

## Private equity in Europe: a constructive outlook in turbulent times

*Over the coming years four inexorable forces will play out against a difficult political, economic and financial backdrop, creating strong demand for private equity investment.*

- In Europe a number of areas need to be addressed to stabilise the situation; but political will has proved strong.
- Outline new arrangements are being worked out, and we judge that, crisis by crisis, Europe will proceed to a more sustainable configuration. Moreover Europe is not unique in the issues it faces.
- Meanwhile population ageing and growth, the IT revolution, and global warming are forcing economies to adapt.
- But government budgets are constrained, and banks are deleveraging at a pace not seen for decades.

With a plentiful supply of good assets to buy, Europe stands to be a positive environment for private equity over the medium term.

### The political and economic backdrop

**Progress in addressing EMU's design flaws was slow**

The euro area has a number of design flaws which have been known about even prior to the area's inception in 1999. These flaws became increasingly apparent in the macroeconomic data, but progress in addressing the situation was slow. Europe, being a collection of individual and individualistic nations, seems to need a crisis to provoke the reforms that are needed to prevent future crises. Policy changes at the European level, and particularly Treaty change, are complex and difficult to bring about.

**Investors brought the matter to a head**

Over the past year the matter was brought to a head by the world's investors, and Europe's policymakers now have to address both the design flaws and the range of repercussions that flowed from them. This challenge is considerable.

**A number of areas need to be addressed**

A number of areas need to be addressed to stabilise the situation. A decisive first step involves a clear, consistent, and workable policy framework, which includes both: greater centralised control of Member States' finances; and a mechanism to ensure compliant governments remain fully funded. Several detailed steps will be required:

- Addressing the banking problems that are intensifying across the continent
- Implementing structural reforms to boost competitiveness and growth, particularly in the periphery
- Reforming governance at the European level, with credibility drawn from Treaty change, or a new intergovernmental Treaty, to ensure:
  - A strengthened institutional framework for fiscal discipline over the medium-term
  - A credible back-stop funding facility to ensure funding at a reasonable rate for economies that are, and remain, solvent
  - An effective crisis resolution mechanism for the long term
- Writing down debt for the insolvent

Moreover, policy needs to proceed in a logical order. Central banks can properly serve as a lender of last resort to the banking system. Bankrolling governments, however, is altogether a different matter. Responsible central banks do not bankroll governments with unsound fiscal policies.

**Sequencing matters**

Once an economy's fiscal policies are judged to be sound, investor demand will bring the rate of interest down. Should investors collectively fail to appreciate the underlying soundness of a country's finances however, it can be appropriate for the central bank to nudge rates down by buying government bonds. In Europe, improving public finances has to start with fiscal reform, following which the ECB can become properly helpful.

*"What I believe our economic and monetary union needs is a new fiscal compact – a fundamental restatement of the fiscal rules together with the mutual fiscal commitments that euro area governments have made ... it is definitely the most important element to start restoring credibility. Other elements might follow, but the sequencing matters."*  
 (Mario Draghi, 1 Dec. 2011)<sup>1</sup>

**This requires much political will**

This requires much political will. The desire for a unified Europe and the will to ‘fix’ its problems have long been present. Back in March 2011, in *Europe will work*, we took as meaning what they said, repeated declarations by Heads of State that they are “ready to do whatever is required”<sup>2</sup> to protect the euro. More recently, that rhetoric has strengthened considerably:

**Rhetoric has strengthened**

*“Nobody should take for granted another 50 years of peace and prosperity in Europe ... that’s why I say: if the euro fails, Europe fails ... We have a historical obligation: to protect by all means Europe’s unification process begun by our forefathers after centuries of hatred and blood spill. None of us can foresee what the consequences would be if we were to fail.” (Mrs Merkel, 26 Oct. 2011)<sup>3</sup>*

Furthermore, the broad directions of policy are starting to be outlined:

*“Fiscal union is the aim, one with real power. There is no other way ... We are working for treaty change, we want to avoid a split between euro and non-euro countries.” (Mrs Merkel, 2 Dec. 2011)<sup>4</sup>*

This strength of political will seems likely to be maintained, and may even augment further, provided that European society remains reasonably socially cohesive.

**Outline new arrangements are starting to emerge**

Outline new arrangements are starting to be worked out. The EU summit of 8 December 2011 set out the beginnings of a roadmap to stabilise the euro area, largely through institutional reform. This roadmap includes powers to enforce deficit and debt limits of euro-area members with quasi-automatic sanctions; and reject national budget proposals that potentially violate these limits.

*“It’s going to be the basis for a good fiscal compact and more discipline in economic policy in the euro area members.” (Mario Draghi, 8 Dec. 2011)*

The crisis resolution mechanism was also brought forward to 2012, together with a commitment to follow IMF principles in respect of private-sector involvement in future debt resolution. If 26 out of 27 EU Members sign up to a new fiscal compact, the new framework will be credible; and it will still be able to draw on European institutions. A succession of summits through 2012 is to take these various elements further.

**Conclusion on Europe**

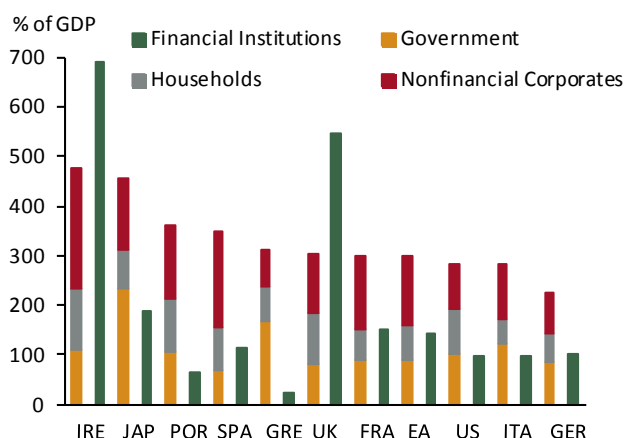
**On balance we judge that Europe will, crisis by crisis ...**

On the positive side, a clearer path towards closer fiscal union is beginning to emerge, and this stands to pave the way for greater support from the ECB, thereby buying time to institutionalise the reforms that are needed to stabilise the situation. On the negative side, the crisis will likely continue, and could intensify, perhaps around events such as further downgrades in the credit ratings of core Europe, and the EFSF; negotiation of new institutional arrangements between member countries; intensifying banking pressures across Europe; the elections in France; and a possible recession.

**... proceed to a more sustainable configuration**

On balance we judge, that – crisis by crisis – Europe will proceed towards an ultimately more

Figure 1: Gross debt/GDP ratios, selected advanced economies, 2011



Source: IMF Global Financial Stability Report, September 2011

Figure 2: Sectoral breakdown of total debt/GDP ratios, 2011

Gross debt (% of 2011GDP)	IRE	JAP	POR	SPA	GRE	UK	FRA	EA	US	ITA	GER
Nonfinancial Corporates	245	143	149	192	74	118	150	138	90	110	80
Households	123	77	106	87	71	101	61	70	92	50	60
Government	109	233	106	67	166	81	87	89	100	121	83
Total	477	453	361	346	311	300	298	297	282	281	223
Financial Institutions	689	188	61	111	22	547	151	143	94	96	98

Source: IMF Global Financial Stability Report, September 2011  
Notes: Cells shaded red indicate a value in the top 25% of a pooled sample of countries from 1990-2009 (or longest sample available).

sustainable configuration, and hence that the euro will survive, in one form or another. Policy steps are being taken, but the path will be bumpy.

### A global perspective

#### Europe is not unique in the issues it faces

Europe however is not unique in many of the issues it faces. Total debt is also several multiples of GDP in many major non-euro-area economies, including importantly the US, the UK, and Japan. For further information, and sectoral breakdowns see Figures 1 and 2.

#### The fiscal position in the US is worse than in the euro area

Indeed, the fiscal position in the US is worse than that of the euro area in aggregate. US gross public debt in 2011 is estimated at 100% of GDP, over 10 percentage points larger than the euro area (89%); and the US public deficit (10%) is estimated to be more than twice that of the euro area (4%). Moreover, on present policies, the situation in the US is set to deteriorate further. In the IMF forecasts, the US deficit remains relatively large, and debt rises continually, reaching 120% or thereabouts of GDP by 2016. In the euro area by contrast, debt is expected to peak in 2013 (at 90% of GDP) and begin falling thereafter (see Figure 3). Altogether the US fiscal situation is serious; and the political solution to address this issue will not be easily forthcoming, irrespective of the upcoming presidential elections.

#### Emerging markets also face problems

Meanwhile emerging markets are not immune from the issues in the West, and face problems of their own. It is almost inconceivable that the emerging markets can maintain earlier high rates of economic growth in the face of protracted slow growth in the West. The EU27 and the US account for nearly half of world GDP, and for a significant proportion of emerging-market exports.

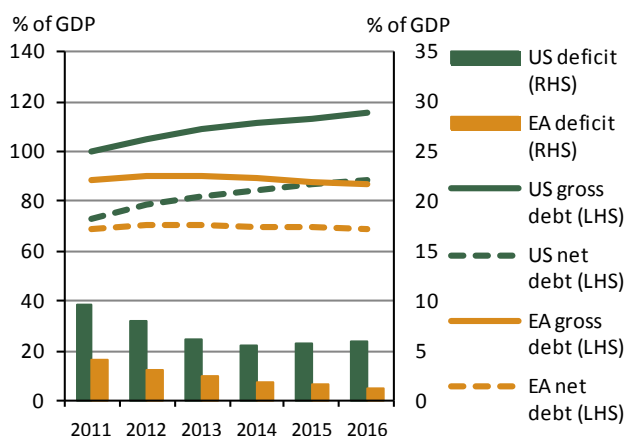
Good – i.e. improving – policies, can encourage growth through domestic demand. India is perhaps the best example: GDP growth has strengthened in every epoch, from the approximately 2% so-called ‘Hindu rate of growth’ in the 1950s and 1960s to 7% or even 8% nowadays.

Strong export growth can also be important as a powerful source of demand growth, e.g. Japan in the 1960s and ‘70s, South Korea in the 1980s and ‘90s, and China and the rest of South East Asia today. Moreover, brisk export growth has other benefits. Exports finance imports: and imports help in easing supply bottlenecks, and hence potential inflation pressures. Moreover, exports are often produced using imported capital equipment, so that the technology that is embedded in this imported equipment enters the national economy.

Not only will strong export growth be hard to achieve in light of Western public-sector deleveraging, but the emerging markets also have issues of their own, including, importantly, inflation. Relative to the pre-crisis period, consumer price inflation in emerging and developing economies has been relatively high over the past two years, particularly in India.

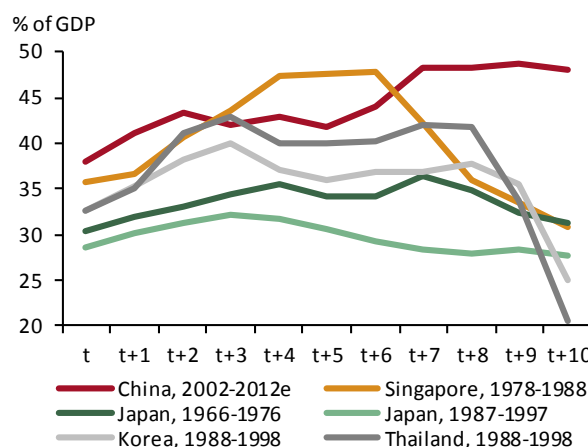
China’s GDP growth will almost certainly slow. Moreover China’s authorities want this to happen, albeit not sharply. China’s (already high) investment/GDP ratio has climbed further since 2008, and is now close to 50%. The risk is of a marked pullback in investment growth, which would result in sharp falls in GDP growth. The challenge is to encourage the share to fall, but less precipitously than it did in some other Asian economies (see Figure 4). The second part of the

Figure 3: Projected public deficits and debt, US and euro area



Source: IMF World Economic Outlook Database, September 2011

Figure 4: Investment/GDP ratios during Asian economic expansions



Source: Nomura and Llewellyn Consulting

challenge is to ensure that it is primarily domestic consumption that offsets the reduced investment share. There is some, tentative, evidence that this is starting to happen.<sup>5</sup>

**China has the capacity to deal with many issues**

China however is in a good position, relative to many other countries, to deal with the consequences of what may prove to be many years of sluggish growth in the West.

- China has ample fiscal space: its government deficit and debt are low, which stands it in good stead to deal with any banking problems that arise, and permits it credibly to pursue expansionary fiscal policy.
- Domestic consumption has considerable room to increase. China has a low share of consumption in GDP and per capita income is low. Development of a credible system of social protection may, over time, reduce the household saving ratio.
- Strong intra-Asian trade can help to offset weakness of exports to Western economies.
- Moreover political will is strong, and the authorities, while keen to see a modest slowdown in GDP growth, are equally keen to avoid a sharp slowdown.

In short, China has a good chance of succeeding where other Asian economies have failed.

### Conclusion on the global economic backdrop

A differentiated tale of three regions:

- Europe has a range of problems which are institutional and structural in origin, and economic and financial in manifestation. They require a political solution; and we judge that policymakers will succeed, albeit after a bumpy ride.
- The US's economic and financial problems are less pressing, and perhaps fewer, but it has a serious budget problem. This also requires a political solution; and that will not be easily forthcoming.
- The Asian economies will not be immune to slowing growth in the West. That aside they appear more conjunctural, and probably do not require a political solution that is as demanding as that needed in Europe and the US.

### The key macroeconomic drivers

**Four powerful forces are at work**

Meanwhile, globally there are four powerful forces at work – not only during the crisis, but also for a long time thereafter:

1. Population ageing
2. Population growth
3. The information technology (IT) revolution
4. Global warming/climate change

These forces are inexorable, are driving events, and are forcing change. Although they are slow moving, that does not mean that they become relevant only in the future. On the contrary: forward-looking markets anticipate future developments; and policy too can bring the ultimate effects forward to the present. Markets and policy are therefore likely to be key determinants of events over the three-five-seven year period ahead that is relevant for private equity investing.

#### Population ageing

**Populations are ageing rapidly all over the world**

The proportion of older people is increasing fast. In the 'oldest' countries, particularly Japan and many in Europe, close to 20% of the population is already aged 65+; and this is projected to rise above 30% by 2050. In most countries, the 'oldest old' population group (the cohort aged 80 and over) is growing faster than any other age group. The median age is rising fast, in developing countries in particular. However, the region with the highest median age in 2050 will still be Europe (see Figures 5 and 6).

**The story is of two trends ...**

Ageing is a story of two trends and an anomaly. The first trend is one of rising longevity. In the developed economies, longevity is increasing by about three months per year, and healthy life expectancy is increasing at a similar rate. Elsewhere the situation is uneven.

The second trend is declining fertility. As per capita income has risen, in many OECD countries the number of children born per woman has fallen to, or even below, the rate that keeps the

population constant (around 2.1). Even a number of developing economies are seeing family sizes decrease, largely the result of improvements in agricultural productivity, and thereby real incomes.

**... and an anomaly**

The anomaly. The post-WWII baby-boom generation (born between 1946 and 1964) in a number of Western countries is just starting to turn 65. In France, Germany, the United Kingdom, and the United States, around *one-third* of the labour force will turn 65 over the coming 18 years.

Ageing of populations is widely portrayed as a problem. But it is so only because of policy: it is hardly a problem for individuals concerned. The retirement age has not been raised significantly, even though (healthy) longevity has increased so much. In the 1950s, the retirement age was 65. Had it been indexed to longevity, today it would be 80+. Consequently, policymakers are (implicitly) asking a declining proportion of the population to support a growing proportion. Globally, the number of people aged 65 and over per 100 persons of working age was 24 in 2010; in 2050 it will almost have doubled, to around 45.

Thus policymakers have generated an expectation that economies will increasingly be unable to fulfil i.e. that people can retire at 65 and expect 20+ years of high income. The solution will have to have three basic components: higher pension contributions; lower real value of pensions (i.e. a lower 'replacement rate'); and a longer working life. Governments have only just started to address the issue.

**Population growth**

**Populations are growing markedly**

The world's population has more than doubled in the past 50 years, and is on course to reach 10 billion by 2050. Meanwhile, significant parts of the world are experiencing rapid growth of per capita income. The supply of land, however, is essentially fixed. Indeed around 90% of the increase in food production over the past decade has been due to increased yields, and only around 10% due to increased land under cultivation. Investment and technical progress have thus been sufficient to offset diminishing returns.

Feeding 10 billion people adequately will be demanding, and implies an approximate further doubling of productivity. Higher agricultural prices will likely be necessary to call forth the requisite increased supply. There is a growing need for investment in agriculture that raises yields.

**The IT revolution**

**The IT revolution impinges widely on economies**

The IT revolution is bigger than the Industrial Revolution: it impinges more widely and thereby fundamentally on the economy, because the Schumpeterian process of 'creative destruction' affects not only manufacturing, but also services.<sup>6</sup> Moreover it is proceeding faster, impelled in particular by international competition. Partial or total automation/computerisation brings enormous cumulative productivity gains by cutting costs, and enhancing the storage and free flow of information. It also stimulates new investment, important in a time of economic stagnation.

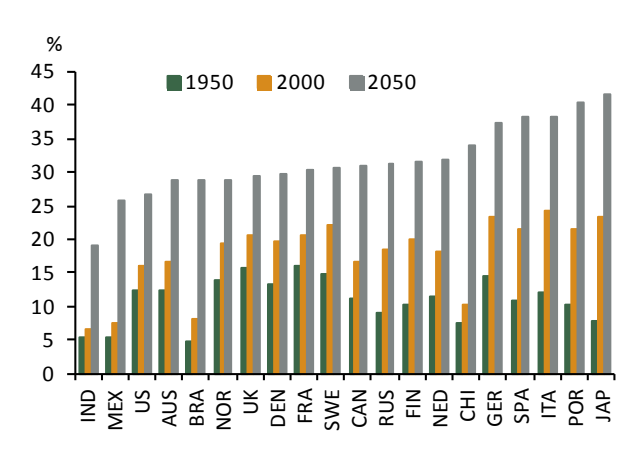
Moreover, the IT revolution is only in its infancy. There is much more to come. Chris Freeman,

Figure 5: Median age across regions, 1950-2050

Median age, years	1950	2010	2050
World	23.9	29.2	37.9
More developed regions	29.0	39.7	44.3
Less developed regions	21.5	26.9	36.8
Africa	19.2	19.7	26.4
Asia	22.1	29.2	41.0
Europe	29.7	40.1	45.7
Latin America and Caribbean	20.1	27.6	41.0
Northern America	29.8	37.2	40.4
Oceania	28.0	32.8	37.9

Source: UN World Population Prospects: The 2010 Revision

Figure 6: Proportion of population aged 65 and over, 1950-2050



Source: UN World Population Prospects: The 2010 Revision

former Professor at the University of Sussex and an expert on the social and economic consequences of developments in science and technology, once observed:

*“If we measure what has been invented in kilometres, we would measure what has been implemented only in centimetres.”*

However, IT also brings vulnerabilities. The majority of systems, particularly in the Western economies, operate on infrastructure that was not designed with security in mind. Most systems cannot be made secure retrospectively; they have to be redesigned from scratch. Here too governments are only just starting to focus on these (ever growing) vulnerabilities.

Societies’ political, policymaking, and social institutions will be challenged to adapt sufficiently quickly. Change on this scale can fundamentally alter the relative fortunes of economies, sectors, and industries. The period over which these changes work through will be many decades, and the most direct manifestation will be at the company level. Firms which successfully adapt to the evolving technological environment will prosper, those that resist change, or misread it, will fail.

### Global warming

#### Earth is warming

Science can never be certain. However, the balance of evidence appears to be that: Earth is warming; greenhouse gas emissions after the Industrial Revolution can account for much of this; and no other factor or factors can account for anything like all of it.

Much of the public debate on climate change has been conducted in terms of temperature increase: hence the term ‘global warming’. However, it is more instructive to think in terms of climate volatility, and frequencies of extreme weather events, both of which are expected to rise. Model simulations suggest that:

- Droughts and coastal and inland flooding will become more frequent and more extreme
- Rains, hurricanes, and cyclones will become more intense and more frequent
- Heat waves in Europe and North America in particular will become more intense, more frequent, and longer-lasting
- Northern Europe, northern Russia, Canada, Siberia, Greenland, the Arctic, and western Antarctica will become warmer and wetter
- India’s all-important monsoon will become more variable and less dependable
- Losses of land mass from sea level rises stand to be substantial. Today, around 60 million people live within one metre of mean sea level; by 2100 the figure could be 130 million.

None of this is certain, but the Intergovernmental Panel on Climate Change (IPCC) recently concluded that:

*“... there is at least a two-in-three chance that man-made global warming has already worsened weather extremes”<sup>7</sup>*

#### Limiting the rise to 2°C appears a lost cause

Policy to mitigate climate change is advancing, slowly. Europe’s response has been strong; and it is to be reinforced, following the December 2011 United Nations Climate Change Conference in Durban. In China, policy will almost certainly strengthen progressively, given that its policymakers accept the issue, and that China is big enough to influence its own outcome. In the US, however, response at the federal level is yet to come. Nevertheless, limiting the rise in Earth’s mean temperature to 2°C now appears to be a lost cause. A 3°C rise is almost a certainty, and a 4°C rise, which would change the world fundamentally, is a distinct possibility. Thus there will be a growing need for adaptation, to alleviate increasing climate-related pressures.

### Opportunities for private equity

#### These forces are changing the world fundamentally

These big four drivers are changing the world fundamentally, creating large investment opportunities, especially in Europe:

- Social services in all countries are set to come under increasing pressure from their ageing populations. Europe’s social model will come under particular pressure, given its ageing population, that its governments have over-promised, and that public expectations remain high.

- Increasing productivity/yields to feed the fast-growing global population is both an issue and an opportunity for all countries. European land is still somewhat less than fully utilised, especially in Emerging Europe.
- The IT revolution has a long way to run in all countries: Europe moreover has lagged behind the US in turning invention into commercialisation.
- On global warming and climate change, there is agreement for the first time between the world's biggest carbon emitters, and Europe has decided to increase its efforts still further. Policy responses are bringing the consequent investment requirements forward to the present.

**Traditional sources of funding are constrained ...**

The macro environment strengthens opportunities for private equity as an alternative source of funding. Traditional funding sources are heavily constrained. Public debt levels are approaching a dangerous 100% of GDP in many western economies, and exceed it in some, constraining government budgets as seldom before. In Europe, virtually all countries are currently tightening fiscal policy, and governments are going to find themselves unable to provide what has come to be expected of, and provided by, them.

Meanwhile banks throughout the West are being obliged to improve their balance sheets, and are less ready a source of lending than they were previously. In Europe, deleveraging is taking place at an unprecedented rate, with the result that bank lending over the coming years will continue to be particularly constrained.

Companies will increasingly be seeking finance through non-bank channels, particularly in Europe. Whereas many large companies can readily access corporate bond and equity markets, small and medium-size enterprises, as well as some large ones, are more constrained.

**Europe is particularly bank-dependent**

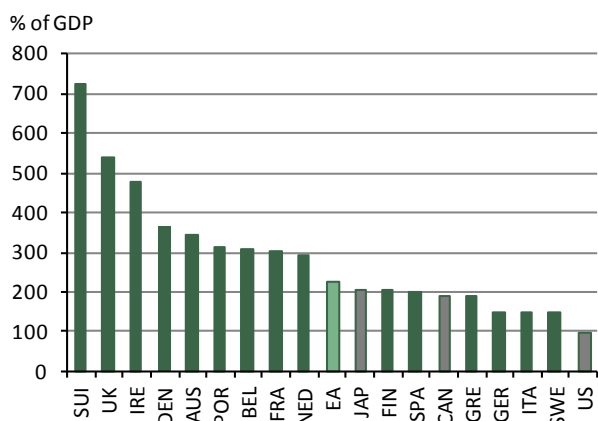
The European financial system is particularly bank-dependent, and corporate bond and stock markets account for a smaller share of the total intermediation between savers and private-sector borrowers. In Europe, banks assets are several multiples of GDP, and stock and corporate bond markets are relatively small. In the US, by contrast, bank assets total less than US GDP,<sup>8</sup> and stock and corporate bond markets are larger than in Europe. Interestingly Sweden stands out in Europe as having a more diversified financial system (see Figures 7 and 8).<sup>9</sup>

**European banks are set to deleverage rapidly**

European banks are set to deleverage rapidly, and at magnitudes not seen for decades. This owes to a combination of factors, including tightened regulatory requirements, the high cost of raising capital, and market pressure to shrink balance sheets rapidly.

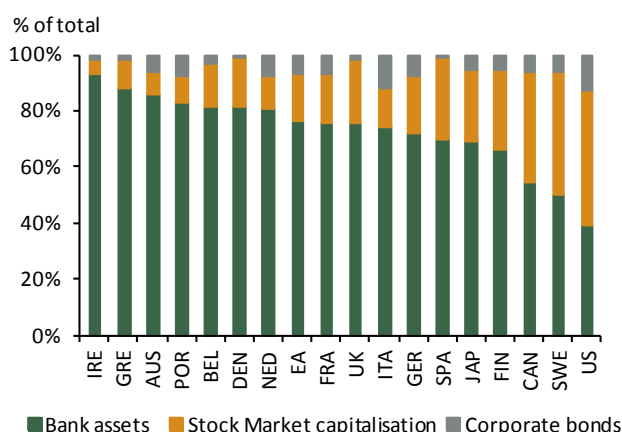
Although the exact figure for European deleveraging is uncertain, estimates are for up to €3tn over the coming two years, and as much as €4.5 trillion on a 5-6 year horizon.<sup>10</sup> These figures represent between 6% and 15% of total European bank assets. Thus far, European banks have announced €1.2tn in sales and run-offs, with French and UK banks accounting for over half the planned deleveraging. Moreover the US too stands to be affected by European bank deleveraging (in dollars).

Figure 7: Bank assets, percentage of host-country GDP, 2010



Source: IMF Global Financial Stability Report, September 2011

Figure 8: Bank assets, stock markets, and corporate bonds, 2010



Source: IMF Global Financial Stability Report, September 2011 and BIS Quarterly Review, September 2011

**Businesses and governments are set to divest assets**

The supply of assets meanwhile will increase, and private equity investors are well placed to make these assets perform. Many assets are likely to be put up for sale by companies, either because the assets themselves are stressed, or because a lack of bank funding forces sales of profitable assets. Government budget constraints will lead to privatisation and other forms of divestment of public-sector assets. Private equity has the ability to help companies deal with the pressures coming from change; transform/restructure businesses; and turn them into international facing businesses.

**Summary of opportunities for private equity****Private equity investors are well placed to step in**

Over the coming years the four key drivers will play out against a difficult political, economic and financial backdrop. Economies will inevitably have to adapt: there is no alternative. This macro environment will create a strong demand for investment, but traditional sources of funding will be severely constrained. At the same time, there will be a plentiful supply of attractive assets to buy.

Private equity investors are well placed to step in, and to make these assets perform.



## What if the euro area were to disintegrate?

*This is not our base case, but it could happen.*

If one or more countries were to leave the euro or, at the extreme, if the euro were to disintegrate, chains of events would set in motion, the results of which can only be guessed at. Even basic questions are hard to address. For example:

- Would a one euro deposit in a Greek bank still be fully fungible with a one euro banknote?
- Would a one euro deposit in a Greek bank still be fully fungible with a one euro deposit in an Italian bank? and
- Would a one euro deposit in an Italian bank still be fungible with one euro in a French, or German, bank?

Although it is extremely difficult, if not impossible, to answer such questions, what is widely agreed is that, were the euro area to disintegrate, the costs would be enormous:

*“A break-up ..., even a partial one involving one or more periphery economies, would be chaotic. A full or comprehensive break-up, with the Euro Area splintering into a Greater DM zone and around 10 national currencies would create financial and economic pandemonium.”*

*“Exit, partial or full, would be precipitated by sovereign defaults in the periphery, whose currencies would weaken substantially, and whose banks would fail. If Spain and Italy were to exit, a collapse of the banking system throughout the EU and North America and years of global depression could occur.”*

(Willem Buiters, 8 Dec. 2011)<sup>11</sup>

Were breakup to happen, however, a good case would remain for investing in European assets.

### **A good company is a good company, and this holds largely irrespective of where it is located:**

- The value of a company is determined, in the final analysis, and in large part, by the net present value of its future stream of profits
- The value of an exporting firm, measured in foreign currency or currencies, is little affected by a change in the exchange rate of the domestic currency
- By contrast, a firm that produces primarily for the domestic market will be affected most by developments in the home market; and these can be positive or negative following a depreciation
- In the long term, even a company that services largely the domestic market will recover, as the domestic economy recovers, albeit this may take several years

**There would be many attractive assets for private equity investment, even were the euro to collapse. ■**

## Endnotes

<sup>1</sup> Mario Draghi, speaking to the European Parliament

<sup>2</sup> For example on 16 December 2010

<sup>3</sup> Chancellor Merkel, speaking to the German Bundestag

<sup>4</sup> Chancellor Merkel, speaking to the German Bundestag

<sup>5</sup> See for example, Barclays Capital (2011), China: Beyond the Miracle: Part 4 – The great wave of consumption upgrading

<sup>6</sup> See Schumpeter (1942), and the descriptive quotation below:

*“... the ... process of industrial mutation ... that incessantly revolutionizes the economic structure from within , incessantly destroying the old one, incessantly creating a new one. This process of Creative Destruction is the essential fact about capitalism. It is what capitalism consists in and what every capitalist concern has got to live in ...”*

<sup>7</sup> Final Draft Report of Panel of Experts, November 2011

<sup>8</sup> However, the US does have the largest shadow banking system in the world. In Europe, the UK and the Netherlands also have relatively large shadow banking sectors. For more information see FSB (2011).

<sup>9</sup> Should the formal banking system become impaired or blocked, the operation of well-functioning non-bank funding channels can help to stabilise elements of the financial/economic system in the face of shocks. There is evidence that this has helped economies such as the US and Sweden in past crises. For more, see remarks by Chairman Greenspan at the Financial Crisis Conference, Council on Foreign Relations, New York, 12 July 2000.

<sup>10</sup> Deutsche Bank has estimated European bank deleveraging at around €2tn over the coming two years. Huw van Steenis, a Morgan Stanley analyst has estimated that European banks may deleverage by up to €3 trillion over the coming two years, or by as much as €4.5 trillion on a 5-6 year horizon. Barclays Capital too have put the figure at up to €3trillion over the coming two years.

<sup>11</sup> See Buitter, W. (2011), What Happens if the Euro Collapses? Citi GPS: Global Perspectives and Solutions, 8 December 2011

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