productivity gains. No other asset class does both. This is why investors both want and need to own equities in the long run.

The mechanism behind the enduring attractiveness of equities is as follows. Inflation drives P/E ratios through the mechanics of interest rates. P/E ratios and interest rates are inversely correlated, with a correlation coefficient of negative 0.8. If we square the correlation coefficient (coefficient of determination) this suggests about two-thirds of the change in P/Es is caused by interest rate movements. The P/E ratio is also affected by future market volatility measures relative to past ones (if volatility is higher, there is downward pressure on P/Es) and lower expectations for economic growth relative to long-term averages (if growth rates are lower, there is more of a headwind for the expansion of valuation multiples).

The takeaway from Figure 4 is that equities hedge inflation and capture productivity growth. If policy makers can create either growth or inflation, equities will win. And they will win big relative to bonds, which would be severely hurt by the eventual rise in interest rates. Nevertheless, in the very short run, bonds will probably be viewed as safe havens until the euro crisis is concluded and either growth or inflation catches on.

What equity strategies will work best? Figure 5 shows a rolling ten-year history of returns along with returns by decade since 1927, which have varied from 0% to nearly 20% with a mean return of over 9%. There are only three determinants of returns — earnings, dividends and P/Es — but their order of importance varies greatly from decade to decade. In the 1980s and 1990s, P/E multiples quadrupled as interest rates fell from 13% to 6%. Only one concept really mattered in those days: staying fully invested with a Beta of at least 1. Capturing economic growth and improving valuation metrics were everything. Volatility management strategies were buried in an avalanche of growth and P/E expansion. As a result, most hedge funds went out of business.

FIGURE 5: THE COMPONENTS OF EQUITY RETURNS



Source: Epoch Investment Partners, Inc.; S&P (1927-2011)

Fast forward to the decade of the 2000s. During this period, ten-year equity returns were 1%, volatility was high, and two market crashes occurred. Volatility strategies became popular, particularly if they had high-single-digit returns. The attraction of these strategies continues to this day.

Another type of strategy has proven relevant in this environment as well. Whereas dividends did not matter in the '80s and '90s, they have dominated returns in equity indices in the last decade. In a world of low growth, low interest rates, and a low likelihood of P/E ratio expansion, dividend strategies will continue to prove to be very successful. Not only will dividends as a percentage of total return be higher than historical averages, the demographics in the developed world will require an increasing number of income solutions. Such income solutions need a growth rate and must hedge against inflation. Thus, equity dividend strategies will play a significant role in long-only opportunities.

Another strategy to highlight is the concentrated long-only strategy. Successful concentrated strategies can be built around several long-run factors, but a dominant one will be the rise of "global champions." The theory behind this strategy is David Ricardo's Law of Comparative Advantage, first espoused in 1817. It is this theory that drives globalization. Its basic premise is that every nation has a production activity that possesses a lower opportunity cost than that of another nation, which means that trade between the two nations can be beneficial to both if each specializes in the production of the good with the lower relative opportunity cost. This law is not only fundamental to the study of international trade, but the inspiration behind our belief that, when scouring the globe for investment opportunities, the focus should be on companies and not geographies. (See Appendix II for an example and fuller discussion.)

CONCLUSION: STABILITY IN AN UNSTABLE WORLD

All told, we're in for some rough sailing. The overall macro environment will get worse before it gets better. Growth will be well below historical averages and volatility in the capital markets will remain elevated. Nevertheless, investors need to capture productivity growth and protect themselves from inflation. Plus, a very large demographic will require an income stream to finance retirement needs.

For these reasons, low-volatility strategies driven by free-cash-flow methodologies should win in the long-only world, particularly as "downside capture" ratios, Sharpe ratios, and information ratios trump the principles behind the traditional nine-box model of manager classifications based on the accounting metrics of price-to-book value ratios, price- to-earnings ratios, and mean-reversion assumptions.

Dividend strategies are in the early days of dominating traditional equity products. Whereas dividends mattered little in the 1980s and 1990s, they will play a central role in the coming years. For example, U.S. companies paid out a net $24 billion in dividends in the first quarter of 2012, a near 30% increase from a year ago. The number of U.S. firms boosting their dividends rose at a similar rate to 677. Meanwhile, payout ratios of around 30% are far below their historical average of 52% and companies have record amounts of cash on their balance sheets, which means that few constraints exist for those firms wishing to maintain or increase their dividend payouts. Importantly, capital returned to shareholders will include not only cash dividends but share buybacks and debt pay downs, as well. Collectively, we call these measures "shareholder yield," and we foresee significant rewards for the investor willing to seek them out.

Finally, it's important to keep a close eye on opportunities beyond our own borders. The world has globalized at a rapid pace over the past 30 years. Global exports relative to global GDP has risen 50% over that period as the Law of Comparative Advantage played out in earnest. The changed nature of supply chains and the resulting effect on world commerce has led to the development of "global champions" that have the ability and scale to reconfigure their factors of production and position themselves to the areas of future growth, no matter where they appear. Concentrated equity portfolios focused on these companies will be a winning strategy in the future.

Appendix I
The choice

A limited version of federalism is a less miserable solution than the break-up of the euro

May 26, 2012, *The Economist*

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WHAT will become of the European Union? One road leads to the full break-up of the euro, with all its economic and political repercussions. The other involves an unprecedented transfer of wealth across Europe's borders and, in return, a corresponding surrender of sovereignty. Separate or superstate: those seem to be the alternatives now.

For two crisis-plagued years Europe's leaders have run away from this choice. They say that they want to keep the euro intact—except, perhaps, for Greece. But northern European creditors, led by Germany, will not pay out enough to assure the euro's survival, and southern European debtors increasingly resent foreigners telling them how to run their lives.

This has become a test of over 60 years of European integration. Only if Europeans share a sense of common purpose will a grand deal to save the single currency be seen as legitimate. Only if it is legitimate can it last. Most of all, it is a test of Germany. Chancellor Angela Merkel maintains that the threat of the euro's failure is needed to keep wayward governments on the path of reform. But German brinkmanship is corroding the belief that the euro has a future, which raises the cost of a rescue and hastens the very collapse she says she wants to avoid. Ultimately, Europe's choice will be made in Berlin.

Last summer this newspaper argued that to break the euro zone's downward spiral required banks to be recapitalised, the European Central Bank (ECB) to stand behind solvent countries with unlimited support, and the curbing of the Teutonic obsession with austerity. Unfortunately, successive European rescue plans fell short and, though the ECB bought temporary relief by supplying banks with cheap, long-term cash in December and February, the crisis has festered and deepened.

In recent months we have concluded that, whether or not Greece stays in the euro, a rescue demands more. If it is to banish the spectre of a full break-up, the euro zone must draw on its joint resources by collectively standing behind its big banks and by issuing Eurobonds to share the burden of its debt. We set out the scheme's nuts and bolts below. It is unashamedly technocratic and limited, designed not to create the full superstate that critics (and we) fear. But it is plainly a move towards federalism—something that troubles many Europeans. It is a gamble, but time is running short. Rumours of bank runs around Europe's periphery have put savers and investors on alert. The euro zone needs a plan.

Goodbye to all that

Is the euro really worth saving? Even the single currency's diehard backers now acknowledge that it was put together badly and run worse. Greece should never have been let in. France and Germany rode a coach and horses through the rules designed to prevent government borrowing getting out of hand. The high priests of euro-orthodoxy failed to grasp that, though Ireland and Spain kept to the euro's fiscal rules, they were vulnerable to a property bust or that Portugal and Italy were trapped by slow growth and declining competitiveness.

A break-up, many argue, would allow individual countries to restore control over monetary policy. A cheaper currency would help match wages with workers' productivity, for a while at least. Advocates of a break-up imagine an amicable split. Each government would decree that all domestic contracts—deposits and loans, prices and pay—should switch into a new currency. To prevent runs, banks, especially in weak economies, would shut over a weekend or limit withdrawals. To stop capital flight, governments would impose controls.

All good, except that the people who believe that countries would be better off without the euro gloss over the huge cost of getting there. Even if this break-up were somehow executed flawlessly, banks and firms across the continent would topple because their domestic and foreign assets and liabilities would no longer match. A cascade of defaults and lawsuits would follow. Governments that run deficits would be forced to cut spending brutally or print cash.

And that is the optimistic scenario. More likely, a break-up would take place amid plunging global share prices, a flight to quality, runs on banks, and a collapse in output. Devaluation in weak economies and currency appreciation in strong ones would devastate rich-country producers. Capital controls are illegal in the EU and the break-up of the euro is outside the law, so the whole union would be cast into legal limbo. Some rich countries might take advantage of that to protect their producers by suspending the single market; they might try to deter economic migrants by restricting freedom of movement. Practically speaking, without the movement of goods, people or capital, little of the EU would remain.

The heirs of Schuman and Monnet would struggle to restore the Europe of 27 when it had been the cause of such mayhem—even if a euro-rump of strong countries emerged. Collapse would be a gift to anti-EU, anti-globalisation populists, like France's Marine Le Pen. There would be so many people to blame: Eurocrats, financiers, intransigent Germans, feckless Mediterraneans, foreigners of all kinds. As national politics turned ugly, European co-operation would break down. That is why this newspaper thinks willingly abandoning the euro is reckless. A rescue is preferable to a break-up.

A problem shared

But not just any rescue. Too much of the debate over how to save the euro puts the emphasis merely on a plan for growth. That would help, because growth makes debt more manageable and banks healthier. Mrs Merkel should have been more accommodating on this. But any realistic stimulus would be too modest to stem the crisis. The ECB could and should cut rates and begin quantitative easing, but official funds for investment are limited. More ambitious ways of boosting growth, such as the completion of a single European market for services, are sadly not even on the table.

In any case, the euro zone's troubles run too deep. Banks and their governments are propping each other up like Friday-night drunks. The ECB's support for the banks cannot prevent the weak economies of Spain, Portugal, Italy and Ireland from enfeebling their banks and governments. For as long as bond yields are high and growth is poor, sovereigns will face doubt about their capacity to service their debt and banks will see loans go bad. Yet that same uncertainty pushes up sovereign yields and stops bank lending, further inhibiting growth. Fear that the state might have to deal with a banking collapse makes government bonds riskier. Fear that the state could not cope makes a banking collapse more likely.

That is why we have reluctantly concluded that the nations in the euro zone must share their burdens. The logic is straightforward. The euro zone's problem is not the debt's size, but its fragmented structure. Taken as a whole, the stock of euro-zone public debt is 87% of GDP, compared with over 100% in America. Similarly, the banks are not too big for the continent as a whole, just for individual governments. To survive, Europe has to become more federal: the debate is how much more.

What's German for demoi?

A lot, according to some gung-ho federalists. For people like Germany's finance minister, Wolfgang Schäuble, the single currency was always a leg on the journey towards a fully integrated Europe. In exchange for paying up, they want to harmonise taxes and centralise political power with, say, an elected European Commission and new powers for the European Parliament. Voters will be scared into grudging acquiescence precisely because a euro collapse is so terrifying. In time, the new institutions will gain legitimacy because they will work and Europeans will begin to feel prosperous again.

Yet to see the euro crisis as a chance to federalise the EU would be to misread people's appetite for integration. The wartime generation that saw the EU as a bulwark against strife is fading. For most Europeans, the outcome of the EU's most ambitious project, the euro, feels like misery. And there is no evidence that voters feel close to the EU. The Lisbon treaty and its precursor, the EU's aborted constitution, were together rejected in three out of six referendums; ten governments reneged on promises to put constitutional reform to the vote. The parliament is hopelessly remote.

Another version of the superstate is to accept that politics remains stubbornly national—and to increase the power of governments to police their neighbours. But that, too, has problems. As the euro crisis has shown, governments struggle to take collective decisions. The small countries of the euro zone fear that the big ones would hold too much sway. If Berlin pays the bills and tells the rest of Europe how to behave, it risks fostering destructive nationalist resentment against Germany. And like the other version of the superstate, it would strengthen the camp in Britain arguing for an exit—a problem not just for Britons but for all economically liberal Europeans.

The €50,300 ($64,000) question

That is why our rescue seeks to limit both the burden-sharing and the concession of sovereignty. Rather than building a federal system, it fills in two holes in the single currency's original design. The first is financial: the euro zone needs a region-wide system of bank supervision, recapitalisation, deposit insurance and regulation. The second is fiscal: euro-zone governments will be able to manage—and reduce—their fiscal burdens only with a limited mutualisation of debt. But in both cases the answer is not to transfer everything to the EU level.

Begin with the banks. Since the euro's creation, European integration has moved farthest in finance. Banks sprawl across national borders. German banks fuelled Spain's property boom, while their French peers funded Greece's borrowing.

The answer is to move the supervision and support of banks (or at least big ones) away from national regulators to European ones. At a minimum there must be a euro-zone-wide system of deposit insurance and oversight, with collective resources for the recapitalisation of endangered institutions and regional rules for the resolution of truly failed banks. A first step would be to use Europe's rescue funds to recapitalise weak banks, particularly in Spain. But a common system of deposit insurance needs to be rapidly set up.

These are big changes. Politicians will no longer be able to force their banks to support national firms or buy their government bonds. Banks will no longer be Spanish or German, but increasingly European. Make no mistake: this is integration. But it is limited to finance, a part of the economy where monetary union has already swept away national boundaries.

The fiscal integration can also be limited. Brussels need not take charge of tax and spending, nor need Eurobonds cover all government debts. All that is required is for overindebted countries to have access to money and for banks to have a "safe" euro-wide class of assets that is not tied to the fortunes of one country. The solution is a narrower Eurobond that mutualises a limited amount of debt for a limited amount of time. The best option is to build on an idea put forward by Germany's Council of Economic Experts, to mutualise the current debts of all euro-zone economies above 60% of their GDP. Rather than issuing new national government bonds, everybody, from Germany (debt: 81% of GDP) to Italy (120%) would issue only these joint bonds until their national debts fell to the 60% threshold. The new mutualised-bond market, worth some €2.3 trillion, would be paid off over the next 25 years. Each country would pledge a specified tax (such as a VAT surcharge) to provide the cash.

So far Mrs Merkel has opposed all forms of mutualisation (and did so again this week—see Charlemagne). Under our scheme, Germany would pay more on a slug of its debt, subsidising riskier borrowers. But it is not a move to wholesale fiscal federalism. These joint bonds would not require intrusive federal fiscal oversight. Limited in scope and time, they do not fall foul of Germany's constitutional constraints. Indeed, they can be built from last autumn's beefed-up "six pack", which curbs excessive borrowing and deficits; and January's fiscal compact, which enshrines budget discipline in law and is now being ratified across the euro zone.

Even this more limited version of federalism is tricky. The single banking regulator might require a treaty change, which would be difficult when ten EU countries, including Britain, are not members of the euro. The treaty setting up Europe's bail-out fund would also have to be changed to allow money to be supplied directly to banks. Countries would have to find convincing ways to commit future governments to pay their share of the interest on the Eurobonds. Greece's debts so outweigh its economy that it would need a further rescue before entering any mutualisation scheme—though the sum involved is small on a continental scale.

So it is a long agenda; but it is more manageable than trying to redesign Brussels from the top down, and it is less costly than a break-up. Saving the euro is desirable and it is doable. One question remains: will Germans, Austrians and the Dutch feel enough solidarity with Italians, Spaniards, Portuguese and Irish to pay up? We believe that to do so is in their own interests. The time has come for Europe's leaders, and Mrs Merkel in particular, to make that case.

Appendix II
A Primer on The Law of Comparative Advantage

The Law of Comparative Advantage is one of the most powerful laws in economics. It drives any understanding of international trade and is behind the rapid rise of globalization that commenced with the fall of the Berlin Wall in 1989. Around that time, nearly three billion people joined our world of commerce, but brought little capital with them. A gigantic labor arbitrage ensued which is still playing out today: the West, along with Japan, contributed capital and technology and the emerging economies contributed an enormous supply of labor. As a result, our world became more interconnected than at any point in history. The nature of supply chain management was transformed, and "global champions" arose: companies that have the ability to reconfigure their factors of production and position themselves for future areas of growth anywhere in the world. Today, we believe that concentrated equity portfolios focused on these companies should be a winning strategy going forward. Home country bias, while still evident, diminishes every year as investors seek access to global growth through multinational companies.

To better envision the powerful role of the Law of Comparative Advantage, imagine two countries, A and B, and two products, food and clothing. From a resource standpoint, it takes country A one day to make one unit of food and two days to make one unit of clothing. Country B takes three days to make one unit of food and four days to make one unit of clothing. As Figure 1 shows, country A is more productive than B in both products in an absolute sense.

Let us now assume that the two products are desired in equal proportion within both countries. If one looks out 100 days, how would each country spend its labor units? Figure 2 shows that A would have to spend 33 days making 33 units of food and 66 days making 33 units of clothing to produce an equal number of food and clothing items. Similarly, B would take roughly 43 days to make 14 units of food and 57 days to make 14 units of clothing.

The Law of Comparative Advantage comes into play in the form of an important question: Is there a way to reconfigure the production of goods between the two countries to create a larger combined total of food and clothing items? The answer is yes and mechanics behind it are shown in Figure 3. If A spends 50 days making food and the other 50 days making clothing, it now has 50 units of food and 25 units of clothing. If B concentrates on only making clothing, it will make 25 units of clothing. Whereas

FIGURE 1

PRODUCTS AND LABOR COSTS

Product	Country A	Country B
1 unit of food	1 day's labor	3 day's labor
1 unit of clothing	2 day's labor	4 day's labor

FIGURE 2

PRODUCTION OUTPUT
Internal Only

Product	Country A 100 days	Country B 100 days	Total
Food	1/3 x 100 ÷ 1 = 33 units	3/7 x 100 ÷ 3 = 14 units	47 units
Clothing	2/3 x 100 ÷ 2 = 33 units	4/7 x 100 ÷ 4 = 14 units	47 units
Total	**66 units**	***28 units***	***94 units***

FIGURE 3

PRODUCTION OUTPUT Producing to Comparative Advantage			
Product	**Country A** 100 days	**Country B** 100 days	**Total**
Food	50 ÷ 1 day = 50 units	0	50 units
Clothing	50 ÷ 2 day = 25 units	100 ÷ 4 day = 25 units	50 units
Total	**75 units**	***25 units***	***100 units***

in Figure 2, A and B together produced only 94 units of food and clothing, we can see that by focusing on RELATIVE productivity advantages, the two can actually make 100 items of food and clothing.

However, each country wants an equal number of each good. So they have to trade. B will not trade unless it wins and neither will A. We can see that by producing to each country's relative advantage we have six more units of food and clothing — 100 in Figure 3 versus 94 in Figure 2. How should the six units be apportioned between the two countries? From Figure 1 we can see that A is three times more productive in food than B, and two times more productive in clothing than B. Hence, roughly speaking, A would get two-thirds of the increment and B would get one-third.

Move now to Figure 4. A now has 70 units of food and clothing in equal proportions, just as it desired, and B has 30 units food and clothing in equal proportions as well. BOTH COUNTIRES HAVE WON. By allocating resources to the production of the item with the greater comparative advantage, and then trading the excess of that good with the other country for the second item it desires, each country is able to come out on top. Through trade, A now has 70 units of food and clothing versus the 66 it had before trading (Figure 2). B has prospered as well with its combined total units rising from 28 to 30.

This is the power behind globalization: a force that is unlikely to diminish unless politicians are foolish enough to erect unnecessary trade barriers and capital controls. If these obstructions arise, the standard of living will decline everywhere. Today, the world is functioning according to the prosperous model outlined in Figure 4. If barriers are erected to trade, we would slide backwards from the 100 units of combined production and potentially all the way back to 94 units, causing poorer living standards throughout the world.

FIGURE 4

Reconfiguring Total to Reflect A's Relative Production Advantage to B (75/25=3:1)			
Product	**Country A** 100 days	**Country B** 100 days	**Total**
Food	35 units	15 units	50 units
Clothing	35 units	15 units	50 units
Total	**70 units**	***30 units***	***100 units***